

## Atmospheric Analysis & Consulting, Inc.

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CLIENT : Eurofins  
PROJECT NAME : MO DNR – Bridgeton Landfill  
AAC PROJECT NO. : 180317  
REPORT DATE : 3/8/2018


On March 6, 2018, Atmospheric Analysis & Consulting, Inc. received two (2) Six-Liter Silonite Canisters for TRS analysis by ASTM D-5504. Upon receipt, each sample was assigned a unique Laboratory ID number as follows:

Client ID	Lab No.	Initial Pressure (mmHg)
D1 (180991)	180317-107083	662.9
U1 (180992)	180317-107084	662.7

All of the analyses mentioned above were performed in accordance with AAC's ISO/IEC 17025:2005 and NELAP approved Quality Assurance Plan. For detailed information pertaining to specific EPA, NCASI, ASTM and SCAQMD accreditations (Methods & Analytes), please visit our website at [www.aacalab.com](http://www.aacalab.com).

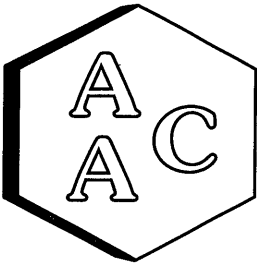
I certify that this data is technically accurate, complete, and in compliance with the terms and conditions of the contract. No problems were encountered during receiving, preparation, and/or analysis of these samples. The Laboratory Director or his/her designee, as verified by the following signature, has authorized release of the data contained in this hardcopy report.

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

  
Marcus Hueppe  
Laboratory Director

This report consists of 5 pages.





# Atmospheric Analysis & Consulting, Inc.

## LABORATORY ANALYSIS REPORT


**CLIENT** : Eurofins  
**PROJECT NO.** : 180317  
**MATRIX** : AIR  
**UNITS** : ppmV

**SAMPLING DATE** : 03/02/2018  
**RECEIVING DATE** : 03/06/2018  
**ANALYSIS DATE** : 03/06-07/2018  
**REPORT DATE** : 03/08/2018

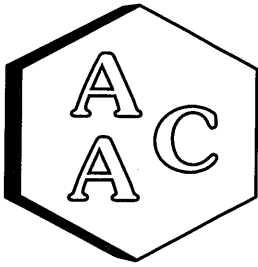
### Total Reduced Sulfur Compounds Analysis by ASTM D-5504

Client ID	D1 (180991)	U1 (180992)
AAC ID	180317-107083	180317-107084
Canister Dil. Fac.	1.4	1.4
Analyte	Result	Result
Hydrogen Sulfide	< 0.014	< 0.014
Carbonyl Sulfide	< 0.014	< 0.014
Sulfur Dioxide	< 0.014	< 0.014
Methyl Mercaptan	< 0.014	< 0.014
Ethyl Mercaptan	< 0.014	< 0.014
Dimethyl Sulfide	< 0.014	< 0.014
Carbon Disulfide	< 0.014	< 0.014
Isopropyl Mercaptan	< 0.014	< 0.014
tert-Butyl Mercaptan	< 0.014	< 0.014
n-Propyl Mercaptan	< 0.014	< 0.014
Methylethylsulfide	< 0.014	< 0.014
sec-Butyl Mercaptan	< 0.014	< 0.014
Thiophene	< 0.014	< 0.014
iso-Butyl Mercaptan	< 0.014	< 0.014
Diethyl Sulfide	< 0.014	< 0.014
n-Butyl Mercaptan	< 0.014	< 0.014
Dimethyl Disulfide	< 0.014	< 0.014
2-Methylthiophene	< 0.014	< 0.014
3-Methylthiophene	< 0.014	< 0.014
Tetrahydrothiophene	< 0.014	< 0.014
Bromothiophene	< 0.014	< 0.014
Thiophenol	< 0.014	< 0.014
Diethyl Disulfide	< 0.014	< 0.014
Total Unidentified Sulfur	< 0.014	< 0.014
Total Reduced Sulfurs	< 0.014	< 0.014

All unidentified compound's concentrations expressed in terms of H<sub>2</sub>S (TRS does not include COS and SO<sub>2</sub>)  
 Sample Reporting Limit (SRL) is equal to Reporting Limit x Canister Dil. Fac. x Analysis Dil. Fac.

  
 Marcus Hueppe  
 Laboratory Director





# Atmospheric Analysis & Consulting, Inc.

## Quality Control/Quality Assurance Report ASTM D-5504

Date Analyzed: 3/6/2018  
 Analyst: ZB  
 Units: ppbV

Instrument ID: SCD#10  
 Calb. Date: 1/10/2018

**Opening Calibration Verification Standard**

*510.75 ppbV H2S (SS1041)*

H <sub>2</sub> S	Resp. (area)	Result	% Rec *	% RPD ****
Initial	2790	495	96.8	0.4
Duplicate	2771	491	96.2	0.3
Triplicate	2777	492	96.4	0.1

*511.75 ppbV MeSH (SS1041)*

MeSH	Resp. (area)	Result	% Rec *	% RPD ****
Initial	2842	492	96.1	0.5
Duplicate	2848	493	96.3	0.3
Triplicate	2878	498	97.3	0.8

*522.75 ppbV DMS (SS1041)*

DMS	Resp. (area)	Result	% Rec *	% RPD ****
Initial	3308	516	98.7	0.7
Duplicate	3381	527	100.9	1.5
Triplicate	3308	516	98.7	0.7

**Method Blank**

Analyte	Result
H <sub>2</sub> S	<PQL
MeSH	<PQL
DMS	<PQL

**Duplicate Analysis**

Sample ID 180306-107057

Analyte	Sample Result	Duplicate Result	Mean	% RPD ***
H <sub>2</sub> S	33178.6	32984.7	33081.7	0.6
MeSH	<PQL	<PQL	0.0	0.0
DMS	<PQL	<PQL	0.0	0.0

**Matrix Spike & Duplicate**

Sample ID 180306-107057 x100

Analyte	Sample Conc.	Spike Added	MS Result	MSD Result	MS % Rec **	MSD % Rec **	% RPD ***
H <sub>2</sub> S	330.8	255.4	585.9	570.8	100.0	97.4	2.6
MeSH	<PQL	255.9	252.7	236.8	98.7	92.6	6.5
DMS	<PQL	261.4	263.1	249.6	100.6	95.5	5.3

**Closing Calibration Verification Standard**

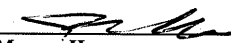
Analyte	Std. Conc.	Result	% Rec **
H <sub>2</sub> S	510.8	508.7	99.6
MeSH	511.8	483.9	94.6
DMS	522.8	514.6	98.4

\* Must be 95-105%, \*\* Must be 90-110%, \*\*\* Must be < 10%, \*\*\*\* Must be < 5% RPD from Mean result.

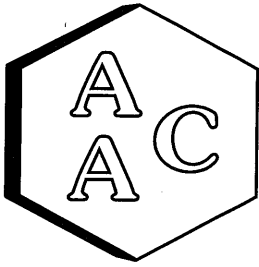
H<sub>2</sub>S: PQL = 10.0 ppbV, MDL = 1.09 ppbV

MeSH: PQL = 10.0 ppbV, MDL = 1.13 ppbV

DMS: PQL = 10.0 ppbV, MDL = 1.39 ppbV

  
 Marcus Hueppe  
 Laboratory Director





# Atmospheric Analysis & Consulting, Inc.

## Quality Control/Quality Assurance Report ASTM D-5504

Date Analyzed: 3/7/2018  
Analyst: ZB  
Units: ppbV

Instrument ID: SCD#10  
Calb. Date: 1/10/2018

### Opening Calibration Verification Standard

*510.75 ppbV H2S (SS1041)*

H <sub>2</sub> S	Resp. (area)	Result	% Rec *	% RPD ****
Initial	2828	501	98.2	1.3
Duplicate	2759	489	95.8	1.2
Triplicate	2792	495	96.9	0.0

*511.75 ppbV MeSH (SS1041)*

MeSH	Resp. (area)	Result	% Rec *	% RPD ****
Initial	2829	490	95.7	0.4
Duplicate	2835	491	95.9	0.2
Triplicate	2854	494	96.5	0.5

*522.75 ppbV DMS (SS1041)*

DMS	Resp. (area)	Result	% Rec *	% RPD ****
Initial	3269	510	97.5	1.4
Duplicate	3336	520	99.5	0.6
Triplicate	3343	521	99.7	0.8

### Method Blank

Analyte	Result
H <sub>2</sub> S	<PQL
MeSH	<PQL
DMS	<PQL

### Duplicate Analysis

Sample ID 180317-107084

Analyte	Sample Result	Duplicate Result	Mean	% RPD ***
H <sub>2</sub> S	<PQL	<PQL	0.0	0.0
MeSH	<PQL	<PQL	0.0	0.0
DMS	<PQL	<PQL	0.0	0.0

### Matrix Spike & Duplicate

Sample ID 180317-107084

Analyte	Sample Conc.	Spike Added	MS Result	MSD Result	MS % Rec **	MSD % Rec **	% RPD ***
H <sub>2</sub> S	<PQL	255.4	242.0	236.2	94.8	92.5	2.4
MeSH	<PQL	255.9	241.9	233.3	94.5	91.2	3.6
DMS	<PQL	261.4	265.2	255.9	101.5	97.9	3.6

### Closing Calibration Verification Standard

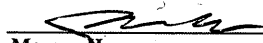
Analyte	Std. Conc.	Result	% Rec **
H <sub>2</sub> S	510.8	481.8	94.3
MeSH	511.8	472.3	92.3
DMS	522.8	497.9	95.2

\* Must be 95-105%, \*\* Must be 90-110%, \*\*\* Must be <10%, \*\*\*\* Must be <5% RPD from Mean result.

H<sub>2</sub>S: PQL = 10.0 ppbV, MDL = 1.09 ppbV

MeSH: PQL = 10.0 ppbV, MDL = 1.13 ppbV

DMS: PQL = 10.0 ppbV, MDL = 1.39 ppbV

  
Marcus Hueppe  
Laboratory Director

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