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Electronic Comprehensive Validation Package (eCVP)

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COMPREHENSIVE VALIDATION PACKAGE

Modified ASTM D-1946

INVENTORY SHEET

Work Order #: 1502053B

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Comments:

Completed by:

Kara McKiernan	Kara McKiernan / Document Control	2/12/15
(Signature)	(Print Name & Title)	(Date)

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WORK ORDER #: 1502053B

Work Order Summary

CLIENT:	Mr. Terry Taylor Anderson Mulholland & Associates, Inc. 110 Corporate Park Drive White Plains, NY 10604	**BILL TO:**	Accounts Payable Anderson Mulholland & Associates, Inc. 110 Corporate Park Drive White Plains, NY 10604
PHONE:	(914) 251-0400	**P.O. #**	
FAX:	(914) 251-1286	**PROJECT #**	Building 6 VI
DATE RECEIVED:	02/05/2015	**CONTACT:**	Brian Whittaker
DATE COMPLETED:	02/10/2015		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	B6-4IA	Modified ASTM D-1946	5.5 "Hg	4.8 psi
02A	B6-5IA	Modified ASTM D-1946	6.9 "Hg	4.9 psi
03A	B6-AA-1	Modified ASTM D-1946	4.5 "Hg	4.8 psi
04A	B6-3IA	Modified ASTM D-1946	4.5 "Hg	4.9 psi
05A	B6-3IAD	Modified ASTM D-1946	7.3 "Hg	4.8 psi
06A	Lab Blank	Modified ASTM D-1946	NA	NA
07A	LCS	Modified ASTM D-1946	NA	NA
07AA	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY: Heidi Mayo

Technical Director

DATE: 02/10/15

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704343-14-7, UT NELAP CA009332014-5, VA NELAP - 460197, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2014, Expiration date: 10/17/2015.
Eurofins Air Toxics Inc.. 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 Eurofins Air Toxics, Inc.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified ASTM D-1946
Anderson Mulholland & Associates, Inc.
Workorder# 1502053B

Five 6 Liter Summa Canister (100% Certified) samples were received on February 05, 2015. The laboratory performed analysis via Modified ASTM Method D-1946 for Methane in air using GC/FID. The method involves direct injection of 1.0 mL of sample.

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

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

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

As per project specific client request the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit.

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

Table 1

Client Sample ID	Lab Sample ID	Date Collected	Date Received	Date Extracted	Sample Holding Time (Days)	Sample Extract Date Analyzed	Sample Extract Holding Time (Days)	Sample Condition
B6-4IA	1502053B-01A	2/ 3/2015	2/ 5/2015	NA	3	2/ 6/2015	NA	Good
B6-5IA	1502053B-02A	2/ 3/2015	2/ 5/2015	NA	3	2/ 6/2015	NA	Good
B6-AA-1	1502053B-03A	2/ 3/2015	2/ 5/2015	NA	3	2/ 6/2015	NA	Good
B6-3IA	1502053B-04A	2/ 3/2015	2/ 5/2015	NA	3	2/ 6/2015	NA	Good
B6-3IAD	1502053B-05A	2/ 3/2015	2/ 5/2015	NA	3	2/ 6/2015	NA	Good
Lab Blank	1502053B-06A	NA	NA	NA	NA	2/ 6/2015	NA	Good
LCS	1502053B-07A	NA	NA	NA	NA	2/ 6/2015	NA	Good
LCSD	1502053B-07AA	NA	NA	NA	NA	2/ 6/2015	NA	Good

Sample Results and Raw Data

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

Client Sample ID: B6-4IA

Lab ID#: 1502053B-01A

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00016	0.00022

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Client Sample ID: B6-4IA

Lab ID#: 1502053B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9020617**	**Date of Collection:**	**2/3/15 1:41:00 PM**
Dil. Factor:	**1.62**	**Date of Analysis:**	**2/6/15 05:43 PM**

Compound	**Rpt. Limit (%)**	**Amount (%)**
Methane	0.00016	0.00022

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

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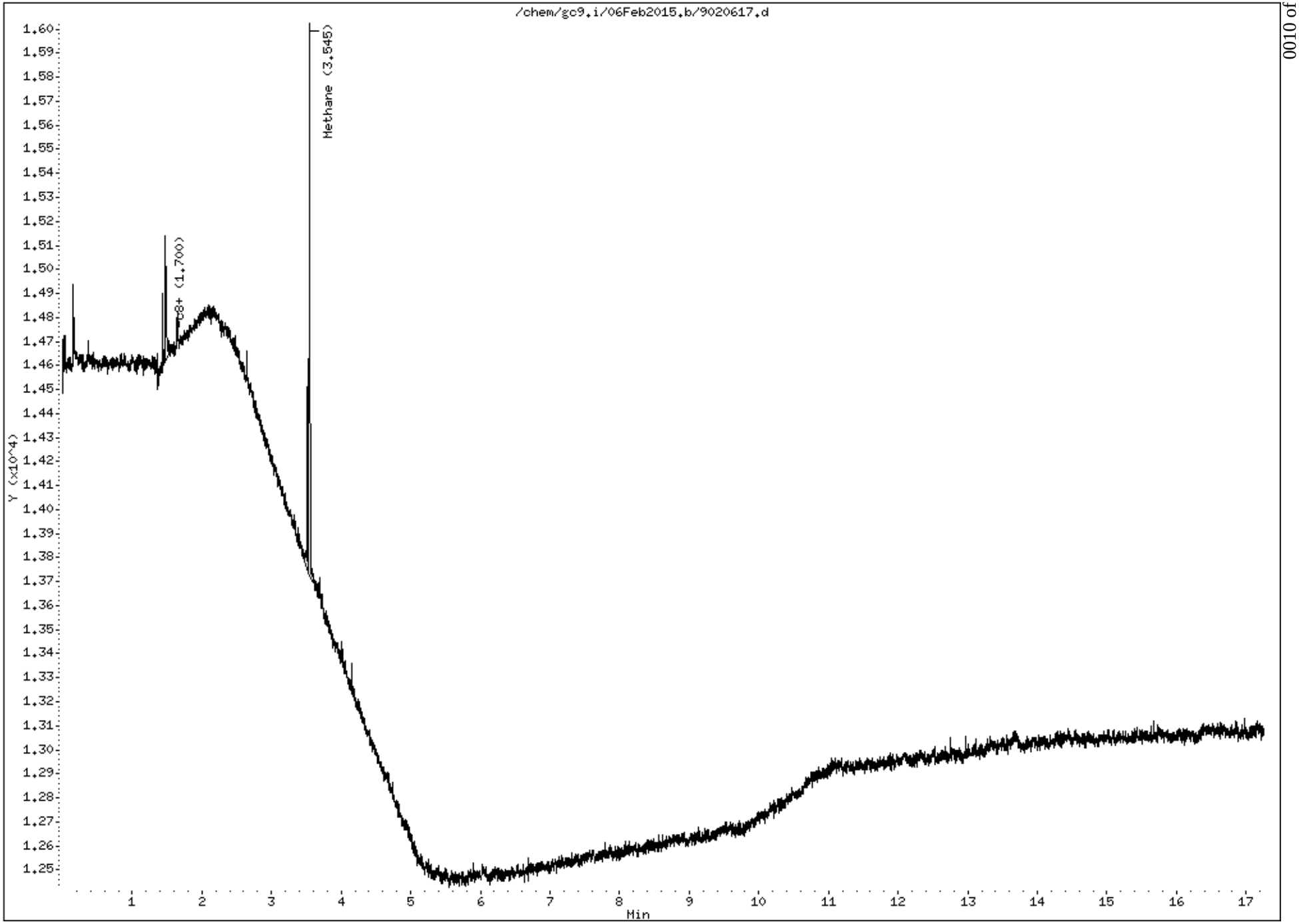
Modified ASTM D-1945/1946

Data file : /chem/gc9.i/06Feb2015.b/9020617.d
Lab Smp Id: 1502053B-01A
Inj Date : 06-FEB-2015 17:43
Operator : gd Inst ID: gc9.i
Smp Info : 1.0ml,3735;1502053B-01A;
Misc Info : 5.5"Hg>4.8psi
Comment : GC/FID
Method : /chem/gc9.i/06Feb2015.b/914n0508.m
Meth Date : 06-Feb-2015 13:30 lyohanne Quant Type: ESTD
Cal Date : 08-MAY-2014 18:23 Cal File: 9050815.d
Als bottle: 1
Dil Factor: 1.62000
Integrator: HP Genie Compound Sublist: ch4.sub
Target Version: 3.50
Processing Host: eeyore

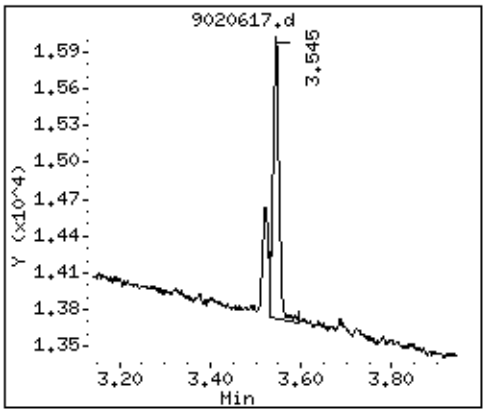
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (%)	FINAL (%)
2 Methane	3.545	3.543	0.002	21632	0.000135	0.000219


/chem/gc9.i/06Feb2015.b/9020617.d
Methane (3.545)
C8+ (1.700)
Y (x10^4)
1.60
1.59
1.58
1.57
1.56
1.55
1.54
1.53
1.52
1.51
1.50
1.49
1.48
1.47
1.46
1.45
1.44
1.43
1.42
1.41
1.40
1.39
1.38
1.37
1.36
1.35
1.34
1.33
1.32
1.31
1.30
1.29
1.28
1.27
1.26
1.25
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
Min

2 Methane


9020617.d
3.545
1.59
1.56
1.53
1.50
1.47
1.44
1.41
1.38
1.35
Y (x10^4)
3.20
3.40
3.60
3.80
Min

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

Client Sample ID: B6-5IA

Lab ID#: 1502053B-02A

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00017	0.00022

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Client Sample ID: B6-5IA

Lab ID#: 1502053B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9020615**	**Date of Collection:**	**2/3/15 3:46:00 PM**
Dil. Factor:	**1.73**	**Date of Analysis:**	**2/6/15 04:21 PM**

Compound	**Rpt. Limit (%)**	**Amount (%)**
Methane	0.00017	0.00022

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

Eurofins Air Toxics Inc.

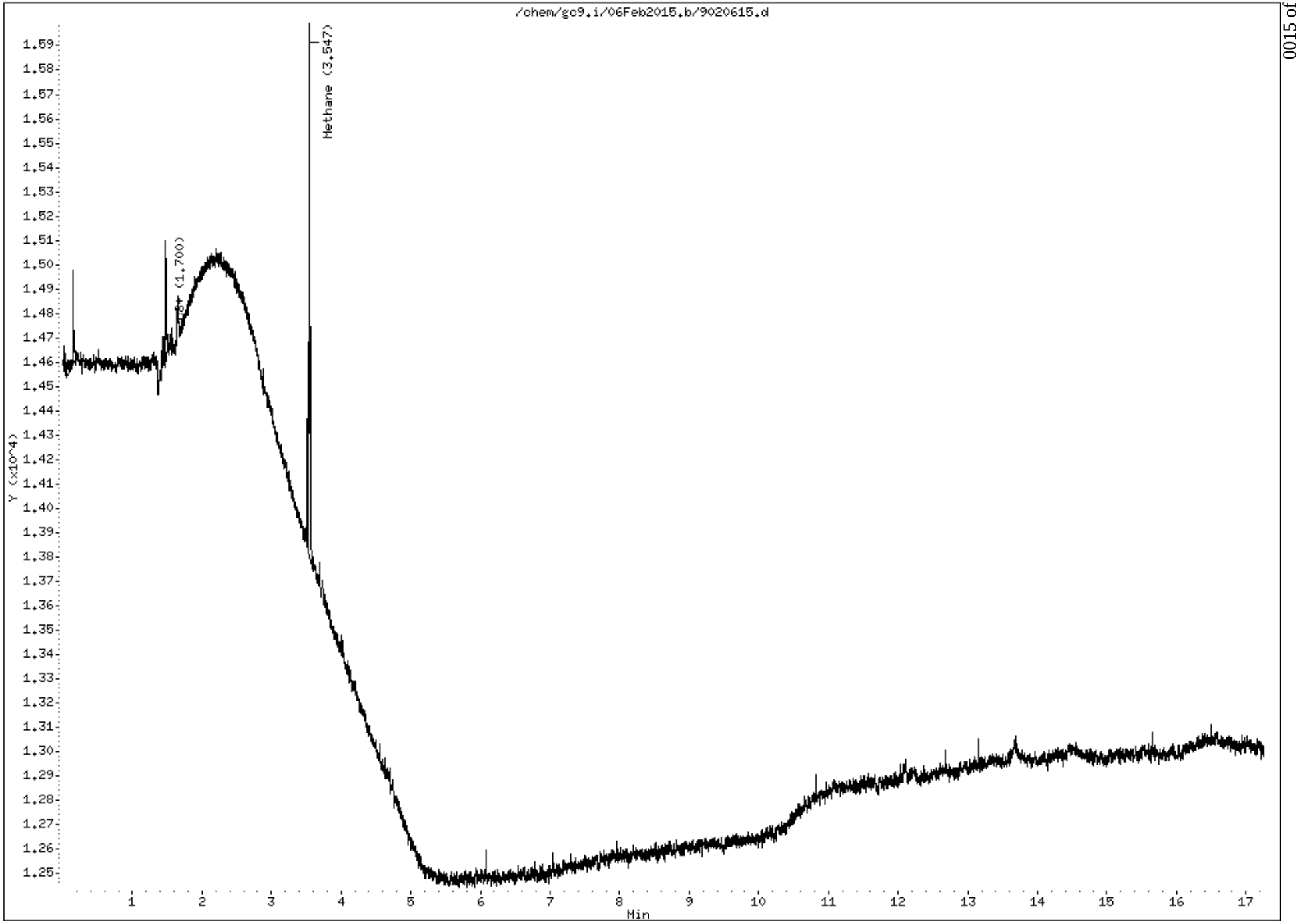
Modified ASTM D-1945/1946

Data file : /chem/gc9.i/06Feb2015.b/9020615.d
Lab Smp Id: 1502053B-02A
Inj Date : 06-FEB-2015 16:21
Operator : gd Inst ID: gc9.i
Smp Info : 1.0ml,34222;1502053B-02A;
Misc Info : 6.9"Hg>4.9psi
Comment : GC/FID
Method : /chem/gc9.i/06Feb2015.b/914n0508.m
Meth Date : 06-Feb-2015 13:30 lyohanne Quant Type: ESTD
Cal Date : 08-MAY-2014 18:23 Cal File: 9050815.d
Als bottle: 1
Dil Factor: 1.73000
Integrator: HP Genie Compound Sublist: ch4.sub
Target Version: 3.50
Processing Host: eeyore

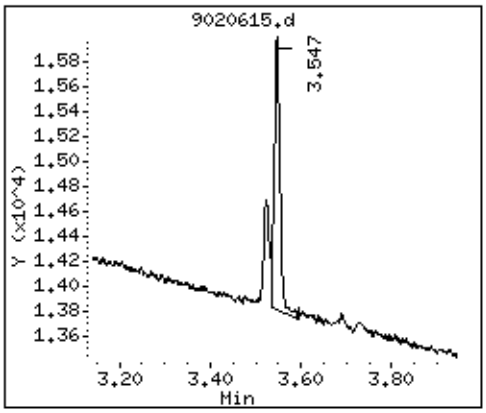
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (%)	FINAL (%)
2 Methane	3.547	3.543	0.004	20341	0.000127	0.000220


/chem/gc9.i/06Feb2015.b/9020615.d
Methane (3.547)
(1.700)
Y (x10^4)
1.59
1.58
1.57
1.56
1.55
1.54
1.53
1.52
1.51
1.50
1.49
1.48
1.47
1.46
1.45
1.44
1.43
1.42
1.41
1.40
1.39
1.38
1.37
1.36
1.35
1.34
1.33
1.32
1.31
1.30
1.29
1.28
1.27
1.26
1.25
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
Min

2 Methane


9020615.d
3.547
1.58
1.56
1.54
1.52
1.50
1.48
1.46
1.44
1.42
1.40
1.38
1.36
Y (x10^4)
3.20
3.40
3.60
3.80
Min

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

Client Sample ID: B6-AA-1

Lab ID#: 1502053B-03A

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00016	0.00019

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Client Sample ID: B6-AA-1

Lab ID#: 1502053B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9020616**	**Date of Collection:**	**2/3/15 3:35:00 PM**
Dil. Factor:	**1.56**	**Date of Analysis:**	**2/6/15 04:47 PM**

Compound	**Rpt. Limit (%)**	**Amount (%)**
Methane	0.00016	0.00019

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

Eurofins Air Toxics Inc.

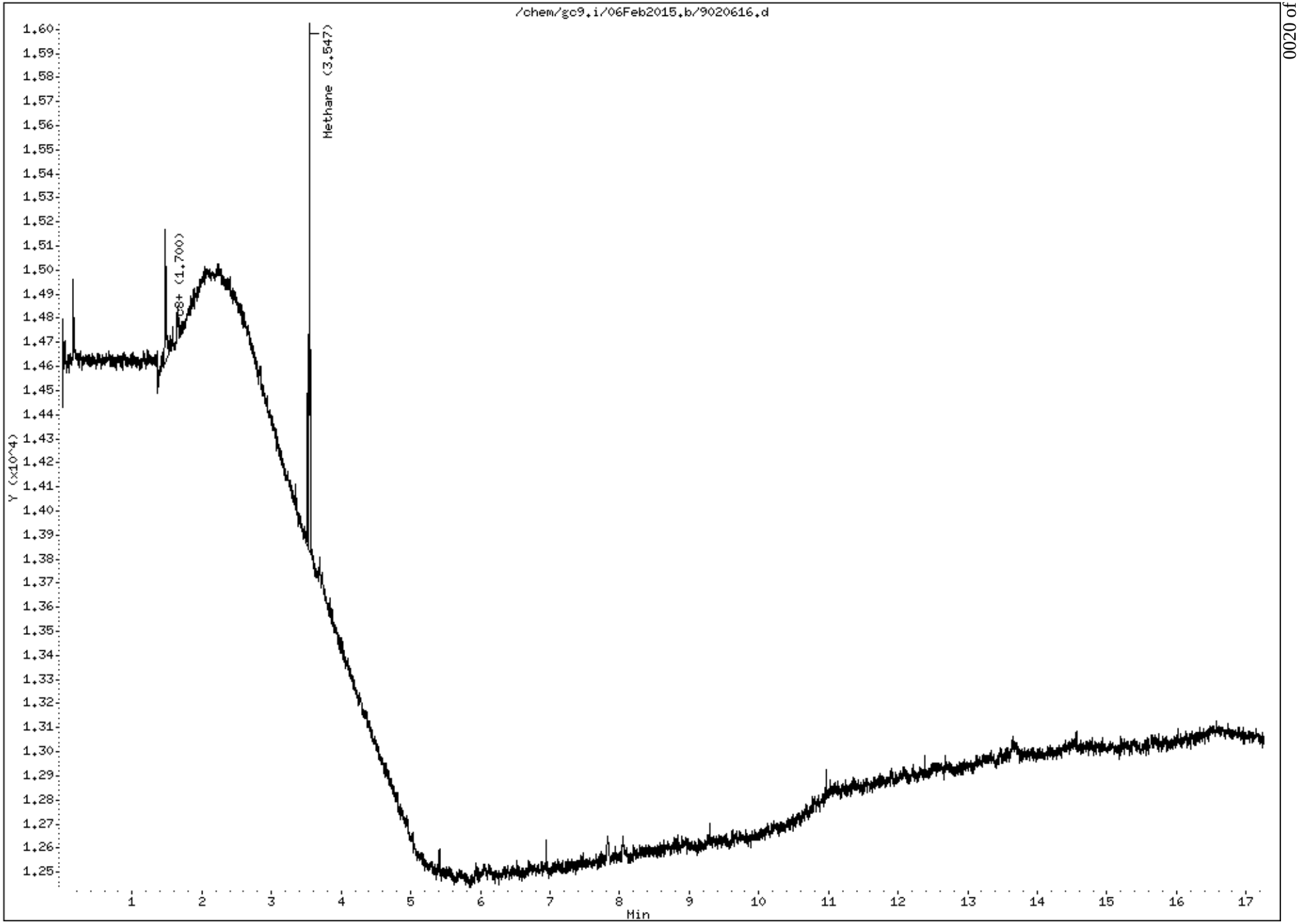
Modified ASTM D-1945/1946

Data file : /chem/gc9.i/06Feb2015.b/9020616.d
Lab Smp Id: 1502053B-03A
Inj Date : 06-FEB-2015 16:47
Operator : gd Inst ID: gc9.i
Smp Info : 1.0ml,34361;1502053B-03A;
Misc Info : 4.5"Hg>4.8psi
Comment : GC/FID
Method : /chem/gc9.i/06Feb2015.b/914n0508.m
Meth Date : 06-Feb-2015 13:30 lyohanne Quant Type: ESTD
Cal Date : 08-MAY-2014 18:23 Cal File: 9050815.d
Als bottle: 1
Dil Factor: 1.56000
Integrator: HP Genie Compound Sublist: ch4.sub
Target Version: 3.50
Processing Host: eeyore

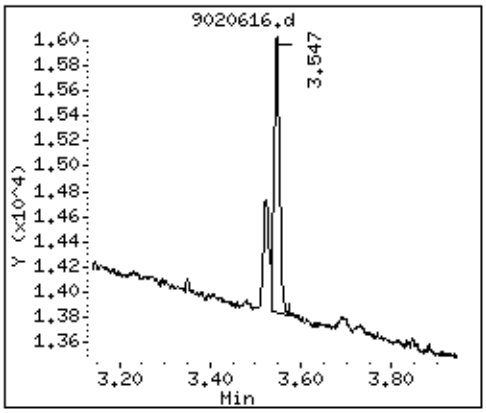
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (%)	FINAL (%)
2 Methane	3.547	3.543	0.004	19682	0.000123	0.000192


/chem/gc9.i/06Feb2015.b/9020616.d
Methane (3.547)
C8+ (1.700)
Y (x10^4)
1.60
1.59
1.58
1.57
1.56
1.55
1.54
1.53
1.52
1.51
1.50
1.49
1.48
1.47
1.46
1.45
1.44
1.43
1.42
1.41
1.40
1.39
1.38
1.37
1.36
1.35
1.34
1.33
1.32
1.31
1.30
1.29
1.28
1.27
1.26
1.25
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
Min

2 Methane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3.547
1.60
1.58
1.56
1.54
1.52
1.50
1.48
1.46
1.44
1.42
1.40
1.38
1.36
Y (x10^4)
3.20
3.40
3.60
3.80
Min

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

Client Sample ID: B6-3IA

Lab ID#: 1502053B-04A

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00016	0.00019

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Client Sample ID: B6-3IA

Lab ID#: 1502053B-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9020618**	**Date of Collection:**	**2/3/15 4:00:00 PM**
Dil. Factor:	**1.57**	**Date of Analysis:**	**2/6/15 06:08 PM**

Compound	**Rpt. Limit (%)**	**Amount (%)**
Methane	0.00016	0.00019

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

Eurofins Air Toxics Inc.

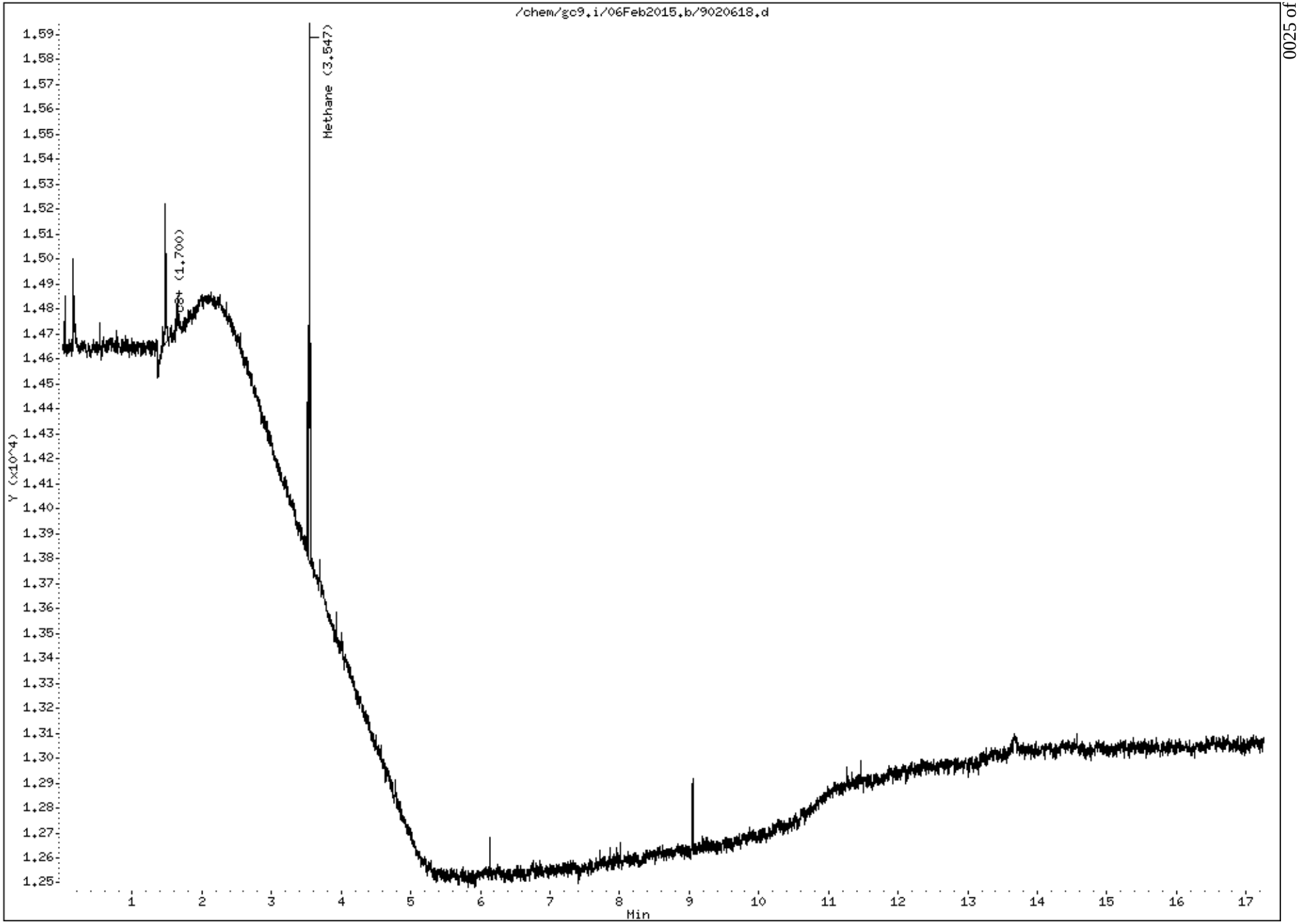
Modified ASTM D-1945/1946

Data file : /chem/gc9.i/06Feb2015.b/9020618.d
Lab Smp Id: 1502053B-04A
Inj Date : 06-FEB-2015 18:08
Operator : gd Inst ID: gc9.i
Smp Info : 1.0ml,35174;1502053B-04A;
Misc Info : 4.5"Hg>4.9psi
Comment : GC/FID
Method : /chem/gc9.i/06Feb2015.b/914n0508.m
Meth Date : 06-Feb-2015 13:30 lyohanne Quant Type: ESTD
Cal Date : 08-MAY-2014 18:23 Cal File: 9050815.d
Als bottle: 1
Dil Factor: 1.57000
Integrator: HP Genie Compound Sublist: ch4.sub
Target Version: 3.50
Processing Host: eeyore

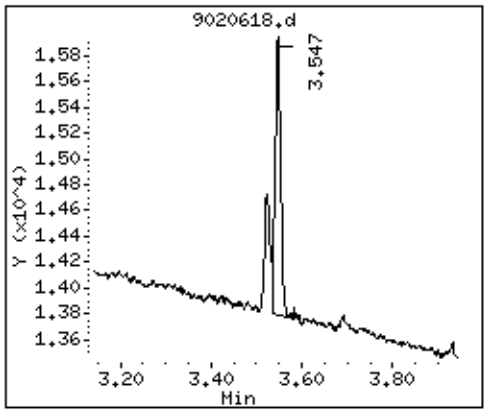
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (%)	FINAL (%)
2 Methane	3.547	3.543	0.004	19509	0.000122	0.000192


/chem/gc9.i/06Feb2015.b/9020618.d
Methane (3.547)
C6+ (1.700)
Y (x10^4)
Min

2 Methane


9020618.d
3.547
1.58
1.56
1.54
1.52
1.50
1.48
1.46
1.44
1.42
1.40
1.38
1.36
Y (x10^4)
3.20
3.40
3.60
3.80
Min

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

Client Sample ID: B6-3IAD

Lab ID#: 1502053B-05A

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00018	0.00020

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Client Sample ID: B6-3IAD

Lab ID#: 1502053B-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9020619**	**Date of Collection:**	**2/3/15 4:00:00 PM**
Dil. Factor:	**1.76**	**Date of Analysis:**	**2/6/15 06:35 PM**

Compound	**Rpt. Limit (%)**	**Amount (%)**
Methane	0.00018	0.00020

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

Eurofins Air Toxics Inc.

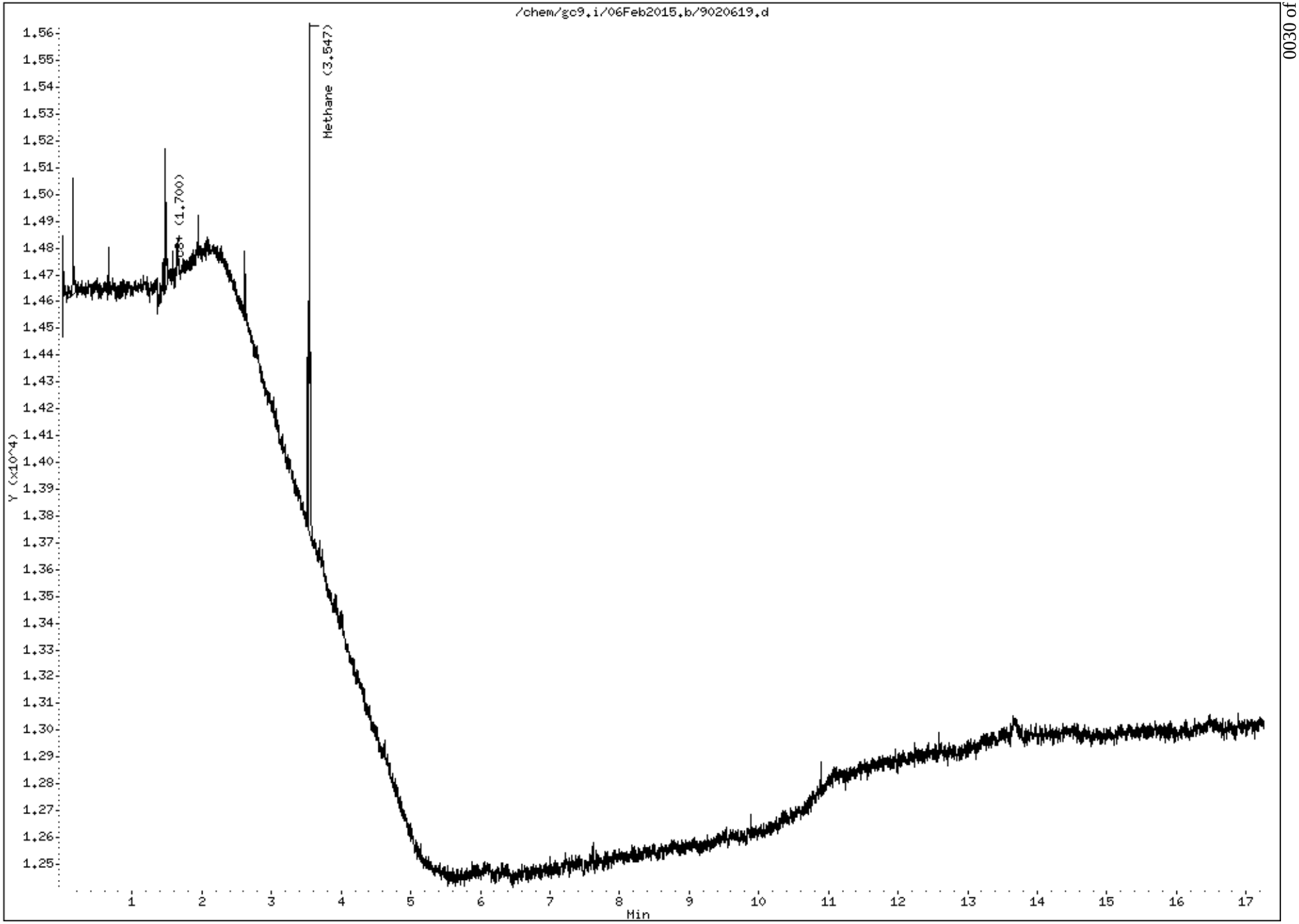
Modified ASTM D-1945/1946

Data file : /chem/gc9.i/06Feb2015.b/9020619.d
Lab Smp Id: 1502053B-05A
Inj Date : 06-FEB-2015 18:35
Operator : gd Inst ID: gc9.i
Smp Info : 1.0ml,33658;1502053B-05A;
Misc Info : 7.3"Hg>4.8psi
Comment : GC/FID
Method : /chem/gc9.i/06Feb2015.b/914n0508.m
Meth Date : 06-Feb-2015 13:30 lyohanne Quant Type: ESTD
Cal Date : 08-MAY-2014 18:23 Cal File: 9050815.d
Als bottle: 1
Dil Factor: 1.76000
Integrator: HP Genie Compound Sublist: ch4.sub
Target Version: 3.50
Processing Host: eeyore

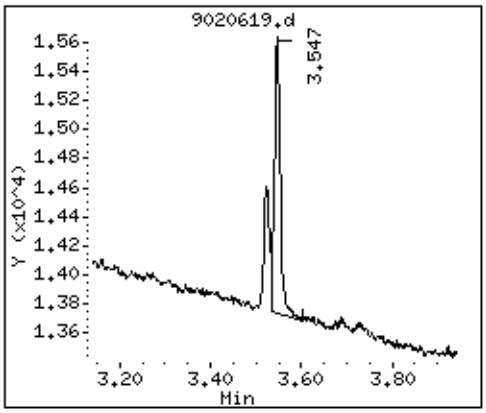
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (%)	CONCENTRATIONS FINAL (%)
2 Methane	3.547	3.543	0.004	18063	0.000113	0.000199


/chem/gc9.i/06Feb2015.b/9020619.d
Methane (3.547)
CO2 (1.700)
Y (x10^4)
Min

2 Methane


9020619.d
3.547
1.56
1.54
1.52
1.50
1.48
1.46
1.44
1.42
1.40
1.38
1.36
Y (x10^4)
3.20
3.40
3.60
3.80
Min

QC Results and Raw Data

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Client Sample ID: Lab Blank

Lab ID#: 1502053B-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9020605**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/6/15 09:47 AM**	

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

Container Type: NA - Not Applicable

Eurofins Air Toxics Inc.

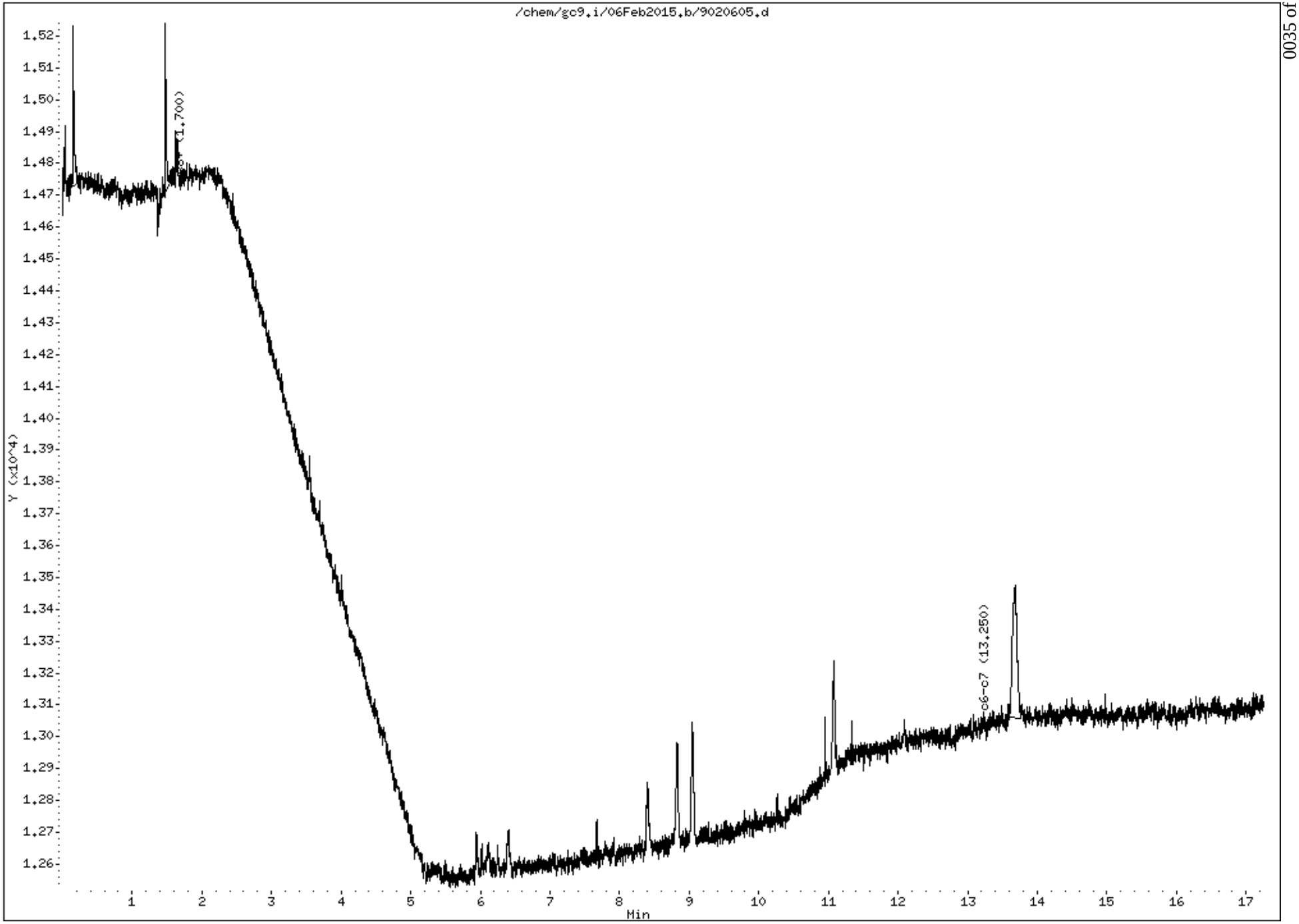
Modified ASTM D-1945/1946

Data file : /chem/gc9.i/06Feb2015.b/9020605.d
Lab Smp Id: Lab blank Client Smp ID: Lab Blank
Inj Date : 06-FEB-2015 09:47
Operator : ly Inst ID: gc9.i
Smp Info : 1.0ml,33977;Lab blank;Lab Blank;
Misc Info : He
Comment : GC/FID
Method : /chem/gc9.i/06Feb2015.b/914n0508.m
Meth Date : 06-Feb-2015 13:23 lyohanne Quant Type: ESTD
Cal Date : 08-MAY-2014 18:23 Cal File: 9050815.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: ngas.sub
Target Version: 3.50
Processing Host: eeyore

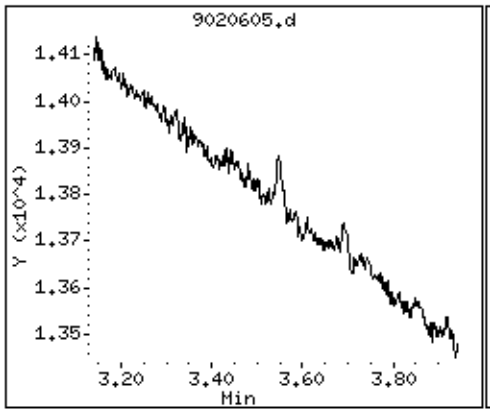
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

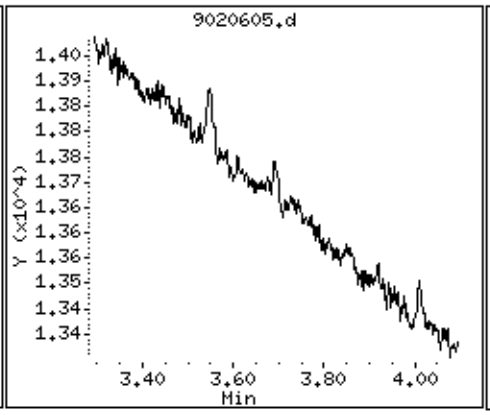
					CONCENTRATIONS ON-COLUMN (%)	CONCENTRATIONS FINAL (%)
Compounds	RT	EXP RT	DLT RT	RESPONSE		
2 Methane	Compound Not Detected.					
3 ethane	Compound Not Detected.					
4 ethene	Compound Not Detected.					
5 propane	Compound Not Detected.					
7 acetylene	Compound Not Detected.					
8 iso-butane	Compound Not Detected.					
10 n-butane	Compound Not Detected.					
15 neo-pentane	Compound Not Detected.					
16 isopentane	Compound Not Detected.					
17 pentane	Compound Not Detected.					
M 37 C6+ Hydrocarbons	Compound Not Detected.					
S 22 c6-c7	Compound Not Detected.					
S 36 c8+	Compound Not Detected.					


/chem/gc9.i/06Feb2015.b/9020605.d
(1.700)
c6-c7 (13.250)
Y (x10^4)
1.52
1.51
1.50
1.49
1.48
1.47
1.46
1.45
1.44
1.43
1.42
1.41
1.40
1.39
1.38
1.37
1.36
1.35
1.34
1.33
1.32
1.31
1.30
1.29
1.28
1.27
1.26
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
Min

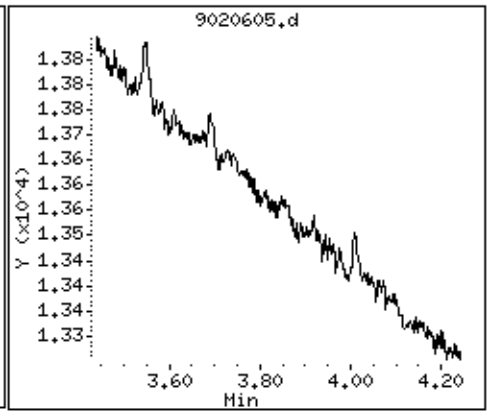
2 Methane (Undetected)



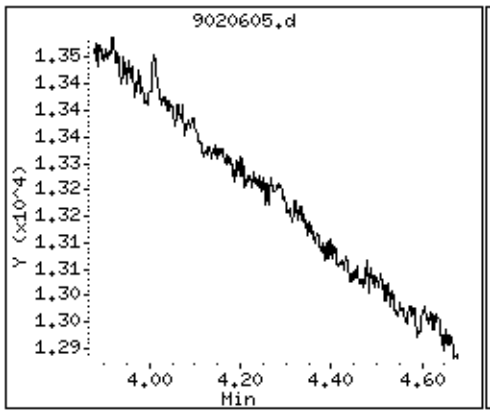
3 ethane (Undetected)



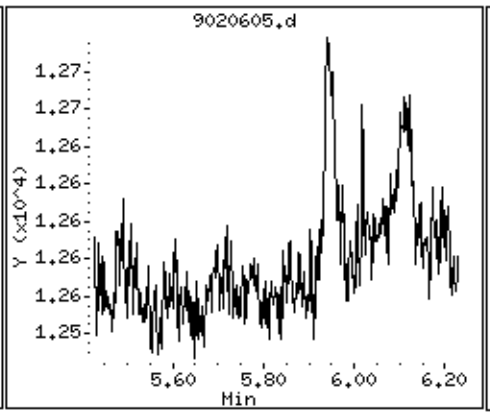
4 ethene (Undetected)



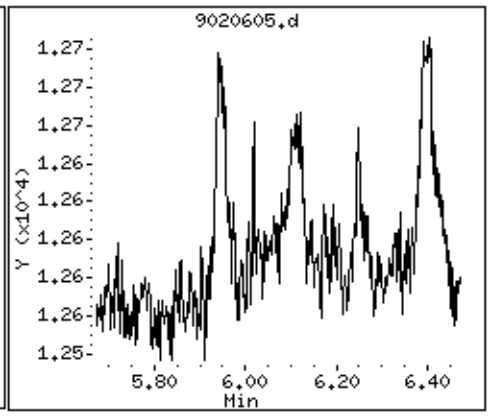
5 propane (Undetected)



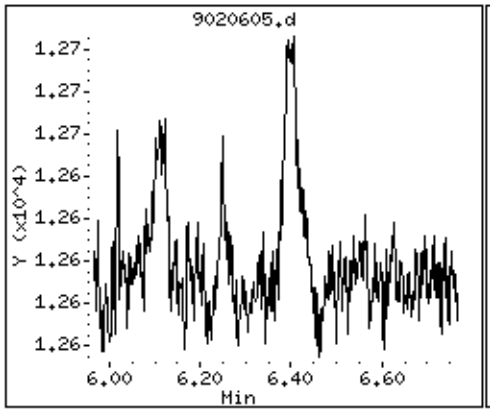
7 acetylene (Undetected)



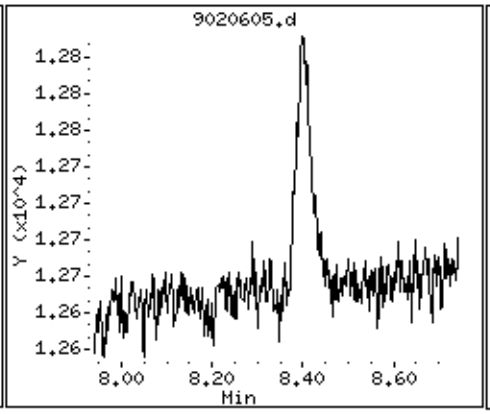
8 iso-butane (Undetected)



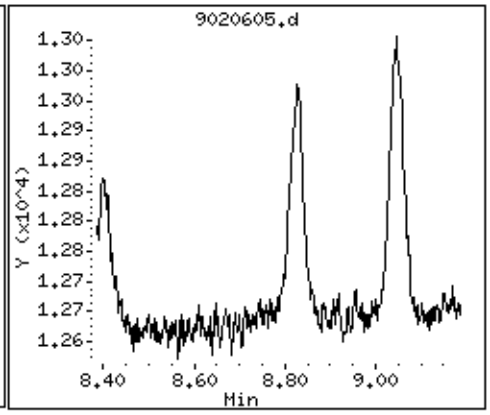
10 n-butane (Undetected)



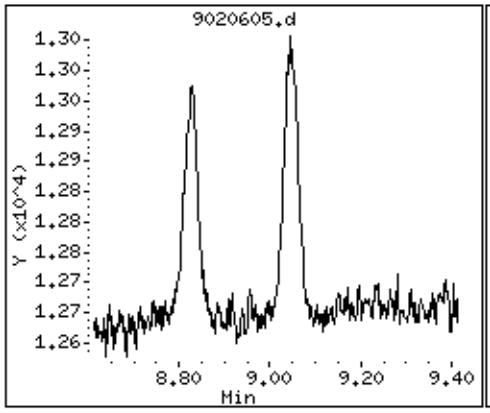
15 neo-pentane (Undetected



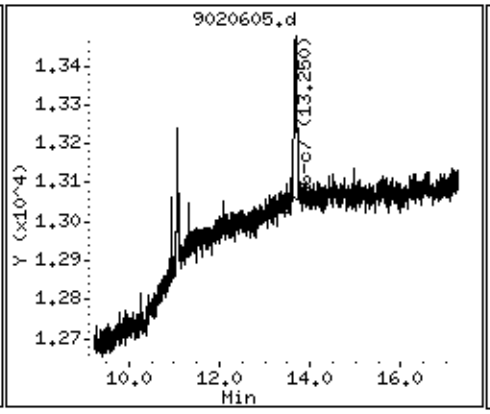
16 isopentane (Undetected)



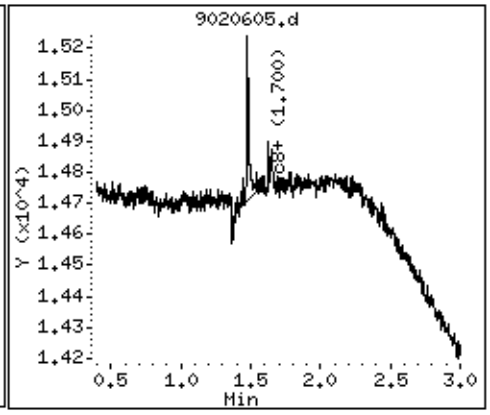
17 pentane (Undetected)



S 22 c6-c7 (Undetected)



S 36 c8+ (Undetected)



SAMPLE RESULTS/SAMPLE RESULTS DUPLICATE

Lab Name: Air Toxics Ltd.

Lab File ID: 9020628.d & 9020602.d

Lab Sample ID: &

Dilution: 1.00 & 1.00

Client Sample ID: LCS & LCSD

Date Analyzed: 2/6/15 & 2/6/15

CAS Number	Compound	Original Amount	Original Flags	Duplicate Amount	Duplicate Flags	RPD	Result Less Than 5X RL
74-82-8	Methane	87		88		1.1	

Note: The results appearing in the Amount columns are the raw, unrounded numbers acquired from the instrument.

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 08-MAY-2014 10:20
End Cal Date : 08-MAY-2014 18:23
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem/gc9.i/08May2014.b/914n0508.m
Cal Date : 01-Jul-2014 08:26 lyohanne
Curve Type : Average

Calibration File Names:
Level 1: /chem/gc9.i/08May2014.b/9050804.d
Level 2: /chem/gc9.i/08May2014.b/9050805.d
Level 3: /chem/gc9.i/08May2014.b/9050806.d
Level 4: /chem/gc9.i/08May2014.b/9050807.d
Level 5: /chem/gc9.i/08May2014.b/9050808.d
Level 6: /chem/gc9.i/08May2014.b/9050809.d
Level 7: /chem/gc9.i/08May2014.b/9050815.d

Compound	0.000e+00 Level 1	0.000e+00 Level 2	0.000e+00 Level 3	0.000e+00 Level 4	0.000e+00 Level 5	0.000e+00 Level 6	0.000e+00 Level 7	___ RRF	% RSD
2 Methane	209470000	150155900	151089199	156304958	151342750	148030913	152268375	159808871	13.792
3 ethane	+++++	285589899	290857692	303545631	295475527	291297220	304863625	295271599	2.577
4 ethene	+++++	276174490	279166870	291003702	283423066	280159913	292318900	283707824	2.324
5 propane	+++++	440307000	446791200	465107327	452897964	446514368	475670918	454548130	2.932
7 acetylene	+++++	361371717	367741532	387971856	378285876	376897830	+++++	374453762	2.735
8 iso-butane	+++++	583260606	589840486	619156653	603721026	597746062	+++++	598744967	2.304
10 n-butane	+++++	567026531	581397755	610993495	594963838	591459495	659548946	600898343	5.364

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 08-MAY-2014 10:20
End Cal Date : 08-MAY-2014 18:23
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem/gc9.i/08May2014.b/914n0508.m
Cal Date : 01-Jul-2014 08:26 lyohanne
Curve Type : Average

Compound	0.000e+00 Level 1	0.000e+00 Level 2	0.000e+00 Level 3	0.000e+00 Level 4	0.000e+00 Level 5	0.000e+00 Level 6	0.000e+00 Level 7	___ RRF	% RSD
15 neo-pentane	+++++	763361165	776628599	811632967	792130258	784603879			
	+++++						785671374		2.291
16 isopentane	+++++	724184158	731769170	761805793	742147969	738284816			
	775635733						745637940		2.601
17 pentane	+++++	729172277	740392079	770084529	749418980	748645514			
	+++++						747542676		2.008
39 Hexane	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++						+++++	+++++	
40 Heptane	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++						+++++	+++++	
S 22 c6-c7	+++++	954216038	964108696	996050768	966580944	985123144			
	+++++						973215918		1.743
M 37 C6+ Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++						973215918	+++++	
S 36 c8+	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++						973215918	+++++	

Calibration History

Method : /chem/gc9.i/08May2014.b/914n0508.m
Start Cal Date: 08-MAY-2014 10:20
End Cal Date : 08-MAY-2014 18:23

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 0.00000		
08-MAY-2014 10:20	ch4	/chem/gc9.i/08May2014.b/9050804.d
Cal Level: 2 , Cal Amount: 0.00000		
08-MAY-2014 11:07	ngas	/chem/gc9.i/08May2014.b/9050805.d
Cal Level: 3 , Cal Amount: 0.00000		
08-MAY-2014 11:45	ngas	/chem/gc9.i/08May2014.b/9050806.d
Cal Level: 4 , Cal Amount: 0.00000		
08-MAY-2014 12:22	ngas	/chem/gc9.i/08May2014.b/9050807.d
Cal Level: 5 , Cal Amount: 0.00000		
08-MAY-2014 14:02	ngas	/chem/gc9.i/08May2014.b/9050808.d
Cal Level: 6 , Cal Amount: 0.00000		
08-MAY-2014 14:25	ngas	/chem/gc9.i/08May2014.b/9050809.d
Cal Level: 7 , Cal Amount: 0.00000		
08-MAY-2014 18:23	ch4	/chem/gc9.i/08May2014.b/9050815.d
08-MAY-2014 17:27	isopentane	/chem/gc9.i/08May2014.b/9050814.d
08-MAY-2014 16:43	Butane	/chem/gc9.i/08May2014.b/9050813.d
08-MAY-2014 16:06	propane	/chem/gc9.i/08May2014.b/9050812.d
08-MAY-2014 15:36	Ethene	/chem/gc9.i/08May2014.b/9050811.d
08-MAY-2014 15:12	Ethane	/chem/gc9.i/08May2014.b/9050810.d

+----------+----------+----------+

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 08-MAY-2014 10:20
End Cal Date : 08-MAY-2014 18:23
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem/gc9.i/08May2014.b/914n0508.m
Cal Date : 01-Jul-2014 08:26 lyohanne
Curve Type : Average

Calibration File Names:
Level 1: /chem/gc9.i/08May2014.b/9050804.d
Level 2: /chem/gc9.i/08May2014.b/9050805.d
Level 3: /chem/gc9.i/08May2014.b/9050806.d
Level 4: /chem/gc9.i/08May2014.b/9050807.d
Level 5: /chem/gc9.i/08May2014.b/9050808.d
Level 6: /chem/gc9.i/08May2014.b/9050809.d
Level 7: /chem/gc9.i/08May2014.b/9050815.d

Please see Calibration History page(s) for all the calibration files.

y 7/1/14

Compound	0.000e+00 Level 1	0.000e+00 Level 2	0.000e+00 Level 3	0.000e+00 Level 4	0.000e+00 Level 5	0.000e+00 Level 6	0.000e+00 Level 7	___ RRF	% RSD
2 Methane	209470000	150155900	151089199	156304958	151342750	148030913	152268375	159808871	13.792
3 ethane	+++++	285589899	290857692	303545631	295475527	291297220	304863625	295271599	2.577
4 ethene	+++++	276174490	279166870	291003702	283423066	280159913	292318900	283707824	2.324
5 propane	+++++	440307000	446791200	465107327	452897964	446514368	475670918	454548130	2.932
7 acetylene	+++++	361371717	367741532	387971856	378285876	376897830	+++++	374453762	2.735
8 iso-butane	+++++	583260606	589840486	619156653	603721026	597746062	+++++	598744967	2.304
10 n-butane	+++++	567026531	581397755	610993495	594963838	591459495	659548946	600898343	5.364

gm 7/1/14

Initial Calibration Narrative

A seven point calibration curve was analyzed on May 08, 2014, on instrument GC-9. The calibration curve features the following:

1.) ICAL name: 914n0508.m
2.) Units: %
3.) The ICAL is based on 1.0 mL load
4.) The second source file number is 9050817
5.) Following are the levels for the ICAL:

Compound	Level-1	Level-2	Level-3	Level-4	Level-5	Level-6	Level-7
Methane	0.00010	0.02000	0.09999	1.01000	2.52500	10.100	99.000
Ethane	NA	0.00099	0.00494	0.04990	0.12475	0.4990	24.975
Ethene	NA	0.00098	0.00492	0.04970	0.12425	0.4970	24.875
Acetylene	NA	0.00099	0.00496	0.05010	0.12525	0.5010	NA
Propane	NA	0.00100	0.00500	0.05050	0.12625	0.5050	19.900
Iso-Butane	NA	0.00099	0.00494	0.04990	0.12475	0.4990	NA
n-Butane	NA	0.00098	0.00490	0.04950	0.12375	0.4950	9.990
Neopentane	NA	0.00103	0.00514	0.05190	0.12975	0.5190	NA
Iso-Pentane	NA	0.00101	0.00506	0.05110	0.12775	0.5110	4.950
Pentane	NA	0.00101	0.00505	0.05100	0.12750	0.5100	NA
C6-C7	NA	0.00106	0.00529	0.05340	0.13350	0.5340	NA

Eurofins Air Toxics, Inc.
Method: **ASTM D-1945/1946** (circle one)

GC-9

Logbook # 2626
Leak Test Ly

	USE	File #	Sample Name/Client ID	Can #	Ver. Pressure >2psi	Pressure	Amt	DF	Date	Time	Review Init.	Comments
1	✓	9050803	System Blank	14875	NA	NA	1.0mL	1.00	05/08/14	0953	Ly	
2	✓	04	2516-92	33995		CH4				1020		Level -1
3	✓	05	2516-65A	23882		C1-C6				1107		-2
4	✓	06	2516-63A	34325			1.0mL			1145		-3
5	✓	07	2299-509 Ngas	NA			(10:100) 1.0mL			1222		-4
6	✓	08					(25:100) 1.0mL			1402		-5
7	✓	09					1.0mL			1425		-6
8	✓	10	1476-438			Ethane 99.9%	12:48 1.0mL			1512	gd	-7
9	✓	11	1476-437			Ethene 99.5%				1536		-7
10	✓	12	843-471			Propane 99.5%	10:50 1.0mL			1606		-7
11	✓	13	1476-897			Butane 99.9%	5:50 1.0mL			1643		-7
12	✓	14	1476-898			Isopentane 99%	5:100 1.0mL			1727		-7
13	✓	15	1476-2859			Methane 99%	1.0mL			1823		-7
14	✓	16	System Blank	14879		Helium				1909		
15	✓	17	2299-365 Ngas	NA		NA				1938		ICV

Calculation check: File ID: 9050809 Compound: CH4 Initials: Ly

Sample Amt = $\frac{\text{Area Count Sample}}{\text{RF}}$ x Dilution Factor = $\frac{(1495112223)}{(159806712)}$ x (1.00) = 9.36

Reported Result = 9.36

Reviewed by/Date Ly 05/09/14

Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc9.i/08May2014.b/9050817.d
Lab Smp Id: 2299-365 Ngas Client Smp ID: ICV
Inj Date : 08-MAY-2014 19:38
Operator : gd Inst ID: gc9.i
Smp Info : 1.0ml,
Misc Info : ICV
Comment : GC/FID
Method : /chem/gc9.i/08May2014.b/914n0508.m
Meth Date : 01-Jul-2014 08:26 lyohanne Quant Type: ESTD
Cal Date : 08-MAY-2014 18:23 Cal File: 9050815.d
Als bottle: 1 QC Sample: ICV
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: ngas.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (%)	FINAL (%)
2 Methane	3.540	3.540	0.000	1500202004	9.38748	9.39
3 ethane	3.684	3.684	0.000	147003909	0.49786	0.498
4 ethene	3.818	3.817	0.001	143279706	0.50503	0.505
5 propane	4.224	4.220	0.004	220742122	0.48563	0.486
7 acetylene	5.538	5.516	0.022	184670715	0.49317	0.493
8 iso-butane	5.874	5.858	0.016	297189060	0.49635	0.496
10 n-butane	6.160	6.142	0.018	291133235	0.48450	0.484
15 neo-pentane	8.141	8.121	0.020	397324200	0.50571	0.506(A)
16 isopentane	8.588	8.570	0.018	375056768	0.50300	0.503
17 pentane	8.817	8.799	0.018	376077812	0.50309	0.503
M 37 C6+ Hydrocarbons				516423233	0.53064	0.531
S 22 c6-c7	9.250-17.250			514598484	0.52876	0.529
S 36 c8+	0.400-3.000			1824748	0.00187	0.00187

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

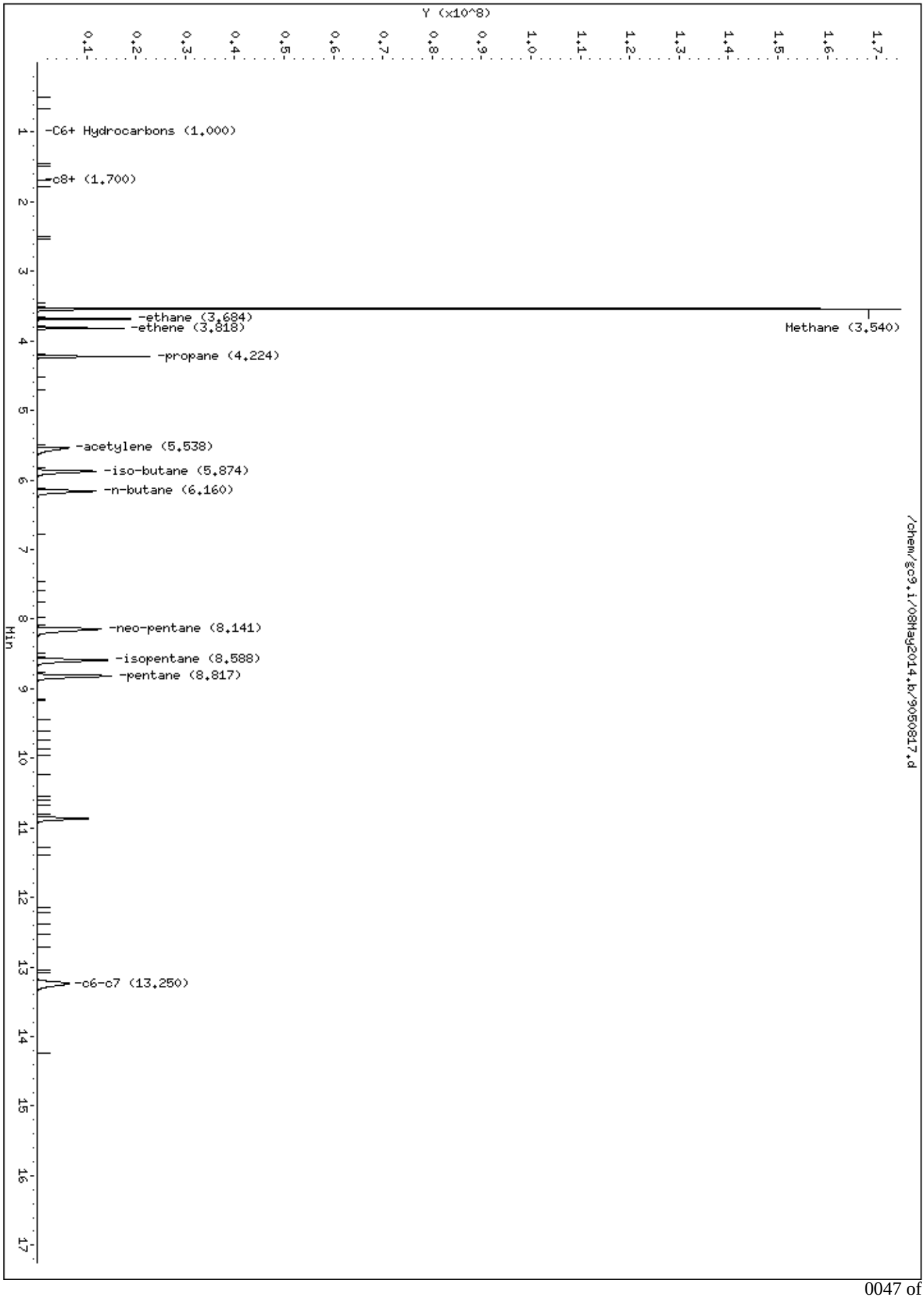
Report Date: 01-Jul-2014 08:26

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name:
Client SDG: 08May2014
Sample Matrix: GAS
Fraction: Atm Gas
Lab Smp Id: 2299-365 Ngas
Client Smp ID: ICV
Level: LOW
Operator: gd
Data Type: GC DATA
SampleType: ICV
SpikeList File: 2299-365.spk
Quant Type: ESTD
Sublist File: ngas.sub
Method File: /chem/gc9.i/08May2014.b/914n0508.m
Misc Info: ICV

SPIKE COMPOUND	CONC ADDED %	CONC RECOVERED %	% RECOVERED	LIMITS
2 Methane	9.99	9.39	93.97	85-115
3 ethane	0.510	0.498	97.62	85-115
4 ethene	0.500	0.505	101.01	85-115
5 propane	0.497	0.486	97.71	85-115
7 acetylene	0.500	0.493	98.63	85-115
8 iso-butane	0.506	0.496	98.09	85-115
10 n-butane	0.487	0.484	99.49	85-115
15 neo-pentane	0.512	0.506	98.77	85-115
16 isopentane	0.508	0.503	99.02	85-115
17 pentane	0.505	0.503	99.62	85-115
M 37 C6+ Hydrocarbons	0.525	0.531	101.07	85-115

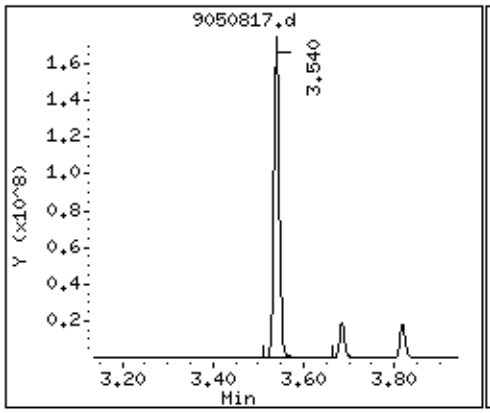


Data File: /chem/gc9.i/08May2014.b/9050817.d

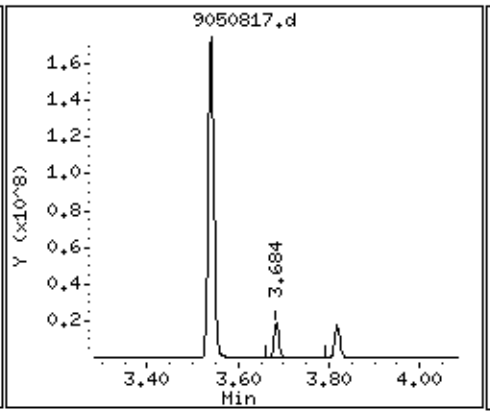
/chem/gc9.i/08May2014.b/9050817.d

Page 1

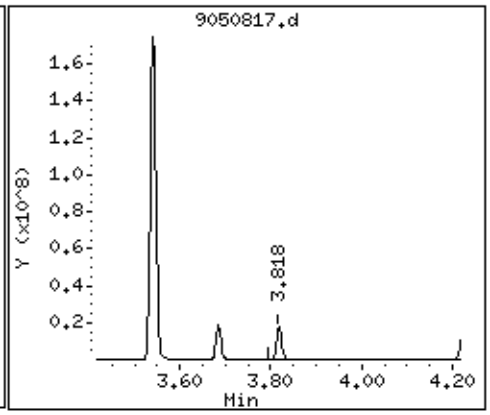
2 Methane



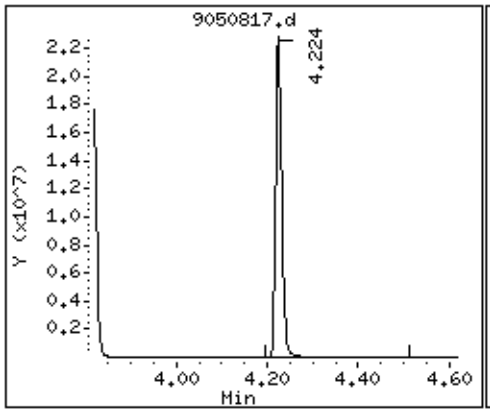
3 ethane



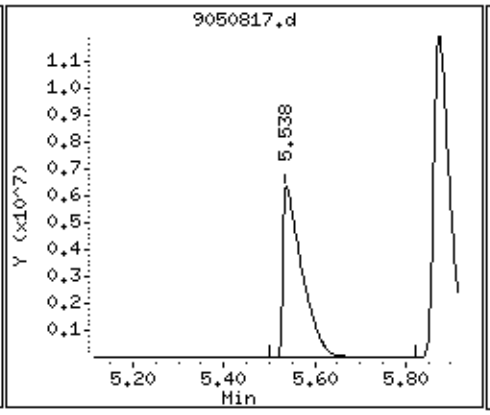
4 ethene



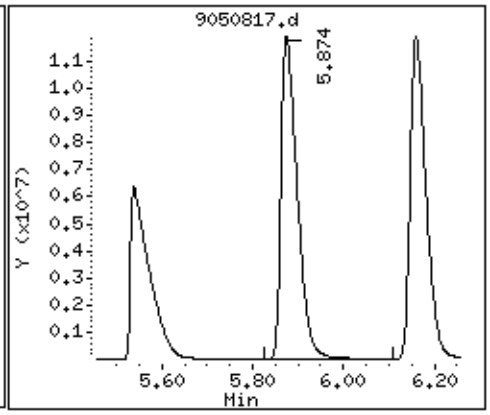
5 propane



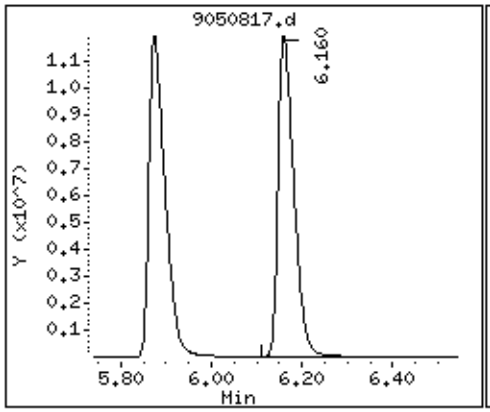
7 acetylene



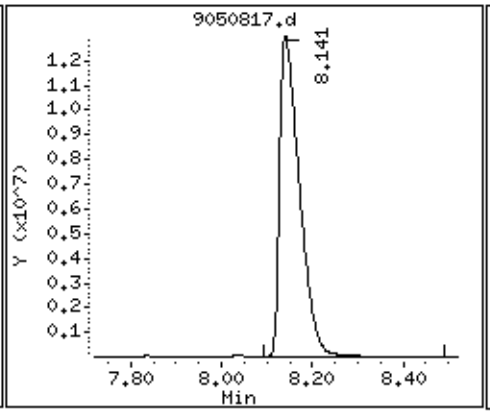
8 iso-butane



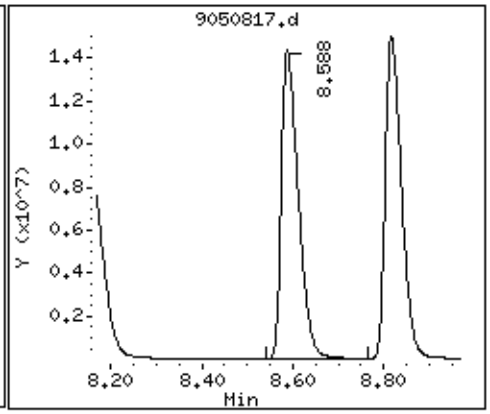
10 n-butane



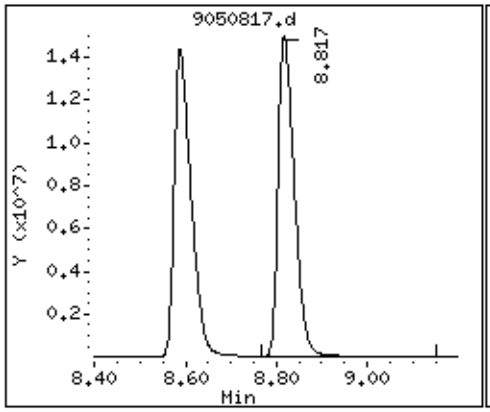
15 neo-pentane



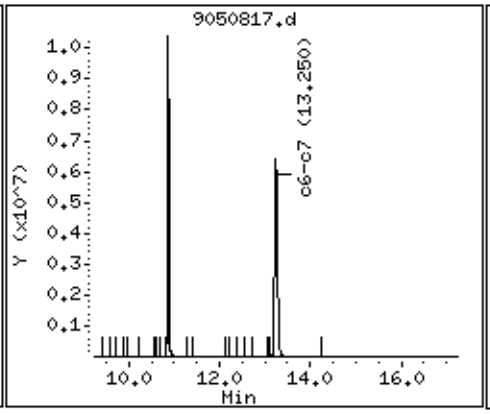
16 isopentane



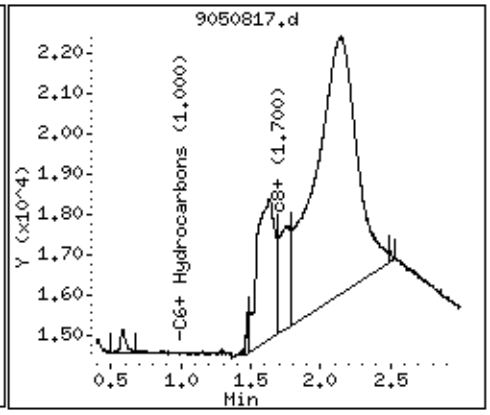
17 pentane



S 22 c6-c7



S 36 c8+



Eurofins Air Toxics Inc.

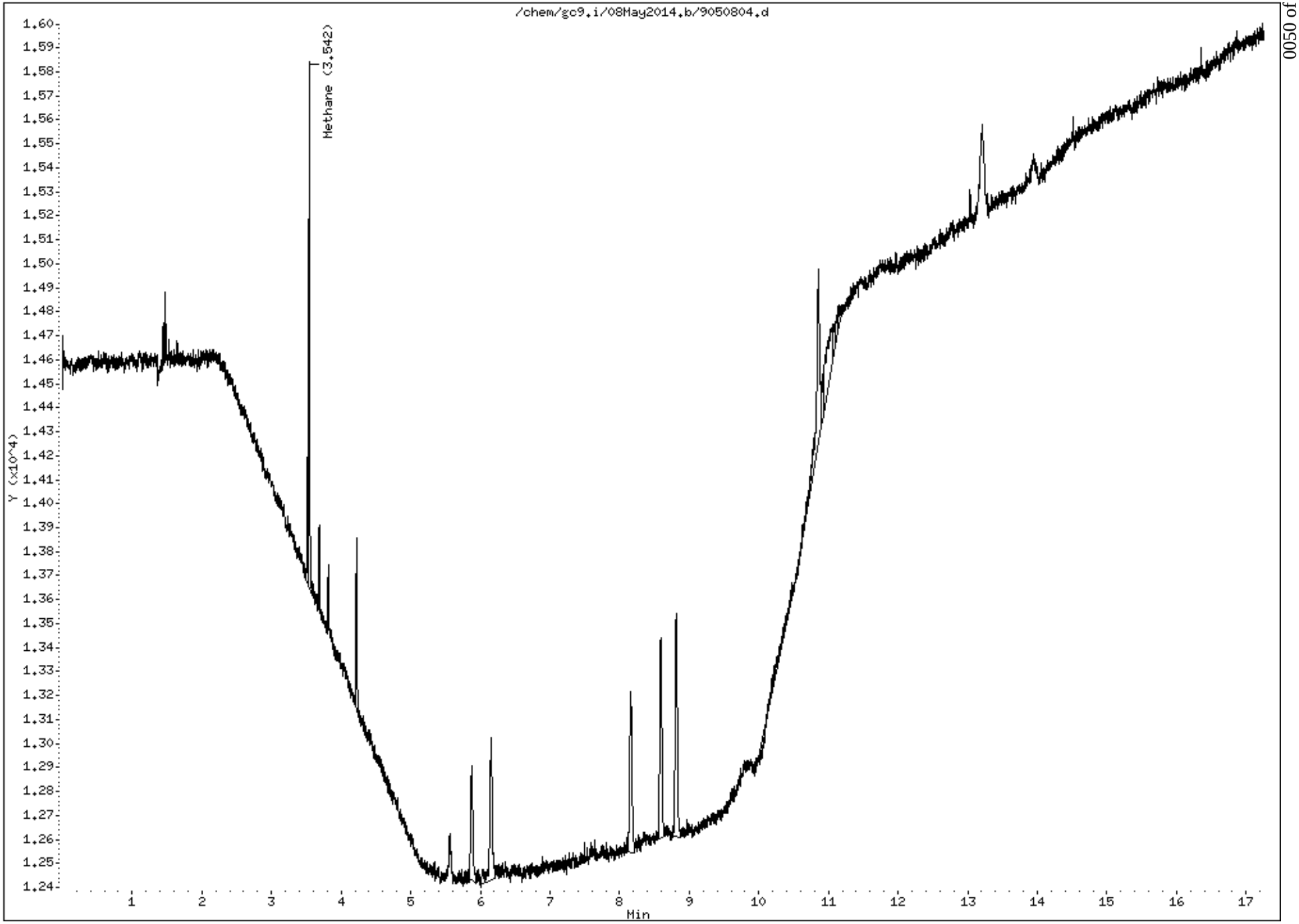
Modified ASTM D-1945/1946

Data file : /chem/gc9.i/08May2014.b/9050804.d
Lab Smp Id: 2516-92 CH4 Client Smp ID: Level-1
Inj Date : 08-MAY-2014 10:20
Operator : ly Inst ID: gc9.i
Smp Info : 1.0ml,33995
Misc Info : Level-1
Comment : GC/FID
Method : /chem/gc9.i/08May2014.b/914n0508.m
Meth Date : 01-Jul-2014 08:19 lyohanne Quant Type: ESTD
Cal Date : 08-MAY-2014 10:20 Cal File: 9050804.d
Als bottle: 1 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: ch4.sub
Target Version: 3.50
Processing Host: eeyore

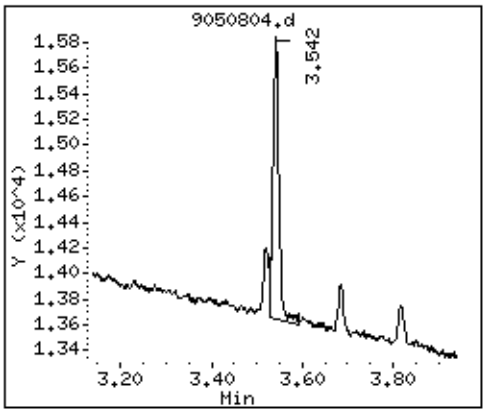
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
2 Methane	3.542	3.540	0.002	20947	0.00010	0.000100


/chem/gc9.i/08May2014.b/9050804.d
Methane (3.542)
Y (x10^4)
1.60
1.59
1.58
1.57
1.56
1.55
1.54
1.53
1.52
1.51
1.50
1.49
1.48
1.47
1.46
1.45
1.44
1.43
1.42
1.41
1.40
1.39
1.38
1.37
1.36
1.35
1.34
1.33
1.32
1.31
1.30
1.29
1.28
1.27
1.26
1.25
1.24
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
Min

2 Methane


9050804.d
3.542
1.58
1.56
1.54
1.52
1.50
1.48
1.46
1.44
1.42
1.40
1.38
1.36
1.34
Y (x10^4)
3.20
3.40
3.60
3.80
Min

Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc9.i/08May2014.b/9050805.d
Lab Smp Id: 2516-65A Client Smp ID: Level-2
Inj Date : 08-MAY-2014 11:07
Operator : ly Inst ID: gc9.i
Smp Info : 1.0ml,33995
Misc Info : Level-2
Comment : GC/FID
Method : /chem/gc9.i/08May2014.b/914n0508.m
Meth Date : 01-Jul-2014 08:19 lyohanne Quant Type: ESTD
Cal Date : 08-MAY-2014 11:07 Cal File: 9050805.d
Als bottle: 1 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: ngas.sub
Target Version: 3.50
Processing Host: eeyore

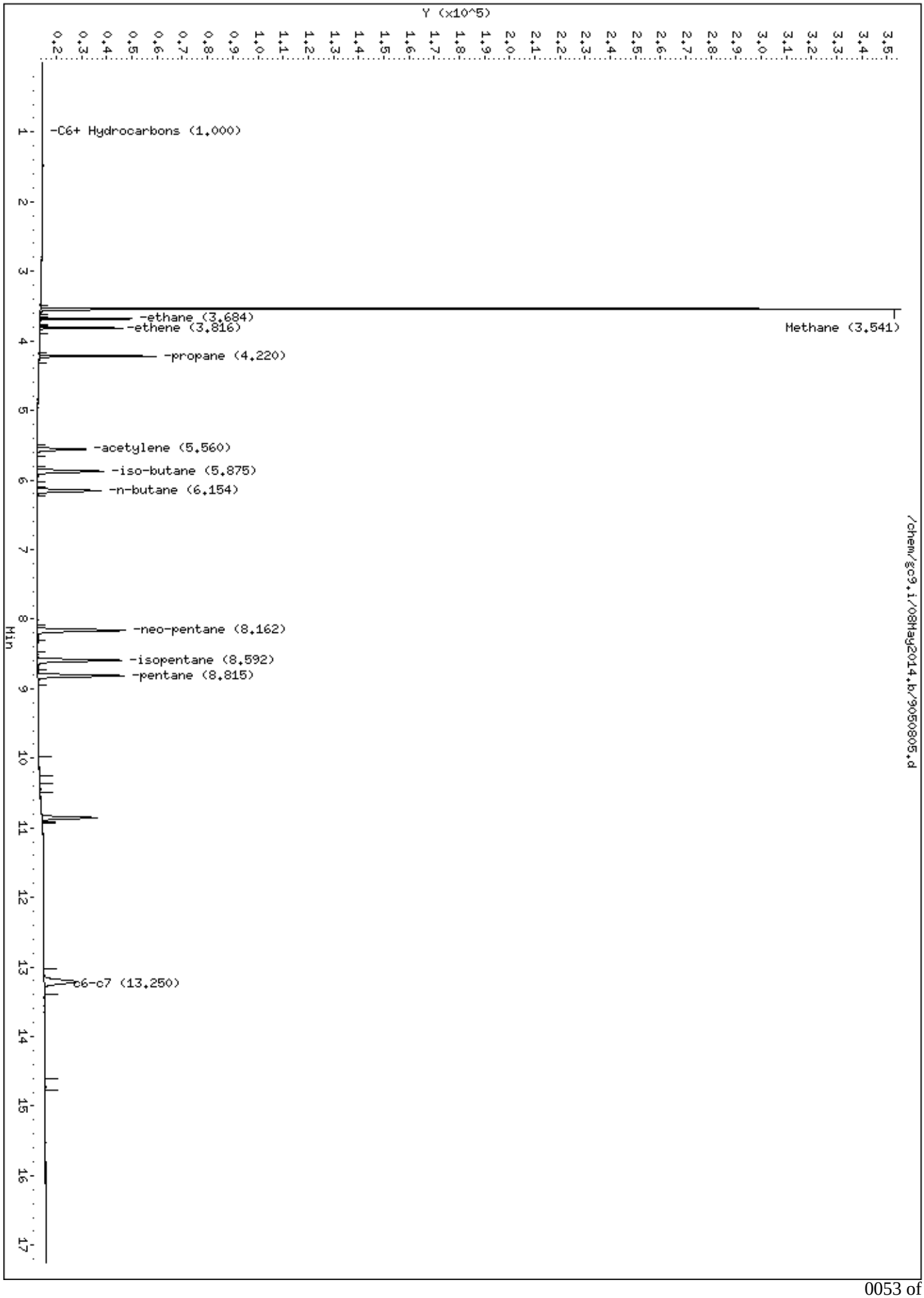
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
2 Methane	3.541	3.540	0.001	3003118	0.02000	0.0167
3 ethane	3.684	3.684	0.000	282734	0.00099	0.000990(a)
4 ethene	3.816	3.817	-0.001	270651	0.00098	0.000980(a)
5 propane	4.220	4.220	0.000	440307	0.00100	0.00100
7 acetylene	5.560	5.516	0.044	357758	0.00099	0.000990(a)
8 iso-butane	5.875	5.858	0.017	577428	0.00099	0.000990(a)
10 n-butane	6.154	6.142	0.012	555686	0.00098	0.000980(a)
15 neo-pentane	8.162	8.121	0.041	786262	0.00103	0.00103
16 isopentane	8.592	8.570	0.022	731426	0.00101	0.00101
17 pentane	8.815	8.799	0.016	736464	0.00101	0.00101
M 37 C6+ Hydrocarbons				1011469	0.00000	0.00106(a)
S 22 c6-c7	9.250-17.250			1011469	0.00106	0.00106
S 36 c8+	Compound Not Detected.					

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

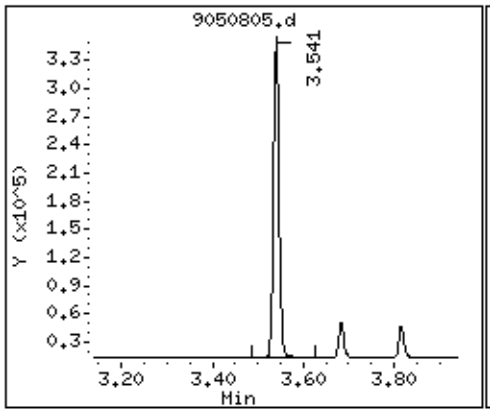


Data File: /chem/gc9.i/08May2014.b/9050805.d

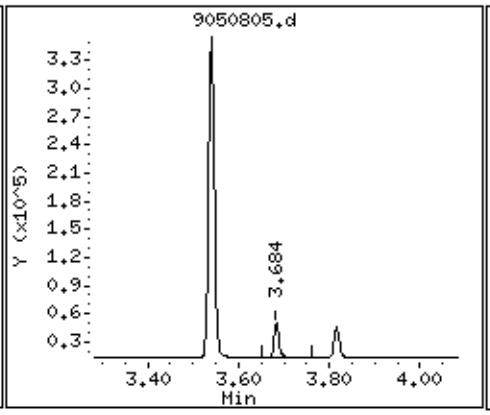
/chem/gc9.i/08May2014.b/9050805.d

Page 1

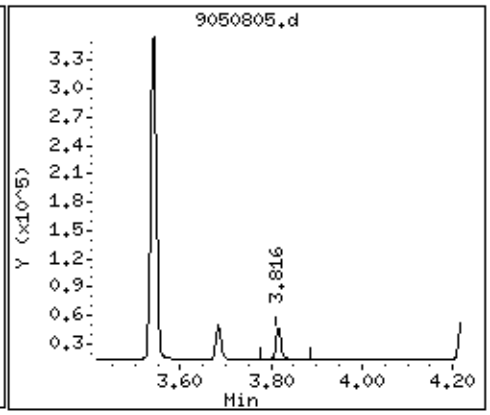
2 Methane



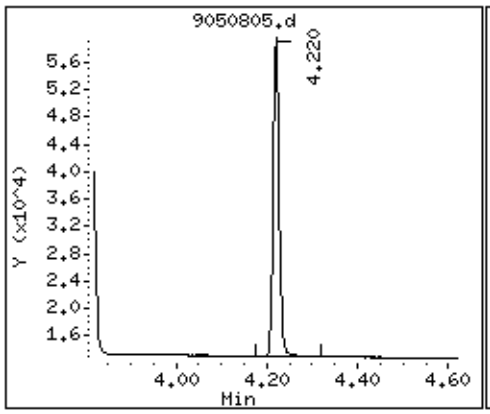
3 ethane



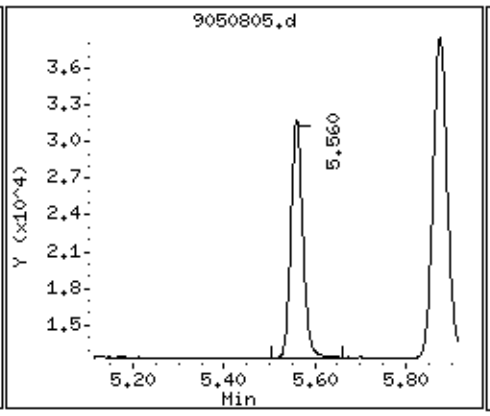
4 ethene



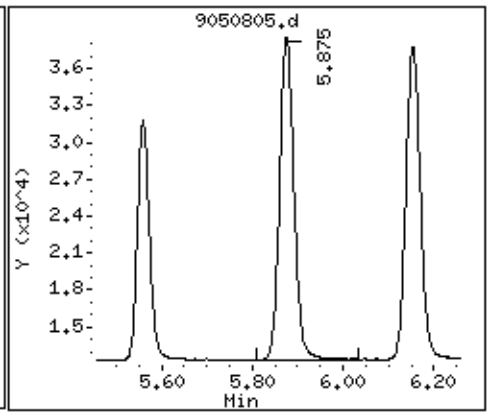
5 propane



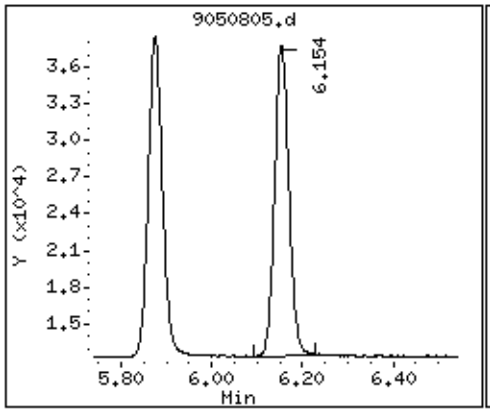
7 acetylene



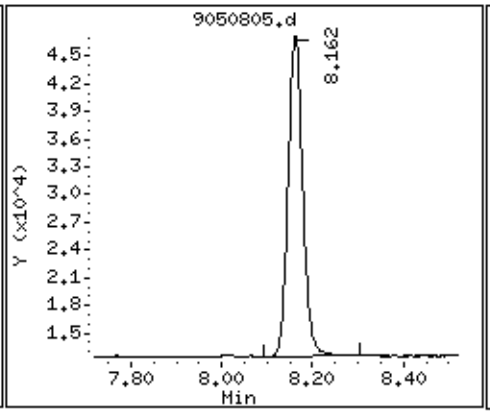
8 iso-butane



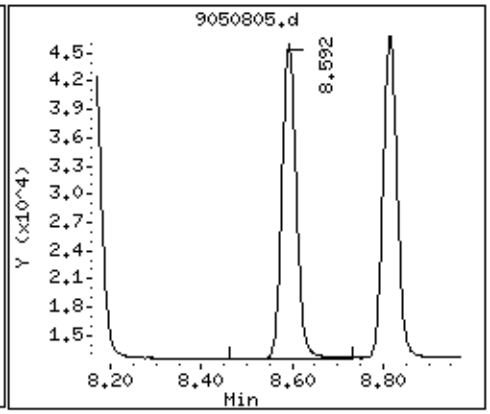
10 n-butane



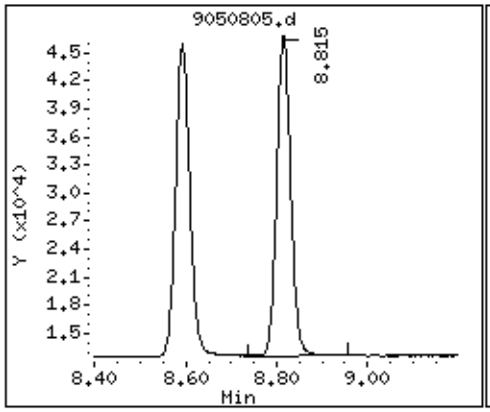
15 neo-pentane



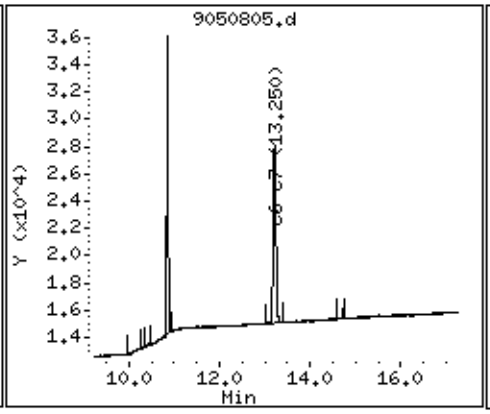
16 isopentane



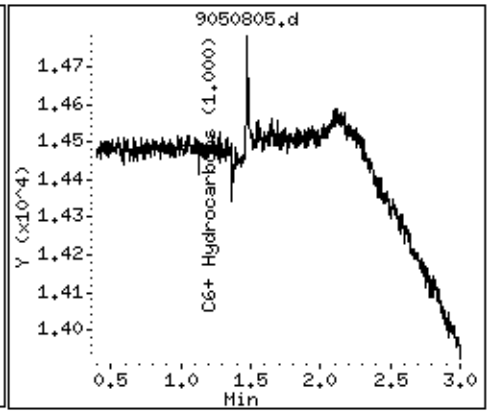
17 pentane



S 22 c6-c7



S 36 c8+ (Undetected)



Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc9.i/08May2014.b/9050806.d
Lab Smp Id: 2516-63A Client Smp ID: Level-3
Inj Date : 08-MAY-2014 11:45
Operator : ly Inst ID: gc9.i
Smp Info : 1.0ml,34325
Misc Info : Level-3
Comment : GC/FID
Method : /chem/gc9.i/08May2014.b/914n0508.m
Meth Date : 01-Jul-2014 08:19 lyohanne Quant Type: ESTD
Cal Date : 08-MAY-2014 11:45 Cal File: 9050806.d
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: ngas.sub
Target Version: 3.50
Processing Host: eeyore

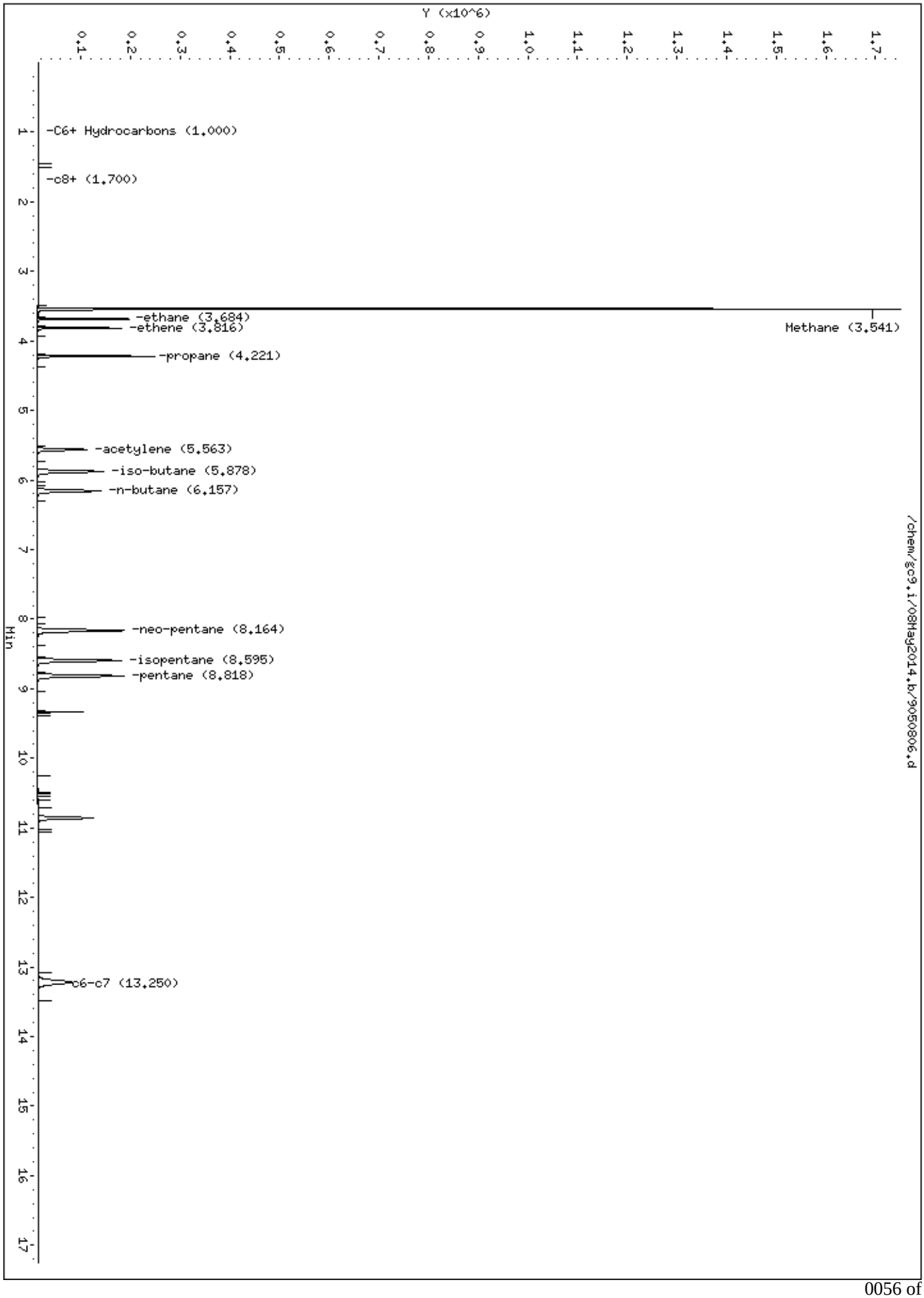
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
2 Methane	3.541	3.540	0.001	15107409	0.09999	0.0887
3 ethane	3.684	3.684	0.000	1436837	0.00494	0.00498
4 ethene	3.816	3.817	-0.001	1373501	0.00492	0.00495
5 propane	4.221	4.220	0.001	2233956	0.00500	0.00504
7 acetylene	5.563	5.516	0.047	1823998	0.00496	0.00500
8 iso-butane	5.878	5.858	0.020	2913812	0.00494	0.00497
10 n-butane	6.157	6.142	0.015	2848849	0.00490	0.00496
15 neo-pentane	8.164	8.121	0.043	3991871	0.00514	0.00518
16 isopentane	8.595	8.570	0.025	3702752	0.00506	0.00509
17 pentane	8.818	8.799	0.019	3738980	0.00505	0.00509
M 37 C6+ Hydrocarbons				5103884	0.00507	0.00532(a)
S 22 c6-c7	9.250-17.250			5100135	0.00529	0.00532(M)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

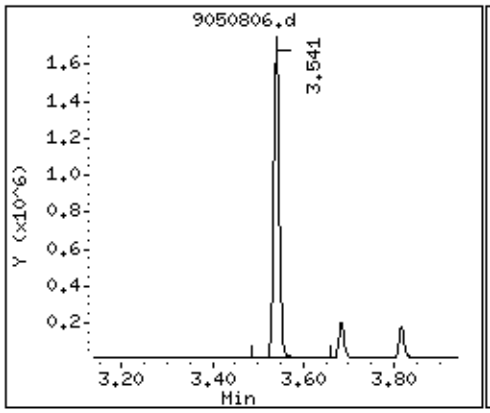


Data File: /chem/gc9.i/08May2014.b/9050806.d

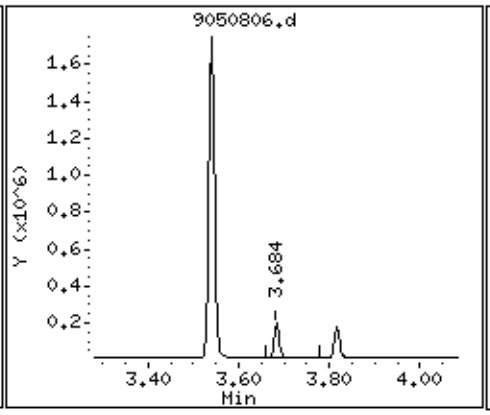
/chem/gc9.i/08May2014.b/9050806.d

Page 1

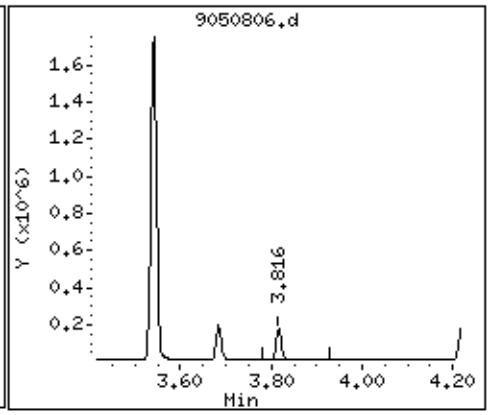
2 Methane



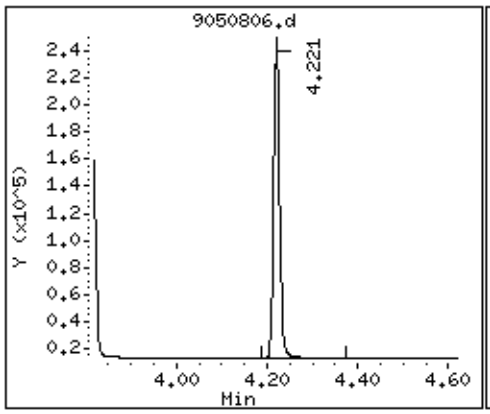
3 ethane



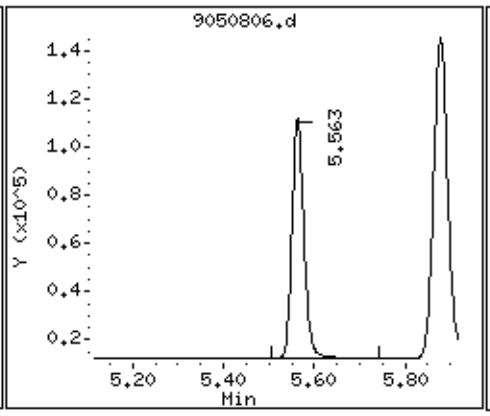
4 ethene



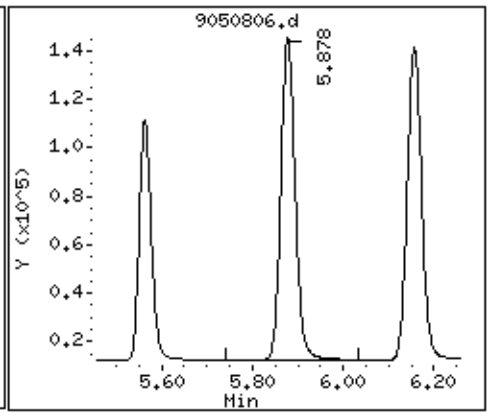
5 propane



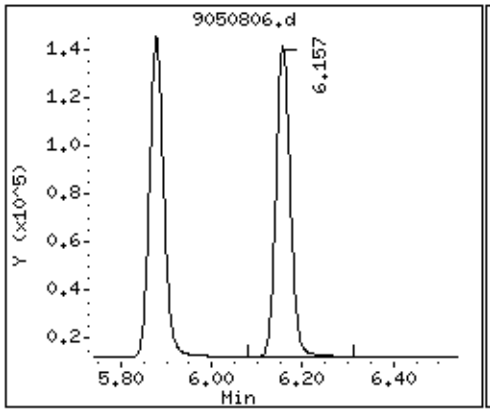
7 acetylene



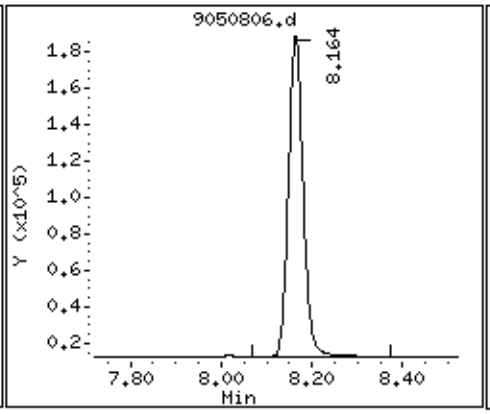
8 iso-butane



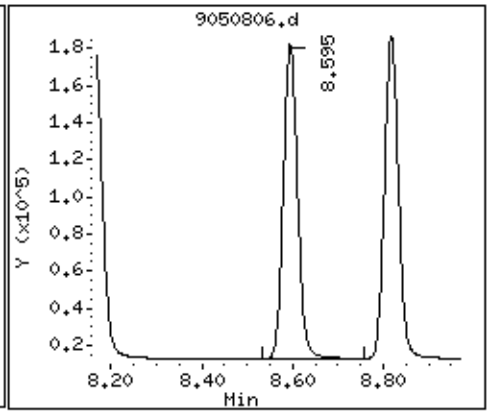
10 n-butane



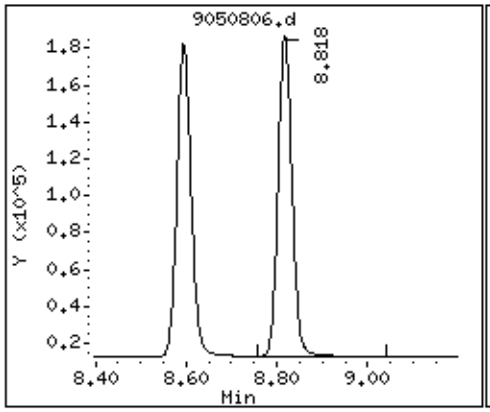
15 neo-pentane



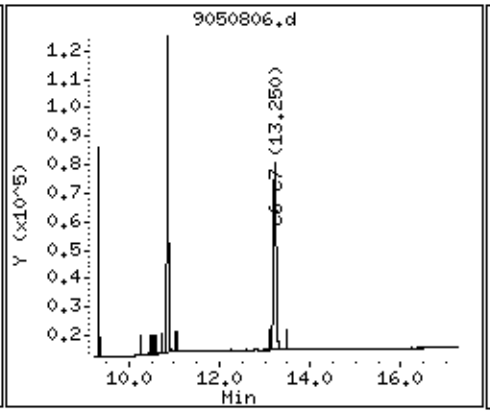
16 isopentane



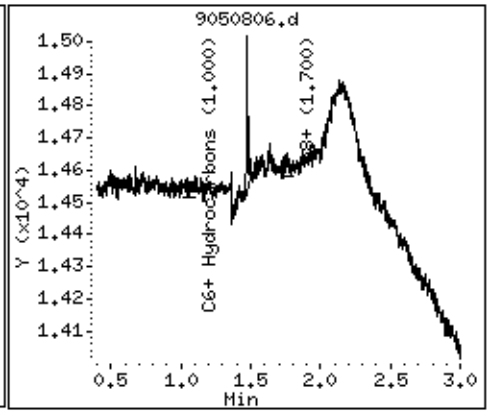
17 pentane



S 22 c6-c7



S 36 c8+



Eurofins Air Toxics Inc.

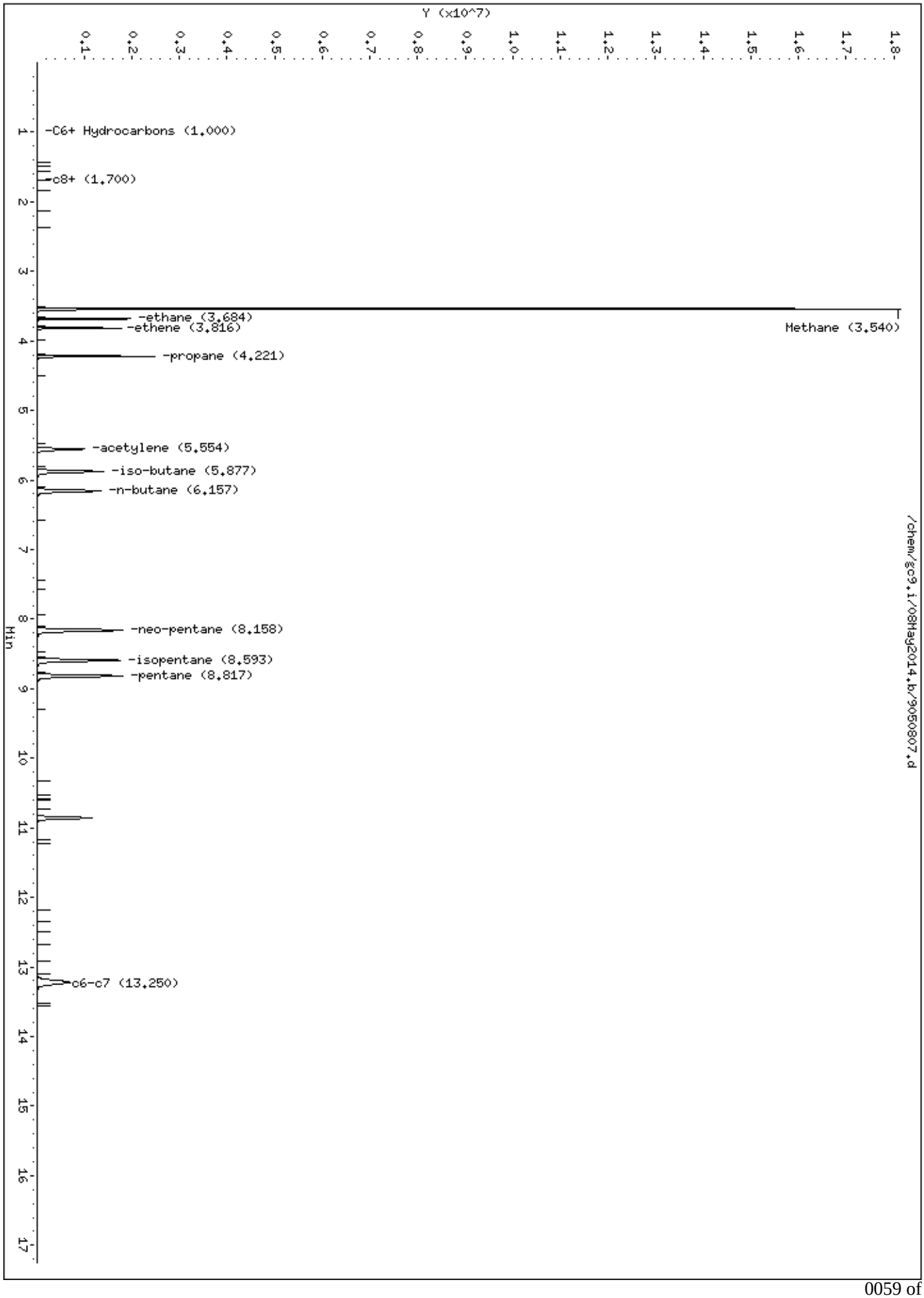
Modified ASTM D-1945/1946

Data file : /chem/gc9.i/08May2014.b/9050807.d
Lab Smp Id: 2299-509 Ngas Client Smp ID: Level-4
Inj Date : 08-MAY-2014 12:22
Operator : ly Inst ID: gc9.i
Smp Info : 1.0ml(10:100)
Misc Info : Level-4
Comment : GC/FID
Method : /chem/gc9.i/08May2014.b/914n0508.m
Meth Date : 01-Jul-2014 08:19 lyohanne Quant Type: ESTD
Cal Date : 08-MAY-2014 12:22 Cal File: 9050807.d
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: ngas.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(%)	(%)
==========	==	======	======	========	=======	=======
2 Methane	3.540	3.540	0.000	157868008	1.01000	0.947
3 ethane	3.684	3.684	0.000	15146927	0.04990	0.0516
4 ethene	3.816	3.817	-0.001	14462884	0.04970	0.0513
5 propane	4.221	4.220	0.001	23487920	0.05050	0.0521
7 acetylene	5.554	5.516	0.038	19437390	0.05010	0.0522
8 iso-butane	5.877	5.858	0.019	30895917	0.04990	0.0517
10 n-butane	6.157	6.142	0.015	30244178	0.04950	0.0516
15 neo-pentane	8.158	8.121	0.037	42123751	0.05190	0.0537
16 isopentane	8.593	8.570	0.023	38928276	0.05110	0.0526
17 pentane	8.817	8.799	0.018	39274311	0.05100	0.0526
M 37 C6+ Hydrocarbons				53380601	0.50700	0.0548
S 22 c6-c7	9.250-17.250			53189111	0.05340	0.0548


Data File: /chem/gc9.i/08May2014.b/9050807.d
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0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
1.5
1.6
1.7
1.8
-C6+ Hydrocarbons (1.000)
c8+ (1.700)
-ethane (3.684)
-ethene (3.816)
Methane (3.540)
-propane (4.221)
-acetylene (5.554)
-iso-butane (5.877)
-n-butane (6.157)
-neo-pentane (8.158)
-isopentane (8.593)
-pentane (8.817)
c6-c7 (13.250)
Min
1
2
3
4
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6
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11
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15
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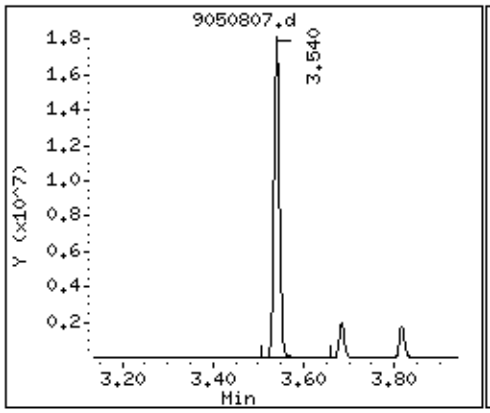
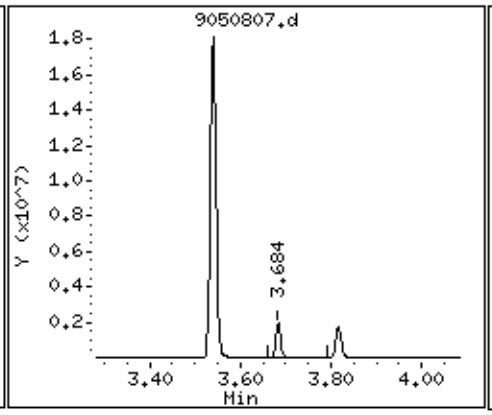
17
/chem/gc9.i/08May2014.b/9050807.d

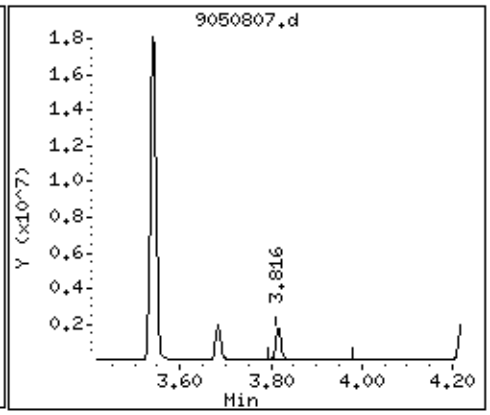
2 Methane



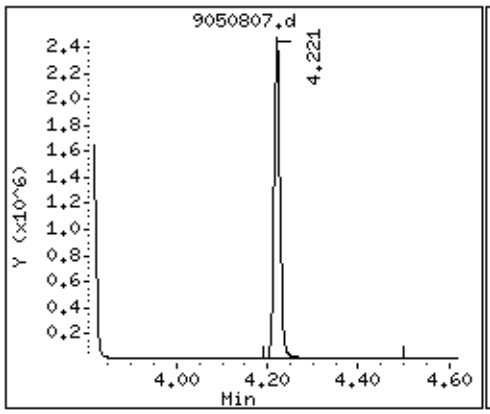
3 ethane



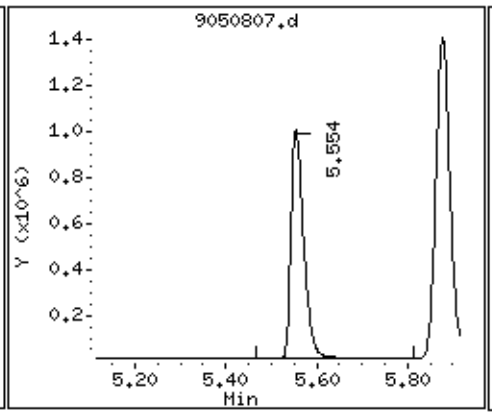
4 ethene



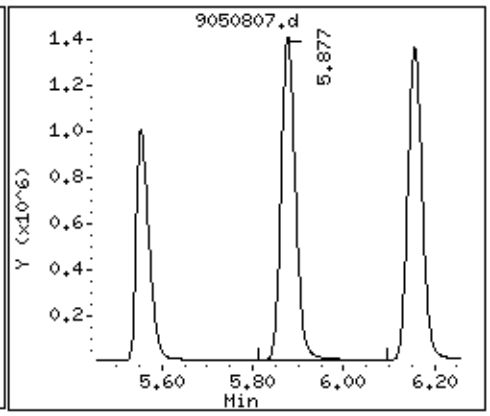
5 propane



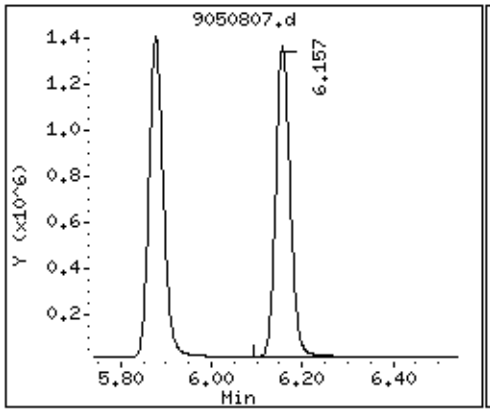
7 acetylene



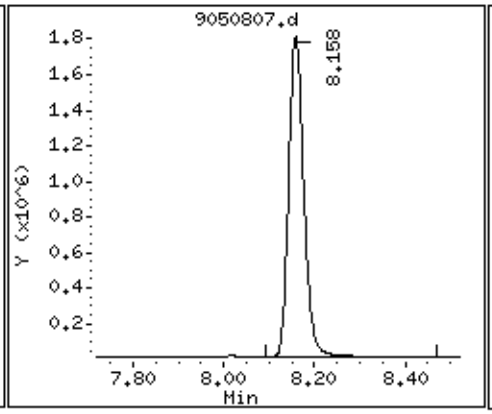
8 iso-butane



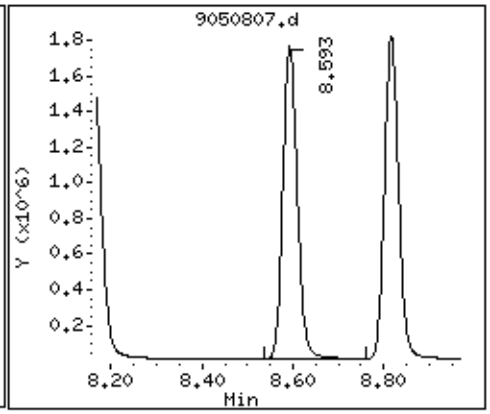
10 n-butane



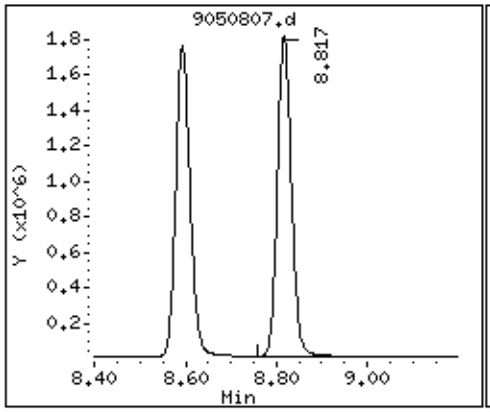
15 neo-pentane



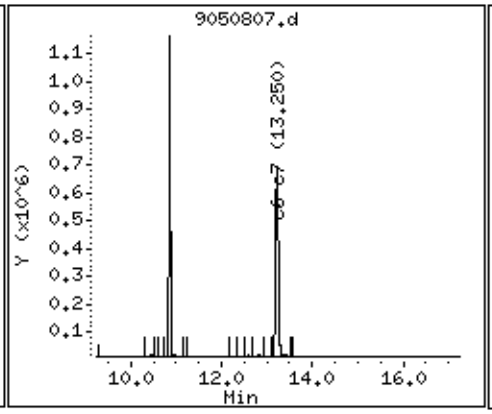
16 isopentane



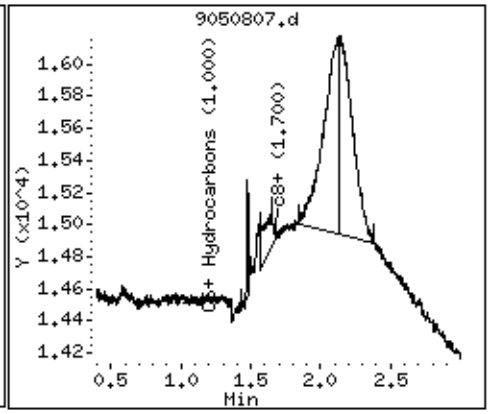
17 pentane



S 22 c6-c7



S 36 c8+



Eurofins Air Toxics Inc.

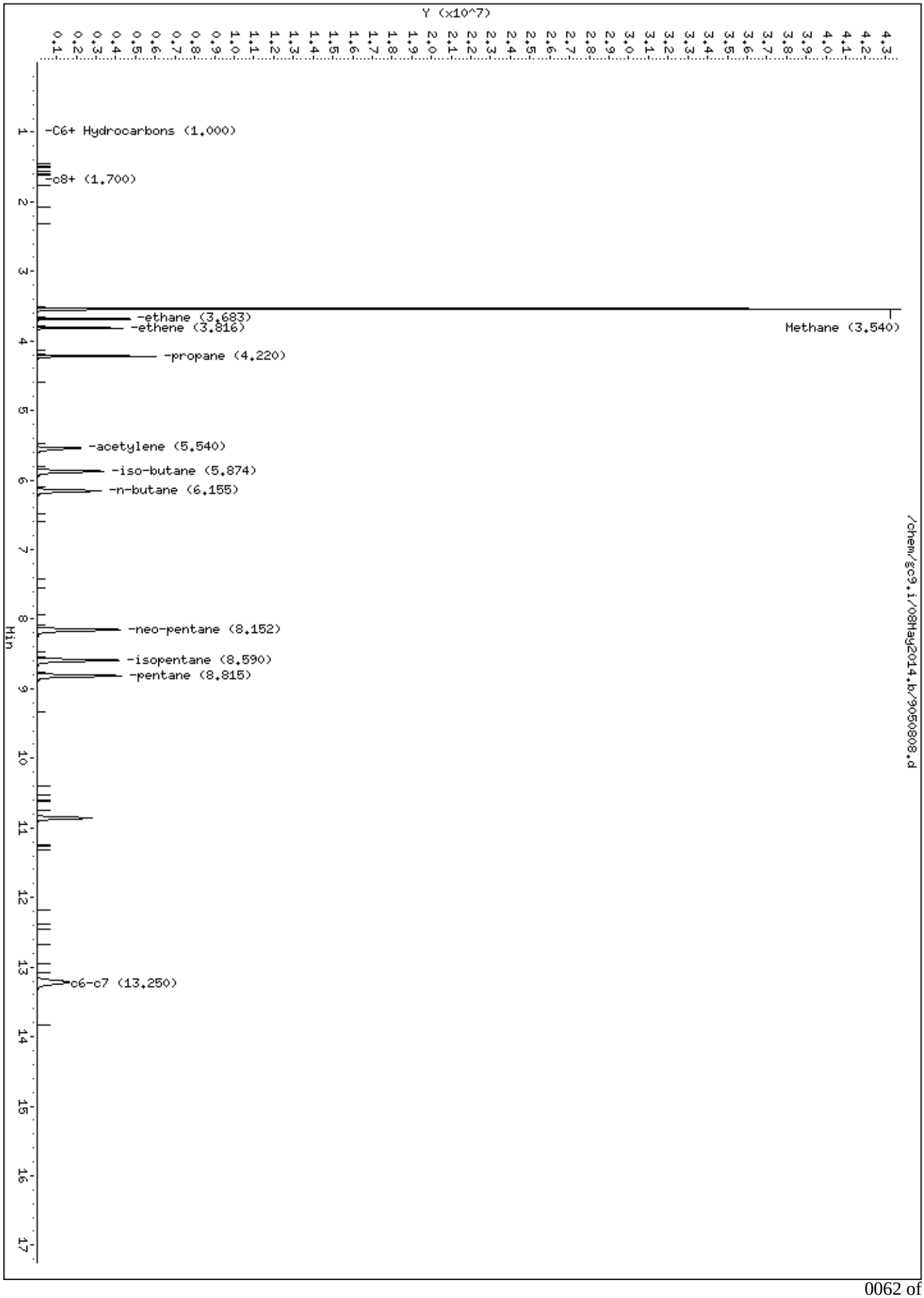
Modified ASTM D-1945/1946

Data file : /chem/gc9.i/08May2014.b/9050808.d
Lab Smp Id: 2299-509 Ngas Client Smp ID: Level-5
Inj Date : 08-MAY-2014 14:02
Operator : ly Inst ID: gc9.i
Smp Info : 1.0ml(25:100)
Misc Info : Level-5
Comment : GC/FID
Method : /chem/gc9.i/08May2014.b/914n0508.m
Meth Date : 01-Jul-2014 08:19 lyohanne Quant Type: ESTD
Cal Date : 08-MAY-2014 14:02 Cal File: 9050808.d
Als bottle: 1 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: ngas.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(%)	(%)
2 Methane	3.540	3.540	0.000	382140445	2.52500	2.33
3 ethane	3.683	3.684	-0.001	36860572	0.12475	0.125
4 ethene	3.816	3.817	-0.001	35215316	0.12425	0.125
5 propane	4.220	4.220	0.000	57178368	0.12625	0.127
7 acetylene	5.540	5.516	0.024	47380306	0.12525	0.127
8 iso-butane	5.874	5.858	0.016	75314198	0.12475	0.126
10 n-butane	6.155	6.142	0.013	73626775	0.12375	0.125
15 neo-pentane	8.152	8.121	0.031	102778901	0.12975	0.131
16 isopentane	8.590	8.570	0.020	94809403	0.12775	0.128
17 pentane	8.815	8.799	0.016	95550920	0.12750	0.128
M 37 C6+ Hydrocarbons				129221595	0.50000	0.133
S 22 c6-c7	9.250-17.250			129038556	0.13350	0.133

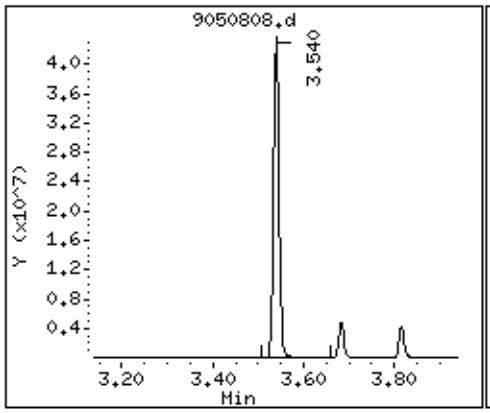


Data File: /chem/gc9.i/08May2014.b/9050808.d

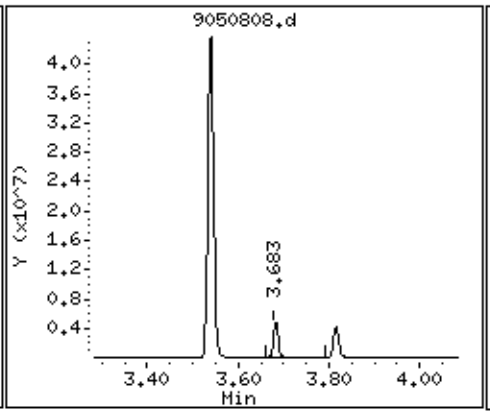
/chem/gc9.i/08May2014.b/9050808.d

Page 1

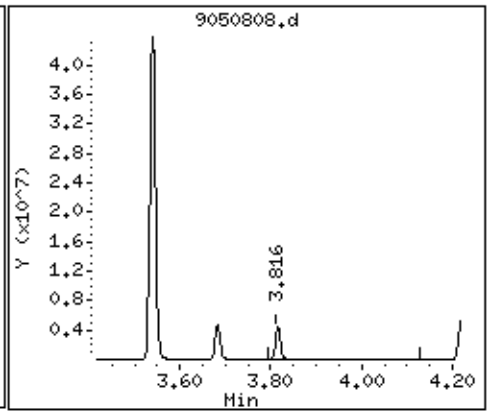
2 Methane



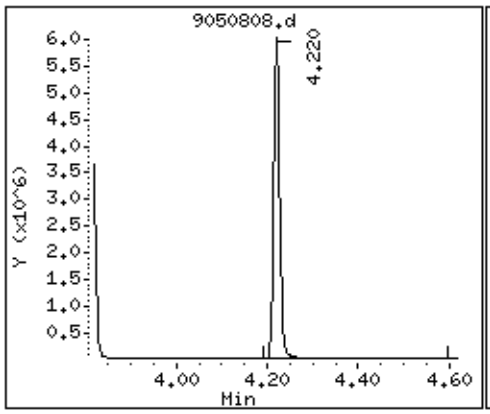
3 ethane



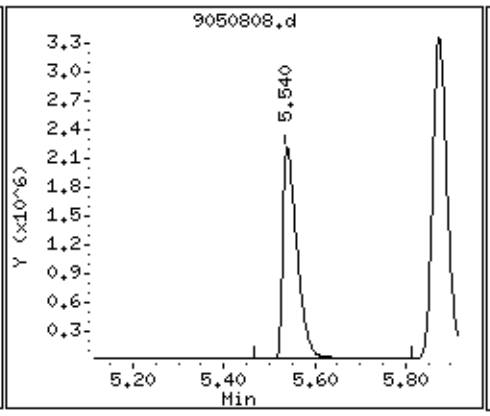
4 ethene



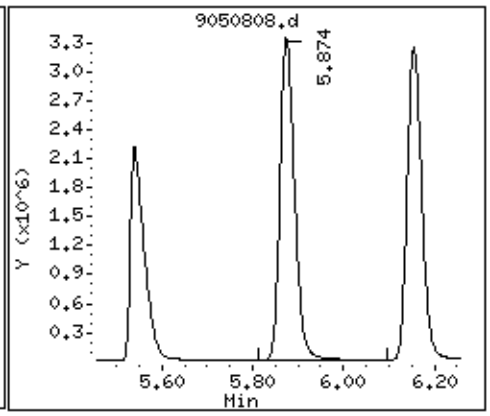
5 propane



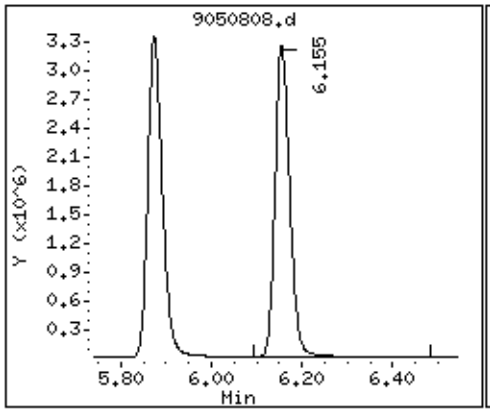
7 acetylene



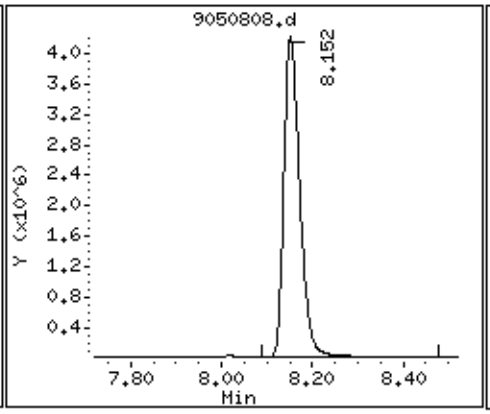
8 iso-butane



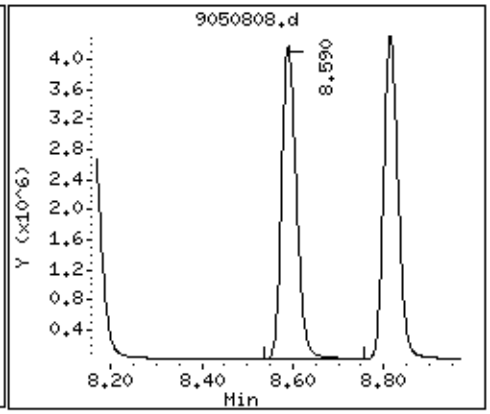
10 n-butane



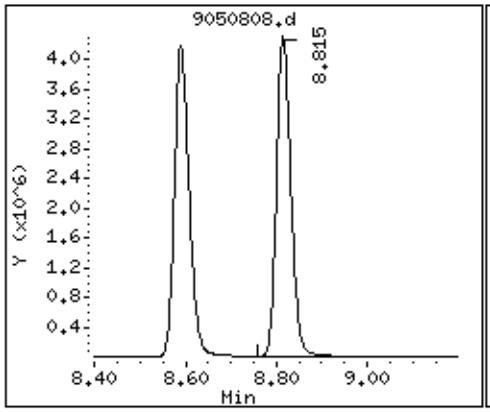
15 neo-pentane



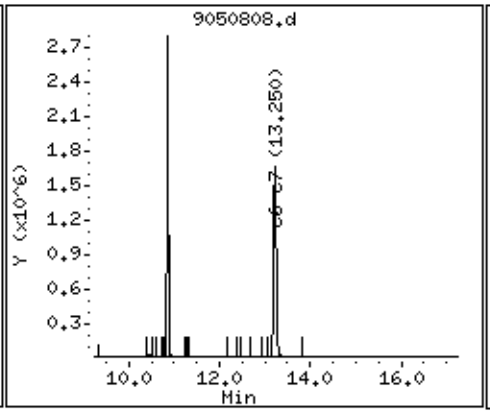
16 isopentane



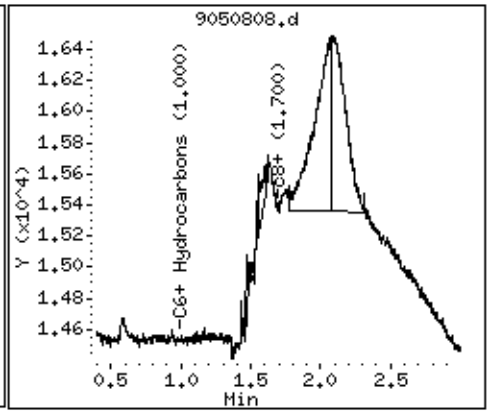
17 pentane



S 22 c6-c7



S 36 c8+



Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc9.i/08May2014.b/9050809.d
Lab Smp Id: 2299-509 Ngas Client Smp ID: Level-6
Inj Date : 08-MAY-2014 14:25
Operator : ly Inst ID: gc9.i
Smp Info : 1.0ml
Misc Info : Level-6
Comment : GC/FID
Method : /chem/gc9.i/08May2014.b/914n0508.m
Meth Date : 01-Jul-2014 08:19 lyohanne Quant Type: ESTD
Cal Date : 08-MAY-2014 14:25 Cal File: 9050809.d
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: ngas.sub
Target Version: 3.50
Processing Host: eeyore

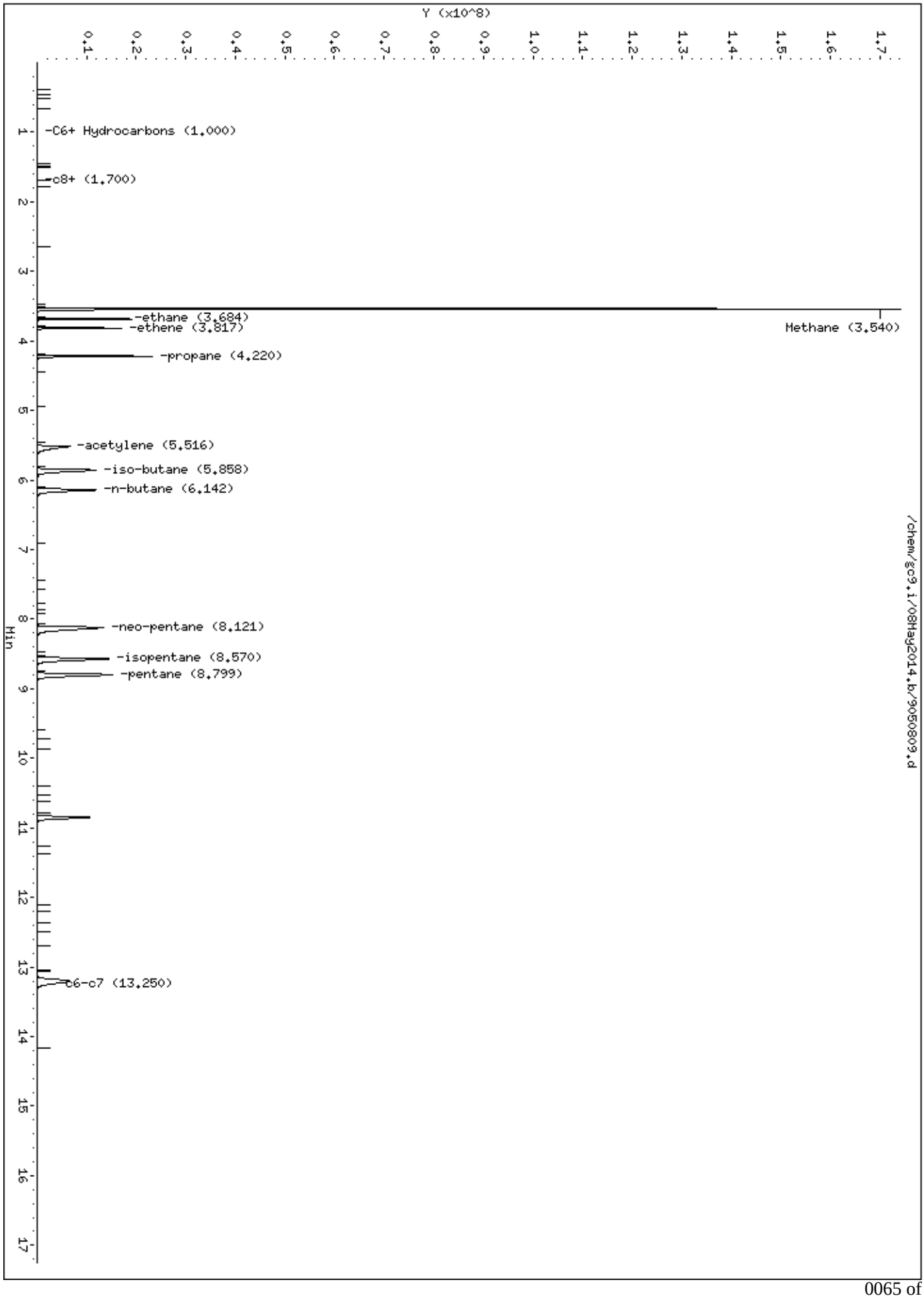
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
Compounds	RT	EXP RT	DLT RT	RESPONSE		
2 Methane	3.540	3.540	0.000	1495112223	10.1000	9.28
3 ethane	3.684	3.684	0.000	145357313	0.49900	0.496
4 ethene	3.817	3.817	0.000	139239477	0.49700	0.494
5 propane	4.220	4.220	0.000	225489756	0.50500	0.501
7 acetylene	5.516	5.516	0.000	188825813	0.50100	0.504(A)
8 iso-butane	5.858	5.858	0.000	298275285	0.49900	0.498
10 n-butane	6.142	6.142	0.000	292772450	0.49500	0.497
15 neo-pentane	8.121	8.121	0.000	407209413	0.51900	0.518(A)
16 isopentane	8.570	8.570	0.000	377263541	0.51100	0.510
17 pentane	8.799	8.799	0.000	381809212	0.51000	0.511
M 37 C6+ Hydrocarbons				527029184	0.00000	0.540
S 22 c6-c7	9.250-17.250			526055759	0.53400	0.540

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.


Data File: /chem/gc9.i/08May2014.b/9050809.d
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0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
1.5
1.6
1.7
Min
1
2
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4
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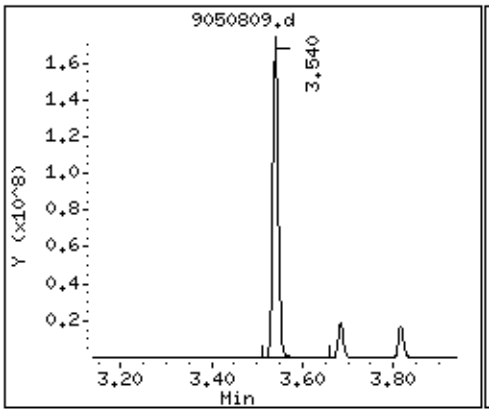
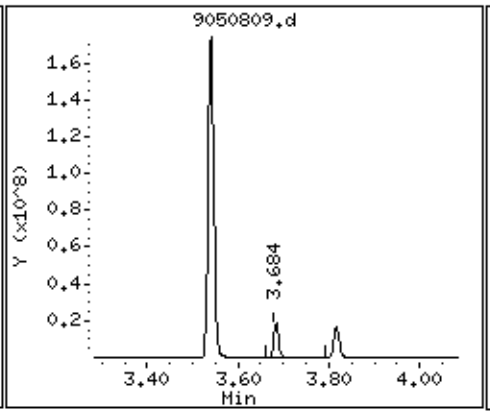
6
7
8
9
10
11
12
13
14
15
16
17
-C6+ Hydrocarbons (1.000)
c8+ (1.700)
-ethane (3.684)
-ethene (3.817)
Methane (3.540)
-propane (4.220)
-acetylene (5.516)
-iso-butane (5.858)
-n-butane (6.142)
-neo-pentane (8.121)
-isopentane (8.570)
-pentane (8.799)
c6-c7 (13.250)
/chem/gc9.i/08May2014.b/9050809.d

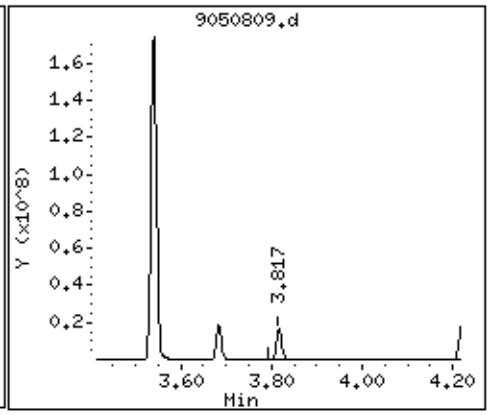
2 Methane



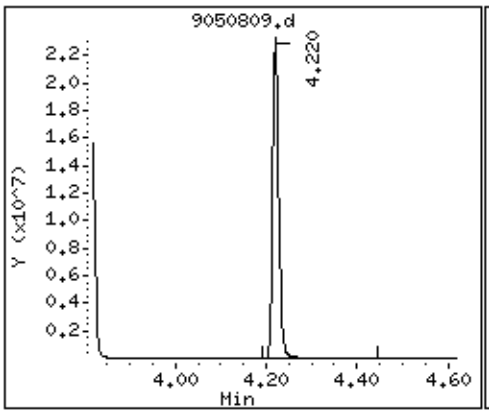
3 ethane



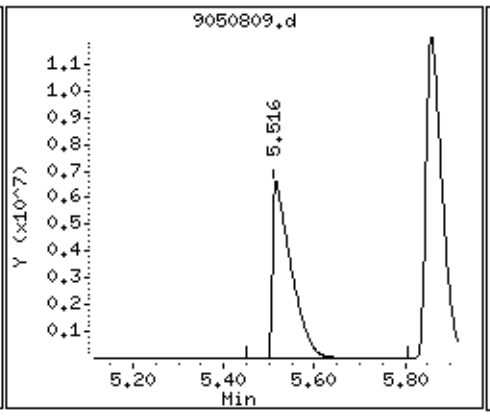
4 ethene



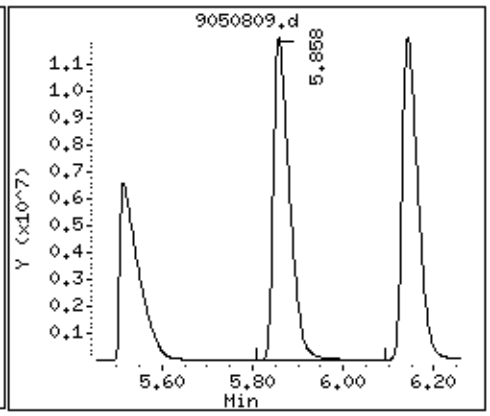
5 propane



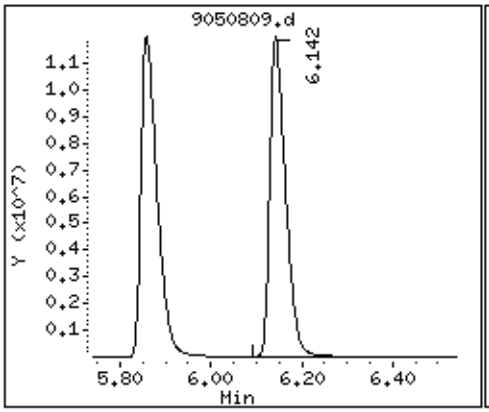
7 acetylene



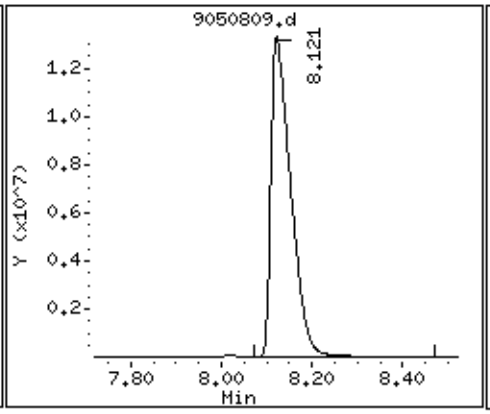
8 iso-butane



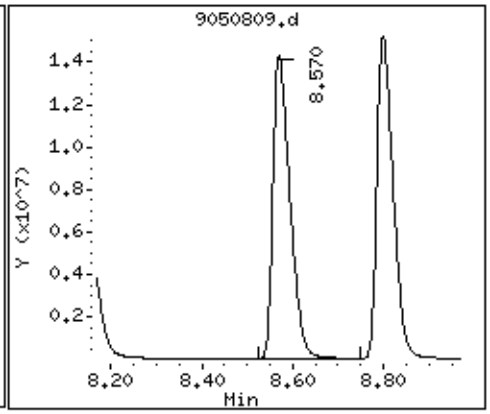
10 n-butane



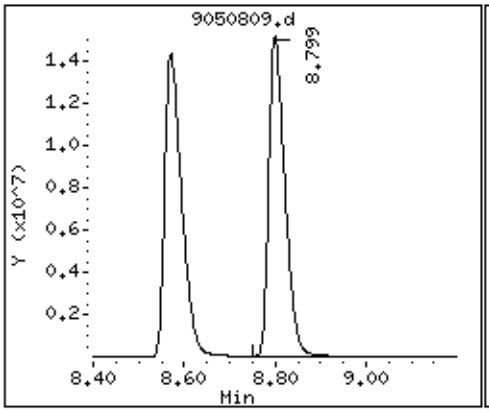
15 neo-pentane



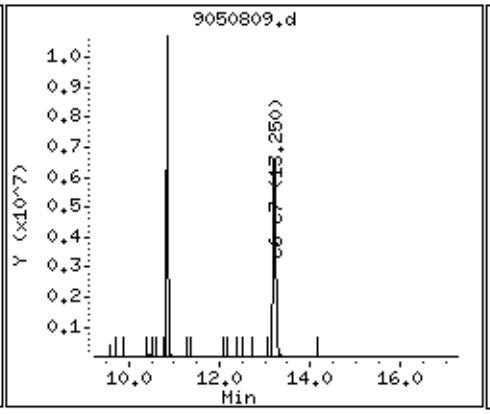
16 isopentane



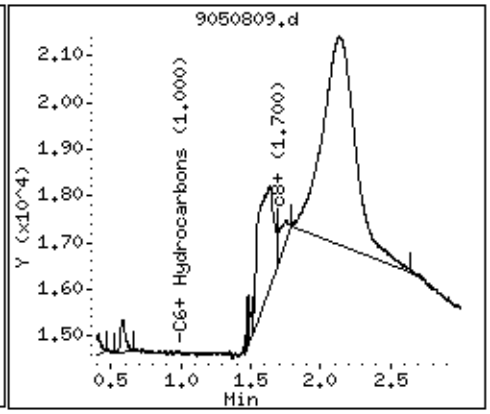
17 pentane



S 22 c6-c7



S 36 c8+



Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc9.i/08May2014.b/9050815.d
Lab Smp Id: 1476-2859 Methane Client Smp ID: Level-7
Inj Date : 08-MAY-2014 18:23
Operator : gd Inst ID: gc9.i
Smp Info : 1.0ml
Misc Info : Level-7
Comment   : GC/FID
Method   : /chem/gc9.i/08May2014.b/914n0508.m
Meth Date : 01-Jul-2014 08:19 lyohanne Quant Type: ESTD
Cal Date : 08-MAY-2014 18:23 Cal File: 9050815.d
Als bottle: 1 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: ch4.sub
Target Version: 3.50
Processing Host: eeyore

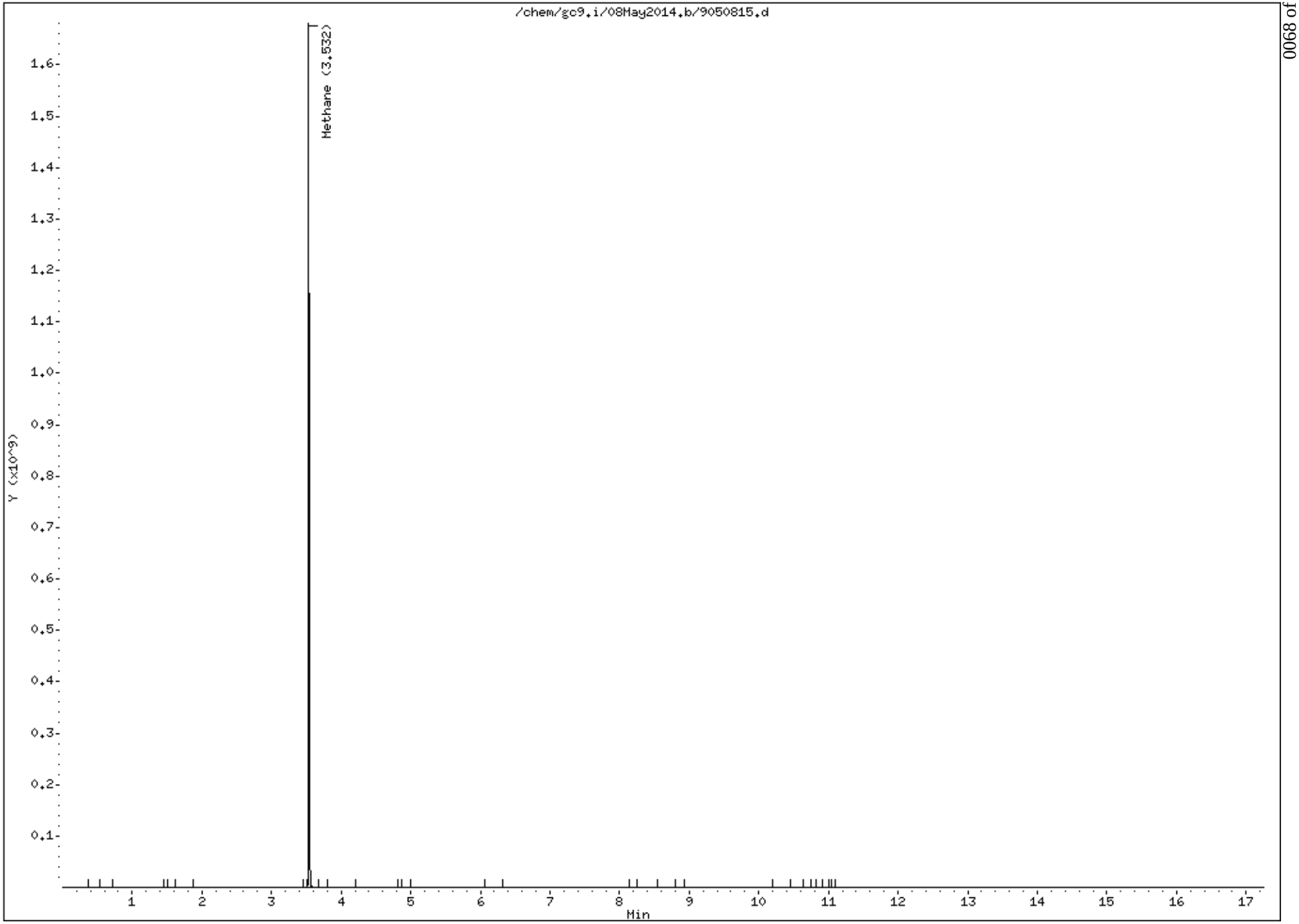
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

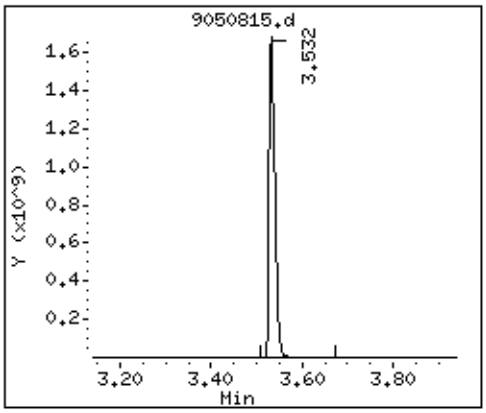
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
2 Methane	3.532	3.540	-0.008	15074569127	99.0000	94.3(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.


/chem/gc9.i/08May2014.b/9050815.d
Methane (3.532)
Y (x10^9)
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
Min

2 Methane



Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc9.i/08May2014.b/9050814.d
Lab Smp Id: 1476-898 Isopentane Client Smp ID: Level-7
Inj Date : 08-MAY-2014 17:27
Operator : gd Inst ID: gc9.i
Smp Info : 1.0ml(5:100)
Misc Info : Level-7
Comment : GC/FID
Method : /chem/gc9.i/08May2014.b/914n0508.m
Meth Date : 01-Jul-2014 08:19 lyohanne Quant Type: ESTD
Cal Date : 08-MAY-2014 17:27 Cal File: 9050814.d
Als bottle: 1 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: isopentane.sub
Target Version: 3.50
Processing Host: eeyore

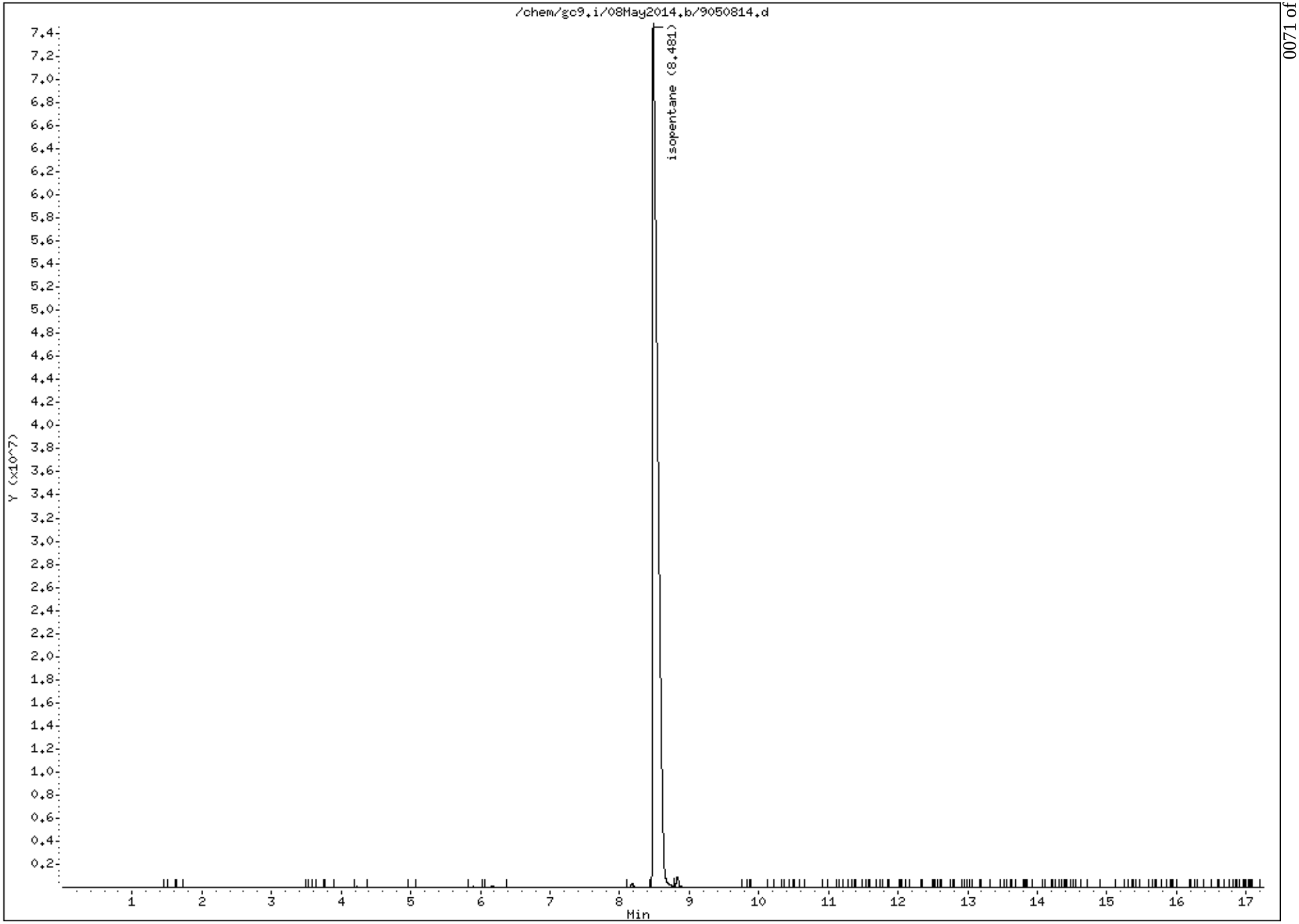
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

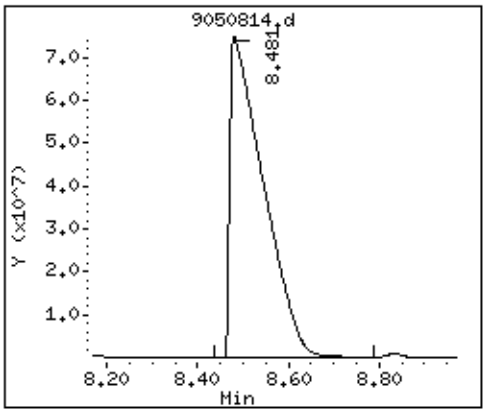
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
16 isopentane	8.481	8.570	-0.089	3839396880	4.95000	5.15(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.


/chem/gc9.i/08May2014.b/9050814.d
isopentane (8.481)
Y (x10^7)
Min

16 isopentane



Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc9.i/08May2014.b/9050813.d
Lab Smp Id: 1476-897 Butane Client Smp ID: Level-7
Inj Date : 08-MAY-2014 16:43
Operator : gd Inst ID: gc9.i
Smp Info : 1.0ml(5:50)
Misc Info : Level-7
Comment : GC/FID
Method : /chem/gc9.i/08May2014.b/914n0508.m
Meth Date : 01-Jul-2014 08:19 lyohanne Quant Type: ESTD
Cal Date : 08-MAY-2014 16:43 Cal File: 9050813.d
Als bottle: 1 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: Butane.sub
Target Version: 3.50
Processing Host: eeyore

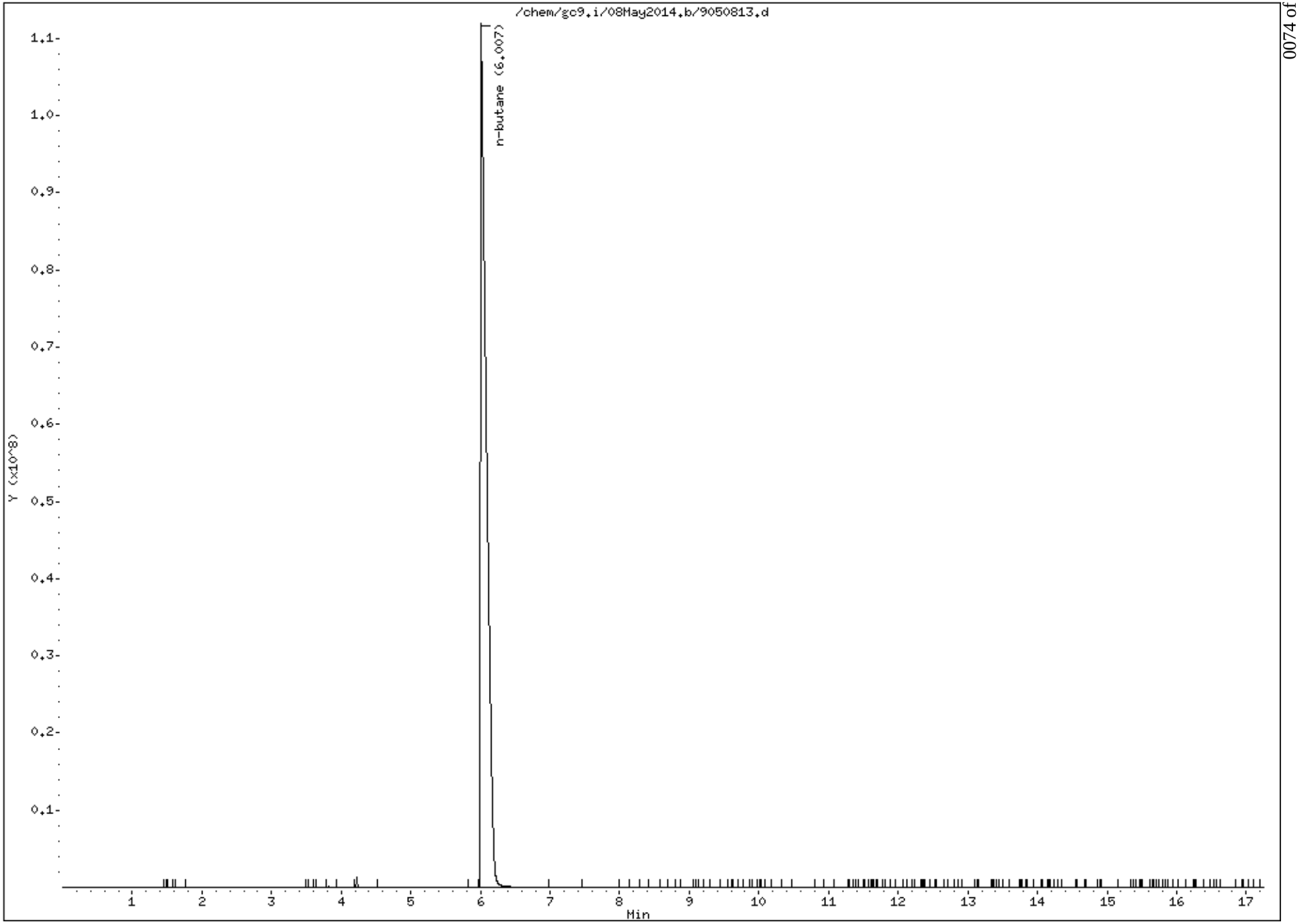
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

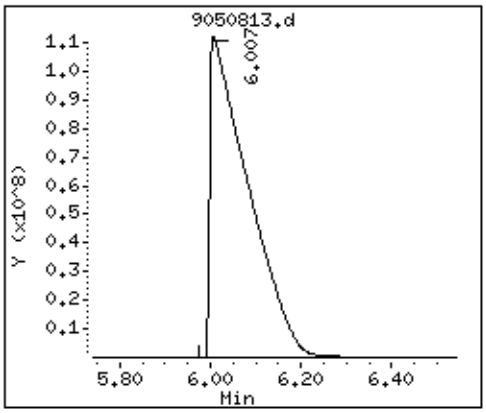
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
10 n-butane	6.007	6.142	-0.135	6588893967	9.99000	11.0(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.


/chem/gc9.i/08May2014.b/9050813.d
n-butane (6.007)
Y (x10^8)
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
Min

10 n-butane


9050813.d
6.007
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
Y (x10^8)
5.80
6.00
6.20
6.40
Min

Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc9.i/08May2014.b/9050812.d
Lab Smp Id: 843-471 Propane Client Smp ID: Level-7
Inj Date : 08-MAY-2014 16:06
Operator : gd Inst ID: gc9.i
Smp Info : 1.0ml(10:50)
Misc Info : Level-7
Comment : GC/FID
Method : /chem/gc9.i/08May2014.b/914n0508.m
Meth Date : 01-Jul-2014 08:19 lyohanne Quant Type: ESTD
Cal Date : 08-MAY-2014 16:06 Cal File: 9050812.d
Als bottle: 1 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: propane.sub
Target Version: 3.50
Processing Host: eeyore

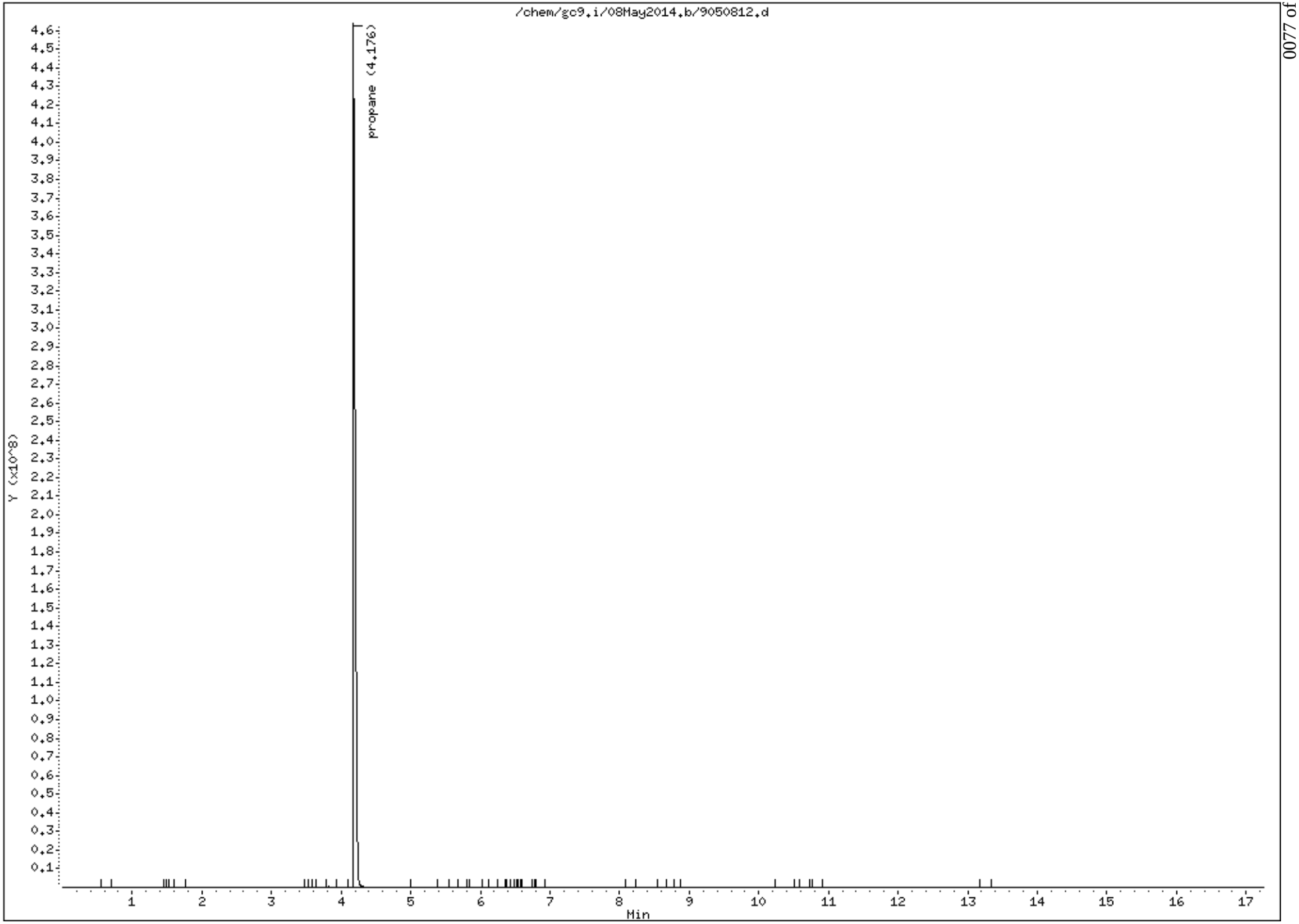
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

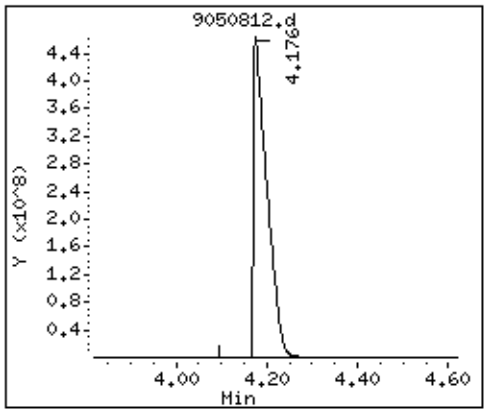
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
5 propane	4.176	4.220	-0.044	9465851268	19.9000	20.8(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.


/chem/gc9.i/08May2014.b/9050812.d
propane (4.176)
Y (x10^8)
Min

5 propane


9050812.d
4.176
Y (x10^8)
4.4
4.0
3.6
3.2
2.8
2.4
2.0
1.6
1.2
0.8
0.4
4.00
4.20
4.40
4.60
Min

Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc9.i/08May2014.b/9050811.d
Lab Smp Id: 1476-437 Ethene Client Smp ID: Level-7
Inj Date : 08-MAY-2014 15:36
Operator : gd Inst ID: gc9.i
Smp Info : 1.0ml(10:40)
Misc Info : Level-7
Comment : GC/FID
Method : /chem/gc9.i/08May2014.b/914n0508.m
Meth Date : 01-Jul-2014 08:19 lyohanne Quant Type: ESTD
Cal Date : 08-MAY-2014 15:36 Cal File: 9050811.d
Als bottle: 1 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: Ethene.sub
Target Version: 3.50
Processing Host: eeyore

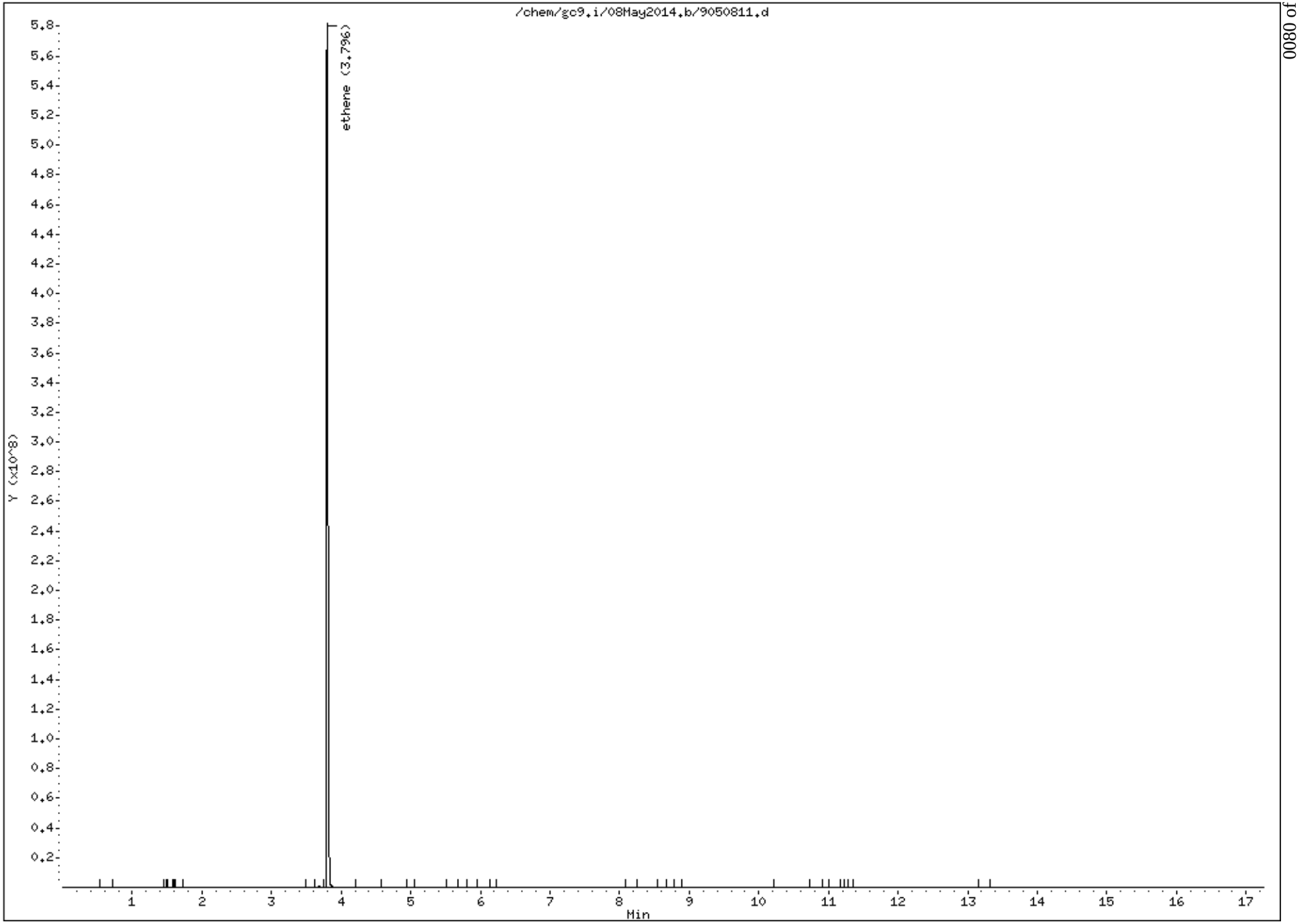
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
4 ethene	3.796	3.817	-0.021	7271432635	24.8750	25.6(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.


/chem/gc9.i/08May2014.b/9050811.d
ethene (3.796)
Y (x10^8)
5.8
5.6
5.4
5.2
5.0
4.8
4.6
4.4
4.2
4.0
3.8
3.6
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
1
2
3
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5
6
7
8
9
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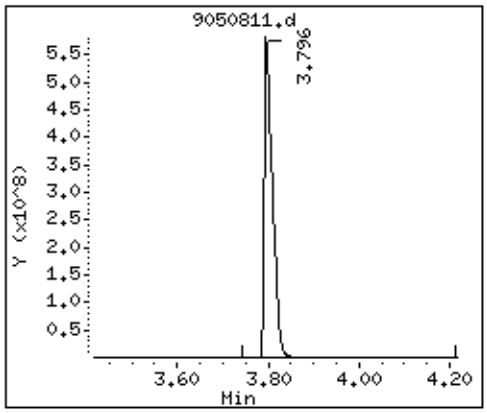
14
15
16
17
Min

4 ethene


9050811.d
3.796
Y (x10^8)
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
3.60
3.80
4.00
4.20
Min

Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc9.i/08May2014.b/9050810.d
Lab Smp Id: 1476-438 Ethane Client Smp ID: Level-7
Inj Date : 08-MAY-2014 15:12
Operator : gd Inst ID: gc9.i
Smp Info : 1.0ml(10:40)
Misc Info : Level-7
Comment : GC/FID
Method : /chem/gc9.i/08May2014.b/914n0508.m
Meth Date : 01-Jul-2014 08:19 lyohanne Quant Type: ESTD
Cal Date : 08-MAY-2014 15:12 Cal File: 9050810.d
Als bottle: 1 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: Ethane.sub
Target Version: 3.50
Processing Host: eeyore

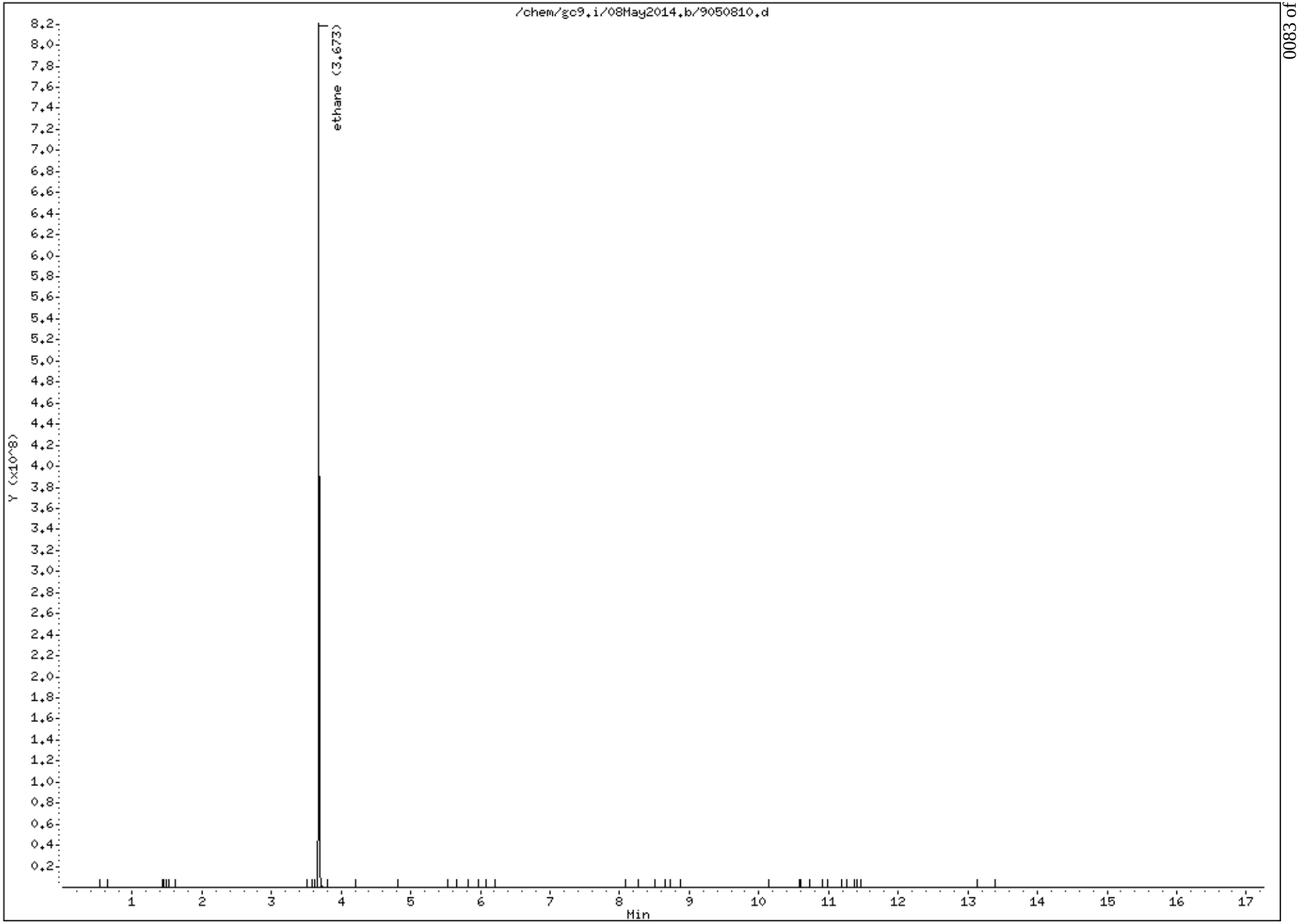
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

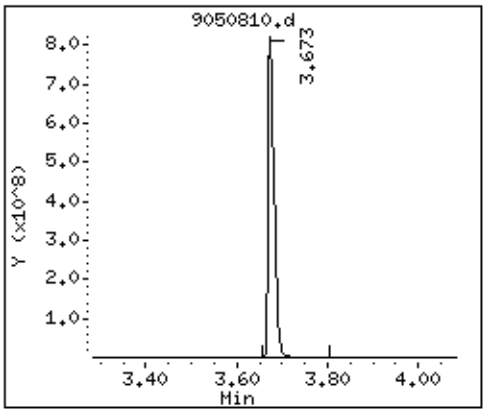
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
3 ethane	3.673	3.684	-0.011	7613969047	24.9750	25.8(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.


/chem/gc9.i/08May2014.b/9050810.d
ethane (3.673)
Y (x10^8)
Min

3 ethane



GC-9 CH4 MDL
ASTM D 1945/1946

Report Date : 17-Jun-2014 15:59

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/gc9.i/09May2014.b/914n0508.m
Batch File: /chem/gc9.i/09May2014.b
Inst ID: gc9.i

1.0ml of Std #2516-97 was spiked, resulting in a concentration of 0.0001% for CH4.

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07
FILENAME:	9050913	9050914	9050915	9050916	9050917	9050918	9050919
INJ.DATE:	09-MAY-2014	09-MAY-2014	09-MAY-2014	09-MAY-2014	09-MAY-2014	09-MAY-2014	09-MAY-2014
INJ.TIME:	15:03	15:25	15:48	16:18	16:44	17:26	17:54

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	AVG CONC	STD DEV	MDL ppmv	% MDL	RL %	Amount Spik
	2 Methane	1.05	1.05	1.04	1.01	1.01	1.05	1.03	1.03	0.02	0.06	0.0000060	0.0001	0.000103
	3 ethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
	4 ethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
	5 propane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
	7 acetylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
	8 iso-butane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
	10 n-butane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
	15 neo-pentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
	16 isopentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
	17 pentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
	39 Hexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
	40 Heptane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
S	22 c6-c7	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
M	37 C6+ Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
S	36 c8+	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			

Reviewer 1 Lydyohanna Date: 6/17/14
Reviewer 2 gMasuona Date: 7/2/14

Report Date: 06-Feb-2015 13:30

Eurofins Air Toxics Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: gc9.i Injection Date: 06-FEB-2015 08:01
Lab File ID: 9020601.d Init. Cal. Date(s): 08-MAY-2014 08-MAY-2014
Analysis Type: AIR Init. Cal. Times: 10:20 18:23
Lab Sample ID: 2299-1048A Ngas Quant Type: ESTD
Method: /chem/gc9.i/06Feb2015.b/914n0508.m

	COMPOUND	RRF / AMOUNT	RF0.000	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
	2 Methane	159808871	157386980	0.010	1.51549	15.00000	Averaged	
	3 ethane	295271599	309014667	0.010	-4.65438	15.00000	Averaged	
	4 ethene	283707824	303768740	0.010	-7.07098	15.00000	Averaged	
	5 propane	454548130	461851933	0.010	-1.60683	15.00000	Averaged	
	7 acetylene	374453762	411786595	0.010	-9.96994	15.00000	Averaged	
	8 iso-butane	598744967	627304112	0.010	-4.76983	15.00000	Averaged	
	10 n-butane	600898343	627518273	0.010	-4.43002	15.00000	Averaged	
	15 neo-pentane	785671374	834529742	0.010	-6.21868	15.00000	Averaged	
	16 isopentane	745637940	787131389	0.010	-5.56483	15.00000	Averaged	
	17 pentane	747542676	796706965	0.010	-6.57679	15.00000	Averaged	
M	37 C6+ Hydrocarbons	973215918	1.059e+09	0.010	-8.80682	15.00000	Averaged	
S	22 c6-c7	973215918	1.106e+09	0.010	-13.65035	15.00000	Averaged	
S	36 c8+	973215918	++++	0.010	++++	15.00000	Averaged	<-

Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc9.i/06Feb2015.b/9020601.d
Lab Smp Id: 2299-1048A Ngas Client Smp ID: CCV
Inj Date : 06-FEB-2015 08:01
Operator : ly Inst ID: gc9.i
Smp Info : 1.0ml,
Misc Info : CCV
Comment : GC/FID
Method : /chem/gc9.i/06Feb2015.b/914n0508.m
Meth Date : 06-Feb-2015 13:30 lyohanne Quant Type: ESTD
Cal Date : 08-MAY-2014 18:23 Cal File: 9050815.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: ngas.sub
Target Version: 3.50
Processing Host: eeyore

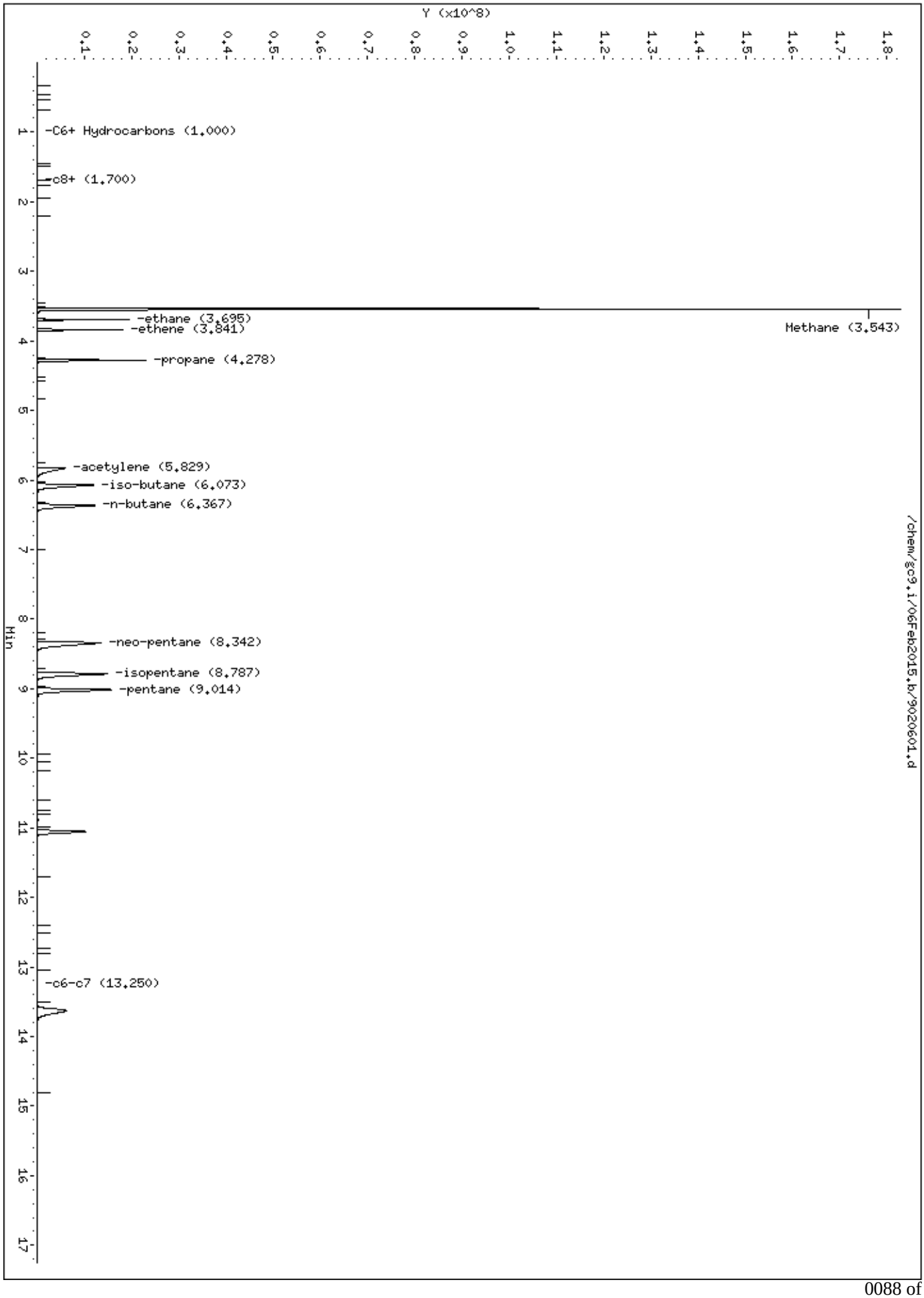
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(%)	(%)
==========	==	======	======	========	=======	=======
2 Methane	3.543	3.543	0.000	1589608502	10.1000	9.95
3 ethane	3.695	3.695	0.000	154198319	0.49900	0.522
4 ethene	3.841	3.841	0.000	150973064	0.49700	0.532
5 propane	4.278	4.278	0.000	233235226	0.50500	0.513
7 acetylene	5.829	5.829	0.000	206305084	0.50100	0.551(A)
8 iso-butane	6.073	6.073	0.000	313024752	0.49900	0.523(A)
10 n-butane	6.367	6.367	0.000	310621545	0.49500	0.517
15 neo-pentane	8.342	8.342	0.000	433120936	0.51900	0.551(A)
16 isopentane	8.787	8.787	0.000	402224140	0.51100	0.539
17 pentane	9.014	9.014	0.000	406320552	0.51000	0.544
M 37 C6+ Hydrocarbons				565466107	0.53400	0.581
S 22 c6-c7	9.250-17.250			564092280	0.51000	0.580
S 36 c8+	0.400-3.000			1373827	0.00000	0.00141

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

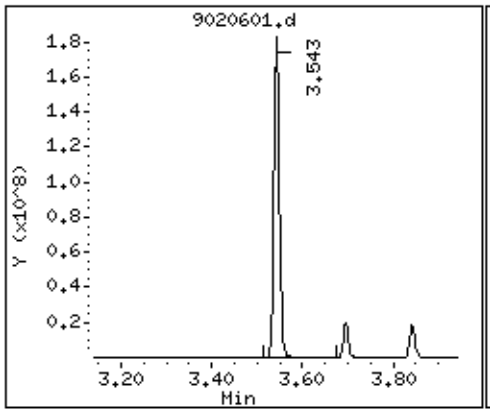


Data File: /chem/gc9.i/06Feb2015.b/9020601.d

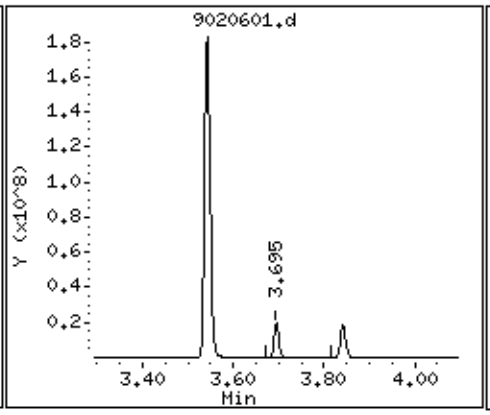
/chem/gc9.i/06Feb2015.b/9020601.d

Page 1

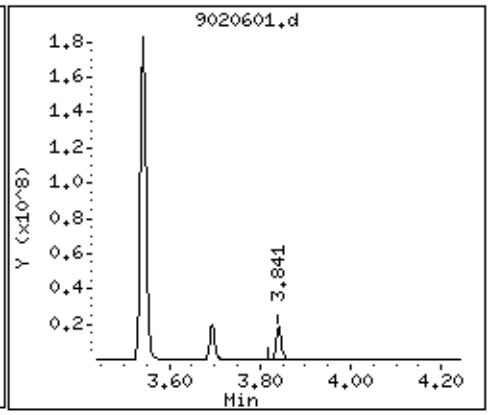
2 Methane



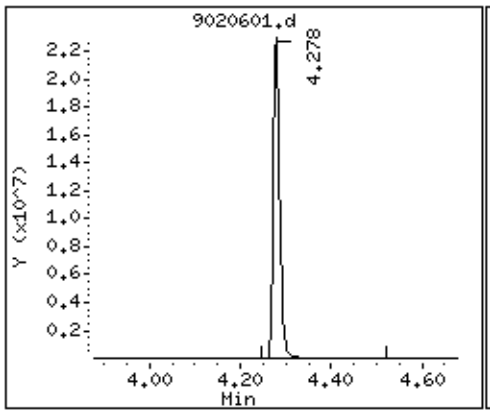
3 ethane



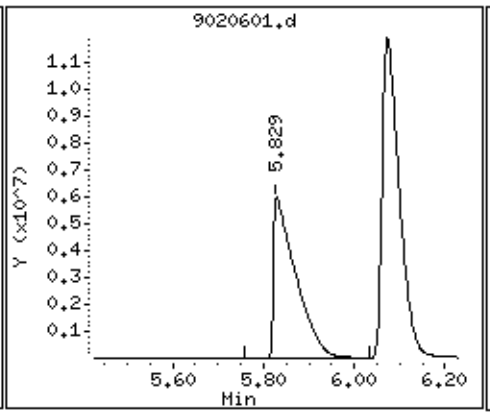
4 ethene



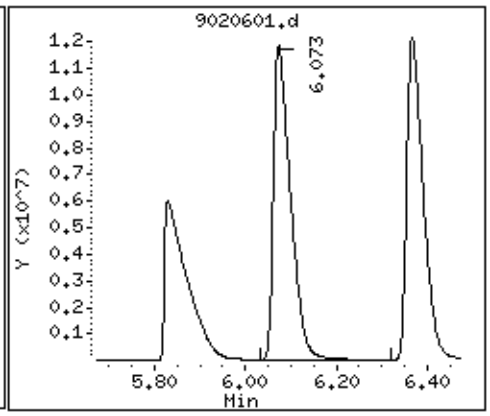
5 propane



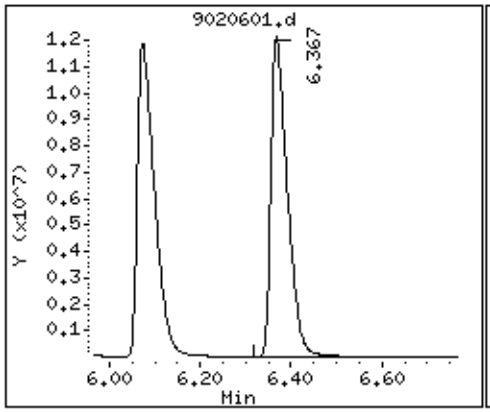
7 acetylene



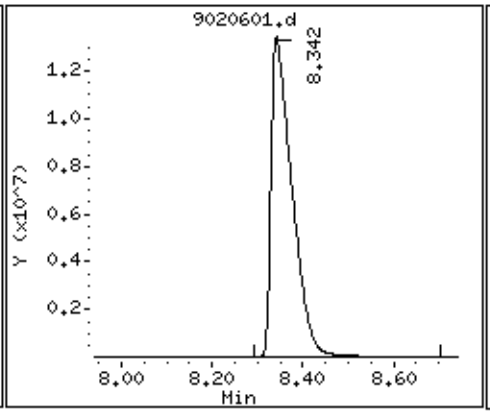
8 iso-butane



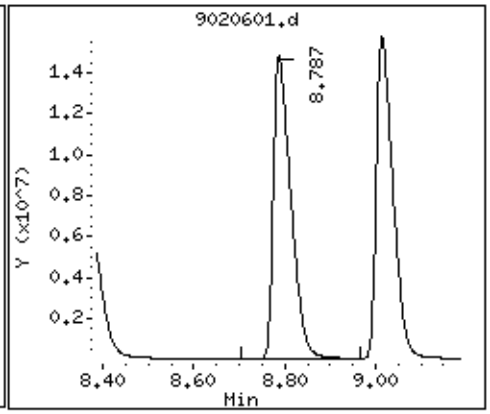
10 n-butane



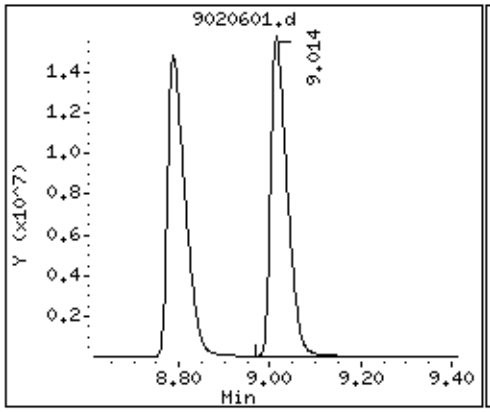
15 neo-pentane



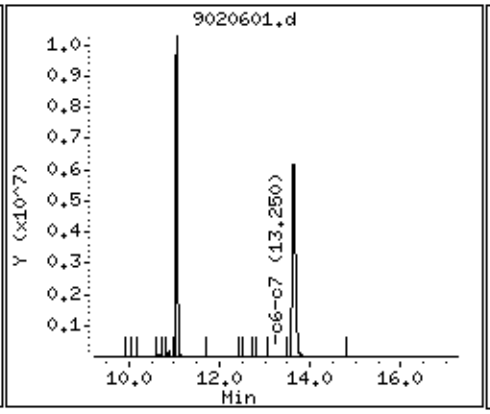
16 isopentane



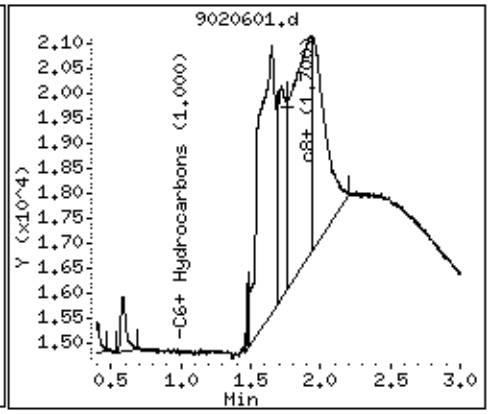
17 pentane



S 22 c6-c7



S 36 c8+



eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 1502053B-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9020602**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/6/15 08:29 AM**	

Compound	**%Recovery**	**Method Limits**
Methane	87	85-115

Container Type: NA - Not Applicable

Report Date: 06-Feb-2015 13:29

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name:
Client SDG: 06Feb2015
Sample Matrix: GAS
Fraction: Atm Gas
Lab Smp Id: 2299-365R Ngas
Client Smp ID: LCS
Level: LOW
Operator: ly
Data Type: GC DATA
SampleType: LCS
SpikeList File: 2299-365R.spk
Quant Type: ESTD
Sublist File: ngas.sub
Method File: /chem/gc9.i/06Feb2015.b/914n0508.m
Misc Info: LCS

SPIKE COMPOUND	CONC ADDED %	CONC RECOVERED %	% RECOVERED	LIMITS
2 Methane	5.02	4.37	87.11	85-115
3 ethane	0.256	0.230	89.99	85-115
4 ethene	0.251	0.233	92.98	85-115
5 propane	0.250	0.225	89.89	85-115
7 acetylene	0.251	0.228	90.80	85-115
8 iso-butane	0.254	0.230	90.51	85-115
10 n-butane	0.245	0.224	91.51	85-115
15 neo-pentane	0.257	0.234	91.07	85-115
16 isopentane	0.255	0.232	91.10	85-115
17 pentane	0.254	0.233	91.66	85-115
M 37 C6+ Hydrocarbons	0.264	0.245	92.93	85-115

Eurofins Air Toxics Inc.

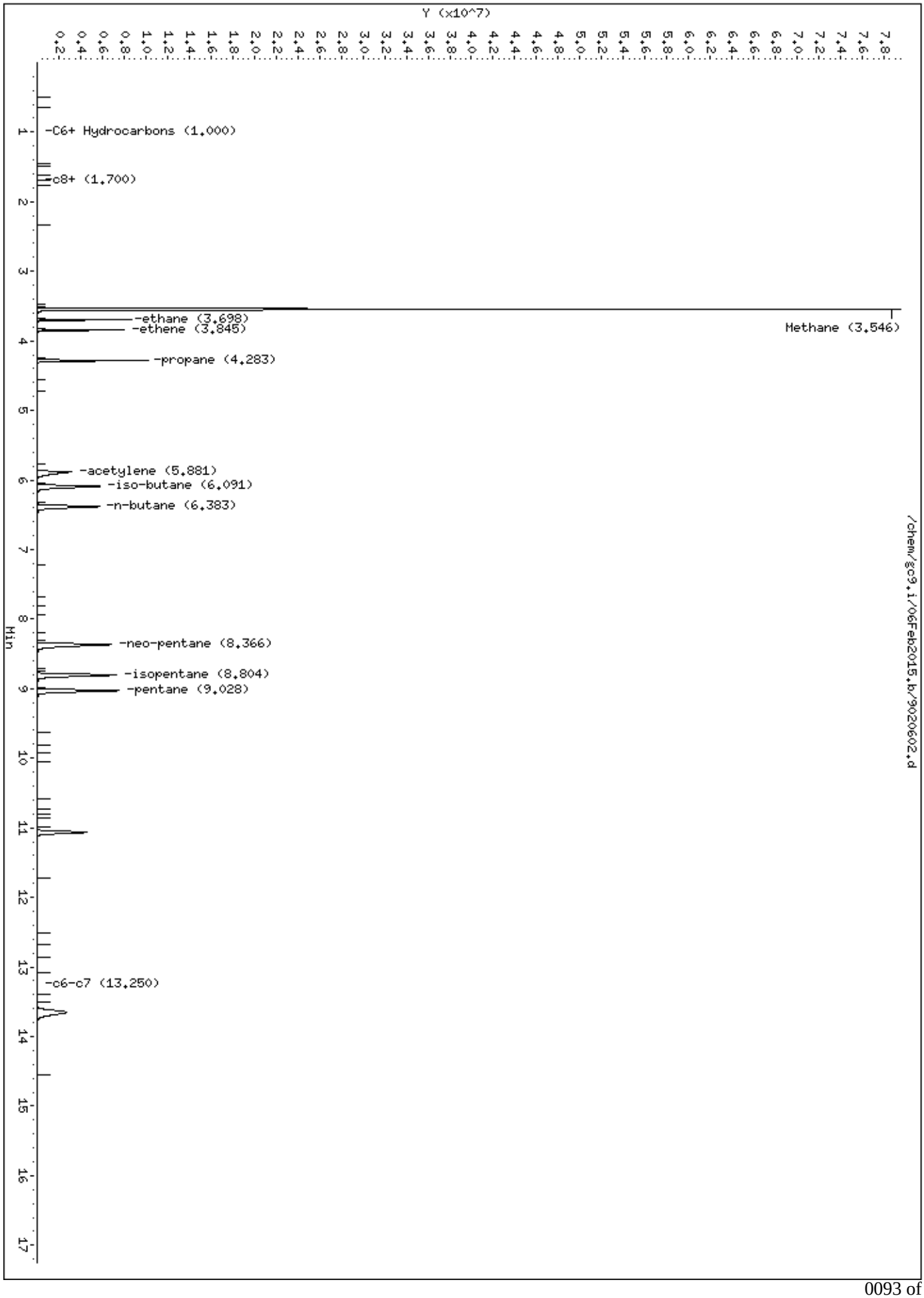
Modified ASTM D-1945/1946

Data file : /chem/gc9.i/06Feb2015.b/9020602.d
Lab Smp Id: 2299-365R Ngas Client Smp ID: LCS
Inj Date : 06-FEB-2015 08:29
Operator : ly Inst ID: gc9.i
Smp Info : 1.0ml,;2299-365R Ngas;LCS
Misc Info : LCS
Comment : GC/FID
Method : /chem/gc9.i/06Feb2015.b/914n0508.m
Meth Date : 06-Feb-2015 13:23 lyohanne Quant Type: ESTD
Cal Date : 08-MAY-2014 18:23 Cal File: 9050815.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: ngas.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COLUMN (%)	FINAL (%)
Compounds	RT	EXP RT	DLT RT	RESPONSE		
2 Methane	3.546	3.543	0.003	698807650	4.37277	4.37
3 ethane	3.698	3.695	0.003	68022225	0.23037	0.230
4 ethene	3.845	3.841	0.004	66214322	0.23339	0.233
5 propane	4.283	4.278	0.005	102145902	0.22472	0.225
7 acetylene	5.881	5.829	0.052	85345310	0.22792	0.228
8 iso-butane	6.091	6.073	0.018	137649422	0.22990	0.230
10 n-butane	6.383	6.367	0.016	134722938	0.22420	0.224
15 neo-pentane	8.366	8.342	0.024	183889162	0.23405	0.234
16 isopentane	8.804	8.787	0.017	173210172	0.23230	0.232
17 pentane	9.028	9.014	0.014	174042940	0.23282	0.233
M 37 C6+ Hydrocarbons				238757519	0.24533	0.245
S 22 c6-c7	9.250-17.250			237595766	0.24413	0.244
S 36 c8+	0.400-3.000			1161753	0.00119	0.00119

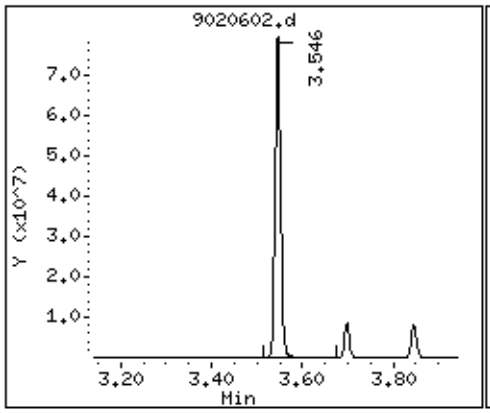


Data File: /chem/gc9.i/06Feb2015.b/9020602.d

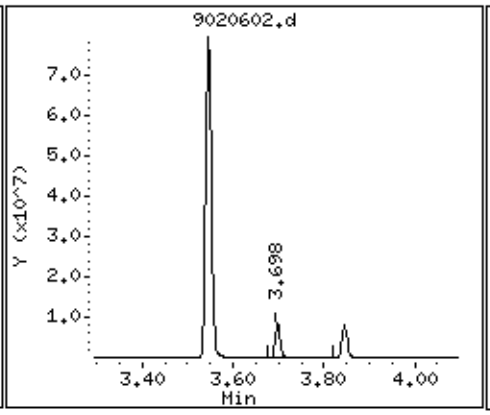
/chem/gc9.i/06Feb2015.b/9020602.d

Page 1

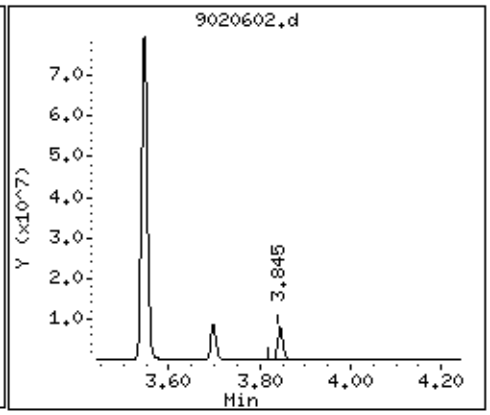
2 Methane



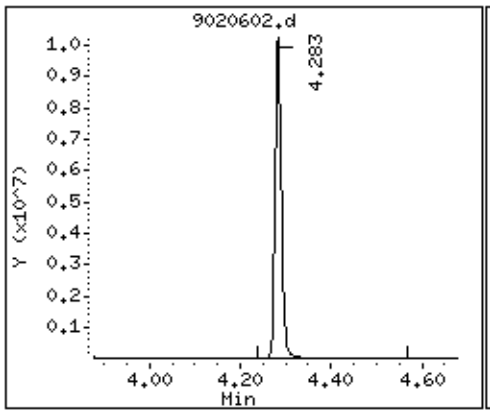
3 ethane



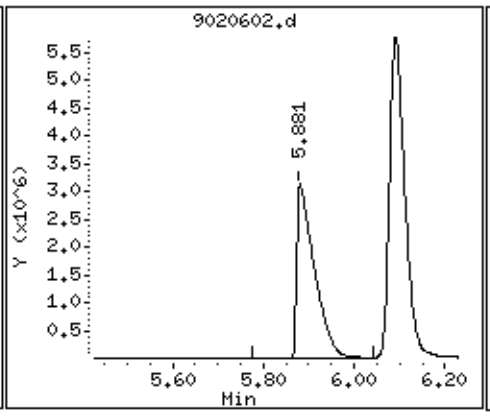
4 ethene



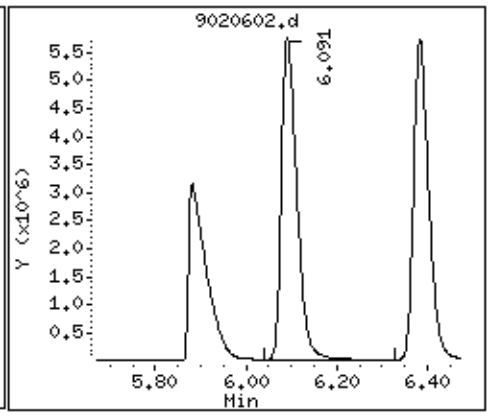
5 propane



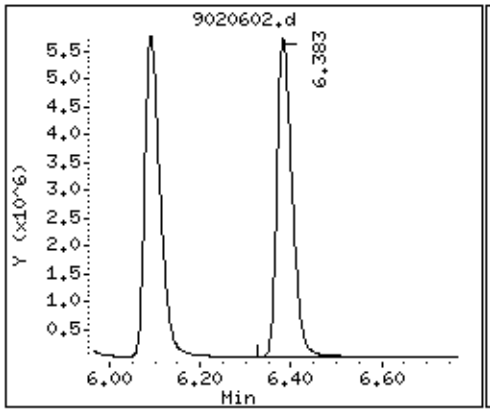
7 acetylene



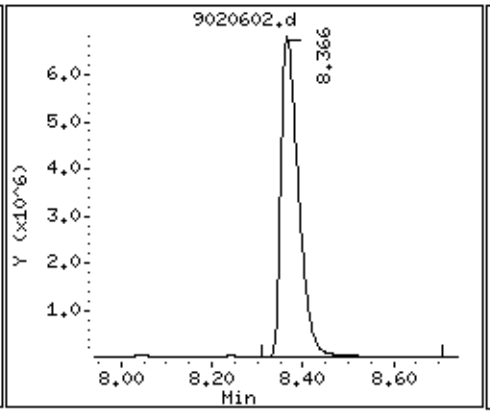
8 iso-butane



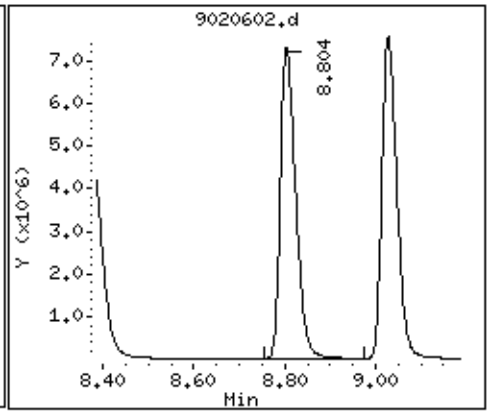
10 n-butane



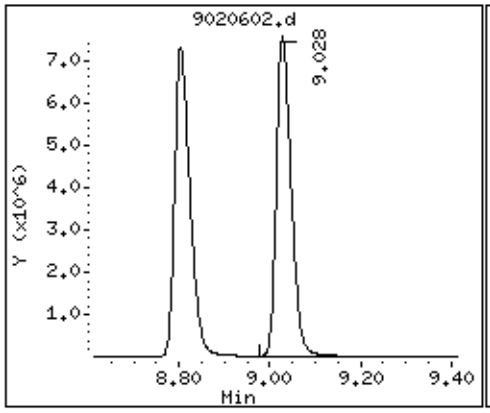
15 neo-pentane



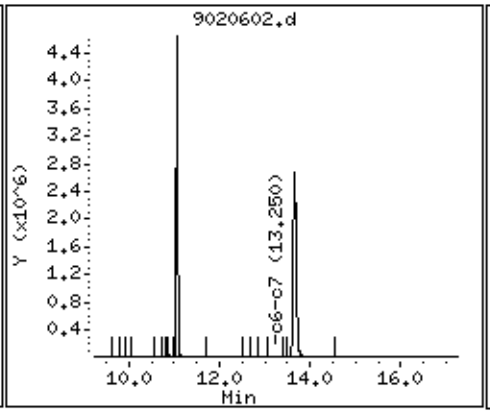
16 isopentane



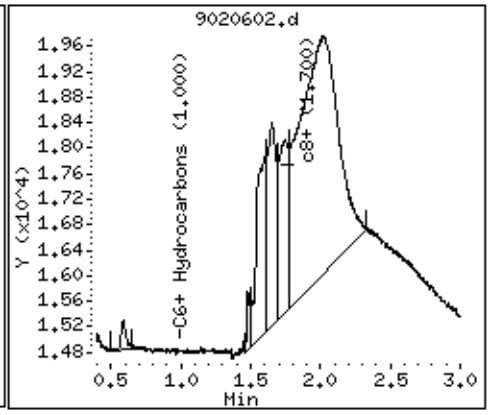
17 pentane



S 22 c6-c7



S 36 c8+



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Client Sample ID: LCSD

Lab ID#: 1502053B-07AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9020628**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/6/15 10:59 PM**	

Compound	**%Recovery**	**Method Limits**
Methane	88	85-115

Container Type: NA - Not Applicable

Report Date: 06-Feb-2015 23:46

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name:
Client SDG: 06Feb2015
Sample Matrix: GAS
Fraction: Atm Gas
Lab Smp Id: 2299-365R Ngas
Client Smp ID: LCSD
Level: LOW
Operator: gd
Data Type: GC DATA
SampleType: LCSD
SpikeList File: 2299-365R.spk
Quant Type: ESTD
Sublist File: ngas.sub
Method File: /chem/gc9.i/06Feb2015.b/914n0508.m
Misc Info: LCSD

SPIKE COMPOUND	CONC ADDED %	CONC RECOVERED %	% RECOVERED	LIMITS
2 Methane	5.02	4.41	87.90	85-115
3 ethane	0.256	0.232	90.76	85-115
4 ethene	0.251	0.235	93.75	85-115
5 propane	0.250	0.227	90.76	85-115
7 acetylene	0.251	0.230	91.51	85-115
8 iso-butane	0.254	0.232	91.33	85-115
10 n-butane	0.245	0.226	92.31	85-115
15 neo-pentane	0.257	0.236	91.90	85-115
16 isopentane	0.255	0.234	91.99	85-115
17 pentane	0.254	0.235	92.58	85-115
M 37 C6+ Hydrocarbons	0.264	0.248	93.97	85-115

Eurofins Air Toxics Inc.

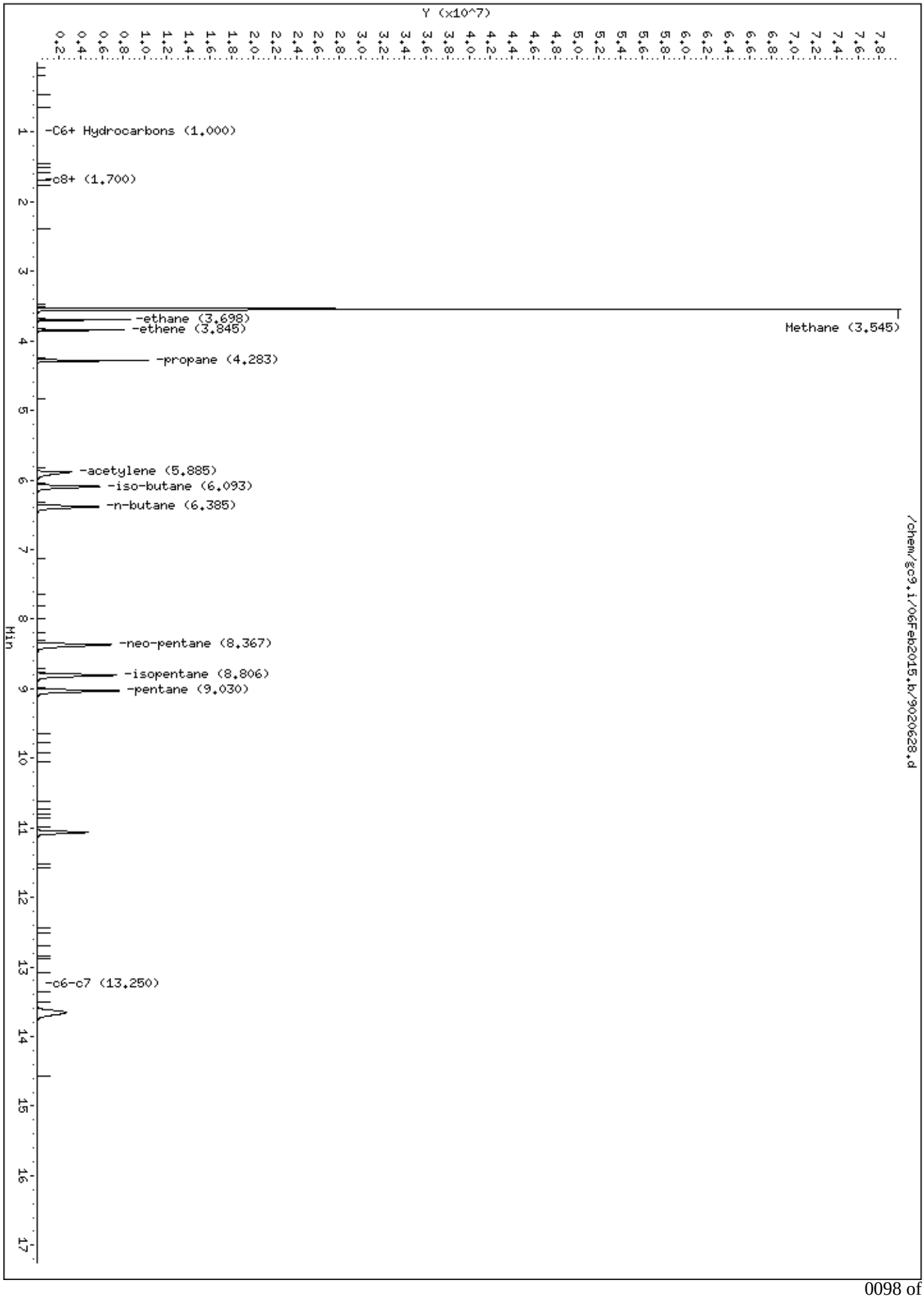
Modified ASTM D-1945/1946

Data file : /chem/gc9.i/06Feb2015.b/9020628.d
Lab Smp Id: 2299-365R Ngas Client Smp ID: LCSD
Inj Date : 06-FEB-2015 22:59
Operator : gd Inst ID: gc9.i
Smp Info : 1.0ml,
Misc Info : LCSD
Comment : GC/FID
Method : /chem/gc9.i/06Feb2015.b/914n0508.m
Meth Date : 06-Feb-2015 13:30 lyohanne Quant Type: ESTD
Cal Date : 08-MAY-2014 18:23 Cal File: 9050815.d
Als bottle: 1 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: ngas.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COLUMN (%)	FINAL (%)
Compounds	RT	EXP RT	DLT RT	RESPONSE		
2 Methane	3.545	3.543	0.002	705188370	4.41270	4.41
3 ethane	3.698	3.695	0.003	68606472	0.23235	0.232
4 ethene	3.845	3.841	0.004	66760637	0.23531	0.235
5 propane	4.283	4.278	0.005	103139188	0.22690	0.227
7 acetylene	5.885	5.829	0.056	86011445	0.22970	0.230
8 iso-butane	6.093	6.073	0.020	138895734	0.23198	0.232
10 n-butane	6.385	6.367	0.018	135904332	0.22617	0.226
15 neo-pentane	8.367	8.342	0.025	185572158	0.23620	0.236
16 isopentane	8.806	8.787	0.019	174909455	0.23458	0.234
17 pentane	9.030	9.014	0.016	175793763	0.23516	0.235
M 37 C6+ Hydrocarbons				241428182	0.24807	0.248
S 22 c6-c7	9.250-17.250			240220758	0.24683	0.247
S 36 c8+	0.400-3.000			1207424	0.00124	0.00124

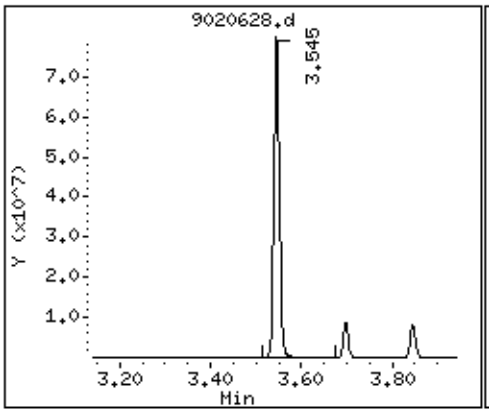


Data File: /chem/gc9.i/06Feb2015.b/9020628.d

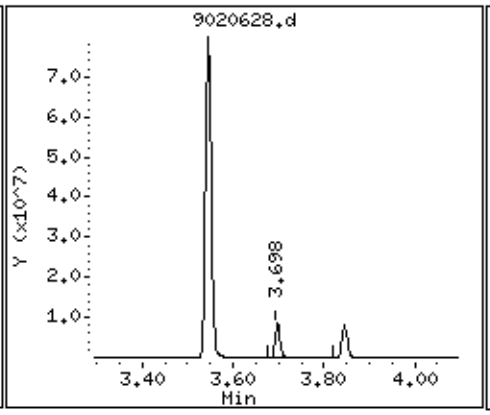
/chem/gc9.i/06Feb2015.b/9020628.d

Page 1

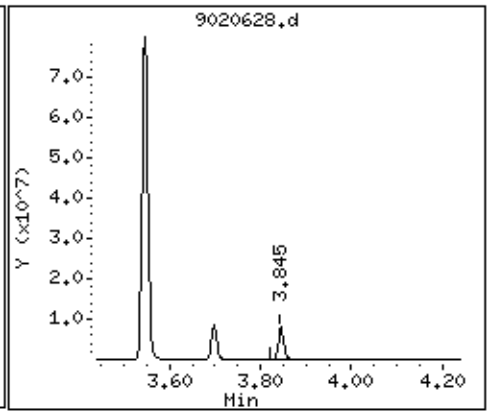
2 Methane



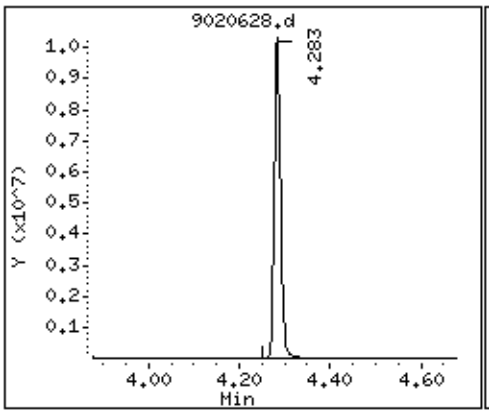
3 ethane



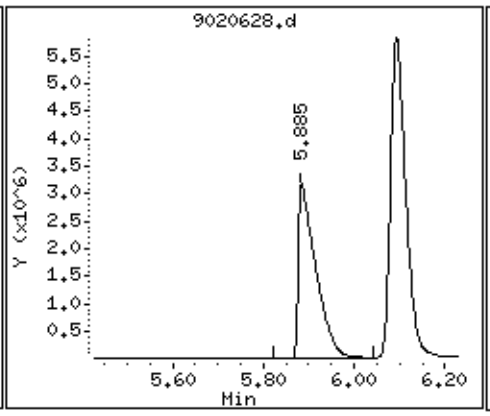
4 ethene



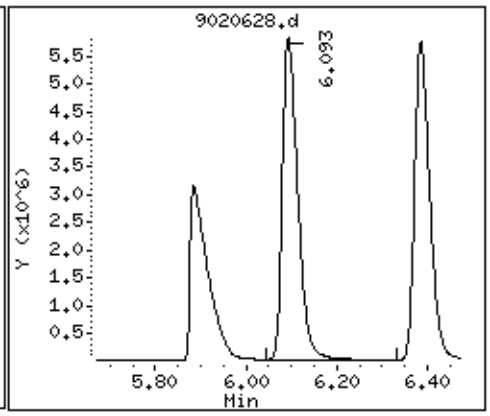
5 propane



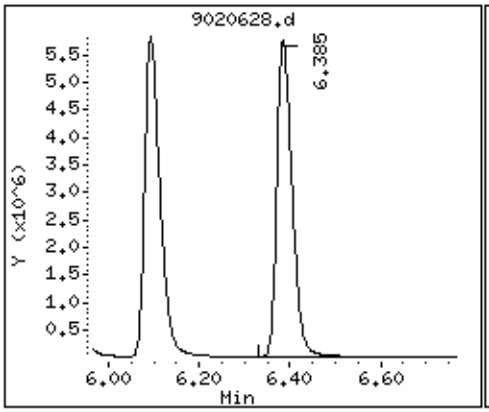
7 acetylene



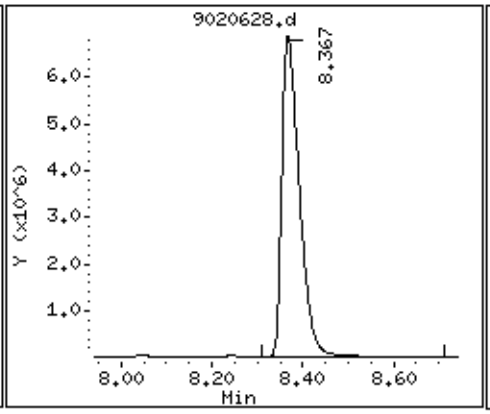
8 iso-butane



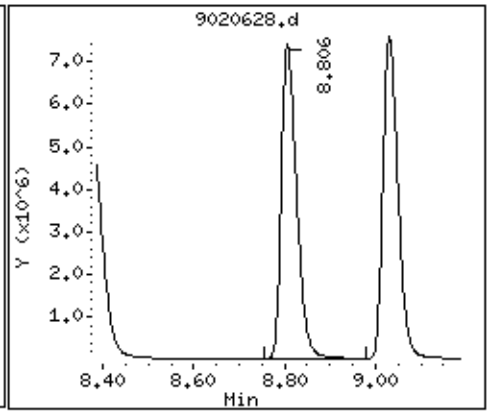
10 n-butane



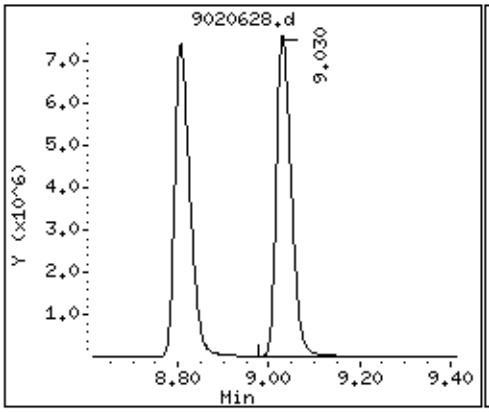
15 neo-pentane



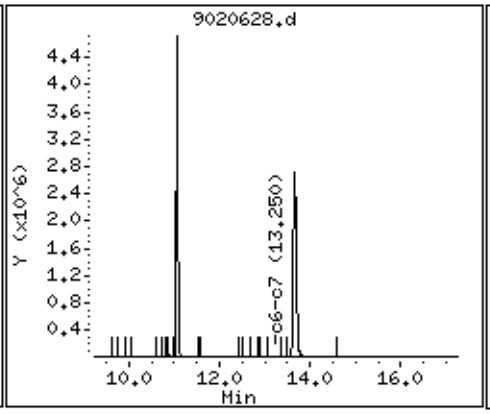
16 isopentane



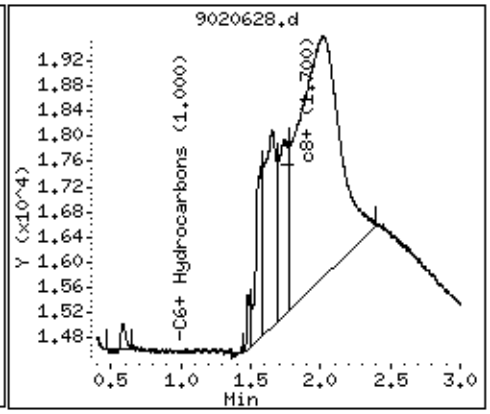
17 pentane



S 22 c6-c7



S 36 c8+



Eurofins Air Toxics, Inc.
Method: **ASTM D-1945/1946** (circle one)

GC-9

Logbook # 2626
Leak Test Cy

	USE	File #	Sample Name/Client ID	Can #	Ver. Pressure >2psi	Pressure	Amt	DF	Date	Time	Review Init.	Comments
1	✓	9020601	2299-1048A Ngas	NA	NA	NA	1.0mL	1.00	2/6/15	0801	Cy	CCV
2	✓	02	2299-365R Ngas							0829		LCS
3	✓	03	2299-480 H_2							0855		CCV
4	✓	04	N_2 Lab Blank	34-264						0924		
5	✓	05	He Lab Blank	33977						0947		
6	X	06	1502038B-01A	37680	✓	4.1" Hg → 15.2 psi		2.35		1028		He carryover
7	✓	07	-02A	37827	✓	4.5" Hg → 15 psi		2.38		1101		
8	✓	08	04~~03A~~ gd 2/6/15	37818	✓	5.5" Hg → 14.9 psi		2.47		1140		
9	✓	09	-01A	37680	✓	4.1" Hg → 15.2 psi		2.35		1213		
10	✓	10	1501393-01A	34742	✓	13.5" Hg → 4.8 psi		2.41		1245		
11	✓	11	-02A	12019	✓	12.2" Hg → 5.1 psi		2.28		1327		
12	✓	12	03A	34370	✓	10.6" Hg → 5.4 psi		2.12		1411	✓	
13	✓	13	-04A	31139	✓	11.4" Hg → 5.1 psi		2.18		1436	gd	
14	X	14	1502053B-01A	3735	✓	5.5" Hg - 4.8 psi		1.62		1544		Carryover
15	✓	15	-02A	34222 gd 2/6/15	✓	6.9" Hg - 4.9 psi gd 2/6/15	✓	1.73 gd 2/6/15	✓	1621	✓	Can# 34222

Calculation check: File ID: 9020607 Compound: CH_4 Initials: Cy

Sample Amt = $\frac{\text{Area Count Sample}}{\text{RF}}$ x Dilution Factor = $\frac{(2702709830)}{(159808871)}$ x (2.38) = 40.2

Reported Result = 40.2

Reviewed by/Date gd 2/6/15

Eurofins Air Toxics, Inc.
Method: **ASTM D-1945/1946** (circle one)

GC-9

Logbook # 2626
Leak Test_____

	USE	File #	Sample Name/Client ID	Can #	Ver. Pressure >2psi	Pressure	Amt (mL)	DF	Date	Time	Review Init.	Comments
1	✓	9020616	1502053B-03A	34361	✓	4.5"Hg - 4.8psi	1.0	1.56	2/6/15	1647	gA	
2	✓	17	-01A	3735	✓	5.5"Hg - 4.8psi		1.62		1743		
3	✓	18	-04A	35174	✓	4.5"Hg - 4.9psi		1.57		1808		
4	✓	19	-05A	33658	✓	7.3"Hg - 4.8psi		1.76		1835		
5	✓	20	1502051A-01A	Bag	NA	Los Esteros		1.00		1910		
6	✓	21	1502076B-01A			MW				2015		
7	✓	22	-02A			RW				2036		
8	✓	23	-03A			Influent				2057		
9	X	24	1501356C-01A	1739	✓	10"Hg - 14.9psi		3.02		2125		
10	✓	25	-02A	1737	✓	9.8"Hg - 14.9psi		2.99		2148		
11	✓	26	-01A	1739	✓	10"Hg - 14.9psi		3.02		2211		
12	✓	27	2299-203	NA	NA	NA		1.00		2233		
13	✓	28	2299-365R							2259		
14												
15											gA	2/6/15

Calculation check: File ID: 9020626 Compound: Oxygen Initials: gA

Sample Amt = $\frac{\text{Area Count Sample}}{\text{RF}}$ x Dilution Factor = $\frac{(198/260014)}{(32447/8563)}$ x (3.02) = 18.4

Reported Result = 18.4

Reviewed by/Date gA 2/6/15

Shipping/ Receiving Documents

Eurofins Air Toxics, Inc. Sample Receipt Confirmation Cover Page

Thank you for choosing Eurofins Air Toxics, Inc. (EATL). We have received your samples and have listed any Sample Receipt Descrepancies below.

In order to expedite analysis and reporting, please review the attached information for accuracy.

For corrections call: **Brian Whittaker at 916-985-1000**

EATL will proceed with the analysis as specified on the Chain of Custody (COC) and Sample Receipt Summary page.

Please note : The Sample Receipt Confirmation, including the total workorder charge, is subject to change upon secondary review. Our aim is to provide a confirmation to you in a timely manner. Sample Receipt Discrepancies, if any, may not include discrepancies regarding sample receipt pressure(s). Additionally, the COC will be provided with the final report.

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

(916) 985-1000 .FAX (916) 985-1020
Hours 6:30 A.M to 5:30 P.M. PST

eurofins | Air Toxics

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

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

Project Manager Terry Taylor
Collected by: (Print and Sign)
Company AMAI Email ttaylor@amaiconsult.com
Address 110 Corporate Plc City White Plains State NY Zip 10604
Phone 914-251-0400 Fax

Project Info:
P.O. #
Project #
Project Name Building 6 VI

Turn Around Time:
☐ Normal
☒ Rush 3days specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
01A	B6-4IA	3735	2/3/15	1341	See Below	30"	5"		
02A	B6-5IA	34222	2/3/15	1546	↓	30"	8"		
03A	B6-AA-1	34361	2/3/15	1535	↓	30"	6"		
04A	B6-3IA	35174	2/3/15	1600	↓	30"	5"		
05A	B6-3IAD	33658	2/3/15	1600	↓	30"	8.5		

Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
2/3/15 : 1621	2-5-15 1125
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time

Notes:
methane via ASTM D-1946.
Acetone, Benzene, Ethylbenzene, Isopropyl Alcohol, Methanol, MIBK, Toluene, xylene via TO-15.
Report to MDL.

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	FedEx	7728 0914 4775	NA	Good	Yes No None	1502053

Form 1293 rev.1

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SAMPLE RECEIPT SUMMARY

WORKORDER 1502053B

Client

Mr. Terry Taylor
Anderson Mulholland &
Associates, Inc.
110 Corporate Park Drive
White Plains, NY 10604

Phone

(914) 251-0400

Fax

(914) 251-1286

Sales Rep: N/A

Date Promised: 02/10/15 2:00 pm
Date Completed: 2/10/15
Date Received: 2/5/15
PO#:
Project#: Building 6 VI

Total $: $ 475.00
Logged By: MS

Fraction	Sample #	Analysis	Collected	Receipt Vac./Pres.	Amount$
01A	B6-4IA	Modified ASTM D-1946	2/3/2015	5.5 "Hg	$90.00
02A	B6-5IA	Modified ASTM D-1946	2/3/2015	6.9 "Hg	$90.00
03A	B6-AA-1	Modified ASTM D-1946	2/3/2015	4.5 "Hg	$90.00
04A	B6-3IA	Modified ASTM D-1946	2/3/2015	4.5 "Hg	$90.00
05A	B6-3IAD	Modified ASTM D-1946	2/3/2015	7.3 "Hg	$90.00
06A	Lab Blank	Modified ASTM D-1946	NA	NA	$0.00
07A	LCS	Modified ASTM D-1946	NA	NA	$0.00
07AA	LCSD	Modified ASTM D-1946	NA	NA	$0.00

Misc. ChargeseCVP (5) @ $5.00 each. $25.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: BMS/19256

BILL TO: Accounts Payable
Anderson Mulholland & Associates, Inc.
110 Corporate Park Drive
White Plains, NY 10604

Analysis Code: ASTM

REMARKS: A 50% surcharge is applied for a 72 hour turnaround time.

TERMS:

Reporting Method: Modified ASTM D-1946 (Sh)-CH4 only

Other Records

$$\text{Dilution Factor} = \frac{\text{Final Pressure}}{\text{Initial Vacuum}} = \frac{14.7\text{psi} + \text{Final Pressure (psi)}}{14.7\text{psi} - [\text{Init. Pressure ("Hg)})*(14.7\text{psi}/30\text{"Hg})]}$$

$$\text{Dilution Factor} = \frac{\text{Final Pressure}}{\text{Initial Pressure}} = \frac{14.7\text{psi} + \text{Final Pressure (psi)}}{14.7\text{psi} + \text{Initial Pressure (psi)}}$$

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
0.0	1.34	2.02
0.2	1.35	2.03
0.4	1.36	2.05
0.5	1.36	2.05
0.6	1.37	2.06
0.8	1.38	2.08
1.0	1.39	2.09
1.2	1.40	2.10
1.4	1.40	2.12
1.5	1.41	2.13
1.6	1.42	2.13
1.8	1.42	2.15
2.0	1.44	2.16
2.2	1.45	2.18
2.4	1.46	2.20
2.5	1.46	2.20
2.6	1.47	2.21
2.8	1.48	2.23
3.0	1.49	2.24
3.2	1.50	2.26
3.4	1.51	2.28
3.5	1.52	2.29
3.6	1.52	2.30
3.8	1.53	2.31
4.0	1.55	2.33
4.2	1.56	2.35
4.4	1.57	2.37
4.5	1.58	2.38
4.6	1.58	2.39
4.8	1.60	2.40
5.0	1.61	2.42
5.2	1.62	2.44
5.4	1.63	2.46
5.5	1.64	2.47
5.6	1.65	2.48
5.8	1.66	2.50
6.0	1.68	2.52
6.2	1.69	2.55
6.4	1.70	2.57
6.5	1.71	2.58
6.6	1.72	2.59
6.8	1.73	2.61
7.0	1.75	2.64
7.2	1.76	2.66
7.4	1.78	2.68
7.5	1.79	2.69
7.6	1.79	2.70

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
7.7	1.80	2.72
7.8	1.81	2.73
8.0	1.83	2.76
8.2	1.84	2.78
8.4	1.86	2.81
8.5	1.87	2.82
8.6	1.88	2.83
8.8	1.90	2.86
9.0	1.91	2.89
9.2	1.93	2.91
9.4	1.95	2.94
9.5	1.96	2.96
9.6	1.97	2.97
9.8	1.99	3.00
10.0	2.01	3.03
10.2	2.03	3.06
10.4	2.05	3.09
10.5	2.06	3.11
10.6	2.07	3.12
10.8	2.09	3.16
11.0	2.12	3.19
11.2	2.14	3.22
11.4	2.16	3.26
11.5	2.17	3.28
11.6	2.18	3.29
11.8	2.21	3.33
12.0	2.23	3.37
12.2	2.26	3.40
12.4	2.28	3.44
12.5	2.30	3.46
12.6	2.31	3.48
12.8	2.34	3.52
13.0	2.36	3.56
13.2	2.39	3.61
13.4	2.42	3.65
13.5	2.44	3.67
13.6	2.45	3.70
13.8	2.48	3.74
14.0	2.51	3.79
14.2	2.54	3.84
14.4	2.58	3.88
14.5	2.59	3.91
14.6	2.61	3.94
14.8	2.64	3.99
15.0	2.68	4.04
15.2	2.72	4.10
15.4	2.75	4.15

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
15.5	2.77	4.18
15.6	2.79	4.21
15.8	2.83	4.27
16.0	2.87	4.33
16.2	2.91	4.39
16.4	2.96	4.46
16.5	2.98	4.49
16.6	3.00	4.52
16.8	3.05	4.59
17.0	3.09	4.66
17.2	3.14	4.74
17.4	3.19	4.81
17.5	3.22	4.85
17.6	3.24	4.89
17.8	3.30	4.97
18.0	3.35	5.05
18.2	3.41	5.14
18.4	3.47	5.22
18.5	3.50	5.27
18.6	3.53	5.32
18.8	3.59	5.41
19.0	3.65	5.51
19.2	3.72	5.61
19.4	3.79	5.72
19.5	3.83	5.77
19.6	3.87	5.83
19.8	3.94	5.94
20.0	4.02	6.06
20.2	4.10	6.18
20.4	4.19	6.31
20.5	4.23	6.38
20.6	4.28	6.45
20.8	4.37	6.59
21.0	4.47	6.73
21.2	4.57	6.89
21.4	4.67	7.05
21.5	4.73	7.13
21.6	4.79	7.22
21.8	4.90	7.39
22.0	5.03	7.58
22.4	5.29	7.98

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
22.5	5.36	8.08
22.6	5.43	8.19
22.8	5.58	8.42
23.0	5.74	8.66
23.2	5.91	8.91
23.4	6.09	9.18
23.5	6.19	9.32
23.6	6.28	9.47
23.8	6.48	9.78
24.0	6.70	10.10
24.2	6.93	10.45
24.4	7.18	10.82
24.5	7.31	11.02
24.6	7.45	11.22
24.8	7.73	11.66
25.0	8.04	12.12
25.2	8.38	12.63
25.4	8.74	13.18
25.5	8.93	13.47
25.6	9.14	13.78
25.8	9.57	14.43
26.0	10.05	15.15
26.2	10.58	15.95
26.4	11.17	16.84
26.5	11.49	17.32
26.6	11.82	17.83
26.8	12.56	18.94
27.0	13.40	20.20
27.2	14.36	21.65
27.4	15.46	23.31
27.5	16.08	24.24
27.6	16.75	25.26
27.8	18.27	27.55
28.0	20.10	30.31
28.2	22.34	33.67
28.4	25.13	37.88
28.5	26.80	40.41
28.6	28.72	43.29
28.8	33.50	50.51
29.0	40.20	60.61

Compound List

Modified ASTM D-1946 (Sh)-CH4 only

CAS Number	Compound	Detection Limit %	Type
74-82-8	Methane	0.00010	

Eurofins Air Toxics, Inc.	Data Review Checklist			Release Date: 12/30/14
Workorder # 1502053B	Form F1.27	Revision #10	Revision date: 12/30/14	Page 1 of 2

S1	S2	S3	S4	D	Section 1 – Spec Out GC-9				
					Initials/Instrument/Date	S1: 2/2/6/15	S2:	S3:	S4:
	✓				Daily QC and ICAL met Criteria				
NA					Lumen QC and ICAL evaluation report initialed and in folder				
NA					Manual Integrations included and approved				
	✓				Chain of Custody verified for special comments (add comments below)				
NA					Non-standard Target sublist printed				

Profile, analyses, reporting, special notes and unusual circumstances:

A1	A2	A3	A4	D	Section 2 – Sample Analysis				
					Initials/Date	A1: 2/2/6/15	A2:	A3:	A4:
✓					Internal Standard/Surrogate Recoveries, Dilution Factors, Load Volumes, Initial/Final Pressures, and Canister #s Verified				
NA					a) Tedlar Bag IDs verified against COC b) Tedlar Bag ID confirmed with loading sequence/leg of instrument				
NA	✓				Manual Integrations/Bag or Can Dilution Forms/Re-pressurization Forms/Bag-Can Transfer Forms present (circle all that apply)				
	✓				12/24 Hr clock time & Hold Time met for all samples				
NA	✓				Re-analysis of sample(s) have been evaluated for comparability and/or samples have been checked for trends (Inf/Eff).				
	✓				All runs have been evaluated for potential carry-over (TPHg/non-Target/over-range compounds etc)				

Analytical and special notes:

D1	D2	D3	D4	T	3T	Section 3 – Target Data Reduction	Technical Review Needed? Circle one: Yes/No		T:	
						Initials/Instrument/Date UG GC9	D1: 2/10/15	D2:	D3:	D4:
NA						CAR # (if applicable)				
	✓					Spectra Verified (documentation of spectral defense included if applicable)				
NA						TICs resemble reference spectra/ TICs between sample dups. are consistent (if applicable)				
	✓					Lab Narrative is correct				
NA						TPH/NMOC calculations complete and included in folder				

Special notes:

A	3T	Section 4- Atlas Data Entry	Lumen verified and included in folder	Circle one: Yes/No
		Initials/Date: UG 2/10/15	3rd Tier: (needed only for DOD or per client request)	
NA		Sample Discrepancy Report (SDR) complete and approved (if applicable)		
	✓	Manually entered results are checked		
	✓	At least one result per sample is verified against Target quant sheets		
NA		Appropriate data qualifier flags are applied		
	✓	Final Invoice is correct/ Final PDF report, COC and EDD reviewed and correct		

Special Notes:

Note (1) *Please check all the appropriate boxes. Indicate "NA" for any statement that doesn't apply*
Note (2) 3rd Tier Report Reviewer and Write Up Reviewer must be separate individuals for DoD & Client Specific Projects

Workorder # :				Reason for Reissue:
W	T	3T	Q	
				Reissue Request form Present
				Client or QA or Lab contact present with reason for reissue
				Review all affected data
				Report header has correct R1, R2 etc
				The Lab Narrative clearly explains the reissue (Date, Reason and whether client requested)
				Date for Reissue in Report Header matches date in Lab Narrative
				Check Project Profile for correct reporting instructions (multiple clients, # hardcopies, etc)
				Corrective Action issued - #
				The reissued workorder has been approved by QA Manager or a Technical Director

Additional Comments:

Write Up (Initials/Date)	Tech Review (Initials/Date)	*3rd Tier Review ** 3rd Tier Report Review is for DoD & Client Specific projects only* (Initials/Date)	QA Review (Initials/Date)

Workorder # :				Reason for Reissue:
W	T	3T	Q	
				Reissue Request form Present
				Client or QA or Lab contact present with reason for reissue
				Review all affected data
				Report header has correct R1, R2 etc
				The Lab Narrative clearly explains the reissue (Date, Reason and whether client requested)
				Date for Reissue in Report Header matches date in Lab Narrative
				Check Project Profile for correct reporting instructions (multiple clients, # hardcopies, etc)
				Corrective Action issued - #
				The reissued workorder has been approved by QA Manager or a Technical Director

Additional Comments:

Write Up (Initials/Date)	Tech Review (Initials/Date)	*3rd Tier Review ** 3rd Tier Report Review is for DoD & Client Specific projects only* (Initials/Date)	QA Review (Initials/Date)

Note (1) *Please check all the appropriate boxes. Indicate "NA" for any statement that doesn't apply*
Note (2) 3rd Tier Report Reviewer and Write Up Reviewer must be separate individuals for DoD & Client Specific Projects

Not Applicable