

Atmospheric Analysis & Consulting, Inc.

CLIENT : SWAPE
PROJECT NAME : Bridgeton Sanitary Landfill Quality Assessment
AAC PROJECT NO. : 130598
REPORT DATE : 07/25/2013

On July 25, 2013, Atmospheric Analysis & Consulting, Inc. received four (4) Six-Liter Summa Canisters for Total Reduced Sulfur analysis by ASTM D-5504. Upon receipt, the samples were assigned unique Laboratory ID numbers as follows:


Client ID	Lab No.	Return Pressure (mmHgA)
U-1 W6 Canister	130958-64795	498.4
U-2 FR Services Canister	130958-64796	596.1
D-1 K Canister	130958-64797	307.6
D-2 Helena Canister	130958-64798	564.1

ASTM D-5504 Analysis - Up to a 1 mL aliquot of sample is injected into the GC/SCD for analysis following ASTM D-5504 as specified in the SOW.

No problems were encountered during receiving, preparation, and/ or analysis of these samples. The test results included in this report meet all requirements of the NELAC Standards and/or AAC SOP# AACI-ASTM D-5504.

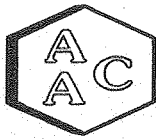
I certify that this data is technically accurate, complete, and in compliance with the terms and conditions of the contract. The Laboratory Director or his designee, as verified by the following signature, has authorized release of the data contained in this hardcopy data package.

If you have any questions or require further explanation of data results, please contact the undersigned.


Marcus Hueppe
Laboratory Director

This report consists of 33 pages.





SAMPLE RECEIPT / LOG-IN REPORT

AAC Project

130958

Received By: W. Horn

<u>Sample Receipt Date</u>	<u>Project Desc</u>	<u>Clients ID</u>	<u>Matrix</u>	<u>Sampling Date/Time</u>	<u>Sampled By</u>	<u>Sample #</u>	<u>Analysis Requested</u>
7/24/2013 1225	Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment	U-1 W6	Summa Canister	7/19/2013	Client	64795	TO15 ASTM D5504 TO15
7/24/2013 1225	Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment	U-2 FR Services	Summa Canister	7/19/2013	Client	64796	TO15 ASTM D5504
7/24/2013 1225	Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment	D-1 K	Summa Canister	7/19/2013	Client	64797	TO15 ASTM D5504
7/24/2013 1225	Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment	D-2 Helena	Summa Canister	7/19/2013	Client	64798	TO15 ASTM D5504

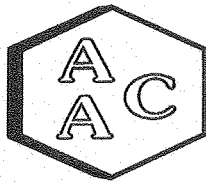
TURN AROUND TIME: Normal (10days)

Lab Due Date: 7/31/2013

Total Samples: 4

REMARKS:

Client returned 4 x Summa Canisters + 4 x Flows.



CANISTER PRESSURE LOG

Client: Soil Water Air Protection Ent Project No.: 130958
Date: 7/24/2013

Canister #	Sample #	Initial Pressure	Final Pressure
741	64795	498.4	1014.6
740	64796	596.1	1015.5
799	64797	307.6	1015.2
578	64798	564.1	1014.8

CHAIN OF CUSTODY RECORD / ANALYTICAL REQUEST FORM

AA# 13295-8

Bridgeton Sanitary Landfill Air Quality Assessment

Client Name: SOIL / WATER AIR PROTECTION ENTERPRISE Telephone No. / Fax No.: (310) 434-0110 / (310) 434-0011 Date: **July 19th, 2013** Page 1 of 1

Project Manager: PAUL ROSENFELD, PH.D. Address: 1640 FIFTH STREET, SUITE 204, SANTA MONICA, CA 90401

Project Name and Location: BRIDGETON SANITARY LANDFILL AIR QUALITY ASSESSMENT

Sampled By: John Blank Sampler Signature: *John Blank*

LAB ID	SAMPLE ID NUMBER	Type	Date	Time	VOCS - EPA TO-15	Reduced Sulfur Compounds - ASTM D5504	Carbonyls - EPA TO-11A	Carboxylic Acids - Tube GC-MS	HCL - NIOSH 7903	Ammonia - OSHA ID-188	SO2 - OSHA ID-200	HCN - NIOSH 6010	Amines - NIOSH 2010M	Fixed Gases - EPA 3C	PAHs / Dioxins EPA TO-13A / 9A	Mercury - NIOSH 6008	Odor Evaluation	Canister #	Flow Control #	
<i>U1W6</i>	U-1 W6	Canister	July 19th	4 Hr	X	X												Canister #	741	692
<i>U2FR</i>	U-2 FR Services	Canister	July 19th	4 Hr	X	X												Canister #	740	693
<i>D1K</i>	D-1 K	Canister	July 19th	4 Hr	X	X												Canister #	799	808
<i>D2H</i>	D-2 Helena	Canister	July 19th	4 Hr	X	X												Canister #	578	806

Requested Turnaround Time: Standard turn-around for all analyses. If possible deliver report within 2 weeks. QC Requirements: Provide Level IV QC Package for all Analyses.

Relinquished By: **John Blank** Date: **July 19th, 2013** Time: 12 Noon Received By: Date: Time:

Relinquished By: Date: Time: Received By: Date: Time:

Relinquished By: Date: Time: Received By: *WJ* Date: *7/24/13* Time: *1225*

Atmospheric Analysis and Consulting Inc.
Canister Sampling Field Data Sheet

GENERAL INFORMATION

Project Name and/or ID No.: **Bridgeton Sanitary Landfill**

Site Address and/or ID No: **13570 St Charles Rock Rd, Bridgeton, MO 63044**

Sample Name and/or ID No.: **U-1 W6 Canister # 741 Flow Control # 692**

AAC Batch ID: 130958 AAC Sample ID: 69795

SAMPLING INFORMATION

Start Date/Time: **July 19th, 2013 / 10:35** Stop Date/Time: **July 19th, 2013 / 14:35**

Start Temp/Pressure*: **28C / 30.02 psi** Stop Temp/Pressure*: **34C / 29.98 psi**

Initial Can Pressure***: **-29** Final Can Pressure***: **- 18**

* Ambient Barometric Reading where sample is being taken (C / inHg) ** Flow Controller Gauge Reading (inHg)

Comments: _____



John Blank
Sampler Name (Print)

July 19th 2013
Sampler Signature/Date

LABORATORY INFORMATION

Canister Size: 6 - Liter

Sampling Period: 4 - Hour

Canister Serial No.: # **741**

Flow Controller Serial No: # **692**

Initial Pressure: 4.1

Certified Flow Rate: 18.0

Return Pressure: 498.4

Certified By/Date: [Signature] 7/8/13

Final Pressure: 1014.6

Flow Rate upon Return: 17.6 ml/min

Date Shipped From Lab: 7/8/13

Shipped By: [Signature]

Date Returned to Lab: 7/24/13

Received By: [Signature]

Flow Controller Certification File ID: MS02/07021306

Canister Certification File ID: MS03/0612E317

Certification Type: SIM _____ SCAN NJLL _____ PAMS _____ Other _____

[Signature] 7/24/13
Chemist Signature/Date

[Signature] 7/24/13
Lab Manager Signature/Date

**Sampler is required to fill out all highlighted sections during sampling.
All remaining sections will be completed upon return by the laboratory.**

Atmospheric Analysis and Consulting Inc.
Canister Sampling Field Data Sheet

GENERAL INFORMATION

Project Name and/or ID No.: **Bridgeton Sanitary Landfill**

Site Address and/or ID No: **13570 St Charles Rock Rd, Bridgeton, MO 63044**

Sample Name and/or ID No.: **U-2 F-R Services** **Canister # 740** **Flow Control # 693**

AAC Batch ID: 130958 AAC Sample ID: 64796

SAMPLING INFORMATION

Start Date/Time: **July 19th, 2013 / 10:25** Stop Date/Time: **July 19th, 2013 / 14:25**

Start Temp/Pressure*: **28C / 30.02 psi** Stop Temp/Pressure*: **34C / 29.98 psi**

Initial Can Pressure** : **- 27** Final Can Pressure** : **- 3**

* Ambient Barometric Reading where sample is being taken (C / inHg) ** Flow Controller Gauge Reading (inHg)

Comments: _____



John Blank
Sampler Name (Print)

July 19th 2013
Sampler Signature/Date

LABORATORY INFORMATION

Canister Size: 6 - Liter

Sampling Period: 4 - Hour

Canister Serial No.: # **740**

Flow Controller Serial No: # **693**

Initial Pressure: 4.1

Certified Flow Rate: 18.0

Return Pressure: 596.1

Certified By/Date: JJ 7/8/13

Final Pressure: 1015.5

Flow Rate upon Return: 20.7 mL/min

Date Shipped From Lab: 7/8/13

Shipped By: JJ

Date Returned to Lab: 7/24/13

Received By: WJF

Flow Controller Certification File ID: 11502107028000

Canister Certification File ID: 11503/06121315

Certification Type: SIM _____ SCAN NJLL _____ PAMS _____ Other _____


Chemist Signature/Date


Lab Manager Signature/Date

**Sampler is required to fill out all highlighted sections during sampling.
All remaining sections will be completed upon return by the laboratory.**

Atmospheric Analysis and Consulting Inc.
Canister Sampling Field Data Sheet

GENERAL INFORMATION

Project Name and/or ID No.: **Bridgeton Sanitary Landfill**

Site Address and/or ID No: **13570 St Charles Rock Rd, Bridgeton, MO 63044**

Sample Name and/or ID No.: **D-1 K** Canister # **799** Flow Control # **808**

AAC Batch ID: 130958 AAC Sample ID: 64797

SAMPLING INFORMATION

Start Date/Time: **July 19th, 2013 / 9:25** Stop Date/Time: **July 19th, 2013 / 13:25**

Start Temp/Pressure*: **28C / 30.02 psi** Stop Temp/Pressure*: **34C / 29.98 psi**

Initial Can Pressure***: **- 31** Final Can Pressure***: **- 18**

* Ambient Barometric Reading where sample is being taken (C / inHg) ** Flow Controller Gauge Reading (inHg)

Comments: _____

John Blank

John Blank
Sampler Name (Print)

Sampler Signature/Date

July 19th 2013

LABORATORY INFORMATION

Canister Size: 6 - Liter

Sampling Period: 4 - Hour

Canister Serial No.: # **799**

Flow Controller Serial No: # **808**

Initial Pressure: 4.4

Certified Flow Rate: 18.0

Return Pressure: 307.6

Certified By/Date: JJ 7/8/13

Final Pressure: 1015.2

Flow Rate upon Return: 12.2 ml/min

Date Shipped From Lab: 7/8/13

Shipped By: JJ

Date Returned to Lab: 7/29/13

Received By: WJF

Flow Controller Certification File ID: 1502/07021306

Canister Certification File ID: 1603/06121318

Certification Type: SIM _____ SCAN NJLL _____ PAMS _____ Other _____

John Blank
Chemist Signature/Date

WJF
Lab Manager Signature/Date

Sampler is required to fill out all highlighted sections during sampling.
All remaining sections will be completed upon return by the laboratory.

Atmospheric Analysis and Consulting Inc.
Canister Sampling Field Data Sheet

GENERAL INFORMATION

Project Name and/or ID No.: **Bridgeton Sanitary Landfill**

Site Address and/or ID No: **13570 St Charles Rock Rd, Bridgeton, MO 63044**

Sample Name and/or ID No.: **D-2 Helena** Canister # **578** Flow Control # **806**

AAC Batch ID: 130958 AAC Sample ID: 64798

SAMPLING INFORMATION

Start Date/Time: **July 19th, 2013 / 10:10** Stop Date/Time: **July 19th, 2013 / 14:10**

Start Temp/Pressure*: **28C / 30.02 psi** Stop Temp/Pressure*: **34C / 29.98 psi**

Initial Can Pressure***: **-29** Final Can Pressure***: **-6**

** Ambient Barometric Reading where sample is being taken (C / inHg) ** Flow Controller Gauge Reading (inHg)*

Comments: _____



John Blank
Sampler Name (Print)

July 19th 2013

Sampler Signature/Date

LABORATORY INFORMATION

Canister Size: 6 – Liter

Sampling Period: 4 – Hour

Canister Serial No.: # **578**

Flow Controller Serial No: # **806**

Initial Pressure: 4.1

Certified Flow Rate: 18.0

Return Pressure: 564.1

Certified By/Date: JS 7/8/13

Final Pressure: 1014.8

Flow Rate upon Return: 21.0 ml/min

Date Shipped From Lab: 7/8/13

Shipped By: JS

Date Returned to Lab: 7/24/13

Received By: WJF

Flow Controller Certification File ID: 11502607021306

Canister Certification File ID: 1803/0021324

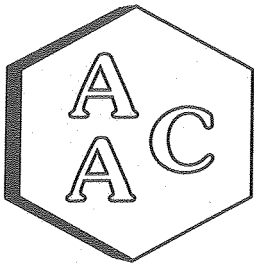
Certification Type: SIM _____ SCAN NJLL _____ PAMS _____ Other _____


Chemist Signature/Date


Lab Manager Signature/Date

**Sampler is required to fill out all highlighted sections during sampling.
All remaining sections will be completed upon return by the laboratory.**

Results



Atmospheric Analysis & Consulting, Inc.

LABORATORY ANALYSIS REPORT


CLIENT : SWAPE
 PROJECT NO. : 130958
 MATRIX : AIR
 UNITS : ppbV

SAMPLING DATE : 07/19/2013
 RECEIVING DATE : 07/24/2013
 ANALYSIS DATE : 07/25/2013
 REPORT DATE : 07/25/2013

Sulfur Compounds by ASTM D-5504

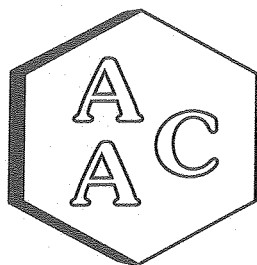
Client ID	U-1 W6 Canister	U-2 FR Services Canister	D-1 K Canister	D-2 Helena Canister
AAC ID	130958-64795	130958-64796	130958-64797	130958-64798
Canister Dil. Fac.	2.04	1.70	3.30	1.80
Analyte	Result	Result	Result	Result
Hydrogen Sulfide	< 20.4	< 17.0	< 33.0	< 18.0
Carbonyl Sulfide	< 20.4	< 17.0	< 33.0	< 18.0
Sulfur Dioxide	< 20.4	< 17.0	< 33.0	< 18.0
Methyl Mercaptan	< 20.4	< 17.0	< 33.0	< 18.0
Ethyl Mercaptan	< 20.4	< 17.0	< 33.0	< 18.0
Dimethyl Sulfide	< 20.4	< 17.0	< 33.0	< 18.0
Carbon Disulfide	< 10.2	< 8.5	< 16.5	< 9.0
Isopropyl Mercaptan	< 20.4	< 17.0	< 33.0	< 18.0
tert-Butyl Mercaptan	< 20.4	< 17.0	< 33.0	< 18.0
n-Propyl Mercaptan	< 20.4	< 17.0	< 33.0	< 18.0
Methylethylsulfide	< 20.4	< 17.0	< 33.0	< 18.0
sec-Butyl Mercaptan	< 20.4	< 17.0	< 33.0	< 18.0
Thiophene	< 20.4	< 17.0	< 33.0	< 18.0
iso-Butyl Mercaptan	< 20.4	< 17.0	< 33.0	< 18.0
Diethyl Sulfide	< 20.4	< 17.0	< 33.0	< 18.0
n-Butyl Mercaptan	< 20.4	< 17.0	< 33.0	< 18.0
Dimethyl Disulfide	< 10.2	< 8.5	< 16.5	< 9.0
2-Methylthiophene	< 20.4	< 17.0	< 33.0	< 18.0
3-Methylthiophene	< 20.4	< 17.0	< 33.0	< 18.0
Tetrahydrothiophene	< 20.4	< 17.0	< 33.0	< 18.0
Bromothiophene	< 20.4	< 17.0	< 33.0	< 18.0
Thiophenol	< 20.4	< 17.0	< 33.0	< 18.0
Diethyl disulfide	< 10.2	< 8.5	< 16.5	< 9.0
Total Unidentified Sulfur	< 20.4	< 17.0	< 33.0	< 18.0

All unidentified sulfur compound's concentrations expressed in terms of μS
 Sample Quantitation Limit (SQL) is equal to the Quantitation Limit x Canister Dil. Fac. x Analysis Dil. Fac.



 Marcus Hueppe
 Laboratory Director





Atmospheric Analysis & Consulting, Inc.

LABORATORY ANALYSIS REPORT


CLIENT : SWAPE
PROJECT NO. : 130958
MATRIX : AIR
UNITS : ug/m³

SAMPLING DATE : 07/19/2013
RECEIVING DATE : 07/24/2013
ANALYSIS DATE : 07/25/2013
REPORT DATE : 07/25/2013

Sulfur Compounds by ASTM D-5504

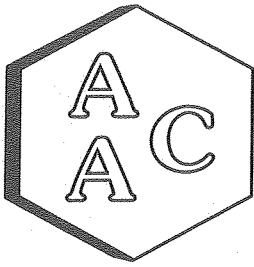
Client ID	U-1 W6 Canister	U-2 FR Services Canister	D-1 K Canister	D-2 Helena Canister
AAC ID	130958-64795	130958-64796	130958-64797	130958-64798
Canister Dil. Fac.	2.04	1.70	3.30	1.80
Analyte	Result	Result	Result	Result
Hydrogen Sulfide	< 28.4	< 23.7	< 46.0	< 25.1
Carbonyl Sulfide	< 50.0	< 41.9	< 81.1	< 44.2
Sulfur Dioxide	< 53.3	< 44.6	< 86.5	< 47.1
Methyl Mercaptan	< 40.1	< 33.5	< 64.9	< 35.4
Ethyl Mercaptan	< 51.7	< 43.3	< 83.9	< 45.7
Dimethyl Sulfide	< 51.7	< 43.3	< 83.9	< 45.7
Carbon Disulfide	< 31.7	< 26.5	< 51.4	< 28.0
Isopropyl Mercaptan	< 63.4	< 53.1	< 103	< 56.0
tert-Butyl Mercaptan	< 75.1	< 62.8	< 122	< 66.4
n-Propyl Mercaptan	< 63.4	< 53.1	< 103	< 56.0
Methylethylsulfide	< 63.4	< 53.1	< 103	< 56.0
sec-Butyl Mercaptan	< 75.1	< 62.8	< 122	< 66.4
Thiophene	< 70.1	< 58.6	< 114	< 61.9
iso-Butyl Mercaptan	< 75.1	< 62.8	< 122	< 66.4
Diethyl Sulfide	< 75.1	< 62.8	< 122	< 66.4
n-Butyl Mercaptan	< 75.1	< 62.8	< 122	< 66.4
Dimethyl Disulfide	< 39.2	< 32.8	< 63.6	< 34.7
2-Methylthiophene	< 81.7	< 68.4	< 133	< 72.2
3-Methylthiophene	< 81.7	< 68.4	< 133	< 72.2
Tetrahydrothiophene	< 73.4	< 61.4	< 119	< 64.9
Bromothiophene	< 136	< 114	< 220	< 120
Thiophenol	< 91.7	< 76.8	< 149	< 81.1
Diethyl disulfide	< 50.9	< 42.6	< 82.5	< 45.0
Total Unidentified Sulfur	< 28.4	< 23.7	< 46.0	< 25.1

All unidentified sulfur compound's concentrations expressed in terms of μS
 Sample Quantitation Limit (SQL) is equal to the Quantitation Limit x Canister Dil. Fac. x Analysis Dil. Fac.


 Marcus Hueppe
 Laboratory Director



QA/QC Summary



Atmospheric Analysis & Consulting, Inc.

Quality Control/Quality Assurance Report ASTM D-5504

Date Analyzed: 07/25/13
Analyst: DH

Instrument ID: SCD#10
Calb. Date: 5/14/2013

Opening Calibration Verification Standard

	Resp. (area)	Result (ppbV)	% Rec *	% RPD ****
Initial	16930	502	100.4	NA
Duplicate	16847	500	99.9	0.5
Triplicate	16834	499	99.9	0.6

Method Blank

Analyte	Result
H2S	ND

Matrix Spike & Duplicate

Sample ID 130958-64795

Analyte	Sample Conc.	Spike Added	MS Result	MSD Result	MS % Rec **	MSD % Rec **	% RPD ***
H2S	0.0	250.0	248.4	237.7	99.4	95.1	4.4

Duplicate Analysis

Sample ID 130958-64795

Analyte	Sample Result	Duplicate Result	Mean	% RPD ***
H2S	0.0	0.0	0.0	0.0

Closing Calibration Verification Standard

Analyte	Std. Conc.	Result	%Recovery **
H2S	500	501.2	100.2

* Must be 95-105%

** Must be 90-110%

*** Must be < 10%

**** must be < 5% RPD from Initial result.

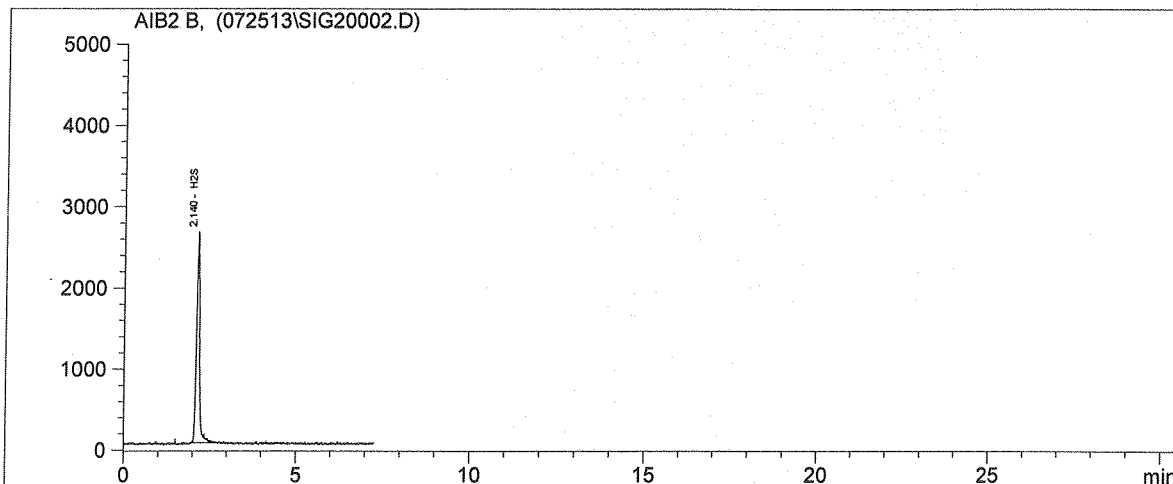
Marcus Hueppe
Laboratory Director



Raw Data

Customized Report: D5504

Injection Date : 7/25/2013 6:29:36 AM Seq. Line : 2
 Sample Name : CCV 500ppbV SS0677 ->Inj. Vol. : Manually
 Multiplier : 1.00
 Dilution : 1.00
 Acq Operator : DH
 Acq. Instrument : GC/SCD #10
 Acq. Method : ASTM5504.M
 Analysis Method : C:\HPCHEM\1\METHODS\D051413.M



Uncalibrated Peaks : using compound H2S

Ret Time [min]	Area	Amount [ppbV]	Name
2.140	16930	502.103	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
0.000	0	0.000	Ethyl Methyl Sulfide
0.000	0	0.000	Sec-butyl Mercaptan
0.000	0	0.000	Thiophene
0.000	0	0.000	Iso-butyl Mercaptan
0.000	0	0.000	Diethyl Sulfide
0.000	0	0.000	N-butyl Mercaptan
0.000	0	0.000	Dimethyl Disulfide
0.000	0	0.000	2-Methylthiophene
0.000	0	0.000	3-Methylthiophene
0.000	0	0.000	Tetrahydrothiophene
0.000	0	0.000	n-Pentyl Mercaptan
0.000	0	0.000	2-Ethylthiophene
0.000	0	0.000	2,5-Dimethylthiophene
0.000	0	0.000	Diethyl Disulfide
0.000	0	0.000	n-Hexyl Mercaptan
0.000	0	0.000	2-Propylthiophene
0.000	0	0.000	Dimethyl Trisulfide
0.000	0	0.000	n-Heptyl Mercaptan
0.000	0	0.000	2-Butylthiophene
0.000	0	0.000	Dipropyl Disulfide
0.000	0	0.000	n-Octyl Mercaptan
0.000	0	0.000	Dipropyl Trisulfide

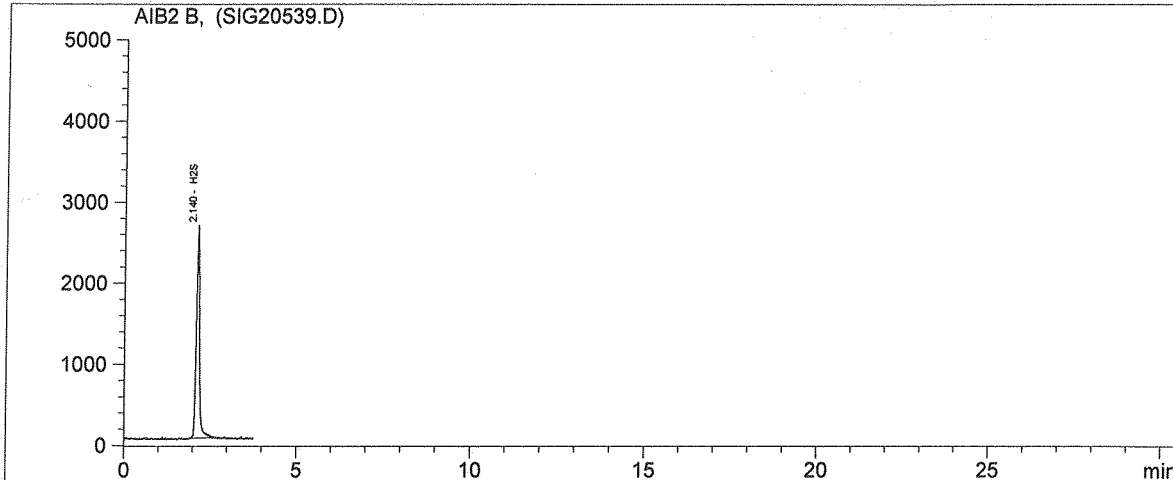
Totals: 502.103

*** End of Report ***

Customized Report: D5504

Injection Date : 7/25/2013 6:37:52 AM
 Sample Name : CCV 500ppbv *DP* *7/25/13*
 Multiplier : 1.00
 Dilution : 1.00
 Acq Operator : DH
 Acq. Instrument : GC/SCD #10
 Acq. Method : ASTM5504.M
 Analysis Method : C:\HPCHEM\1\METHODS\D051413.M

Seq. Line : 0
 Inj. Vol. : Manually



Uncalibrated Peaks : using compound H2S

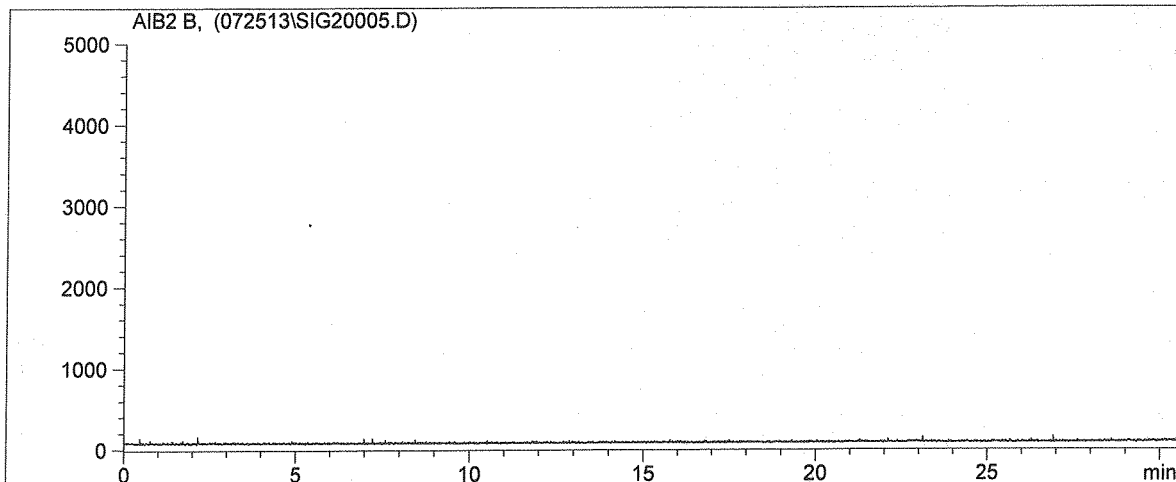
Ret Time [min]	Area	Amount [ppbV]	Name
2.140	16847	499.669	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
0.000	0	0.000	Ethyl Methyl Sulfide
0.000	0	0.000	Sec-butyl Mercaptan
0.000	0	0.000	Thiophene
0.000	0	0.000	Iso-butyl Mercaptan
0.000	0	0.000	Diethyl Sulfide
0.000	0	0.000	N-butyl Mercaptan
0.000	0	0.000	Dimethyl Disulfide
0.000	0	0.000	2-Methylthiophene
0.000	0	0.000	3-Methylthiophene
0.000	0	0.000	Tetrahydrothiophene
0.000	0	0.000	n-Pentyl Mercaptan
0.000	0	0.000	2-Ethylthiophene
0.000	0	0.000	2,5-Dimethylthiophene
0.000	0	0.000	Diethyl Disulfide
0.000	0	0.000	n-Hexyl Mercaptan
0.000	0	0.000	2-Propylthiophene
0.000	0	0.000	Dimethyl Trisulfide
0.000	0	0.000	n-Heptyl Mercaptan
0.000	0	0.000	2-Butylthiophene
0.000	0	0.000	Dipropyl Disulfide
0.000	0	0.000	n-Octyl Mercaptan
0.000	0	0.000	Dipropyl Trisulfide

Totals: 499.669

*** End of Report ***

Customized Report: D5504

Injection Date : 7/25/2013 6:51:00 AM Seq. Line : 5
 Sample Name : Method Blank Inj. Vol. : Manually
 Multiplier : 1.00
 Dilution : 1.00
 Acq Operator : DH
 Acq. Instrument : GC/SCD #10
 Acq. Method : ASTM5504.M
 Analysis Method : C:\HPCHEM\1\METHODS\D051413.M



Uncalibrated Peaks : using compound H2S

Ret Time [min]	Area	Amount [ppbV]	Name
0.000	0	0.000	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
0.000	0	0.000	Ethyl Methyl Sulfide
0.000	0	0.000	Sec-butyl Mercaptan
0.000	0	0.000	Thiophene
0.000	0	0.000	Iso-butyl Mercaptan
0.000	0	0.000	Diethyl Sulfide
0.000	0	0.000	N-butyl Mercaptan
0.000	0	0.000	Dimethyl Disulfide
0.000	0	0.000	2-Methylthiophene
0.000	0	0.000	3-Methylthiophene
0.000	0	0.000	Tetrahydrothiophene
0.000	0	0.000	n-Pentyl Mercaptan
0.000	0	0.000	2-Ethylthiophene
0.000	0	0.000	2,5-Dimethylthiophene
0.000	0	0.000	Diethyl Disulfide
0.000	0	0.000	n-Hexyl Mercaptan
0.000	0	0.000	2-Propylthiophene
0.000	0	0.000	Dimethyl Trisulfide
0.000	0	0.000	n-Heptyl Mercaptan
0.000	0	0.000	2-Butylthiophene
0.000	0	0.000	Dipropyl Disulfide
0.000	0	0.000	n-Octyl Mercaptan
0.000	0	0.000	Dipropyl Trisulfide

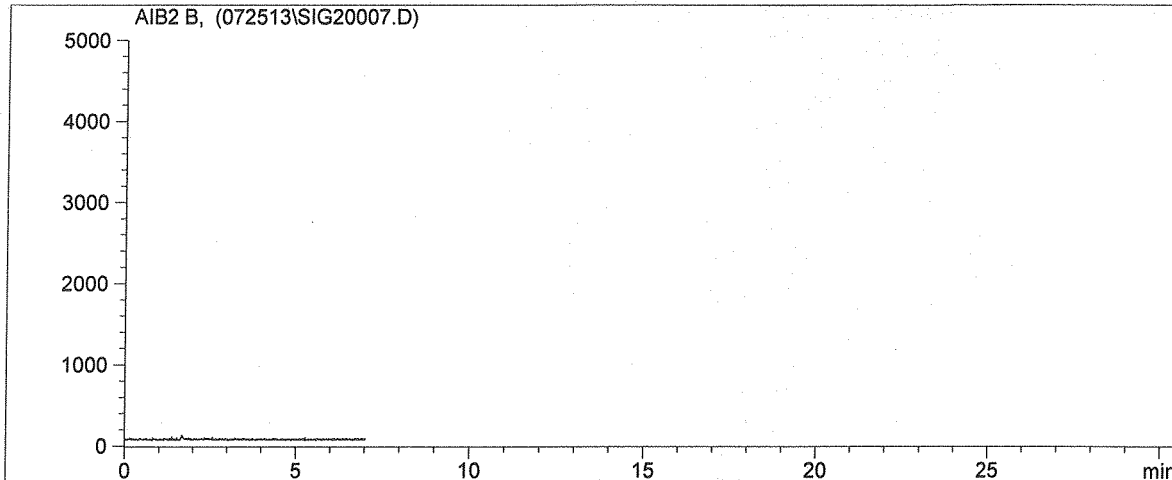
Totals: 0.000

*** End of Report ***

Handwritten signature
7/25/13

Customized Report: D5504

Injection Date : 7/25/2013 8:11:16 AM
Sample Name : 130958-64795 dp
Multiplier : 1.00
Dilution : 1.00
Acq Operator : DH
Acq. Instrument : GC/SCD #10
Acq. Method : ASTM5504.M
Analysis Method : C:\HPCHEM\1\METHODS\D051413.M
Seq. Line : 7
->Inj. Vol. : Manually



Uncalibrated Peaks : using compound H2S

Table with 4 columns: Ret Time [min], Area, Amount [ppbV], Name. Lists 28 sulfur compounds with zero values for area and amount.

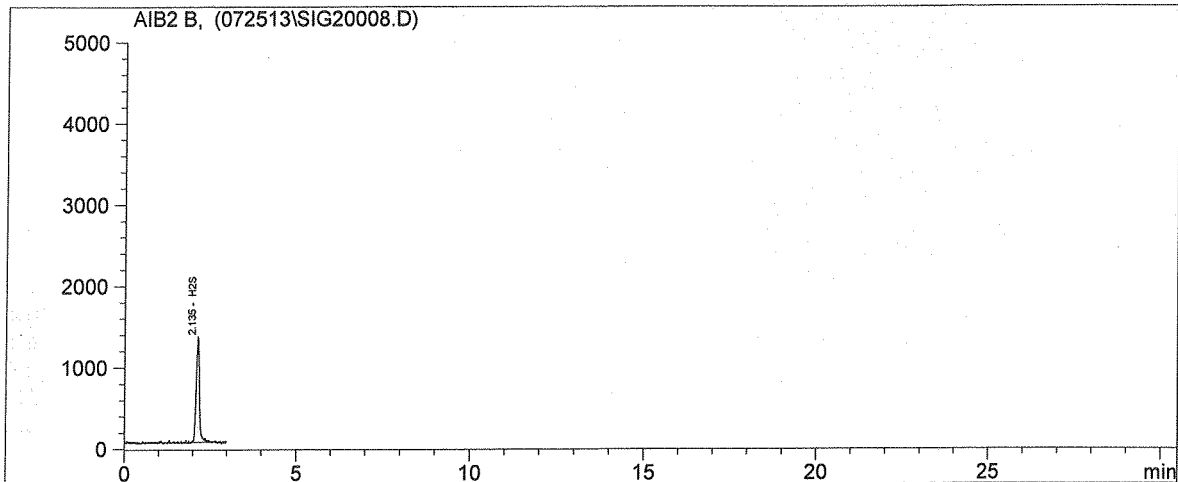
Totals: 0.000

*** End of Report ***

Handwritten signature and date 7/25/13

Customized Report: D5504

Injection Date : 7/25/2013 8:19:16 AM Seq. Line : 8
 Sample Name : MS 64795 SS0677 ->Inj. Vol. : Manually
 Multiplier : 1.00
 Dilution : 1.00
 Acq Operator : DH
 Acq. Instrument : GC/SCD #10
 Acq. Method : ASTM5504.M
 Analysis Method : C:\HPCHEM\1\METHODS\D051413.M



Uncalibrated Peaks : using compound H2S

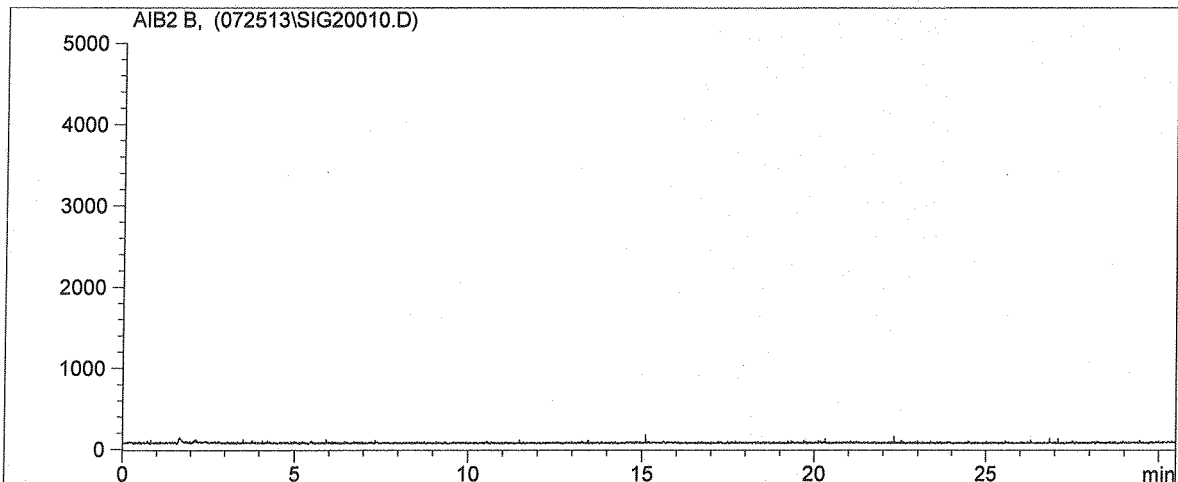
Ret Time [min]	Area	Amount [ppbV]	Name
2.135	8376	248.431	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
0.000	0	0.000	Ethyl Methyl Sulfide
0.000	0	0.000	Sec-butyl Mercaptan
0.000	0	0.000	Thiophene
0.000	0	0.000	Iso-butyl Mercaptan
0.000	0	0.000	Diethyl Sulfide
0.000	0	0.000	N-butyl Mercaptan
0.000	0	0.000	Dimethyl Disulfide
0.000	0	0.000	2-Methylthiophene
0.000	0	0.000	3-Methylthiophene
0.000	0	0.000	Tetrahydrothiophene
0.000	0	0.000	n-Pentyl Mercaptan
0.000	0	0.000	2-Ethylthiophene
0.000	0	0.000	2,5-Dimethylthiophene
0.000	0	0.000	Diethyl Disulfide
0.000	0	0.000	n-Hexyl Mercaptan
0.000	0	0.000	2-Propylthiophene
0.000	0	0.000	Dimethyl Trisulfide
0.000	0	0.000	n-Heptyl Mercaptan
0.000	0	0.000	2-Butylthiophene
0.000	0	0.000	Dipropyl Disulfide
0.000	0	0.000	n-Octyl Mercaptan
0.000	0	0.000	Dipropyl Trisulfide

Totals: 248.431

*** End of Report ***

Customized Report: D5504

Injection Date : 7/25/2013 8:29:10 AM Seq. Line : 10
Sample Name : 130958-64796 Inj. Vol. : Manually
Multiplier : 1.00
Dilution : 1.00
Acq Operator : DH
Acq. Instrument : GC/SCD #10
Acq. Method : ASTM5504.M
Analysis Method : C:\HPCHEM\1\METHODS\D051413.M



Uncalibrated Peaks : using compound H2S

Ret Time [min]	Area	Amount [ppbV]	Name
0.000	0	0.000	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
0.000	0	0.000	Ethyl Methyl Sulfide
0.000	0	0.000	Sec-butyl Mercaptan
0.000	0	0.000	Thiophene
0.000	0	0.000	Iso-butyl Mercaptan
0.000	0	0.000	Diethyl Sulfide
0.000	0	0.000	N-butyl Mercaptan
0.000	0	0.000	Dimethyl Disulfide
0.000	0	0.000	2-Methylthiophene
0.000	0	0.000	3-Methylthiophene
0.000	0	0.000	Tetrahydrothiophene
0.000	0	0.000	n-Pentyl Mercaptan
0.000	0	0.000	2-Ethylthiophene
0.000	0	0.000	2,5-Dimethylthiophene
0.000	0	0.000	Diethyl Disulfide
0.000	0	0.000	n-Hexyl Mercaptan
0.000	0	0.000	2-Propylthiophene
0.000	0	0.000	Dimethyl Trisulfide
0.000	0	0.000	n-Heptyl Mercaptan
0.000	0	0.000	2-Butylthiophene
0.000	0	0.000	Dipropyl Disulfide
0.000	0	0.000	n-Octyl Mercaptan
0.000	0	0.000	Dipropyl Trisulfide

Totals: 0.000

*** End of Report ***

Calibration Summary

Analysis Date: 5/14/2013

Analyst: DH/MMH

Units: ppbv

SCAQMD 307.91 / ASTM D-5504 INITIAL CALIBRATION SUMMARY

CALIBRATION CURVE RAW DATA:

Standard Concentration (ppbv)	Retention time (min)	Response (Area)	RPD from initial result (< 5%)	Std Deviation	Standard Concentration	Mean Response (Area)	Calculated Concentration (From Mean)	Mean % Recovery (+/- 5%)
0.0	0.00	0						
0.0	0.00	0	0.0	0	0.0	0	0.0	0.0
0.0	0.00	0	0.0					
25.0	2.096	836						
25.0	2.094	855	2.2	12	25.0	842	25.0	99.9
25.0	2.093	834	0.2					
100.0	2.091	3222						
100.0	2.090	3374	4.6	82	100.0	3316	98.4	98.4
100.0	2.091	3353	4.0					
500.0	2.091	17233						
500.0	2.090	17453	1.3	272	500.0	17486	518.6	103.7
500.0	2.089	17773	3.1					
2500.0	2.087	85533						
2500.0	2.088	83551	2.3	1182	2500.0	84170	2496.3	99.9
2500.0	2.087	83425	2.5					
Avg. Ret:		2.091						

Calibration Verification Check Standards:


Check Standard Concentration: 500 ppbv

	Resp. (area)	Result (ppbv)	% Rec *	% RPD
Initial	17273	512.3	102.5	NA
Duplicate	17117	507.7	101.5	0.9
Triplicate	17378	515.4	103.1	0.6

* All CV's must have +/- 5 % Recovery and < 5% RPD from Initial result.

Linear Slope: X = Y/ 33.7172
 R2 value: 0.9999 Must be > 0.990

Laboratory Director (signature/date)

 5/14/13

SCAQMD 307.91/ASTM D-5504 INITIAL CALIBRATION SUMMARY

Area (mean) vs. Conc. (theor)

$Y = 33.7172X$
 $R^2 = 0.9999$

