Atmospheric Analysis & Consulting, Inc.

CLIENT	:	SWAPE
PROJECT NAME	:	Bridgeton Sanitary Landfill Quality Assessment
AAC PROJECT NO.	:	131082
REPORT DATE	:	08/16/2013

On August 15, 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 W2 Canister	131082-65502	650.9
U-2 Virbac Canister	131082-65503	653.4
D-1 W8 Canister	131082-65504	668.0
D-2 W6 Canister	131082-65505	655.9

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 34 pages.

ACCREDITED IN ACCORDANCE WITH nelac Certificate #E87837

1534 Eastman Ave., Ste. A • Ventura, • CA 93003 www.aaclab.com • (805) 650-1642 • FAX (805) 650-1644

Atmospheric Analysis & Consulting, Inc.

SAMPLE RECEIPT / LOG-IN REPORT

AAC Project **131082** **Received By: J. Zachman**

Sample Receipt Date	Project Desc	Clients ID	Matrix	Sampling Date/Time	Sampled By	Sample #	Analysis Requested
8/15/2013 1130	Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment	U-1 W2 Canister	Summa Canister	8/10/2013	Client	65502	TO15 ASTM D5504
8/15/2013 1130	Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment	U-2 Virbac Canister	Summa Canister	8/10/2013	Client	65503	TO15 ASTM D5504
8/15/2013 1130	Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment	D-1 W8 Canister	Summa Canister	8/10/2013	Client	65504	TO15 ASTM D5504
8/15/2013 1130	Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment	D-2 W6 Canister	Summa Canister	8/10/2013	Client	65505	TO15 ASTM D5504

TURN AROUND TIME: Normal (10days)

Lab Due Date: 8/22/2013

Total Samples: 4

REMARKS:

Client returned 4 x Summa canisters + 4 x Flows. "Standard TAT for all analyses. If possible deliver report within 2 weeks. Provide Level IV QC package for all analyses."

CANISTER PRESSURE LOG

Client: Soil Water Air Protection Ent Project No.: 131082

Date: 8/15/2013

Canister #	Sample #	Initial Pressure	Final Pressure
668	65502	650.9	1022.0
703	65503	653.4	1021.5
723	65504	668.0	1020.3
669	65505	655.9	1017.9

1

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 W2** **Canister #668** **Flow Control #710**

AAC Batch ID: 131082 AAC Sample ID: 65502

SAMPLING INFORMATION

Start Date/Time: **Aug 10th, 2013 – 7:15 AM** Stop Date/Time: **Aug 10th, 2013 – 12:30 PM**

Start Temp/Pressure*: **23 C / 30.02 inHg** Stop Temp/Pressure*: **28 C / 30.14 inHg**

Initial Can Pressure**: **- 30 inHg** Final Can Pressure**: **- 4 inHg**

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

Comments: _____

John A Blank

John Blank **August 10th, 2013**

Sampler Name (Print) ***Sampler Signature/Date***

LABORATORY INFORMATION

Canister Size: 6 – Liter Sampling Period: **315 Minutes**

Canister Serial No.: **668** Flow Controller Serial No: **710**

Initial Pressure: 2.6 Certified Flow Rate: 18.0

Return Pressure: 650.9 Certified By/Date: FF 8/1/13

Final Pressure: 1022.0 Flow Rate upon Return: 17.9

Date Shipped From Lab: 8/1/13 Shipped By: FF

Date Returned to Lab: 8/15/13 Received By: FF

Flow Controller Certification File ID: MS03071713.0

Canister Certification File ID: MS03072313.04

Certification Type: SIM ____ SCAN ✓ NJLL ____ PAMS ____ Other ____

08/16/13 5/24/13

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.: **U- 2 Virbac** **Canister # 703** **Flow Control # 805**

AAC Batch ID: 131082 AAC Sample ID: 65503

SAMPLING INFORMATION

Start Date/Time: **Aug 10th, 2013 – 7:30 AM** Stop Date/Time: **Aug 10th, 2013 – 12:35 PM**

Start Temp/Pressure*: **23 C / 30.02 inHg** Stop Temp/Pressure*: **28 C / 30.14 inHg**

Initial Can Pressure**: **- 31 inHg** Final Can Pressure**: **- 5 inHg**

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

Comments: ______

John A Blank

John Blank **August 10th, 2013**
Sampler Name (Print) *Sampler Signature/Date*

LABORATORY INFORMATION

Canister Size: 6 – Liter Sampling Period: 305 Minutes

Canister Serial No: **703** Flow Controller Serial No: **805**

Initial Pressure: 2.5 Certified Flow Rate: 18.0

Return Pressure: 653.4 Certified By/Date: [signature] 8/1/13

Final Pressure: 1021.5 Flow Rate upon Return: 18.4

Date Shipped From Lab: 8/1/13 Shipped By: [signature]

Date Returned to Lab: 8/15/13 Received By: [signature]

Flow Controller Certification File ID: U502/06071305

Canister Certification File ID: U503/0723130

Certification Type: SIM ____ SCAN ✓ NJLL ____ PAMS ____ Other ____

[signature] 08/16/13 MW 8/21/13

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 W2** **Canister # 723** **Flow Control # 806**

AAC Batch ID: 131082 AAC Sample ID: 65504

SAMPLING INFORMATION

Start Date/Time: **Aug 10th, 2013 – 7:55 AM** Stop Date/Time: **Aug 10th, 2013 – 12:35 PM**

Start Temp/Pressure*: **23 C / 30.02 inHg** Stop Temp/Pressure*: **28 C / 30.14 inHg**

Initial Can Pressure**: **- 29 inHg** Final Can Pressure**: **- 3 inHg**

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

Comments: _____

John Blank
Sampler Name (Print)

August 10th, 2013
Sampler Signature/Date

LABORATORY INFORMATION

Canister Size: 6 – Liter Sampling Period: 280 Minutes

Canister Serial No.: **723** Flow Controller Serial No: **806**

Initial Pressure: 2.4 Certified Flow Rate: 18.0

Return Pressure: 668.0 Certified By/Date: 8/1/13

Final Pressure: 1020.3 Flow Rate upon Return: 20.0

Date Shipped From Lab: 8/1/13 Shipped By:

Date Returned to Lab: 8/15/13 Received By:

Flow Controller Certification File ID: 1503/073/1310

Canister Certification File ID: 1503/060/1329

Certification Type: SIM ___ SCAN ✓ NJLL ___ PAMS ___ Other ___

08/16/13
Chemist Signature/Date

8/21/13
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.: **D- 2 W6** **Canister # 669** **Flow Control # 717**

AAC Batch ID: 131082 AAC Sample ID: 655505

SAMPLING INFORMATION

Start Date/Time: **Aug 10th, 2013 – 8:10 AM** Stop Date/Time: **Aug 10th, 2013 – 12:55 PM**

Start Temp/Pressure*: **23 C / 30.02 inHg** Stop Temp/Pressure*: **28 C / 30.14 inHg**

Initial Can Pressure**: **- 31 inHg** Final Can Pressure**: **- 5 inHg**

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

Comments: _____

John Blank
Sampler Name (Print)

August 10th, 2013
Sampler Signature/Date

LABORATORY INFORMATION

Canister Size: 6 – Liter Sampling Period: 285 Minutes

Canister Serial No.: **669** Flow Controller Serial No: **717**

Initial Pressure: 2.3 Certified Flow Rate: 18.0

Return Pressure: 655.9 Certified By/Date: FF 8/1/13

Final Pressure: 1017.9 Flow Rate upon Return: 16.9

Date Shipped From Lab: 8/1/13 Shipped By: FF

Date Returned to Lab: 8/15/13 Received By: FF

Flow Controller Certification File ID: M503/0717B10

Canister Certification File ID: M503/0611330

Certification Type: SIM ___ SCAN ✓ NJLL ___ PAMS ___ Other ___

08/16/13
Chemist Signature/Date

MM 8/21/13
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.

American Environmental Laboratories

ISO 9001:2000 Certification #A1836US

MDNR **Bridgeton Landfill** **Date:** **August 10th, 2013**

Field Data Work Sheet - Weekly Event

4 Hour Test Time

Air Sampler calibrated for 1 Liter per Minute Flow Rate **Aldehydes Tube #226-20**

SUMMA Canister with a 4 hour flow valve

Prepared by:

	Temperature C		Pressure	
Start	23	Centigrade	30.02	inHg
Stop	28	Centigrade	30.14	inHg

Canister Stop 12:30 PM U-1

			Start		Stop		Total
Sample Point ID	U-1 W2	Time	7:15:00		11:15:00		4:00:00 Hr
Canister Serial #	668	Vacuum	-30	inHg	-4	inHg	315 min
Flow Control #	710	Flow Rate	1.125	L/M	1.195	L/M	278.4 L
Sample Pump #	71526	Sample Tube #	4440600656				

Canister Stop 12:35 PM U-2

			Start		Stop		Total
Sample Point ID	U-2 Virbac	Time	7:30:00		11:50:00		4:20:00 Hr
Canister Serial #	703	Vacuum	-31	inHg	-5	inHg	305 min
Flow Control #	805	Flow Rate	1.096	L/M	1.253	L/M	281.88 L
Sample Pump #	59912	Sample Tube #	4440600655				

Canister Stop 12:35 PM D-1

			Start		Stop		Total
Sample Point ID	D-1 W2	Time	7:55:00		11:55:00		4:00:00 Hr
Canister Serial #	723	Vacuum	-29	inHg	-3	inHg	280 min
Flow Control #	806	Flow Rate	1.172	L/M	1.213	L/M	286.2 L
Sample Pump #	67835	Sample Tube #	4440600653				

Canister Stop 12:55 PM D-2

			Start		Stop		Total
Sample Point ID	D-2 W6	Time	8:10:00		12:10:00		4:00:00 Hr
Canister Serial #	669	Vacuum	-31	inHg	-5	inHg	285 min
Flow Control #	717	Flow Rate	1.183	L/M	1.164	L/M	281.64 L
Sample Pump #	67385	Sample Tube #	4440600654				

AAC#13082

CHAIN OF CUSTODY RECORD / ANALYTICAL REQUEST FORM

Bridgeton Sanitary Landfill Air Quality Assessment

Client Name: SOIL / WATER AIR PROTECTION ENTERPRISE	Telephone No. / Fax No.: (310) 434-0110 / (310) 434-0011	Date: **August 10th 2013**
Project Manager: PAUL ROSENFELD, PH.D.		Page 1 of 1
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:	

LAB ID	SAMPLE ID NUMBER		Type	Date	Time	VOCS - EPA TO-15	Reduced Sulfur Compounds - ASTM D5504	Carbonyls - EPA TO-11A	Carboxlyic 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 6009	Odor Evaluation	Special Instructions / Conditions of Receipt
65502	U-1 W2	Canister		August 10th	4 Hr	X	X												Canister # 668
65503	U-2 Virbac	Canister		August 10th	4 Hr	X	X												Canister # 703
65504	D-1 W8	Canister		August 10th	4 Hr	X	X												Canister # 723
65505	D-2 W6	Canister		August 10th	4 Hr	X	X												Canister # 669

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: **August 10th**	12 Noon	Received By:	Date:	**Time:**
Relinquished By:	Date:	Time:	Received By:	Date:	**Time:**
Relinquished By:	Date:	Time:	Received By:	Date: 8/15/13	**Time:** 1130

Results

LABORATORY ANALYSIS REPORT

CLIENT	**: SWAPE**	**SAMPLING DATE**	**: 08/10/2013**
PROJECT NO.	**: 131082**	**RECEIVING DATE**	**: 08/15/2013**
MATRIX	**: AIR**	**ANALYSIS DATE**	**: 08/16/2013**
UNITS	**: ppbV**	**REPORT DATE**	**: 08/16/2013**

Sulfur Compounds by ASTM D-5504

Client ID	U-1 W2 Canister	U-2 Virbac Canister	D-1 W8 Canister	D-2 W6 Canister
AAC ID	131082-65502	131082-65503	131082-65504	131082-65505
Canister Dil. Fac.	1.57	1.56	1.53	1.55
Analyte	Result	Result	Result	Result
Hydrogen Sulfide	< 15.7	< 15.6	< 15.3	< 15.5
Carbonyl Sulfide	< 15.7	< 15.6	< 15.3	< 15.5
Sulfur Dioxide	< 15.7	< 15.6	< 15.3	< 15.5
Methyl Mercaptan	< 15.7	< 15.6	< 15.3	< 15.5
Ethyl Mercaptan	< 15.7	< 15.6	< 15.3	< 15.5
Dimethyl Sulfide	< 15.7	< 15.6	< 15.3	< 15.5
Carbon Disulfide	< 7.9	< 7.8	< 7.6	< 7.8
Isopropyl Mercaptan	< 15.7	< 15.6	< 15.3	< 15.5
tert-Butyl Mercaptan	< 15.7	< 15.6	< 15.3	< 15.5
n-Propyl Mercaptan	< 15.7	< 15.6	< 15.3	< 15.5
Methylethylsulfide	< 15.7	< 15.6	< 15.3	< 15.5
sec-Butyl Mercaptan	< 15.7	< 15.6	< 15.3	< 15.5
Thiophene	< 15.7	< 15.6	< 15.3	< 15.5
iso-Butyl Mercaptan	< 15.7	< 15.6	< 15.3	< 15.5
Diethyl Sulfide	< 15.7	< 15.6	< 15.3	< 15.5
n-Butyl Mercaptan	< 15.7	< 15.6	< 15.3	< 15.5
Dimethyl Disulfide	< 7.9	< 7.8	< 7.6	< 7.8
2-Methylthiophene	< 15.7	< 15.6	< 15.3	< 15.5
3-Methylthiophene	< 15.7	< 15.6	< 15.3	< 15.5
Tetrahydrothiophene	< 15.7	< 15.6	< 15.3	< 15.5
Bromothiophene	< 15.7	< 15.6	< 15.3	< 15.5
Thiophenol	< 15.7	< 15.6	< 15.3	< 15.5
Diethyl disulfide	< 7.9	< 7.8	< 7.6	< 7.8
Total Unidentified Sulfur	< 15.7	< 15.6	< 15.3	< 15.5

All unidentified sulfur compound's concentrations expressed in terms of H_2S
Sample Quantitation Limit (SQL) is equal to the Quantitation Limit x Canister Dil. Fac. x Analysis Dil. Fac.

Marcus Hueppe
Laboratory Director

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LABORATORY ANALYSIS REPORT

CLIENT	**: SWAPE**	**SAMPLING DATE**	**: 08/10/2013**
PROJECT NO.	**: 131082**	**RECEIVING DATE**	**: 08/15/2013**
MATRIX	**: AIR**	**ANALYSIS DATE**	**: 08/16/2013**
UNITS	**: ug/m^3**	**REPORT DATE**	**: 08/16/2013**

Sulfur Compounds by ASTM D-5504

Client ID	U-1 W2 Canister	U-2 Virbac Canister	D-1 W8 Canister	D-2 W6 Canister
AAC ID	131082-65502	131082-65503	131082-65504	131082-65505
Canister Dil. Fac.	1.57	1.56	1.53	1.55
Analyte	Result	Result	Result	Result
Hydrogen Sulfide	< 21.9	< 21.8	< 21.3	< 21.6
Carbonyl Sulfide	< 38.6	< 38.4	< 37.5	< 38.1
Sulfur Dioxide	< 41.1	< 41.0	< 40.0	< 40.7
Methyl Mercaptan	< 30.9	< 30.8	< 30.1	< 30.5
Ethyl Mercaptan	< 39.9	< 39.7	< 38.8	< 39.4
Dimethyl Sulfide	< 39.9	< 39.7	< 38.8	< 39.4
Carbon Disulfide	< 24.4	< 24.3	< 23.8	< 24.2
Isopropyl Mercaptan	< 48.9	< 48.7	< 47.6	< 48.3
tert-Butyl Mercaptan	< 57.9	< 57.7	< 56.3	< 57.2
n-Propyl Mercaptan	< 48.9	< 48.7	< 47.6	< 48.3
Methylethylsulfide	< 48.9	< 48.7	< 47.6	< 48.3
sec-Butyl Mercaptan	< 57.9	< 57.7	< 56.3	< 57.2
Thiophene	< 54.0	< 53.8	< 52.6	< 53.4
iso-Butyl Mercaptan	< 57.9	< 57.7	< 56.3	< 57.2
Diethyl Sulfide	< 57.9	< 57.7	< 56.3	< 57.2
n-Butyl Mercaptan	< 57.9	< 57.7	< 56.3	< 57.2
Dimethyl Disulfide	< 30.2	< 30.1	< 29.4	< 29.9
2-Methylthiophene	< 63.0	< 62.8	< 61.3	< 62.3
3-Methylthiophene	< 63.0	< 62.8	< 61.3	< 62.3
Tetrahydrothiophene	< 56.6	< 56.4	< 55.1	< 56.0
Bromothiophene	< 105	< 104	< 102	< 103
Thiophenol	< 70.8	< 70.5	< 68.8	< 69.9
Diethyl disulfide	< 39.3	< 39.1	< 38.2	< 38.8
Total Unidentified Sulfur	< 21.9	< 21.8	< 21.3	< 21.6

All unidentified sulfur compound's concentrations expressed in terms of H_2S
Sample Quantitation Limit (SQL) is equal to the Quantitation Limit x Canister Dil. Fac. x Analysis Dil. Fac.

Marcus Hueppe
Laboratory Director

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QA/QC Summary

Quality Control/Quality Assurance Report
ASTM D-5504

Date Analyzed: 08/16/13
Analyst: DH

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

Opening Calibration Verification Standard

	Resp. (area)	Result (ppbV)	% Rec *	% RPD ****
Initial	16606	493	98.5	NA
Duplicate	16677	495	98.9	0.4
Triplicate	16720	496	99.2	0.7

Method Blank

Analyte	Result
H2S	ND

Matrix Spike & Duplicate **Sample ID 131082-65505 x2**

Analyte	Sample Conc.	Spike Added	MS Result	MSD Result	MS % Rec **	MSD % Rec **	% RPD ***
H2S	0.0	250.0	244.2	243.2	97.7	97.3	0.4

Duplicate Analysis **Sample ID 131082-65505**

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	468.7	93.7

** Must be 95-105%*

*** Must be 90-110%*

**** Must be < 10%*

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

Marcus Hueppe
Laboratory Director

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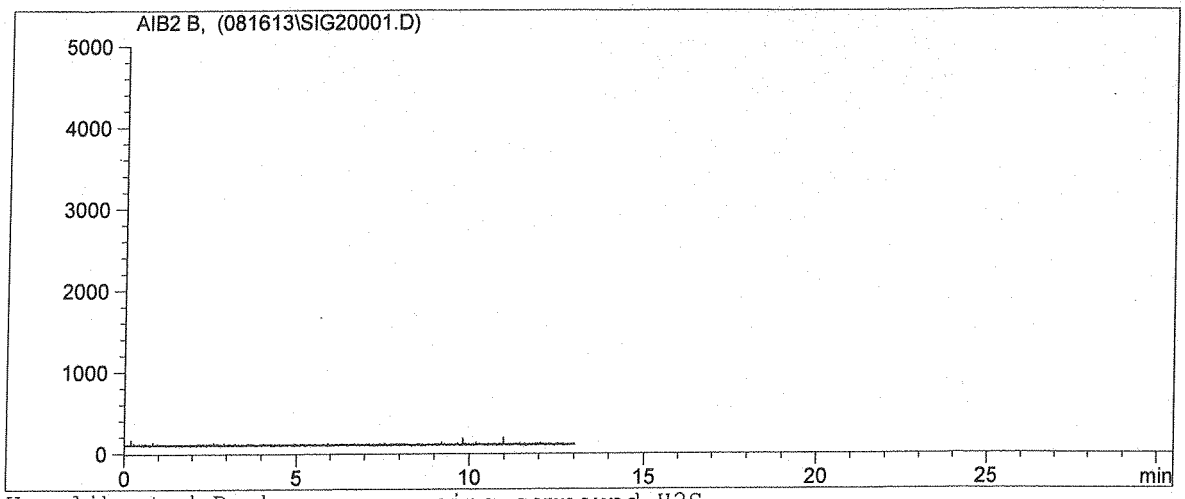
Raw Data

Customized Report: D5504

Injection Date : 8/16/2013 6:27:58 AM
Sample Name : System Blank
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 : 1
Inj. Vol. :Manually



Uncalibrated Peaks : using compound H2S

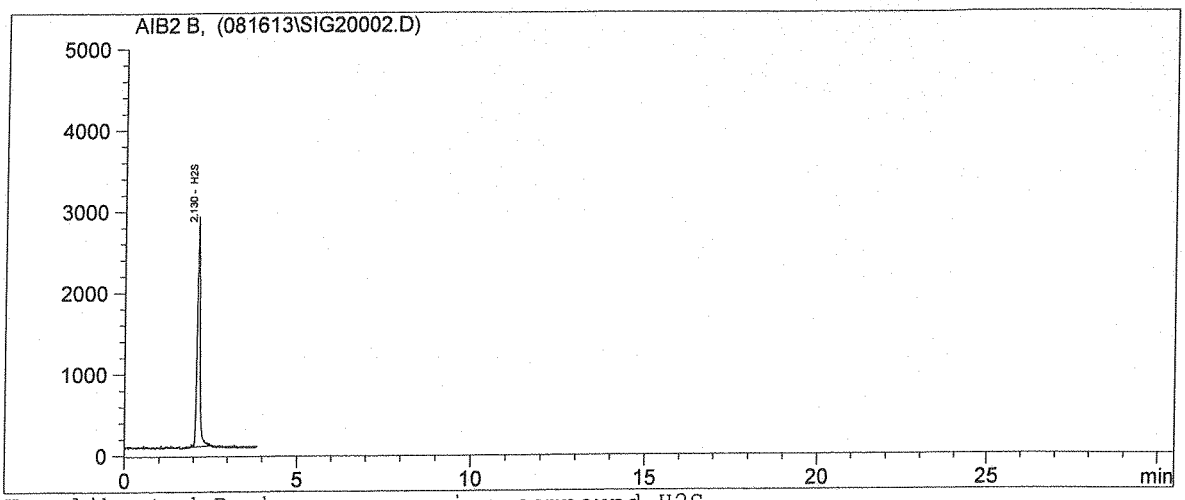
Ret Time [min]	Area	Amount [ppbV]	Name
0.000	0	0.000	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
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 ***

Page 8/16/13

Customized Report: D5504

Injection Date : 8/16/2013 6:47:18 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

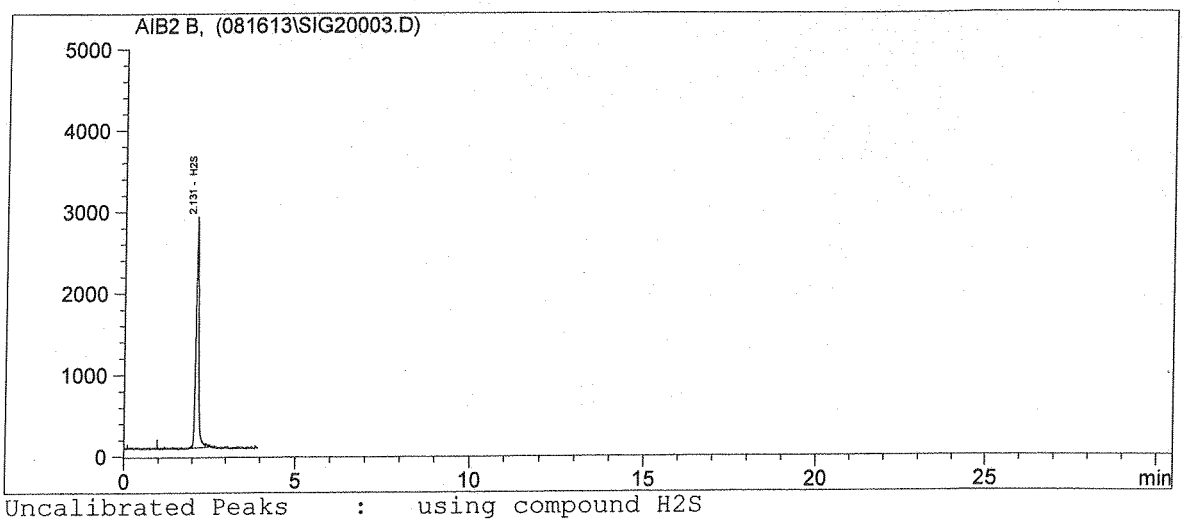
Ret Time [min]	Area	Amount [ppbV]	Name
2.130	16606	492.520	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
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:		492.520	

*** End of Report ***

Page 1 8/16/13

Customized Report: D5504

Injection Date : 8/16/2013 6:53:19 AM Seq. Line : 3
Sample Name : CCV 500ppbV dp 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

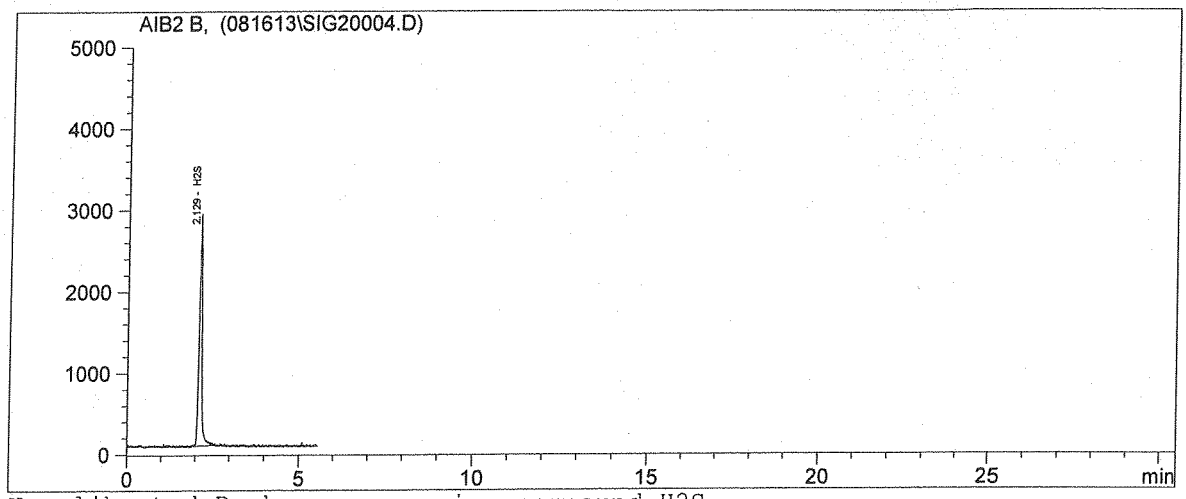
Ret Time [min]	Area	Amount [ppbV]	Name
2.131	16677	494.608	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
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:		494.608	

*** End of Report ***

8/16/13

Customized Report: D5504

Injection Date : 8/16/2013 6:57:50 AM Seq. Line : 4
Sample Name : CCV 500ppbV tp 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
2.129	16720	495.891	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:		495.891	

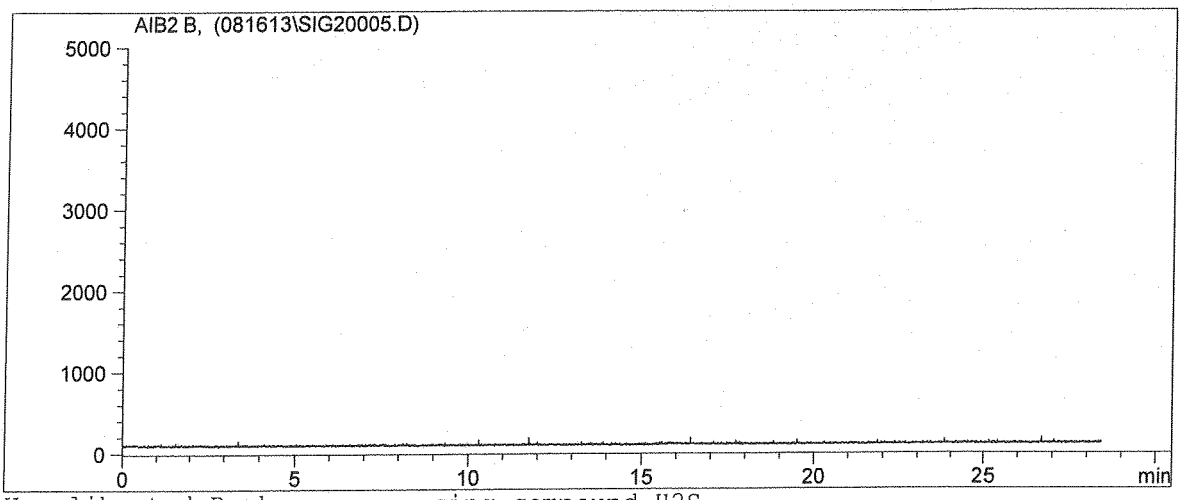
*** End of Report ***

8/14/13

Customized Report: D5504

Injection Date : 8/16/2013 7:04:51 AM
Sample Name : Method Blank
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 : 5
Inj. Vol. :Manually



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	

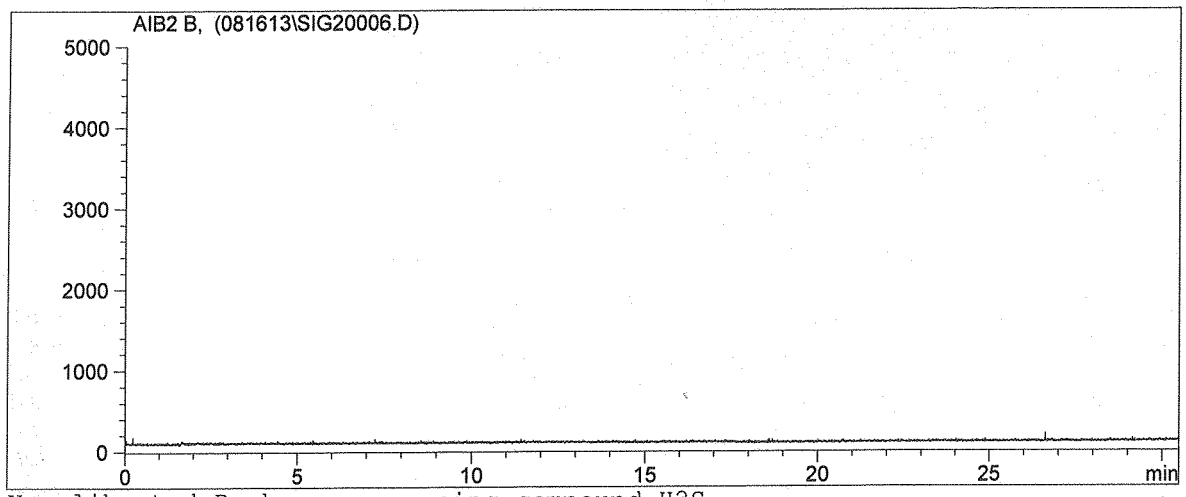
*** End of Report ***

8/16/13

Customized Report: D5504

Injection Date : 8/16/2013 7:36:55 AM
Sample Name : 131082-65502
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 : 6
Inj. Vol. :Manually



Uncalibrated Peaks : using compound H2S

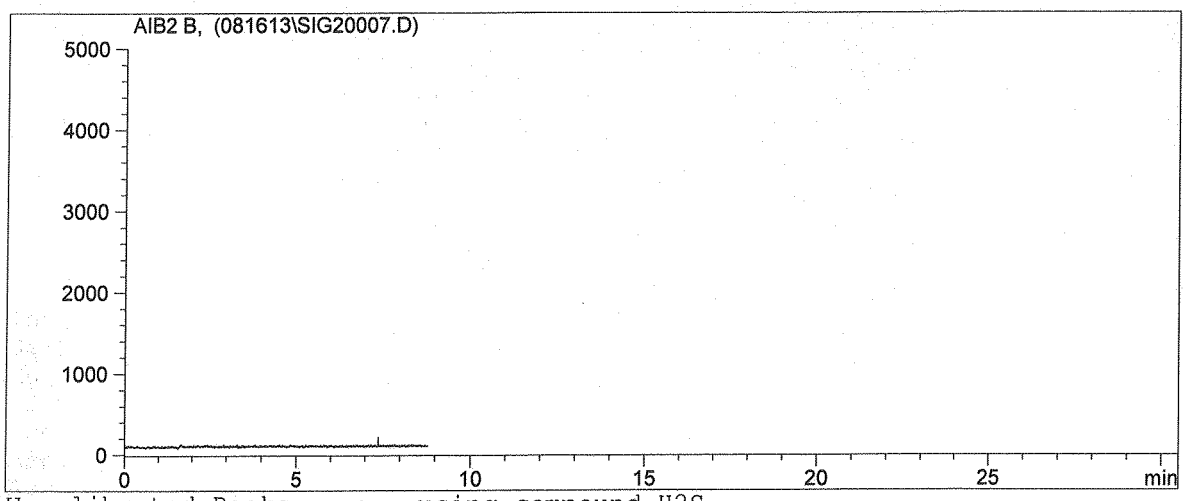
Ret Time [min]	Area	Amount [ppbV]	Name
0.000	0	0.000	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
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 ***

DH 8/16/13

Customized Report: D5504

Injection Date : 8/16/2013 8:11:28 AM Seq. Line : 7
Sample Name : 131082-65502 dp ->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

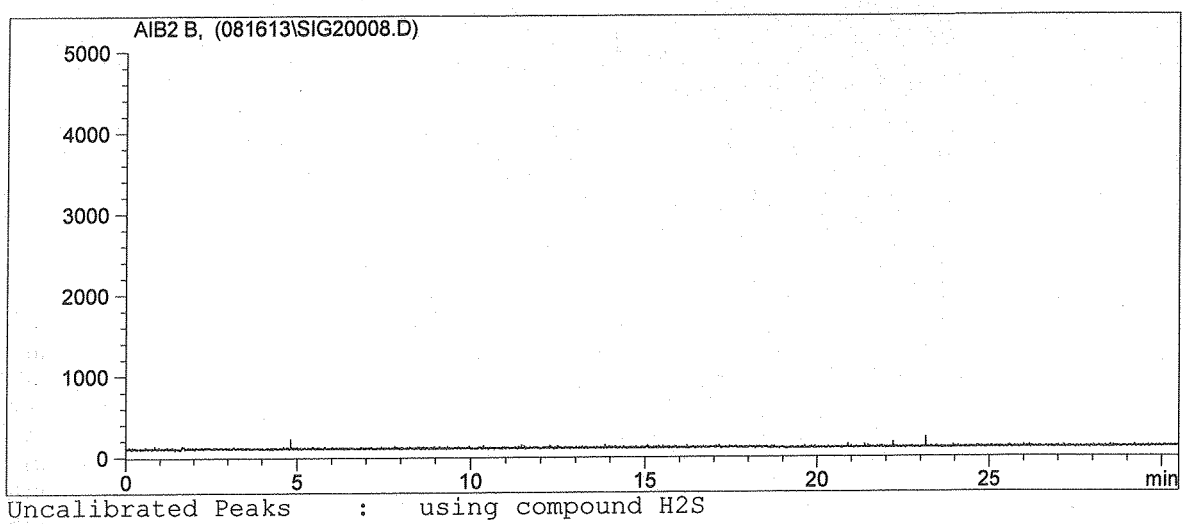
Ret Time [min]	Area	Amount [ppbV]	Name
0.000	0	0.000	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
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 ***

Customized Report: D5504

Injection Date : 8/16/2013 8:20:52 AM
Sample Name : 131082-65503
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 : 8
Inj. Vol. :Manually



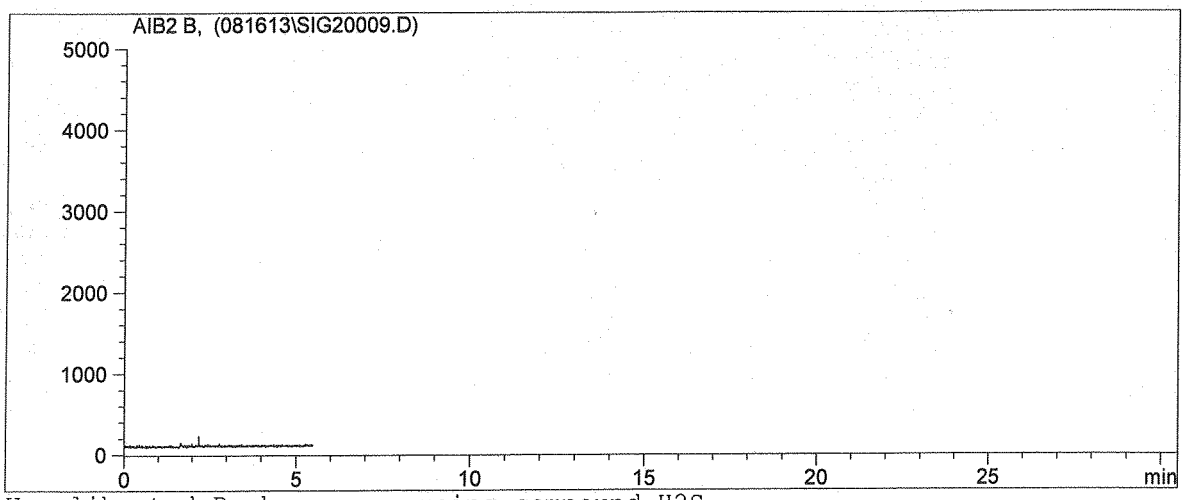
Uncalibrated Peaks : using compound H2S

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 ***

Customized Report: D5504

Injection Date : 8/16/2013 8:55:40 AM Seq. Line : 9
Sample Name : 131082-65503 dp ->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	

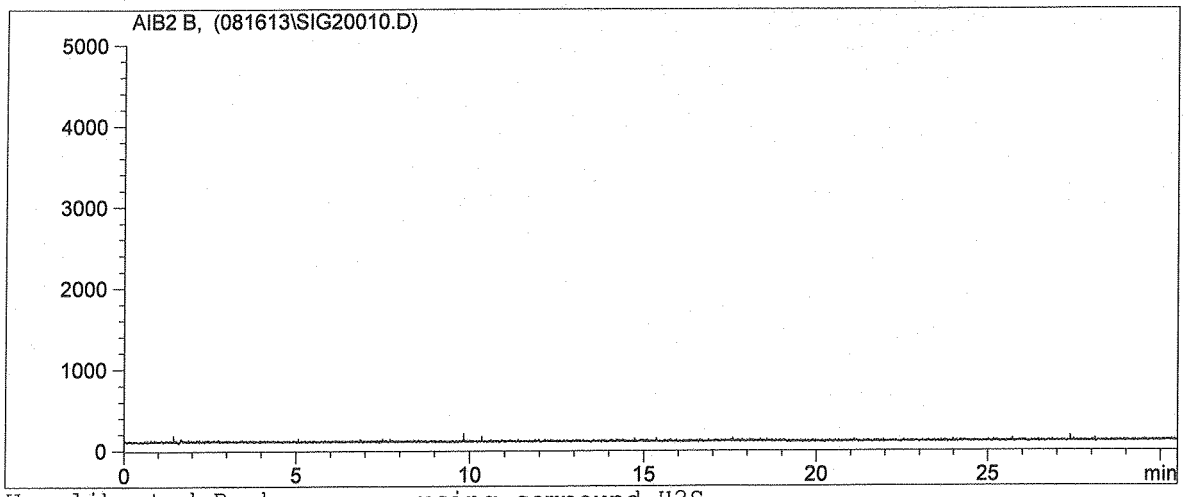
*** End of Report ***

8/16/13

Customized Report: D5504

Injection Date : 8/16/2013 9:01:53 AM
Sample Name : 131082-65504
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 : 10
Inj. Vol. :Manually



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 ***

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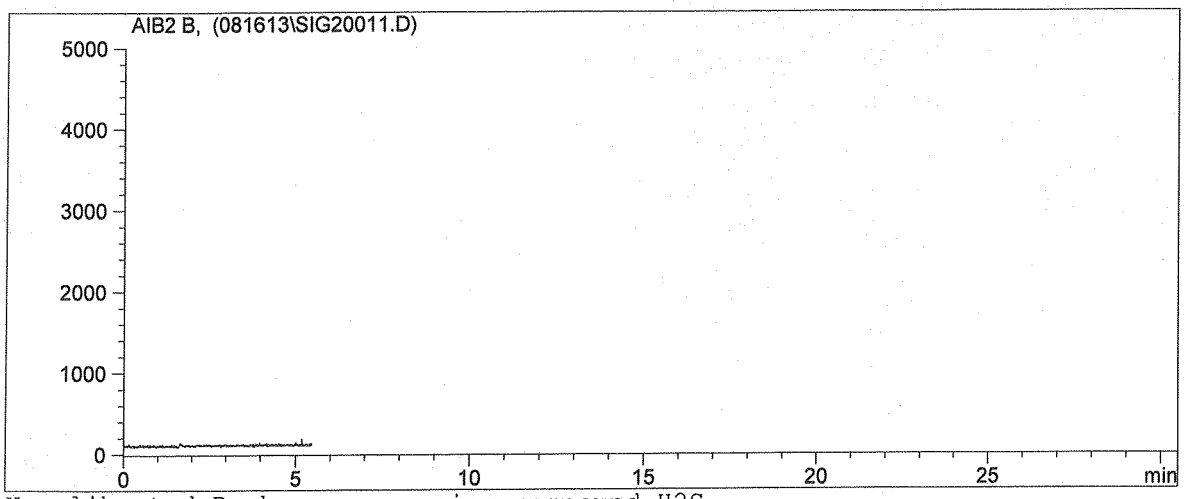
Customized Report: D5504

Injection Date : 8/16/2013 9:36:31 AM Seq. Line : 11
Sample Name : 131082-65504 dp ->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

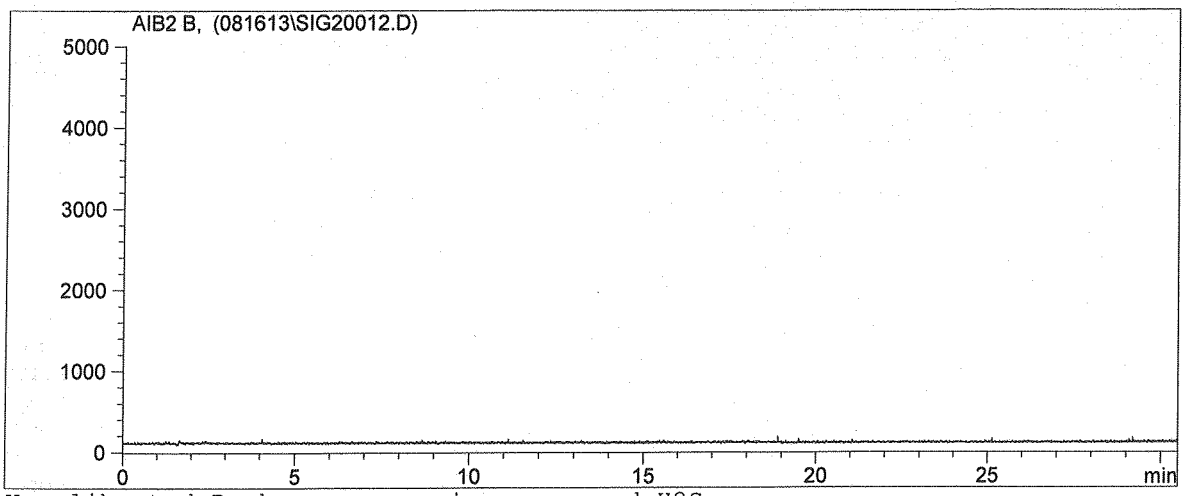
Ret Time [min]	Area	Amount [ppbV]	Name
0.000	0	0.000	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
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 ***

Customized Report: D5504

Injection Date : 8/16/2013 9:43:25 AM
Sample Name : 131082-65505
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 : 12
Inj. Vol. :Manually



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 ***

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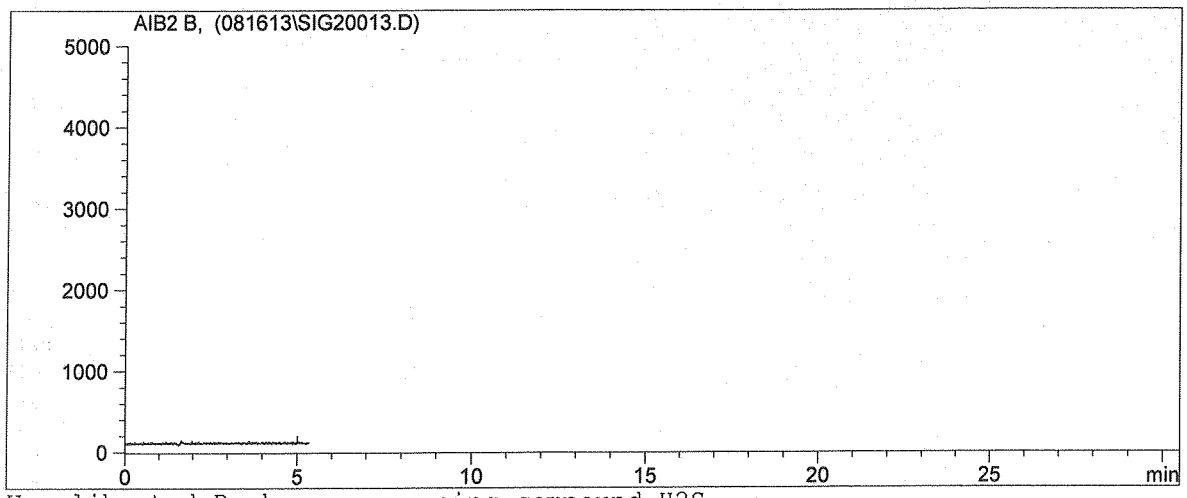
Customized Report: D5504

Injection Date : 8/16/2013 10:17:46 AM Seq. Line : 13
Sample Name : 131082-65505 dp ->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

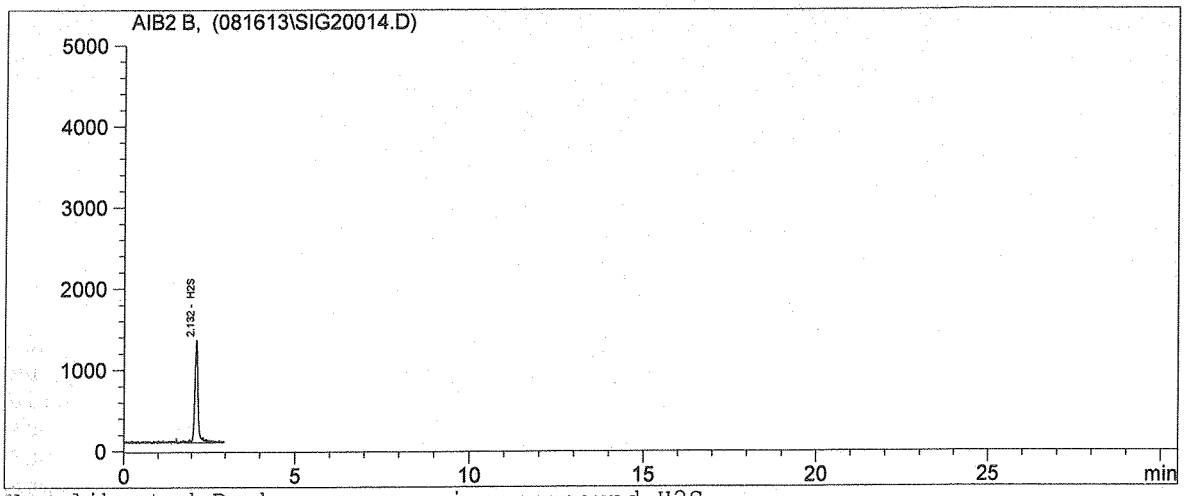
Ret Time [min]	Area	Amount [ppbV]	Name
0.000	0	0.000	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
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 ***

DH 8/16/13

Customized Report: D5504

Injection Date : 8/16/2013 10:24:03 AM Seq. Line : 14
Sample Name : MS 65505 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
2.132	8235	244.235	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:		244.235	

*** End of Report ***

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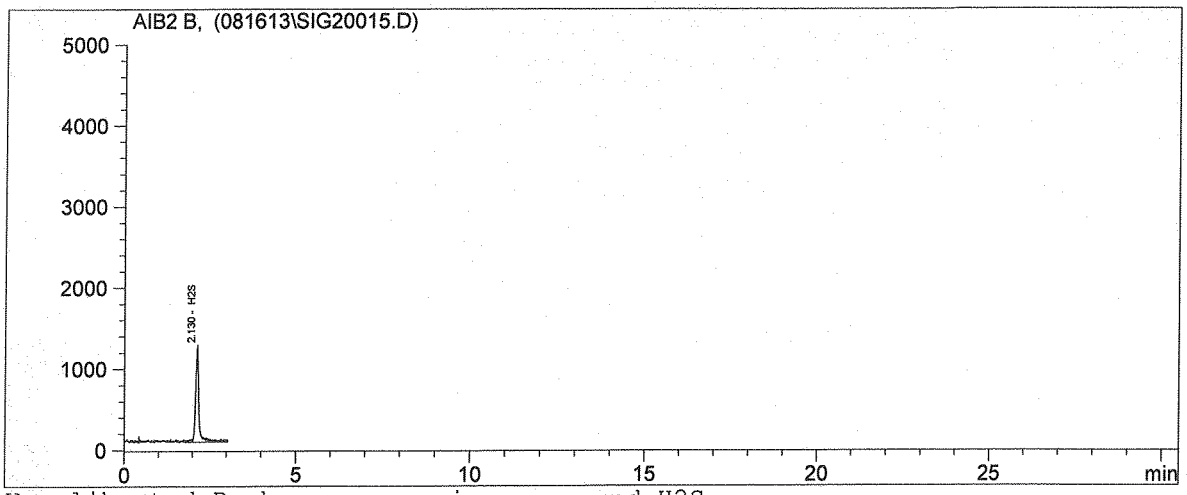
Customized Report: D5504

Injection Date : 8/16/2013 10:28:08 AM Seq. Line : 15
Sample Name : MSD 65505 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

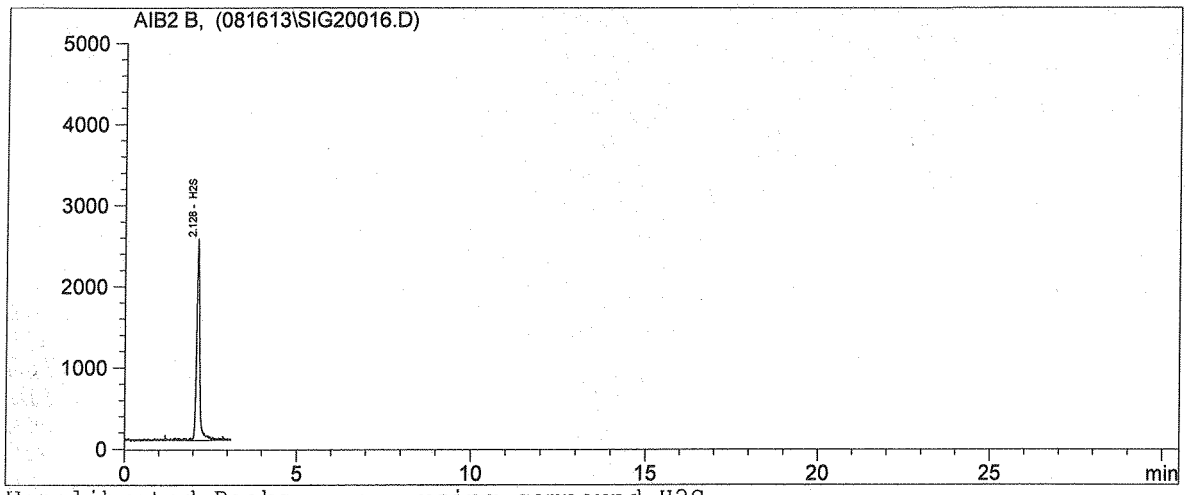
Ret Time [min]	Area	Amount [ppbV]	Name
2.130	8199	243.167	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
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:		243.167	

*** End of Report ***

DH 8/16/13

Customized Report: D5504

Injection Date : 8/16/2013 10:33:01 AM Seq. Line : 16
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
2.128	15802	468.650	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:		468.650	

*** End of Report ***

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Calibration Summary

SCAQMD 307.91 / ASTM D-5504 INITIAL CALIBRATION SUMMARY

Analysis Date: 5/14/2013 **Analyst:** DH/MH **Units:** ppbV

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*

5/14/13

Laboratory Director (signature/date)

SCAQMD 307.91/ASTM D-5504 INITIAL CALIBRATION SUMMARY