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Electronic Comprehensive Validation Package (eCVP)

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COMPREHENSIVE VALIDATION PACKAGE

Modified ASTM D-1946

INVENTORY SHEET

Work Order #: 1506153C

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Comments:

Completed by:

Vera Belitsky	Vera Belitsky / Document Control	6/23/15
(Signature)	(Print Name & Title)	(Date)

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WORK ORDER #: 1506153C

Work Order Summary

CLIENT:	Mr. Terry Taylor Anderson Mulholland & Associates, Inc. 2700 Westchester Avenue Suite 417 Purchase, NY 10577	**BILL TO:**	Accounts Payable Anderson Mulholland & Associates, Inc. 2700 Westchester Avenue Suite 417 Purchase, NY 10577
PHONE:	(914) 251-0400	**P.O. #**	
FAX:		**PROJECT #**	BMS Humacao Building 6 Indoor Air
DATE RECEIVED:	06/09/2015	**CONTACT:**	Brian Whittaker
DATE COMPLETED:	06/17/2015		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	B6-1IA-2	Modified ASTM D-1946	5.1 "Hg	4.7 psi
02A	B6-2IA-2	Modified ASTM D-1946	5.7 "Hg	5.1 psi
03A	B6-2IAD-2	Modified ASTM D-1946	3.7 "Hg	5 psi
04A	B6-AA-3	Modified ASTM D-1946	6.3 "Hg	4.9 psi
05A	Lab Blank	Modified ASTM D-1946	NA	NA
06A	LCS	Modified ASTM D-1946	NA	NA
06AA	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY: Heidi Hayes

Technical Director

DATE: 06/17/15

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

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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# 1506153C

Four 6 Liter Summa Canister (100% Certified) samples were received on June 09, 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
B6-1IA-2	1506153C-01A	6/ 7/2015	6/ 9/2015	NA	8	6/15/2015	NA	Good
B6-2IA-2	1506153C-02A	6/ 7/2015	6/ 9/2015	NA	8	6/15/2015	NA	Good
B6-2IAD-2	1506153C-03A	6/ 7/2015	6/ 9/2015	NA	8	6/15/2015	NA	Good
B6-AA-3	1506153C-04A	6/ 7/2015	6/ 9/2015	NA	8	6/15/2015	NA	Good
Lab Blank	1506153C-05A	NA	NA	NA	NA	6/15/2015	NA	Good
LCS	1506153C-06A	NA	NA	NA	NA	6/15/2015	NA	Good
LCSD	1506153C-06AA	NA	NA	NA	NA	6/15/2015	NA	Good

Sample Results and Raw Data

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

Client Sample ID: B6-1IA-2

Lab ID#: 1506153C-01A

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

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Client Sample ID: B6-1IA-2

Lab ID#: 1506153C-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9061513**	**Date of Collection:**	**6/7/15 6:04:00 PM**
Dil. Factor:	**1.59**	**Date of Analysis:**	**6/15/15 03:49 PM**

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

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

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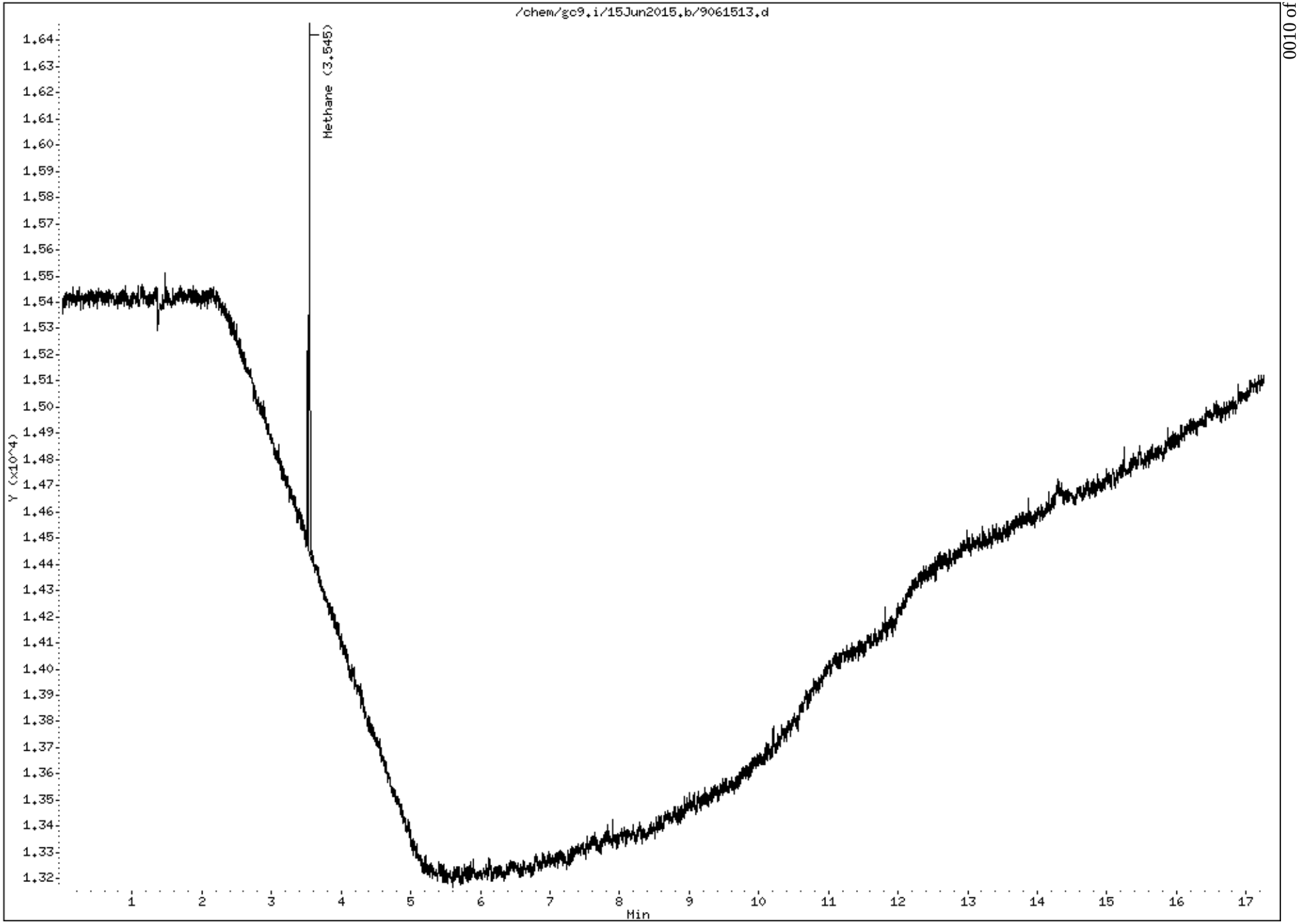
Modified ASTM D-1945/1946

Data file : /chem/gc9.i/15Jun2015.b/9061513.d
Lab Smp Id: 1506153C-01A
Inj Date : 15-JUN-2015 15:49
Operator : gd Inst ID: gc9.i
Smp Info : 1.0ml,33902
Misc Info : 5.1"Hg->4.7psi
Comment : GC/FID
Method : /chem/gc9.i/15Jun2015.b/915n0515.m
Meth Date : 17-Jun-2015 13:05 gmash Quant Type: ESTD
Cal Date : 15-MAY-2015 18:52 Cal File: 9051514.d
Als bottle: 1
Dil Factor: 1.59000
Integrator: HP Genie Compound Sublist: ch4.sub
Target Version: 3.50
Processing Host: eeyore

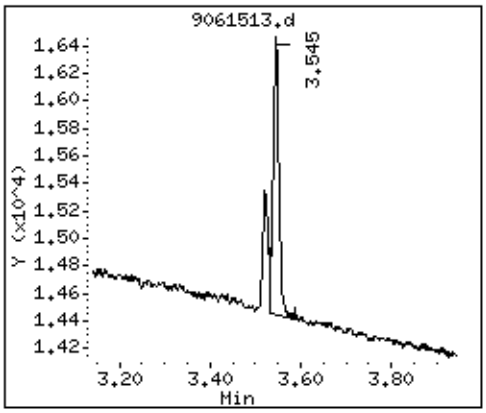
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (%)	FINAL (%)
2 Methane	3.545	3.544	0.001	18443	0.000117	0.000186


/chem/gc9.i/15Jun2015.b/9061513.d
Methane (3.545)
Y (x10^4)
1.64
1.63
1.62
1.61
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
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
Min

2 Methane


9061513.d
3.545
1.64
1.62
1.60
1.58
1.56
1.54
1.52
1.50
1.48
1.46
1.44
1.42
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: B6-2IA-2

Lab ID#: 1506153C-02A

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00017	0.00020

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Client Sample ID: B6-2IA-2

Lab ID#: 1506153C-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9061514**	**Date of Collection:**	**6/7/15 5:41:00 PM**
Dil. Factor:	**1.66**	**Date of Analysis:**	**6/15/15 04:11 PM**

Compound	**Rpt. Limit (%)**	**Amount (%)**
Methane	0.00017	0.00020

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

Eurofins Air Toxics Inc.

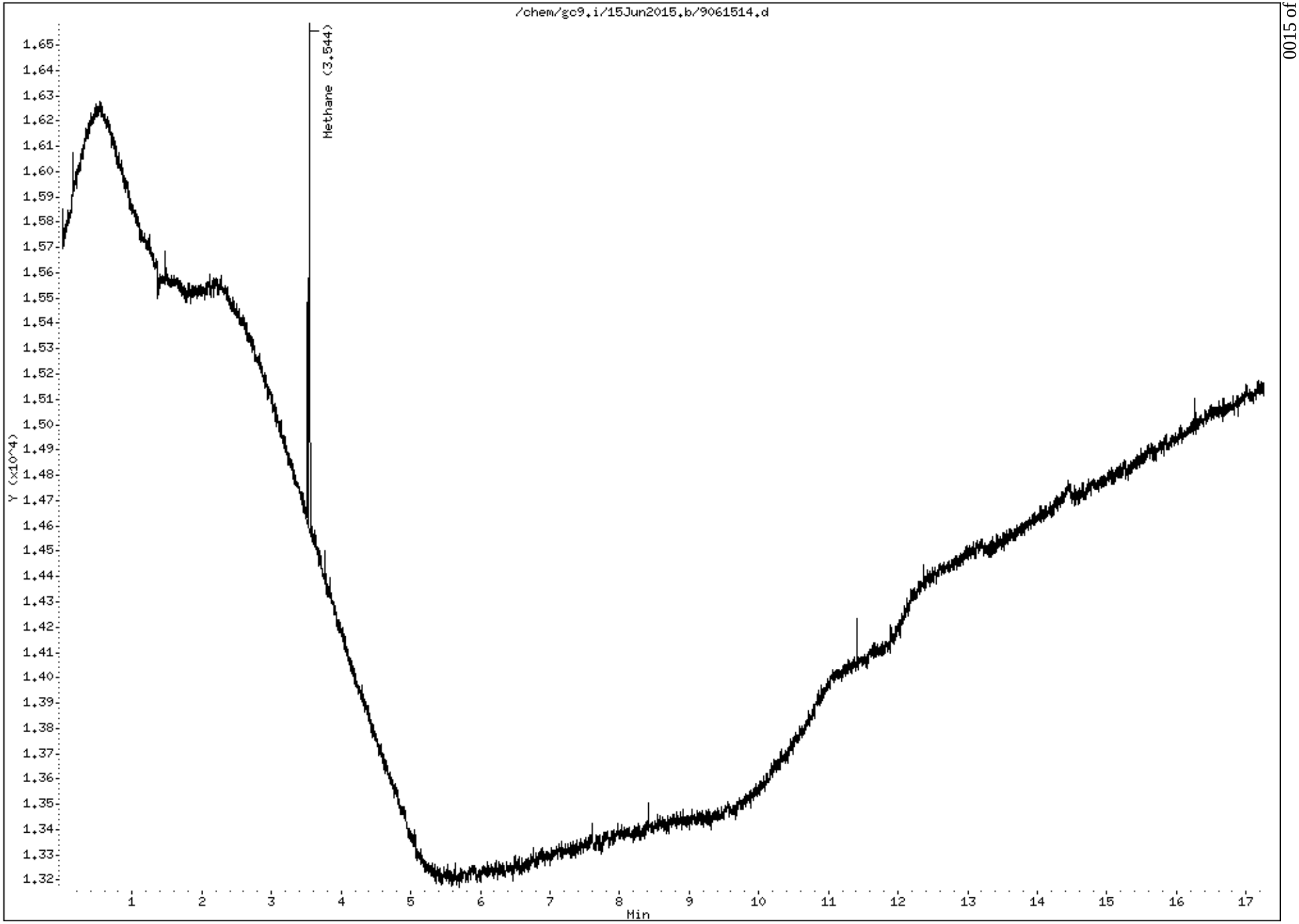
Modified ASTM D-1945/1946

Data file : /chem/gc9.i/15Jun2015.b/9061514.d
Lab Smp Id: 1506153C-02A
Inj Date : 15-JUN-2015 16:11
Operator : gd Inst ID: gc9.i
Smp Info : 1.0ml,6L0054
Misc Info : 5.7"Hg->5.1psi
Comment : GC/FID
Method : /chem/gc9.i/15Jun2015.b/915n0515.m
Meth Date : 17-Jun-2015 13:05 gmash Quant Type: ESTD
Cal Date : 15-MAY-2015 18:52 Cal File: 9051514.d
Als bottle: 1
Dil Factor: 1.66000
Integrator: HP Genie Compound Sublist: ch4.sub
Target Version: 3.50
Processing Host: eeyore

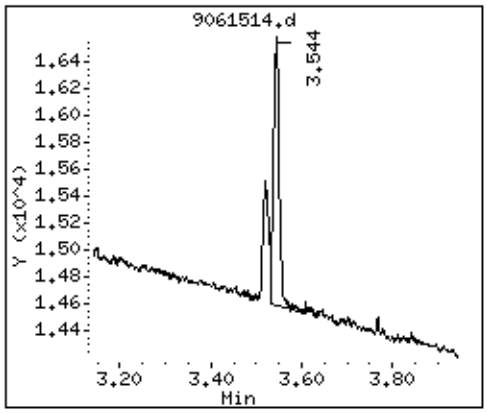
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (%)	FINAL (%)
2 Methane	3.544	3.544	0.000	18842	0.000119	0.000198


/chem/gc9.i/15Jun2015.b/9061514.d
Methane (3.544)
Y (x10^4)
1.65
1.64
1.63
1.62
1.61
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
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
Min

2 Methane


9061514.d
3.544
1.64
1.62
1.60
1.58
1.56
1.54
1.52
1.50
1.48
1.46
1.44
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: B6-2IAD-2

Lab ID#: 1506153C-03A

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00015	0.00019

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Client Sample ID: B6-2IAD-2

Lab ID#: 1506153C-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9061515**	**Date of Collection:**	**6/7/15 5:40:00 PM**
Dil. Factor:	**1.53**	**Date of Analysis:**	**6/15/15 04:40 PM**

Compound	**Rpt. Limit (%)**	**Amount (%)**
Methane	0.00015	0.00019

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

Eurofins Air Toxics Inc.

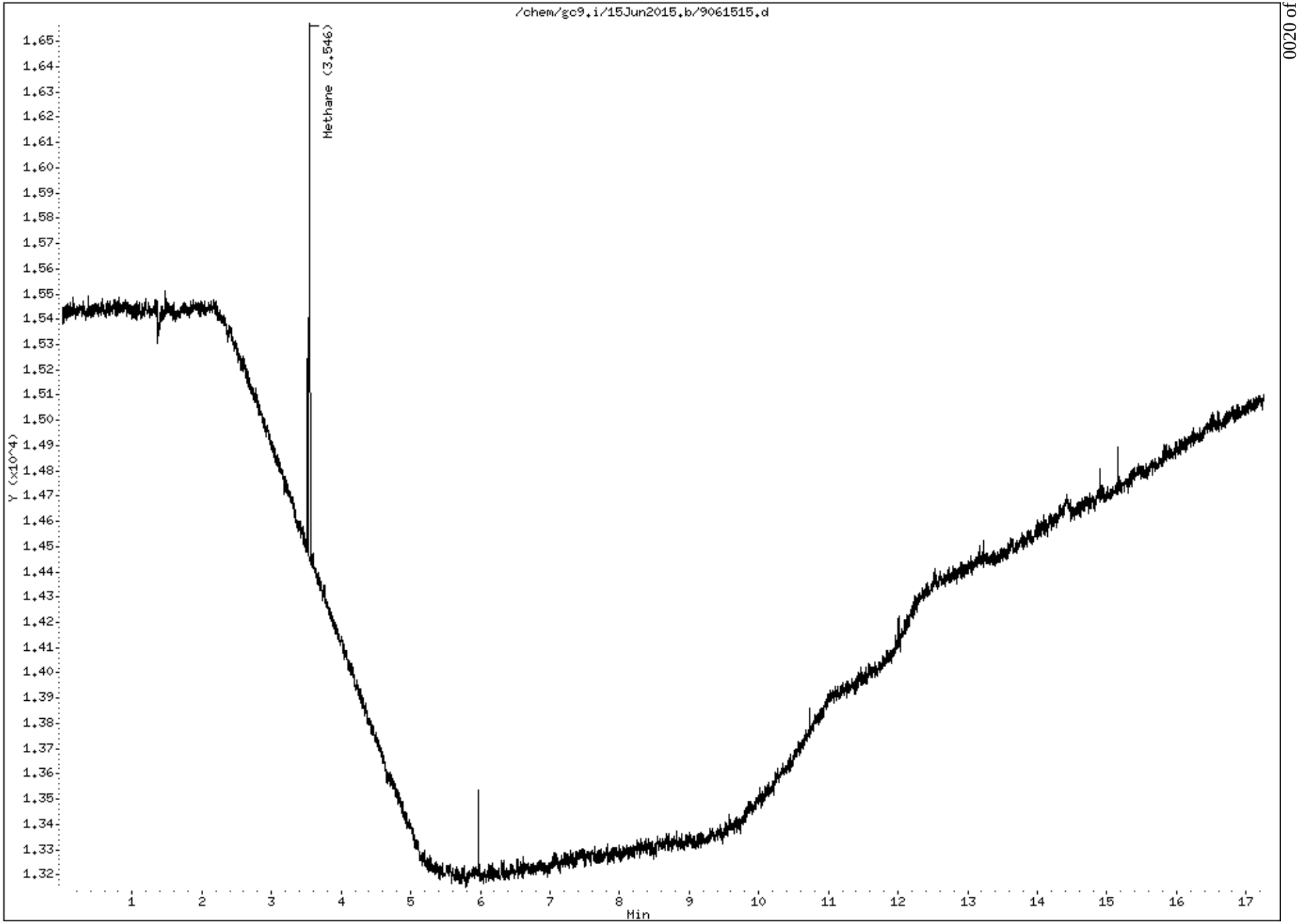
Modified ASTM D-1945/1946

Data file : /chem/gc9.i/15Jun2015.b/9061515.d
Lab Smp Id: 1506153C-03A
Inj Date : 15-JUN-2015 16:40
Operator : gd Inst ID: gc9.i
Smp Info : 1.0ml,23925
Misc Info : 3.7"Hg->5psi
Comment : GC/FID
Method : /chem/gc9.i/15Jun2015.b/915n0515.m
Meth Date : 17-Jun-2015 13:05 gmash Quant Type: ESTD
Cal Date : 15-MAY-2015 18:52 Cal File: 9051514.d
Als bottle: 1
Dil Factor: 1.53000
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	3.546	3.544	0.002	19688	0.000125	0.000191


/chem/gc9.i/15Jun2015.b/9061515.d
Methane (3.546)
Y (x10^4)
1.65
1.64
1.63
1.62
1.61
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
2
3
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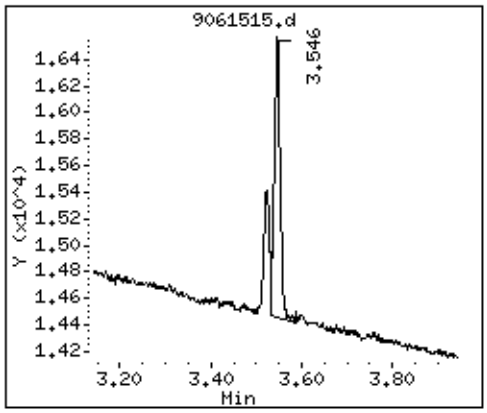
5
6
7
8
9
10
11
12
13
14
15
16
17
Min

2 Methane


9061515.d
3.546
1.64
1.62
1.60
1.58
1.56
1.54
1.52
1.50
1.48
1.46
1.44
1.42
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-AA-3

Lab ID#: 1506153C-04A

Compound	Rpt. Limit (%)	Amount (%)
Methane	0.00017	0.00019

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Client Sample ID: B6-AA-3

Lab ID#: 1506153C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9061516**	**Date of Collection:**	**6/7/15 5:49:00 PM**
Dil. Factor:	**1.69**	**Date of Analysis:**	**6/15/15 05:18 PM**

Compound	**Rpt. Limit (%)**	**Amount (%)**
Methane	0.00017	0.00019

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

Eurofins Air Toxics Inc.

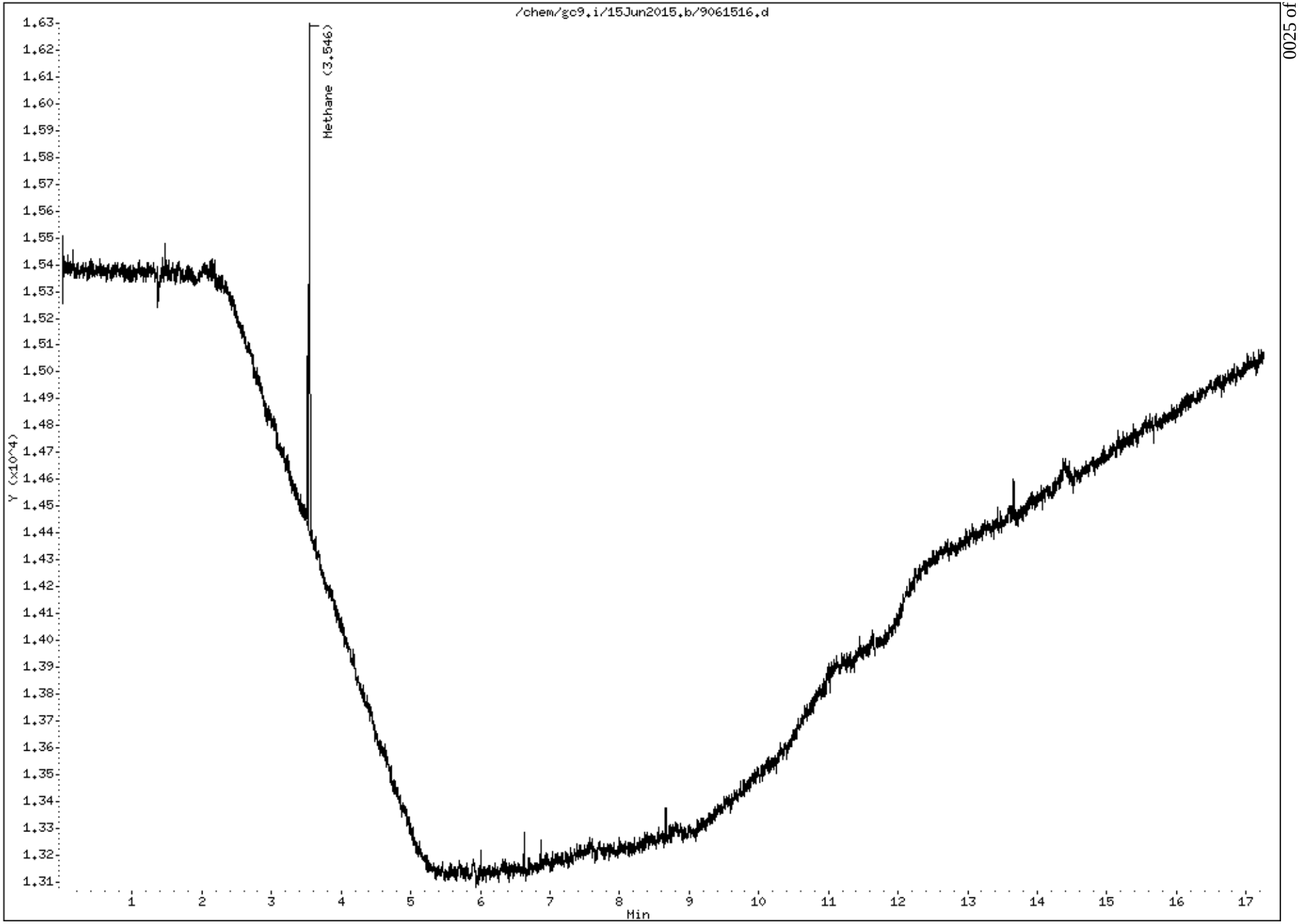
Modified ASTM D-1945/1946

Data file : /chem/gc9.i/15Jun2015.b/9061516.d
Lab Smp Id: 1506153C-04A
Inj Date : 15-JUN-2015 17:18
Operator : gd Inst ID: gc9.i
Smp Info : 1.0ml,22509
Misc Info : 6.3"Hg->4.9psi
Comment : GC/FID
Method : /chem/gc9.i/15Jun2015.b/915n0515.m
Meth Date : 17-Jun-2015 13:05 gmash Quant Type: ESTD
Cal Date : 15-MAY-2015 18:52 Cal File: 9051514.d
Als bottle: 1
Dil Factor: 1.69000
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	3.546	3.544	0.002	17645	0.000112	0.000189


/chem/gc9.i/15Jun2015.b/9061516.d
Methane (3.546)
Y (x10^4)
1.63
1.62
1.61
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
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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
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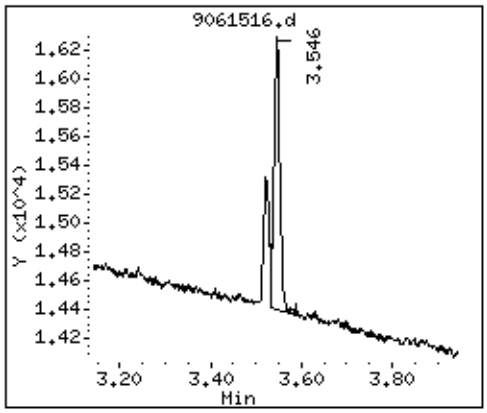
11
12
13
14
15
16
17
Min

2 Methane


9061516.d
3.546
1.62
1.60
1.58
1.56
1.54
1.52
1.50
1.48
1.46
1.44
1.42
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#: 1506153C-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9061505**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/15/15 09:24 AM**	

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

Container Type: NA - Not Applicable

Eurofins Air Toxics Inc.

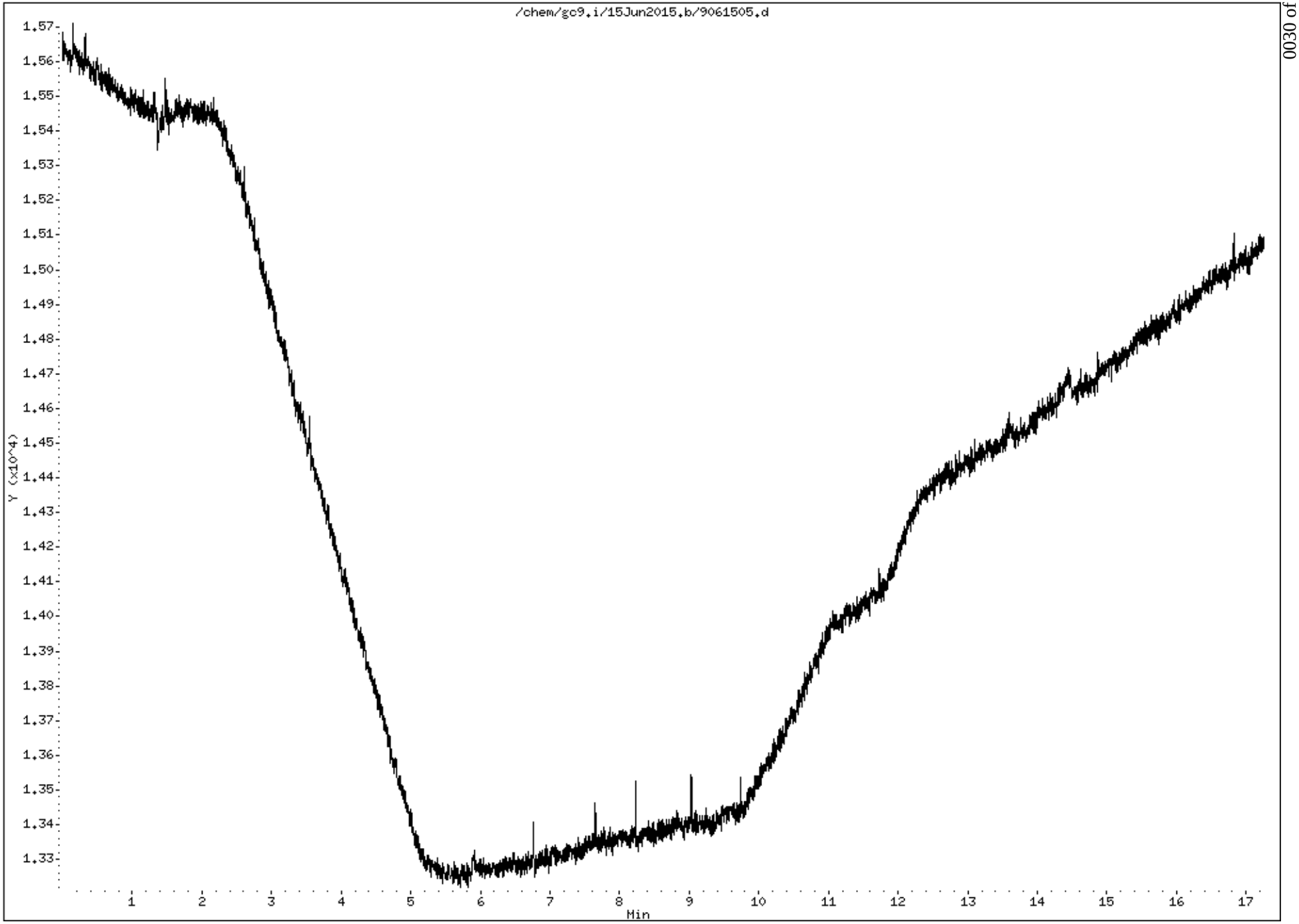
Modified ASTM D-1945/1946

Data file : /var/chem/gc9.i/15Jun2015.b/9061505.d
Lab Smp Id: He Lab Blank Client Smp ID: Lab Blank
Inj Date : 15-JUN-2015 09:24
Operator : gm Inst ID: gc9.i
Smp Info : 1.0ml,33977;He Lab Blank;Lab Blank
Misc Info : Lab Blank
Comment : GC/FID
Method : /chem/gc9.i/15Jun2015.b/915n0515.m
Meth Date : 15-Jun-2015 08:19 gmash Quant Type: ESTD
Cal Date : 15-MAY-2015 18:52 Cal File: 9051514.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: ngas.sub
Target Version: 3.50
Processing Host: eeyore

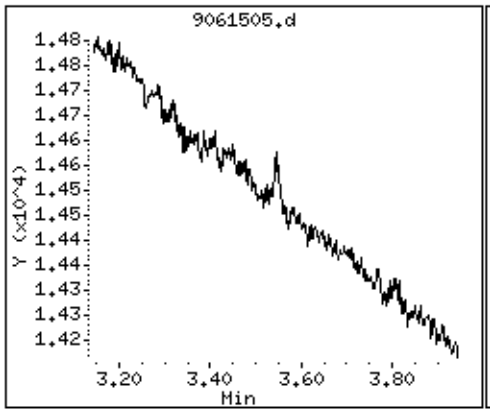
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

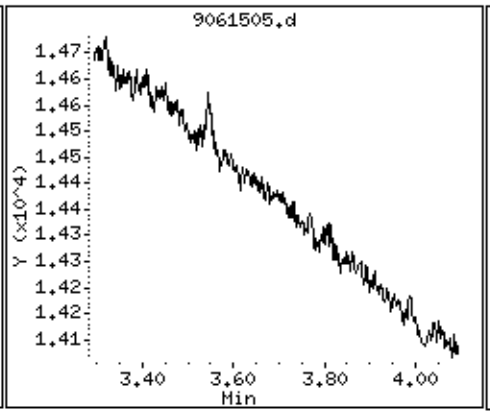
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (%)	FINAL (%)
	2 Methane		Compound Not Detected.				
	3 ethane		Compound Not Detected.				
	4 ethene		Compound Not Detected.				
	5 propane		Compound Not Detected.				
	7 acetylene		Compound Not Detected.				
	8 iso-butane		Compound Not Detected.				
	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/15Jun2015.b/9061505.d
Y (x10^4)
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
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
Min

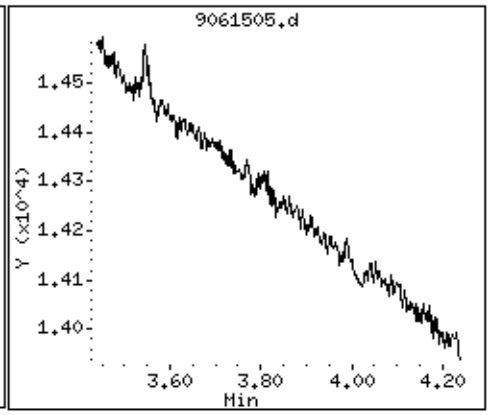
2 Methane (Undetected)



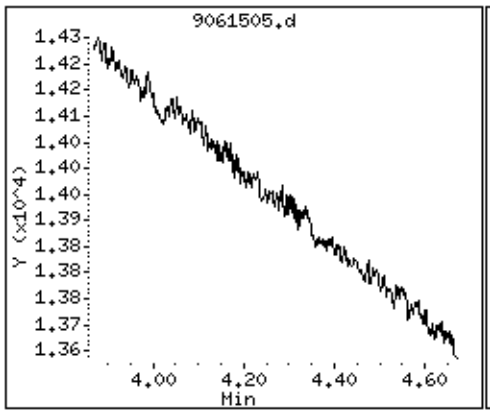
3 ethane (Undetected)



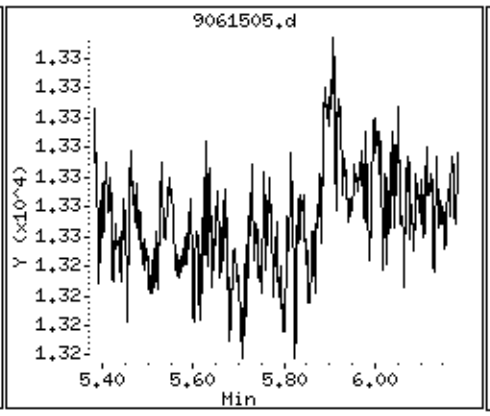
4 ethene (Undetected)



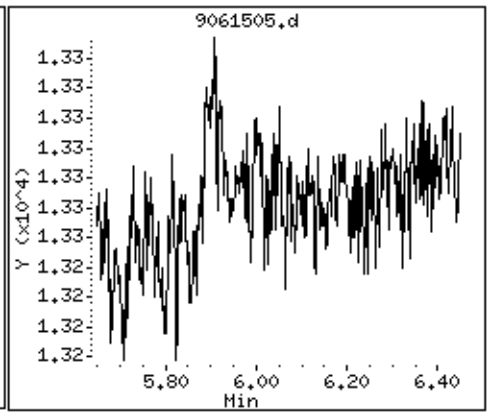
5 propane (Undetected)



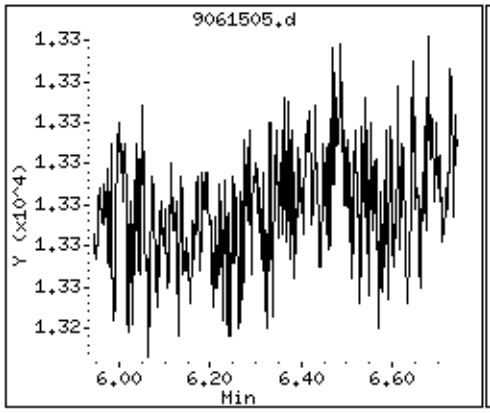
7 acetylene (Undetected)



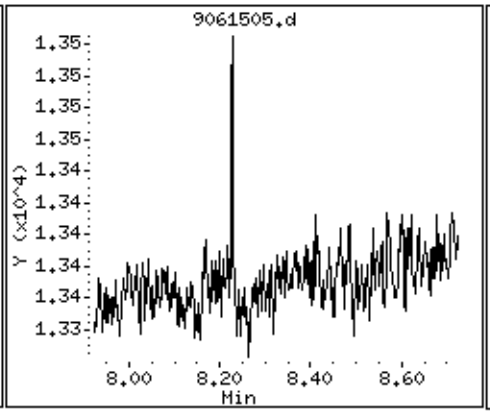
8 iso-butane (Undetected)



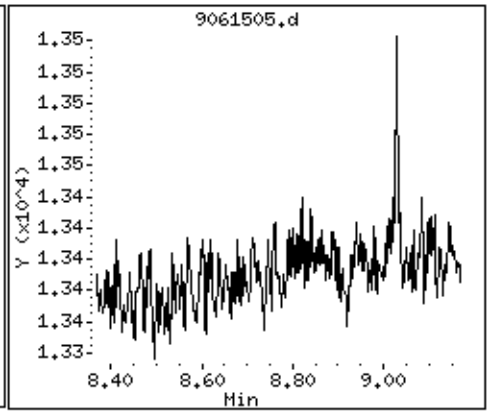
10 n-butane (Undetected)



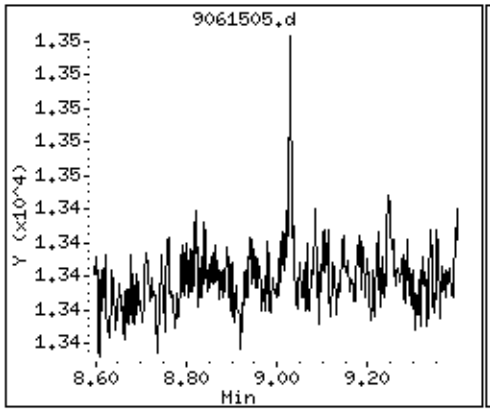
15 neo-pentane (Undetected



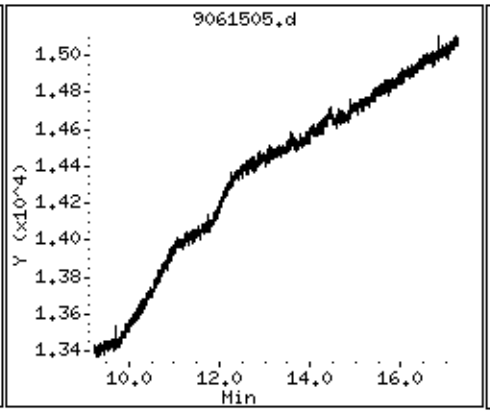
16 isopentane (Undetected)



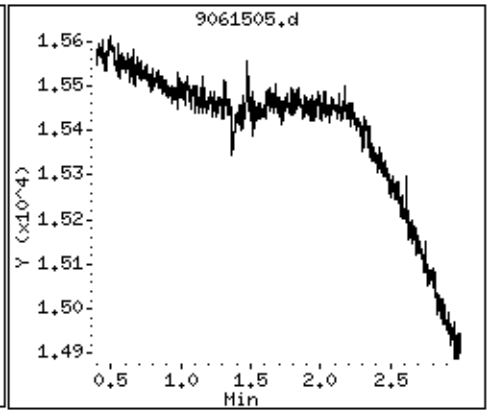
17 pentane (Undetected)



S 22 c6-c7 (Undetected)



S 36 c8+ (Undetected)



SAMPLE RESULTS/SAMPLE RESULTS DUPLICATE

Lab Name: Air Toxics Ltd.

Lab File ID: 9061526.d & 9061502.d

Lab Sample ID: &

Dilution: 1.00 & 1.00

Client Sample ID: LCS & LCSD

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

CAS Number	Compound	Original Amount	Original Flags	Duplicate Amount	Duplicate Flags	RPD	Result Less Than 5X RL
74-82-8	Methane	100		95		5.1	

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 : 15-MAY-2015 12:51
End Cal Date : 15-MAY-2015 18:52
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem/gc9.i/15May2015.b/915n0515.m
Cal Date : 16-May-2015 12:38 lyohanne
Curve Type : Average

Calibration File Names:
Level 1: /chem/gc9.i/15May2015.b/9051503.d
Level 2: /chem/gc9.i/15May2015.b/9051504.d
Level 3: /chem/gc9.i/15May2015.b/9051505.d
Level 4: /chem/gc9.i/15May2015.b/9051506.d
Level 5: /chem/gc9.i/15May2015.b/9051507.d
Level 6: /chem/gc9.i/15May2015.b/9051508.d
Level 7: /chem/gc9.i/15May2015.b/9051514.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	164810000	159890348	151118766	155320421	158709273	158081647	155918160	157692659	2.699
3 ethane	+++++	302012000	285747705	297093182	305122601	307176253	317570545	302453714	3.518
4 ethene	+++++	293982000	279453785	290093235	297946391	300328521	304051500	294309238	2.974
5 propane	+++++	457871000	433210180	449087075	461135708	465155771	487110214	458928325	3.895
7 acetylene	+++++	387929412	370678235	386958990	398848544	405464495	+++++	389975935	3.403
8 iso-butane	+++++	596966337	573390079	595382770	611561383	620214275	+++++	599502969	2.983
10 n-butane	+++++	600207000	570672000	594217624	610264855	621071198	675959724	612065400	5.818

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-2015 12:51
End Cal Date : 15-MAY-2015 18:52
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem/gc9.i/15May2015.b/915n0515.m
Cal Date : 16-May-2015 12:38 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	+++++ +++++	799465714	758080645	786586360	807005553	820634223		794354499	2.988
16 isopentane	+++++	750233654	709626104	737864772	754142183	772356939	964900956	781520768	11.799
17 pentane	+++++ +++++	757189320	715799421	746931855	761422134	783594522		752987450	3.284
39 Hexane	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
40 Heptane	+++++ +++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
S 22 c6-c7	+++++ +++++	984233019	928655347	999998401	993424230	1.062e+09		993638785	4.776
M 37 C6+ Hydrocarbons	+++++ +++++	+++++	+++++	+++++	+++++	+++++		993638785	+++++
S 36 c8+	+++++ +++++	+++++	+++++	+++++	+++++	+++++		993638785	+++++

Calibration History

Method : /chem/gc9.i/15May2015.b/915n0515.m
Start Cal Date: 15-MAY-2015 12:51
End Cal Date : 15-MAY-2015 18:52

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 0.00000		
15-MAY-2015 12:51	ch4	/chem/gc9.i/15May2015.b/9051503.d
Cal Level: 2 , Cal Amount: 0.00000		
15-MAY-2015 13:16	ngas	/chem/gc9.i/15May2015.b/9051504.d
Cal Level: 3 , Cal Amount: 0.00000		
15-MAY-2015 13:39	ngas	/chem/gc9.i/15May2015.b/9051505.d
Cal Level: 4 , Cal Amount: 0.00000		
15-MAY-2015 14:15	ngas	/chem/gc9.i/15May2015.b/9051506.d
Cal Level: 5 , Cal Amount: 0.00000		
15-MAY-2015 14:46	ngas	/chem/gc9.i/15May2015.b/9051507.d
Cal Level: 6 , Cal Amount: 0.00000		
15-MAY-2015 15:08	ngas	/chem/gc9.i/15May2015.b/9051508.d
Cal Level: 7 , Cal Amount: 0.00000		
15-MAY-2015 18:52	ch4	/chem/gc9.i/15May2015.b/9051514.d
15-MAY-2015 18:26	isopentane	/chem/gc9.i/15May2015.b/9051513.d
15-MAY-2015 17:07	Butane	/chem/gc9.i/15May2015.b/9051512.d
15-MAY-2015 16:39	propane	/chem/gc9.i/15May2015.b/9051511.d
15-MAY-2015 15:59	Ethene	/chem/gc9.i/15May2015.b/9051510.d
15-MAY-2015 15:35	Ethane	/chem/gc9.i/15May2015.b/9051509.d

```
+------------------+-----------------+----------------------------------------+


Continuing Calibration
Ccal Level Mode: GLOBAL LEVEL 8
+------------------+-----------------+----------------------------------------+
| Ccal Level: 8 , Ccal Amount: 0.00                                            |
+==============================================================================+
|15-MAY-2015 15:08 |ngas             |/chem/gc9.i/15May2015.b/9051508a.d      |
+------------------+-----------------+----------------------------------------+
```

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-2015 12:51
End Cal Date : 15-MAY-2015 18:52
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem/gc9.i/15May2015.b/915n0515.m
Cal Date : 16-May-2015 12:38 lyohanne
Curve Type : Average

gm 5/18/15

Calibration File Names:
Level 1: /chem/gc9.i/15May2015.b/9051503.d
Level 2: /chem/gc9.i/15May2015.b/9051504.d
Level 3: /chem/gc9.i/15May2015.b/9051505.d
Level 4: /chem/gc9.i/15May2015.b/9051506.d
Level 5: /chem/gc9.i/15May2015.b/9051507.d
Level 6: /chem/gc9.i/15May2015.b/9051508.d
Level 7: /chem/gc9.i/15May2015.b/9051514.d

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

ly 5/16/15

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	RRF	% RSD
	0.000e+00 Level 7							
2 Methane	164810000	159890348	151118766	155320421	158709273	158081647		
	155918160						157692659	2.699
3 ethane	+++++	302012000	285747705	297093182	305122601	307176253		
	317570545						302453714	3.518
4 ethene	+++++	293982000	279453785	290093235	297946391	300328521		
	304051500						294309238	2.974
5 propane	+++++	457871000	433210180	449087075	461135708	465155771		
	487110214						458928325	3.895
7 acetylene	+++++	387929412	370678235	386958990	398848544	405464495		
	+++++						389975935	3.403
8 iso-butane	+++++	596966337	573390079	595382770	611561383	620214275		
	+++++						599502969	2.983
10 n-butane	+++++	600207000	570672000	594217624	610264855	621071198		
	675959724						612065400	5.818

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-2015 12:51
End Cal Date : 15-MAY-2015 18:52
Quant Method : ESTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem/gc9.i/15May2015.b/915n0515.m
Cal Date : 16-May-2015 12:38 lyohanne
Curve Type : Average

Compound	0.000e+00 Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	RRF	% RSD
	0.000e+00 Level 7							
15 neo-pentane	+++++	799465714	758080645	786586360	807005553	820634223		
	+++++						794354499	2.988
16 isopentane	+++++	750233654	709626104	737864772	754142183	772356939		
	964900956						781520768	11.799
17 pentane	+++++	757189320	715799421	746931855	761422134	783594522		
	+++++						752987450	3.284
39 Hexane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++						+++++	+++++
40 Heptane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++						+++++	+++++
S 22 c6-c7	+++++	984233019	928655347	999998401	993424230	1.062e+09		
	+++++						993638785	4.776
M 37 C6+ Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++						993638785	+++++
S 36 c8+	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++						993638785	+++++

Initial Calibration Narrative

A seven point calibration curve was analyzed on May 15, 2015, on instrument GC-9. The calibration curve features the following:

1.) ICAL name: 915n0515.m
2.) Units: %
3.) The ICAL is based on 1.0 mL load
4.) The second source file number is 9051516
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	0.02010	0.10050	1.01500	2.53750	10.150	99.000
Ethane	NA	0.00100	0.00501	0.05060	0.12650	0.5060	24.975
Ethene	NA	0.00100	0.00502	0.05070	0.12675	0.5070	24.875
Acetylene	NA	0.00102	0.00510	0.05150	0.12875	0.5150	NA
Propane	NA	0.00100	0.00501	0.05060	0.12650	0.5060	19.900
Iso-Butane	NA	0.00101	0.00504	0.05090	0.12725	0.5090	NA
n-Butane	NA	0.00100	0.00500	0.05050	0.12625	0.5050	9.990
Neopentane	NA	0.00105	0.00527	0.05330	0.13325	0.5330	NA
Iso-Pentane	NA	0.00104	0.00521	0.05260	0.13150	0.5260	4.950
Pentane	NA	0.00103	0.00518	0.05230	0.13075	0.5230	NA
C6-C7	NA	0.00106	0.00533	0.05380	0.13450	0.5380	NA

Eurofins Air Toxics, Inc.
Method: **ASTM D-1945/1946**

GC-9

Logbook # 2723
Leak Test Cy

	USE	File #	Sample Name/Client ID	Can #	Verified Pressure >2psi	Pressure	Amt	DF	Date	Time	Review Init.	Comments
1	✓	9051502	He System Blank	33977	NA	NA	1.0ml	1.00	5/15/15	1220	Cy	
2	✓	03	2516-166	13670		CH4				1251	MB	Level-1
3	✓	04	2516-142	23882		C1-C6				1316	MB	-2
4	✓	05	2516-165	5580						1339	Cy	-3
5	✓	06	2299-1048A Ngas	NA			(10:100) 1.0ml			1415		-4
6	✓	07					(25:100) 1.0ml			1446		-5
7	✓	08					1.0ml			1508	MB	-6
8	✓	09	1476-438			Ethane 99.9%	(12:48) 1.0ml			1535	MB	-7
9	✓	10	1476-437			Ethene 99.5%	(12:48) 1.0ml			1559	MB	-7
10	✓	11	843-471			Propane 99.5%	(10:50) 1.0ml			1639	MB	-7
11	✓	12	1476-897			Butane 99.9%	(5:50) 1.0ml			1707	MB	-7
12	✓	13	1476-898			Isopentane 99%	(5:100) 1.0ml			1826	MB	
13	✓	14	1476-2859			methane 99%	1.0ml			1852	MB	
14	✓	15	System Blank	33977		N/A	1.0ml			1933	MB	
15	✓	16	2299-1160 Ngas	N/A						2003	MB	ICV

Calculation check : File ID: 9051516 Compound: methane Initials: MB

Sample Amt= Area Count Sample x / RF Dilution Factor = (153965883) x / (158250862) (1.00) = 9.73

Reported Result= 9.73

Reviewed by/Date MB 5/15/18

Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc9.i/15May2015.b/9051516.d
Lab Smp Id: 2299-1160 Ngas Client Smp ID: LCS
Inj Date : 15-MAY-2015 20:03
Operator : mjs Inst ID: gc9.i
Smp Info : 1.0ml,
Misc Info : LCS
Comment : GC/FID
Method : /chem/gc9.i/15May2015.b/915n0515.m
Meth Date : 16-May-2015 12:11 lyohanne Quant Type: ESTD
Cal Date : 15-MAY-2015 18:52 Cal File: 9051514.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

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (%)	FINAL (%)
2 Methane	3.545	3.544	0.001	1539658831	9.76367	9.76
3 ethane	3.695	3.693	0.002	146887575	0.48565	0.486
4 ethene	3.837	3.836	0.001	146268517	0.49699	0.497
5 propane	4.263	4.262	0.001	228743043	0.49843	0.498
7 acetylene	5.748	5.746	0.002	196816971	0.50469	0.505(A)
8 iso-butane	6.012	6.011	0.001	304468643	0.50787	0.508(A)
10 n-butane	6.305	6.304	0.001	302122625	0.49361	0.494
15 neo-pentane	8.282	8.279	0.003	411642493	0.51821	0.518(A)
16 isopentane	8.729	8.726	0.003	375350737	0.48028	0.480
17 pentane	8.957	8.954	0.003	381854906	0.50712	0.507
M 37 C6+ Hydrocarbons				525312641	0.52868	0.529
S 22 c6-c7	9.250-17.250			524692610	0.52805	0.528
S 36 c8+	0.400-3.000			620031	0.000624	0.000624(a)

QC Flag Legend

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

Report Date: 16-May-2015 12:35

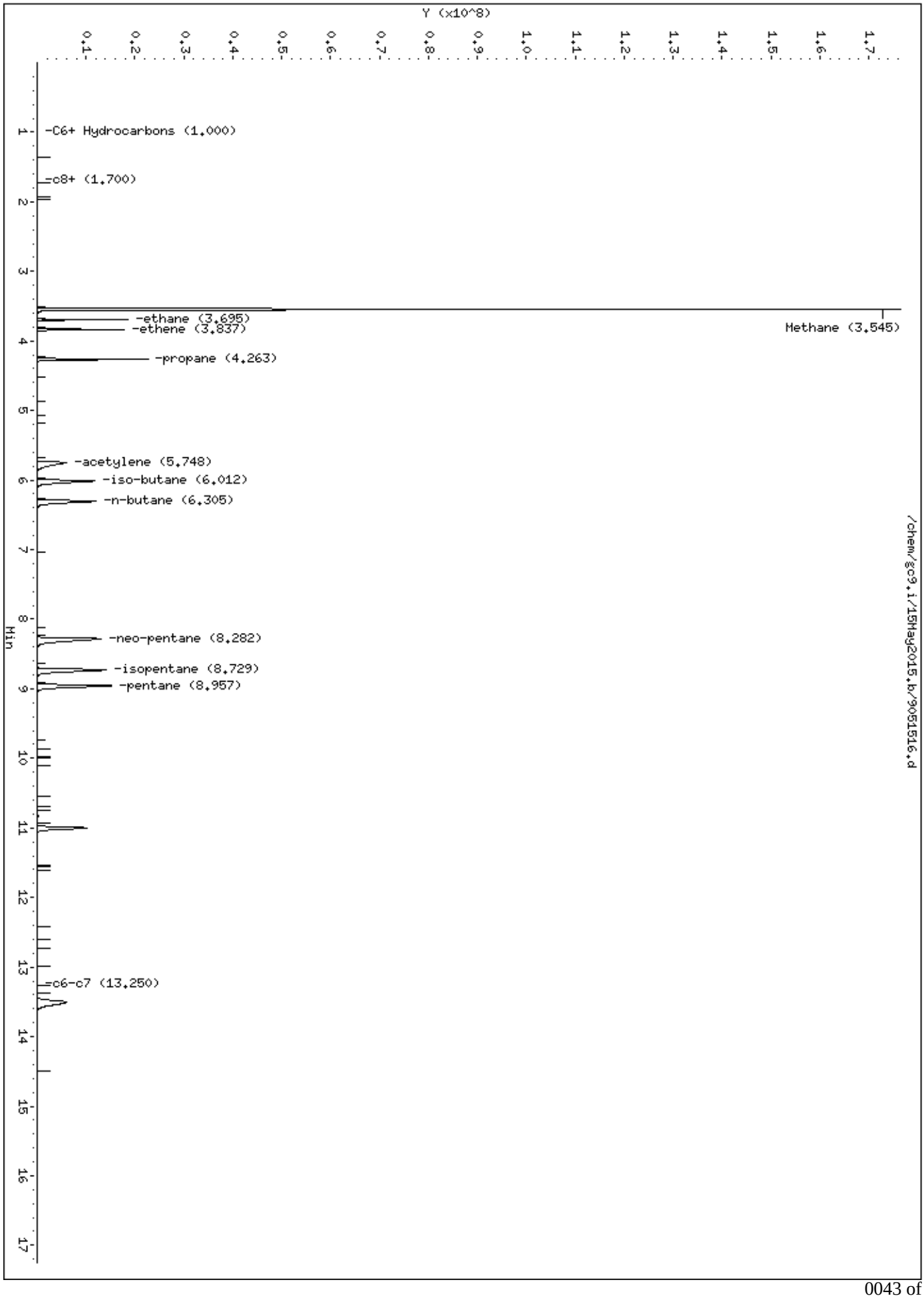
Eurofins Air Toxics Inc.

RECOVERY REPORT

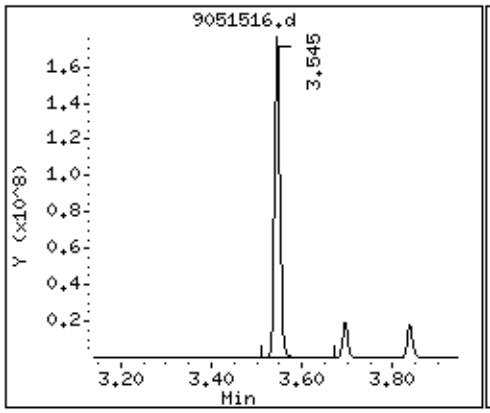
Client Name:
Sample Matrix: GAS
Lab Smp Id: 2299-1160 Ngas
Level: LOW
Data Type: GC DATA
SpikeList File: 2299-1160.spk
Sublist File: ngas.sub
Method File: /chem/gc9.i/15May2015.b/915n0515.m
Misc Info: LCS

Client SDG: 15May2015
Fraction: Atm Gas
Client Smp ID: LCS
Operator: mjs
SampleType: LCS
Quant Type: ESTD

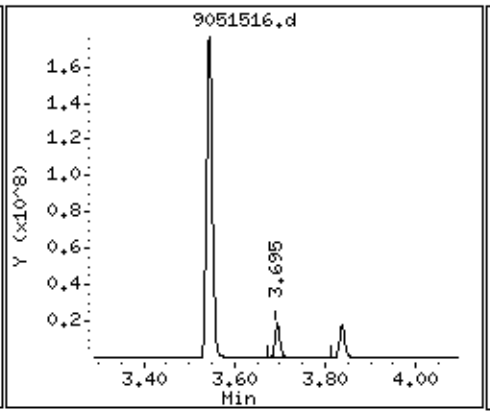
SPIKE COMPOUND	CONC ADDED %	CONC RECOVERED %	% RECOVERED	LIMITS
2 Methane	9.96	9.76	98.03	85-115
3 ethane	0.501	0.486	96.94	85-115
4 ethene	0.507	0.497	98.03	85-115
5 propane	0.500	0.498	99.69	85-115
7 acetylene	0.501	0.505	100.74	85-115
8 iso-butane	0.501	0.508	101.37	85-115
10 n-butane	0.495	0.494	99.72	85-115
15 neo-pentane	0.512	0.518	101.21	85-115
16 isopentane	0.505	0.480	95.11	85-115
17 pentane	0.507	0.507	100.02	85-115
M 37 C6+ Hydrocarbons	0.524	0.529	100.89	85-115


Data File: /chem/gc9.i/15May2015.b/9051516.d
Page 1
/chem/gc9.i/15May2015.b/9051516.d
Y (x10^8)
0.1
0.2
0.3
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
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
-C6+ Hydrocarbons (1.000)
=c8+ (1.700)
-ethane (3.695)
-ethene (3.837)
Methane (3.545)
-propane (4.263)
-acetylene (5.748)
-iso-butane (6.012)
-n-butane (6.305)
-neo-pentane (8.282)
-isopentane (8.729)
-pentane (8.957)
=c6-c7 (13.250)

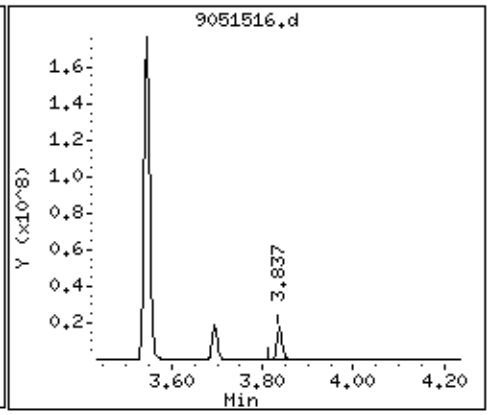
2 Methane



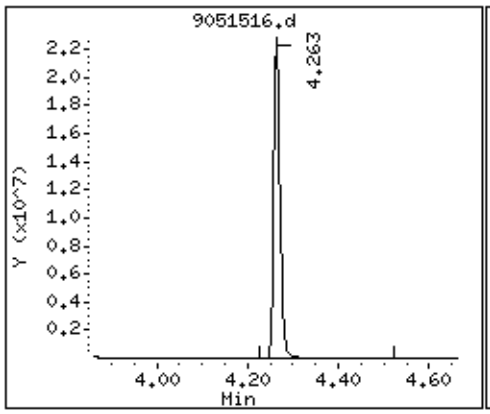
3 ethane



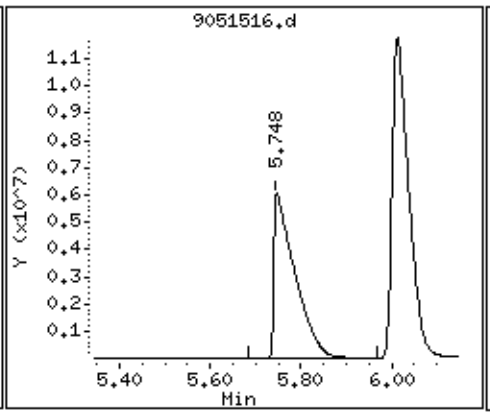
4 ethene



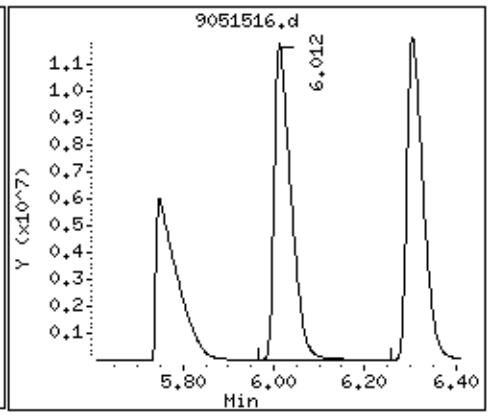
5 propane



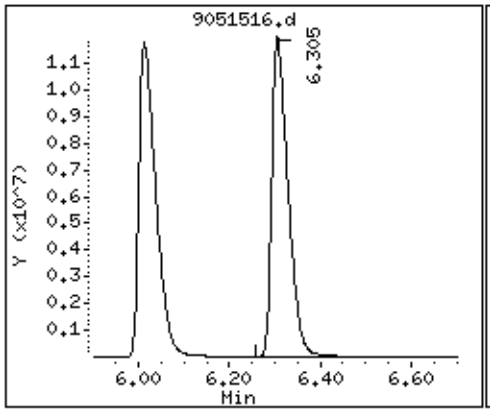
7 acetylene



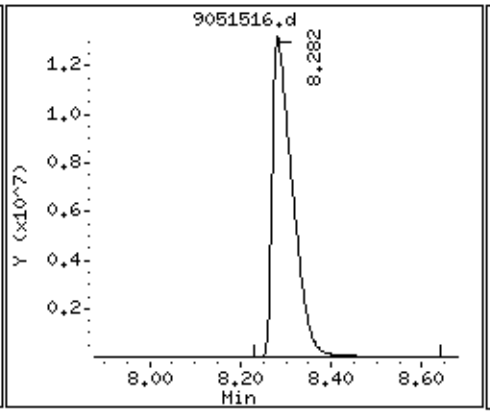
8 iso-butane



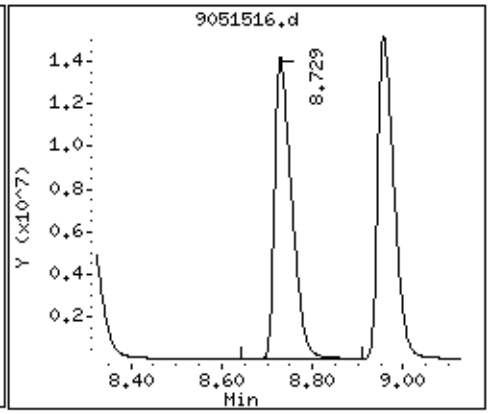
10 n-butane



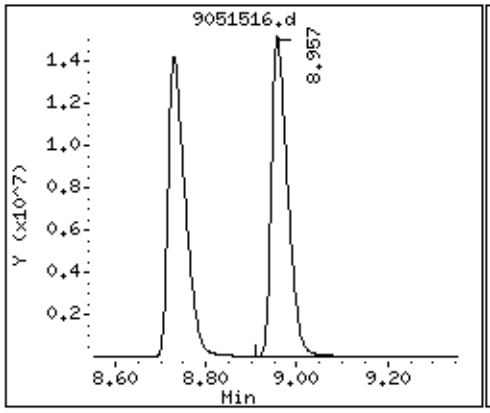
15 neo-pentane



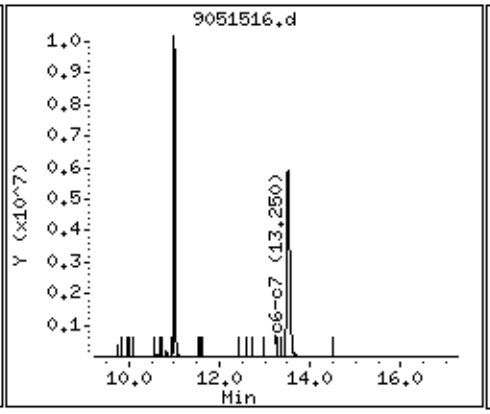
16 isopentane



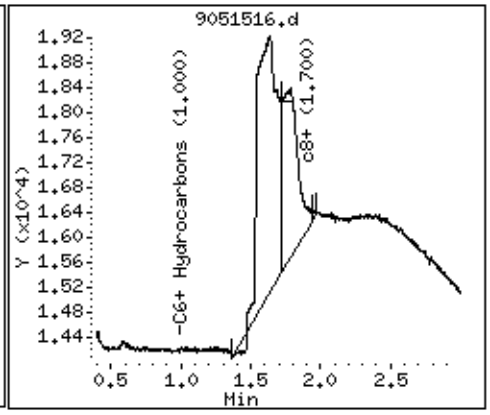
17 pentane



S 22 c6-c7



S 36 c8+



Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

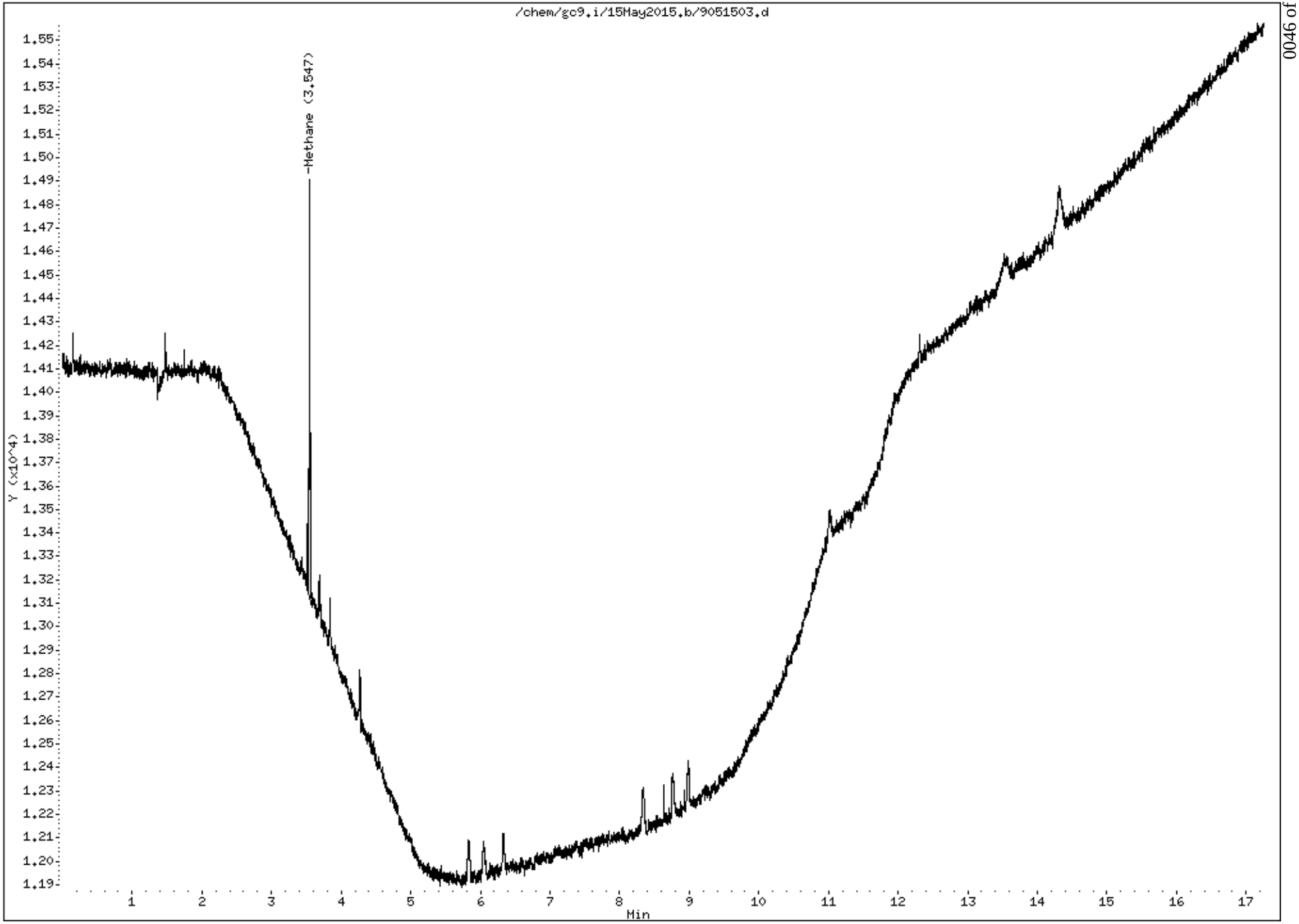
Data file : /chem/gc9.i/15May2015.b/9051503.d
Lab Smp Id: 2516-166 Client Smp ID: Level-1
Inj Date : 15-MAY-2015 12:51
Operator : ly Inst ID: gc9.i
Smp Info : 1.0ml,13670
Misc Info : CH4
Comment : GC/FID
Method : /chem/gc9.i/15May2015.b/915n0515.m
Meth Date : 16-May-2015 12:10 lyohanne Quant Type: ESTD
Cal Date : 15-MAY-2015 12:51 Cal File: 9051503.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

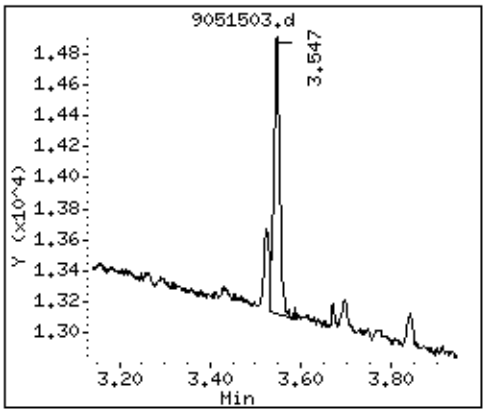
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
2 Methane	3.547	3.544	0.003	16481	0.00010	0.000100

Data File: /chem/gc9.i/15May2015.b/9051503.d



2 Methane


9051503.d
3.547
1.48
1.46
1.44
1.42
1.40
1.38
1.36
1.34
1.32
1.30
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/15May2015.b/9051504.d
Lab Smp Id: 2516-142 Client Smp ID: Level-2
Inj Date : 15-MAY-2015 13:16
Operator : mjs Inst ID: gc9.i
Smp Info : 1.0ml,23882
Misc Info : c1-c6
Comment : GC/FID
Method : /chem/gc9.i/15May2015.b/915n0515.m
Meth Date : 16-May-2015 12:10 lyohanne Quant Type: ESTD
Cal Date : 15-MAY-2015 13:16 Cal File: 9051504.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

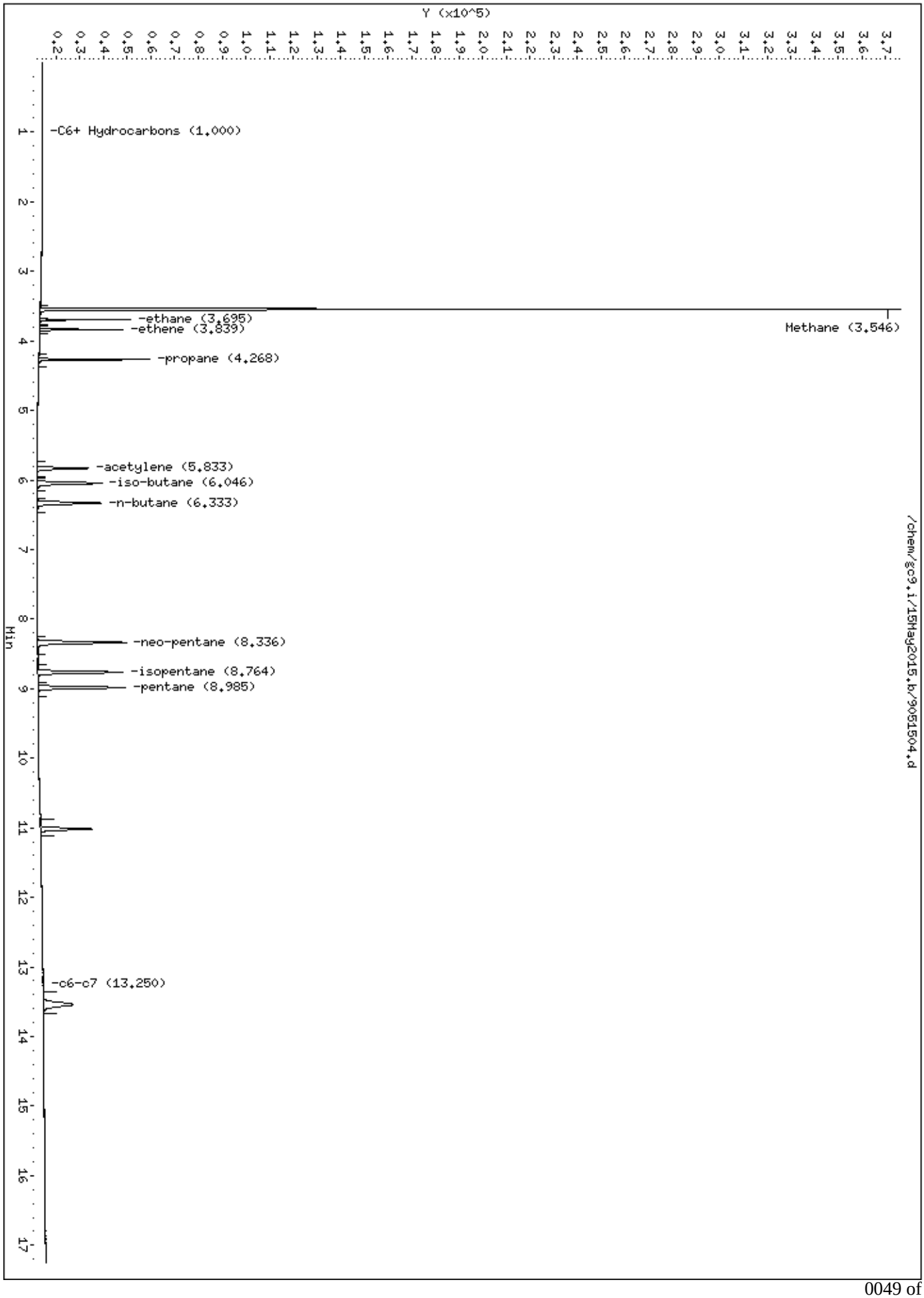
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
	2 Methane	3.546	3.544	0.002	3213796	0.02010	0.0198
	3 ethane	3.695	3.693	0.002	302012	0.00100	0.00100
	4 ethene	3.839	3.836	0.003	293982	0.00100	0.00100
	5 propane	4.268	4.262	0.006	457871	0.00100	0.00100
	7 acetylene	5.833	5.746	0.087	395688	0.00102	0.00102
	8 iso-butane	6.046	6.011	0.035	602936	0.00101	0.00101
	10 n-butane	6.333	6.304	0.029	600207	0.00100	0.00100
	15 neo-pentane	8.336	8.279	0.057	839439	0.00105	0.00105
	16 isopentane	8.764	8.726	0.038	780243	0.00104	0.00104
	17 pentane	8.985	8.954	0.031	779905	0.00103	0.00103
M	37 C6+ Hydrocarbons				1043287	0.00000	0.00106(a)
S	22 c6-c7	9.250-17.250			1043287	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).

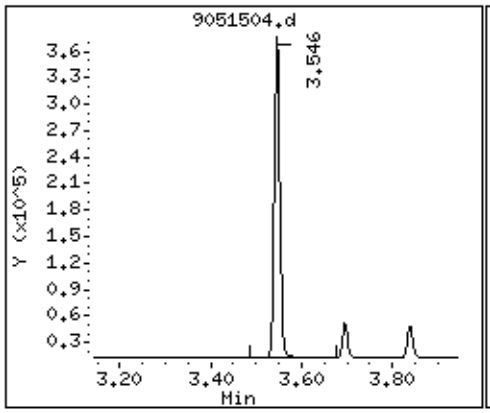


Data File: /chem/gc9.i/15May2015.b/9051504.d

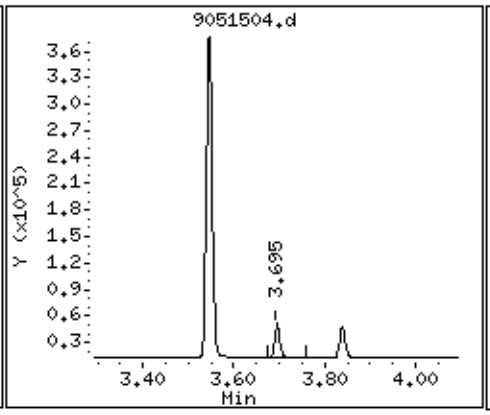
/chem/gc9.i/15May2015.b/9051504.d

Page 1

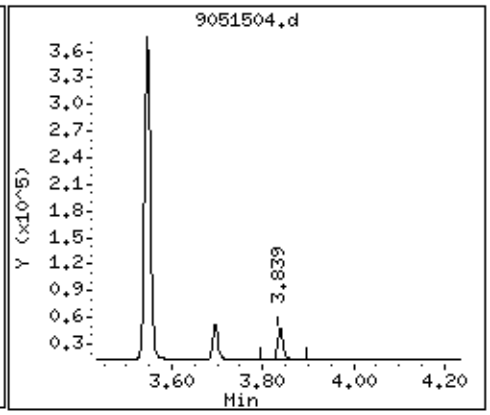
2 Methane



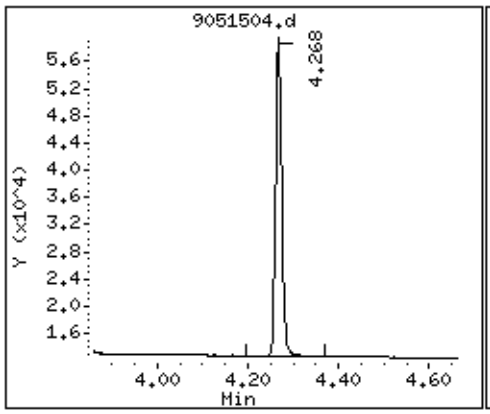
3 ethane



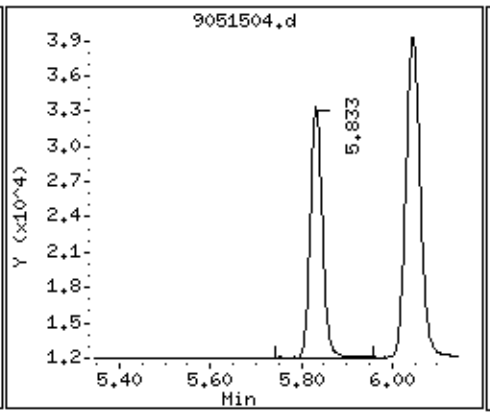
4 ethene



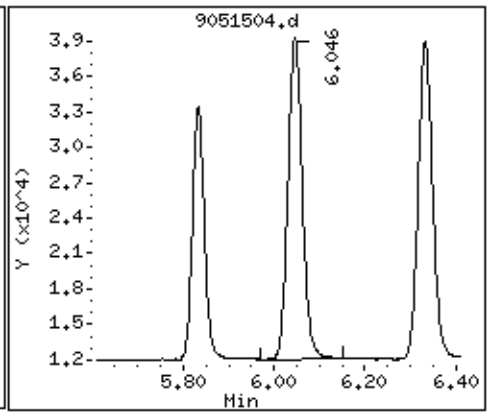
5 propane



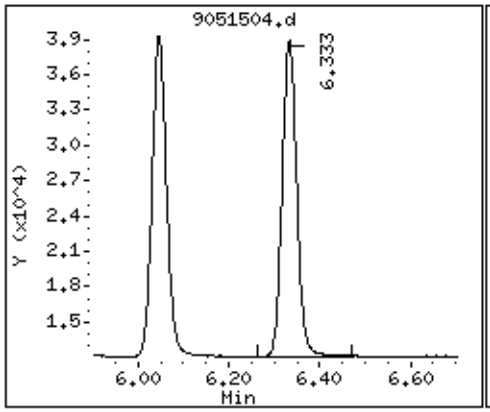
7 acetylene



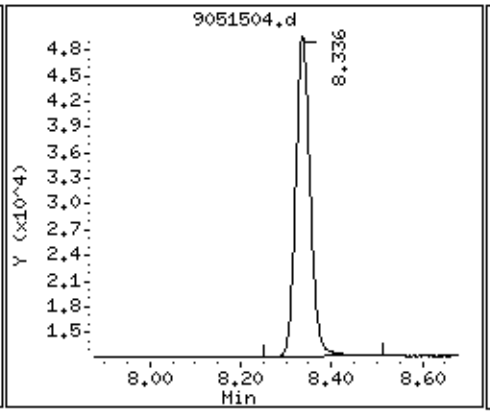
8 iso-butane



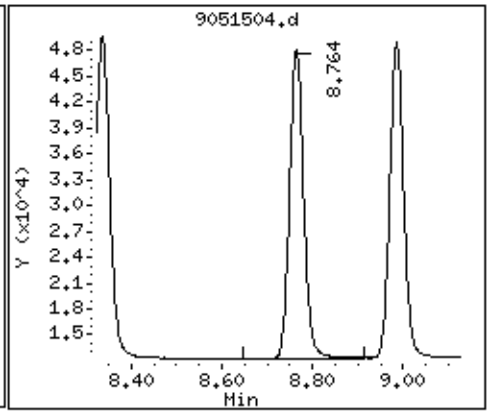
10 n-butane



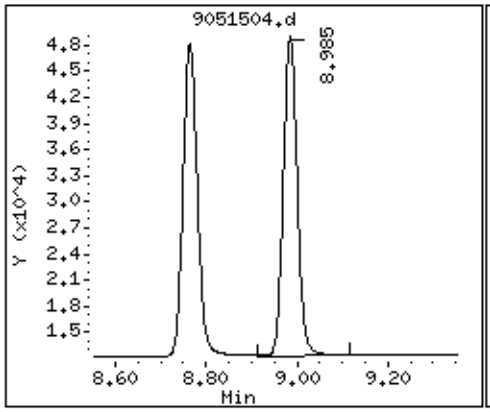
15 neo-pentane



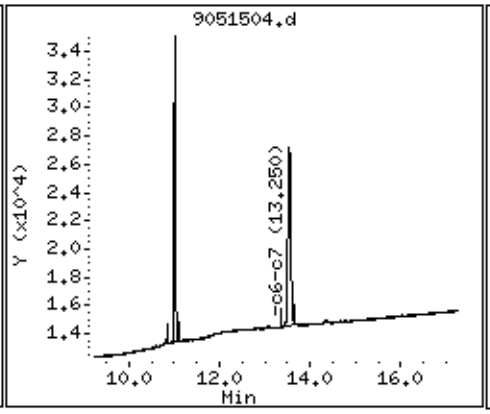
16 isopentane



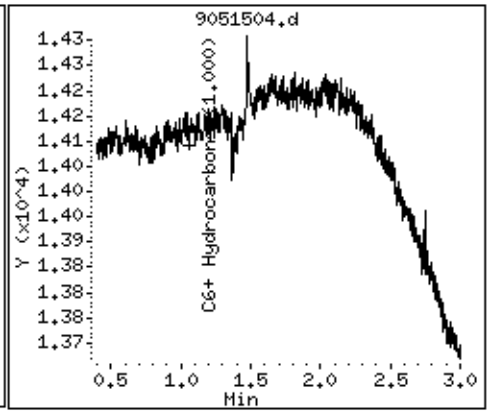
17 pentane



S 22 c6-c7



S 36 c8+ (Undetected)



Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc9.i/15May2015.b/9051505.d
Lab Smp Id: 2516-165 Client Smp ID: Level-3
Inj Date : 15-MAY-2015 13:39
Operator : mjs Inst ID: gc9.i
Smp Info : 1.0ml,5580;2516-165;Level-3
Misc Info : c1-c6
Comment : GC/FID
Method : /chem/gc9.i/15May2015.b/915n0515.m
Meth Date : 16-May-2015 12:10 lyohanne Quant Type: ESTD
Cal Date : 15-MAY-2015 13:39 Cal File: 9051505.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

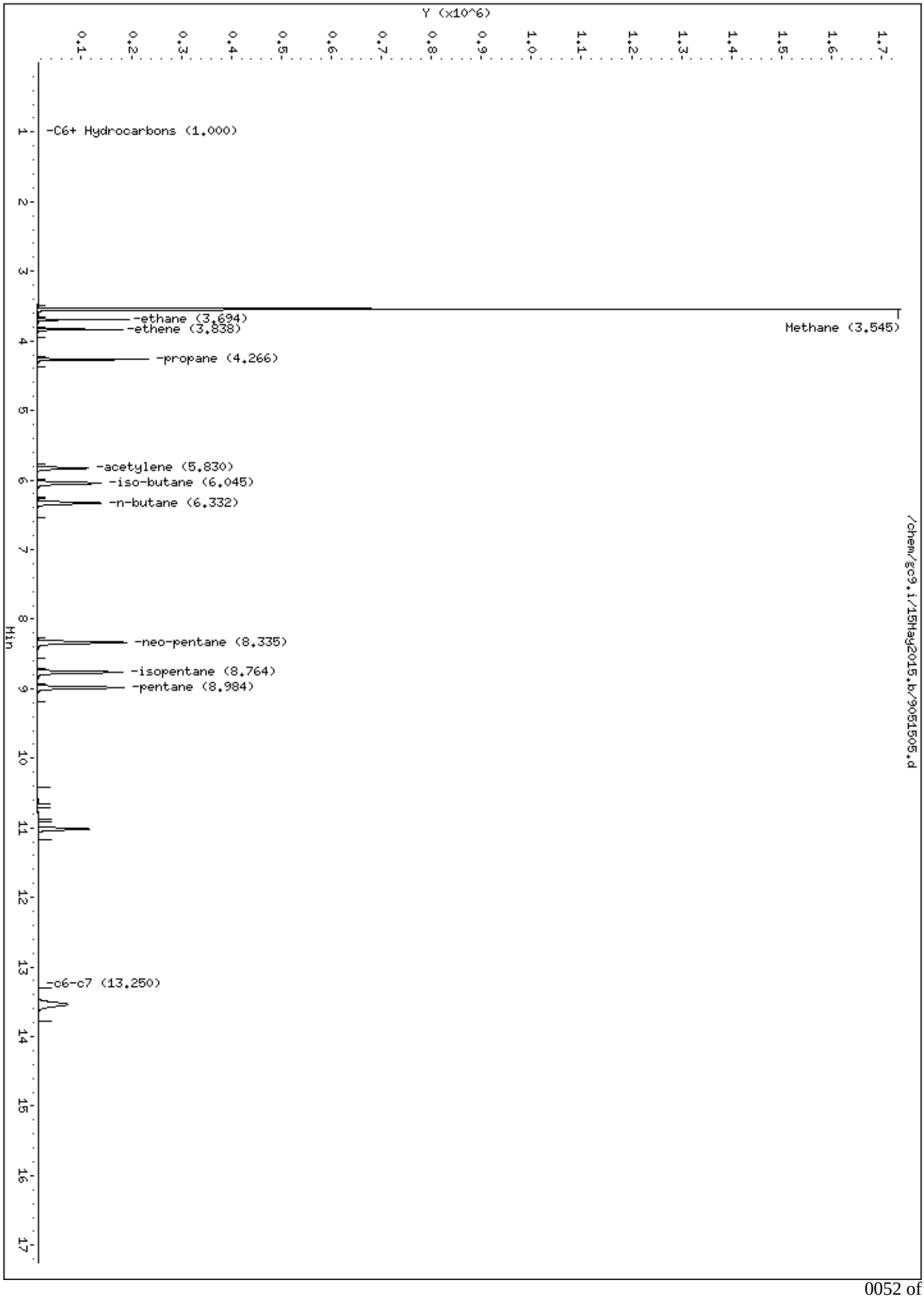
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
	2 Methane	3.545	3.544	0.001	15187436	0.10050	0.0958
	3 ethane	3.694	3.693	0.001	1431596	0.00501	0.00487
	4 ethene	3.838	3.836	0.002	1402858	0.00502	0.00489
	5 propane	4.266	4.262	0.004	2170383	0.00501	0.00487
	7 acetylene	5.830	5.746	0.084	1890459	0.00510	0.00498
	8 iso-butane	6.045	6.011	0.034	2889886	0.00504	0.00494
	10 n-butane	6.332	6.304	0.028	2853360	0.00500	0.00487
	15 neo-pentane	8.335	8.279	0.056	3995085	0.00527	0.00513
	16 isopentane	8.764	8.726	0.038	3697152	0.00521	0.00506
	17 pentane	8.984	8.954	0.030	3707841	0.00518	0.00503
M	37 C6+ Hydrocarbons				4949733	0.00507	0.00518(a)
S	22 c6-c7	9.250-17.250			4949733	0.00533	0.00518
S	36 c8+	Compound Not Detected.					

QC Flag Legend

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

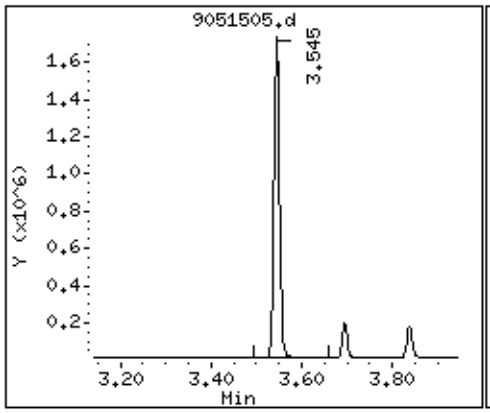


Data File: /chem/gc9.i/15May2015.b/9051505.d

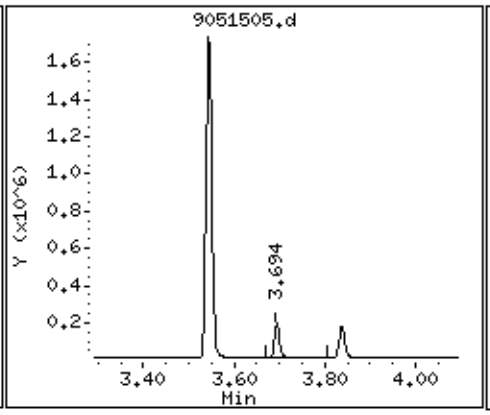
/chem/gc9.i/15May2015.b/9051505.d

Page 1

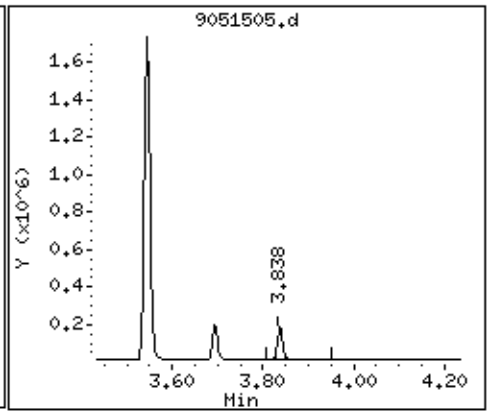
2 Methane



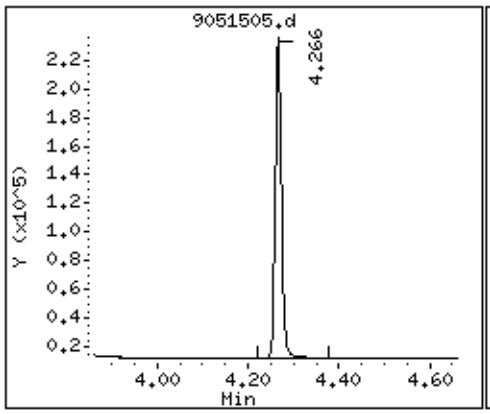
3 ethane



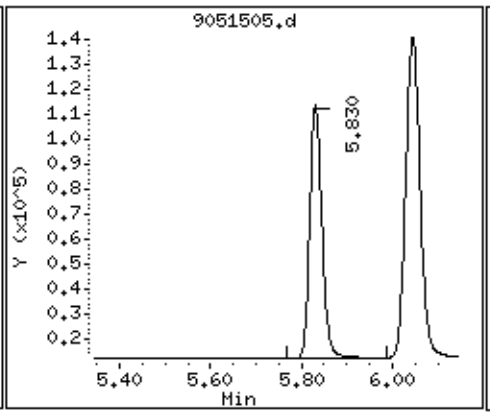
4 ethene



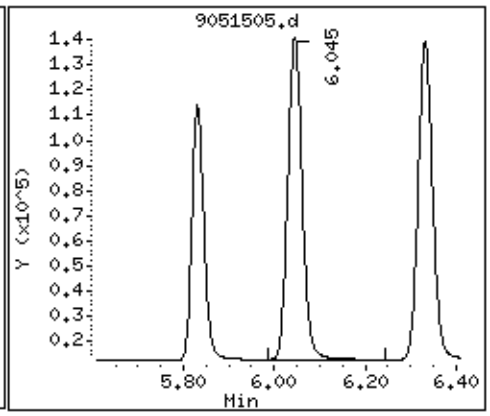
5 propane



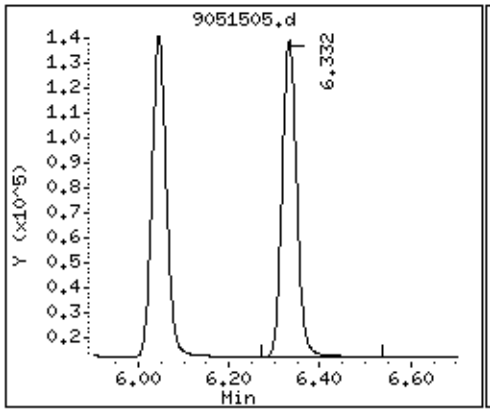
7 acetylene



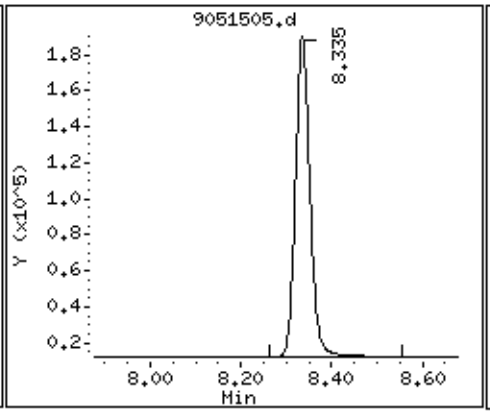
8 iso-butane



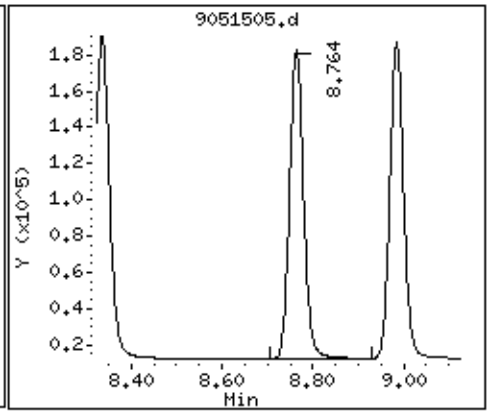
10 n-butane



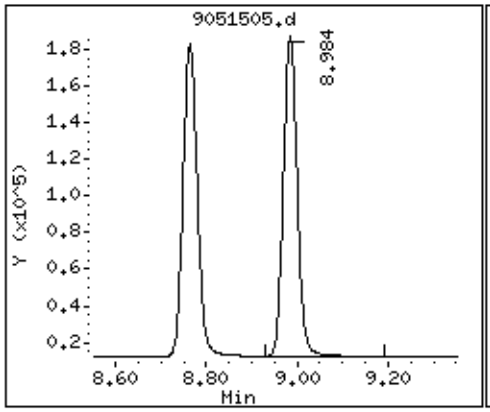
15 neo-pentane



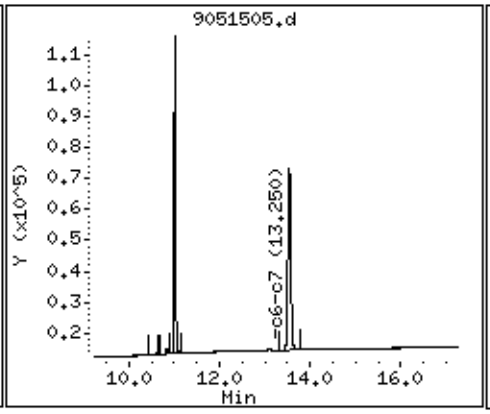
16 isopentane



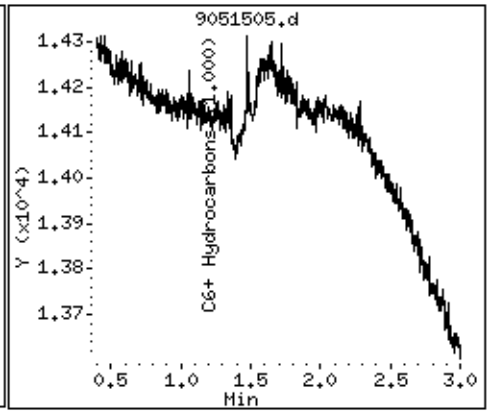
17 pentane



S 22 c6-c7



S 36 c8+ (Undetected)



Eurofins Air Toxics Inc.

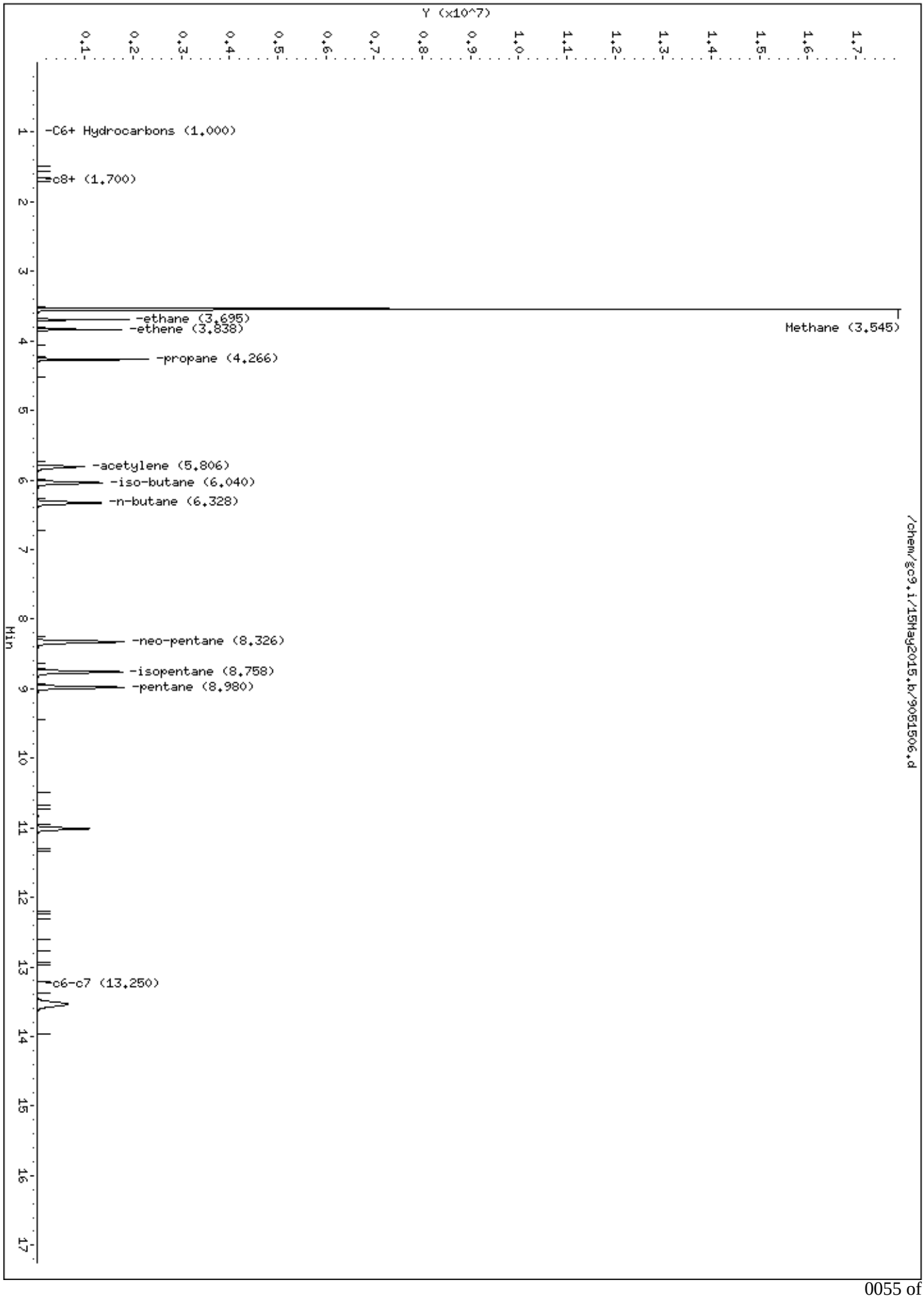
Modified ASTM D-1945/1946

Data file : /chem/gc9.i/15May2015.b/9051506.d
Lab Smp Id: 2299-1048A Ngas Client Smp ID: Level-4
Inj Date : 15-MAY-2015 14:15
Operator : ly Inst ID: gc9.i
Smp Info : 1.0ml,;2299-1048A Ngas;Level-4
Misc Info : c1-c6
Comment : GC/FID
Method : /chem/gc9.i/15May2015.b/915n0515.m
Meth Date : 16-May-2015 12:10 lyohanne Quant Type: ESTD
Cal Date : 15-MAY-2015 14:15 Cal File: 9051506.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

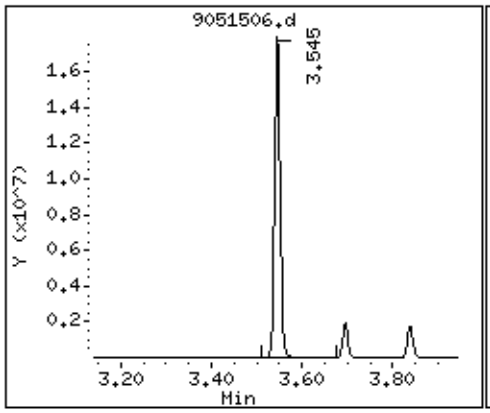
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

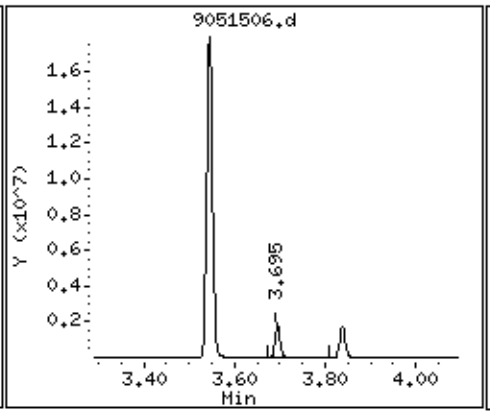
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
2 Methane	3.545	3.544	0.001	157650227	1.01500	0.999
3 ethane	3.695	3.693	0.002	15032915	0.05060	0.0510
4 ethene	3.838	3.836	0.002	14707727	0.05070	0.0511
5 propane	4.266	4.262	0.004	22723806	0.05060	0.0509
7 acetylene	5.806	5.746	0.060	19928388	0.05150	0.0522
8 iso-butane	6.040	6.011	0.029	30304983	0.05090	0.0515
10 n-butane	6.328	6.304	0.024	30007990	0.05050	0.0510
15 neo-pentane	8.326	8.279	0.047	41925053	0.05330	0.0536
16 isopentane	8.758	8.726	0.032	38811687	0.05260	0.0530
17 pentane	8.980	8.954	0.026	39064536	0.05230	0.0528
M 37 C6+ Hydrocarbons				53839667	0.50700	0.0554
S 22 c6-c7	9.250-17.250			53799914	0.05380	0.0554


Data File: /chem/gc9.i/15May2015.b/9051506.d
Page 1
/chem/gc9.i/15May2015.b/9051506.d
Y (x10^7)
0.1
0.2
0.3
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
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
-C6+ Hydrocarbons (1.000)
c8+ (1.700)
-ethane (3.695)
-ethene (3.838)
Methane (3.545)
-propane (4.266)
-acetylene (5.806)
-iso-butane (6.040)
-n-butane (6.328)
-neo-pentane (8.326)
-isopentane (8.758)
-pentane (8.980)
c6-c7 (13.250)

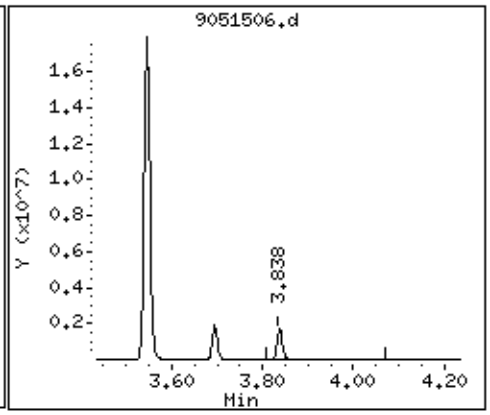
2 Methane



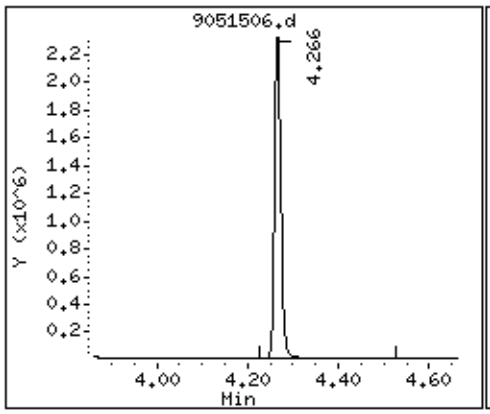
3 ethane



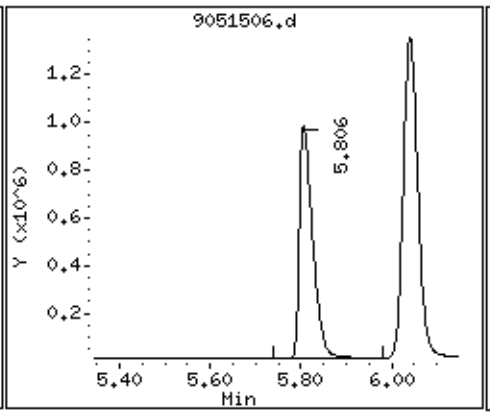
4 ethene



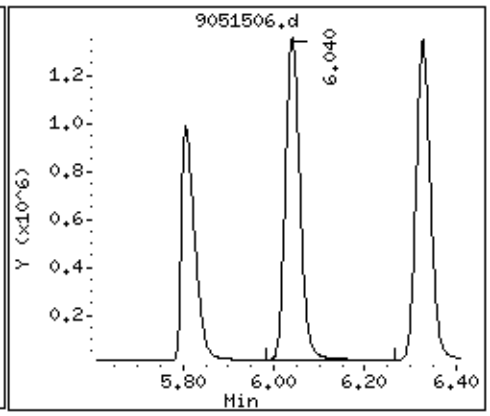
5 propane



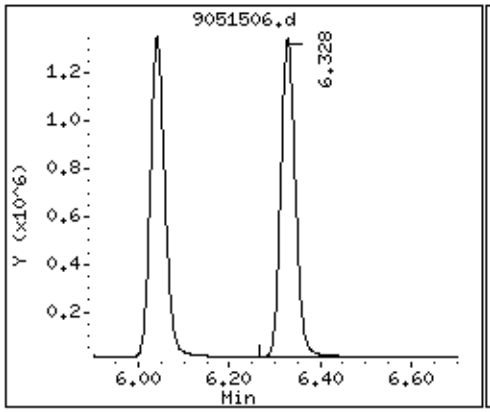
7 acetylene



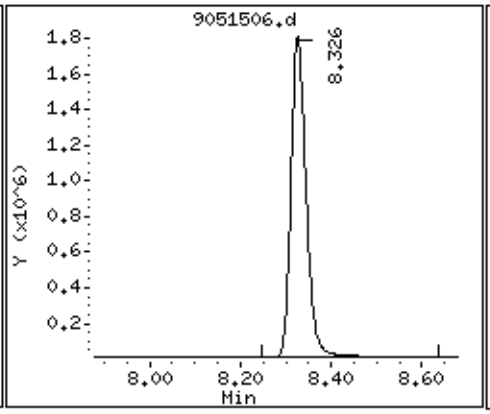
8 iso-butane



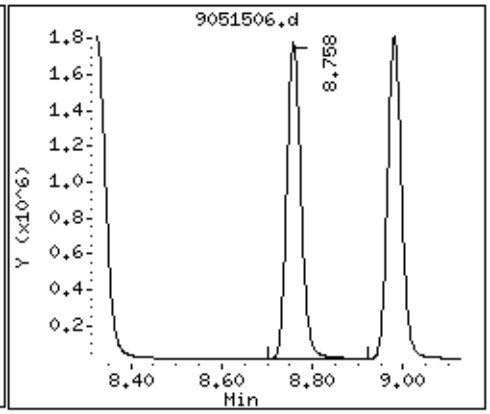
10 n-butane



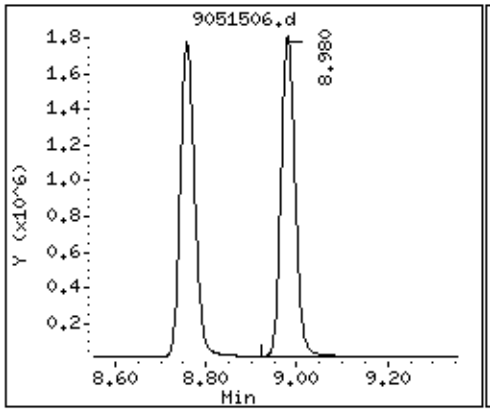
15 neo-pentane



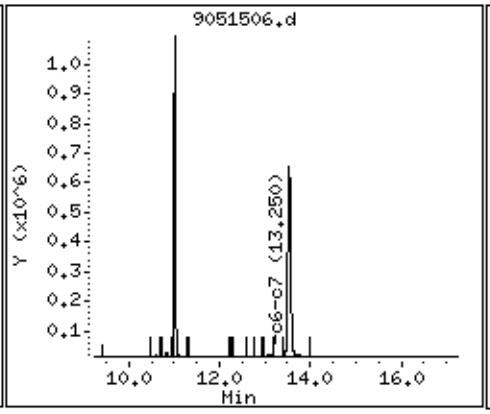
16 isopentane



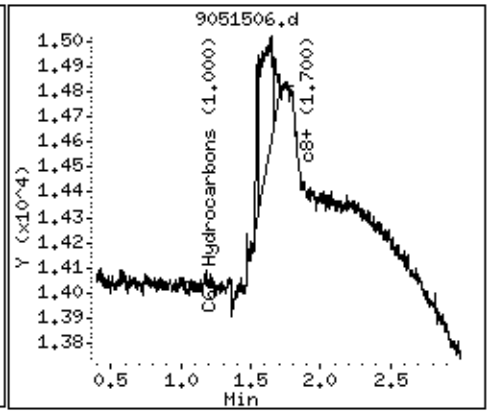
17 pentane



S 22 c6-c7



S 36 c8+



Eurofins Air Toxics Inc.

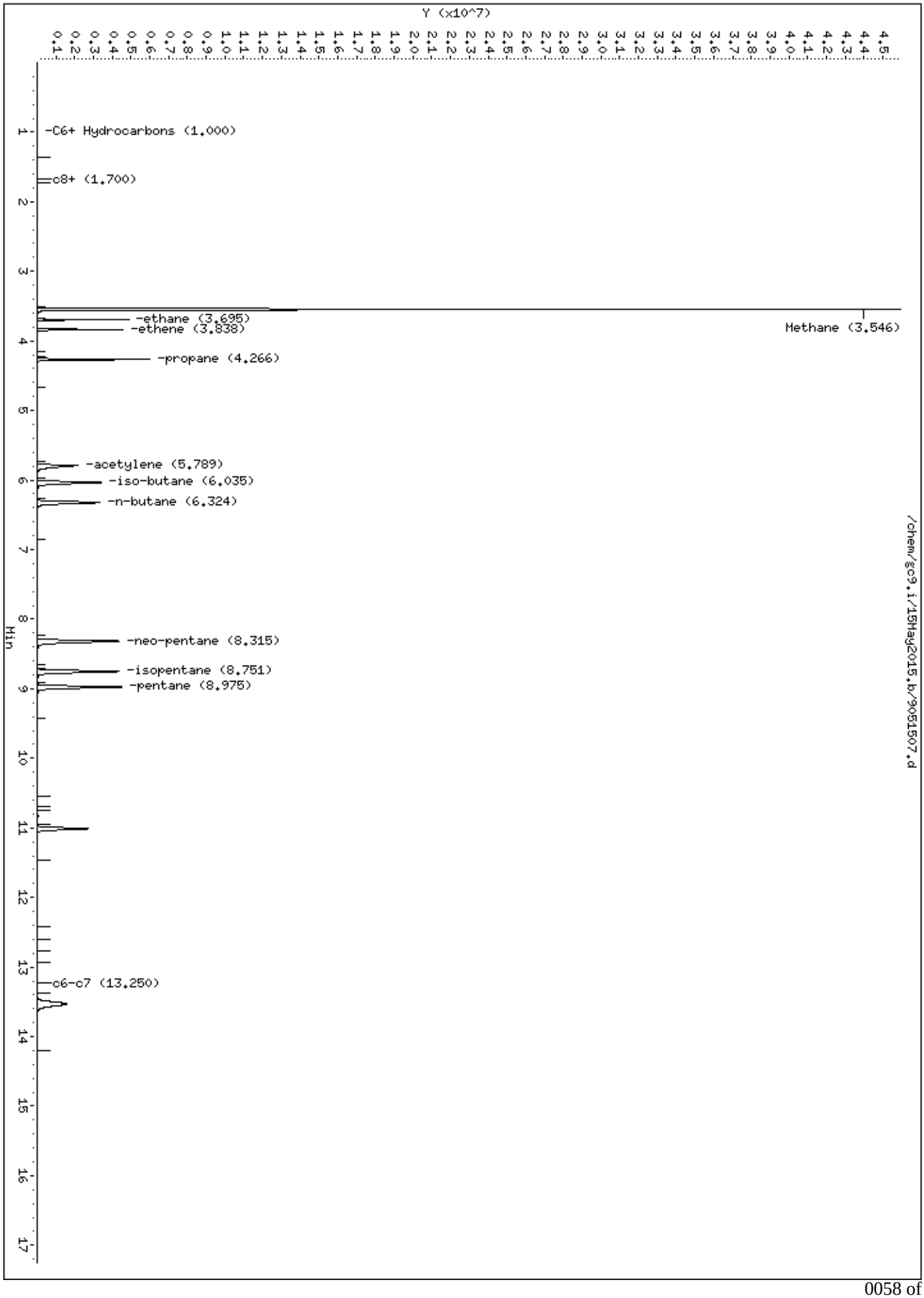
Modified ASTM D-1945/1946

Data file : /chem/gc9.i/15May2015.b/9051507.d
Lab Smp Id: 2299-1048A Ngas Client Smp ID: Level-5
Inj Date : 15-MAY-2015 14:46
Operator : ly Inst ID: gc9.i
Smp Info : 1.0ml(25:100),;2299-1048A Ngas;Level-5
Misc Info : c1-c6
Comment : GC/FID
Method : /chem/gc9.i/15May2015.b/915n0515.m
Meth Date : 16-May-2015 12:10 lyohanne Quant Type: ESTD
Cal Date : 15-MAY-2015 14:46 Cal File: 9051507.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

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
2 Methane	3.546	3.544	0.002	402724779	2.53750	2.55
3 ethane	3.695	3.693	0.002	38598009	0.12650	0.130
4 ethene	3.838	3.836	0.002	37764705	0.12675	0.130
5 propane	4.266	4.262	0.004	58333667	0.12650	0.130
7 acetylene	5.789	5.746	0.043	51351750	0.12875	0.133
8 iso-butane	6.035	6.011	0.024	77821186	0.12725	0.131
10 n-butane	6.324	6.304	0.020	77045938	0.12625	0.130
15 neo-pentane	8.315	8.279	0.036	107533490	0.13325	0.136
16 isopentane	8.751	8.726	0.025	99169697	0.13150	0.134
17 pentane	8.975	8.954	0.021	99555944	0.13075	0.134
M 37 C6+ Hydrocarbons				133668408	0.50000	0.137
S 22 c6-c7	9.250-17.250			133615559	0.13450	0.137

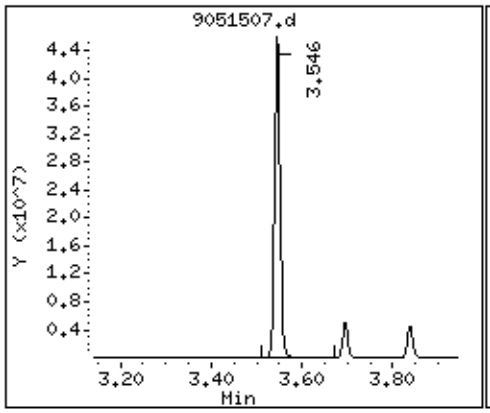


Data File: /chem/gc9.i/15May2015.b/9051507.d

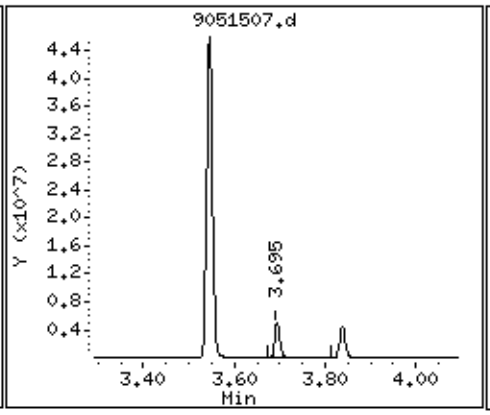
/chem/gc9.i/15May2015.b/9051507.d

Page 1

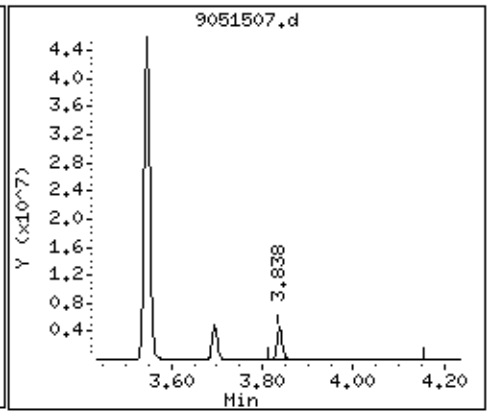
2 Methane



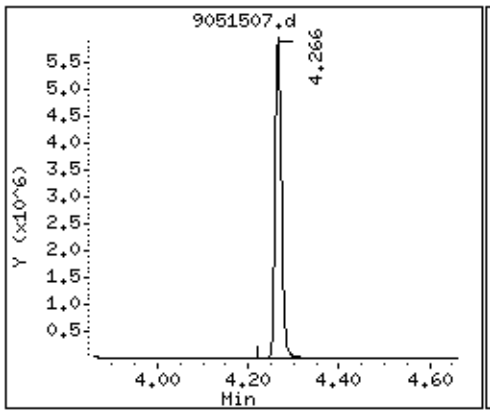
3 ethane



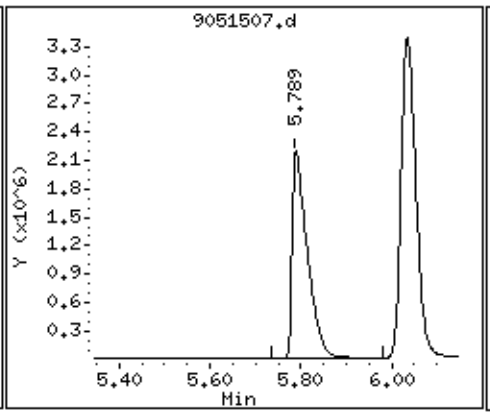
4 ethene



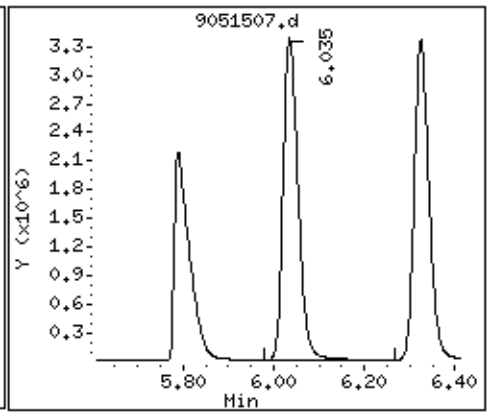
5 propane



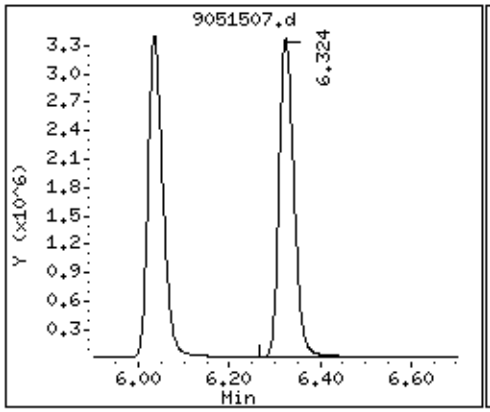
7 acetylene



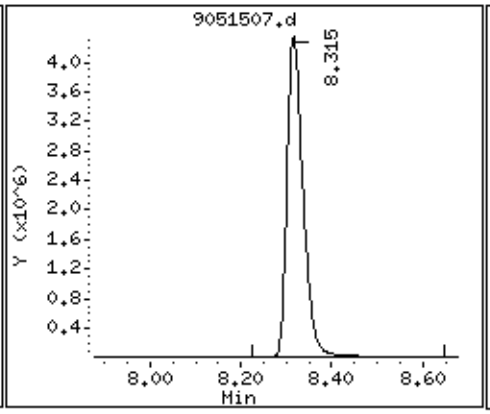
8 iso-butane



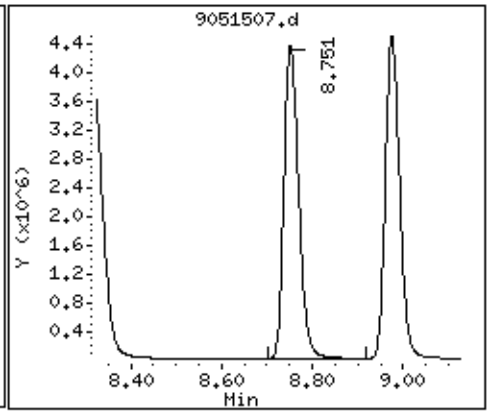
10 n-butane



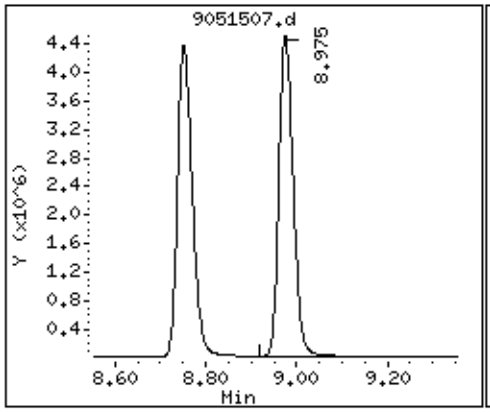
15 neo-pentane



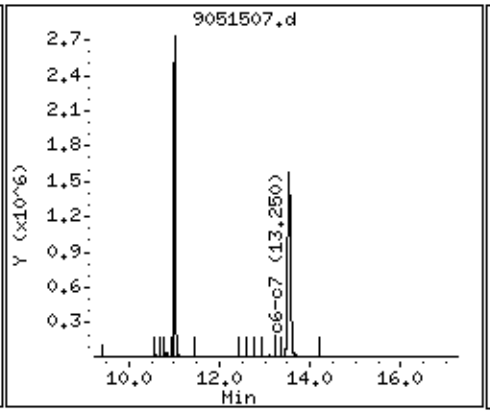
16 isopentane



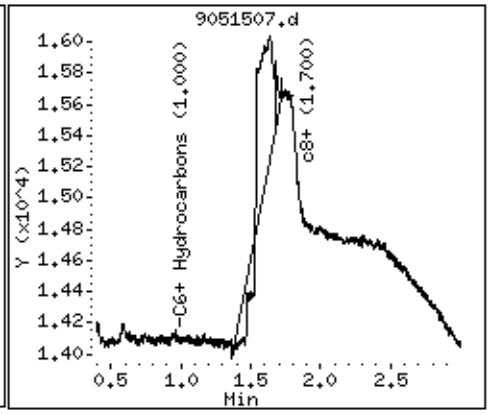
17 pentane



S 22 c6-c7



S 36 c8+



Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc9.i/15May2015.b/9051508.d
Lab Smp Id: 2299-1048A Ngas Client Smp ID: Level-6
Inj Date : 15-MAY-2015 15:08
Operator : ly Inst ID: gc9.i
Smp Info : 1.0ml,;2299-1048A Ngas;Level-6
Misc Info : c1-c6
Comment : GC/FID
Method : /chem/gc9.i/15May2015.b/915n0515.m
Meth Date : 16-May-2015 12:10 lyohanne Quant Type: ESTD
Cal Date : 15-MAY-2015 15:08 Cal File: 9051508.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

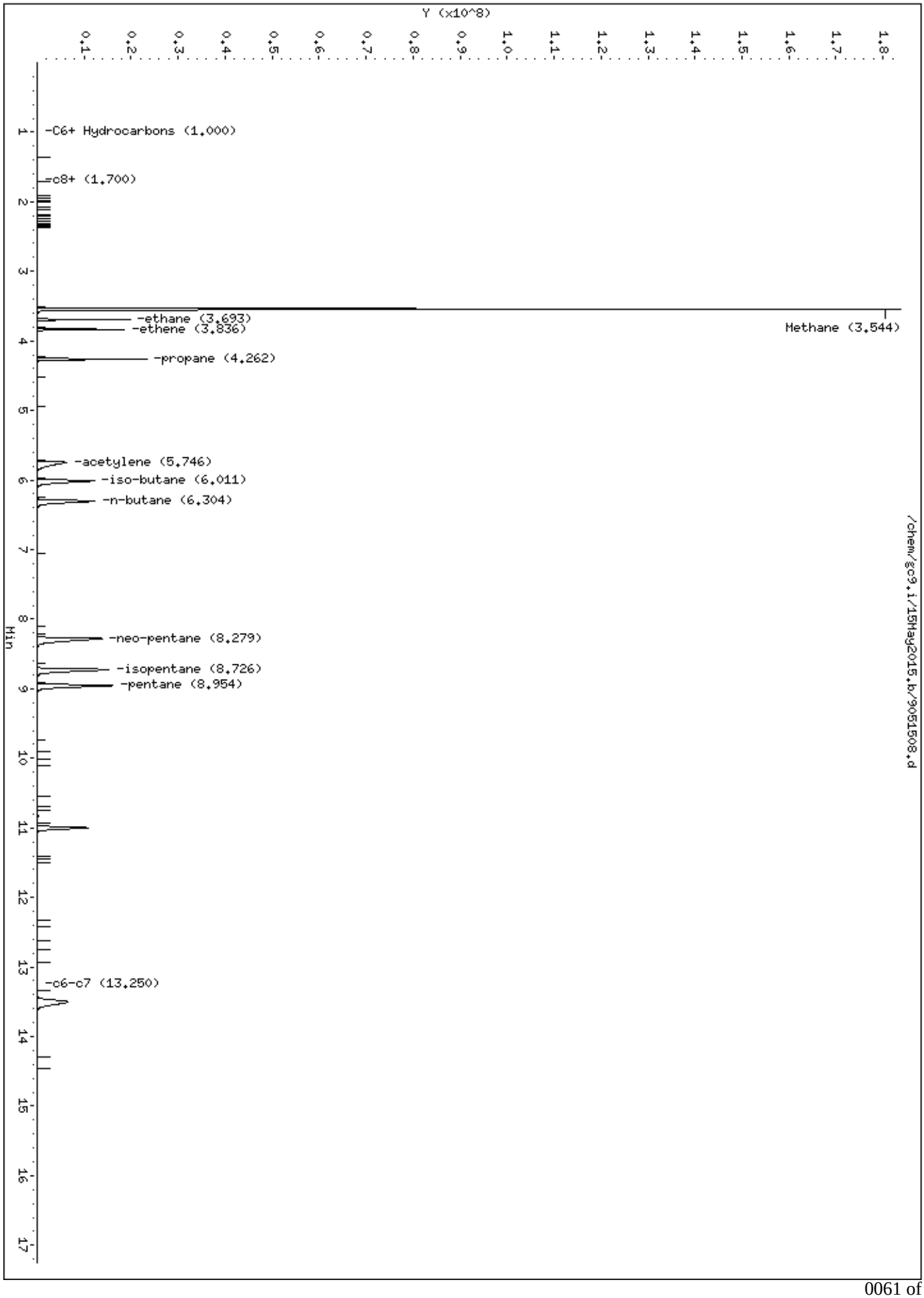
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
2 Methane	3.544	3.544	0.000	1604528720	10.1500	10.2
3 ethane	3.693	3.693	0.000	155431184	0.50600	0.519
4 ethene	3.836	3.836	0.000	152266560	0.50700	0.521
5 propane	4.262	4.262	0.000	235368820	0.50600	0.519
7 acetylene	5.746	5.746	0.000	208814215	0.51500	0.535(A)
8 iso-butane	6.011	6.011	0.000	315689066	0.50900	0.526(A)
10 n-butane	6.304	6.304	0.000	313640955	0.50500	0.523
15 neo-pentane	8.279	8.279	0.000	437398041	0.53300	0.551(A)
16 isopentane	8.726	8.726	0.000	406259750	0.52600	0.545
17 pentane	8.954	8.954	0.000	409819935	0.52300	0.544
M 37 C6+ Hydrocarbons				572566071	0.00000	0.575
S 22 c6-c7	9.250-17.250			571293016	0.53800	0.575

QC Flag Legend

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


Data File: /chem/gc9.i/15May2015.b/9051508.d
Page 1
Y (x10^8)
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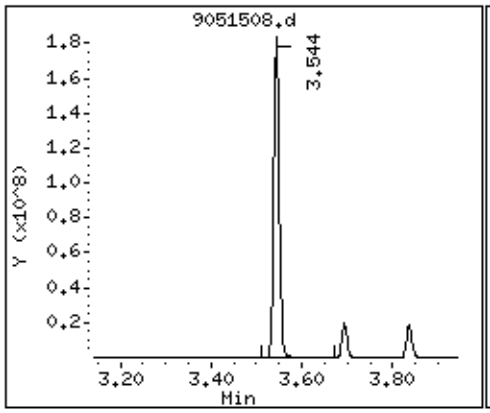
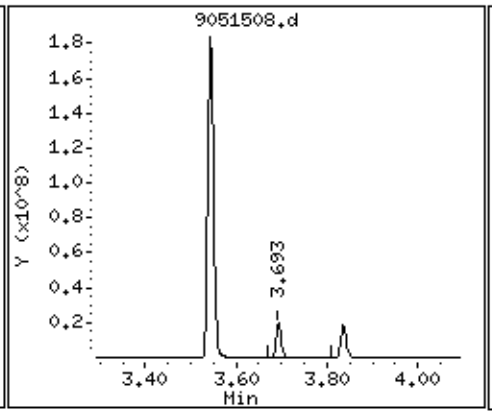
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
1.5
1.6
1.7
1.8
Min
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
-C6+ Hydrocarbons (1.000)
=c8+ (1.700)
-ethane (3.693)
-ethene (3.836)
Methane (3.544)
-propane (4.262)
-acetylene (5.746)
-iso-butane (6.011)
-n-butane (6.304)
-neo-pentane (8.279)
-isopentane (8.726)
-pentane (8.954)
-c6-c7 (13.250)
/chem/gc9.i/15May2015.b/9051508.d

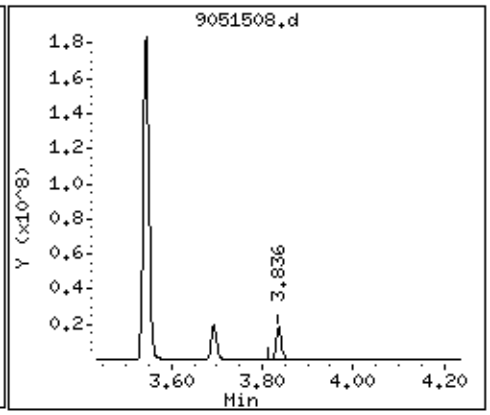
2 Methane



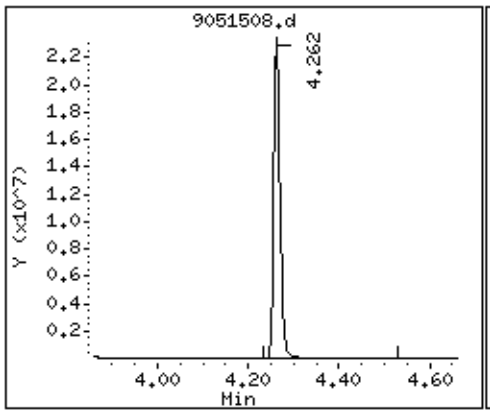
3 ethane



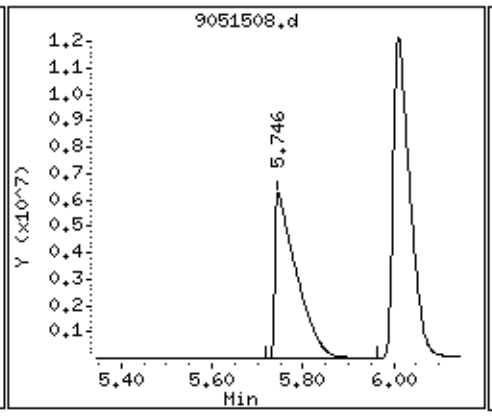
4 ethene



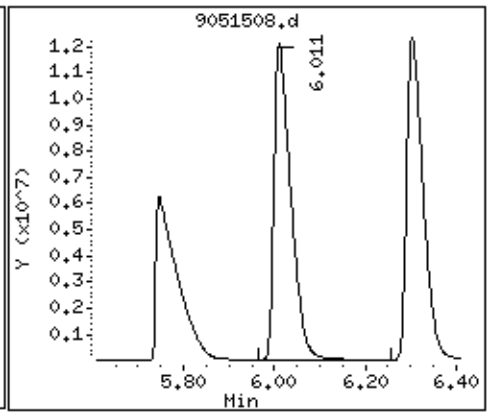
5 propane



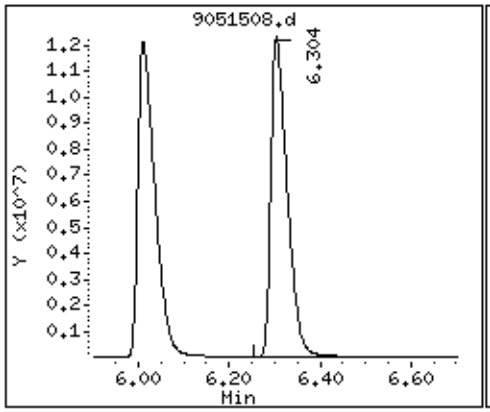
7 acetylene



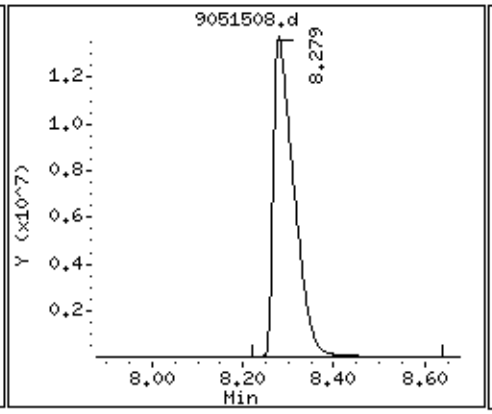
8 iso-butane



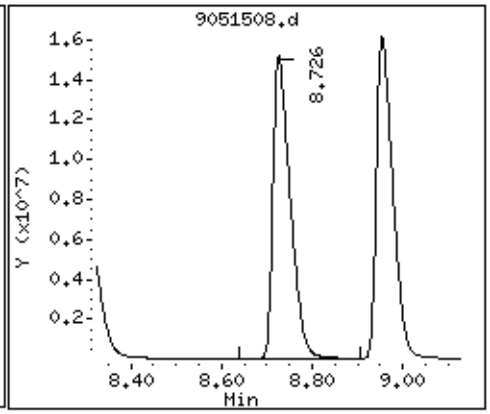
10 n-butane



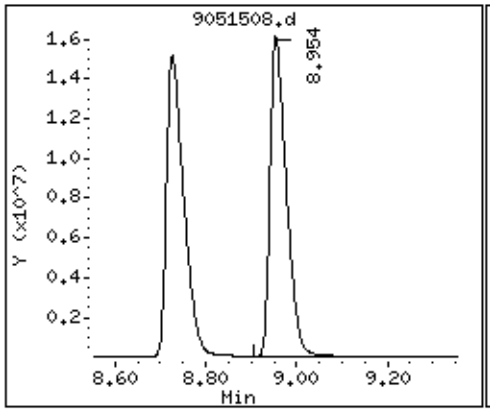
15 neo-pentane



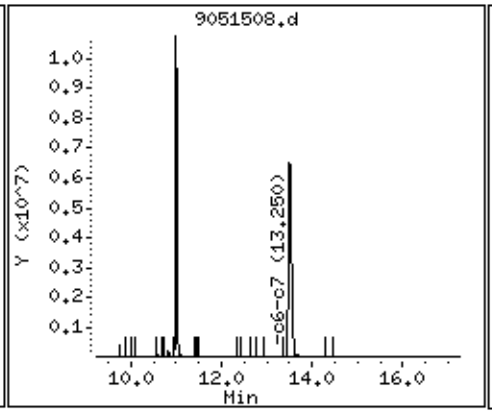
16 isopentane



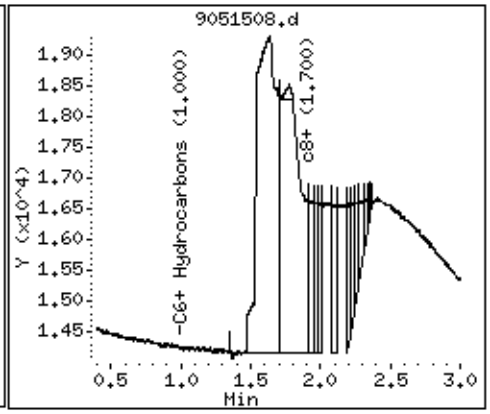
17 pentane



S 22 c6-c7



S 36 c8+



Eurofins Air Toxics Inc.

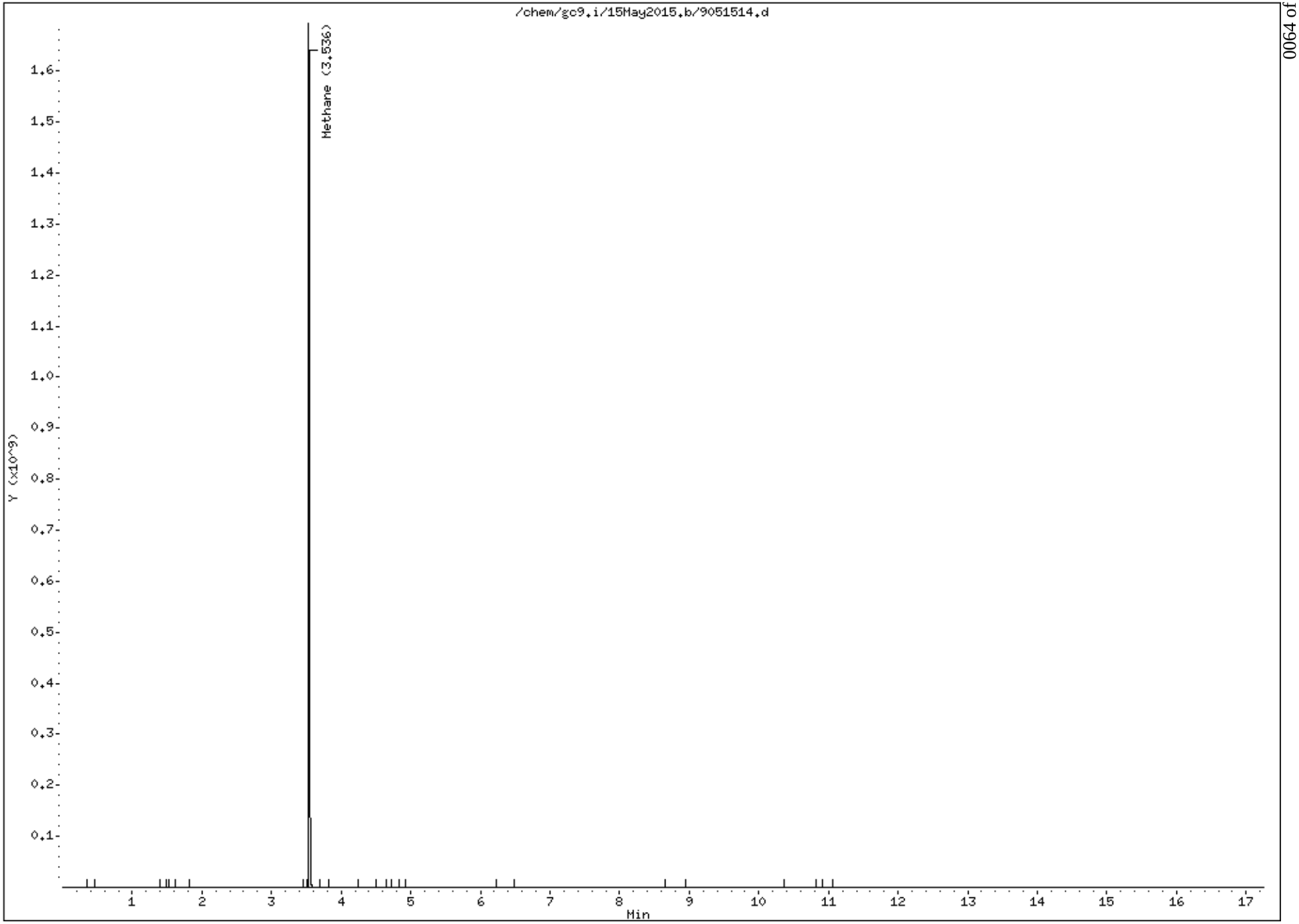
Modified ASTM D-1945/1946

Data file : /chem/gc9.i/15May2015.b/9051514.d
Lab Smp Id: 1476-2859 Client Smp ID: Level-7
Inj Date : 15-MAY-2015 18:52
Operator : mjs Inst ID: gc9.i
Smp Info : 1.0ml,
Misc Info : Methane 99%
Comment : GC/FID
Method : /chem/gc9.i/15May2015.b/915n0515.m
Meth Date : 16-May-2015 12:10 lyohanne Quant Type: ESTD
Cal Date : 15-MAY-2015 18:52 Cal File: 9051514.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

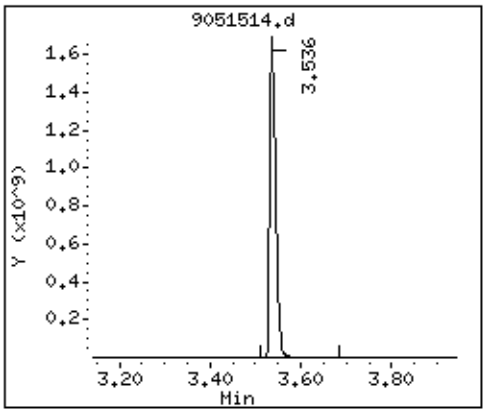
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
2 Methane	3.536	3.544	-0.008	15435897799	99.0000	97.9


/chem/gc9.i/15May2015.b/9051514.d
Methane (3.536)
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/15May2015.b/9051513.d
Lab Smp Id: 1476-898 Client Smp ID: Level-7
Inj Date : 15-MAY-2015 18:26
Operator : mjs Inst ID: gc9.i
Smp Info : (5:100)1.0ml,
Misc Info : Isopentane 99%
Comment : GC/FID
Method : /chem/gc9.i/15May2015.b/915n0515.m
Meth Date : 16-May-2015 12:10 lyohanne Quant Type: ESTD
Cal Date : 15-MAY-2015 18:26 Cal File: 9051513.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

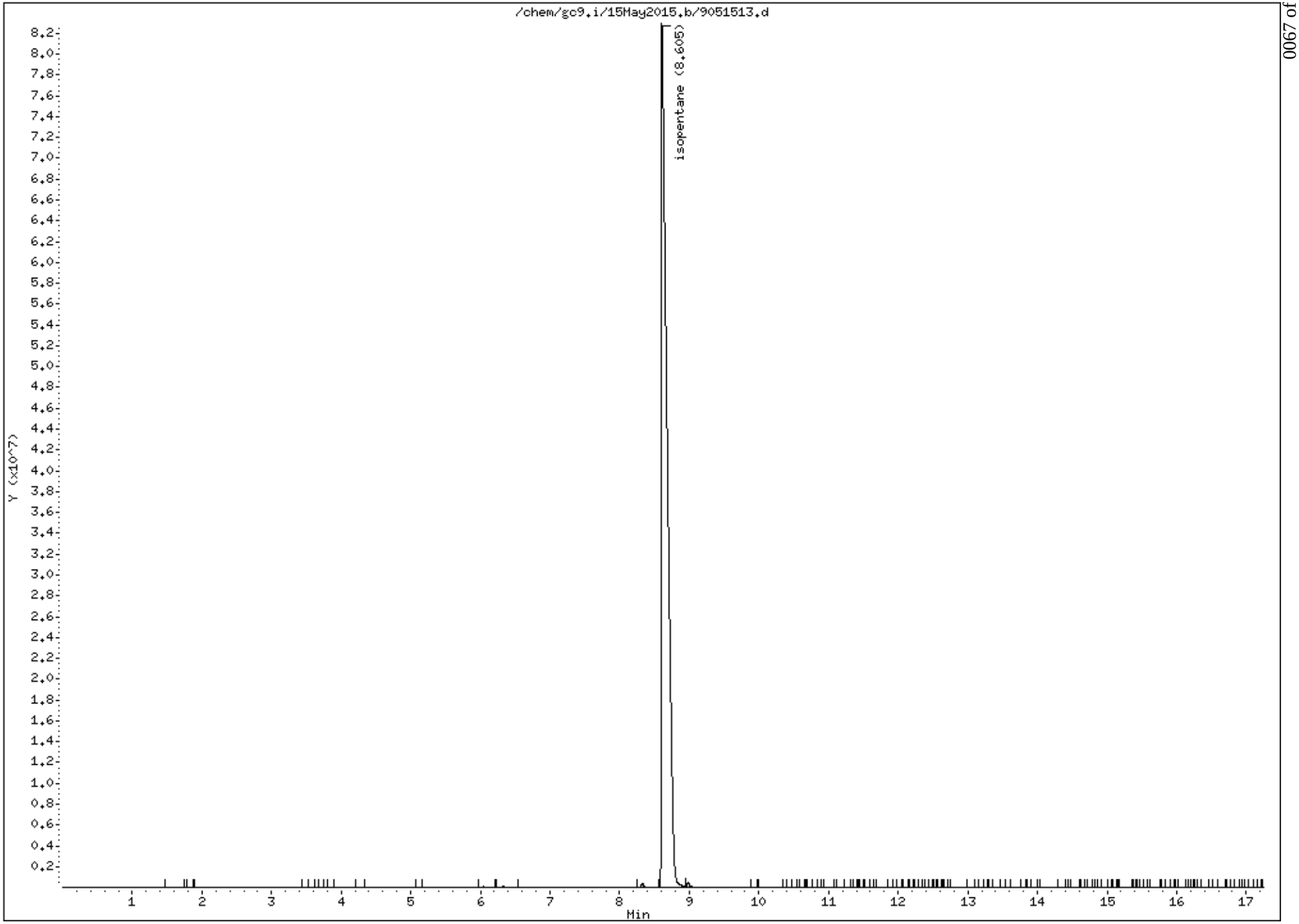
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

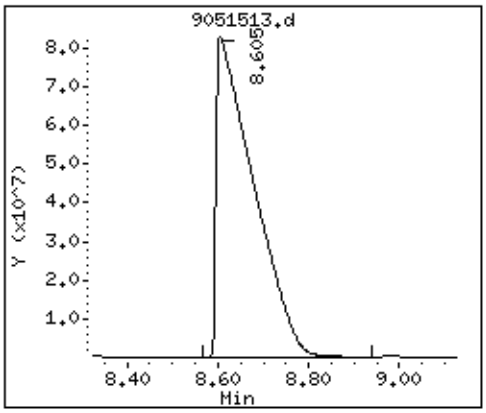
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
16 isopentane	8.605	8.726	-0.121	4776259732	4.95000	6.11(A)

QC Flag Legend

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


/chem/gc9.i/15May2015.b/9051513.d
isopentane (8.605)
Y (x10^7)
Min

16 isopentane



Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc9.i/15May2015.b/9051512.d
Lab Smp Id: 1476-897 Client Smp ID: Level-7
Inj Date : 15-MAY-2015 17:07
Operator : mjs Inst ID: gc9.i
Smp Info : (5:50)1.0ml,
Misc Info : Butane 99.9%
Comment : GC/FID
Method : /chem/gc9.i/15May2015.b/915n0515.m
Meth Date : 16-May-2015 12:10 lyohanne Quant Type: ESTD
Cal Date : 15-MAY-2015 17:07 Cal File: 9051512.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

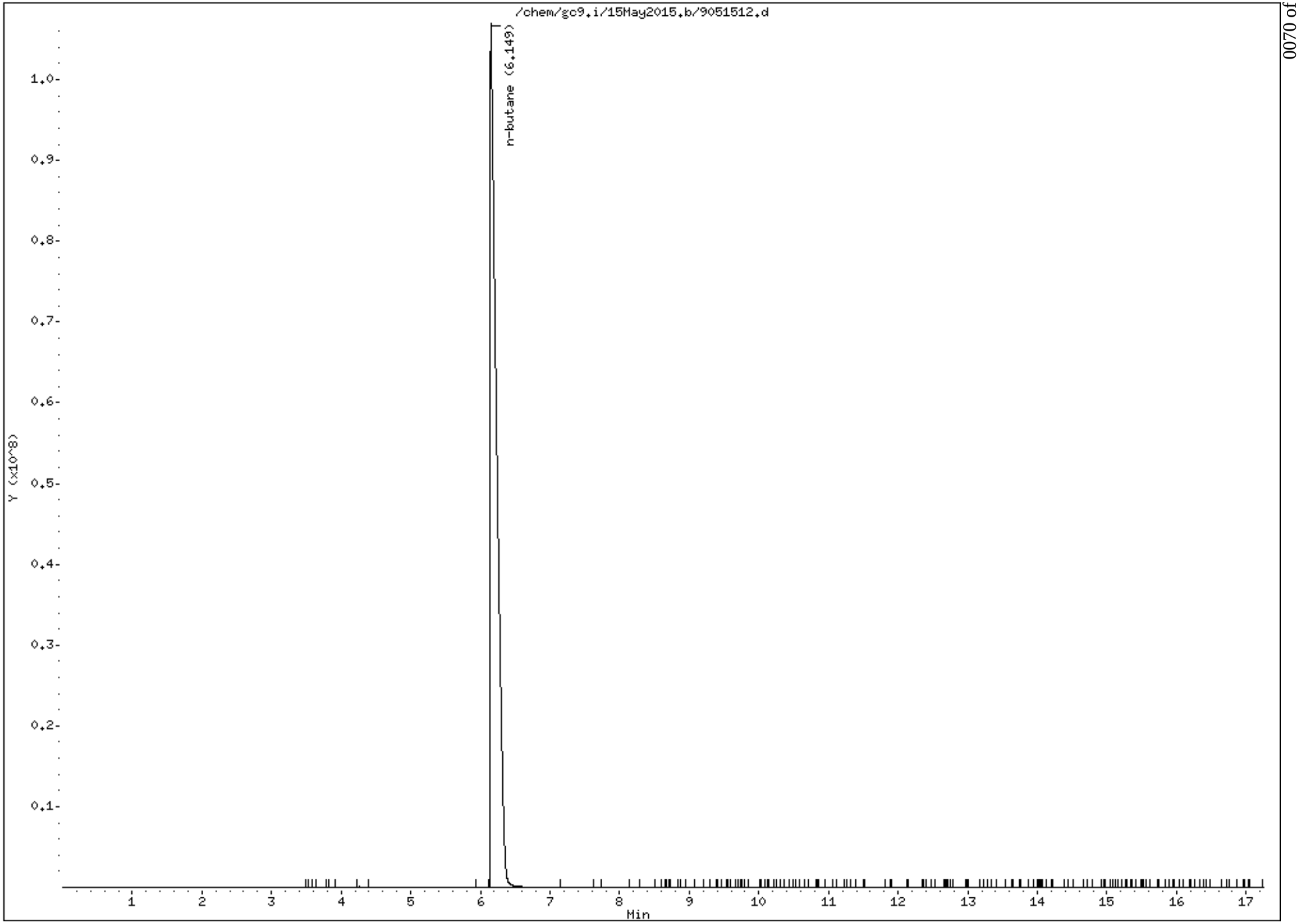
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

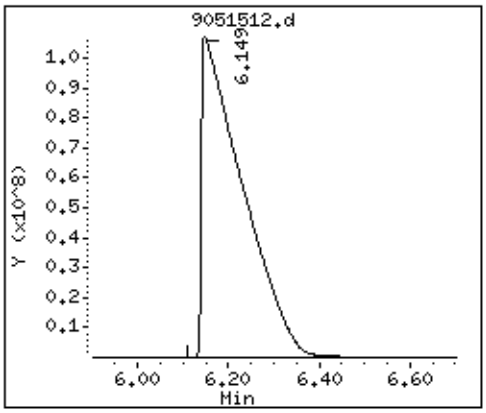
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
10 n-butane	6.149	6.304	-0.155	6752837647	9.99000	11.0(A)

QC Flag Legend

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


/chem/gc9.i/15May2015.b/9051512.d
n-butane (6.149)
Y (x10^8)
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


9051512.d
6.149
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
Y (x10^8)
6.00
6.20
6.40
6.60
Min

Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc9.i/15May2015.b/9051511.d
Lab Smp Id: 843-471 Client Smp ID: Level-7
Inj Date : 15-MAY-2015 16:39
Operator : mjs Inst ID: gc9.i
Smp Info : (10:50)1.0ml,
Misc Info : Propane 99.5%
Comment : GC/FID
Method : /chem/gc9.i/15May2015.b/915n0515.m
Meth Date : 16-May-2015 12:10 lyohanne Quant Type: ESTD
Cal Date : 15-MAY-2015 16:39 Cal File: 9051511.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

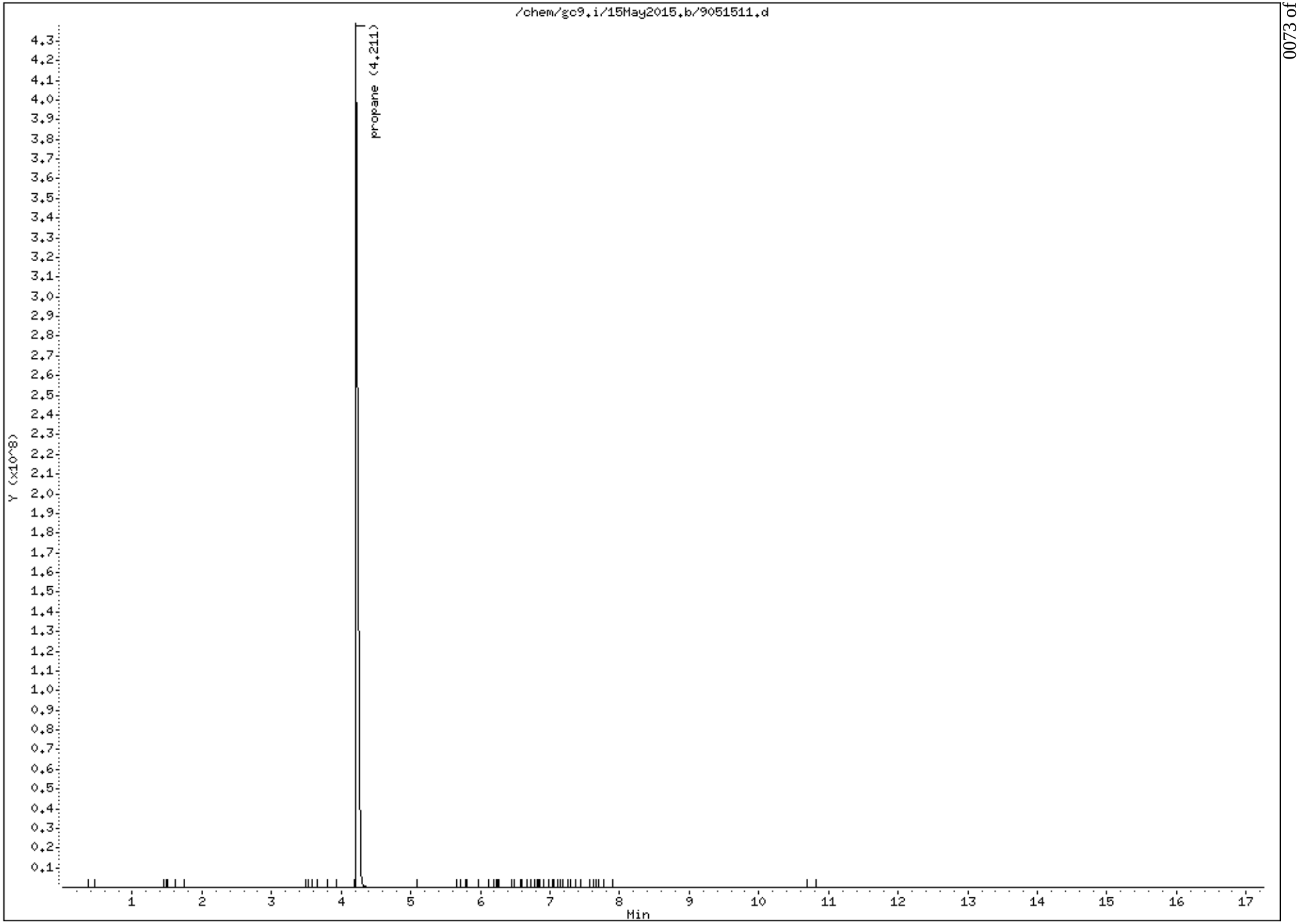
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

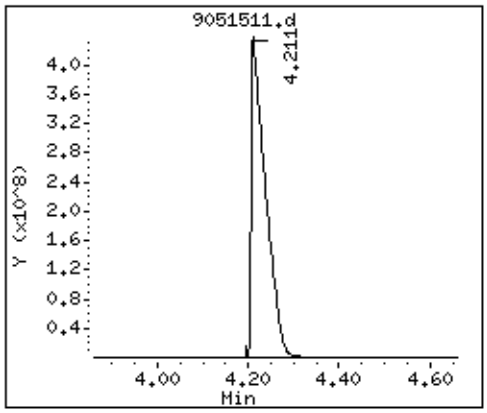
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
5 propane	4.211	4.262	-0.051	9693493268	19.9000	21.1(A)

QC Flag Legend

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


/chem/gc9.i/15May2015.b/9051511.d
propane (4.211)
Y (x10^8)
Min

5 propane


9051511.d
4.211
4.0
3.6
3.2
2.8
2.4
2.0
1.6
1.2
0.8
0.4
Y (x10^8)
4.00
4.20
4.40
4.60
Min

Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc9.i/15May2015.b/9051510.d
Lab Smp Id: 1476-437 Client Smp ID: Level-7
Inj Date : 15-MAY-2015 15:59
Operator : mjs Inst ID: gc9.i
Smp Info : (12:48)1.0ml,
Misc Info : Ethene 99.5%
Comment : GC/FID
Method : /chem/gc9.i/15May2015.b/915n0515.m
Meth Date : 16-May-2015 12:10 lyohanne Quant Type: ESTD
Cal Date : 15-MAY-2015 15:59 Cal File: 9051510.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

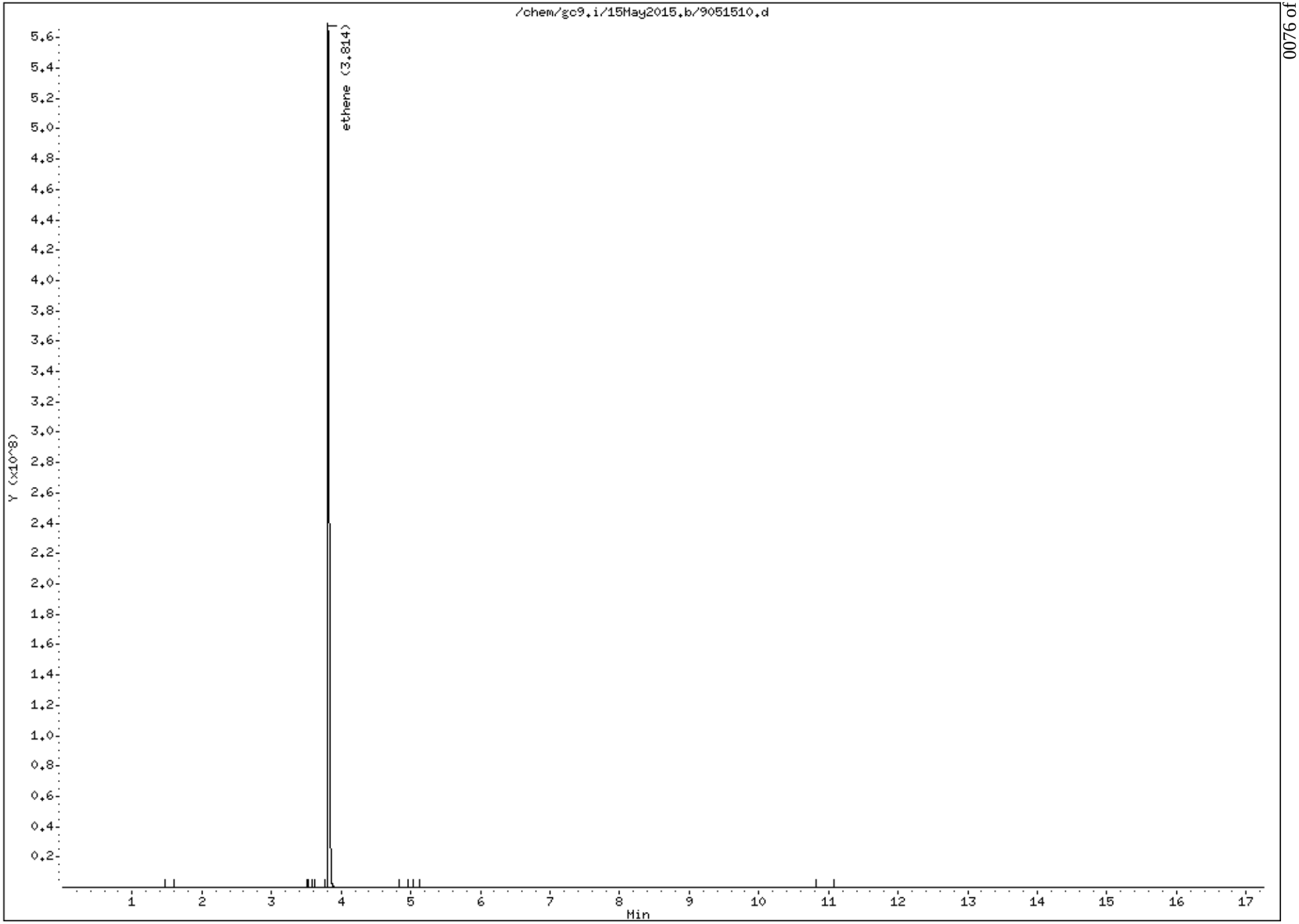
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
4 ethene	3.814	3.836	-0.022	7563281059	24.8750	25.7(A)

QC Flag Legend

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


/chem/gc9.i/15May2015.b/9051510.d
ethene (3.814)
Y (x10^8)
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
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12
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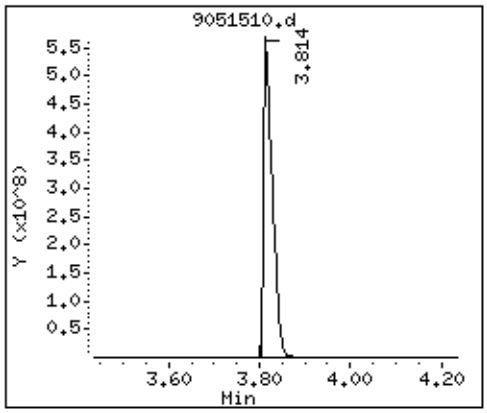
14
15
16
17
Min

4 ethene


9051510.d
3.814
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/15May2015.b/9051509.d
Lab Smp Id: 1476-438 Client Smp ID: Level-7
Inj Date : 15-MAY-2015 15:35
Operator : mjs Inst ID: gc9.i
Smp Info : (12:48)1.0ml,
Misc Info : Ethane 99.9%
Comment : GC/FID
Method : /chem/gc9.i/15May2015.b/915n0515.m
Meth Date : 16-May-2015 12:10 lyohanne Quant Type: ESTD
Cal Date : 15-MAY-2015 15:35 Cal File: 9051509.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

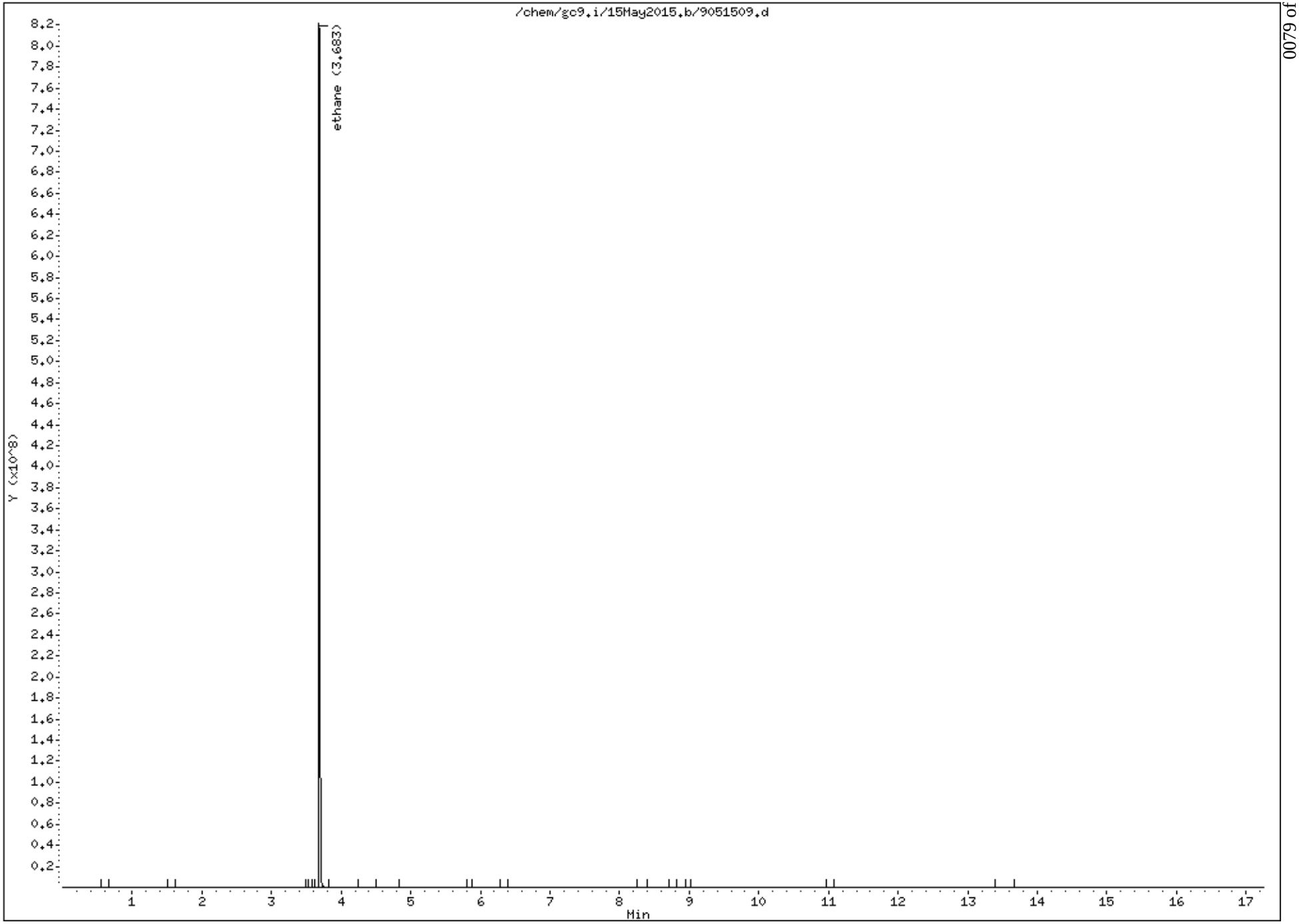
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

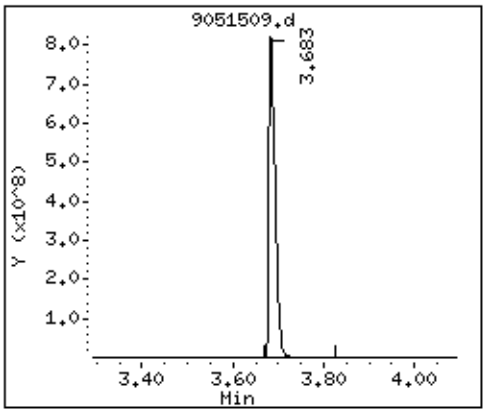
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
3 ethane	3.683	3.693	-0.010	7931324350	24.9750	26.2(A)

QC Flag Legend

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


/chem/gc9.i/15May2015.b/9051509.d
ethane (3.683)
Y (x10^8)
Min

3 ethane



Report Date: 15-Jun-2015 08:19

Eurofins Air Toxics Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: gc9.i Injection Date: 15-JUN-2015 07:51
Lab File ID: 9061501.d Init. Cal. Date(s): 15-MAY-2015 15-MAY-2015
Analysis Type: AIR Init. Cal. Times: 12:51 18:52
Lab Sample ID: 2299-1048A Quant Type: ESTD
Method: /chem/gc9.i/15Jun2015.b/915n0515.m

	COMPOUND	RRF / AMOUNT	RF0.000	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
	2 Methane	157692659	157839768	0.010	-0.09329	15.00000	Averaged	
	3 ethane	302453714	307639158	0.010	-1.71446	15.00000	Averaged	
	4 ethene	294309238	300689927	0.010	-2.16802	15.00000	Averaged	
	5 propane	458928325	465739920	0.010	-1.48424	15.00000	Averaged	
	7 acetylene	389975935	404625216	0.010	-3.75646	15.00000	Averaged	
	8 iso-butane	599502969	621438546	0.010	-3.65896	15.00000	Averaged	
	10 n-butane	612065400	621963208	0.010	-1.61712	15.00000	Averaged	
	15 neo-pentane	794354499	822070335	0.010	-3.48910	15.00000	Averaged	
	16 isopentane	781520768	772412977	0.010	1.16539	15.00000	Averaged	
	17 pentane	752987450	783362146	0.010	-4.03389	15.00000	Averaged	
M	37 C6+ Hydrocarbons	993638785	1.057e+09	0.010	-6.40011	15.00000	Averaged	
S	22 c6-c7	993638785	1.056e+09	0.010	-6.23819	15.00000	Averaged	
S	36 c8+	993638785	++++	0.010	++++	15.00000	Averaged	<-

Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc9.i/15Jun2015.b/9061501.d
Lab Smp Id: 2299-1048A Client Smp ID: CCV
Inj Date : 15-JUN-2015 07:51
Operator : gm Inst ID: gc9.i
Smp Info : 1.0ml,
Misc Info : CCV
Comment : GC/FID
Method : /chem/gc9.i/15Jun2015.b/915n0515.m
Meth Date : 15-Jun-2015 08:19 gmash Quant Type: ESTD
Cal Date : 15-MAY-2015 18:52 Cal File: 9051514.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

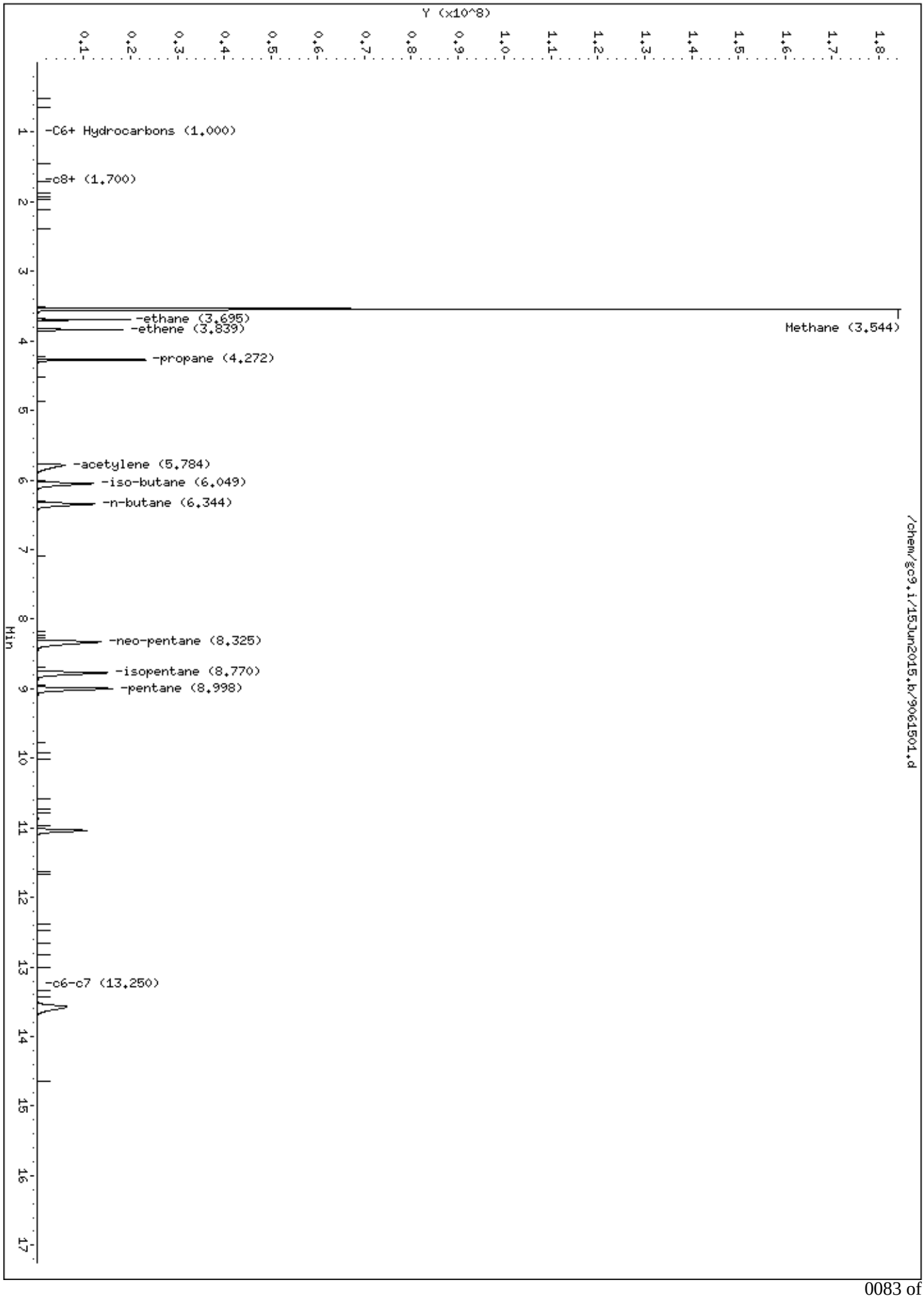
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (%)	AMOUNTS ON-COL (%)
	2 Methane	3.544	3.544	0.000	1602073644	10.1500	10.2
	3 ethane	3.695	3.695	0.000	155665413	0.50600	0.515
	4 ethene	3.839	3.839	0.000	152449792	0.50700	0.518
	5 propane	4.272	4.272	0.000	235664399	0.50600	0.514
	7 acetylene	5.784	5.784	0.000	208381986	0.51500	0.534(A)
	8 iso-butane	6.049	6.049	0.000	316312219	0.50900	0.528(A)
	10 n-butane	6.344	6.344	0.000	314091420	0.50500	0.513
	15 neo-pentane	8.325	8.325	0.000	438163488	0.53300	0.552(A)
	16 isopentane	8.770	8.770	0.000	406289225	0.52600	0.520
	17 pentane	8.998	8.998	0.000	409698402	0.52300	0.544(A)
M	37 C6+ Hydrocarbons				568791226	0.53800	0.572
S	22 c6-c7	9.250-17.250			567925652	0.53800	0.572
S	36 c8+	0.400-3.000			865573	0.00000	0.000871(a)

QC Flag Legend

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

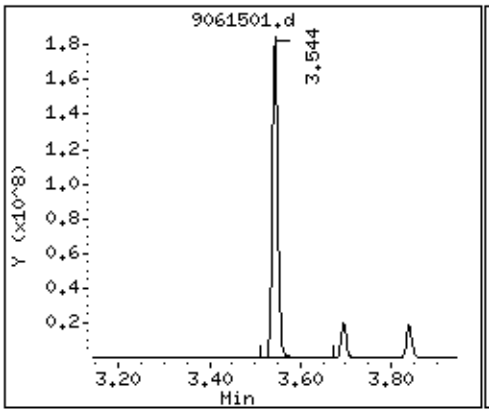


Data File: /chem/gc9.i/15Jun2015.b/9061501.d

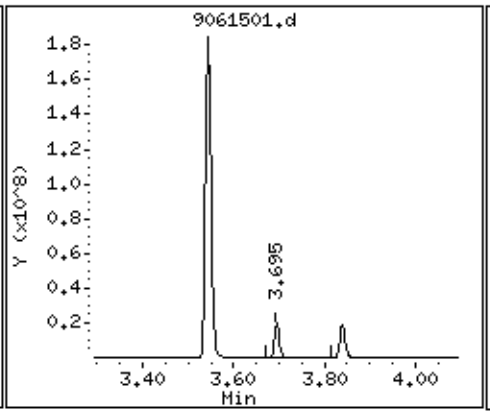
/chem/gc9.i/15Jun2015.b/9061501.d

Page 1

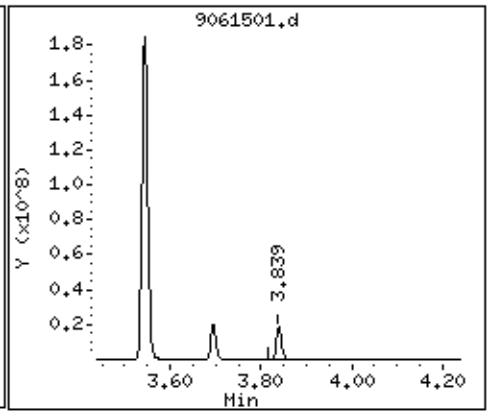
2 Methane



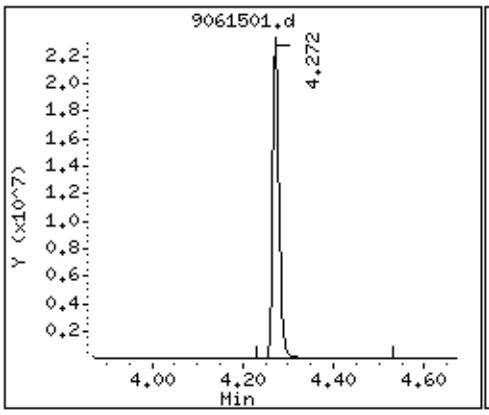
3 ethane



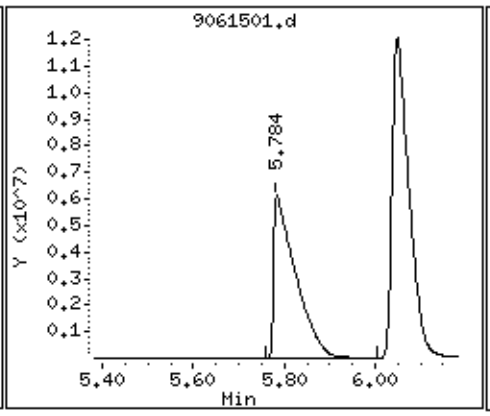
4 ethene



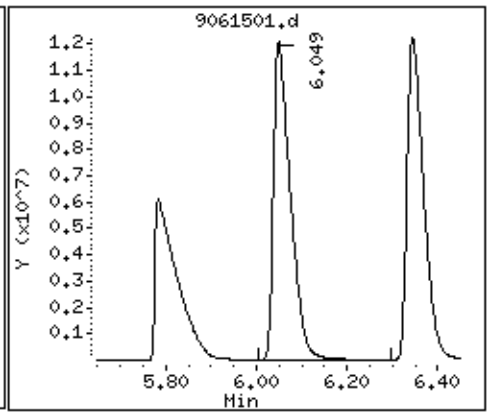
5 propane



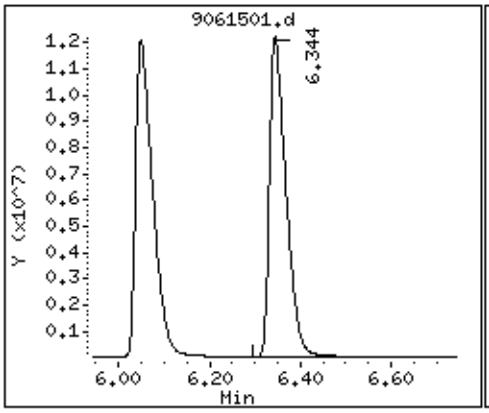
7 acetylene



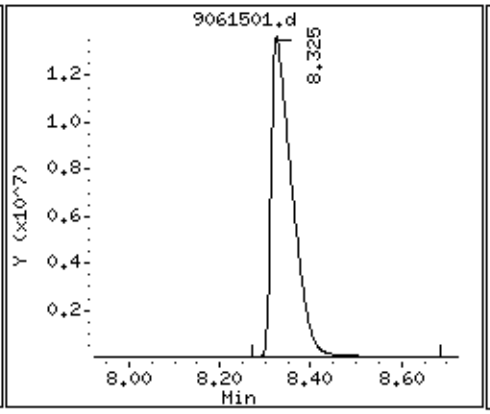
8 iso-butane



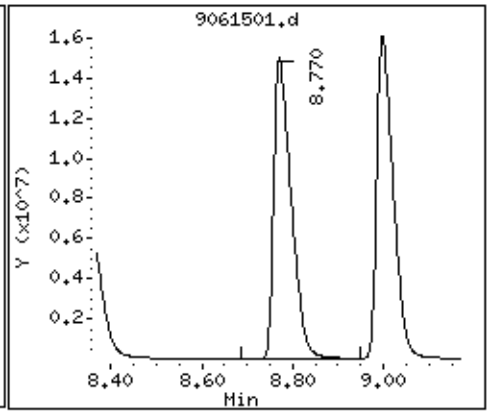
10 n-butane



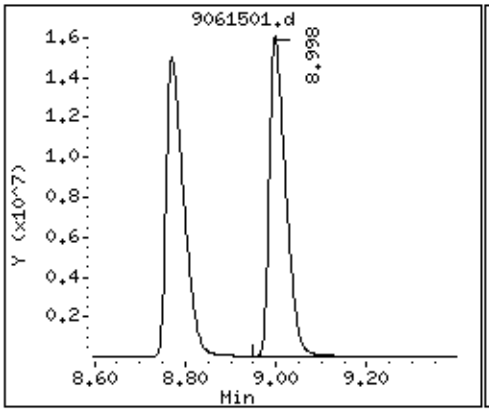
15 neo-pentane



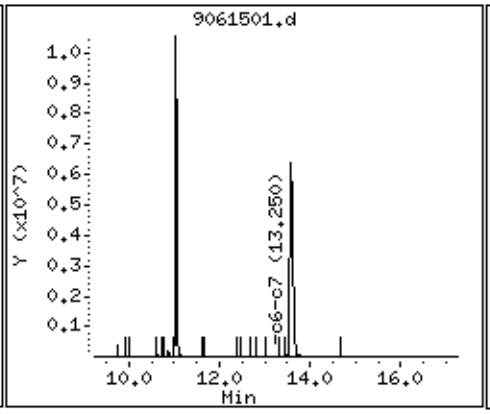
16 isopentane



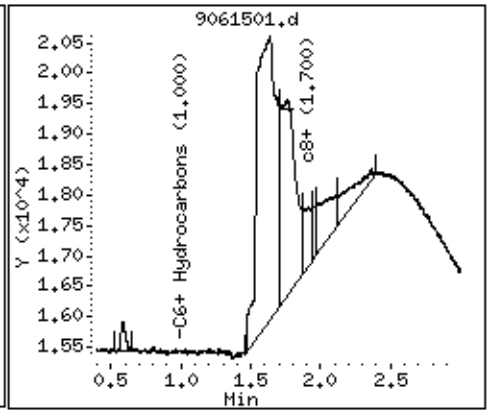
17 pentane



S 22 c6-c7



S 36 c8+



eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 1506153C-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9061502**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/15/15 08:16 AM**	

Compound	**%Recovery**	**Method Limits**
Methane	100	85-115

Container Type: NA - Not Applicable

Report Date: 15-Jun-2015 08:41

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name:
Client SDG: 15Jun2015
Sample Matrix: GAS
Fraction: Atm Gas
Lab Smp Id: 2299-1160
Client Smp ID: LCS
Level: LOW
Operator: gm
Data Type: GC DATA
SampleType: LCS
SpikeList File: 2299-1160.spk
Quant Type: ESTD
Sublist File: ngas.sub
Method File: /chem/gc9.i/15Jun2015.b/915n0515.m
Misc Info: LCS

SPIKE COMPOUND	CONC ADDED %	CONC RECOVERED %	% RECOVERED	LIMITS
2 Methane	9.96	9.96	100.04	85-115
3 ethane	0.501	0.497	99.18	85-115
4 ethene	0.507	0.508	100.29	85-115
5 propane	0.500	0.510	102.10	85-115
7 acetylene	0.501	0.517	103.27	85-115
8 iso-butane	0.501	0.522	104.21	85-115
10 n-butane	0.495	0.507	102.47	85-115
15 neo-pentane	0.512	0.533	104.05	85-115
16 isopentane	0.505	0.494	97.76	85-115
17 pentane	0.507	0.521	102.81	85-115
M 37 C6+ Hydrocarbons	0.524	0.544	103.91	85-115

Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc9.i/15Jun2015.b/9061502.d
Lab Smp Id: 2299-1160 Client Smp ID: LCS
Inj Date : 15-JUN-2015 08:16
Operator : gm Inst ID: gc9.i
Smp Info : 1.0ml,
Misc Info : LCS
Comment : GC/FID
Method : /chem/gc9.i/15Jun2015.b/915n0515.m
Meth Date : 15-Jun-2015 08:19 gmash Quant Type: ESTD
Cal Date : 15-MAY-2015 18:52 Cal File: 9051514.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

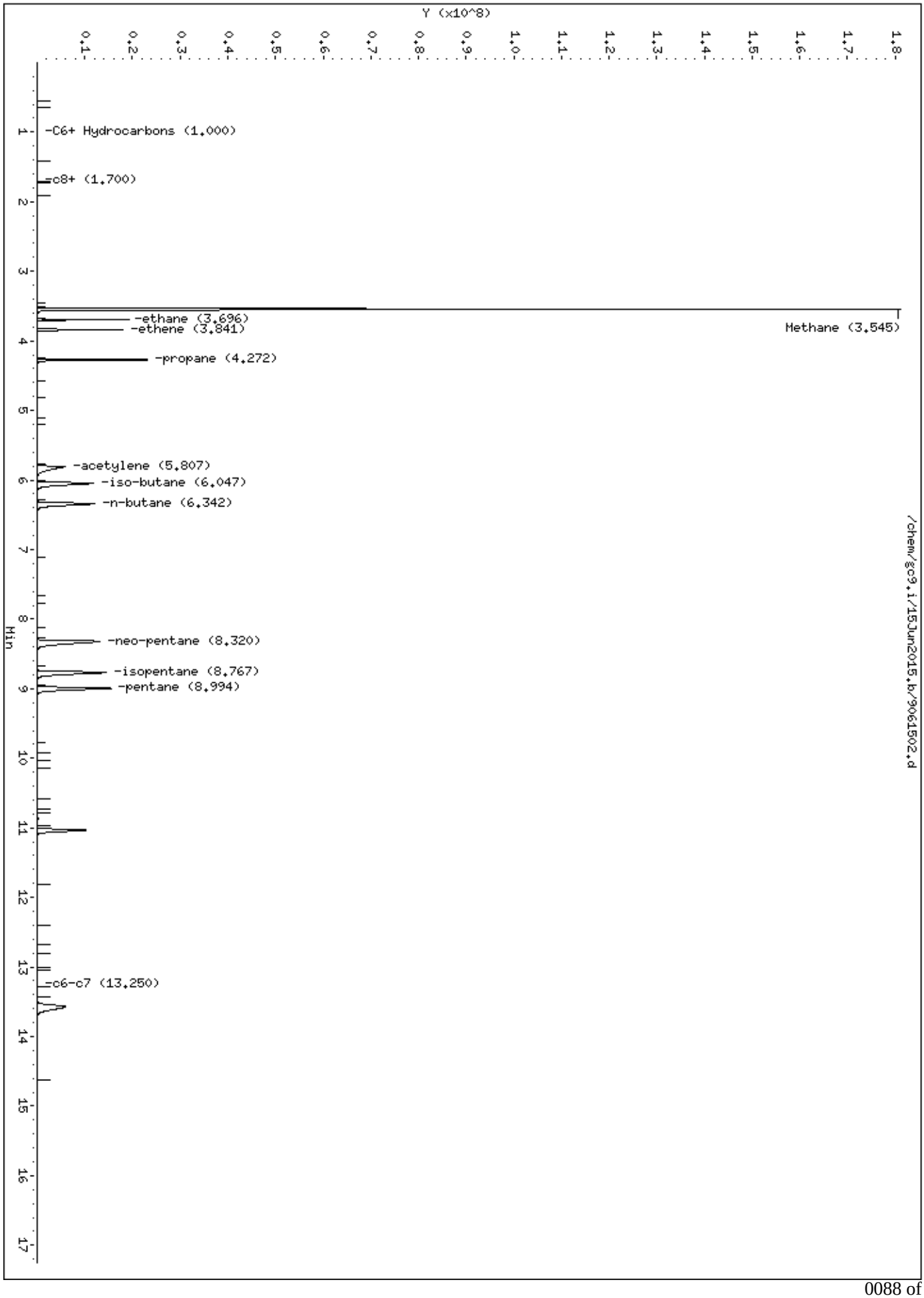
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (%)	FINAL (%)
2 Methane	3.545	3.544	0.001	1571315859	9.96442	9.96
3 ethane	3.696	3.695	0.001	150281590	0.49687	0.497
4 ethene	3.841	3.839	0.002	149653411	0.50849	0.508
5 propane	4.272	4.272	0.000	234279123	0.51049	0.510
7 acetylene	5.807	5.784	0.023	201760058	0.51737	0.517(A)
8 iso-butane	6.047	6.049	-0.002	312999162	0.52210	0.522(A)
10 n-butane	6.342	6.344	-0.002	310465552	0.50724	0.507
15 neo-pentane	8.320	8.325	-0.005	423183510	0.53274	0.533(A)
16 isopentane	8.767	8.770	-0.003	385840388	0.49370	0.494
17 pentane	8.994	8.998	-0.004	392506971	0.52127	0.521
M 37 C6+ Hydrocarbons				541033917	0.54450	0.544
S 22 c6-c7	9.250-17.250			540402721	0.54386	0.544
S 36 c8+	0.400-3.000			631196	0.000635	0.000635(a)

QC Flag Legend

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

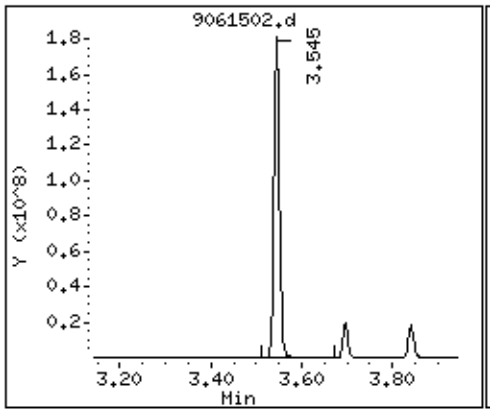


Data File: /chem/gc9.i/15Jun2015.b/9061502.d

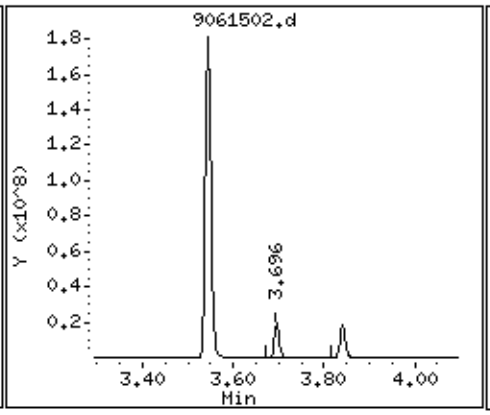
/chem/gc9.i/15Jun2015.b/9061502.d

Page 1

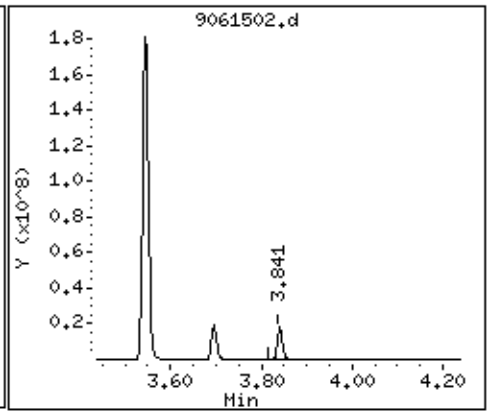
2 Methane



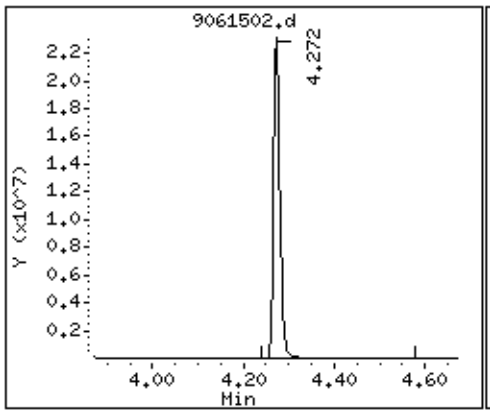
3 ethane



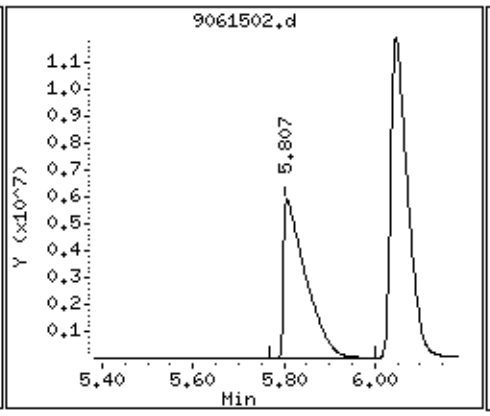
4 ethene



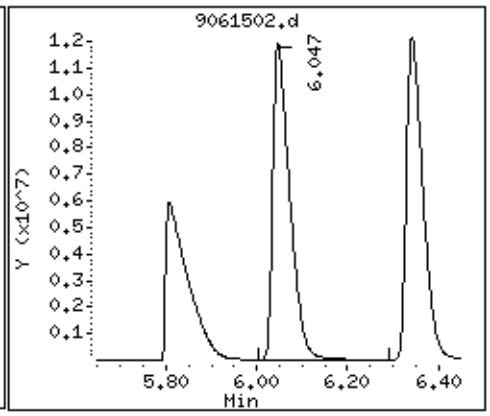
5 propane



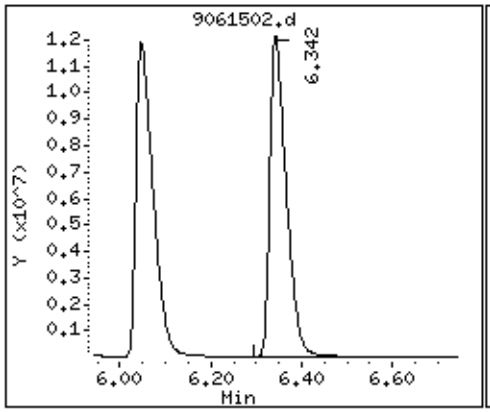
7 acetylene



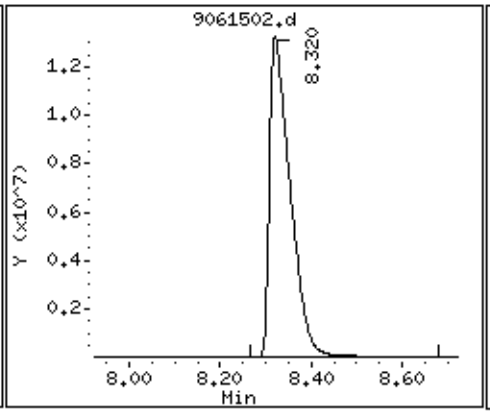
8 iso-butane



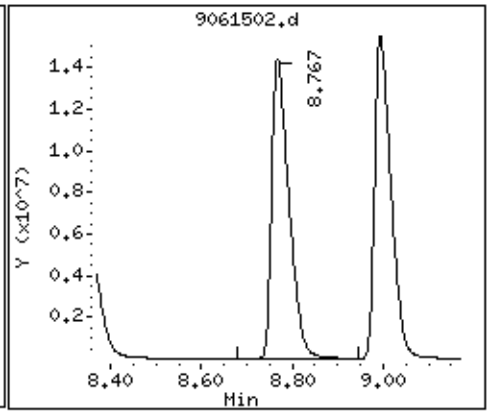
10 n-butane



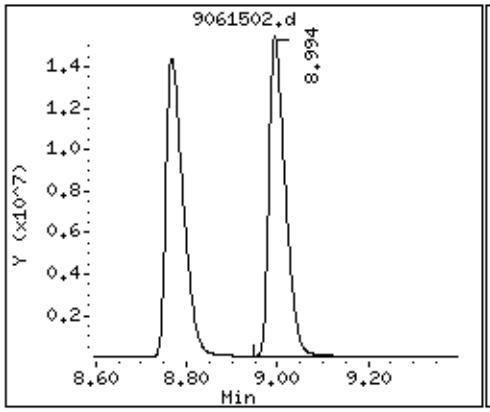
15 neo-pentane



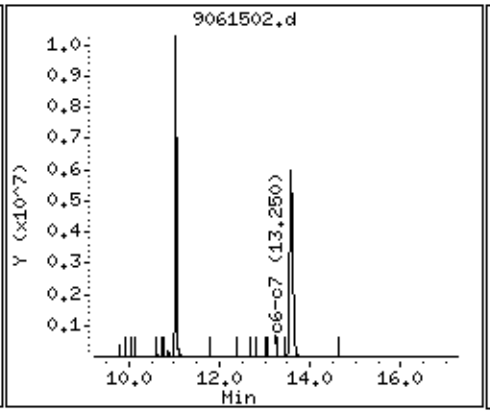
16 isopentane



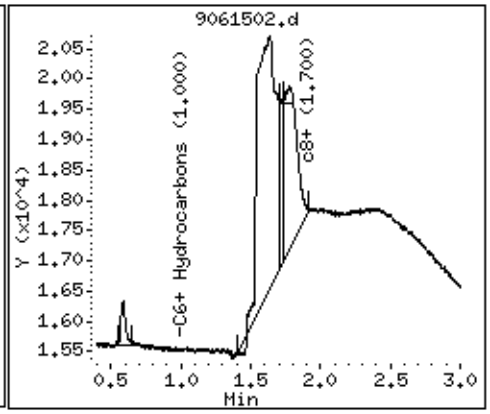
17 pentane



S 22 c6-c7



S 36 c8+



eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1506153C-06AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9061526**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/15/15 10:46 PM**	

Compound	**%Recovery**	**Method Limits**
Methane	95	85-115

Container Type: NA - Not Applicable

Report Date: 15-Jun-2015 23:12

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name:
Client SDG: 15Jun2015
Sample Matrix: GAS
Fraction: Atm Gas
Lab Smp Id: 2299-1160 ngas
Client Smp ID: LCSD
Level: LOW
Operator: gd
Data Type: GC DATA
SampleType: LCSD
SpikeList File: 2299-1160.spk
Quant Type: ESTD
Sublist File: ngas.sub
Method File: /chem/gc9.i/15Jun2015.b/915n0515.m
Misc Info: LCSD

	SPIKE COMPOUND	CONC ADDED %	CONC RECOVERED %	% RECOVERED	LIMITS
	2 Methane	9.96	9.48	95.17	85-115
	3 ethane	0.501	0.472	94.32	85-115
	4 ethene	0.507	0.484	95.42	85-115
	5 propane	0.500	0.485	97.05	85-115
	7 acetylene	0.501	0.492	98.24	85-115
	8 iso-butane	0.501	0.497	99.21	85-115
	10 n-butane	0.495	0.483	97.65	85-115
	15 neo-pentane	0.512	0.508	99.19	85-115
	16 isopentane	0.505	0.471	93.28	85-115
	17 pentane	0.507	0.498	98.23	85-115
M	37 C6+ Hydrocarbons	0.524	0.521	99.37	85-115

Eurofins Air Toxics Inc.

Modified ASTM D-1945/1946

Data file : /chem/gc9.i/15Jun2015.b/9061526.d
Lab Smp Id: 2299-1160 ngas Client Smp ID: LCSD
Inj Date : 15-JUN-2015 22:46
Operator : gd Inst ID: gc9.i
Smp Info : 1.0ml,
Misc Info : LCSD
Comment : GC/FID
Method : /chem/gc9.i/15Jun2015.b/915n0515.m
Meth Date : 15-Jun-2015 08:19 gmash Quant Type: ESTD
Cal Date : 15-MAY-2015 18:52 Cal File: 9051514.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

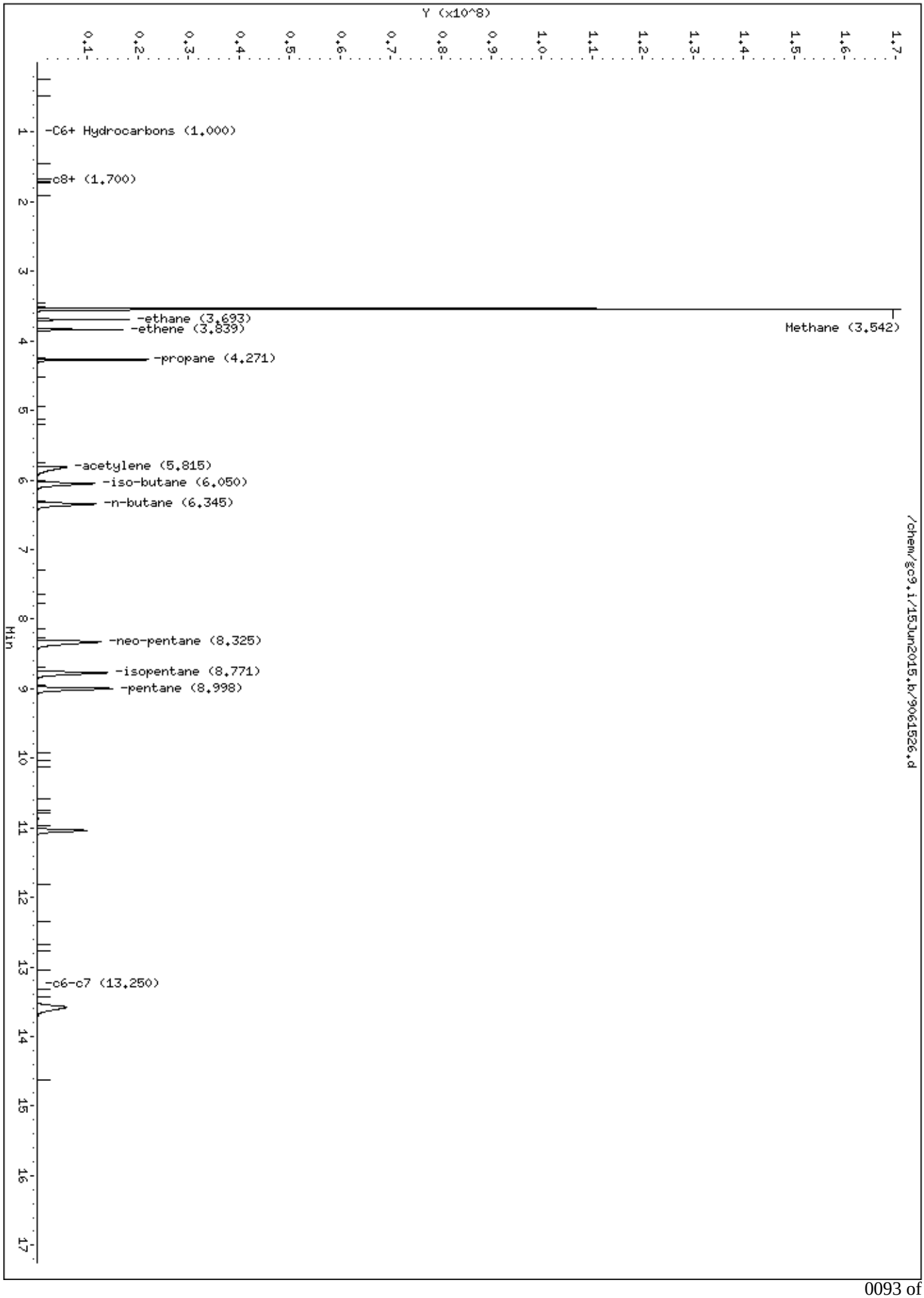
Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (%)	FINAL (%)
2 Methane	3.542	3.544	-0.002	1494744736	9.47885	9.48
3 ethane	3.693	3.695	-0.002	142928818	0.47256	0.472
4 ethene	3.839	3.839	0.000	142377284	0.48377	0.484
5 propane	4.271	4.272	-0.001	222685676	0.48523	0.485
7 acetylene	5.815	5.784	0.031	191940469	0.49219	0.492
8 iso-butane	6.050	6.049	0.001	297992454	0.49707	0.497
10 n-butane	6.345	6.344	0.001	295854841	0.48337	0.483
15 neo-pentane	8.325	8.325	0.000	403410121	0.50785	0.508
16 isopentane	8.771	8.770	0.001	368143837	0.47106	0.471
17 pentane	8.998	8.998	0.000	374993500	0.49801	0.498
M 37 C6+ Hydrocarbons				517402618	0.52071	0.521
S 22 c6-c7	9.250-17.250			516863405	0.52017	0.520
S 36 c8+	0.400-3.000			539213	0.000543	0.000543(a)

QC Flag Legend

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


Data File: /chem/gc9.i/15Jun2015.b/9061526.d
Page 1
Y (x10^8)
0.1
0.2
0.3
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
-C6+ Hydrocarbons (1.000)
c8+ (1.700)
-ethane (3.693)
-ethene (3.839)
Methane (3.542)
-propane (4.271)
-acetylene (5.815)
-iso-butane (6.050)
-n-butane (6.345)
-neo-pentane (8.325)
-isopentane (8.771)
-pentane (8.998)
-c6-c7 (13.250)
Min
1
2
3
4
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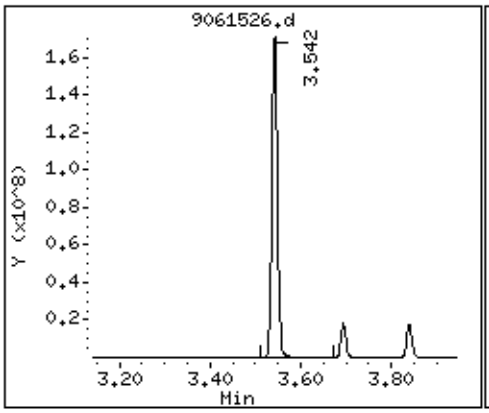
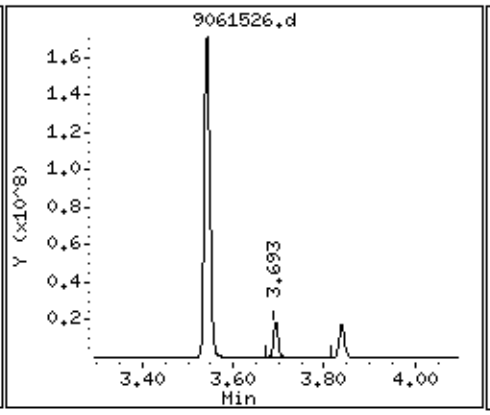
17
/chem/gc9.i/15Jun2015.b/9061526.d

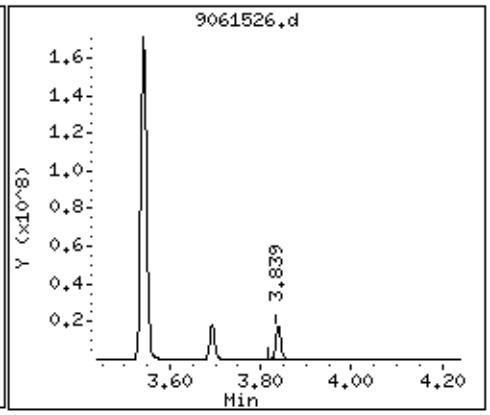
2 Methane



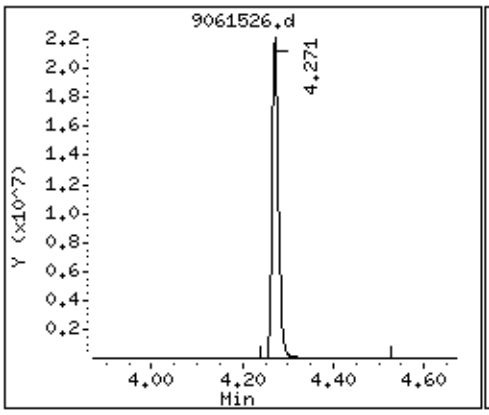
3 ethane



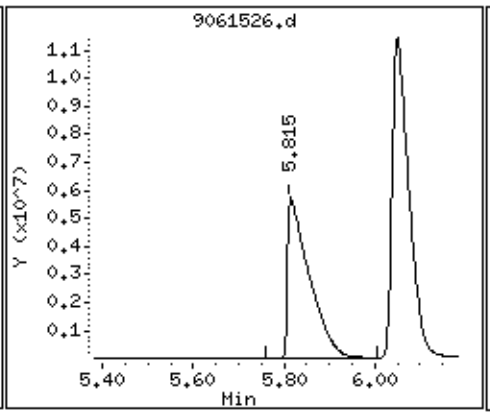
4 ethene



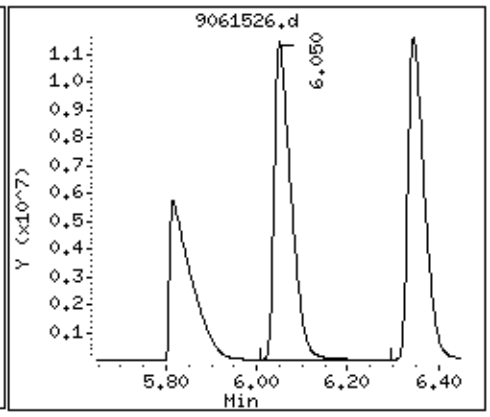
5 propane



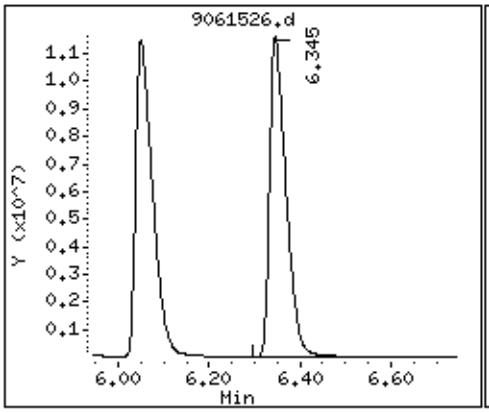
7 acetylene



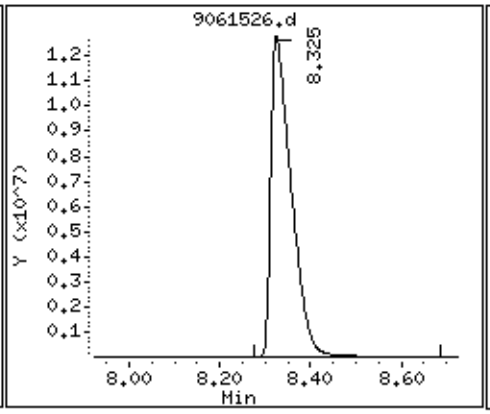
8 iso-butane



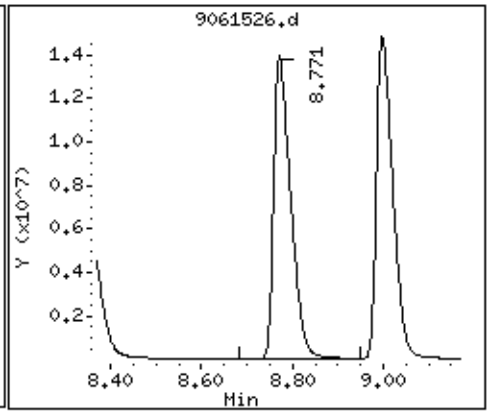
10 n-butane



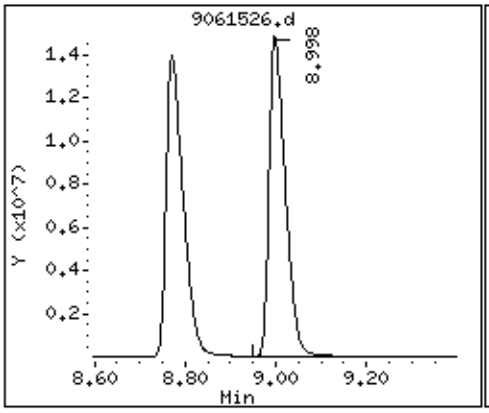
15 neo-pentane



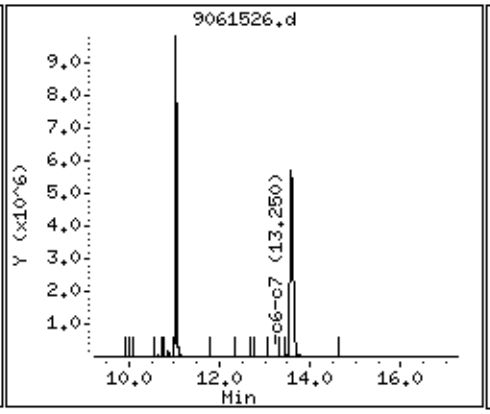
16 isopentane



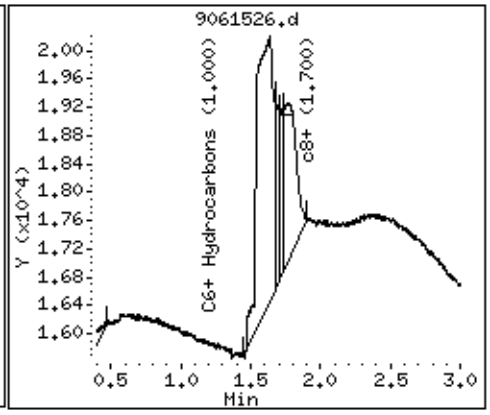
17 pentane



S 22 c6-c7



S 36 c8+



Eurofins Air Toxics, Inc.
Method: **ASTM D-1945/1946**

GC-9

Logbook # 2723
Leak Test gm

	USE	File #	Sample Name/Client ID	Can #	Verified Pressure >2psi	Pressure	Amt (mL)	DF	Date	Time	Review Init.	Comments
1	✓	9061501	2299-1048A	NA	NA	NA	1.0	1.00	6/15/15	0751	gm	CCV (NGas)
2	✓	02	2299-1160							0816		LCS (")
3	✓	03	2299-480							0838		CCV (CH_2)
4	✓	04	2299-203							0900		LCS (")
5	✓	05	He Lab Blank	33977						0924		Lab Blank
6	✓	06	N_2 Lab Blank	34264						0947		
7	✓	07	1506074B-01A	1L2715	✓	1"Hg → 14.9psi		2.08		1012	gm	
8	✓	08	-02A	1L2733	✓	2.6"Hg → 15.2psi		2.23		1048		
9	✓	09	-03A	1L2714	✓	1.4"Hg → 15.3psi		2.14		1111		
10	✓	10	1506169B-03A	13844	✓	7.0"Hg → 5psi		1.75		1132	gm	
11	✓	11	-02A	4225	✓					1153	gd	
12	✓	12	-01A	34320	✓					1439		
13	✓	13	1506153C-01A	33902	✓	5.1"Hg - 4.7psi		1.59		1549		
14	✓	14	-02A	6L0054	✓	5.7"Hg - 5.1psi		1.66		1611		
15	✓	15	-03A	23925	✓	3.7"Hg - 5psi		1.53		1640		

Calculation check : File ID: 9061502 Compound: CH_4 Initials: gd

Sample Amt= $\frac{\text{Area Count Sample} \times}{\text{RF}}$ Dilution Factor = $\frac{(157131585 9)}{(15769265 9)} \times$ (1.00)= 9.96

Reported Result= 9.96

Reviewed by/Date gd 6/15/15

Eurofins Air Toxics, Inc.
Method: **ASTM D-1945/1946**

GC-9

Logbook # 2723
Leak Test_____

	USE	File #	Sample Name/Client ID	Can #	Verified Pressure >2psi	Pressure	Amt (mL)	DF	Date	Time	Review Init.	Comments
1	✓	9061516	1506153C-04A	22509	✓	6.3"Hg - 4.9psi	1.0	1.69	6/15/15	1718	gd	
2	✓	17	1506118B-01A	36393	✓	10.6"Hg - 14.9psi		3.12		1754		
3	✓	18	-03A	33410	✓	7.3"Hg - 15.2psi		2.69		1817		
4	X	19	-02A	36519	✓	6.5"Hg - 14.9psi		2.57		1845		
5	✓	20	-02A		✓					2007		
6	C	21	-02A		✓					2030		Confirmation
7	✓	22	1506166B-01A	2222	✓	4.7"Hg - 15psi		2.40		2053		
8	X	23	-03A	34626	✓	7.8"Hg - 15.1psi 1.3psi - 15.3psi		~~5.34~~ 5.13	6/15/15	2141		~~0.1psi - 0.4psi~~ gd 6/15/15 Bad Leak
9	✓	24	-03A		✓			6.98		2202		0.0"Hg - 5.3psi Repress (2x)
10	✓	25	-02A	2202	✓	0.7"Hg - 15.1psi 0.6psi - 15.3psi		6.65		2225		0.4psi - 5psi Repress (2x)
11	✓	26	2299-1160	NA	NA	NA		1.00		2246	✓	LCSD (Ngas)
12	✓	27	2299-203							2310	gm	LCSD (H2)
13												
14												
15										gm 6/16/15		

Calculation check : File ID: 9061522 Compound: Helium Initials: gd

Sample Amt= $\frac{\text{Area Count Sample} \times}{\text{RF}}$ Dilution Factor = $\frac{(84400598)}{(64082523)} \times$ (2.48)= 2.99

Reported Result= 2.99

Reviewed by/Date gd 6/15/15

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

Page 1 of 1

Project Manager: Terry Taylor
Collected by: (Print and Sign) David Lindstrand
Company: AMAI Email:
Address: 2700 Westchester City: Purchase State: NY Zip: 10577
Phone: 914-251-0400 x309 Fax:

Project Info:
P.O. #:
Project #: BMS Humacao
Project Name: Building 6 Indoor Air

Turn Around Time:
☐ Normal
☒ Rush 3-Day (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	BG-1IA-2	33902	6/7/15	18:04	TO15	-30"	-5.5"		
02A	BG-2IA-2	6L0054	6/7/15	17:41		-30"	-7.0		
03A	BG-2IAD-2	23925	6/7/15	17:40		-30"	-5.0		
04A	BG-AA-3	22509	6/7/15	17:49		-30"	-8.0		
	Empty Canister	6L1269	—	—	Not Used/No Analysis	—	—		

Dak 6/8/15

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
David Lindstrand	6/8/15 13:00	[illegible]	6/9/15 0925
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:
Report full list of TO-15 compounds

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fed Ex	7737 7733 2454		Good	Yes No None	1506153

Form 1293 rev.11

eurofins | Air Toxics

SAMPLE RECEIPT SUMMARY

WORKORDER 1506153C

Client

Mr. Terry Taylor
Anderson Mulholland &
Associates, Inc.
2700 Westchester Avenue
Suite 417
Purchase, NY 10577
Sales Rep: N/A

Phone

(914) 251-0400

Fax

Date Promised: 06/17/15 2:00 pm
Date Completed: 6/17/15
Date Received: 6/9/15
PO#:
Project#: BMS Humacao Building 6 Indoor Air

Total $: $ 360.00
Logged By: CC

Fraction	Sample #	Analysis	Collected	Receipt Vac./Pres.	Amount$
01A	B6-1IA-2	Modified ASTM D-1946	6/7/2015	5.1 "Hg	$90.00
02A	B6-2IA-2	Modified ASTM D-1946	6/7/2015	5.7 "Hg	$90.00
03A	B6-2IAD-2	Modified ASTM D-1946	6/7/2015	3.7 "Hg	$90.00
04A	B6-AA-3	Modified ASTM D-1946	6/7/2015	6.3 "Hg	$90.00
05A	Lab Blank	Modified ASTM D-1946	NA	NA	$0.00
06A	LCS	Modified ASTM D-1946	NA	NA	$0.00
06AA	LCSD	Modified ASTM D-1946	NA	NA	$0.00

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.
2700 Westchester Avenue
Suite 417
Purchase, NY 10577

Analysis Code: ASTM

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

TERMS: NET 30

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

Other Records

DILUTION FACTORS

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

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

Initial Vacuum ("Hg)	**5 psi** Final Press. Dil. Factor	**10 psi** Final Press. Dil. Factor	**15 psi** Final Press. Dil. Factor
0.0	1.34	1.68	2.02
0.5	1.36	1.71	2.05
1.0	1.39	1.74	2.09
1.5	1.41	1.77	2.13
2.0	1.44	1.80	2.16
2.5	1.46	1.83	2.20
3.0	1.49	1.87	2.24
3.5	1.52	1.90	2.29
4.0	1.55	1.94	2.33
4.5	1.58	1.98	2.38
5.0	1.61	2.02	2.42
5.5	1.64	2.06	2.47
6.0	1.68	2.10	2.53
6.5	1.71	2.15	2.58
7.0	1.75	2.19	2.64
7.5	1.79	2.24	2.69
8.0	1.83	2.29	2.76
8.5	1.87	2.34	2.82
9.0	1.91	2.40	2.89
9.5	1.96	2.46	2.96
10.0	2.01	2.52	3.03
10.5	2.06	2.59	3.11
11.0	2.12	2.65	3.19
11.5	2.17	2.72	3.28
12.0	2.23	2.80	3.37
12.5	2.30	2.88	3.46
13.0	2.36	2.97	3.57
13.5	2.44	3.06	3.67
14.0	2.51	3.15	3.79
14.5	2.59	3.25	3.91
15.0	2.68	3.36	4.04
15.5	2.77	3.48	4.18
16.0	2.87	3.60	4.33
16.5	2.98	3.73	4.49
17.0	3.09	3.88	4.66
17.5	3.22	4.03	4.85
18.0	3.35	4.20	5.05
18.5	3.50	4.38	5.27
19.0	3.65	4.58	5.51
19.5	3.83	4.80	5.77
20.0	4.02	5.04	6.06
20.5	4.23	5.31	6.38

Initial Vacuum ("Hg)	**5 psi** Final Press. Dil. Factor	**10 psi** Final Press. Dil. Factor	**15 psi** Final Press. Dil. Factor
21.0	4.47	5.60	6.73
21.5	4.73	5.93	7.13
22.0	5.03	6.30	7.58
22.5	5.36	6.72	8.08
23.0	5.74	7.20	8.66
23.5	6.19	7.76	9.32
24.0	6.70	8.40	10.10
24.5	7.31	9.17	11.02
25.0	8.04	10.08	12.12
25.5	8.93	11.20	13.47
26.0	10.05	12.60	15.15
26.5	11.49	14.40	17.32
27.0	13.40	16.80	20.20
27.5	16.08	20.16	24.24
28.0	20.10	25.20	30.31
28.5	26.80	33.61	40.41
29.0	40.20	50.41	60.61

Initial Pressure (psi)	**5 psi** Final Press. Dil. Factor	**10 psi** Final Press. Dil. Factor	**15 psi** Final Press. Dil. Factor
0.0	1.34	1.68	2.02
0.2	1.32	1.66	1.99
0.4	1.30	1.64	1.97
0.6	1.29	1.61	1.94
0.8	1.27	1.59	1.92
1.0	1.25	1.57	1.89
1.2	1.24	1.55	1.87
1.4	1.22	1.53	1.84
1.6	1.21	1.52	1.82
1.8	1.19	1.50	1.80
2.0	1.18	1.48	1.78
2.2	1.17	1.46	1.76
2.4	1.15	1.44	1.74
2.6	1.14	1.43	1.72
2.8	1.13	1.41	1.70
3.0	1.11	1.40	1.68
3.2	1.10	1.38	1.66
3.4	1.09	1.36	1.64
3.6	1.08	1.35	1.62
3.8	1.06	1.34	1.61
4.0	1.05	1.32	1.59

DILUTION FACTORS

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

Initial Pressure (psi)	**5 psi** Final Press. Dil. Factor	**10 psi** Final Press. Dil. Factor	**15 psi** Final Press. Dil. Factor
0.0	1.34	1.68	2.02
0.2	1.32	1.66	1.99
0.4	1.30	1.64	1.97
0.6	1.29	1.61	1.94
0.8	1.27	1.59	1.92
1.0	1.25	1.57	1.89
1.2	1.24	1.55	1.87
1.4	1.22	1.53	1.84
1.6	1.21	1.52	1.82
1.8	1.19	1.50	1.80
2.0	1.18	1.48	1.78
2.2	1.17	1.46	1.76
2.4	1.15	1.44	1.74
2.6	1.14	1.43	1.72
2.8	1.13	1.41	1.70
3.0	1.11	1.40	1.68
3.2	1.10	1.38	1.66
3.4	1.09	1.36	1.64
3.6	1.08	1.35	1.62
3.8	1.06	1.34	1.61
4.0	1.05	1.32	1.59
4.2	1.04	1.31	1.57
4.4	1.03	1.29	1.55
4.6	1.02	1.28	1.54
4.8	1.01	1.27	1.52
5.0	1.00	1.25	1.51
5.2	NA	1.24	1.49
5.4	NA	1.23	1.48
5.6	NA	1.22	1.46
5.8	NA	1.20	1.45
6.0	NA	1.19	1.43
6.2	NA	1.18	1.42
6.4	NA	1.17	1.41
6.6	NA	1.16	1.39
6.8	NA	1.15	1.38
7.0	NA	1.14	1.37
7.2	NA	1.13	1.36
7.4	NA	1.12	1.34

Initial Pressure (psi)	**5 psi** Final Press. Dil. Factor	**10 psi** Final Press. Dil. Factor	**15 psi** Final Press. Dil. Factor
7.6	NA	1.11	1.33
7.8	NA	1.10	1.32
8.0	NA	1.09	1.31
8.2	NA	1.08	1.30
8.4	NA	1.07	1.29
8.6	NA	1.06	1.27
8.8	NA	1.05	1.26
9.0	NA	1.04	1.25
9.2	NA	1.03	1.24
9.4	NA	1.02	1.23
9.6	NA	1.02	1.22
9.8	NA	1.01	1.21
10.0	NA	1.00	1.20
10.2	NA	NA	1.19
10.4	NA	NA	1.18
10.6	NA	NA	1.17
10.8	NA	NA	1.16
11.0	NA	NA	1.16
11.2	NA	NA	1.15
11.4	NA	NA	1.14
11.6	NA	NA	1.13
11.8	NA	NA	1.12
12.0	NA	NA	1.11
12.2	NA	NA	1.10
12.4	NA	NA	1.10
12.6	NA	NA	1.09
12.8	NA	NA	1.08
13.0	NA	NA	1.07
13.2	NA	NA	1.06
13.4	NA	NA	1.06
13.6	NA	NA	1.05
13.8	NA	NA	1.04
14.0	NA	NA	1.03
14.2	NA	NA	1.03
14.4	NA	NA	1.02
14.6	NA	NA	1.01
14.8	NA	NA	1.01

Compound Listing

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: 03/26/15
Workorder # 1506153C	Form F1.27	Revision #11	Revision date: 03/26/15	Page 1 of 2

S1	S2	S3	S4	D	Section 1 – Spec Out GC9				
					Initials/Instrument/Date	S1: gd 6/15/15	S2:	S3:	S4:
✓				■	Project Identification (PID), Project Requirements Table (PRT), Daily QC and ICAL met Criteria				
✓				■	Lumen QC and ICAL evaluation (ref. SOP/Method) report initialed and in folder				
✓				✓	Manual Integrations included and approved				
✓				■	Chain of Custody verified for special comments (add comments below)				
✓				■	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: gd 6/15/15	A2:	A3:	A4:
✓				✓	Internal Standard/Surrogate Recoveries, Dilution Factors, Load Volumes, Initial/Final Pressures, and Canister #s Verified				
✓				✓	a) Tedlar Bag IDs verified against COC b) Tedlar Bag ID confirmed with loading sequence/leg of instrument				
✓				✓	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				
✓				✓	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	D1: JM 6/17/15	D2:	D3:	D4:
✓					■	CAR # (if applicable)				
✓					■	Spectra Verified (documentation of spectral defense included if applicable)				
✓					■	TICs resemble reference spectra/ TICs between sample dups. are consistent (if applicable)				
✓						Lab Narrative is correct				
✓					■	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: JM 6/17/15	3rd Tier: (needed only for DOD or per client request)	
✓		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		
✓	✓	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*

Eurofins Air Toxics, Inc.	Reissued - Data Review Checklist			Release Date 01/29/14
	Form F 1.27	Revision #8	Revision date 01/29/14	Page 2 of 2

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