REPORT

ST MARYS CEMENT INC. (CANADA)

ST. MARY'S, ONTARIO

2025 COMPLIANCE SOURCE TESTING ECA #6394-D78PR2

RWDI #2509873

July 25, 2025

SUBMITTED TO

Ministry of the Environment, and Climate Change
source.testing@ontario.ca
Technology Standards Section
6th Floor
40 St. Claire Ave W.
Toronto, Ontario M4V 1M2

CC:

St. Mary's Cement Inc.
Kara Pelissero
Environmental Manager
Kara.pelissero@vcimentos.com

SUBMITTED BY

Karri Legarrie
Senior Project Manager
Karri.legarrie@rwdi.com

RWDI AIR Inc.
Consulting Engineers & Scientists
600 Southgate Drive
Guelph, Ontario N1G 4P6

T: 519.823.1311
F: 519.823.1316

EXECUTIVE SUMMARY

RWDI AIR Inc. (RWDI) was retained by St. Mary's Cement Inc. (Canada) to conduct emission sampling on the kiln exhaust at their facility in St. Mary's, Ontario. The Source Testing is required under the Environmental Compliance Approval (ECA) #6394-D78PR2.

The sampling program consisted of measuring the following parameters:

- Velocity, flow rate and temperature
- Particulate Matter (PM)
- Metals (as listed in ECA)
- Semi-Volatile Organic Compounds (SVOCs) (listed as Polycyclic Organic Matter in ECA)
- Dioxins and Furans and Dioxin-like PCB's (as listed in ECA)
- Hydrogen Chloride (HCl)
- Ammonia (NH_3)
- Aldehydes (Acrolein, Acetaldehyde, Propionaldehyde)
- Alcohols (Methanol, Phenol)
- Volatile Organic Matter (VOCs as listed in the ECA)
- CEMS - Carbon Monoxide (CO), Carbon Dioxide (CO_2), Oxygen (O_2)

The Pre-Test Plan for this source testing was submitted on January 7, 2025, to the Ministry of Environment, Conservation and Parks (MECP). Approval for the program was granted by the MECP on January 28, 2025. Testing was conducted between April 8th and April 11th, under normal process conditions. Results from the sampling program are presented in the **Tables Section** of the report, with more detailed sampling results located in the Appendices. All parameters were tested in accordance with referenced methodologies following the MECP approved Pre-Test Plan. Additionally, the results show that emission concentrations are below those outlined in the ECA for all parameters.

TABLE OF CONTENTS

LIST OF TABLES

(Found Within the Report Text)

LIST OF TABLES

(Found After the Report Text)

LIST OF FIGURES

(Found Within the Report Text)

LIST OF APPENDICES

(Found After the Report Text)

1 INTRODUCTION

1.1 Summary of Test Program

RWDI AIR Inc. (RWDI) was retained by St. Mary's Cement Inc. (Canada) to conduct emission sampling on the kiln exhaust at their facility in St. Mary's, Ontario. The Source Testing is required under the Environmental Compliance Approval (ECA) #6394-D78PR2.

The sampling program consisted of measuring the following parameters:

- Velocity, flow rate and temperature
- Particulate Matter (PM)
- Metals (as listed in ECA)
- Semi-Volatile Organic Compounds (SVOCs) (listed as Polycyclic Organic Matter in ECA)
- Dioxins and Furans and Dioxin-like PCB's (as listed in ECA)
- Hydrogen Chloride (HCl)
- Ammonia (NH_3)
- Aldehydes (Acrolein, Acetaldehyde, Propionaldehyde)
- Alcohols (Methanol, Phenol)
- Volatile Organic Matter (VOCs as listed in the ECA)
- CEMS - Carbon Monoxide (CO), Carbon Dioxide (CO_2), Oxygen (O_2)

The Pre-Test Plan for this source testing was submitted on January 7th, 2025, to the Ministry of Environment, Conservation and Parks (MECP). Approval for the program was granted by the MECP on January 28th, 2025. Testing was conducted between April 8th, and April 11th, under normal process conditions. Results from the sampling program are presented in the **Tables Section** of the report, with more detailed sampling results located in the Appendices.

1.2 Key Personnel

RWDI's field team lead for the test program was Adam Tran, and Karri Legarrie was the Senior Project Manager. The primary contact for St Mary's Cement was Kara Pelissero. A list of all participants is included in **Appendix M**.

2 SOURCE DESCRIPTION

2.1 Facility Description

The St Mary's location operates a cement manufacturing facility, having a permitted clinker production rate of 1.1 million tonnes per year. However, the normal daily maximum operation at the facility is generally 2,200 tonnes per day.

The cement plant operates 12 months per year, typically on 24 hours per day, 7 days per week schedule, with a theoretical maximum production capacity of 6,300 tonnes of clinker per day. The normal operating capacity is 5,000 to 5,500 tonnes of clinker per day.

2.2 Process Description

The stack testing measurements were conducted on the exhaust air from the single dry process cement kiln. Raw feed consisting of various sources of calcium oxide, silica, iron oxide and alumina are fed via a preheater tower into the kiln. The kiln is fired by a main burner and a back-end firing system which uses petroleum coke, and/or natural gas. The exhaust air from the kiln is controlled by the main kiln baghouse prior to exhaust to the atmosphere through the main stack. In addition to exhausting gases from the main kiln baghouse, the main kiln stack also exhausts air from the bypass stream controlled by a precipitator. The kiln system is also equipped with a selective non-catalytic reduction system for nitrogen oxides.

The current ECA allows for use of conventional fuels, alternative low-carbon fuels, and Adjunct Fuel Material as defined in the ECA.

2.3 Sample Location

The sampling location for the kiln stack is located above grade on a brick stack. This brick stack has a concrete outer shell, and enough room between the shell and the stack to setup the sampling equipment. This sampling location is considered 'ideal' as per the Ontario Source Test Code Method 1 since the nearest flow disturbances were greater than eight duct diameters upstream and two duct diameters downstream of the sample location.

At the sampling platform there are three ports, 1.2 m above the platform positioned 120° from each other. Isokinetic sampling was performed using two ports.

3 RESULTS

3.1 Objective and Test Matrix

The average emission results for this study are presented in the **Tables Section** of this report. A minimum of three tests were performed for all the parameters tested in the study. Detailed information for each test run can be found in the appendices. The following **Table 3.1** identifies each sampling parameter, and identifies the corresponding table, and appendices to locate the results from the sampling program.

Table 3.1: Test Matrix Summary

Parameter	Table	Appendix
Stack Gas Characteristics	3	B & C
Particulate Matter and Metals	4	B
Dioxins and Furans	5	C
PAH's	6	C
Hydrogen Chloride and Ammonia	7	D
Phenol and Methanol	10	E
Aldehydes	9	F
CEMS (CO, CO_2, O_2)	11	G
VOC's	8	H

All field notes collected during this study are presented in **Appendix K**. All laboratory results are included in **Appendix I**. All calibration information for the equipment used for this study is included in **Appendix J**.

3.2 Discussion of Results

The source testing conducted was a requirement of the facility ECA # 6394-D78PR2**. Table 3.2** shows a comparison of the results with their applicable limits as listed in Schedule B of the ECA. The results show that the emission concentrations are below those outlined in the ECA for all parameters.

Table 3.2: Results Comparison with ECA limits

Parameter	Stack Testing Results	ECA Limit
Limits in Schedule B of the C of A (6394-D78PR2)		
Particulate Matter	42.6 mg/Rm^3	50 mg/Rm^3
Cadmium	0.523 µg/Rm^3	7 µg/Rm^3
Lead	20.7 µg/Rm^3	60 µg/Rm^3
Mercury	< 2.61 µg/Rm^3	20 µg/Rm^3
Dioxins and Furans	< 31.6 pg/Rm^3	80 pg/Rm^3 ITEQ
Hydrochloric Acid	9.8 mg/Rm^3	27 mg/Rm^3

Concentrations at 25^{0}C, 101.3 kPa, dry and 11%O_2

3.3 Conclusion

Testing was completed between April 8th – 11th 2025 under normal process conditions. All parameters were tested in accordance with the referenced methodologies outlined in the MECP-approved Pre-Test Plan.

4 SAMPLING METHODOLOGY

The following section provides an overview of the sampling methodologies used in this program. Table 1, located in the Tables Section, summarizes the testing parameters and corresponding methodologies.

4.1 Stack Velocity, Temperature, and Volumetric Flow Rate Determination

The exhaust velocities and flow rates were determined following the Ontario Source Testing Code (OSTC) Method 2, "Determination of Stack Gas Velocity and Flow Rate (Type S Pitot Tube)". Velocity measurements were taken with a pre-calibrated S-Type Pitot tube and incline manometer.

Volumetric flow rates were determined following the equal area method as outlined in OSTC Method 2. Temperature measurements were made simultaneously with the velocity measurements and were conducted using a chromel-alumel type "k" thermocouple in conjunction with a digital temperature indicator.

The dry molecular weight of the stack gas was determined following calculations outlined in OSTC Method 3, "Determination of Molecular Weight of Dry Stack Gas". Stack moisture content was determined through direct condensation and according to OSTC Method 4, "Determination of Moisture Content of Stack Gas".

4.2 Sampling for Particulate Matter and Metals

Sampling for PM and metals was performed in accordance with OSTC Method 5, "Determination of Particulate Emissions from Stationary Sources" and U.S. EPA Method 29 "Determination of Metals Emissions from Stationary Sources", respectively. Both PM and metals were sampled concurrently using the same sampling train.

Sampling was conducted isokinetically using the required number of traverse points across the stack diameter. The sample was drawn through a glass lined sample probe and quartz fibre filter, which was maintained at a temperature of 120 ± 14ºC (248 ± 25ºF). The sample was then introduced into the impinger train. The impinger train included two (2) 5% HNO_3/10% H_2O_2 absorbing solution impingers, one (1) empty impinger, two (2) impingers containing acidified $KMnO_4$ solution and one (1) impinger containing silica gel. Particulate emissions are collected on the heated filter; gaseous emissions are collected in the hydrogen peroxide and acidified potassium permanganate solution impingers. Mercury is analyzed specifically in the permanganate solution and all metals, including mercury, are analyzed in the peroxide impingers.

For the isokinetic testing, a total of 32 points (eight (8) per traverse) were used. Sampling duration was 7.5 minutes per point (2.5 min readings) with a total sampling time per isokinetic test of 240 minutes. **Figure 4.2.1** shows a diagram of the sampling train.

Upon completion of the test, the sampling train was recovered, as in the procedures detailed in the reference method, and the samples were packaged for transport to ALS Environmental Laboratory in Burlington, Ontario for analysis.

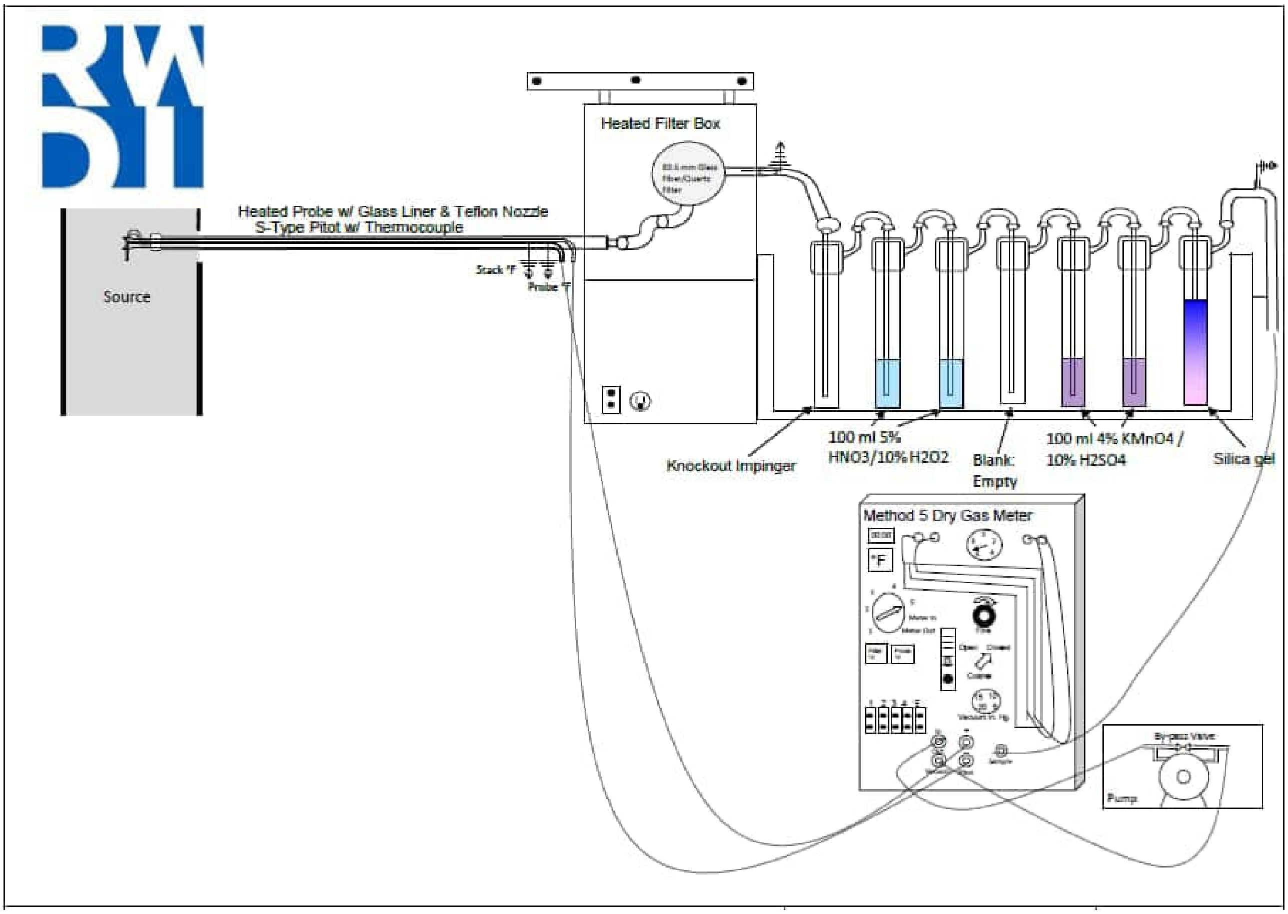

Figure 4.2.1: OSTC Method 5 / US EPA Method 29 Sampling Train

4.3 Polyaromatic Hydrocarbons (PAH's) and Dioxin and Furan Congeners (PCDD/PCDF)

Sampling for polyaromatic hydrocarbons and dioxin and furan congeners was performed in accordance with Environment Canada Method 1/RM/2 (1/RM/2) "Measurement of Releases of Selected Semi-Volatile Organic Compounds from Stationary Sources". The dioxin and furan sampling was conducted in combination with PAH sampling from the Voluntary sampling program.

Sampling was conducted isokinetically using the required number of traverse points across the stack diameter. The sample was drawn through a glass lined sample probe and proofed glass fibre filter. Both were maintained at a temperature of 120 ± 14°C (248 ± 25°F).

The sample then passed through a water-cooled condenser and an XAD-2 absorbent module. The temperature of the XAD-2 module was kept below 20°C. The stack gas sample was then introduced into the impinger train. The impinger train was configured as specified in the reference method.

All glassware and filters were cleaned and proofed in accordance with procedures in 1/RM/2 prior to use in the field. Cleaning, proofing, and analysis were performed by Bureau Veritas Laboratory in Mississauga, Ontario.

Upon completion of the test, the samples were kept cool and delivered to ALS Environmental Laboratory in Burlington, Ontario for analysis.

The filter, XAD-2 module, impinger catch, and all rinses were analysed for the PAH's and PCDD/PCDF's using high resolution gas chromatography / mass spectrometry.

For the isokinetic testing, a total of 32 points (eight (8) per traverse) were used. Sampling duration was 7.5 minutes per point (2.5 min readings) with a total sampling time per isokinetic test of 240 minutes. **Figure 4.3.1** shows a diagram of the sampling train.

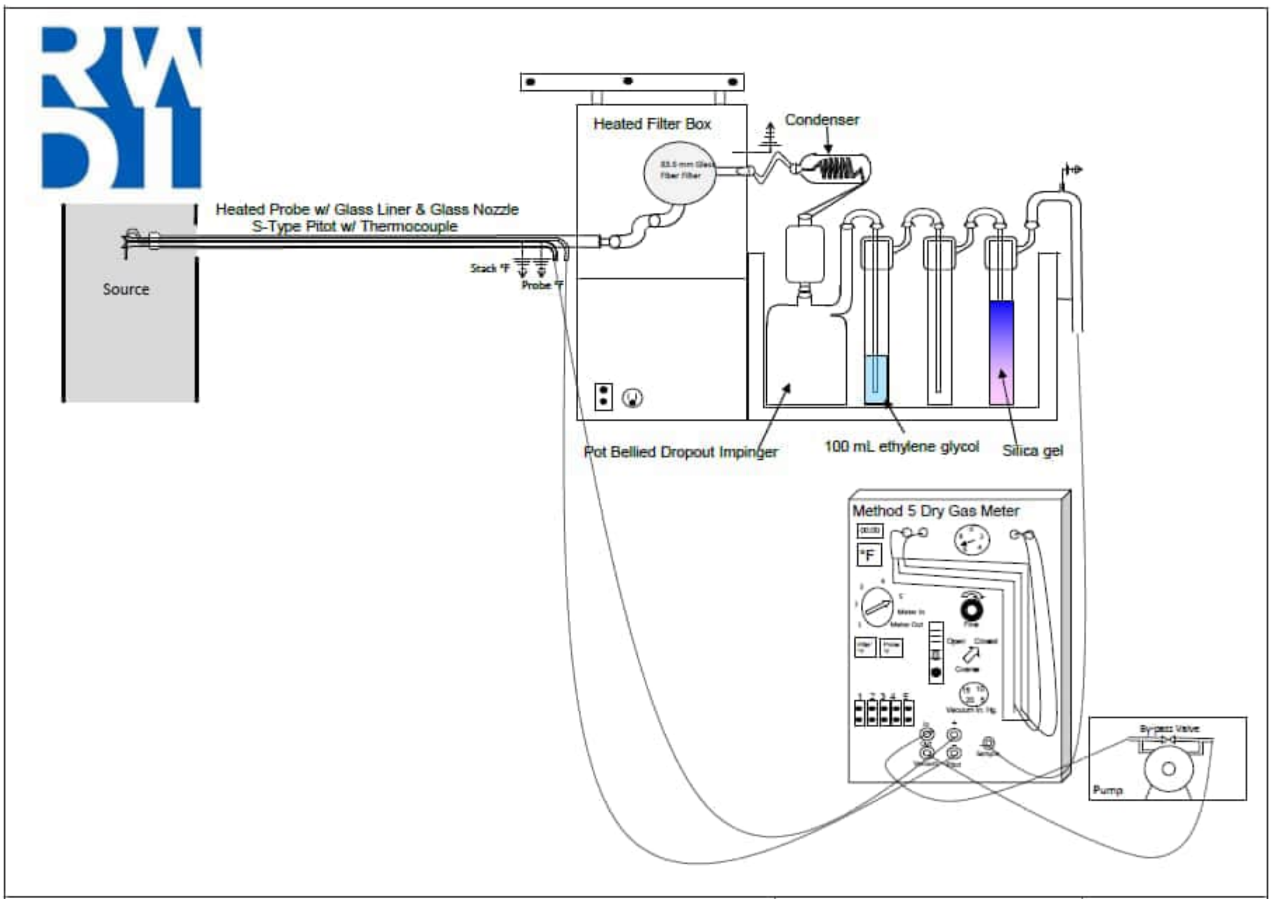

Figure 4.3.1: EPS 1/RM/2 Sampling Train

4.4 Sampling for Hydrogen Chloride and Ammonia

Sampling for Hydrogen Chloride, and Ammonia will be completed following U.S. EPA Method 26 "Determination of Hydrogen Halide and Halogen Emissions from Stationary Sources - Non-isokinetic Method". The sampling will be conducted using a midget impinger sampling train. The sample will be drawn through a Teflon lined probe, glass fibre filter and three-way stopcock which will be maintained at a temperature of 120 ± 14oC (248 ± 25oF). The sample will then enter the impinger train which consists of three impingers. The impingers in order include two acidic impingers, two basic impingers and a final silica impinger to dry the sample. Triplicate samples will be conducted at a collection rate of 1.5 liters per minute for a total test time of 60 minutes. Upon completion of the testing, samples were kept cool and submitted ALS Environmental Laboratory in Burlington, Ontario for analysis.

4.5 Sampling for Volatile Organic Compounds

Sampling for volatile organic compounds (VOC) was conducted using a volatile organic sampling train (VOST) following U.S. EPA SW846 Method 0030. Sample gas was collected on a pair of adsorbent tubes, the first containing Tenax, and the second, a combination of Tenax/charcoal. Since there was no visible condensate in the knockout flask located after the first tube, it was not recovered for analysis. Each set of tubes was sampled over a 60-minute period at 0.25 L/min. Samples were then submitted to Eurofins Laboratory in Knoxville, United States for analysis.

Like PAH and PCDD/PCDF's testing, VOST tubes were "proofed" to ensure that there was no contamination before taking any samples.

4.6 CEMS (Carbon Monoxide, Carbon Dioxide, Oxygen)

Sampling for Carbon Monoxide (CO), Carbon Dioxide (CO_2) and Oxygen (O_2) was conducted following USEPA Method 10 and Method 3A using a Horiba PG-350 multi-gas analyzer. Prior to testing, sample system bias checks and instrument linearity checks (calibration error) were completed. In addition, the analysers were calibrated (zeroed and span checked) at the completion of each run.

4.7 Sampling for Aldehydes

Aldehyde sampling was conducted following procedures outlined in NCASI Method A105 "Impinger Source Sampling Method for Selected Aldehydes, Ketones and Polar compounds". The sampling was conducted using a midget impinger sampling train. The sample gas passes through three chilled aqueous impingers containing o-benzylhydroxylamine (BHA) solution. The ratio of sample gas flow through the impingers to the initial BHA solution volume (both expressed as milliliters) must be between 200:1 to 4000:1. Sampling was conducted at a collection rate of 1.5 liters per minute.

There was a total of three (3) samples for aldehyde compounds collected at a single point in the stack, for a total sampling time of 60 minutes per test.

Upon completion of the test, the samples were kept cool and delivered to ALS Environmental Laboratory in Burlington, Ontario for analysis. **Figure 4.7.1** shows a diagram of the sampling train.

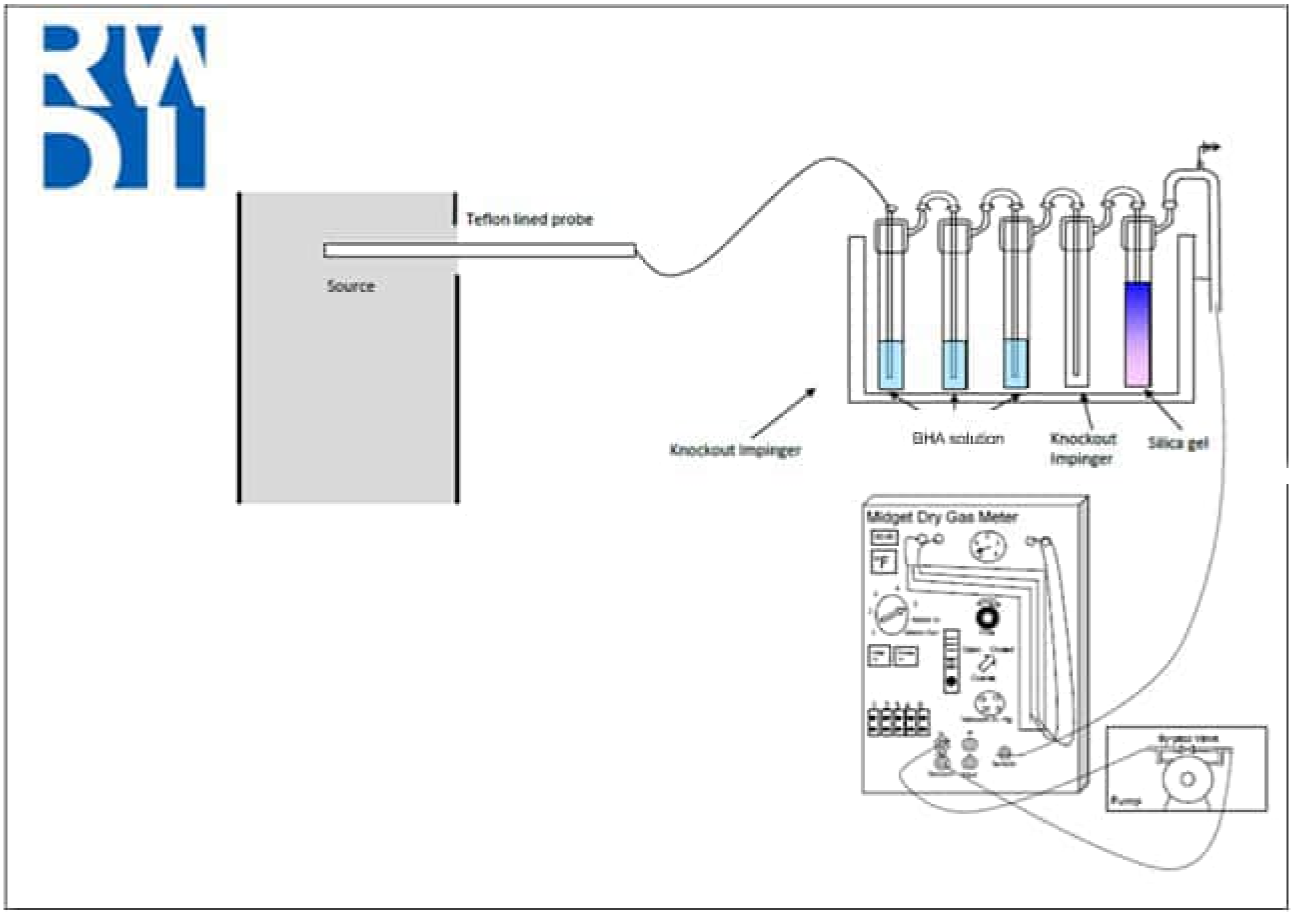

Figure 4.7.1: NCASI Method A105 Sampling Train

4.8 Sampling for Alcohols

The sampling for alcohols was performed using NCASI Impinger Method IM/CAN/WP-98.01. The sampling was conducted using a midget impinger sampling train. The sample was drawn through a Teflon lined probe, glass fibre filter and three-way stopcock which was maintained at a temperature of 120 ± 14°C (248 ± 25°F). The sample then entered the impinger train, which consisted of two (2) impingers containing 15 mL of distilled, deionized water. Sampling was conducted at a collection rate of 1 liter per minute.

There was a total of three (3) samples for alcohol compounds collected at a single point in the stack, for a total sampling time of 60 minutes per test.

Upon completion of the test, the samples were kept cool and delivered to ALS Environmental Laboratory in Burlington, Ontario for analysis.

5 QUALITY ASSURANCE/QUALITY CONTROL ACTIVITIES

Applicable quality assurance measures were implemented during the sampling program to ensure the integrity of the results. These measures included detailed documentation of field data, equipment calibrations for all measured parameters, completion of Chain of Custody forms when submitting laboratory samples, and submission of field blank samples to the laboratories. Table 2 presents a sample log and summarizes the sampling times, sample ID's, Lab ID's, and Clinker Rates.

For instances when the desired compound was less than the laboratory detection limit, the Reportable Detection Limit (RDL) was used in the calculation. A less than sign (<) is then added to the value. The < sign is used for the average concentration and emission rate, if at least one (1) sample or part of that sample is below the lab detection limit.

Leak checks were performed on the Method 5 sampling train by plugging the sample inlet and pulling a representative vacuum. This check was done before and after each test. Similar leak check procedures for pitot tube and pressure lines were also conducted. Daily temperature sensor audits were completed by noting the ambient temperature, as measured by a reference thermometer, and comparing these values to those obtained from the stack sensor. Leak checks for each test were documented on the field data sheets and presented in the applicable appendices of this report for each sample parameter.

6 OPERATING CONDITIONS

Operating conditions during the sampling period were monitored by St. Mary's personnel. All equipment was operated under normal maximum operating conditions.

Radio contact was kept between the process operators and the sampling team. A member of the RWDI sampling team contacted the operator before each test, to ensure that the process was at normal operating conditions. **Appendix L** Contains the process information summarized by St Mary's.

7 STATEMENT OF LIMITATION

This report entitled 2025 Compliance Source Testing Program ECA #6394-D78PR2 – St. Mary's, ON: RWDI Project #2509873 dated July 25, 2025, was prepared by RWDI Air Incorporated ("RWDI") for St. Mary's Cement St. Mary's. ("Client"). The findings and conclusions presented in this report have been prepared for the client and are specific to the project described herein ("Project"). The Conclusions and recommendations contained in this report are based on the information available to RWDI when this report was prepared. The conclusions and recommendations contained in this report have also been made for the specific purpose(s) set out herein. Should the Client or any other third party utilize the report and/or implement the conclusions and recommendations contained therein for any other purpose of Project without the involvement of RWDI, the

Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss or damage of any kind suffered by the Client or any other third party arising therefrom. Finally, it is imperative that the Client and/or any party relying on the results in this report carefully review the stated assumptions contained herein and to understand the different factors which may impact the results provided.

TABLES

Table 1 - Sampling Parameters and Methods
Kiln Stack

Source Location	No. of Tests	Sampling Parameter	Sampling Method
Main Stack	6	Velocity, Temperature and Flow Rate	OSTC [1] Methods 1-4
	3	Particulate Matter	OSTC [1] Method 5
	3	Metals	U.S. EPA [2] Method 29
	3	SVOC's, Dioxins and Furans	Environment Canada Method RM/2
	3	Aldehydes	NCASI[3] Method A105
	3	HCl and Ammonia	U.S. EPA[2] Method 26 (non-isokinetic)
	3	Methanol and Phenol	NCASI[3] Method 98.01
	3	Volatile Organic Matter	U.S. EPA[2] SW 846 0030 VOST
	3	Carbon Monoxide	US EPA[2] Method 10
	3	Oxygen and Carbon Dioxide	US EPA[2] Method 3A

Notes:

[1] OSTC - Ontario Source Testing Code - Version 3

[2] U.S. EPA - United States Environmental Protection Agency

[3] NCASI - National Council for Air and Stream Improvement

Table 2: Sampling Summary and Sample Log
Kiln Stack

Source and Test #	Sampling Date	Start Time	End Time	Filter ID / Trap ID	Lab Sample ID
Velocity / Metals / Mercury					
Test #1	8-Apr-25	9:37 AM	12:53 PM	QZ12521	BU2500945-004
Test #2 [1]	8-Apr-25 to 9-Apr-25	2:28 PM	10:17 AM	QZ12567	BU2500945-005
Test #3	9-Apr-25	11:42 AM	2:53 PM	QZ12566	BU2500945-006
Velocity / Dioxins and Furans					
Test #1	8-Apr-25	9:37 AM	12:53 PM	XAD ID #2	BU2500942-004
Test #2 [1]	8-Apr-25 to 9-Apr-25	2:28 PM	10:17 AM	XAD ID #7	BU2500942-005
Test #3	9-Apr-25	11:42 AM	2:53 PM	XAD ID #11	BU2500942-006
Methanol and Phenol					
Test #1	11-Apr-25	8:09 AM	9:09 AM	-	25040201-01
Test #2	11-Apr-25	9:36 AM	10:36 AM	-	25040201-02
Test #3	11-Apr-25	10:55 AM	11:55 AM	-	25040201-03
Aldehydes					
Test #1	11-Apr-25	8:09 AM	9:09 AM	-	BU2500943-001
Test #2	11-Apr-25	9:36 AM	10:36 AM	-	BU2500943-002
Test #3	11-Apr-25	10:55 AM	11:55 AM	-	BU2500943-003
HCl and Ammonia					
Test #1	9-Apr-25	9:36 AM	10:36 AM	-	BU2500944-001
Test #2	9-Apr-25	12:09 PM	1:09 PM	-	BU2500944-002
Test #3	9-Apr-25	1:22 PM	2:22 PM	-	BU2500944-003
VOST					
Test #1	8-Apr-25	11:27 AM	12:27 PM	A080537+A080127	140-41580-1
Test #2	8-Apr-25	1:09 PM	2:09 PM	A087911+A066832	140-41580-2
Test #3	9-Apr-25	11:39 AM	12:39 PM	A081209+A081162	140-41580-3

Notes:
[1] Test #2 was suspended at 3:30 pm on 8-Apr-25 and restarted at 8:07 am on 9-Apr-25 due to process operational issues.

Table 3: Sampling Summary - Flow Characteristics
Kiln Stack

Stack Gas Parameter		Test No. 1			Test No. 2			Test No. 3			TOTAL AVERAGE
		PM, Metals	D and F [1]	Average	PM, Metals	D and F [1]	Average	PM, Metals	D and F [1]	Average	Average
Testing Date											-
Stack Temperature	°F	263	242	253	284	271	278	267	250	259	**263**
	°C	129	117	123	140	133	137	131	121	126	**128**
Moisture	%	10.6%	11.8%	11.2%	10.5%	12.8%	11.7%	12.6%	11.5%	12.1%	**11.6%**
Velocity	ft/s	93.5	80.8	87.1	92.4	79.1	85.7	92.6	78.3	85.5	**86.1**
	m/s	28.5	24.6	26.5	28.2	24.1	26.1	28.2	23.9	26.1	**26.2**
Actual Flow Rate	CFM	273095	235922	254509	269953	230965	250459	270698	228839	249769	**251579**
Referenced Flow Rate[2]	CFM	173538	152455	162997	166959	141465	154212	167165	147974	157570	**158259**
	m^3/s	82	72	77	79	67	73	79	70	74	**75**
Sampling Isokinetic Rate	%	100	100	100	101	102	102	100	103	102	**101**

***Notes*:**

[1] D and F = Dioxins, Furans, and Dioxin-like PCBs

[2] Referenced flow rate expressed as dry at 101.3 kPa, 25°C, and Actual Oxygen

Detailed sampling results including individual test results can be found in Appendix A and B

Table 4: PM, Metals and Mercury[1] - Averaged Results
Kiln Stack

Parameter	CAS Number	Concentration [2]	Concentration @ 11% O_2 [3]	Emission Rate
Particulate		**(mg/m^3)**	**(mg/m^3)**	**(mg/s)**
Particulate Matter		33.1	42.6	2640
Metals	**CAS Number**	**($\mu g/m^3$)**	**($\mu g/m^3$)**	**(mg/s)**
Arsenic (As)	7440-38-2	< 0.358	< 0.46	< 0.0287
Barium (Ba)	7440-39-3	8.75	11.2	0.7
Beryllium (Be)	7440-41-7	< 0.0564	< 0.0725	< 0.0045
Cadmium (Cd)	7440-43-9	0.407	0.523	0.0324
Chromium (Cr)	7440-47-3	92.1	118	7.43
Cobalt (Co)	7440-48-4	0.44	0.566	0.0352
Copper (Cu)	7440-50-8	5.91	7.6	0.474
Lead (Pb)	7439-92-1	16.1	20.7	1.28
Manganese (Mn)	7439-96-5	28	36	2.24
Molybdenum (Mo)	7439-98-7	6.97	8.96	0.559
Nickel (Ni)	7440-02-0	14	18	1.12
Selenium (Se)	7782-49-2	< 0.564	< 0.725	< 0.045
Silver (Ag)	7440-22-4	0.388	0.499	0.0311
Thallium (Tl)	7440-28-0	2.3	2.96	0.184
Vanadium (V)	7440-62-2	9.2	11.8	0.736
Zinc (Zn)	7440-66-6	25.8	33.2	2.05
Mercury		**($\mu g/m^3$)**	**($\mu g/m^3$)**	**(mg/s)**
Total Mercury	7439-97-6	< 2.03	< 2.61	< 0.162

Notes:

[1] Sampling followed OSTC Method 5 (PM) and U.S. EPA Method 29 (Metals)

[2] Referenced concentration values are expressed at 101.3kPa, 25 ^{o} C, actual oxygen

[3] Referenced concentration values are expressed at 101.3kPa, 25 ^{o} C, at 11% O_2

- When laboratory analysis was below the detection limit, the Reportable Detection Limit (RDL) was used to calculate the concentration and emission rate

Average of three tests

Detailed sampling results including individual test results can be found in Appendix B

Table 5: Dioxins and Furans - Averaged Results[1]
Kiln Stack

Parameter	CAS Number	Average Concentration [2]	Average Concentration @25°C and 11% O_2 [3]	Reg 419 Toxic Equivalency Factors: TEF	Reg 419 Toxic Equivalency Factors: TEF Concentration @ 25°C and 11% O_2	Reg 419 Toxic Equivalency Factors: TEF Emission Rate
Dioxins and Furans	**CAS Number**	**(pg/m^3)**	**(pg/m^3)**		**(pg TEQ/m^3)**	**(pg/s)**
2,3,7,8-Tetra CDD *	1746-01-6	< 1.89	< 2.42	1	< 2.42	< 131
1,2,3,7,8-Penta CDD *	40321-76-4	< 1.54	< 1.98	1	< 1.98	< 107
1,2,3,4,7,8-Hexa CDD *	39227-28-6	< 0.722	< 0.929	0.1	< 0.0929	< 5.02
1,2,3,6,7,8-Hexa CDD *	57653-85-7	< 1.1	< 1.41	0.1	< 0.141	< 7.65
1,2,3,7,8,9-Hexa CDD *	19408-74-3	< 0.572	< 0.735	0.1	< 0.0735	< 3.98
1,2,3,4,6,7,8-Hepta CDD *	35822-46-9	3.06	3.93	0.01	0.0393	2.13
1,2,3,4,6,7,8,9-Octa CDD *	3268-87-9	< 4.79	< 6.16	0.0003	< 0.00185	< 0.0999
2,3,7,8-Tetra CDF **	51207-31-9	73.4	94.3	0.1	9.43	510
1,2,3,7,8-Penta CDF **	57117-41-6	16	20.6	0.03	0.618	33.4
2,3,4,7,8-Penta CDF **	57117-31-4	< 28.1	< 36.1	0.3	< 10.8	< 586
1,2,3,4,7,8-Hexa CDF **	70648-26-9	< 9.54	< 12.3	0.1	< 1.23	< 66.3
1,2,3,6,7,8-Hexa CDF **	57117-44-9	< 5.61	< 7.22	0.1	< 0.722	< 39
2,3,4,6,7,8-Hexa CDF **	60851-34-5	< 6.57	< 8.44	0.1	< 0.844	< 45.7
1,2,3,7,8,9-Hexa CDF **	72918-21-9	< 1.46	< 1.87	0.1	< 0.187	< 10.1
1,2,3,4,6,7,8-Hepta CDF **	67562-39-4	< 7.96	< 10.2	0.01	< 0.102	< 5.53
1,2,3,4,7,8,9-Hepta CDF **	55673-89-7	< 0.709	< 0.912	0.01	< 0.00912	< 0.493
1,2,3,4,6,7,8,9-Octa CDF **	39001-02-0	2.81	3.62	0.0003	0.00108	0.0586
PCBs	**CAS Number**	**(pg/m^3)**	**(pg/m^3)**		**(pg TEQ/m^3)**	**(pg/s)**
33'44'-TetraCB-(77)	32598-13-3	217	278	0.0001	0.0278	1.51
344'5-TetraCB-(81)	70362-50-4	< 22.7	< 29.2	0.0003	< 0.00876	< 0.473
233'44'-PentaCB-(105)	32598-14-4	< 441	< 568	0.00003	< 0.017	< 0.919
2344'5-PentaCB-(114)	74472-37-0	33	42.4	0.00003	0.00127	0.0688
23'44'5-PentaCB-(118)	31508-00-6	1030	1320	0.00003	0.0397	2.15
23'44'5'-PentaCB-(123)	65510-44-3	< 22	< 28.3	0.00003	< 0.00085	< 0.0459
33'44'5-PentaCB-(126)	57465-28-8	< 20.2	< 26	0.1	< 2.6	< 140
HexaCB-(156)+(157)	32774-16-6	167	215	0.00003	0.00646	0.348
23'44'55'-HexaCB-(167)	69782-90-7	83.9	108	0.00003	0.00324	0.175
33'44'55'-HexaCB-(169)	32774-16-6	< 5.72	< 7.36	0.03	< 0.221	< 11.9
233'44'55'-HeptaCB-(189)	74472-50-7	< 31.3	< 40.2	0.00003	< 0.00121	< 0.0653
				Total Toxic Equivalency	**< 31.6**	**< 1710**

Notes:

[1] Sampling followed Environment Canada Method RM/2 (Dioxin and Furans)

[2] Referenced concentration values are expressed at 101.3kPa, 25 ° C

[3] Referenced concentration values are expressed at 101.3kPa, 25 ° C, at 11% O_2

Average of three tests

- When laboratory analysis was below the detection limit, the detection limit was used to calculate the concentration and emission rate.

**CCD = Chloro Dibenzo-p-Dioxin,*

***CDF = Chloro Dibenzo-p-Furan*

****CB = Chloro Benzene*

Detailed sampling results including individual test results can be found in Appendix C

Table 6 - Polycyclic Aromatic Hydrocarbons (PAH's)
Kiln Stack

Parameter	CAS Number	Concentration [1]	Concentration @ 11% O_2 [2]	Emission Rate
PAH		**(µg/m^3)**	**(µg/m^3)**	**(µg/s)**
Acenaphthene	83-32-9	10.8	13.8	745
Acenaphthylene	208-96-8	17	21.8	1170
Anthracene	120-12-7	7.39	9.5	504
Benzo(a)anthracene	56-55-3	< 0.555	< 0.714	< 37.5
Benzo(b)anthracene + Chrysene + Triphenylene	56-55-3/218-01-9 / 217-59-4	3.01	3.87	202
Benzo(a)fluorene	238-84-6	< 0.176	< 0.226	< 12.2
Benzo(a)pyrene	50-32-8	< 0.176	< 0.226	< 12.2
Benzo(b)fluoranthene	205-99-2	< 0.33	< 0.424	< 22.5
Benzo(b)fluorene	243-17-4	< 0.251	< 0.323	< 17.2
Benzo(e)pyrene	192-97-2	< 0.386	< 0.497	< 26.3
Benzo(g,h,i)perylene	191-24-2	< 0.176	< 0.226	< 12.2
Benzo(j+k)fluoranthenes	207-08-9/ 205-82-3	< 0.188	< 0.241	< 13
Chloronaphthalene, 2-	91-57-8	7.11	9.14	485
Coronene	191-07-1	< 0.176	< 0.226	< 12.2
Dibenzo(a,c+a,h)anthracenes	53-70-3	< 0.176	< 0.226	< 12.2
Dimethylanthracene, 9,10-	781-43-1	< 0.391	< 0.503	< 26.6
Dimethylbenzo(a)anthracene, 7,12-	57-97-6	< 0.000586	< 0.000753	< 0.0407
Fluoranthene	206-44-0	6.68	8.59	450
Fluorene	86-73-7	15.1	19.4	1040
Indeno(1,2,3-c,d)pyrene	193-39-5	< 0.176	< 0.226	< 12.2
Methylanthracene, 2-	613-12-7	5.73	7.37	389
Methylcholanthrene, 3-	56-49-5	< 0.176	< 0.226	< 12.2
Methylnaphthalene, 1-	90-12-0	96.4	124	6680
Methylnaphthalene, 2-	91-57-6	124	159	8570
Methylphenanthrene, 1-	832-69-9	7.98	10.3	543
Methylphenanthrene, 9-	883-20-5	3.12	4.01	212
Naphthalene	91-20-3	159	205	11000
Perylene	198-55-0	< 0.176	< 0.226	< 12.2
Phenanthrene	85-01-8	50.7	65.2	3470
Picene	213-46-7	< 0.176	< 0.226	< 12.2
Pyrene	129-00-0	4.05	5.21	273
Tetralin	119-64-2	24.6	31.6	1700

Notes:
[1] Referenced concentration values are expressed at 101.3kPa, 25 ^{o} C
[2] Referenced concentration values are expressed at 101.3kPa, 25 ^{o} C, at 11% O_2
Average of three tests
- When laboratory analysis was below the detection limit, the detection limit was used to calculate the concentration and emission rate.
Detailed sampling results including individual test results can be found in Appendix C

Table 7: Hydrochloric Acid and Ammonia - Averaged Results
Kiln Stack

Parameter	CAS Number	Concentration [1]	Concentration @ 11% O_2 [2]	Concentration @ 0 °C, 10% O_2 [3]	Emission Rate
		(mg/m^3)	(mg/m^3)	(mg/m^3)	(mg/s)
Hydrochloric Acid	7647-01-0	7.62	9.8	9.89	566
Ammonia (NH_3)	7664-41-7	9.79	12.6	12.7	731

Notes:

[1] Referenced concentration values are expressed at 101.3kPa, 25 °C

[2] Referenced concentration values are expressed at 101.3kPa, 25 °C, at 11% O_2

Average of three tests

'<' indicates that the laboratory results were less than the Reportable Detection Limit (RDL). The RDL was used to calculate the concentration and emission rate.

Detailed sampling results including individual test results can be found in Appendix D

Table 8: Volatile Organic Compounds - Averaged Results
Kiln Stack

Parameter	CAS Number	Concentration[1]	Concentration @ 11% O_2[2]	Concentration @ 0°C, 10% O_2[3]	Emission Rate
		(µg/m³)	(µg/m³)	(µg/m³)	(mg/s)
Acetone	67-64-1	< 730	< 939	< 357	< 54.3
Benzene	71-43-2	< 193	< 248	< 94.4	< 14.4
Bromodichloromethane	75-27-4	< 0.474	< 0.609	< 0.232	< 0.0354
Bromoform	75-25-2	< 1.18	< 1.52	< 0.579	< 0.0884
Bromomethane	74-83-9	< 7.51	< 9.65	< 3.67	< 0.559
Butanone, 2 -	78-93-3	< 260	< 334	< 127	< 19.3
Carbon Tetrachloride	56-23-5	< 0.474	< 0.609	< 0.232	< 0.0354
Chloroform	67-66-3	< 0.474	< 0.609	< 0.232	< 0.0354
Cumene	98-82-8	< 3.37	< 4.33	< 1.65	< 0.25
Dibromochloromethane	124-48-1	< 1.18	< 1.52	< 0.579	< 0.0884
Dichlorodifluoromethane	75-71-8	< 0.998	< 1.28	< 0.488	< 0.0741
Dichloroethane, 1,2 -	107-06-2	< 0.474	< 0.609	< 0.232	< 0.0354
Dichloroethene, 1,1 -	75-35-4	< 0.474	< 0.609	< 0.232	< 0.0354
Dichloroethene, Trans - 1,2	156-60-5	< 0.474	< 0.609	< 0.232	< 0.0354
Dichloropropane, 1,2 -	78-87-5	< 0.474	< 0.609	< 0.232	< 0.0354
Ethylbenzene	100-41-4	< 59.7	< 76.8	< 29.2	< 4.44
Ethylene Dibromide	106-93-4	< 1.18	< 1.52	< 0.579	< 0.0884
Mesitylene	108-67-8	< 13.5	< 17.3	< 6.59	< 1
Methylene Chloride	75-09-2	459	590	224	34.6
Styrene	100-42-5	< 79	< 102	< 38.6	< 5.88
Tetrachloroethene	127-18-4	< 0.474	< 0.609	< 0.232	< 0.0354
Toluene	108-88-3	135	174	66	10
Trichloroethane, 1,1,1 -	71-55-6	< 1.18	< 1.52	< 0.579	< 0.0884
Trichloroethene	79-01-6	< 0.474	< 0.609	< 0.232	< 0.0354
Trichlorofluoromethane	75-69-4	< 1.05	< 1.35	< 0.513	< 0.0782
Vinyl Chloride	75-01-4	< 5.92	< 7.62	< 2.9	< 0.441
Xylenes, M-, P- and O	95-47-6,108-38-3,106-42-3	< 129	< 166	< 63.3	< 9.62

Notes:

Analytical laboratory results - Butadiene, 1,3 - and Trichlorotrifluoroethane were not reported.

*' **<** ' indicates that the laboratory results were less than the Reportable Detection Limit (RDL). This RDL was used to calculate the concentration and emission rate.*

[1] Sample volume and volumetric flow rate based on dry referenced conditions (101.3kPa, 25 °C)

[2] All referenced concentration values are expressed at 101.3kPa, 25 °C, and 11% Oxygen

[3] All referenced concentration values are expressed at 101.3kPa, 0 °C, and 10% Oxygen

Average of three tests

Detailed sampling results including individual test results can be found in Appendix H

Table 9: Aldehydes - Averaged Results
Kiln Stack

Parameter	CAS Number	Concentration [1]	Concentration @ 11% O_2 [2]	Emission Rate
		(mg/m^3)	(mg/m^3)	(mg/s)
Acetaldehyde	75-07-0	24.7	31.7	1840
Acrolein	107-02-8	4.8	6.17	359
Propionaldehyde	123-38-6	7.43	9.55	556

Notes:

[1] Referenced concentration values are expressed at 101.3kPa, 25 ^{o} C

[2] Referenced concentration values are expressed at 101.3kPa, 25 ^{o} C, at 11% O_2

Average of three tests

When laboratory analysis was below the detection limit, the Reportable Detection Limit (RDL) was used to calculate the concentration and emission rate

Flow rate from isokinetic tests were used to calculate the emission rate

Detailed sampling results including individual test results can be found in Appendix F

Table 10: Phenol and Methanol - Averaged Results
Kiln Stack

Parameter	CAS Number	Concentration [1]	Concentration @ 11% O_2 [2]	Emission Rate
		(mg/m^3)	(mg/m^3)	(mg/s)
Phenol	108-95-2	< 0.16	< 0.0885	< 12
Methanol	67-56-1	< 0.16	< 0.0885	< 12

Notes:
[1] Referenced concentration values are expressed at 101.3kPa, 25 ^{o} C
[2] Referenced concentration values are expressed at 101.3kPa, 25 ^{o} C, at 11% O_2
Average of three tests
When laboratory analysis was below the detection limit, the Reportable Detection Limit (RDL) was used to calculate the concentration and emission rate
Flow rate from isokinetic tests were used to calculate the emission rate
Detailed sampling results including individual test results can be found in Appendix E

Table 11: CEMS - Averaged Results
Kiln Stack

Average				
O2 (%)	CO2 (%)	CO (ppm)	CO (mg/m^3) [1]	CO (g/s) [2]
13.2	12.5	1436	1644	122.8

Test ID: 1	April 8, 2025			
Time	O2 (%)	CO2 (%)	CO (ppm)	CO (mg/m^3) [1]
9:15 AM to 11:55 AM	13.4	12.3	1,107	1,268

Test ID: 2	April 8, 2025			
Time	O2 (%)	CO2 (%)	CO (ppm)	CO (mg/m^3) [1]
11:55 AM to 2:48 PM	12.9	12.9	1,652	1,892

Test ID: 3	11-Apr-25			
Time	O2 (%)	CO2 (%)	CO (ppm)	CO (mg/m^3) [1]
8:15 AM to 9:58 AM	13.3	12.3	1,548	1,773

Notes:

[1] Referenced flow rate expressed as dry at 101.3 kPa, 25°C, and Actual Oxygen

[2] Emission rate calculated based on averaged volumetric flow rate of isokinetic tests

Detailed CEM results can be found in Appendix G

Table 12: Results Comparison
Kiln Stack

Parameter	Stack Testing Results [1]	ECA Limit [2]
Limits in Schedule B of the ECA (6394-D78PR2)		
Particulate Matter	42.6 mg/Rm^3	50 mg/Rm^3
Cadmium	0.523 µg/Rm^3	7 µg/Rm^3
Lead	20.7 µg/Rm^3	60 µg/Rm^3
Mercury	< 2.61 µg/Rm^3	20 µg/Rm^3
Dioxins and Furans	< 31.6 pg/Rm^3	80 pg/Rm^3 ITEQ
Hydrochloric Acid	9.8 mg/Rm^3	27 mg/Rm^3

Notes:

[1] - Concentration referenced to dry conditions at 25°C, 101.3kPa, and 11% oxygen

[2] – Schedule B of ECA Number 6394-D78PR2. Limits referenced to dry conditions at 25°C, 101.3kPa, and 11% oxygen

Table 13: Summary of Operating Conditions
Kiln Stack

Source and Test #	Sampling Date	Start Time	End Time	Clinker Production (tonnes/hr)	Conventional Fuel Rate Kiln (tonnes/hr)	ALCF Firing Rate	ALCF Rate %Plastic	ALCF Rate %Wood	ALCF Rate Plastic TPH	ALCF Rate Wood TPH	RM Feed	Kiln Feed	NOx (F) (ppmv)	Opacity (%)	SO2 (F) (ppmv)	Stage 1 O2 - East	Stage 1 O2 - West	Stage 1 CO - East	Stage 1 CO - West	Riser Temperature	Burner Temperature	Pressure Stage 1 - East	Pressure Stage 1 - West	Pressure - Riser	Pressure - Kiln Hood	Pressure - Raw Mill
M29/SVOC Test #1	8-Apr-25	9:37 AM	12:53 PM	65.70	5.19	3.97	75.00	25.00	2.98	0.99	203.00	114.90	260.00	3.24	235.72	8.01	4.60	1498.80	3408.95	827.52	1190.95	-352.11	-277.93	-8.87	-3.00	-31.27
M29/SVOC Test #2	8-Apr-25 to 9-Apr-25	2:28 PM	10:17 AM	67.17	5.74	3.09	79.00	21.00	2.25	0.51	119.70	112.70	297.00	4.53	136.50	8.18	5.67	1508.75	2773.39	823.00	1187.08	-363.84	-287.62	-27.35	-3.07	-24.15
M29/SVOC Test #3	9-Apr-25	11:42 AM	2:53 PM	67.57	4.63	5.00	100.00	0.00	5.00	0.00	223.10	120.20	194.60	3.46	271.30	5.95	4.47	2092.28	4569.90	830.36	1224.43	-343.71	-277.22	-12.84	-3.08	-34.26
HCl/Ammonia T1	9-Apr-25	9:36 AM	10:36 AM	67.67	4.78	4.43	92.00	8.00	4.10	0.33	234.70	115.80	280.30	4.20	177.50	7.41	5.39	1644.13	3161.95	825.64	1218.85	-344.69	-270.92	-14.42	-3.04	-39.03
HCl/Ammonia T2	9-Apr-25	12:09 PM	1:09 PM	65.62	4.69	5.00	100.00	0.00	5.00	0.00	234.70	120.50	180.30	3.40	295.20	5.65	4.16	2233.94	4935.19	831.73	1237.94	-343.54	-275.38	-13.00	-3.10	-32.92
HCl/Ammonia T3	9-Apr-25	1:22 PM	2:22 PM	69.90	4.57	5.00	100.00	0.00	5.00	0.00	215.60	121.70	206.00	3.29	289.90	5.65	4.34	2088.25	4616.91	832.27	1237.72	-348.58	-280.21	-18.57	-3.08	-31.56
VOST T1	8-Apr-25	11:27 AM	12:27 PM	66.93	5.00	3.95	0.75	0.25	2.96	0.99	198.48	114.48	237.67	3.15	214.03	8.33	4.67	1442.90	3321.36	825.85	1250.60	-357.66	-280.75	-11.17	-3.02	-39.49
VOST T2	8-Apr-25	1:09 PM	2:09 PM	68.09	5.87	2.72	0.75	0.25	2.04	0.68	63.66	112.96	225.67	3.82	149.73	8.59	5.43	1572.18	3059.63	823.21	1203.07	-378.98	-300.42	-28.94	-3.07	-25.16
VOST T3	9-Apr-25	11:39 AM	12:39 PM	64.61	4.75	5.00	1.00	0.00	5.00	0.00	234.49	119.56	195.67	3.60	271.37	6.12	4.48	2123.46	4636.78	828.84	1224.52	-343.00	-274.30	-7.72	-3.04	-37.51
NCASI 98.01 / A105 T1	11-Apr-25	8:09 AM	9:09 AM	69.43	4.29	5.00	1.00	0.00	5.00	0.00	222.38	124.04	194.33	3.00	309.47	5.64	4.71	2159.07	4661.67	807.89	1141.77	-393.47	-335.84	-10.36	-3.05	-36.20
NCASI 98.01 / A105 T2	11-Apr-25	9:36 AM	10:36 AM	61.18	4.22	5.00	1.00	0.00	5.00	0.00	222.36	125.67	235.33	2.96	317.07	5.74	4.48	2110.03	4579.42	801.33	1173.90	-399.89	-346.03	-10.79	-3.04	-36.81
NCASI 98.01 / A105 T3	11-Apr-25	10:55 AM	11:55 AM	66.16	4.06	5.00	1.00	0.00	5.00	0.00	222.13	126.24	252.00	2.86	305.17	5.87	4.34	2175.95	4684.20	799.13	1218.35	-401.68	-348.50	-12.65	-3.09	-27.63

Notes:
Data supplied by SMC St Marys

APPENDIX A

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER 6394-D78PR2
Issue Date: November 11, 2024

St. Marys Cement Inc. (Canada)
55 Industrial St
Toronto, Ontario
M4G 3W9

Site Location: 585 Water St South
St. Marys Separated Town, County of Perth
N4X 1B6

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act , R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

Description Section

A cement manufacturing facility, consisting of the following processes and support units:

- Raw material delivery, storage, processing and transfers;
- Conventional Fuels processing, storage and handling;
- Alternative Low-Carbon Fuels processing, storage and handling;
- Clinker production- Cement Kiln operations;
- Clinker storage and transfer; and
- Cement production including ball mills, cement storage and shipping;

including the Equipment and any other ancillary and support processes and activities, operating at a Facility Production Limit of up to a clinker production rate of 1.1 million tonnes per year, discharging to the air as described in the Original ESDM Report.

For the purpose of this environmental compliance approval, the following definitions apply:

1. "ACB list" means the document entitled "Air Contaminants Benchmarks (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants", as amended from time to time and published by the Ministry and available on a Government website;

2. "Acceptable Point of Impingement Concentration" means a concentration accepted by the Ministry as not likely to cause an adverse effect for a Compound of Concern that,
   a. is not identified in the ACB list, or
   b. is identified in the ACB list as belonging to the category “Benchmark 2” and has a concentration at a Point of Impingement that exceeds the concentration set out for the contaminant in that document.
      With respect to the Original ESDM Report, the Acceptable Point of Impingement Concentration for a Compound of Concern mentioned above is the concentration set out in the Original ESDM Report;
3. "Acoustic Assessment Report" means the report, prepared in accordance with Publication NPC-233 and Appendix A of the Basic Comprehensive User Guide, by Petr Chocensky of HGC Engineering and dated August 31, 2023 submitted in support of the application, that documents all sources of noise emissions and Noise Control Measures present at the Facility, as updated in accordance with Condition 5 of this Approval;
4. "Acoustic Assessment Summary Table" means a table prepared in accordance with the Basic Comprehensive User Guide summarising the results of the Acoustic Assessment Report, as updated in accordance with Condition 5 of this Approval;
5. "Acoustic Audit" means an investigative procedure consisting of measurements and/or acoustic modelling of all sources of noise emissions due to the operation of the Facility, assessed to determine compliance with the Performance Limits for the Facility regarding noise emissions, completed in accordance with the procedures set in Publication NPC-103 and reported in accordance with Publication NPC-233;
6. "Acoustic Audit Report" means a report presenting the results of an Acoustic Audit, prepared in accordance with Publication NPC-233;
7. "Acoustical Consultant" means a person currently active in the field of environmental acoustics and noise/vibration control, who is familiar with Ministry noise guidelines and procedures and has a combination of formal university education, training and experience necessary to assess noise emissions from a Facility;
8. "Agricultural Waste" has the same meaning as defined in O. Reg. 347;
9. "Alternative Low-Carbon Fuels" means a fuel as defined in O. Reg. 79/15 and includes the materials approved under Condition 7 of this Approval;
10. "Approval" means this entire Environmental Compliance Approval and any Schedules to it;
11. "Basic Comprehensive User Guide" means the Ministry document titled "Basic

Comprehensive Certificates of Approval (Air) User Guide” dated March 2011, as amended;

12. "Best Management Practices Plan" means the document titled "Best Management Practices Plan for the Control of Fugitive Dust Emissions - St. Mary's Cement Plant" Revision 8, dated February 2022, as amended;
13. "CAEAL" means the Canadian Association for Environmental Analytical Laboratories;
14. "Carbon Dioxide Emission Intensity" has the same meaning as defined under O. Reg. 79/15;
15. "Cement Kiln" means the cement kiln, firing Conventional Fuels, Alternative Low-Carbon Fuels, hydrogen and oxygen generated from the Electrolysis System, and Fuel Adjunct Material, described in the ESDM Report, this Approval, and in the supporting documentation referred to herein;
16. "CEM System" means the continuous monitoring and recording system used to measure the emissions from the Cement Kiln stack;
17. "CPM System" means the continuous monitoring and recording system used to measure the operational parameters of the Cement Kiln;
18. "Company" means St. Mary's Cement Inc. (Canada) that is responsible for the construction or operation of the Facility and includes any successors and assigns in accordance with section 19 of the EPA;
19. "Compound of Concern" means a contaminant described in paragraph 4 subsection 26 (1) of O. Reg. 419/05, namely, a contaminant that is discharged from the Facility in an amount that is not negligible;
20. "Conventional Fuels" means solid fuels including petroleum coke and coal for regular firing and also includes diesel, propane and natural gas for preheating during start-up;
21. "Demonstration Project" means a project that:
    a. involves the combustion of Alternative Low-Carbon Fuel, introduced through the back-end firing system of the Cement Kiln, for the purpose of manufacturing cement, at the Facility, and
    b. is carried out for the primary purpose of assisting in the design or assessing the merits of, or substantiating and showing the merits of a technology for the combustion described in definition 21.a.;
22. "Description Section" means the section on page one of this Approval describing the Company's operations and the Equipment located at the Facility and specifying the Facility Production Limit for the Facility;

23. "Director" means a person appointed for the purpose of section 20.3 of the EPA by the Minister pursuant to section 5 of the EPA;
24. "District Manager" means the District Manager of the appropriate local district office of the Ministry, where the Facility is geographically located;
25. "Electrolysis System" means the Ultimate Cell Continuous Combustion (UC3) System described in the Original ESDM Report, or an equivalent system, where up to 30 normal cubic metres per hour of hydrogen and up to 15 normal cubic metres per hour of oxygen are generated and introduced into the fuel injection port of the cement kiln;
26. "Emission Summary Table" means a table described in paragraph 14 of subsection 26 (1) of O. Reg. 419/05;
27. "Environmental Assessment Act" means the *Environmental Assessment Act,* R.S.O. 1990, c.E.18;
28. "EPA" means the *Environmental Protection Act,* R.S.O. 1990, c.E.19;
29. "Equipment" means equipment or processes described in the ESDM Report, this Approval and in the Schedules referred to herein and any other equipment or processes;
30. "Equipment with Specific Operational Limits" means the Cement Kiln (except the fuel feed system feeding Alternative Low-Carbon Fuels, Conventional Fuels and Hydrogen to the Cement Kiln), and any other Equipment related to the thermal oxidation of waste or waste derived fuels, fume incinerators or any other Equipment that is specifically referenced in any published Ministry document that outlines specific operational guidance that must be considered by the Director in issuing an Approval;
31. "ESDM Report" means the most current Emission Summary and Dispersion Modelling Report that describes the Facility. The ESDM Report is based on the Original ESDM Report and is updated after the issuance of this Approval in accordance with section 26 of O. Reg. 419/05 and the Procedure Document;
32. "Facility" means the entire operation belonging to the Company's cement manufacturing facility located on the Property where the Equipment is located;
33. "Facility Production Limit" means the production limit placed by the Director on the main product(s) or raw materials used by the Facility;
34. "Fuel Adjunct Materials" means solid fuel, wholly used at the Facility, as supplementary fuels to coal and petroleum coke for firing the Cement Kiln, such as but not limited to carbon dust, metallurgical coke and carbon black, but which does not include Alternative Low-Carbon Fuels;
35. "Highest Ranking Person" means the highest ranking person regularly present at

the Facility who has management responsibilities relating to the Facility;

36. "Independent Acoustical Consultant" means an Acoustical Consultant who is not representing the Company and was not involved in preparing the Acoustic Assessment Report or the design/implementation of Noise Control Measures for the Facility and/or Equipment. The Independent Acoustical Consultant shall not be retained by the Acoustical Consultant involved in the noise impact assessment or the design/implementation of Noise Control Measures for the Facility and/or Equipment;
37. "Industrial By-Product Materials" means industrial by-product materials such as but not limited to iron slag from smelting industry, fly ash from coal fired generating plants, ash from waste water treatment plants and foundry sand used in casting processes, wholly used at the Facility as substitute raw material sources of calcium oxide, silica, iron oxide and alumina required for the ongoing cement manufacturing process and which do not serve as fuel for the Cement Kiln;
38. "Log" means a document that contains a record of each change that is required to be made to the ESDM Report and Acoustic Assessment Report, including the date on which the change occurred. For example, a record would have to be made of a more accurate emission rate for a source of contaminant, more accurate meteorological data, a more accurate value of a parameter that is related to a source of contaminant, a change to a Point of Impingement and all changes to information associated with a Modification to the Facility that satisfies Condition 2;
39. "Manager" means the Manager, Technology Standards Section, Technical Assessment and Standards Development Branch, or any other person who represents and carries out the duties of the Manager, Technology Standards Section, Technical Assessment and Standards Development Branch, as those duties relate to the conditions of this Approval;
40. "Minister" means the Minister of the Environment, Conservation and Parks or such other member of the Executive Council as may be assigned the administration of the EPA under the Executive Council Act;
41. "Ministry" means the ministry of the Minister;
42. "Modification" means any construction, alteration, extension or replacement of any plant, structure, equipment, apparatus, mechanism or thing, or alteration of a process or rate of production at the Facility that may discharge or alter the rate or manner of discharge of a Compound of Concern to the air or discharge or alter noise or vibration emissions from the Facility;
43. "Noise Abatement Action Plan" means the noise abatement program developed by the Company, submitted to the Director and District Manager and approved by the Director, designed to achieve compliance with the sound level limits set in

Publication NPC-300, as applicable. It also means the Noise Abatement Action Plan outlined in the Acoustic Assessment Report;

44. "Noise Control Measures" means measures to reduce the noise emissions from the Facility and/or Equipment including, but not limited to, silencers, acoustic louvres, enclosures, absorptive treatment, plenums and barriers. It also means the noise control measures outlined in the Acoustic Assessment Report;
45. "O. Reg. 79/15" means Ontario Regulation 79/15: Alternative Low-Carbon Fuels; as amended;
46. “O. Reg. 347” means Ontario Regulation 347: General – Waste Management; as amended;
47. "O. Reg. 419/05" means Ontario Regulation 419/05: Air Pollution – Local Air Quality, made under the EPA;
48. "Original ESDM Report" means the Emission Summary and Dispersion Modelling Report which was prepared in accordance with section 26 of O. Reg. 419/05 and the Procedure Document by BCX Environmental Consulting and dated June 2024 submitted in support of the application, and includes any changes to the report made up to the date of issuance of this Approval;
49. "Point of Impingement" has the same meaning as in section 2 of O. Reg. 419/05;
50. "Point of Reception" means Point of Reception as defined by Publication NPC-300;
51. "Pre-Test Plan" means a plan for the Source Testing including the information required in Section 5 of the Source Testing Code;
52. "Procedure Document" means Ministry guidance document titled "Procedure for Preparing an Emission Summary and Dispersion Modelling Report" dated March 2018, as amended;
53. "Processes with Significant Environmental Aspects" means the Equipment which, during regular operation, would discharge one or more contaminants into the air in an amount which is not considered as negligible in accordance with section 26 (1) 4 of O. Reg. 419/05 and the Procedure Document;
54. "Property" means the single property jointly occupied by St. Marys Cement Inc. (Canada) cement manufacturing facility, the high calcium dried limestone manufacturing facility operated by Canada Building Material Co., and the dual-fuel fired truck heating system operated by Laidlaw Carriers Bulk, as described in the Company's application, this Approval and in the supporting documentation submitted with the application, to the extent approved by this Approval;
55. "Publication NPC-207" means the Ministry draft technical publication "Impulse Vibration in Residential Buildings", November 1983, supplementing the Model

Municipal Noise Control By-Law, Final Report, published by the Ministry, August 1978, as amended;

56. "Publication NPC-233" means the Ministry Publication NPC-233, "Information to be Submitted for Approval of Stationary Sources of Sound", October, 1995, as amended;
57. "Publication NPC-300" means the Ministry Publication NPC-300, “Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning, Publication NPC-300”, August 2013, as amended;
58. "Report EPS1/PG/7" means means the document published by Environment Canada entitled “Protocols and Performance Specifications for Continuous Monitoring of Gaseous Emissions from Thermal Power Generation";
59. "Schedules" means the following schedules attached to this Approval and forming part of this Approval namely:
    - Schedule A - Supporting Documentation
    - Schedule B - Performance Requirements - In-Stack Emission Limits
    - Schedule C - Emission Control Equipment Operational Requirements
    - Schedule D - Material Analysis Contaminants
    - Schedule E - Continuous Monitoring System Requirements
    - Schedule F - Alternative Low-Carbon Fuels Operational Requirements
    - Schedule G - Procedure for Source Testing
    - Schedule H - Test Sources and Test Contaminants
60. "Source Testing" means sampling and testing to measure emissions resulting from operating the test sources under conditions which yield the worst case emissions within the approved operating range of the test sources which satisfies paragraph 1 of subsection 11(1) of O. Reg. 419/05;
61. "Source Testing Code" means the Ontario Source Testing Code, dated June 2010, prepared by the Ministry, as amended;
62. "Toxicologist" means a qualified professional currently active in the field of risk assessment and toxicology that has a combination of formal university education, training and experience necessary to assess contaminants;
63. "Woodwaste" has the same meaning as defined in O. Reg 347; and
64. "Written Summary Form" means the electronic questionnaire form, available on the Ministry website, that documents whether Modifications were undertaken at the Facility and compliance with the Approval, in the previous calendar year.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. **GENERAL**
    1. Except as otherwise provided by this Approval, the Facility shall be designed, developed, built, operated and maintained in accordance with the terms and conditions of this Approval and in accordance with the following Schedules attached hereto:
        - Schedule A - Supporting Documentation
        - Schedule B - Performance Requirements - In-Stack Emission Limits
        - Schedule C - Emission Control Equipment Operational Requirements
        - Schedule D - Material Analysis Contaminants
        - Schedule E - Continuous Monitoring System Requirements
        - Schedule F - Alternative Low-Carbon Fuels Operational Requirements
        - Schedule G - Procedure for Source Testing
        - Schedule H - Test Sources and Test Contaminants
    2. The use of Alternative Low-Carbon Fuels is approved at the Facility under the requirements of O. Reg. 79/15, and pursuant to Section 3 of O. Reg. 79/15, section 27 of the EPA does not apply to the Facility.
2. **LIMITED OPERATIONAL FLEXIBILITY**
    1. Pursuant to section 20.6 (1) of the EPA and subject to Conditions 2.2 and 2.3 of this Approval, future construction, alterations, extensions or replacements are approved in this Approval if the future construction, alterations, extensions or replacements are Modifications to the Facility that:
        a. are within the scope of the operations of the Facility as described in the Description Section of this Approval;
        b. do not result in an increase of the Facility Production Limit above the level specified in the Description Section of this Approval; and
        c. result in compliance with the performance limits as specified in Condition 4.
    2. Condition 2.1 does not apply to,
        a. the addition of any new Equipment with Specific Operational Limits or to the Modification of any existing Equipment with Specific Operational Limits at the Facility;

b. alteration of the Alternative Low-Carbon Fuels and the increase in the quantity of Alternative Low-Carbon Fuels specified in Condition 7 of this Approval; and

c. Modifications to the Facility that would be subject to the Environmental Assessment Act.

3. Condition 2.1 of this Approval shall expire ten (10) years from the date of this Approval, unless this Approval is revoked prior to the expiry date. The Company may apply for renewal of Condition 2.1 of this Approval by including an ESDM Report and an Acoustic Assessment Report that describes the Facility as of the date of the renewal application.

3. **REQUIREMENT TO REQUEST AN ACCEPTABLE POINT OF IMPINGEMENT CONCENTRATION**

1. Prior to making a Modification to the Facility that satisfies Condition 2.1.a. and 2.1.b., the Company shall prepare a proposed update to the ESDM Report to reflect the proposed Modification.

2. The Company shall request approval of an Acceptable Point of Impingement Concentration for a Compound of Concern if the Compound of Concern is not identified in the ACB list as belonging to the category “Benchmark 1” and a proposed update to an ESDM Report indicates that one of the following changes with respect to the concentration of the Compound of Concern may occur:

    a. The Compound of Concern was not a Compound of Concern in the previous version of the ESDM Report and

        i. the concentration of the Compound of Concern exceeds the concentration set out for the contaminant in the ACB list; or

        ii. the Compound of Concern is not identified in the ACB list; or

    b. The concentration of the Compound of Concern in the updated ESDM Report exceeds the higher of,

        i. the most recent Acceptable Point of Impingement Concentration, and

        ii. the concentration set out for the contaminant in the ACB list,if the contaminant is identified in that document.

3. The request required by Condition 3.2 shall propose a concentration for the Compound of Concern and shall contain an assessment, performed by a Toxicologist, of the likelihood of the proposed concentration causing an adverse effect at Points of Impingement.

4. If the request required by Condition 3.2 is a result of a proposed Modification described in Condition 3.1, the Company shall submit the request, in writing, to the Director at least 30 days prior to commencing to make the Modification. The Director shall provide written confirmation of receipt of this request to the Company.
5. If a request is required to be made under Condition 3.2 in respect of a proposed Modification described in Condition 3.1, the Company shall not make the Modification mentioned in Condition 3.1 unless the request is approved in writing by the Director.
6. If the Director notifies the Company in writing that the Director does not approve the request, the Company shall,
    a. revise and resubmit the request; or
    b. notify the Director that it will not be making the Modification.
7. The re-submission mentioned in Condition 3.6 shall be deemed a new submission under Condition 3.2.
8. If the Director approves the request, the Company shall update the ESDM Report to reflect the Modification.
9. Condition 3 does not apply if Condition 2.1 has expired.

4. **PERFORMANCE LIMITS**
    1. Subject to Condition 4.2, the Company shall not discharge or cause or permit the discharge of a Compound of Concern into the air if,
        a. the Compound of Concern is identified in the ACB list as belonging to the category "Benchmark 1" and the discharge results in the concentration at a Point of Impingement exceeding the Benchmark 1 concentration; or
        b. the Compound of Concern is not identified in the ACB list as belonging to the category “Benchmark 1” and the discharge results in the concentration at a Point of Impingement exceeding the higher of,
            i. if an Acceptable Point of Impingement Concentration exists, the most recent Acceptable Point of Impingement Concentration, and
            ii. the concentration set out for the contaminant in the ACB list, if the contaminant is identified in that document.
    2. Condition 4.1 does not apply if the benchmark set out in the ACB list has a 10-minute averaging period and no ambient monitor indicates an exceedance at a Point of Impingement where human activities regularly occur at a time when those activities regularly occur.

3. The Company shall:
    a. fully implement the Noise Control Measures as outlined in the Noise Abatement Action Plan by no later than August 31, 2027;
    b. ensure subsequent to the completion of the Noise Abatement Action Plan that the noise emissions from the Facility comply with the limits in Ministry Publication NPC-300;
    c. ensure that the Noise Control Measures are properly maintained and continue to provide the acoustic performance outlined in the Acoustic Assessment Report; and
    d. ensure that any and all operations at the Facility are done so in accordance with the information presented in Table 1 of the Acoustic Assessment Report.
4. The Company shall ensure that the vibration emissions from the Facility comply with the limits set out in Ministry Publication NPC-207.
5. The Company shall operate any Equipment with Specific Operational Limits approved by this Approval in accordance with the Original ESDM Report.
6. The Company shall ensure that at all times when Alternative Low-Carbon Fuels are co-fired with Conventional Fuels in the Cement Kiln, the discharge from the Cement Kiln complies with the performance requirements specified in Schedule B of this Approval.

5. **DOCUMENTATION REQUIREMENTS**
    1. The Company shall maintain an up-to-date Log.
    2. No later than June 30 of each year, the Company shall update the Acoustic Assessment Report and shall update the ESDM Report in accordance with section 26 of O. Reg. 419/05 so that the information in the reports is accurate as of December 31 in the previous year.
    3. The Company shall make the Emission Summary Table (see section 27 of O. Reg. 419/05) and Acoustic Assessment Summary Table available for examination by any person, without charge, by posting it on the Internet or by making it available during regular business hours at the Facility.
    4. The Company shall, within three (3) months after the expiry of Condition 2.1 of this Approval, update the ESDM Report and the Acoustic Assessment Report such that the information in the reports is accurate as of the date that Condition 2.1 of this Approval expired.
    5. Conditions 5.1 and 5.2 do not apply if Condition 2.1 has expired.

6. **WRITTEN SUMMARY FORM**

1. Subject to Condition 6.2, the Company shall prepare, and make available to the Ministry upon request, no later than August 31 of each year, a Written Summary Form signed by the Highest Ranking Person.
2. Condition 6.1 does not apply if:
   a. Condition 2.1 has expired; and
   b. the Written Summary Form has been completed for the year in which Condition 2.1 expired.

7. **APPROVED ALTERNATIVE LOW-CARBON FUELS**
   1. The following Alternative Low-Carbon Fuels are approved for use as a fuel in the Cement Kiln at the Facility:
      a. Material that is biomass fuel derived from harvested plant and forest sources, end of life agricultural sources, Woodwaste or Agricultural Waste, and includes but is not limited to sawdust, wood chips, wood, miscanthus grass, millet, sorghum, hemp, switch grass, and maize;
      b. Material that is comprised of non-recyclable plastics, including but not limited to manufacturing rejects, material resource recovery facility rejects, plastics bags and packaging;
      c. Material that is comprised of construction, renovation & demolition waste, including but not limited to scrap wood, treated lumber, carpets, textiles, sawdust, floor laminates and asphalt shingles;
      d. Material that is comprised of non-recyclable paper fiber/wood/plastic composites, including but not limited to single-serve coffee pods, printed papers, paper towels, rejects and trimmings from paper recycling facilities such as ragger tails (residue including plastic trimmings, staples, paper fibre and metal wire), end rolls and cores; and
      e. Material that is comprised of rubber (non-tire derived), including but not limited to shredded conveyor belt rubber.
   2. Notwithstanding Condition 7.1 of this Approval, the Company shall ensure that the Alternative Low-Carbon Fuels are not derived from or composed of any material set out in Schedule 1 of O. Reg. 79/15.
   3. The combined amount of Alternative Low-Carbon Fuels approved under Condition 7.1 of this Approval, subjected to thermal processing in the Cement Kiln (including for the purposes of the Demonstration Project) shall not exceed 175 tonnes per day.

8. **OPERATION AND MAINTENANCE**
   1. The Company shall prepare and implement, not later than three (3) months

from the date of this Approval, operating procedures and maintenance programs for all Processes with Significant Environmental Aspects, which shall specify as a minimum:

a. frequency of inspections and scheduled preventative maintenance;
b. procedures to prevent upset conditions;
c. procedures to minimize all fugitive emissions;
d. procedures to prevent and/or minimize odorous emissions;
e. procedures to prevent and/or minimize noise emissions;
f. procedures for record keeping activities relating to the operation and maintenance programs;
g. acceptable range of the static pressure drop for the process dust control equipment listed in Schedule C of this Approval;
h. program to continuously monitor and record the pressure differential across each baghouse dust collector and the applicable operational parameters of the electrostatic precipitator specified as Primary Equipment in Schedule C of this Approval, including procedures to investigate and correct the cause of any anomalous measurements of the operational parameter;
i. program to periodically monitor and record the pressure differential across each baghouse dust collector specified as Secondary Equipment in Schedule C of this Approval, including procedures to investigate and correct the cause of any anomalous measurements;
j. list of management and supervisory personnel responsible for the operation and maintenance of the emission control equipment specified in Schedule C of this Approval.

2. The Company shall maintain and update to keep current, a list of all process dust control equipment, including the following details:
Source identification; Production building/area served; Process/location served; Stack gas flow rate; Filter area (as applicable); Stack diameter and Stack height above grade.
3. The Company shall ensure that all Processes with Significant Environmental Aspects are operated and maintained in accordance with this Approval, the operating procedures and maintenance programs.
4. The Company shall prepare, update as necessary and implement, not later than three (3) months prior to the implementation of Alternative Low-Carbon Fuels operation at the Facility, procedures for the handling, processing and combustion in the Cement Kiln of Alternative Low-Carbon Fuels, including but

not limited to:

   a. operating and maintenance procedures in accordance with good engineering practices and as recommended by the equipment suppliers;
   b. start-up, shut-down and emergency measures;
   c. procedures for handling, storage, maintenance and conveyance of Alternative Low-Carbon Fuels and the inspection of such facilities in accordance with the requirements set out in O. Reg. 79/15;
   d. procedures for record keeping activities, including but not limited to the record keeping requirements for Alternative Low-Carbon Fuels facility inspection, and Alternative Low-Carbon Fuels use and transport, in accordance with the requirements set out in O. Reg. 79/15;

5. The Company shall ensure that the Facility/Equipment is properly designed and operated at all times while firing Alternative Low-Carbon Fuels and comply with the operational requirements set out in Schedule F of this Approval.
6. Alternative Low-Carbon Fuels shall be fired in accordance with the operating procedures and shall only be fired once the Cement Kiln has achieved normal operation, temperatures and production and shall be introduced directly into the Cement Kiln to maintain the requirements set out in Schedule F of this Approval.
7. The introduction of Alternative Low-Carbon Fuels in the Cement Kiln shall be stopped (following appropriate procedures) if:
   a. the temperature, residual oxygen or pressure as measured by the CPM System do not meet the operational requirements outlined in Schedule F of this Approval for more than four (4) consecutive hours; or
   b. the CPM System for one or more of the parameters specified in condition 8.7 (a) are down or malfunctioning for more than four (4) consecutive hours.
8. The Company shall comply with the following Alternative Low-Carbon Fuels storage requirements:
   a. the Alternative Low-Carbon Fuels shall be stored indoors or in enclosed containers, and the storage location shall be secure;
   b. the maximum amount of Alternative Low-Carbon Fuels stored and the maximum time periods for which the Alternative Low-Carbon Fuels can be stored shall be in accordance with the requirements set out in O. Reg. 79/15; and
   c. the Alternative Low-Carbon Fuels stored shall be combusted in the

Cement Kiln.

9. The Company shall record the following data during Cement Kiln operation:
    a. daily combined raw feed in the Cement Kiln in tonnes per day;
    b. daily Alternative Low-Carbon Fuels fired in the Cement Kiln in tonnes per day, for each category of Alternative Low-Carbon Fuels approved under Condition 7 of this Approval;
    c. daily Conventional Fuels fired in the Cement Kiln in tonnes per day;
    d. hours of operation of each of the Electrolysis System units in hours per day and the amount of hydrogen and oxygen produced by each Electrolysis System units and introduced in the cement kiln in normal cubic metres per hour;
    e. daily Fuel Adjunct Material and Industrial By-Product Material in tonnes per day used in the Cement Kiln;
    f. daily clinker production in tonnes per day;
    g. records of any incidents specified in Condition 8.7 of this Approval, and
    h. any start-up, shut-down and malfunction incidents.

10. The Company shall not engage in the Demonstration Project:
    a. at any time after three (3) years from the date that Alternative Low-Carbon Fuel is first combusted for the purposes of the Demonstration Project;
    b. for more than a total of ninety (90) days in any twelve (12) month period; and,
    c. for more than thirty (30) consecutive days.

11. The Company shall within two (2) weeks notify the Director and the District Manager in writing of:
    a. the date when Alternative Low-Carbon Fuel is first combusted at the Facility for the purposes of the Demonstration Project.

9. **MATERIAL ANALYSIS AND CRITERIA FOR ACCEPTANCE - ALTERNATIVE LOW-CARBON FUELS, INDUSTRIAL BY-PRODUCT AND FUEL ADJUNCT MATERIAL**
    1. The Company shall ensure that a material analysis program and criteria for acceptance for Alternative Low-Carbon Fuels is implemented as follows:
        a. A protocol for Alternative Low-Carbon Fuels vendor screening, sampling and analysis shall be immediately implemented in accordance with the document "Alternative Low-Carbon Fuel Handling Procedures and

Testing Manual, St. Mary's Cement Inc. (Canada)- St. Mary's Cement Plant, Version 1.0- March, 2022 revision, as amended. At a minimum, the Alternative Low-Carbon Fuels analysis parameters shall comply with the criteria specified in Table 1, Table 2 and Table 3 of this document. Any change in the criteria specified in Table 1, Table 2 and Table 3 shall be finalized in consultation with the District Manager.

b. If the analysis results of the Alternative Low-Carbon Fuels indicate that the emission rates of contaminants from the Cement Kiln are higher than the maximum emission rates identified in the maximum emission scenario outlined in the ESDM Report, the Company shall update the ESDM Report with the emission rates derived from this analysis in accordance with the document "Alternative Low-Carbon Fuel Handling Procedures and Testing Manual, St. Mary's Cement Inc. (Canada)- St. Mary's Cement Plant, Version 1.0- March, 2022, as amended.

2. The Company shall ensure that the following material analysis program to measure and record the concentration of contaminants for Industrial By-Product Material and Fuel Adjunct Material is implemented as follows:
   a. For each material used as Fuel Adjunct Materials, the Company shall obtain a metals/metal hydrides scan, including at a minimum the contaminants listed in Schedule D on a quarterly or Lot basis, as applicable. The Company shall ensure that the standard sampling methods outlined in the document "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario, Ontario Ministry of the Environment and Energy, Standards Development Branch, December, 1996" are used, and that the samples are submitted to a CAEAL certified laboratory for analysis.
   b. For each material used as Industrial By-Product Materials, the Company shall obtain a metals/metal hydrides scan, including at a minimum the contaminants listed in Schedule D, on a quarterly or Lot basis, as applicable. The Company shall ensure that the standard sampling methods outlined in the document "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario, Ontario Ministry of the Environment and Energy, Standards Development Branch, December, 1996" are used, and that the samples are submitted to a CAEAL certified laboratory for analysis.
   c. At any time, should the Company either independently or through other sources reasonably expect other metal/metal hydrides not outlined under Schedule D to be present in any material at greater than the trace concentrations, the Company shall obtain the appropriate analysis

forthwith.

d. Upon receipt of the analysis, the Company shall ensure that the Point of Impingement concentrations of metal/metal hydrides do not exceed the respective performance limits based on the maximum emissions scenario outlined in the ESDM Report.

e. The Company shall limit the accumulation of Industrial By-Product Materials and other raw materials in exterior storage piles to amounts which may reasonably be expected to be necessary for use in the cement manufacturing processes.

f. The Company shall ensure that any Industrial By-Product Material stored at the Facility which the Company determines cannot be utilized in ongoing cement manufacturing processes, is managed in accordance with applicable waste management regulations, and, where an Industrial By-Product Material becomes unusable, the Company shall advise the District Manager in writing, of the type and quantity of such material, the reasons why it cannot be used and the specific manner in which the material is to be managed as a waste.

g. The Company shall continue to prepare an annual summary report documenting the use of Industrial By-Product Materials and Fuel Adjunct Materials received at the Facility for the preceding calendar year. This summary report shall be submitted to the District Manager within sixty (60) days following the close of each calendar year and shall include a summary of the information set out in Condition No. 9.1 of this Approval.

10. **CONTINUOUS MONITORING**

1. **Continuous Emissions Monitoring in the Kiln Stack**

a. The Company shall ensure that the CEM System continuously monitors the following parameters in the exhaust gas stream from the Cement Kiln stack:

i. Nitrogen Oxides

ii. Sulphur Dioxide, and

iii. Opacity

b. The CEM System for nitrogen oxides and sulphur dioxide shall be installed, operated, maintained and quality assurance conducted and reported in accordance with the requirements set out in Report EPS1/PG/7. The annual Relative Accuracy Test Audit (RATA) report, including the required production data during the testing shall be submitted to the Manager and District Manager by June 30 of each year, for the previous calendar year. The quarterly cylinder gas audit reports shall be made available to the Ministry upon request.

c. The CEM System for monitoring opacity shall comply with the requirements outlined in Schedule E.

2. **Continuous Monitoring of Process Conditions**
   a. The Company shall install, operate and maintain a CPM System to continuously monitor:
      i. residual oxygen at locations specified in Schedule F;
      ii. carbon monoxide in the preheater tower;
      iii. temperature of gases in the preheater tower, as specified in Schedule F and correspond with a retention time of not less than 10 seconds;
      iv. pressure at locations specified in Schedule F; and,
      v. Total Hydrocarbon (as methane) in the gases leaving the Cement Kiln stack.

   b. The CPM System specified in condition 10.2.a shall be designed, operated and maintained in accordance with an approved continuous monitoring plan, complete with specifications based on manufacturer's specifications and manuals. In this regard, the continuous monitoring plan shall be revised to assure proper calibration, maintenance and operation of the CPM System, in order to establish its performance on a continuous basis. The revised continuous monitoring plan shall be provided to the Manager for approval three (3) months prior to the implementation of the Alternative Low-Carbon Fuels operation at the Facility.

3. **Continuous Monitoring Documentation**
   a. The Company shall prepare and retain on site monthly reports of the data monitored during the preceding month by the CEM System and CPM System, summarizing the following as a minimum:
      i. the daily minimum, maximum and average readings for the parameters specified in condition 10 of this Approval on a monthly basis;
      ii. the percent availability of the CEM System and CPM System for the parameters specified in condition 10 of this Approval on a monthly basis; and

iii. daily operational status (on/off) of the raw mill and the fuel mill on a monthly basis.

b. After one (1) month of the date of commencement of operation of the Electrolysis System, the Company shall prepare monthly reports by the end of the following month, including the data monitored during the preceding month, for the following parameters as a minimum:
   i. the hourly average readings for the parameters specified in Conditions 10.1, 10.2 and 8.9.d. of this Approval, maintained electronically in a spreadsheet format;
   ii. the parameters specified in Conditions 8.9.a, 8.9.b, 8.9.c, 8.9.e, and 8.9.f of this Approval.

c. The Company shall retain the monthly reports included in Conditions 10.3.a and 10.3.b of this Approval at the Facility, and when requested provide these to the District Manager and the Manager within 15 days of the date of the request.

d. The District Manager may relax the frequency and/or scope of the reports required under Condition 10.3 of this Approval, if the data is observed to be within the performance requirements of the Approval on a consistent basis.

e. The Company shall establish the normal operating concentration range for total hydrocarbon for baseline conditions (operating conditions which include the use of Conventional Fuel, Fuel Adjunct Materials and Industrial By-Product Materials in the Cement Kiln) based on CPM System data. The Company shall, at a minimum on a quarterly basis, review the CPM System data and identify and investigate any anomalous total hydrocarbon concentrations when using Alternative Low-Carbon Fuels. An investigations report shall be prepared and retained on site.

f. The Company shall retain on site, all raw data generated by the CEM System and CPM System for a minimum of five (5) years from the date of their creation.

11. **SOURCE TESTING**

1. **REGULAR ALCF USE (Main Burner)**

a. The Company shall perform Source Testing in accordance with the procedure in Schedule G to determine the rate of emission of the test contaminants from the sources specified in Schedule H. Source Testing shall be conducted not later than twelve (12) months from the date of commencement of operation of the Alternative Low-Carbon Fuels feed equipment which permits the use of Alternative Low-Carbon Fuels up to 175 tonnes per day, or within a time frame as directed or agreed to in writing by the District Manager.

b. The Company shall notify the District Manager in writing of the details of the installed equipment, date of installation and date of commencement of operation of the Alternative Low-Carbon Fuels feed equipment which permits the use of Alternative Low-Carbon Fuels up to 175 tonnes per day within two (2) weeks of the installation and the commencement of operation.

c. In addition to Source Testing required under Conditions 11.1.a of this Approval, Source Testing shall be repeated once every calendar year in accordance with the procedure in Schedule G to determine the rate of emission of the test contaminants from the sources specified in Schedule H. Annual Source Testing is not required to be conducted in the year in which Source Testing required under Condition 11.1 was conducted.

d. The Source Testing required under Conditions 11.1.a and 11.1.c of this Approval shall include, as a minimum, the rates of emissions of the test contaminants from the Cement Kiln stack, when the Cement Kiln is co-fired with Conventional Fuels and Alternative Low-Carbon Fuels, at an Alternative Low-Carbon Fuels maximum approved firing rate of 175 tonnes per day, or at a firing rate agreed to in writing by the Manager, subject to the condition that operational checks of the Cement Kiln are accepted by the Company. The Alternative Low-Carbon Fuels used during the Source Testing shall contain a representative blend of the Alternative Low-Carbon Fuels approved under Condition 7 of this Approval, with considerations of the market availability of Alternative Low-Carbon Fuels types and quantities at the time of Source Testing. The blend (s) of Alternative Low-Carbon Fuels and quantity proposed to be used for the Source Testing shall be submitted along with the Pre-Test Plan to the Manager and the Director for approval, along with the details regarding the process for selection of the Alternative Low-Carbon Fuels blend (s) and quantity for Source Testing.

e. The Company shall perform Source Testing in accordance with the procedures in Schedule G to determine the rate of emission of the test contaminants from the sources specified in Schedule H during the regular operation of the Electrolysis System. Source Testing shall be conducted not later than six (6) months from the date of commencement of operation of the Electrolysis System and shall be conducted while

Conventional Fuels and Alternative Low-Carbon Fuels are used as required for Source Testing in Condition 11.1.d of this Approval.

f. The Company shall notify the District Manager in writing of the date of installation and the date of commencement of operation of the Electrolysis System within two (2) weeks of the installation and the commencement of operation.

g. The District Manager may relax the frequency and/or scope of the annual Source Testing required under Condition 11.1.c of this Approval, if the results of the annual Source Testing program indicate that the emissions and Point of Impingement concentrations of Compounds of Concern are consistently recorded as insignificant when substituting a portion of Conventional Fuels with Alternative Low-Carbon Fuels.

2. **ALCF DEMONSTRATION PROJECT USE (Back-end Riser)**

   a. The Company shall conduct Source Testing in accordance with the procedure in Schedule G, to determine the rates of emissions of the Test Contaminants from the sources specified in Schedule H. The Source Testing shall be conducted not later than one (1) year from the date of the first use of Alternative Low-Carbon Fuel in the Cement Kiln for the purposes of the Demonstration Project. As a minimum, the Source Testing shall include the following scenarios:

      i. Baseline Conditions: the rates of emissions of the Test Contaminants from the Cement Kiln exhaust stack when it is co-fired with Conventional Fuel and Alternative Low-Carbon Fuel introduced through the Main Burner.

      ii. Alternative Low-Carbon Fuel Co-firing Conditions: the rates of emissions of the Test Contaminants from the Cement Kiln exhaust stack when it is co-fired with Conventional Fuel and Alternative Low-Carbon Fuel (introduced through the riser), at an Alternative Low-Carbon Fuel maximum approved firing rate of 175 tonnes per day, or at a firing rate agreed to in writing by the Manager, subject to the condition that operational checks of the Cement Kiln are accepted by the Company.

12. **CARBON DIOXIDE EMISSION INTENSITY TESTING**

    1. The Company shall perform Carbon-Dioxide Emission Intensity testing of the representative samples of the Alternative Low-Carbon Fuels and Conventional Fuels at all times when Source Testing is carried out under Condition 11 of this Approval. Representative samples of the Alternative Low-Carbon Fuels and Conventional Fuels used during the Source Testing

events shall be used for performing Carbon-Dioxide Emission Intensity testing. The Carbon-Dioxide Emission Intensity testing shall be carried out in accordance with the requirements set out in O. Reg. 79/15.

2. The Company shall prepare a Carbon-Dioxide Emission Intensity report in respect of the Alternative Low-Carbon Fuels combusted at the site, in accordance with the requirements set out in O. Reg. 79/15, that includes a statement that the Carbon-Dioxide Emission Intensity of the Alternative Low-carbon Fuels are less than the Carbon Dioxide Emission Intensity of the Conventional Fuels in the place of which the Alternative Low-Carbon Fuels are proposed to be combusted.
3. The Company shall submit the Carbon-Dioxide Emission Intensity report along with the Source Testing report to the District Manager.

13. **FUGITIVE EMISSIONS CONTROL**
    1. The Company shall update as necessary and implement the Best Management Practices Plan for the control of fugitive dust emissions.
    2. The Company shall:
        a. review and evaluate the Best Management Practices Plan on an annual basis;
        b. record the results of each annual review and update as required the Best Management Practices Plan within two (2) months of the completion of the annual review;
        c. maintain the updated Best Management Practices Plan at the Facility;
        d. implement, at all times, the most recent version of the Best Management Practices Plan.
    3. The Company shall record and retain such records, each time a specific preventative and control measure described in the Best Management Practices Plans is implemented. The Company shall record, as a minimum:
        a. the date when each emission control measure is implemented, including a description of the control measure;
        b. the date when each new preventative measure or operating procedure to minimize emissions is implemented, including a description of the preventative measure or operating procedure; and
        c. the date, time of commencement, and time of completion of each periodic activity conducted to minimize emissions, including a description of the preventative measure/procedure and the name of the individual performing the periodic activity.

14. **ODOUR ABATEMENT PLAN**
    1. The Company shall implement the currently approved Odour Abatement Plan. The Company shall implement operating procedures including inspection, maintenance and monitoring initiatives to prevent or minimize odour emissions from the Facility.
    2. The Company shall submit to the District Manager, during the implementation of the Odour Abatement Plan, annual odour progress report in hard copy and electronic format by March 31 of each year which shall include at a minimum:
        a. applicable monitoring and assessment information for the previous year;
        b. status of implementation of the Odour Abatement Plan; and
        c. effectiveness/progress/results of the odour abatement measures implemented during the previous year.

15. **COMMUNITY ENGAGEMENT**
    1. The Company shall continue to participate in a Community Liaison Committee (CLC). The objectives of the CLC shall include:
        a. keeping the community informed about the operations of the Facility in relation to the potential impacts on the community;
        b. keeping the Company informed of any community concerns about the operations of the Facility;
        c. to serve as a forum for the Company to disseminate and exchange information with the community related to operations of the Facility; and,
        d. to monitor the Company`s complaint response program and make recommendations to the Company with respect to this program.
    2. The CLC shall not exercise any supervisory, regulatory, approval, legal or other decision making role with respect to the operations of the Facility.

16. **COMPLAINTS RECORDING AND REPORTING**
    1. If at any time, the Company receives an environmental complaint from the public regarding the operation of the Equipment approved by this Approval, the Company shall take the following steps:
        a. Record and number each complaint, either electronically or in a log book. The record shall include the following information: the time and date of the complaint and incident to which the complaint relates, the nature of the complaint, wind direction at the time and date of the incident to which the complaint relates and, if known, the address of the complainant.
        b. Notify the District Manager of the complaint within two (2) business days

after the complaint is received, or in a manner acceptable to the District Manager.

c. Initiate appropriate steps to determine all possible causes of the complaint, and take the necessary actions to appropriately deal with the cause of the subject matter of the complaint.

d. Complete and retain on-site a report written within five (5) business days of the complaint date. The report shall list the actions taken to appropriately deal with the cause of the complaint and set out steps to be taken to avoid the recurrence of similar incidents.

17. **RECORD KEEPING REQUIREMENTS**

1. Any information requested by any employee in or agent of the Ministry concerning the Facility and its operation under this Approval, including, but not limited to, any records required to be kept by this Approval, shall be provided to the employee in or agent of the Ministry, upon request, in a timely manner.

2. Unless otherwise specified in this Approval, the Company shall retain, for a minimum of five (5) years from the date of their creation all reports, records and information described in this Approval, including,

    a. a copy of the Original ESDM Report and each updated version;

    b. a copy of each version of the Acoustic Assessment Report;

    c. supporting information used in the emission rate calculations performed in the ESDM Reports and Acoustic Assessment Reports;

    d. the records in the Log;

    e. copies of each Written Summary Form prepared under Condition 6.1 of this Approval;

    f. records of maintenance, repair and inspection of Equipment related to all Processes with Significant Environmental Aspects;

    g. all records related to environmental complaints made by the public as required by Condition 16 of this Approval;

    h. records related to Source Testing events, as required by Condition 11 of this Approval;

    i. records related to the operation of the CEM System and CPM System, as required by Condition 10 of this Approval;

    j. records related to the preventative and control measures implemented, as required by Condition 13 of this Approval;

k. records related to sampling and analysis, as required by Conditions 8 and 9 of this Approval;

l. records related to the Odour Abatement Plan specified under Condition 14 of this Approval; and

m. records related to Carbon Dioxide Emission Intensity testing, as required by Condition 12 of this Approval.

18. **COMPLIANCE REPORTING**

1. The Company shall prepare and submit by June 30 of each year to the District Manager, an Annual Report summarizing the operation of the Facility, covering the previous calendar year. The Annual Report shall include, as a minimum, the following information:

   a. a statement of whether the Facility was in compliance with this Approval, including compliance with the Performance Limits;

   b. the Emission Summary Table and Acoustic Assessment Summary Table for the Facility as of December 31 from the previous calendar year;

   c. clinker and cement production in tonnes per year;

   d. maximum daily feed rate and average daily feed rate of Alternative Low-Carbon Fuels and Conventional Fuels in the Cement Kiln for each month of the preceding calendar year, and the weight percentage of each category of Alternative Low-Carbon Fuels approved under Condition 7 of this Approval, of the total monthly Alternative Low-Carbon Fuel used;

   e. maximum and average percent thermal replacement of Conventional Fuels by combined Alternative Low-Carbon Fuels for each month;

   f. a summary of data from CEM System, CPM System, Source Testing and Carbon Dioxide Emission Intensity testing described under Conditions 10.3(a) and (b), 11 and 12 of this Approval, and a description of the status of compliance with the Performance Limits, Alternative Low-Carbon Fuel definition under this Approval and Alternative Low-Carbon Fuels operational requirements described in Schedule F of this Approval;

   g. a summary of dates, duration and reasons for any operational events including but not limited to events described in Condition 8.7 of this Approval that may have negatively impacted the quality of the environment and corrective measures taken to address these impacts;

   h. details of environmental complaints including a summary of complaints received, causes of complaints and action taken to avoid the recurrence of similar incidents, as described in Condition 16 of this Approval.

2. The Company shall make the Annual Report available for examination by any person by posting it on a Company website and making it available without charge during regular business hours at the Facility, immediately after it is submitted to the Ministry.

19. **ACOUSTIC AUDIT**
    1. The Company shall carry out Acoustic Audit measurements on the actual noise emissions due to the operation of the Facility. The Company;
        a. shall carry out Acoustic Audit measurements in accordance with the procedures in Ministry Publication NPC-103; and,
        b. shall submit an Acoustic Audit Report on the results of the Acoustic Audit, prepared by an Independent Acoustical Consultant, in accordance with the requirements of Ministry Publication NPC-233, to the District Manager and the Director not later than six (6) months after the completion of the Noise Abatement Action Plan.
    2. The Director;
        a. may not accept the results of the Acoustic Audit if the requirements of Ministry Publication NPC-233 were not followed; and,
        b. may require the Company to repeat the Acoustic Audit if the results of the Acoustic Audit are found unacceptable to the Director.

20. **REVOCATION OF PREVIOUS APPROVALS**
    1. This Approval replaces and revokes all Certificates of Approval (Air) issued under section 9 EPA and Environmental Compliance Approvals issued under Part II.1 EPA to the Facility in regards to the activities mentioned in subsection 9(1) of the EPA and dated prior to the date of this Approval.

SCHEDULE A

Supporting Documentation

1. Environmental Compliance Approval Application, dated November 29, 2023, signed by Ruben Plaza and submitted by the Company;
2. Emission Summary and Dispersion Modelling Report, prepared by BCX Environmental Consulting and dated June 2024;
3. Carbon Dioxide Emission Intensity Report, Votorantim Cimentos North America -

Prepared by Golder Associates Ltd., March 2022;

4. Alternative Low Carbon Fuel Use at St. Marys Cement St. Mary's Plant - Consultation Report - Prepared by Golder Associates Ltd., March 2022;
5. Alternative Low Carbon Fuel Handling Procedures and Testing Manual- St. Marys Cement Inc. (Canada) - St. Mary's Cement Plant, Version 1.0, March, 2022;
6. Acoustic Assessment Report prepared by Petr Chocensky of HGC Engineering and dated March 29, 2022.
7. Acoustic Assessment Report prepared by Petr Chocensky of HGC Engineering and dated June 2, 2023.
8. Acoustic Assessment Report prepared by Petr Chocensky of HGC Engineering and dated August 31, 2023.
9. Acoustic Assessment Report Addendum prepared by Petr Chocensky of HGC Engineering and dated June 27, 2024.

SCHEDULE B

PERFORMANCE REQUIREMENTS - IN-STACK EMISSION LIMITS

Parameter	Cement Kiln Stack Emission Limit	Verification of Compliance
Particulate Matter (PM)	50 mg/Rm^3	Results from compliance source testing
Cadmium (Cd)	7 µg/Rm3	Results from compliance source testing
Lead (Pb)	60 µg/Rm3	Results from compliance source testing
Mercury (Hg)	20 µg/Rm3	Results from compliance source testing
Dioxins and Furans	80 pg/Rm^3 as ITEQ	Results from compliance source testing; results

		expressed as I-TEQ.
Hydrochloric Acid (HCl)	27 mg/Rm^3	Results from compliance source testing

Notes:

- R : Reference flue gas conditions, defined as follows:
  - Temperature 25 °C
  - Pressure 101.3 kPa
  - Oxygen content 11%
  - Water content nil (dry conditions)
- mg/Rm3 : milligrams per cubic metre of gas at Reference conditions.
- µg/Rm3 : micrograms per cubic metre of gas at Reference conditions.
- pg/Rm3 : picograms per cubic metre of gas at Reference conditions.
- I-TEQ : a toxicity equivalent concentration calculated using the toxic equivalency factors (I-TEFs) derived for each dioxin and furan congener by comparing its toxicity to the toxicity of 2,3,7,8 tetrachloro dibenzo-p-dioxin, recommended by the World Health Organization (WHO) dioxin toxicity equivalence factors (TEFs) in 2005, and adopted by Ontario in April 2012.

SCHEDULE C

Emission Control Equipment Operational Requirements

1. **Process Dust Control Equipment Operational Requirements**
   The value of each of the following parameters must be referenced to the value recorded during previous source testing, if available. In the absence of source testing, each parameter must be referenced to the value or normal range representing normal operation, recorded as soon as possible for the Equipment.
   a. **Primary Equipment**
      Primary dust control equipment includes the Kiln Baghouse; Bypass Electrostatic Precipitator, Fuel Mill Baghouse; Clinker Cooler Baghouse and Finish Mill Baghouses.
      i. **Dust Collector**
         Operating parameters mean the following parameters of a fabric filter dust collector:
         1. the condition of the dust collector filter bags, the ducts leading to and from the dust collector and connecting the components of the dust collector;

2. the static pressure drop across the dust collector filter bag compartments;
3. the air reservoir pressure;
4. the presence or absence of clean side deposits;
5. the frequency of cleaning;
6. the current of the induced draft fan(s); and
7. the revolutions per minute of the induced draft fan(s).

ii. **Electrostatic Precipitator**
Operating Parameters means the following parameters of the electrostatic precipitator:
1. the condition of the electrostatic precipitator, the ducts leading to and from the electrostatic precipitator, the ducts connecting the components of the electrostatic precipitator and the electrical system;
2. the inlet temperature of the electrostatic precipitator;
3. the secondary voltages and current of the electrostatic precipitator; and
4. the presence or absence of clean side deposits in the electrostatic precipitator.

b. **Secondary Equipment**
Secondary dust control equipment includes all other dust collectors which are not primary dust control equipment.

i. **Dust Collector**
Operating parameters mean the following operating parameters of a fabric filter dust collector:
1. the condition of the dust collector filter bags, the ducts leading to and from the dust collector and connecting the components of the dust collector;
2. the static pressure drop across the dust collector filter bag compartments;
3. the air reservoir pressure;
4. the presence or absence of clean side deposits;
5. the frequency of cleaning; and
6. the revolutions per minute of the induced draft fan(s).

2. **Other Emission Control Equipment**
   Including but not limited to Selective Noncatalytic Reduction (SNCR) equipment.

SCHEDULE D

MATERIAL ANALYSIS CONTAMINANTS

1. Antimony
2. Arsenic
3. Barium
4. Beryllium
5. Cadmium
6. Chromium
7. Cobalt
8. Iron
9. Lead
10. Manganese
11. Mercury
12. Nickel
13. Selenium
14. Silver
15. Tin
16. Vanadium
17. Total Halogens

SCHEDULE E

Continuous Monitoring System Requirements

PARAMETER: Opacity

INSTALLATION:

The continuous opacity monitor shall be installed at an accessible location where the measurements are representative of the actual opacity of the gases leaving the flare and shall meet the following design and installation specifications.

PARAMETERS	SPECIFICATION
Wavelength at Peak Spectral Response (nanometres, nm)	500 to 600
Wavelength at Mean Spectral Response (nm)	500 to 600
Detector Angle of View	≤ 5 degrees
Angle of Projection	≤ 5 degrees
Range (percent of opacity)	0 to 100

PERFORMANCE:

The Continuous Opacity Monitor shall meet the following minimum performance specifications for the following parameters.

PARAMETERS	SPECIFICATION
Span Value (percent opacity)	2 times the average normal opacity of the source
Calibration Error	≤ 3 percent opacity
Attenuator Calibration	≤ 2 percent opacity
Response Time (95 percent response to a step change)	≤ 10 seconds
Schedule for Zero and Calibration Checks	daily minimum
Procedure for Zero and Calibration Checks	all system components checked
Zero Calibration Drift (24-hours)	≤ 2 percent opacity
Span Calibration Drift (24-hours)	≤ 2 percent opacity
Conditioning Test Period	≥ 168 hours without corrective maintenance
Operational Test Period:	≥ 168 hours without corrective maintenance

CALIBRATION:

The monitor shall be calibrated, to ensure that it meets the drift limits specified above, during the periods of the operation of the Cement Kiln. The results of all calibrations shall be recorded at the time of calibration.

DATA RECORDER:

The data recorder must be capable of registering continuously the measurement of the monitor with an accuracy of 0.5 percent of a full scale reading or better and with a time resolution of 30 seconds or better.

RELIABILITY:

The monitor shall be operated and maintained so that accurate data is obtained during a minimum of 90 percent of the time each calendar quarter during the first full year of operation, and 95% thereafter.

SCHEDULE F

ALTERNATIVE LOW-CARBON FUELS OPERATIONAL REQUIREMENTS

Parameter	Limits	Measurement
Total Quantity of Alternative Low-Carbon Fuels combusted in the Cement Kiln.	175 tonnes per day	Measured continuously and summed daily.
Temperature in the Cement Kiln (**in order to commence introduction of ALCF's**)	**PRIMARY -** the temperature of the gas leaving the kiln reaches a minimum of 1000 Deg C; or **SECONDARY -** the temperature of the gases at Stage 4 of the preheater tower where the gas temperature reaches a minimum of 750 Deg C	Measured by the CPM System in the Burner Pipe infrared temperature probe or one of the Stage 4 temperature sensors (West or East) Calculated as a rolling 1-hour arithmetic average measured by the CPM System with a minimum combined uptime of 90%
Residual oxygen (**in order to commence introduction of ALCF's**)	The residual oxygen at Stage 1 of the preheater tower where the residual oxygen reaches a minmum of 1%	Measured by the CPM System in either the Stage 1 West or Stage 1 East sensor and calculated by volume on a dry basis in the undiluted gases leaving the preheater tower. Calculated as a rolling 1-hour arithmetic average measured by

		the CPM System with a minimum combined uptime of 90% for both Stage 1 sensors
Pressure Control (**in order to commence introduction of ALCF's**)	Kiln, Preheater tower and Raw Mill must be operated under negative pressure at all times.	Measured at the top of the preheater towers and in Raw Mill by continuous monitor. Calculated as a rolling 4-hour arithmetic average measured by the CPM System with a minimum uptime of 90%
Start-Up, Shut-down and Upset Operating Conditions	No Alternative Low-Carbon Fuels shall be used.	-

SCHEDULE G

PROCEDURE FOR SOURCE TESTING

1. The Company shall submit, not later than three (3) months prior to the Source Testing required under Conditions 11.1.a, 11.1.e, and 11.2.a of this Approval, a Pre-Test Plan for the Source Testing required under this Approval to the Manager and the Director. In addition to the required information, the Pre-Test plan shall also include information on the blend (s) of Alternative Low-Carbon Fuels and quantity proposed to be used for the Source Testing, along with details regarding the process for selection of the Alternative Low-Carbon Fuels blend (s) and quantity for Source Testing. The Company shall finalize the Pre-Test Plan in consultation with the Manager and the Director.

2. The Company shall not commence the Source Testing until the Manager has accepted the Pre-Test Plan.

3. For subsequent Source Testing under Condition 11.1.c of this Approval:

4. The Company shall submit either a written notification of intent to use a previously approved Pre-Test Plan (with version reference if there were more than one (1) previously approved Pre-Test Plan), or a new Pre-Test Plan, to the Manager and Director not later than three (3) months of the planned date of the Source Testing for approval. The written notification or the new Pre-Test Plan shall also include information on the blend (s) of Alternative Low-Carbon Fuel and the quantity proposed to be used for the Source Testing, along with details regarding the process for selection of the blend (s) for Source Testing for its finalization in consultation with the Manager and the Director.

5. If the Company submitted a written notification of intent to use a previously approved

Pre-Test Plan, the Manager may either accept the use of a previously approved Pre-Test Plan, or request the submission of a new Pre-Test Plan for approval. The Company shall submit the requested new Pre-Test Plan within two (2) months after the Manager requested the submission.

6. The Company shall complete the subsequent Source Testing no later than three (3) months after the Manager has either agreed with the written notification or approved the new Pre-Test Plan.

7. The Company shall notify the District Manager, the Manager and the Director in writing of the location, date and time of any impending Source Testing required by this Approval, at least fifteen (15) days prior to the Source Testing.

8. The Company shall submit a report (hardcopy and electronic format) on the Source Testing to the Manager and the District Manager not later than four (4) months after completing the Source Testing, or not later than a time frame agreed in writing with the Manager. The report shall be in the format described in the Source Testing Code, and shall also include, but not be limited to:

9. an executive summary;

10. results of Source Testing, including the emission rate, emission concentration and relevant emission factor of the Test Contaminants;

11. records of operating conditions at the time of Source Testing and other information including but not limited to:

a. an executive summary
b. a summary of the results of the fuel analysis program specified in Condition 8.9 of this Approval;
c. a summary of records specified in condition 8.11 of this Approval and records of operating conditions at the time of Source Testing, including but not limited to:
    i. Clinker production rate in tonnes/hour
    ii. Conventional Fuels fired in the Cement Kiln in tonnes/hour
    iii. Each category of the Alternative Low-Carbon Fuels described in condition 7.1 of the Approval fired in the Cement Kiln in tonnes/day;
    iv. Fuel Adjunct Material and Industrial By-Product Material input into the Cement Kiln in tonnes/day;
d. any other records that may affect the Source Testing results.

12. A summary of all records of the CEM System and CPM System for the parameters

specified in Condition 10 of this Approval at the time of Source Testing;

13. A summary table that compares the Source Testing results to the emission estimates described in the Company's application, the ESDM Report and the Performance Limits;

14. The Director may not accept the results of the Source Testing if:

15. the Source Testing Code or the requirements of the Manager were not followed;

16. the Company did not notify the District Manager, the Manager and the Director of the Source Testing; or

17. the Company failed to provide a complete report on the Source Testing.

18. If the Director does not accept the results of the Source Testing, the Director may require re-testing. If re-testing is required, the Pre-Test Plan strategies need to be revised and submitted to the Manager for approval. The actions taken to minimize the possibility of the Source Testing results not being accepted by the Director must be noted in the revision.

19. If the Source Testing results are higher than the emission estimates in the Company's ESDM Report, the Company shall update their ESDM Report in accordance with Section 26 of O. Reg. 419/05 with the results from the Source Testing report and make these records available for review by staff of the Ministry upon request. The updated Emission Summary Table from the updated ESDM Report shall be submitted with the report on the Source Testing.

20. The Company shall ensure that the above mentioned Source Testing report is made available and easily accessible for review by the public at the Facility immediately after the document is submitted to the Ministry.

SCHEDULE H

TEST CONTAMINANTS AND SOURCES

TEST SOURCES: Cement Kiln Stack

TEST CONTAMINANTS

- Total Suspended Particulate Matter
- Hydrogen Chloride
- Ammonia

- Carbon Monoxide (CO)

List of Metals:

- Arsenic
- Barium
- Beryllium
- Cadmium
- Chromium
- Cobalt
- Copper
- Lead
- Mercury
- Manganese
- Molybdenum
- Nickel
- Selenium
- Silver
- Thallium
- Vanadium
- Zinc

SCHEDULE H

Volatile Organic Matter	List of Polycyclic Organic Matter
• Acetaldehyde • Acetone • Acrolein • Benzene • Bromodichloromethane • Bromoform • Bromomethane • Butadiene, 1,3 - • Butanone, 2 - • Carbon Tetrachloride • Chloroform	• Acenaphthylene • Acenaphthene • Anthracene • Benzo(a)anthracene • Benzo(b)fluoranthene • Benzo(k)fluoranthene • Benzo(a)fluorene • Benzo(b)fluorene • Benzo(ghi)perylene • Benzo(a)pyrene • Benzo(e)pyrene

• Cumene • Dibromochloromethane • Dichlorodifluoromethane • Dichloroethane, 1,2 - • Dichloroethene, Trans - 1,2 • Dichloroethene, 1,1 - • Dichloropropane, 1,2 - • Ethylbenzene • Ethylene Dibromide • Mesitylene • Methanol • Methylene Chloride • Phenol • Propionaldehyde • Styrene • Tetrachloroethene • Toluene • Trichloroethane, 1,1,1 - • Trichloroethene • Trichloroethylene, 1,1,2 - • Trichlorotrifluoroethane • Trichlorofluoromethane • Xylenes, M-, P- and O • Vinyl Chloride	• 2-Chloronaphthalene • Chrysene • Coronene • Dibenzo(a,c)anthracene • 9,10-Dimethylanthracene • 7,12-Dimethylbenzo(a)anthracene • Fluoranthene • Fluorene • Indeno(1,2,3-cd)pyrene • 2-Methylanthracene • 3-Methylcholanthrene • 1-Methylnaphthalene • 2-Methylnaphthalene • 1-Methylphenanthrene • 9-Methylphenanthrene • Naphthalene • Perylene • Phenanthrene • Picene • Pyrene • Tetralin • Triphenylene

SCHEDULE H

Dioxins, Furans and Dioxin-like PCBs (Polychlorinated Biphenyls)

Toxicity equivalency factors (TEFs) are applied to 29 isomers of dioxins, furans and dioxin-like PCBs to convert them into 2,3,7,8-CDD (tetrachlorodibenzo-p-dioxin) toxicity equivalents (TEQ). The conversion involves multiplying the concentration of each isomer by the appropriate TEF to yield the TEQ for this isomer. Summing the individual TEQ values for each of the isomers provides the total toxicity equivalent level for the sample mixture.

A table listing the isomers and their TEFs can be found in the Ministry publication titled “Air Contaminants Benchmarks (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants”, as amended from time to time.

No.	Dioxins, Furans, and Dioxin-like PCBs	CASRN	WHO $_{2005}$ Toxic Equivalency Factors [TEFs]
1	2,3,7,8-Tetrachlorodibenzo-p-dioxin [2,3,7,8-TCDD]	1746-01-6	1
2	1,2,3,7,8-Pentachlorodibenzo-p-dioxin [1,2,3,7,8-PeCDD]	40321-76-4	1
3	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin [1,2,3,4,7,8-HxCDD]	39227-28-6	0.1
4	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin [1,2,3,6,7,8-HxCDD]	57653-85-7	0.1
5	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin [1,2,3,7,8,9-HxCDD]	19408-74-3	0.1
6	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin [1,2,3,4,6,7,8-HpCDD]	35822-46-9	0.01
7	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin [1,2,3,4,6,7,8,9-OCDD]	3268-87-9	0.0003
8	2,3,7,8-Tetrachlorodibenzofuran [2,3,7,8-TCDF]	51207-31-9	0.1
9	1,2,3,7,8-Pentachlorodibenzofuran [1,2,3,7,8-PeCDF]	57117-41-6	0.03
10	2,3,4,7,8-Pentachlorodibenzofuran [2,3,4,7,8-PeCDF]	57117-31-4	0.3
11	1,2,3,4,7,8-Hexachlorodibenzofuran [1,2,3,4,7,8-HxCDF]	70648-26-9	0.1
12	1,2,3,6,7,8-Hexachlorodibenzofuran [1,2,3,6,7,8-HxCDF]	57117-44-9	0.1
13	1,2,3,7,8,9-Hexachlorodibenzofuran [1,2,3,7,8,9-HxCDF]	72918-21-9	0.1

SCHEDULE H

No.	Dioxins, Furans, and Dioxin-like PCBs	CASRN	WHO $_{2005}$ Toxic Equivalency Factors [TEFs]
14	2,3,4,6,7,8-Hexachlorodibenzofuran [2,3,4,6,7,8-HxCDF]	60851-34-5	0.1
15	1,2,3,4,6,7,8-Heptachlorodibenzofuran [1,2,3,4,6,7,8-HpCDF]	67562-39-4	0.01
16	1,2,3,4,7,8,9-Heptachlorodibenzofuran [1,2,3,4,7,8,9-HpCDF]	55673-89-7	0.01
17	1,2,3,4,6,7,8,9-Octachlorodibenzofuran [1,2,3,4,6,7,8,9-OCDF]	39001-02-0	0.0003
18	3,3',4,4'-Tetrachlorobiphenyl [3,3',4,4'-tetraCB (PCB 77)]	32598-13-3	0.0001
19	3,4,4',5- Tetrachlorobiphenyl [3,4,4',5-tetraCB (PCB 81)]	70362-50-4	0.0003
20	3,3',4,4',5- Pentachlorobiphenyl (PCB 126) [3,3',4,4',5-	57465-28-8	0.1

	pentaCB (PCB 126)]		
21	3,3',4,4',5,5'- Hexachlorobiphenyl [3,3',4,4',5,5'-hexaCB (PCB 169)]	32774-16-6	0.03
22	2,3,3',4,4'- Pentachlorobiphenyl [2,3,3',4,4'-pentaCB (PCB 105)]	32598-14-4	0.00003
23	2,3,4,4',5- Pentachlorobiphenyl [2,3,4,4',5-pentaCB (PCB 114)]	74472-37-0	0.00003
24	2,3',4,4',5- Pentachlorobiphenyl [2,3',4,4',5-pentaCB (PCB 118)]	31508-00-6	0.00003
25	2',3,4,4',5- Pentachlorobiphenyl [2',3,4,4',5-pentaCB (PCB 123)]	65510-44-3	0.00003
26	2,3,3',4,4',5- Hexachlorobiphenyl [2,3,3',4,4',5-hexaCB (PCB 156)]	38380-08-4	0.00003
27	2,3,3',4,4',5'- Hexachlorobiphenyl [2,3,3',4,4',5'-hexaCB (PCB 157)]	69782-90-7	0.00003
28	2,3',4,4',5,5'- Hexachlorobiphenyl [2,3',4,4',5,5'-hexaCB (PCB 167)]	52663-72-6	0.00003
29	2,3,3',4,4',5,5'- Heptachlorobiphenyl [2,3,3',4,4',5,5'-heptaCB (PCB 189)]	39635-31-9	0.00003

SCHEDULE H

NOTE:

The TEF scheme is intended to be used with isomer specific analytical results. In cases where results are reported by congener group only, staff at Ministry's Technical Assessment and Standards Development Branch shall be contacted for appropriate procedures to convert non-isomer specific data to TEQs.

The reasons for the imposition of these terms and conditions are as follows:

1. **GENERAL**
   Condition No. 1 is included to require the Approval holder to build, operate and maintain the Facility in accordance with the Supporting Documentation in Schedule A considered by the Director in issuing this Approval.
2. **LIMITED OPERATIONAL FLEXIBILITY, REQUIREMENT TO REQUEST AN ACCEPTABLE POINT OF IMPINGEMENT CONCENTRATION AND PERFORMANCE LIMITS**
   Conditions No. 2, 3 and 4 are included to limit and define the Modifications permitted by this Approval, and to set out the circumstances in which the Company shall request approval of an Acceptable Point of Impingement Concentration prior to making Modifications. The holder of the Approval is approved for operational flexibility for the Facility that is consistent with the description of the operations included with the application up to the Facility

Production Limit. In return for the operational flexibility, the Approval places performance based limits that cannot be exceeded under the terms of this Approval. Approval holders will still have to obtain other relevant approvals required to operate the Facility, including requirements under other environmental legislation such as the Environmental Assessment Act.

3. **DOCUMENTATION REQUIREMENTS**
   Condition No. 5 is included to require the Company to maintain ongoing documentation that demonstrates compliance with the performance limits as specified in Condition 4 of this Approval and allows the Ministry to monitor on-going compliance with these performance limits. The Company is required to have an up to date ESDM Report and Acoustic Assessment Report that describe the Facility at all times and make the Emission Summary Table and Acoustic Assessment Summary Table from these reports available to the public on an ongoing basis in order to maintain public communication with regard to the emissions from the Facility.

4. **WRITTEN SUMMARY FORM**
   Condition No. 6 is included to require the Company to provide a yearly Written Summary Form to the Ministry, to assist the Ministry with the review of the site's compliance with the EPA, the regulations and this Approval.

5. **APPROVED ALTERNATIVE LOW-CARBON FUELS**
   Condition No. 7 is included to define Alternative Low-Carbon Fuels in this Approval.

6. **OPERATION AND MAINTENANCE**
   Condition No. 8 is included to require the Company to properly operate and maintain the Processes with Significant Environmental Aspects to minimize the impact to the environment from these processes.

7. **MONITORING AND TESTING**
   Condition Nos. 9, 10, 11 and 12 are included to require the Company to gather and retain accurate information so that compliance with the EPA, O. Reg. 419/05, O. Reg. 79/15 and this Approval may be verified.

8. **FUGITIVE EMISSIONS CONTROL AND ODOUR ABATEMENT PLAN**
   Condition Nos. 13 and 14 are included to emphasize that the Equipment and Facility must be maintained and operated in accordance with a procedure that will result in compliance with the EPA, Regulation 419/05 and this Approval and to require the Company to keep records and to provide information to staff of the Ministry so that compliance with the EPA, Regulation 419/05 and this Approval may be verified.

9. **COMMUNITY ENGAGEMENT**
   Condition No. 15 is included to require the Company to involve and inform the

public on the environmental performance of the Facility.

10. **COMPLAINTS RECORDING AND REPORTING**
Condition No. 16 is included to require the Company to respond to any environmental complaints regarding the operation of the Equipment, according to a procedure that includes methods for preventing recurrence of similar incidents and a requirement to prepare and retain a written report.

11. **RECORD KEEPING REQUIREMENTS**
Condition No. 17 is included to require the Company to retain all documentation related to this Approval and provide access to employees in or agents of the Ministry, upon request, so that the Ministry can determine if a more detailed review of compliance with the Performance Limits as specified in Condition 4 of this Approval is necessary.

12. **COMPLIANCE REPORTING**
Condition No. 18 is included to require the Company to provide an Annual Report to the Ministry and the public, to assist the Ministry with the review of the site's compliance with the EPA, the regulations and this Approval and to ensure that the public has access to information on the environmental impacts of the Facility.

13. **ACOUSTIC AUDIT**
Condition No. 19 is included to require the Company to gather accurate information and submit an Acoustic Audit Report in accordance with procedures set in the Ministry's noise guidelines, so that the environmental impact and subsequent compliance with this Approval can be verified.

14. **REVOCATION OF PREVIOUS APPROVALS**
Condition No. 20 is included to identify that this Approval replaces all Section 9 Certificate(s) of Approval and Part II.1 Approvals in regards to the activities mentioned in subsection 9(1) of the EPA and dated prior to the date of this Approval.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 0706-CLVLC2 issued on August 17, 2023

In accordance with Section 139 of the *Environmental Protection Act,* you may by written notice served upon me and the Ontario Land Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the *Environmental Protection Act* provides that the Notice requiring the hearing shall state:

a. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;

b. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the *Environmental Protection Act,* a hearing may not be available with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

Registrar* Ontario Land Tribunal 655 Bay Street, Suite 1500 Toronto, Ontario M5G 1E5 OLT.Registrar@ontario.ca	and	The Director appointed for the purposes of Part II.1 of the *Environmental Protection Act* Ministry of the Environment, Conservation and Parks 135 St. Clair Avenue West, 1st Floor Toronto, Ontario M4V 1P5

* **Further information on the Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or** www.olt.gov.on.ca

The above noted activity is approved under s.20.3 of Part II.1 of the *Environmental Protection Act.*

DATED AT TORONTO this 11th day of November, 2024

Nancy E Orpana, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

AB/
c: District Manager, MECP London - District
Kate Liubansky, WSP Canada Inc.

APPENDIX B

Sampling Results - Particulate Matter and Metals Sampling

SMC St Marys - Kiln Stack

Test :	Blank	Test #1			Test #2			Test #3			AVERAGE RESULTS	
Sample Volume (Rm^3) [1] :	-	3.98			3.83			3.89				
Stack Flow Rate (Rm^3/s) [1] :	-	81.9			78.8			78.9			79.8	
Filterable Particulate	**Lab Data (mg)**	**Lab Data (mg)**	**Concentration (mg/m^3)**	**Emission Rate (mg/s)**	**Lab Data (mg)**	**Concentration (mg/m^3)**	**Emission Rate (mg/s)**	**Lab Data (mg)**	**Concentration (mg/m^3)**	**Emission Rate (mg/s)**	**Concentration (mg/m^3)**	**Emission Rate (mg/s)**
Particulate in Acetone Rinse	< 0.40	83.30	-	-	59.10	-	-	48.20	-	-	-	-
Particulate on Filter	< 0.60	25.50	-	-	83.50	-	-	87.40	-	-	-	-
Total Filterable Particulate	< 1.00	108.80	27.40	2240	142.60	37.20	2930	135.60	34.80	2750	33.10	2640
Metals	**Lab Data (µg)**	**Lab Data (µg)**	**Concentration ($\mu g/m^3$)**	**Emission Rate (mg/s)**	**Lab Data (µg)**	**Concentration ($\mu g/m^3$)**	**Emission Rate (mg/s)**	**Lab Data (µg)**	**Concentration ($\mu g/m^3$)**	**Emission Rate (mg/s)**	**Concentration ($\mu g/m^3$)**	**Emission Rate (mg/s)**
Arsenic (As)	< 1.10	1.80	0.45	0.0371	1.3	0.34	0.0267	< 1.10	< 0.28	< 0.0223	< 0.3580	< 0.0287
Barium (Ba)	< 5.60	43.00	10.80	0.886	34.7	9.06	0.713	24.8	6.37	0.502	8.7500	0.7
Beryllium (Be)	< 0.22	< 0.22	< 0.06	< 0.00453	< 0.22	< 0.06	< 0.00452	< 0.22	< 0.06	< 0.00446	< 0.0564	< 0.0045
Cadmium (Cd)	< 0.11	1.24	0.31	0.0255	1.87	0.49	0.0385	1.64	0.42	0.0332	0.4070	0.0324
Chromium (Cr)	< 1.10	660.00	166.00	13.6	314	82.00	6.46	110	28.20	2.23	92.1000	7.43
Cobalt (Co)	< 0.22	2.04	0.51	0.042	1.55	0.41	0.0319	1.57	0.40	0.0318	0.4400	0.0352
Copper (Cu)	2.40	30.20	7.60	0.622	24.9	6.50	0.512	14.2	3.65	0.288	5.9100	0.474
Lead (Pb)	< 0.56	50.10	12.60	1.03	67.9	17.70	1.4	70.4	18.10	1.43	16.1000	1.28
Manganese (Mn)	< 0.56	152.00	38.20	3.13	96.9	25.30	1.99	79.4	20.40	1.61	28.0000	2.24
Molybdenum (Mo)	10.70	38.60	9.71	0.795	25.8	6.73	0.53	17.4	4.47	0.352	6.9700	0.559
Nickel (Ni)	2.60	78.30	19.70	1.61	45.5	11.90	0.936	40.2	10.30	0.814	14.0000	1.12
Selenium (Se)	< 2.20	< 2.20	< 0.55	< 0.0453	< 2.20	< 0.57	< 0.0452	< 2.20	< 0.57	< 0.0446	< 0.5640	< 0.045
Silver (Ag)	< 0.22	1.96	0.49	0.0404	1.63	0.43	0.0335	0.96	0.25	0.0194	0.3880	0.0311
Thallium (Tl)	< 0.22	11.20	2.82	0.231	9.86	2.57	0.203	5.91	1.52	0.12	2.3000	0.184
Vanadium (V)	< 1.10	42.90	10.80	0.883	42.2	11.00	0.868	22.6	5.80	0.458	9.2000	0.736
Zinc (Zn)	< 6.70	81.30	20.40	1.67	110	28.70	2.26	110	28.20	2.23	25.8000	2.05
Mercury	**Lab Data (µg)**	**Lab Data (µg)**	**Concentration ($\mu g/m^3$)**	**Emission Rate (mg/s)**	**Lab Data (µg)**	**Concentration ($\mu g/m^3$)**	**Emission Rate (mg/s)**	**Lab Data (µg)**	**Concentration ($\mu g/m^3$)**	**Emission Rate (mg/s)**	**Concentration ($\mu g/m^3$)**	**Emission Rate (mg/s)**
1B Mercury (Hg)	< 0.02	0.61	0.15	0.0125	0.18	0.05	0.00362	0.05	0.01	0.000992	0.0705	0.00571
2B Mercury (Hg)	< 0.06	< 0.50	< 0.13	< 0.0103	< 0.47	< 0.12	< 0.00956	< 0.53	< 0.14	< 0.0107	< 0.1280	< 0.0102
3A Mercury (Hg)	0.00	< 0.02	< 0.00	< 0.000309	< 0.01	< 0.00	< 0.000226	< 0.01	< 0.00	< 0.000203	< 0.0031	< 0.000246
3B Mercury (Hg)	< 0.01	4.46	1.12	0.0918	6.80	1.77	0.14	4.48	1.15	0.0907	1.350	0.107
3C Mercury (Hg)	< 0.08	2.10	0.53	0.0432	1.47	0.38	0.0302	2.06	0.53	0.0417	0.480	0.0384
Filterable Hg	< 0.02	0.61	0.15	0.0125	0.18	0.05	0.00362	0.05	0.01	0.000992	0.07	0.00571
Non-Filterable Hg	< 0.14	< 7.08	< 1.78	< 0.146	< 8.75	< 2.28	< 0.18	< 7.08	< 1.82	< 0.143	< 1.9600	< 0.156
Total Hg	< 0.17	< 7.69	< 1.93	< 0.158	< 8.92	< 2.33	< 0.183	< 7.13	< 1.83	< 0.144	< 2.030	< 0.162

Notes:

[1] Sample volume and volumetric flow rate based on dry referenced conditions (101.3kPa, and 25°C)

'<' indicates that laboratory results were below the detection limit. The detection limit was used to calculate the concentration and emission rate.

Concentration and Emission Rate has been reported t(3 significant figures.

Particulate Matter and Metals Sampling

Facility: SMC St Marys				**Operator:** PB	
City: St Marys				**Entered by:** PB	
Source: Kiln Stack				**Checked by:** AT	
Reference Method: OSTC Method 5, US EPA Method 29					

DATA INPUTS	Symbol	Units	Test #1 PM	Test #2 PM	Test #3 PM
Date	-	-	8-Apr-25	8-Apr-25, 9-Apr-25	9-Apr-25
Start Time	-	-	9:37 AM	2:28 PM, 8:35 AM	11:42 AM
End Time	-	-	12:53 PM	3:30 PM, 10:17 AM	2:53 PM
Round Stack, Diameter	d_s	in	95	95	95
Standard Temperature	T_s	°F	77	77	77
Standard Pressure	P_s	in.Hg	29.9	29.9	29.9
Nozzle Diameter	D_n	in	0.200	0.200	0.200
Average Stack Temperature	T_s	°F	263	284	267
Average Meter Temperature	T_m	°F	37	49	69
Barometric Pressure	P_{bar}	" Hg	28.72	28.72	28.72
Stack Static Pressure	P_g	" H_2O	-1.2	-1.2	-1.2
Average Delta H	dH	" H_2O	2.09	2.09	2.08
Average Velocity Head (root mean square)	dP_{rms}	" H_2O	1.97	1.90	1.96
Pitot Coefficient	C_p	-	0.833	0.833	0.833
	Pitot ID :			9' #1	
Gas Sample Volume	V_m	ft³	133.70	132.09	139.38
DGM Calibration Factor	Y	-	1.0070	1.0070	1.0070
	$\Delta H_@$	-	1.8200	1.8200	1.8200
	DGM ID:			I	
Total Sampling Time	min	minutes	180	180	180
Stack Gas Oxygen Concentration	O_2	%	13.2	13.2	13.2
Stack Gas Carbon Dioxide Concentration	CO_2	%	12.5	12.5	12.5
Impinger Gain	W_w	g	347.3	330.3	413.4

Particulate Matter and Metals Sampling

Facility:	SMC St Marys	**Operator:**	PB
City:	St Marys	**Entered by:**	PB
Source:	Kiln Stack	**Checked by:**	AT
Reference Method:	OSTC Method 5, 29		

Emissions Calculations	**Symbol**	**Units**	**Test #1** PM	**Test #2** PM	**Test #3** PM	**AVERAGE** PM
Nozzle Area	A_n	ft²	2.18E-04	2.18E-04	2.18E-04	-
Stack Area	A_s	ft²	48.71	48.71	48.71	-
Average Stack Temperature	T_s	°R	723	744	727	731
Average DGM Temperature	T_m	°R	497	509	529	511
Sample Volume at Reference Conditions	V_{mStd}	ft³	140.50	135.38	137.61	-
	$\mathbf{V_{mmstd}}$	**m³**	**3.98**	**3.83**	**3.89**	-
Vol. of Water Vapour	V_{wStd}	ft³	16.67	15.85	19.84	-
Water Fraction	B_{ws}		10.6%	10.5%	12.6%	11.2%
Molecular Weight, dry	M_d	g/mole	30.63	30.63	30.63	30.63
Molecular Weight, wet	M_w	g/mole	29.29	29.31	29.04	29.21
Absolute Stack Pressure	P_s	in. Hg	28.63	28.63	28.63	28.63
Stack Gas Velocity	U_s	ft/s	93.45	92.37	92.63	92.82
	$\mathbf{U_{sm}}$	**m/s**	**28.48**	**28.16**	**28.23**	28.29
Actual Gas Flow Rate	Q_{act}	acf/min	273,095	269,953	270,698	271,249
Dry Gas Flow Rate (dry, ref)	Q_{ref}	dscf/min	173,538	166,959	167,165	169,221
	$\mathbf{Q_{mref}}$	**m³/min**	**4913**	**4727**	**4732**	4,791
	$\mathbf{Q_{mref\ (Actual\ O2)}}$	**m³/s**	**81.88**	**78.78**	**78.87**	79.84
Isokinetic Rate	I	%	100	101	100	100

Particulate Matter and Metals Sampling

Facility: SMC St Marys
City: St Marys
Source: Kiln Stack
OSTC Method 5, 29 OSTC Method 5, US EPA Method 29
Run: Test #1
Operator: PB
Entered by: PB
Checked by: AT
Test Date: 8-Apr-25

Pt.	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Actual Meter Vol. (ft^3)	Stack Temp (^oF)	Probe Temp (^oF)	Box Temp (^oF)	Imp Temp (^oF)	Meter Temp (^oF)	Vac Pressure ("Hg)	Percentage Isokinetic (%)	Stack Velocity (ft/sec)
Traverse 1												
Pre-Test Leak Check =	< 0.02CFM @ 10"Hg											
1	0	2.30	2.20	0.00	253	249	250	25	33	0	94	99.41
	2.5	2.30	2.20	1.86	252	249	252	29	31	-3	97	99.35
	5	2.30	2.20	3.78	253	248	251	29	31	-3	97	99.41
2	7.5	2.30	2.20	5.69	253	251	250	30	32	-3	97	99.41
	10	2.30	2.20	7.61	255	250	248	31	31	-3	98	99.55
	12.5	2.30	2.20	9.53	254	250	249	31	32	-3	97	99.48
3	15	2.30	2.20	11.44	255	247	248	32	33	-3	99	99.55
	17.5	2.30	2.30	13.40	256	243	248	32	33	-3	99	99.62
	20	2.30	2.30	15.35	256	245	250	32	34	-3	99	99.62
4	22.5	2.30	2.30	17.30	256	250	251	33	34	-3	99	99.62
	25	2.30	2.30	19.26	255	252	252	33	34	-3	99	99.55
	27.5	2.30	2.30	21.22	256	253	250	33	35	-3	98	99.62
5	30	2.30	2.30	23.17	255	250	249	33	35	-3	99	99.55
	32.5	2.30	2.40	25.13	253	249	249	33	35	-3	100	99.41
	35	2.30	2.40	27.12	252	249	250	33	35	-3	101	99.35
6	37.5	2.30	2.40	29.12	253	248	250	33	35	-3	101	99.41
	40	2.30	2.40	31.12	254	247	250	33	35	-3	100	99.48
	42.5	2.30	2.40	33.11	254	249	248	33	36	-3	100	99.48
7	45	2.30	2.40	35.10	255	250	248	33	35	-3	100	99.55
	47.5	2.30	2.40	37.09	255	250	247	33	35	-3	100	99.55
	50	2.30	2.40	39.07	255	250	252	33	35	-3	99	99.55
8	52.5	2.30	2.40	41.04	254	251	251	33	35	-3	101	99.48
	55	2.30	2.50	43.05	253	249	250	33	35	-3	102	99.41
	57.5	2.30	2.50	45.07	251	250	251	33	35	-3	103	99.28
9	60	2.30	2.50	47.11	251	250	251	33	35	-3	101	99.28
	62.5	2.30	2.50	49.12	252	251	251	33	35	-3	101	99.35
	65	2.30	2.50	51.13	252	252	251	33	35	-3	101	99.35
10	67.5	2.30	2.50	53.14	251	250	252	33	35	-3	102	99.28
	70	2.30	2.50	55.16	252	248	248	33	35	-3	101	99.35
	72.5	2.30	2.50	57.17	251	247	249	33	35	-3	101	99.28
11	75	2.30	2.50	59.18	252	246	250	33	35	-3	101	99.35
	77.5	2.30	2.50	61.18	251	248	250	33	35	-3	101	99.28
	80	2.30	2.50	63.18	251	248	247	33	36	-3	100	99.28
12	82.5	2.30	2.50	65.17	250	250	250	33	36	-3	100	99.21
	85	2.20	2.50	67.17	250	252	250	33	36	-3	103	97.02
	87.5	2.20	2.50	69.17	253	251	250	33	36	-3	104	97.23
	90	2.20	2.50	71.20	252	250	251	33	36	-3	102	97.16
Traverse 2												
1	0	1.70	2.20	71.20	269	251	251	34	36	0	112	86.42
	2.5	1.70	2.20	73.10	268	253	251	36	35	-3	103	86.36
	5	1.70	1.70	74.84	270	250	252	38	35	-2	96	86.48
2	7.5	1.70	1.70	76.47	268	255	253	39	35	-2	96	86.36
	10	1.70	1.70	78.10	268	254	247	41	35	-2	96	86.36
	12.5	1.70	1.70	79.72	267	250	249	42	35	-2	98	86.30
3	15	1.70	1.80	81.38	270	254	231	44	35	-2	98	86.48
	17.5	1.70	1.80	83.04	268	252	238	45	36	-2	98	86.36
	20	1.70	1.80	84.70	269	252	225	47	36	-2	98	86.42
4	22.5	1.70	1.80	86.36	268	251	226	48	37	-2	101	86.36
	25	1.70	1.90	88.08	266	250	228	49	37	-2	101	86.25
	27.5	1.70	1.90	89.80	270	249	228	49	37	-2	103	86.48
5	30	1.70	1.90	91.54	267	245	232	49	37	-2	102	86.30
	32.5	1.70	1.90	93.27	269	250	232	50	38	-2	102	86.42
	35	1.70	1.90	95.00	268	252	232	50	38	-2	102	86.36
6	37.5	1.70	1.90	96.74	269	250	228	50	38	-2	102	86.42
	40	1.70	1.90	98.47	269	248	228	50	38	-2	102	86.42
	42.5	1.70	1.90	100.20	265	253	231	50	38	-2	101	86.19
7	45	1.70	1.90	101.92	268	247	235	50	38	-2	101	86.36
	47.5	1.80	1.90	103.64	271	253	233	52	39	-2	98	89.05
	50	1.80	1.90	105.36	271	249	237	54	39	-2	99	89.05
8	52.5	1.80	1.90	107.09	271	254	236	55	39	-2	98	89.05
	55	1.80	1.90	108.81	270	255	235	58	40	-2	98	88.99
	57.5	1.80	1.90	110.53	271	249	237	58	40	-2	101	89.05
9	60	1.80	2.00	112.31	268	255	237	60	40	-2	102	88.87
	62.5	1.80	2.00	114.10	269	250	237	62	40	-2	101	88.93
	65	1.80	2.00	115.88	266	253	237	63	41	-2	101	88.75
10	67.5	1.80	2.00	117.67	270	252	241	65	41	-2	102	88.99
	70	1.80	2.00	119.46	270	247	242	66	41	-2	105	88.99
	72.5	1.80	2.00	121.30	268	253	237	67	41	-2	98	88.87
11	75	1.80	2.00	123.02	271	252	238	68	41	-2	102	89.05
	77.5	1.80	2.00	124.81	271	250	239	68	41	-2	101	89.05
	80	1.80	2.00	126.59	273	256	239	68	41	-2	101	89.17
12	82.5	1.80	2.00	128.37	272	247	244	68	41	-2	102	89.11
	85	1.80	2.00	130.17	270	251	242	68	41	-2	100	88.99
	87.5	1.80	2.00	131.93	269	252	240	68	42	-2	100	88.93
	90	1.80	2.00	133.70	270	249	237	68	42	-2		88.99
Post-test Leak Check =	< 0.02CFM @ 10"Hg											
	Average	1.97	2.09	133.70	263.0	250.4	242.4	45.1	36.7	-	100	93.45

Particulate Matter and Metals Sampling

Facility:	SMC St Marys	**Operator:**	PB
City:	St Marys	**Entered by:**	PB
Source:	Kiln Stack	**Checked by:**	AT
OSTC Method 5, 29	OSTC Method 5, US EPA Method 29	**Test Date:**	8-Apr-25, 9-
Run:	Test #2		

Pt.	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Actual Meter Vol. (ft^3)	Stack Temp (°F)	Probe Temp (°F)	Box Temp (°F)	Imp Temp (°F)	Meter Temp (°F)	Vac Pressure ("Hg)	Percentage Isokinetic (%)	Stack Velocity (ft/sec)
Traverse 1												
Pre-Test Leak Check =		< 0.02CFM @ 10"Hg										
1	0	2.00	1.80	0.00	315	250	242	46	41	-3	94	96.65
	2.5	2.00	1.80	1.69	316	252	239	47	40	-3	100	96.71
	5	2.00	2.00	3.49	318	253	238	48	40	-3	103	96.84
2	7.5	1.90	2.10	5.33	318	252	239	49	41	-3	105	94.39
	10	1.90	2.10	7.17	319	252	239	52	40	-3	108	94.45
	12.5	1.90	2.10	9.05	319	250	238	55	41	-3	102	94.45
3	15	1.90	2.10	10.83	320	250	238	58	41	-3	104	94.51
	17.5	1.90	2.10	12.64	321	254	240	61	41	-3	104	94.57
	20	1.90	2.10	14.45	322	250	240	64	42	-3	103	94.63
4	22.5	1.90	2.10	16.26	323	254	241	66	42	-3	102	94.69
	25	1.90	2.10	18.05	323	249	246	70	42	-3	103	94.69
	27.5	1.90	2.10	19.85	325	256	247	74	43	-3	103	94.81
5	30	1.90	2.10	21.65	325	250	249	79	44	-3	103	94.81
	32.5	1.90	2.10	23.45	326	256	249	81	44	-3	103	94.87
	35	1.90	2.10	25.25	327	246	251	78	45	-3	107	94.93
6	37.5	1.90	2.10	27.12	327	252	248	79	45	-3	105	94.93
	40	1.90	2.10	28.97	328	254	251	80	45	-3	104	94.99
	42.5	1.90	2.10	30.80	328	246	248	78	46	-3	106	94.99
7	45	1.90	2.10	32.66	328	246	244	73	47	-3	105	94.99
	47.5	1.90	2.10	34.51	329	244	240	68	47	-3	105	95.05
	50	1.90	2.10	36.36	329	247	239	65	47	-3	105	95.05
8	52.5	1.90	2.10	38.21	330	254	239	62	46	-3	105	95.11
	55	1.90	2.10	40.05	330	254	238	57	46	-3	105	95.11
	57.5	1.90	2.10	41.90	330	250	241	54	46	-3	104	95.11
9	60	1.90	2.10	43.73	330	251	239	53	46	-3	101	95.11
	62.5	1.90	2.10	45.50	260	249	248	35	48	-3	103	90.80
	65	1.90	2.10	47.40	260	250	250	35	47	-3	101	90.80
10	67.5	1.90	2.10	49.26	260	254	251	35	47	-3	100	90.80
	70	1.90	2.10	51.11	262	246	251	36	46	-3	101	90.93
	72.5	1.90	2.10	52.96	262	252	251	37	46	-3	101	90.93
11	75	1.90	2.10	54.81	261	250	251	39	46	-3	97	90.86
	77.5	1.90	2.10	56.60	261	253	252	41	46	-4	101	90.86
	80	1.90	2.10	58.46	262	250	251`	43	46	-4	102	90.93
12	82.5	1.90	2.10	60.33	262	253	251	44	47	-4	102	90.93
	85	1.90	2.10	62.21	262	248	252	45	47	-4	102	90.93
	87.5	1.90	2.10	64.09	260	252	251	46	47	-4	102	90.80
	90	1.90	2.10	65.96	261	250	252	46	48	-4	99	90.86
Traverse 2												
1	0	1.90	2.10	65.96	260	250	251	41	49	-4	99	90.80
	2.5	1.90	2.10	67.79	263	253	252	44	48	-4	99	90.99
	5	1.90	2.10	69.62	261	248	252	45	48	-4	99	90.86
2	7.5	1.90	2.10	71.44	261	257	252	47	49	-4	99	90.86
	10	1.90	2.10	73.27	262	241	250	49	49	-4	99	90.93
	12.5	1.90	2.10	75.10	262	255	252	50	49	-4	99	90.93
3	15	1.90	2.10	76.93	261	246	252	51	50	-4	98	90.86
	17.5	1.90	2.10	78.74	262	255	251	51	50	-4	98	90.93
	20	1.90	2.10	80.56	261	246	252	52	50	-4	99	90.86
4	22.5	1.90	2.10	82.39	260	254	251	52	51	-4	100	90.80
	25	1.90	2.10	84.24	261	247	250	51	52	-4	101	90.86
	27.5	1.90	2.10	86.11	263	254	251	51	52	-4	99	90.99
5	30	1.90	2.10	87.95	262	251	252	50	52	-4	100	90.93
	32.5	1.90	2.10	89.80	263	253	251	50	53	-4	99	90.99
	35	1.90	2.10	91.65	265	249	253	50	53	-4	100	91.11
6	37.5	1.90	2.10	93.50	265	250	252	50	53	-4	99	91.11
	40	1.90	2.10	95.34	265	254	253	50	53	-4	100	91.11
	42.5	1.90	2.10	97.19	266	247	251	50	54	-4	99	91.18
7	45	1.90	2.10	99.03	265	254	252	50	54	-4	99	91.11
	47.5	1.90	2.10	100.87	265	246	252	51	54	-4	98	91.11
	50	1.90	2.10	102.70	263	254	251	51	55	-4	97	90.99
8	52.5	1.90	2.10	104.52	263	249	251	51	55	-4	99	90.99
	55	1.90	2.10	106.36	263	257	252	51	56	-4	98	90.99
	57.5	1.90	2.10	108.19	265	244	253	52	56	-4	98	91.11
9	60	1.90	2.10	110.02	263	253	251	52	56	-4	98	90.99
	62.5	1.90	2.10	111.85	264	248	252	53	56	-4	98	91.05
	65	1.90	2.10	113.68	265	253	251	54	57	-4	98	91.11
10	67.5	1.90	2.10	115.52	263	246	249	54	57	-4	97	90.99
	70	1.90	2.10	117.34	265	253	250	53	58	-4	99	91.11
	72.5	1.90	2.10	119.19	266	246	251	53	58	-4	98	91.18
11	75	1.90	2.10	121.03	268	250	250	53	58	-4	98	91.30
	77.5	1.90	2.10	122.87	267	252	252	53	58	-4	99	91.24
	80	1.90	2.10	124.72	268	251	252	54	58	-4	98	91.30
12	82.5	1.90	2.10	126.56	269	253	252	55	58	-4	98	91.34
	85	1.90	2.10	128.40	269	250	252	56	58	-4	98	91.34
	87.5	1.90	2.10	130.23	267	252	252	57	58	-4	99	91.22
	90	1.90	2.10	132.09	266	248	252	58	59	-4		91.15
Post-test Leak Check =		< 0.02CFM @ 10"Hg										
	Average	1.90	2.09	132.09	283.9	250.6	248.3	53.7	49.2	-	101	92.37

Particulate Matter and Metals Sampling

Facility: SMC St Marys
City: St Marys
Source: Kiln Stack
OSTC Method 5, 29 OSTC Method 5, US EPA Method 29
Run: Test #3
Operator: PB
Entered by: PB
Checked by: AT
Test Date: 9-Apr-25

Pt.	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Actual Meter Vol. (ft^3)	Stack Temp (^oF)	Probe Temp (^oF)	Box Temp (^oF)	Imp Temp (^oF)	Meter Temp (^oF)	Vac Pressure ("Hg)	Percentage Isokinetic (%)	Stack Velocity (ft/sec)
Traverse 1												
Pre-Test Leak Check =	< 0.02CFM @ 10"Hg											
1	0	2.00	2.10	0.00	268	249	253	44	62	-3	97	93.68
	2.5	2.00	2.10	1.87	266	251	252	43	60	-3	100	93.55
	5	2.00	2.10	3.80	266	248	252	43	60	-3	101	93.55
2	7.5	2.00	2.10	5.75	265	253	252	43	60	-3	102	93.48
	10	2.00	2.10	7.72	265	253	250	45	61	-3	97	93.48
	12.5	2.00	2.10	9.60	264	254	252	45	61	-3	101	93.42
3	15	2.00	2.10	11.55	265	255	252	45	61	-3	99	93.48
	17.5	2.00	2.10	13.46	264	259	252	46	62	-3	102	93.42
	20	2.00	2.10	15.44	264	236	250	46	62	-3	102	93.42
4	22.5	2.00	2.10	17.41	264	250	251	47	63	-3	101	93.42
	25	2.00	2.10	19.38	266	249	250	45	64	-3	101	93.55
	27.5	2.00	2.10	21.34	266	252	250	46	64	-3	101	93.55
5	30	2.00	2.10	23.30	266	249	251	46	64	-3	101	93.55
	32.5	2.00	2.10	25.26	267	257	252	46	65	-3	101	93.61
	35	2.00	2.10	27.22	267	242	251	47	65	-3	100	93.61
6	37.5	2.00	2.10	29.16	266	257	251	47	65	-3	100	93.55
	40	2.00	2.10	31.11	268	242	251	48	66	-3	99	93.68
	42.5	2.00	2.10	33.04	267	259	252	48	66	-3	99	93.61
7	45	2.00	2.10	34.97	268	242	251	48	67	-3	99	93.68
	47.5	2.00	2.10	36.90	268	256	251	49	68	-3	99	93.68
	50	2.00	2.10	38.83	268	244	251	50	68	-3	99	93.68
8	52.5	2.00	2.10	40.76	268	258	250	50	69	-3	98	93.68
	55	2.00	2.10	42.69	268	240	252	50	70	-3	98	93.68
	57.5	2.00	2.10	44.61	267	258	250	51	70	-3	99	93.61
9	60	2.00	2.10	46.56	267	239	249	50	71	-3	99	93.61
	62.5	2.00	2.10	48.50	265	250	250	50	71	-3	98	93.48
	65	2.00	2.10	50.44	266	251	250	50	72	-3	98	93.55
10	67.5	2.00	2.10	52.38	266	253	253	51	72	-3	99	93.55
	70	2.00	2.10	54.34	267	247	252	52	71	-3	99	93.61
	72.5	2.00	2.10	56.29	267	258	252	53	72	-3	99	93.61
11	75	2.00	2.10	58.25	268	241	251	54	72	-3	99	93.68
	77.5	2.00	2.10	60.20	267	256	250	55	72	-3	98	93.61
	80	2.00	2.10	62.14	267	242	251	56	72	-3	99	93.61
12	82.5	2.00	2.10	64.09	267	256	250	57	73	-3	98	93.61
	85	2.00	2.10	66.03	268	246	251	58	73	-3	98	93.68
	87.5	2.00	2.10	67.97	268	255	250	60	73	-3	100	93.68
	90	2.00	2.10	69.95	267	244	254	59	74	-3	98	93.61
Traverse 2												
1	0	1.90	2.10	69.95	269	248	251	51	75	-4	103	91.37
	2.5	1.90	2.10	71.94	270	251	251	53	73	-4	103	91.43
	5	1.90	2.10	73.92	270	250	250	54	72	-4	103	91.43
2	7.5	1.90	2.10	75.90	271	252	251	57	72	-4	103	91.49
	10	1.90	2.10	77.88	272	243	251	59	71	-4	104	91.55
	12.5	1.90	2.10	79.86	271	256	251	60	70	-4	102	91.49
3	15	1.90	2.10	81.80	271	245	252	62	70	-4	101	91.49
	17.5	1.90	2.10	83.73	272	254	251	63	70	-4	103	91.55
	20	1.90	2.10	85.69	271	246	250	64	70	-4	103	91.49
4	22.5	2.00	2.10	87.65	269	247	250	63	71	-4	100	93.74
	25	2.00	2.10	89.61	271	249	250	63	71	-4	100	93.87
	27.5	2.00	2.10	91.58	273	253	249	61	71	-4	99	94.00
5	30	2.00	2.10	93.53	274	250	252	62	71	-3	99	94.06
	32.5	2.00	2.10	95.48	275	247	249	61	70	-3	100	94.12
	35	2.00	2.10	97.44	255	253	251	61	70	-3	98	92.83
6	37.5	1.70	2.10	99.38	250	247	251	62	70	-3	103	85.29
	40	1.70	1.90	101.27	251	251	250	61	70	-3	99	85.35
	42.5	1.70	1.90	103.09	250	250	251	62	69	-3	100	85.29
7	45	1.70	2.00	104.93	257	251	250	62	69	-3	102	85.71
	47.5	1.80	2.00	106.79	262	251	251	62	69	-3	100	88.50
	50	1.80	2.00	108.65	264	250	251	62	69	-3	99	88.62
8	52.5	1.80	2.00	110.50	264	253	251	63	69	-4	101	88.62
	55	1.80	2.00	112.38	266	248	252	65	68	-4	101	88.75
	57.5	1.80	2.00	114.26	271	252	250	65	68	-4	101	89.05
9	60	2.00	2.00	116.14	273	251	253	67	68	-4	98	94.00
	62.5	2.00	2.00	118.05	273	245	250	67	68	-4	96	94.00
	65	2.00	2.00	119.92	274	255	251	67	68	-4	100	94.06
10	67.5	2.00	2.10	121.86	272	239	252	68	69	-4	100	93.93
	70	2.00	2.10	123.81	273	250	250	68	69	-4	101	94.00
	72.5	2.00	2.10	125.78	271	241	252	68	69	-4	98	93.87
11	75	2.00	2.10	127.70	272	246	249	68	70	-4	99	93.93
	77.5	2.00	2.10	129.63	273	252	251	68	70	-4	99	94.00
	80	2.00	2.10	131.57	271	247	252	68	70	-4	99	93.87
12	82.5	2.00	2.10	133.52	270	252	250	68	71	-4	98	93.78
	85	2.00	2.10	135.45	271	246	251	68	71	-4	99	93.84
	87.5	2.00	2.10	137.39	271	249	249	68	72	-4	101	93.84
	90	2.00	2.10	139.38	271	251	250	65	72	-4		93.84
Post-test Leak Check =	< 0.02CFM @ 10"Hg											
	Average	1.96	2.08	139.38	267.4	249.6	250.9	56.2	68.6	-	100	92.63

APPENDIX C

Sampling Results - Benzene-Phenolics

Kiln Stack

Test :	Blank	Test #1			Test #2			Test #3			AVERAGE RESULTS		
Sample Volume (m^3) [1] :	-	3.49			3.31			3.45			3.42		
Stack Flow Rate (m^3/s) [1] :	-	71.9			66.7			69.8			69.50		
		Lab Data	Concentration	Emission Rate	Lab Data	Concentration	Emission Rate	Lab Data	Concentration	Emission Rate	Concentration	Concentration @ 11% O_2	Emission Rate
Chlorobenzenes	(ng)	(ng)	(µg/m³)	(µg/s)	(ng)	(µg/m³)	(µg/s)	(ng)	(µg/m³)	(µg/s)	(µg/m³)	(µg/m³)	(µg/s)
Acenaphthene	18.1	33400	9.58	689	42600	12.9	859	33900	9.83	686	10.8	13.83099	745
Acenaphthylene	32.7	50900	14.6	1050	73800	22.3	1490	48400	14	979	17	21.82239	1170
Anthracene	164	12300	3.53	254	46600	14.1	940	15700	4.55	318	7.39	9.49562	504
Benzo(a)anthracene	< 6	< 600	< 0.172	< 12.4	4370	1.32	88.1	< 600	< 0.174	< 12.1	< 0.555	< 0.714112	< 37.5
Benzo(b)anthracene + Chrysene + Triphenylene	< 6	1050	0.301	21.7	27900	8.43	563	1050	0.304	21.2	3.01	3.872141	202
Benzo(a)fluorene	< 6	< 600	< 0.172	< 12.4	< 600	< 0.181	< 12.1	< 600	< 0.174	< 12.1	< 0.176	< 0.225945	< 12.2
Benzo(a)pyrene	< 6	< 600	< 0.172	< 12.4	< 600	< 0.181	< 12.1	< 600	< 0.174	< 12.1	< 0.176	< 0.225945	< 12.2
Benzo(b)fluoranthene	< 6	< 600	< 0.172	< 12.4	2130	0.644	43	< 600	< 0.174	< 12.1	< 0.33	< 0.424061	< 22.5
Benzo(b)fluorene	< 6	< 600	< 0.172	< 12.4	1350	0.408	27.2	< 600	< 0.174	< 12.1	< 0.251	< 0.32306	< 17.2
Benzo(e)pyrene	< 6	< 600	< 0.172	< 12.4	2690	0.813	54.2	< 600	< 0.174	< 12.1	< 0.386	< 0.496574	< 26.3
Benzo(g,h,i)perylene	< 6	< 600	< 0.172	< 12.4	< 600	< 0.181	< 12.1	< 600	< 0.174	< 12.1	< 0.176	< 0.225945	< 12.2
Benzo(j+k)fluoranthenes	< 6	< 600	< 0.172	< 12.4	717	0.217	14.5	< 600	< 0.174	< 12.1	< 0.188	< 0.241095	< 13
Chloronaphthalene, 2-	< 6	13300	3.81	274	45100	13.6	910	13400	3.88	271	7.11	9.138567	485
Coronene	< 10	< 600	< 0.172	< 12.4	< 600	< 0.181	< 12.1	< 600	< 0.174	< 12.1	< 0.176	< 0.225945	< 12.2
Dibenzo(a,c+a,h)anthracenes	< 6	< 600	< 0.172	< 12.4	< 600	< 0.181	< 12.1	< 600	< 0.174	< 12.1	< 0.176	< 0.225945	< 12.2
Dimethylanthracene, 9,10-	23.6	< 600	< 0.172	< 12.4	2740	0.828	55.3	< 600	< 0.174	< 12.1	< 0.391	< 0.503048	< 26.6
Dimethylbenzo(a)anthracene, 7,12-	< 2	< 2	< 0.000573	< 0.0412	< 2	< 0.000604	< 0.0403	< 2	< 0.00058	< 0.0405	< 0.000586	< 0.000753	< 0.0407
Fluoranthene	17.1	4820	1.38	99.4	55600	16.8	1120	6400	1.85	130	6.68	8.586721	450
Fluorene	46.4	41000	11.8	846	69500	21	1400	43000	12.5	870	15.1	19.37839	1040
Indeno(1,2,3-c,d)pyrene	< 6	< 600	< 0.172	< 12.4	< 600	< 0.181	< 12.1	< 600	< 0.174	< 12.1	< 0.176	< 0.225945	< 12.2
Methylanthracene, 2-	7.7	7620	2.18	157	41100	12.4	829	8970	2.6	182	5.73	7.372429	389
Methylcholanthrene, 3-	< 10	< 600	< 0.172	< 12.4	< 600	< 0.181	< 12.1	< 600	< 0.174	< 12.1	< 0.176	< 0.225945	< 12.2
Methylnaphthalene, 1-	144	312000	89.5	6430	384000	116	7740	289000	83.8	5850	96.4	123.9575	6680
Methylnaphthalene, 2-	243	404000	116	8330	490000	148	9880	370000	107	7490	124	159.0489	8570
Methylphenanthrene, 1-	9	12200	3.5	252	53500	16.2	1080	14800	4.29	299	7.98	10.265	543
Methylphenanthrene, 9-	11	4020	1.15	82.9	21800	6.59	440	5580	1.62	113	3.12	4.009892	212
Naphthalene	547	512000	147	10600	606000	183	12200	509000	148	10300	159	204.6055	11000
Perylene	< 6	< 600	< 0.172	< 12.4	< 600	< 0.181	< 12.1	< 600	< 0.174	< 12.1	< 0.176	< 0.225945	< 12.2
Phenanthrene	166	98500	28.2	2030	298000	90	6010	117000	33.9	2370	50.7	65.22334	3470
Picene	< 10	< 600	< 0.172	< 12.4	< 600	< 0.181	< 12.1	< 600	< 0.174	< 12.1	< 0.176	< 0.225945	< 12.2
Pyrene	12.3	3000	0.86	61.9	33500	10.1	676	4030	1.17	81.6	4.05	5.207032	273
Tetralin	181	86200	24.7	1780	87000	26.3	1750	78200	22.7	1580	24.6	31.57063	1700

Notes :

[1] Sample volume and volumetric flow rate based on dry referenced conditions (101.3 kPa and 25 °C)

'<' indicates that laboratory results were below the detection limit. The detection limit was used to calculate the concentration and emission rate.

Concentration and Emission Rate has been reported to 3 significant figures.

Sampling Results - Dioxins and Furans

SMC St. Marys - Kiln Stack

Test :	Blank	Test #1			Test #2			Test #3			Average Concentration	Average Concentration @ 25 °C and 11 % O_2	Reg 419 Toxic Equivalency Factors		
Sample Volume (Rm^3) [1] :		3.49			3.31			3.45					TEF	TEF Concentration	TEF Emission Rate
Stack Flow Rate (Rm^3/s) [1] :		71.9			66.7			69.8							
Parameter	**Lab Data (pg)**	**Lab Data (pg)**	**Concentration (pg/m^3)**	**Emission Rate (pg/s)**	**Lab Data (pg)**	**Concentration (pg/m^3)**	**Emission Rate (pg/s)**	**Lab Data (pg)**	**Concentration (pg/m^3)**	**Emission Rate (pg/s)**	**(pg/m^3)**	**(pg/m^3)**	**-**	**(pg TEQ/m^3)**	**(pg/s)**
2,3,7,8-Tetra CDD *	< 0.44	< 0.74	< 0.212	< 15.3	16.2	4.89	327	< 1.9	< 0.551	< 38.4	< 1.89	< 2.43	1	< 2.43	< 131
1,2,3,7,8-Penta CDD *	< 0.35	< 0.51	< 0.146	< 10.5	14	4.23	282	0.851	0.247	17.2	< 1.54	< 1.98	1	< 1.98	< 107
1,2,3,4,7,8-Hexa CDD *	< 0.37	< 0.4	< 0.115	< 8.25	5.94	1.79	120	< 0.89	< 0.258	< 18	< 0.722	< 0.928	0.1	< 0.0928	< 5.02
1,2,3,6,7,8-Hexa CDD *	0.468	< 0.68	< 0.195	< 14	9.42	2.85	190	< 0.85	< 0.246	< 17.2	< 1.1	< 1.41	0.1	< 0.141	< 7.65
1,2,3,7,8,9-Hexa CDD *	< 0.34	0.822	0.236	17	< 4.1	< 1.24	< 82.7	< 0.83	< 0.241	< 16.8	< 0.572	< 0.735	0.1	< 0.0735	< 3.98
1,2,3,4,6,7,8-Hepta CDD *	< 1.7	4.59	1.32	94.7	23	6.95	464	3.13	0.907	63.3	3.06	3.93	0.01	0.0393	2.13
1,2,3,4,6,7,8,9-Octa CDD *	< 7.2	13.2	3.78	272	26.9	8.13	542	< 8.5	< 2.46	< 172	< 4.79	< 6.16	0.0003	< 0.00185	< 0.0999
2,3,7,8-Tetra CDF **	< 0.33	24.6	7.05	507	662	200	13400	44.8	13	907	73.4	94.4	0.1	9.44	510
1,2,3,7,8-Penta CDF **	< 0.74	4.31	1.24	88.9	148	44.7	2980	7.18	2.08	145	16	20.6	0.03	0.617	33.4
2,3,4,7,8-Penta CDF **	< 0.33	8.45	2.42	174	260	78.6	5240	< 11	< 3.19	< 223	< 28.1	< 36.1	0.3	< 10.8	< 586
1,2,3,4,7,8-Hexa CDF **	< 0.3	< 2.8	< 0.803	< 57.7	88.4	26.7	1780	3.79	1.1	76.7	< 9.54	< 12.3	0.1	< 1.23	< 66.3
1,2,3,6,7,8-Hexa CDF **	< 0.31	1.58	0.453	32.6	52.9	16	1070	< 1.4	< 0.406	< 28.3	< 5.61	< 7.21	0.1	< 0.721	< 39
2,3,4,6,7,8-Hexa CDF **	< 0.3	< 2.5	< 0.717	< 51.6	60.8	18.4	1230	< 2.1	< 0.609	< 42.5	< 6.57	< 8.45	0.1	< 0.845	< 45.7
1,2,3,7,8,9-Hexa CDF **	< 0.39	< 0.96	< 0.275	< 19.8	12.3	3.72	248	< 1.3	< 0.377	< 26.3	< 1.46	< 1.88	0.1	< 0.188	< 10.1
1,2,3,4,6,7,8-Hepta CDF **	0.758	< 3.7	< 1.06	< 76.3	71.5	21.6	1440	4.24	1.23	85.8	< 7.96	< 10.2	0.01	< 0.102	< 5.53
1,2,3,4,7,8,9-Hepta CDF **	< 0.79	< 0.55	< 0.158	< 11.3	< 5.8	< 1.75	< 117	< 0.75	< 0.217	< 15.2	< 0.709	< 0.912	0.01	< 0.00912	< 0.493
1,2,3,4,6,7,8,9-Octa CDF **	< 3.3	5.16	1.48	106	11.9	3.6	240	11.6	3.36	235	2.81	3.61	0.0003	0.00108	0.0586
Parameter	**Lab Data (pg)**	**Lab Data (pg)**	**Concentration (pg/m^3)**	**Emission Rate (pg/s)**	**Lab Data (pg)**	**Concentration (pg/m^3)**	**Emission Rate (pg/s)**	**Lab Data (pg)**	**Concentration (pg/m^3)**	**Emission Rate (pg/s)**	**(pg/m^3)**	**(pg/m^3)**	**-**	**(pg TEQ/m^3)**	**(pg/s)**
33'44'-TetraCB-(77)	< 8	244	70	5030	1610	486	32500	322	93.3	6520	217	279	0.0001	0.0279	1.51
344'5-TetraCB-(81)	< 7.7	< 19	< 5.45	< 392	172	52	3470	< 37	< 10.7	< 749	< 22.7	< 29.2	0.0003	< 0.00876	< 0.473
233'44'-PentaCB-(105)	< 9.8	< 320	< 91.7	< 6600	3590	1080	72400	< 510	< 148	< 10300	< 441	< 567	0.00003	< 0.017	< 0.919
2344'5-PentaCB-(114)	< 4.5	27.1	7.77	559	246	74.3	4960	58.4	16.9	1180	33	42.4	0.00003	0.00127	0.0688
23'44'5-PentaCB-(118)	36.9	1210	347	25000	7550	2280	152000	1590	461	32200	1030	1320	0.00003	0.0397	2.15
23'44'5'-PentaCB-(123)	< 4.5	< 30	< 8.6	< 619	< 160	< 48.3	< 3230	31.5	9.13	637	< 22	< 28.3	0.00003	< 0.000849	< 0.0459
33'44'5-PentaCB-(126)	< 4.2	< 12	< 3.44	< 247	170	51.4	3430	< 20	< 5.8	< 405	< 20.2	< 26	0.1	< 2.6	< 140
HexaCB-(156)+(157)	< 5.6	107	30.7	2210	1410	426	28400	158	45.8	3200	167	215	0.00003	0.00644	0.348
23'44'55'-HexaCB-(167)	< 3.7	65.5	18.8	1350	670	202	13500	105	30.4	2120	83.9	108	0.00003	0.00324	0.175
33'44'55'-HexaCB-(169)	< 3.4	< 11	< 3.15	< 227	29.1	8.79	587	< 18	< 5.22	< 364	< 5.72	< 7.35	0.03	< 0.221	< 11.9
233'44'55'-HeptaCB-(189)	< 4.4	23.2	6.65	478	273	82.5	5510	< 16	< 4.64	< 324	< 31.3	< 40.2	0.00003	< 0.00121	< 0.0653
												Total Toxic Equivalency		< 31.7	< 1710

Notes :

[1] Sample volume and volumetric flow rate based on dry referenced conditions (101.3 kPa and 25°C)

'<' indicates that laboratory results were below the Reportable Detection Limit (RDL) This detection limit was used to calculate the concentration and emission rate.

Concentration and Emission Rate has been reported to 3 significant figures.

*CDD = chlorodibenzo-*p*-dioxin

**CDF = chlorodibenzo-*p*-furan

***CB = chlorobenzene

Semi-Volatile Organic Compounds Sampling

Facility: SMC St. Marys				**Operator:** MB	
City: St. Marys				**Entered by:** MB	
Source: Kiln Stack				**Checked by:** AT	
Reference Method: Environment Canada EPS/1/RM/2					
DATA INPUTS	**Symbol**	**Units**	**Test #1** SVOC	**Test #2** SVOC	**Test #3** SVOC
Date	-	-	8-Apr-25	8-Apr-25, 9-Apr-25	9-Apr-25
Start Time	-	-	9:37 AM	2:28 PM, 8:35 AM	11:42 AM
End Time	-	-	12:53 PM	3:30 PM, 10:17 AM	2:53 PM
Round Stack, Diameter	d_s	in	94.5	94.5	94.5
Standard Temperature	T_s	°F	77	77	77
Standard Pressure	P_s	in.Hg	29.9	29.9	29.9
Nozzle Diameter	D_n	in	0.200	0.200	0.200
Average Stack Temperature	T_s	°F	242	271	250
Average Meter Temperature	T_m	°F	35	42	53
Barometric Pressure	P_{bar}	" Hg	28.72	28.72	29.00
Stack Static Pressure	P_g	" H_2O	-1.2	-1.2	-1.2
Average Delta H	dH	" H_2O	1.59	1.45	1.54
Average Velocity Head (root mean square)	dP_{rms}	" H_2O	1.46	1.35	1.40
Pitot Coefficient	C_p	-	0.855	0.855	0.855
	Pitot ID :			8' #1	
Gas Sample Volume	V_m	ft³	122.29	117.76	124.13
DGM Calibration Factor	Y	-	0.9637	0.9637	0.9637
	$\Delta H_@$	-	1.9323	1.9323	1.9323
	DGM ID:			H	
Total Sampling Time	min	minutes	180	180	180
Stack Gas Oxygen Concentration	O_2	%	13.2	13.2	13.2
Stack Gas Carbon Dioxide Concentration	CO_2	%	12.5	12.5	12.5
Impinger Gain	W_w	g	342.7	358.7	330.7

Semi-Volatile Organic Compounds Sampling

Facility:	SMC St. Marys	**Operator:**	MB
City:	St. Marys	**Entered by:**	MB
Source:	Kiln Stack	**Checked by:**	AT
Reference Method:	Environment Canada EPS/1/RM/2		

Emissions Calculations	**Symbol**	**Units**	**Test #1** SVOC	**Test #2** SVOC	**Test #3** SVOC	**AVERAGE** SVOC
Nozzle Area	A_n	ft²	2.18E-04	2.18E-04	2.18E-04	-
Stack Area	A_s	ft²	48.69	48.69	48.69	-
Average Stack Temperature	T_s	°R	702	731	710	714
Average DGM Temperature	T_m	°R	495	502	513	503
Sample Volume at Reference Conditions	V_{mStd}	ft³	123.25	116.95	121.92	-
	$\mathbf{V_{mmstd}}$	**m³**	**3.49**	**3.31**	**3.45**	-
Vol. of Water Vapour	V_{wStd}	ft³	16.45	17.22	15.87	-
Water Fraction	B_{ws}		11.8%	12.8%	11.5%	12.0%
Molecular Weight, dry	M_d	g/mole	30.63	30.63	30.63	30.63
Molecular Weight, wet	M_w	g/mole	29.15	29.01	29.18	29.11
Absolute Stack Pressure	P_s	in. Hg	28.63	28.63	28.91	28.73
Stack Gas Velocity	U_s	ft/s	80.75	79.05	78.32	79.38
	$\mathbf{U_{sm}}$	**m/s**	**24.61**	**24.10**	**23.87**	24.19
Actual Gas Flow Rate	Q_{act}	acf/min	235,922	230,965	228,839	231,909
Dry Gas Flow Rate (dry, ref)	Q_{ref}	dscf/min	152,455	141,465	147,974	147,298
	$\mathbf{Q_{mref}}$	**m³/min**	**4316**	**4005**	**4189**	4,170
	$\mathbf{Q_{mref\ (Actual\ O2)}}$	**m³/s**	**71.93**	**66.75**	**69.82**	69.50
	$\mathbf{Q_{mref\ (11\%\ O2)}}$	**m³/s**	**55.95**	**51.91**	**54.30**	54.06
Isokinetic Rate	I	%	100	102	103	102

Semi-Volatile Organic Compounds Sampling

Facility: SMC St. Marys
City: St. Marys
Source: Kiln Stack
Reference Method: Environment Canada EPS/1/RM/2
Run: Test #1
Operator: MB
Entered by: MB
Checked by: AT
Test Date: 8-Apr-25

Pt.	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Actual Meter Vol. (ft^3)	Stack Temp (°F)	Probe Temp (°F)	Filter Temp (°F)	Imp Temp (°F)	Meter Temp (°F)	Condenser Temp (°F)	Vac Pressure ("Hg)	Percentage Isokinetic (%)	Stack Velocity (ft/sec)
Traverse 1													
Pre-Test Leak Check =		< 0.02CFM @ 10"Hg											
1	0	1.50	1.50	0.36	241	245	250	34	33	33	-2	97	81.92
	2.5	1.55	1.50	2.02	251	249	251	37	33	33	-3	93	83.86
	5	1.50	1.50	3.63	250	250	251	37	33	33	-3	103	82.44
2	7.5	1.50	1.50	5.38	240	248	249	42	33	33	-3	96	81.86
	10	1.50	1.50	7.02	241	247	252	42	33	33	-4	99	81.92
	12.5	1.50	1.60	8.71	240	246	249	43	33	33	-4	98	81.86
3	15	1.50	1.60	10.39	240	245	250	43	33	33	-4	99	81.86
	17.5	1.50	1.60	12.09	240	246	250	44	33	33	-4	100	81.86
	20	1.45	1.60	13.80	240	246	250	46	33	34	-4	101	80.48
4	22.5	1.45	1.60	15.50	242	249	251	46	33	34	-4	100	80.60
	25	1.45	1.60	17.19	243	247	250	46	33	34	-4	100	80.65
	27.5	1.45	1.60	18.87	242	246	250	46	33	34	-4	103	80.60
5	30	1.45	1.60	20.60	242	246	251	45	33	34	-3	101	80.60
	32.5	1.45	1.60	22.30	243	249	250	45	33	34	-3	102	80.65
	35	1.45	1.60	24.02	243	246	250	45	33	34	-3	102	80.65
6	37.5	1.45	1.60	25.73	243	247	251	46	34	34	-3	100	80.65
	40	1.45	1.60	27.42	241	247	251	46	34	34	-3	100	80.54
	42.5	1.45	1.60	29.11	241	248	252	46	34	34	-3	101	80.54
7	45	1.45	1.60	30.82	241	245	248	46	35	34	-3	101	80.54
	47.5	1.45	1.60	32.52	242	246	253	46	35	35	-3	99	80.60
	50	1.45	1.60	34.19	242	247	250	46	35	35	-3	103	80.60
8	52.5	1.45	1.60	35.93	243	247	252	47	36	38	-3	100	80.65
	55	1.45	1.60	37.63	242	247	252	47	36	38	-3	100	80.60
	57.5	1.45	1.60	39.32	242	246	250	47	36	38	;-3	102	80.60
9	60	1.45	1.60	41.05	243	246	245	47	36	38	-3	102	80.65
	62.5	1.45	1.60	42.78	240	247	248	47	36	38	-3	100	80.48
	65	1.45	1.60	44.47	241	246	240	50	36	38	-3	99	80.54
10	67.5	1.45	1.60	46.15	243	245	240	51	36	39	-3	100	80.65
	70	1.45	1.60	47.84	246	245	253	51	36	39	-3	100	80.83
	72.5	1.45	1.60	49.53	245	245	247	50	36	39	-3	99	80.77
11	75	1.45	1.60	51.20	244	248	253	50	36	39	-3	100	80.71
	77.5	1.45	1.60	52.89	247	246	252	50	35	40	-3	101	80.88
	80	1.45	1.60	54.59	247	246	250	50	35	40	-3	100	80.88
12	82.5	1.45	1.60	56.28	245	250	241	50	35	40	-3	101	80.77
	85	1.45	1.60	57.98	245	249	244	50	35	40	-4	102	80.77
	87.5	1.45	1.60	59.70	244	250	258	50	35	40	-4	98	80.71
	90			61.35									
Traverse 2													
1	0	1.45	1.60	61.35	244	250	258	50	35	40	-4	101	80.71
	2.5	1.45	1.60	63.05	238	240	255	50	33	40	-4	99	80.37
	5	1.45	1.60	64.72	240	242	244	50	33	40	-4	103	80.48
2	7.5	1.45	1.60	66.46	242	242	252	54	35	40	-4	99	80.60
	10	1.45	1.60	68.13	238	246	250	54	35	40	-4	104	80.37
	12.5	1.45	1.60	69.89	238	241	248	54	35	40	-4	101	80.37
3	15	1.45	1.60	71.61	238	240	237	54	35	40	-4	102	80.37
	17.5	1.45	1.60	73.34	238	240	243	50	35	40	-4	100	80.37
	20	1.45	1.60	75.03	239	240	236	50	34	40	-4	101	80.42
4	22.5	1.45	1.60	76.74	239	243	237	45	34	40	-4	101	80.42
	25	1.45	1.60	78.44	239	244	239	45	34	40	-4	102	80.42
	27.5	1.45	1.60	80.17	240	244	231	45	34	40	-4	102	80.48
5	30	1.45	1.60	81.89	240	244	234	44	33	36	-4	98	80.48
	32.5	1.45	1.60	83.55	240	239	252	44	33	36	-4	100	80.48
	35	1.45	1.60	85.23	240	239	252	44	33	36	-4	100	80.48
6	37.5	1.45	1.60	86.91	240	244	252	44	33	36	-4	109	80.48
	40	1.45	1.60	88.75	240	245	244	44	33	36	-4	98	80.48
	42.5	1.45	1.60	90.41	240	245	244	44	33	36	-4	99	80.48
7	45	1.45	1.60	92.08	241	246	236	44	33	36	-4	100	80.54
	47.5	1.45	1.65	93.76	247	247	248	44	32	35	-4	100	80.88
	50	1.45	1.60	95.44	247	247	248	44	32	35	-4	101	80.88
8	52.5	1.45	1.60	97.13	247	245	249	44	32	35	-4	101	80.88
	55	1.45	1.60	98.82	247	245	246	44	32	35	-4	103	80.88
	57.5	1.45	1.60	100.55	244	245	250	42	32	34	-4	98	80.71
9	60	1.45	1.60	102.20	238	245	247	42	32	34	-4	103	80.37
	62.5	1.45	1.60	103.94	237	244	251	40	32	34	-4	98	80.31
	65	1.45	1.60	105.60	237	243	253	40	32	34	-4	98	80.31
10	67.5	1.45	1.60	107.25	238	240	243	40	35	36	-4	102	80.37
	70	1.45	1.60	108.98	238	240	237	40	38	36	-4	98	80.37
	72.5	1.45	1.60	110.65	239	241	240	40	44	36	-4	101	80.42
11	75	1.45	1.60	112.39	239	245	255	40	44	36	-4	102	80.42
	77.5	1.45	1.60	114.15	240	245	252	40	44	34	-4	97	80.48
	80	1.45	1.60	115.83	240	245	254	40	44	34	-4	99	80.48
12	82.5	1.45	1.60	117.54	240	245	252	40	44	34	-4	100	80.48
	85	1.45	1.60	119.26	241	245	240	40	44	34	-4	98	80.54
	87.5	1.45	1.60	120.95	242	245	245	40	44	34	-4	99	80.60
	90			122.65									
Post-test Leak Check =		< 0.02CFM @ 10"Hg											
	Average	1.46	1.59	122.29	241.67	245.19	247.75	45.32	34.96	36.31	-	100	80.75

Semi-Volatile Organic Compounds Sampling

Facility:	SMC St. Marys	**Operator:**	MB
City:	St. Marys	**Entered by:**	MB
Source:	Kiln Stack	**Checked by:**	AT
Reference Method:	Environment Canada EPS/1/RM/2	**Test Date:**	8-Apr-25, 9-
Run:	Test #2		

Pt.	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Actual Meter Vol. (ft^3)	Stack Temp (^oF)	Probe Temp (^oF)	Filter Temp (^oF)	Imp Temp (^oF)	Meter Temp (^oF)	Condenser Temp (^oF)	Vac Pressure ("Hg)	Percentage Isokinetic (%)	Stack Velocity (ft/sec)
Traverse 1													
Pre-Test Leak Check =		< 0.02CFM @ 10"Hg											
1	0	1.10	1.10	0.00	314	245	250	31	43	33	-3	105	73.88
	2.5	1.10	1.15	1.49	314	244	250	31	43	33	-4	104	73.88
	5	1.10	1.15	2.96	314	244	250	31	43	33	-4	98	73.88
2	7.5	1.10	1.15	4.35	314	244	250	31	43	33	-4	97	73.88
	10	1.10	1.20	5.72	319	245	250	31	43	33	-4	96	74.12
	12.5	1.10	1.20	7.07	319	245	250	33	43	33	-4	98	74.12
3	15	1.10	1.20	8.45	319	244	250	33	42	33	-4	106	74.12
	17.5	1.10	1.20	9.94	320	244	252	33	42	33	-4	98	74.17
	20	1.10	1.20	11.31	319	244	250	33	42	33	-4	99	74.12
4	22.5	1.10	1.20	12.70	319	244	250	33	42	33	-4	107	74.12
	25	1.10	1.20	14.20	324	245	250	33	42	33	-4	110	74.36
	27.5	1.10	1.10	15.74	326	245	250	33	42	33	-4	108	74.45
5	30	1.10	1.10	17.25	326	245	250	33	42	33	-4	107	74.45
	32.5	1.10	1.10	18.75	327	249	249	34	44	29	-4	121	74.50
	35	1.10	1.10	20.45	328	249	249	34	44	29	-4	109	74.54
6	37.5	1.10	1.10	21.98	329	247	249	34	44	29	-4	99	74.59
	40	1.10	1.10	23.37	329	247	249	34	44	29	-4	98	74.59
	42.5	1.10	1.10	24.75	330	248	235	34	44	29	-4	106	74.64
7	45	1.05	1.10	26.24	330	246	230	34	44	29	-4	107	72.92
	47.5	1.05	1.10	27.70	334	245	230	35	45	29	-4	107	73.11
	50	1.05	1.10	29.16	332	245	240	35	45	29	-4	109	73.02
8	52.5	1.05	1.10	30.65	332	245	245	35	45	29	-4	126	73.02
	55	1.05	1.10	32.38	332	245	246	35	45	29	-4	97	73.02
	57.5	1.05	1.10	33.71	332	245	246	35	45	29	-4	95	73.02
9	60	1.05	1.10	35.01	334	245	246	35	45	29	-4	97	73.11
	62.5	1.05	1.10	36.34	240	244	245	35	45	29	-4	100	68.64
	65	1.40	1.45	37.80	240	239	246	33	40	30	-5	100	79.26
10	67.5	1.45	1.50	39.46	240	244	248	33	40	30	-5	96	80.67
	70	1.40	1.40	41.08	241	246	250	32	41	30	-5	92	79.32
	72.5	1.45	1.40	42.62	241	246	251	32	41	30	-5	98	80.72
11	75	1.50	1.50	44.28	242	248	249	36	40	38	-6	97	82.16
	77.5	1.50	1.50	45.95	242	244	250	40	40	44	-6	99	82.16
	80	1.50	1.60	47.65	242	245	249	42	40	44	-6	99	82.16
12	82.5	1.50	1.60	49.36	242	245	250	42	40	44	-6	101	82.16
	85	1.55	1.70	51.10	242	245	250	42	40	44	-6	99	83.52
	87.5	1.55	1.70	52.83	241	243	250	42	40	44	-6	98	83.46
	90			54.55									
Traverse 2													
1	0	1.55	1.70	54.55	241	243	251	42	40	44	-6	102	83.46
	2.5	1.50	1.70	56.33	241	246	270	42	40	44	-6	102	82.10
	5	1.55	1.70	58.08	241	246	271	42	40	44	-6	104	83.46
2	7.5	1.45	1.70	59.90	241	246	271	42	40	44	-6	98	80.72
	10	1.45	1.70	61.55	242	240	270	42	40	44	-6	106	80.78
	12.5	1.50	1.70	63.34	242	246	269	42	40	46	-6	106	82.16
3	15	1.50	1.70	65.17	242	246	272	42	40	46	-6	101	82.16
	17.5	1.50	1.65	66.91	242	245	272	44	40	50	-6	104	82.16
	20	1.50	1.65	68.69	241	240	273	44	40	50	-6	102	82.10
4	22.5	1.50	1.65	70.45	240	240	272	44	40	50	-6	104	82.05
	25	1.45	1.70	72.24	241	240	272	44	40	50	-6	100	80.72
	27.5	1.45	1.70	73.93	241	240	272	44	40	50	-6	99	80.72
5	30	1.45	1.70	75.60	241	240	270	46	40	48	-6	105	80.72
	32.5	1.45	1.70	77.38	244	240	265	46	42	48	-6	106	80.90
	35	1.50	1.70	79.17	244	245	271	44	40	44	-6	103	82.28
6	37.5	1.50	1.65	80.94	244	245	271	44	40	44	-6	105	82.28
	40	1.55	1.65	82.75	245	248	272	44	40	44	-6	106	83.70
	42.5	1.55	1.65	84.59	245	248	272	44	40	44	-6	100	83.70
7	45	1.55	1.65	86.34	245	248	272	44	40	44	-6	97	83.70
	47.5	1.50	1.65	88.04	245	248	272	44	40	44	-6	98	82.34
	50	1.50	1.65	89.72	244	244	270	44	40	44	-6	99	82.28
8	52.5	1.50	1.65	91.42	243	244	270	46	40	48	-6	103	82.22
	55	1.50	1.65	93.19	244	247	272	46	42	48	-6	100	82.28
	57.5	1.50	1.65	94.92	244	247	272	46	42	48	-6	98	82.28
9	60	1.50	1.65	96.61	244	247	272	46	42	48	-6	97	82.28
	62.5	1.50	1.60	98.29	244	245	272	46	42	48	-6	102	82.28
	65	1.50	1.60	100.05	245	245	270	46	42	48	-6	104	82.34
10	67.5	1.50	1.60	101.85	245	245	270	46	42	48	-6	103	82.34
	70	1.50	1.60	103.63	245	245	272	50	46	50	-6	102	82.34
	72.5	1.50	1.60	105.40	246	250	273	50	46	50	-6	103	82.40
11	75	1.50	1.60	107.18	247	250	271	50	46	50	-6	101	82.45
	77.5	1.50	1.65	108.94	247	245	271	52	45	50	-6	102	82.45
	80	1.50	1.65	110.71	247	245	270	52	45	50	-6	101	82.45
12	82.5	1.50	1.60	112.46	247	245	273	52	45	51	-6	103	82.45
	85	1.50	1.60	114.24	245	245	273	52	45	51	-6	101	82.34
	87.5	1.50	1.60	115.99	248	245	270	52	46	50	-6	102	82.51
	90			117.76									
Post-test Leak Check =		< 0.02CFM @ 10"Hg											
	Average	1.35	1.45	117.76	271.42	244.96	258.96	40.11	42.10	40.11	-	102	79.05

Semi-Volatile Organic Compounds Sampling

Facility: SMC St. Marys
City: St. Marys
Source: Kiln Stack
Reference Method: Environment Canada EPS/1/RM/2
Run: Test #3

Operator: MB
Entered by: MB
Checked by: AT
Test Date: 9-Apr-25

Pt.	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Actual Meter Vol. (ft^3)	Stack Temp (^oF)	Probe Temp (^oF)	Filter Temp (^oF)	Imp Temp (^oF)	Meter Temp (^oF)	Condenser Temp (^oF)	Vac Pressure ("Hg)	Percentage Isokinetic (%)	Stack Velocity (ft/sec)
Traverse 1													
Pre-Test Leak Check =	< 0.02CFM @ 10"Hg												
1	0	0.95	1.50	0.16	247	245	270	45	40	45	-4	101	65.11
	2.5	0.95	1.50	1.55	246	245	272	45	40	45	-4	98	65.07
	5	0.95	1.50	2.90	246	245	272	45	40	45	-4	104	65.07
2	7.5	1.20	1.50	4.33	244	245	270	45	40	45	-4	97	73.03
	10	1.20	1.50	5.83	244	245	270	45	40	45	-4	104	73.03
	12.5	1.20	1.50	7.44	244	245	270	45	40	45	-4	99	73.03
3	15	1.35	1.50	8.97	244	245	269	45	40	45	-4	104	77.46
	17.5	1.30	1.60	10.67	244	250	271	46	41	45	-4	98	76.01
	20	1.35	1.60	12.25	245	250	271	46	41	45	-4	100	77.51
4	22.5	1.50	1.60	13.90	245	250	271	46	41	45	-4	102	81.70
	25	1.50	1.60	15.66	245	252	271	47	43	46	-4	105	81.70
	27.5	1.50	1.60	17.48	246	251	272	47	43	46	-4	101	81.76
5	30	1.55	1.60	19.24	246	251	272	47	43	46	-4	102	83.11
	32.5	1.55	1.50	21.04	247	251	271	49	44	46	-4	106	83.17
	35	1.50	1.50	22.91	247	251	270	49	42	48	-4	107	81.82
6	37.5	1.70	1.50	24.76	247	245	273	49	42	48	-4	102	87.10
	40	1.75	1.50	26.64	247	245	270	49	42	48	-4	100	88.38
	42.5	1.75	1.50	28.52	247	245	270	50	44	49	-4	97	88.38
7	45	1.95	1.45	30.35	248	240	265	50	44	49	-4	98	93.36
	47.5	1.95	1.45	32.30	248	250	268	50	44	49	-4	104	93.36
	50	1.95	1.45	34.37	248	254	272	50	44	49	-4	97	93.36
8	52.5	1.80	1.45	36.29	249	254	270	50	44	49	-4	103	89.76
	55	1.80	1.45	38.25	239	254	270	50	44	49	-4	96	89.12
	57.5	1.85	1.45	40.10	248	250	271	50	48	50	-4	103	90.93
9	60	1.55	1.45	42.11	247	250	271	50	48	50	-4	101	83.17
	62.5	1.55	1.45	43.91	247	245	270	50	48	50	-4	103	83.17
	65	1.45	1.45	45.75	246	249	270	50	48	50	-4	101	80.39
10	67.5	1.20	1.45	47.50	246	249	270	50	48	50	-4	105	73.13
	70	1.20	1.45	49.15	246	250	270	50	49	52	-4	106	73.13
	72.5	1.20	1.45	50.81	247	250	270	50	49	52	-4	95	73.18
11	75	1.10	1.50	52.30	247	250	270	50	49	52	-4	105	70.07
	77.5	1.10	1.50	53.88	248	254	273	52	54	53	-4	97	70.12
	80	1.10	1.50	55.35	248	252	271	52	54	53	-4	92	70.12
12	82.5	1.00	1.60	56.75	248	249	265	52	54	53	-4	104	66.85
	85	1.00	1.60	58.25	249	249	269	52	54	53	-4	97	66.90
	87.5	1.00	1.60	59.65	249	244	271	54	56	51	-4	106	66.90
	90	1.000		61.19								105	53.89
Traverse 2													
1	0	0.90	1.60	61.19	248	244	271	54	56	51	-4	104	63.42
	2.5	0.90	1.60	62.63	250	244	270	54	56	53	-5	106	63.51
	5	0.90	1.60	64.09	251	248	270	55	56	54	-5	98	63.56
2	7.5	1.10	1.60	65.44	252	249	271	55	56	54	-5	97	70.31
	10	1.10	1.60	66.92	252	250	260	55	56	54	-5	97	70.31
	12.5	1.10	1.60	68.40	252	250	265	55	56	54	-5	105	70.31
3	15	1.40	1.60	69.99	252	250	270	55	56	54	-5	104	79.33
	17.5	1.40	1.60	71.77	251	250	270	55	56	54	-5	101	79.27
	20	1.40	1.60	73.51	251	249	271	55	56	54	-5	98	79.27
4	22.5	1.55	1.60	75.20	251	249	265	56	56	53	-5	103	83.41
	25	1.55	1.60	77.06	251	249	266	56	56	53	-5	98	83.41
	27.5	1.55	1.60	78.83	253	250	269	56	56	53	-5	104	83.53
5	30	1.65	1.60	80.71	253	250	271	56	59	54	-5	103	86.18
	32.5	1.70	1.60	82.63	255	250	271	56	59	54	-5	101	87.60
	35	1.70	1.60	84.55	255	250	270	56	59	54	-5	103	87.60
6	37.5	1.85	1.60	86.50	256	250	270	56	59	54	-5	102	91.44
	40	1.85	1.50	88.52	256	250	270	56	59	54	-5	100	91.44
	42.5	1.85	1.50	90.49	255	250	270	56	59	54	-5	99	91.38
7	45	1.95	1.50	92.44	255	250	265	58	60	54	-5	101	93.82
	47.5	1.95	1.50	94.50	256	245	268	58	60	54	-5	102	93.88
	50	1.95	1.50	96.57	256	249	269	58	60	54	-5	97	93.88
8	52.5	1.75	1.50	98.55	255	250	271	59	62	54	-5	102	88.88
	55	1.75	1.50	100.53	255	250	271	59	62	54	-5	99	88.88
	57.5	1.65	1.50	102.44	255	250	271	59	62	54	-5	102	86.30
9	60	1.45	1.50	104.35	256	250	270	60	64	56	-5	105	80.96
	62.5	1.45	1.50	106.20	256	245	270	60	64	56	-5	101	80.96
	65	1.40	1.60	107.99	256	249	270	60	64	56	-5	103	79.55
10	67.5	1.20	1.60	109.77	255	250	271	60	64	56	-5	99	73.60
	70	1.20	1.60	111.37	255	250	272	60	64	56	-5	101	73.60
	72.5	1.20	1.60	112.99	255	251	272	61	66	59	-5	102	73.60
11	75	1.20	1.60	114.64	255	251	273	61	66	59	-5	103	73.60
	77.5	1.10	1.60	116.30	255	251	273	62	66	61	-5	103	70.46
	80	1.10	1.60	117.89	255	251	273	62	66	61	-5	103	70.46
12	82.5	1.10	1.60	119.49	255	251	273	62	66	61	-5	103	70.46
	85	1.05	1.60	121.09	255	251	273	62	66	61	-5	104	68.84
	87.5	1.10	1.60	122.66	255	251	273	62	66	61	-5	105	70.46
	90	1.050		124.29								209	55.22
Post-test Leak Check =	< 0.02CFM @ 10"Hg												
	Average	1.40	1.54	124.13	250.11	248.97	270.13	53.22	52.76	51.85	-	103	78.32

APPENDIX D

M26 - Hydrogen Halide and Ammonia Sampling

Test :	Blank	Test No. 1			Test No. 2			Test No. 3			Average		
Sample ID :	BLANK-M26	M26-T1			M26-T2			M26-T3			-		
Sample Volume (Rm^3) [1] :	-	0.098			0.094			0.094			0.095		
Stack Flow Rate (Rm^3/s) [2] :	-	76.99			72.76			74.35			74.70		
Parameter	**Lab Data (mg)**	**Lab Data (mg)**	**Conc. (mg/m^3)**	**Emission Rate (mg/s)**	**Lab Data (mg)**	**Conc. (mg/m^3)**	**Emission Rate (mg/s)**	**Lab Data (mg)**	**Conc. (mg/m^3)**	**Emission Rate (mg/s)**	**Conc. (mg/m^3)**	**Conc. Corrected to 11% O_2 [3] (mg/m^3)**	**Emission Rate (mg/s)**
Hydrogen Chloride	<0.021	0.434	4.44	342	0.811	8.62	627	0.926	9.81	729	7.62	9.803466	566
Ammonia (NH_3)	<0.020	0.907	9.28	715	0.874	9.29	676	1.02	10.8	803	9.79	12.59204	731

Notes:

[1] Sample volume and volumetric flow rate based on dry referenced conditions (101.3kPa, 25 ^{o} C)

[2] Flow rate based on average of isokentic tests conducted that day

[3] Correct O_2 to 11% equation ***a*((20.9-11)/(20.91-b))*** *a = concentration @ original O_2 b = original O_2 %*

M26 - Hydrogen Halide and Ammonia Sampling

Facility:	SMC St. Marys	**Operator:**	AT
City:	St. Marys	**Entered by:**	MB
Source:	Kiln Stack	**Checked by:**	AT
Run:	Test #1	**Test Date:**	Apr-09-25
Method:	USEPA Method 26	**PBar:**	29.00
		DGM Y:	1.028

Time (min)	**Orifice Press.** ("H_2O)	**Meter Volume** (L)	**Meter Temp** (^{o}F)	**Vacuum** (in Hg)	**Condenser Temp** (°F)	**Sampling Rate** (L/min)
START TIME:	9:36			Pre-test Leak Check: Good		
0	2.0	0.104	37	1.0	33	-
5	2.0	8	37	1.0	34	1.5
10	2.0	15	38	1.0	34	1.5
15	2.0	23	38	1.0	35	1.6
20	2.0	30	39	1.0	35	1.4
25	2.0	38	39	1.0	35	1.6
30	2.0	45	40	1.0	35	1.4
35	2.0	53	41	1.0	35	1.6
40	2.0	61	41	1.0	36	1.6
45	2.0	68	42	1.0	36	1.4
50	2.0	76	43	1.0	36	1.6
55	2.0	83	43	1.0	36	1.4
60	2.0	90.962	43	1.0	36	1.6
END TIME:	10:36					
				Post-test Leak Check: Good		
Average	2.0		40		35	1.51
Total Volume Actual (m^3)		0.091				
Total Volume Ref. (Rm^3)		**0.098**				

M26 - Hydrogen Halide and Ammonia Sampling

Facility:	SMC St. Marys	**Operator:**	AT
City:	St. Marys	**Entered by:**	MB
Source:	Kiln Stack	**Checked by:**	AT
Run:	Test #2	**Test Date:**	Apr-09-25
Method:	USEPA Method 26	**PBar:**	29.00
		DGM Y:	1.028

Time (min)	**Orifice Press.** ("H_2O)	**Meter Volume** (L)	**Meter Temp** (°F)	**Vacuum** (in Hg)	**Condenser Temp** (°F)	**Sampling Rate** (L/min)
START TIME:	12:09		Pre-test Leak Check: Good			
0	2.0	0.230	46	1.0	38	-
5	2.0	8	47	1.0	38	1.6
10	2.0	15	48	1.0	39	1.4
15	2.0	23	48	1.0	39	1.6
20	2.0	30	48	1.0	40	1.4
25	2.0	37	49	1.0	40	1.4
30	2.0	45	49	1.0	40	1.6
35	2.0	52	50	1.0	40	1.4
40	2.0	60	52	1.0	40	1.6
45	2.0	67	52	1.0	41	1.4
50	2.0	74	53	1.0	41	1.4
55	2.0	82	54	1.0	42	1.6
60	2.0	89.438	55	1.0	42	1.5
END TIME:	13:09					
			Post-test Leak Check: Good			
Average	2.0		50		40	1.49
Total Volume Actual (m^3)		0.089				
Total Volume Ref. (Rm^3)		**0.094**				

M26 - Hydrogen Halide and Ammonia Sampling

Facility:	SMC St. Marys	**Operator:**	AT
City:	St. Marys	**Entered by:**	MB
Source:	Kiln Stack	**Checked by:**	AT
Run:	Test #3	**Test Date:**	Apr-09-25
Method:	USEPA Method 26	**PBar:**	29.00
		DGM Y:	1.028

Time (min)	**Orifice Press.** ("H_2O)	**Meter Volume** (L)	**Meter Temp** (^oF)	**Vacuum** (in Hg)	**Condenser Temp** (°F)	**Sampling Rate** (L/min)
START TIME:	13:22			Pre-test Leak Check: Good		
0	2.0	0.335	56	1.0	40	-
5	2.0	8	57	1.0	40	1.5
10	2.0	15	56	1.0	40	1.4
15	2.0	23	55	1.0	40	1.6
20	2.0	30	54	1.0	40	1.4
25	2.0	38	53	1.0	39	1.6
30	2.0	45	53	1.0	39	1.4
35	2.0	53	53	1.0	39	1.6
40	2.0	60	53	1.0	38	1.4
45	2.0	68	52	1.0	38	1.6
50	2.0	76	52	1.0	38	1.6
55	2.0	83	51	1.0	38	1.4
60	2.0	90.474	51	1.0	38	1.5
END TIME:	14:22					
				Post-test Leak Check: Good		
Average	2.0		54		39	1.50
Total Volume Actual (m^3)		0.090				
Total Volume Ref. (Rm^3)		**0.094**				

APPENDIX E

NCASI 98.01 - Methaol and Phenol Sampling

Test :	Blank	Test No. 1			Test No. 2			Test No. 3			Average		
Sample ID :	BLANK-M26	NCASI-98.01-T1			NCASI-98.01-T2			NCASI-98.01-T3			-		
Sample Volume (Rm^3) [1] :	-	0.058			0.067			0.063			0.063		
Stack Flow Rate (Rm^3/s) [2] :	-	76.91			72.76			74.35			74.67		
Parameter	**Lab Data (ug)**	**Lab Data (ug)**	**Conc. (mg/m^3)**	**Emission Rate (mg/s)**	**Lab Data (ug)**	**Conc. (mg/m^3)**	**Emission Rate (mg/s)**	**Lab Data (ug)**	**Conc. (mg/m^3)**	**Emission Rate (mg/s)**	**Conc. (mg/m^3)**	**Conc. Corrected to 11% O_2 [3] (mg/m^3)**	**Emission Rate (mg/s)**
Methanol	ND	< 10	< 0.17	< 13	< 10	< 0.15	< 11	< 10	< 0.16	< 12	< 0.16	< 0.21	< 12
Phenol	ND	< 10	< 0.17	< 13	< 10	< 0.15	< 11	< 10	< 0.16	< 12	< 0.16	< 0.21	< 12

Notes:

[1] Sample volume and volumetric flow rate based on dry referenced conditions (101.3kPa, 25 ^{o} C)

[2] Flow rate based on average of isokentic tests conducted that day

[3] Correct O_2 to 11% equation ***a*((20.9-11)/(20.91-b))*** *a = concentration @ original O_2 b = original O_2 %*

NCASI 98.01 - Methaol and Phenol Sampling

Facility:	SMC St. Marys	**Operator:**	PB, MB, AT
City:	St. Marys	**Entered by:**	MB
Source:	Kiln Stack	**Checked by:**	AT
Run:	Test #1	**Test Date:**	Apr-11-25
Method:	NASI 98.01	**PBar:**	28.91
		DGM Y:	1.028

Time (min)	**Orifice Press.** ("H_2O)	**Meter Volume** (L)	**Meter Temp** (^oF)	**Vacuum** (in Hg)	**Condenser Temp** (°F)	**Sampling Rate** (L/min)
START TIME:	8:09		Pre-test Leak Check: Good			
0	0.0	0.0	57	0.0	32	-
5	1.0	5.10	57	0.0	32	1.0
10	1.0	10.07	57	0.0	32	1.0
15	1.0	15.13	57	0.0	32	1.0
20	1.0	20.16	58	0.0	32	1.0
25	1.0	25.22	585	0.0	32	1.0
30	1.0	30.27	59	0.0	32	1.0
35	1.0	35.30	59	0.0	33	1.0
40	1.0	40.34	59	0.0	33	1.0
45	1.0	45.37	59	0.0	33	1.0
50	1.0	50.41	59	0.0	33	1.0
55	1.0	55.58	59	0.0	33	1.0
60	1.0	60.50	60	0.0	34	1.0
END TIME:	9:09					
			Post-test Leak Check: Good			
Average	0.9		99		33	1.01
Total Volume Actual (m^3)		0.061				
Total Volume Ref. (Rm^3)		**0.058**				

NCASI 98.01 - Methaol and Phenol Sampling

Facility:	SMC St. Marys	**Operator:**	PB, MB, AT
City:	St. Marys	**Entered by:**	MB
Source:	Kiln Stack	**Checked by:**	AT
Run:	Test #2	**Test Date:**	Apr-11-25
Method:	NASI 98.01	**PBar:**	28.91
		DGM Y:	1.028

Time (min)	**Orifice Press.** ("H_2O)	**Meter Volume** (L)	**Meter Temp** (^oF)	**Vacuum** (in Hg)	**Condenser Temp** (°F)	**Sampling Rate** (L/min)
START TIME:	9:36		Pre-test Leak Check: Good			
0	0.0	0.0	60	0.0	32	-
5	1.0	5.42	60	0.0	33	1.1
10	1.0	10.84	60	0.0	33	1.1
15	1.0	16.31	60	0.0	33	1.1
20	1.0	21.67	61	0.0	33	1.1
25	1.0	27.07	60	0.0	33	1.1
30	1.0	32.82	61	0.0	34	1.2
35	1.0	37.97	61	0.0	34	1.0
40	1.0	43.36	61	0.0	34	1.1
45	1.0	48.76	61	0.0	34	1.1
50	1.0	54.21	61	0.0	34	1.1
55	1.0	59.69	61	0.0	34	1.1
60	1.0	65.03	62	0.0	34	1.1
END TIME:	10:36					
			Post-test Leak Check: Good			
Average	0.9		61		33	1.08
Total Volume Actual (m^3)		0.065				
Total Volume Ref. (Rm^3)		**0.067**				

NCASI 98.01 - Methaol and Phenol Sampling

Facility:	SMC St. Marys	**Operator:**	PB, MB, AT
City:	St. Marys	**Entered by:**	MB
Source:	Kiln Stack	**Checked by:**	AT
Run:	Test #3	**Test Date:**	Apr-11-25
Method:	NASI 98.01	**PBar:**	28.91
		DGM Y:	1.028

Time (min)	**Orifice Press.** ("H_2O)	**Meter Volume** (L)	**Meter Temp** (°F)	**Vacuum** (in Hg)	**Condenser Temp** (°F)	**Sampling Rate** (L/min)
START TIME:	10:55			Pre-test Leak Check: Good		
0	1.0	0.0	62	0.0	34	-
5	1.0	5.17	62	0.0	34	1.0
10	1.0	10.46	62	0.0	34	1.1
15	1.0	15.48	63	0.0	34	1.0
20	1.0	20.64	63	0.0	34	1.0
25	1.0	25.91	63	0.0	34	1.1
30	1.0	31.04	63	0.0	34	1.0
35	1.0	36.22	63	0.0	34	1.0
40	1.0	41.39	63	0.0	34	1.0
45	1.0	46.58	63	0.0	34	1.0
50	1.0	51.80	63	0.0	34	1.0
55	1.0	56.99	63	0.0	34	1.0
60	1.0	62.08	63	0.0	34	1.0
END TIME:	11:55					
				Post-test Leak Check: Good		
Average	1.0		63		34	1.03
Total Volume Actual (m^3)		0.062				
Total Volume Ref. (Rm^3)		**0.063**				

APPENDIX F

NCASI A105 - Aldehydes Sampling

Test :	Blank	Test No. 1			Test No. 2			Test No. 3			Average		
Sample ID :	BLANK-M26	NCASI-A105-T1			NCASI-A105-T2			NCASI-A105-T3			-		
Sample Volume (Rm^3) [1] :	-	0.031			0.035			0.032			0.033		
Stack Flow Rate (Rm^3/s) [2] :	-	76.91			72.76			74.35			74.67		
Parameter	**Lab Data (ug)**	**Lab Data (ug)**	**Conc. (mg/m^3)**	**Emission Rate (mg/s)**	**Lab Data (ug)**	**Conc. (mg/m^3)**	**Emission Rate (mg/s)**	**Lab Data (ug)**	**Conc. (mg/m^3)**	**Emission Rate (mg/s)**	**Conc. (mg/m^3)**	**Conc. Corrected to 11% O_2 [3] (mg/m^3)**	**Emission Rate (mg/s)**
Acetaldehyde	4.57	884	28.50	2190	843	24.40	1780	683	21.10	1570	24.70	31.70	1840
Acrolein	ND	174	5.61	431	166	4.81	350	129	3.98	296	4.80	6.17	359.000
Propionaldehyde	4.46	279	8.99	692	243	7.03	512	203	6.26	465	7.43	9.55	556

<u>Notes:</u>

[1] Sample volume and volumetric flow rate based on dry referenced conditions (101.3kPa, 25 °C)

[2] Flow rate based on average of isokentic tests conducted that day

[3] Correct O_2 to 11% equation ***a*((20.9-11)/(20.91-b))*** *a = concentration @ original O_2 b = original O_2 %*

NCASI A105 - Aldehydes Sampling

Facility:	SMC St. Marys	**Operator:**	PB, MB, AT
City:	St. Marys	**Entered by:**	MB
Source:	Kiln Stack	**Checked by:**	AT
Run:	Test #1	**Test Date:**	Apr-11-25
Method:	NCASI A105	**PBar:**	28.91
		DGM Y:	1.025

Time (min)	**Orifice Press.** ("H_2O)	**Meter Volume** (L)	**Meter Temp** (^oF)	**Vacuum** (in Hg)	**Condenser Temp** (°F)	**Sampling Rate** (L/min)
START TIME:	8:09			Pre-test Leak Check: Good		
0	0.0	0.0	58	0.0	33	-
5	2.0	2.32	58	0.0	33	0.5
10	2.0	5.09	58	0.0	33	0.6
15	2.0	7.54	59	0.0	33	0.5
20	2.0	10.07	59	0.0	34	0.5
25	2.0	12.60	59	0.0	34	0.5
30	2.0	15.05	59	0.0	33	0.5
35	2.0	17.60	60	0.0	34	0.5
40	2.0	20.14	60	0.0	34	0.5
45	2.0	22.59	60	0.0	35	0.5
50	2.0	25.14	60	0.0	35	0.5
55	2.0	27.64	60	0.0	35	0.5
60	2.0	30.15	61	0.0	35	0.5
END TIME:	9:09					
				Post-test Leak Check: Good		
Average	1.8		59		34	0.50
Total Volume Actual (m^3)		0.030				
Total Volume Ref. (Rm^3)		**0.031**				

NCASI A105 - Aldehydes Sampling

Facility:	SMC St. Marys	**Operator:**	PB, MB, AT
City:	St. Marys	**Entered by:**	MB
Source:	Kiln Stack	**Checked by:**	AT
Run:	Test #2	**Test Date:**	Apr-11-25
Method:	NCASI A105	**PBar:**	28.91
		DGM Y:	1.025

Time (min)	**Orifice Press.** ("H_2O)	**Meter Volume** (L)	**Meter Temp** (^oF)	**Vacuum** (in Hg)	**Condenser Temp** (°F)	**Sampling Rate** (L/min)
START TIME:	9:36			Pre-test Leak Check: Good		
0	0.0	0.00	58	0.0	33	-
5	2.0	2.80	58	0.0	33	0.6
10	2.0	5.58	58	0.0	33	0.6
15	2.0	8.40	59	0.0	33	0.6
20	2.0	11.21	59	0.0	34	0.6
25	2.0	13.99	59	0.0	34	0.6
30	2.0	16.75	59	0.0	33	0.6
35	2.0	19.59	60	0.0	33	0.6
40	2.0	22.38	60	0.0	33	0.6
45	2.0	25.22	60	0.0	33	0.6
50	2.0	27.98	60	0.0	34	0.6
55	2.0	30.69	60	0.0	34	0.5
60	2.0	33.58	61	0.0	34	0.6
END TIME:	10:36					
				Post-test Leak Check: Good		
Average	1.8		59		33	0.56
Total Volume Actual (m^3)		0.034				
Total Volume Ref. (Rm^3)		**0.035**				

NCASI A105 - Aldehydes Sampling

Facility:	SMC St. Marys	**Operator:**	PB, MB, AT
City:	St. Marys	**Entered by:**	MB
Source:	Kiln Stack	**Checked by:**	AT
Run:	Test #3	**Test Date:**	Apr-11-25
Method:	NCASI A105	**PBar:**	28.91
		DGM Y:	1.025

Time (min)	**Orifice Press.** ("H_2O)	**Meter Volume** (L)	**Meter Temp** (^oF)	**Vacuum** (in Hg)	**Condenser Temp** (°F)	**Sampling Rate** (L/min)
START TIME:	10:55		Pre-test Leak Check: Good			
0	0.0	0.024	63	0.0	34	-
5	2.0	2.71	63	0.0	34	0.5
10	2.0	5.33	63	0.0	34	0.5
15	2.0	7.99	63	0.0	35	0.5
20	2.0	10.57	63	0.0	34	0.5
25	2.0	13.27	64	0.0	34	0.5
30	2.0	15.93	64	0.0	34	0.5
35	2.0	18.56	63	0.0	34	0.5
40	2.0	21.25	65	0.0	35	0.5
45	2.0	23.88	65	0.0	35	0.5
50	2.0	26.52	65	0.0	34	0.5
55	2.0	29.17	65	0.0	34	0.5
60	2.0	31.82	65	0.0	34	0.5
END TIME:	11:25					
			Post-test Leak Check: Good			
Average	1.8		64		34	0.53
Total Volume Actual (m^3)		0.032				
Total Volume Ref. (Rm^3)		**0.032**				

APPENDIX G

Summary of CEM Data
SMC St. Marys
Kiln Stack

Overall Average Concentrations		
O_2 (%)	CO_2 (%)	CO (ppm)
13.2	12.5	1,436

Test ID: 1	Date: 9-Apr-25		
Time	O_2 (%)	CO_2 (%)	CO (ppm)
9:15 AM to 11:55 AM	13.4	12.3	1,107

Test ID: 2	Date: 9-Apr-25		
Time	O_2 (%)	CO_2 (%)	CO (ppm)
11:55 AM to 2:48 PM	12.9	12.9	1,652

Test ID: 3	Date: 11-Apr-25		
Time	O_2 (%)	CO_2 (%)	CO (ppm)
8:15 AM to 9:58 AM	13.3	12.3	1,548

Test: 1

Date	9-Apr-25					
Analyzer	**O2**		**CO2**		**CO**	
Zero Value *(Cv)*	0.00		0.00		0.00	
Direct *(C Dir)*	0.04		0.01		-0.40	
Calibration Error *(ACE)*	0.25%	*PASS*	0.05%	*PASS*	-0.03%	*PASS*
System Initial *(Csi)*	0.14		0.06		0.30	
System Post *(Csf)*	0.17		0.11		-0.50	
Average *(Co)*	0.16		0.09		-0.10	
System Bias Initial *(SBi)*	0.6%	*PASS*	0.3%	*PASS*	0.0%	*PASS*
System Bias Post *(SBf)*	0.8%	*PASS*	0.5%	*PASS*	0.0%	*PASS*
Drift Assessment *(D)*	0.19%	*PASS*	0.25%	*PASS*	-0.05%	*PASS*
Mid						
Mid Value *(Cv)*	10.00		10.00		750.00	
Direct *(C Dir)*	10.01		9.99		753.00	
Calibration Error *(ACE)*	0.06%	*PASS*	-0.05%	*PASS*	0.20%	*PASS*
System Initial *(Csi)*						
System Post *(Csf)*						
Average *(Cm)*	-		-		-	
System Bias Initial *(SBi)*	N/A	-	N/A	-	N/A	-
System Bias Post *(SBf)*	N/A	-	N/A	-	N/A	-
Drift Assessment *(D)*	N/A	-	N/A	-	N/A	-
High						
High Value *(CS/Cv)*	16.00		20.00		1500.00	
Direct *(C Dir)*	16.02		20.04		1507.00	
Calibration Error *(ACE)*	0.12%	*PASS*	0.20%	*PASS*	0.47%	*PASS*
System Initial *(Csi)*	15.99		20.02		1501.00	
System Post *(Csf)*	15.94		19.97		1496.00	
Average *(Cm)*	15.965		20.0		1498.5	
System Bias Initial *(SBi)*	-0.2%	*PASS*	-0.1%	*PASS*	-0.4%	*PASS*
System Bias Post *(SBf)*	-0.5%	*PASS*	-0.4%	*PASS*	-0.7%	*PASS*
Drift Assessment *(D)*	-0.31%	*PASS*	-0.25%	*PASS*	-0.33%	*PASS*
Analyser Span (Range)	25		30		2000	
Average	13.37	13.38	12.35	12.32	1,105.86	1,106.99
Time	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**
9:15:34	13.6	13.6	12.0	12.0	917.7	918.7
9:16:34	13.6	13.6	12.0	12.0	883.9	884.8
9:17:34	13.5	13.5	12.1	12.1	938.5	939.5
9:18:34	13.6	13.6	12.1	12.1	927.1	928.0
9:19:34	13.4	13.4	12.3	12.3	985.6	986.6
9:20:34	13.6	13.6	11.9	11.8	901.3	902.2
9:21:34	13.3	13.3	12.4	12.4	1092.1	1093.2
9:22:34	13.5	13.5	12.1	12.0	892.3	893.2
9:23:34	13.5	13.5	11.8	11.8	887.1	888.1
9:24:34	13.4	13.4	12.3	12.2	975.9	976.9
9:25:34	13.5	13.5	11.9	11.8	870.5	871.5
9:26:34	13.5	13.5	11.9	11.8	962.6	963.6
9:27:34	13.5	13.5	11.9	11.9	949.8	950.8
9:28:34	13.6	13.6	11.7	11.6	835.4	836.3
9:29:34	13.6	13.6	11.8	11.8	905.4	906.3
9:30:34	13.3	13.3	12.3	12.2	1039.5	1040.6
9:31:34	13.4	13.4	11.9	11.9	881.5	882.5
9:32:34	13.6	13.6	11.5	11.4	784.6	785.5
9:33:34	13.3	13.3	12.0	12.0	959.4	960.4
9:34:34	13.4	13.4	12.0	12.0	923.5	924.4
9:35:34	13.6	13.6	11.7	11.7	804.9	805.8
9:36:34	13.5	13.5	11.9	11.8	878.1	879.0
9:37:34	13.5	13.5	11.9	11.8	924.1	925.0
9:38:34	13.5	13.5	12.1	12.0	906.4	907.3
9:39:34	13.5	13.5	12.2	12.2	967.7	968.7
9:40:34	13.6	13.6	11.8	11.7	806.9	807.7
9:41:34	13.4	13.4	12.3	12.2	1024.4	1025.4
9:42:34	13.3	13.3	12.3	12.2	941.3	942.3
9:43:34	13.5	13.5	11.8	11.8	831.6	832.5
9:44:34	13.7	13.7	11.6	11.6	840.2	841.1
9:45:34	13.7	13.7	11.6	11.6	823.5	824.3
9:46:34	13.6	13.6	11.9	11.8	868.4	869.3
9:48:34	13.6	13.7	11.6	11.6	792.1	792.9
9:49:34	13.7	13.7	11.4	11.4	767.7	768.5
9:50:34	13.7	13.7	11.8	11.8	837.2	838.1
9:51:34	13.6	13.6	11.8	11.8	832.9	833.7
9:52:34	13.5	13.5	11.7	11.7	818.2	819.1
9:53:34	13.9	13.9	11.4	11.4	762.6	763.4
9:54:34	13.4	13.4	12.1	12.1	966.3	967.3
9:55:34	13.6	13.6	12.0	11.9	869.1	870.0
9:56:34	13.4	13.4	12.3	12.3	1005.9	1006.9
9:57:34	13.7	13.7	11.9	11.8	859.9	860.8
9:58:34	13.5	13.5	12.2	12.1	951.0	952.0
9:59:34	13.5	13.5	12.1	12.1	895.1	896.1
10:00:34	13.6	13.6	12.2	12.1	897.9	898.8
10:01:34	13.4	13.4	12.4	12.4	1098.3	1099.4
10:02:34	13.8	13.8	11.8	11.8	806.5	807.3
10:03:34	13.5	13.5	12.0	12.0	856.2	857.1
10:04:34	13.5	13.5	12.2	12.2	910.2	911.1
10:05:34	13.5	13.5	12.2	12.2	887.8	888.8
10:06:34	13.7	13.7	12.1	12.1	818.9	819.7
10:07:34	13.6	13.7	12.0	12.0	836.9	837.8
10:08:34	13.7	13.7	11.9	11.8	781.5	782.3
10:09:34	13.5	13.5	12.4	12.4	909.6	910.6
10:10:34	13.5	13.5	12.2	12.2	858.8	859.7
10:11:34	13.5	13.5	12.3	12.3	867.1	868.0
10:12:34	13.4	13.5	12.2	12.2	849.2	850.1
10:13:34	13.2	13.2	12.6	12.5	1019.4	1020.4
10:14:34	13.6	13.6	12.2	12.2	918.6	919.6
10:15:34	13.5	13.5	12.4	12.3	927.4	928.4
10:16:34	13.5	13.5	12.2	12.2	915.8	916.8
10:17:34	13.2	13.2	12.6	12.5	1017.3	1018.3
10:18:34	13.4	13.4	12.4	12.3	971.1	972.1
10:19:34	13.5	13.5	12.2	12.2	863.6	864.5
10:20:34	13.5	13.5	12.5	12.5	936.8	937.8
10:21:34	13.4	13.4	12.5	12.5	925.9	926.9
10:22:34	13.6	13.6	12.4	12.4	899.1	900.0
10:23:34	13.3	13.4	12.7	12.7	1008.8	1009.8
10:24:34	13.2	13.2	12.6	12.6	941.1	942.0
10:25:34	13.5	13.5	12.2	12.2	857.0	857.9
10:26:34	13.3	13.3	12.5	12.5	931.1	932.1
10:27:34	13.2	13.2	12.6	12.5	895.9	896.9
10:28:34	13.3	13.3	12.6	12.6	947.4	948.4
10:29:34	13.6	13.6	12.3	12.3	864.4	865.3
10:30:34	13.1	13.1	12.9	12.8	1127.7	1128.8
10:31:34 AM	13.4	13.5	12.3	12.2	956.6	957.6
10:32:34 AM	13.3	13.4	12.5	12.5	988.2	989.2
10:33:34 AM	13.2	13.2	12.8	12.8	1147.4	1148.5
10:34:34 AM	13.2	13.2	12.7	12.6	1118.3	1119.4
10:35:34 AM	13.5	13.5	12.6	12.6	1101.0	1102.2
10:36:34 AM	13.4	13.4	12.4	12.4	1039.5	1040.5
10:37:34 AM	13.3	13.3	12.7	12.7	1129.1	1130.3
10:38:34 AM	13.5	13.5	12.3	12.3	976.7	977.7
10:39:34 AM	13.4	13.5	12.2	12.2	987.4	988.4
10:40:34 AM	13.4	13.4	12.4	12.4	1052.9	1054.0
10:41:34 AM	13.4	13.5	12.3	12.3	1093.6	1094.7
10:42:34 AM	13.2	13.2	12.6	12.6	1196.8	1198.0
10:43:34 AM	13.3	13.3	12.4	12.4	997.0	998.0
10:44:34 AM	13.8	13.8	12.0	12.0	864.4	865.3
10:45:34 AM	13.2	13.2	12.7	12.6	1136.6	1137.8
10:46:34 AM	13.3	13.3	12.4	12.3	966.6	967.7
10:47:34 AM	13.3	13.3	12.2	12.2	1038.0	1039.0
10:48:34 AM	13.4	13.4	12.4	12.3	1017.0	1018.0
10:49:34 AM	13.5	13.5	12.2	12.2	985.3	986.4
10:50:34 AM	13.5	13.5	12.0	12.0	956.8	957.8
10:51:34 AM	13.3	13.3	12.5	12.4	1063.9	1065.0
10:52:34 AM	13.4	13.4	12.3	12.3	984.1	985.1
10:53:34 AM	13.2	13.2	12.3	12.2	1116.8	1117.9
10:54:34 AM	13.5	13.5	12.3	12.3	1004.0	1005.0
10:55:34 AM	13.3	13.3	12.2	12.2	1006.6	1007.6
10:56:34 AM	13.5	13.5	12.1	12.1	976.5	977.5
10:57:34 AM	13.3	13.3	12.2	12.2	970.9	971.9
10:58:34 AM	13.4	13.4	12.2	12.1	1011.3	1012.4
10:59:34 AM	13.3	13.3	12.4	12.4	1179.1	1180.3
11:00:34 AM	13.4	13.4	12.3	12.3	1048.2	1049.3
11:01:34 AM	13.4	13.4	12.3	12.3	1083.4	1084.5
11:02:34 AM	13.4	13.4	11.9	11.9	940.8	941.8
11:03:34 AM	13.5	13.5	12.2	12.2	899.5	900.4
11:04:34 AM	13.4	13.4	12.2	12.2	986.6	987.6
11:05:34 AM	13.4	13.4	12.3	12.3	1086.3	1087.4
11:06:34 AM	13.3	13.3	12.4	12.4	1108.5	1109.6
11:07:34 AM	13.2	13.2	12.5	12.5	1203.3	1204.6
11:08:34 AM	13.3	13.3	12.6	12.6	1153.2	1154.4
11:09:34 AM	13.4	13.4	12.3	12.3	1021.3	1022.4
11:10:34 AM	13.3	13.3	12.3	12.2	1091.3	1092.4
11:11:34 AM	13.3	13.3	12.4	12.4	1125.5	1126.6
11:12:34 AM	13.2	13.2	12.6	12.5	1176.6	1177.8
11:13:34 AM	13.1	13.1	12.7	12.7	1189.6	1190.8
11:14:34 AM	13.5	13.5	12.3	12.3	1086.9	1088.0
11:15:34 AM	13.3	13.3	12.4	12.3	1146.9	1148.0
11:16:34 AM	13.2	13.2	12.8	12.8	1330.7	1332.0
11:17:34 AM	13.1	13.1	12.9	12.9	1393.4	1394.8
11:18:34 AM	13.2	13.2	13.0	12.9	1256.9	1258.2
11:19:34 AM	13.0	13.0	13.1	13.1	1366.6	1368.0
11:20:34 AM	13.4	13.4	12.5	12.4	1246.5	1247.7
11:21:34 AM	13.2	13.2	12.5	12.5	1317.1	1318.5
11:22:34 AM	13.2	13.2	12.7	12.7	1266.9	1268.2
11:23:34 AM	13.0	13.0	12.9	12.9	1516.0	1517.5
11:24:34 AM	13.3	13.3	12.5	12.5	1181.6	1182.8
11:25:34 AM	13.1	13.1	13.0	13.0	1623.6	1625.3
11:26:34 AM	13.0	13.0	13.0	13.0	1437.9	1439.4
11:27:34 AM	13.0	13.0	13.0	13.0	1620.0	1621.7
11:28:34 AM	13.2	13.2	13.1	13.1	1550.9	1552.4
11:29:34 AM	13.1	13.1	13.1	13.1	1564.6	1566.1
11:30:34 AM	13.2	13.3	12.9	12.8	1441.4	1442.8
11:31:34 AM	13.0	13.0	13.2	13.2	1517.3	1518.8
11:32:34 AM	13.2	13.2	12.9	12.9	1438.6	1440.0
11:33:34 AM	13.2	13.2	13.1	13.1	1540.4	1541.9
11:34:34 AM	13.3	13.3	13.0	12.9	1417.5	1418.9
11:35:34 AM	13.2	13.2	13.0	12.9	1536.8	1538.3
11:36:34 AM	13.0	13.0	13.4	13.3	1865.3	1867.1
11:37:34 AM	13.0	13.0	13.3	13.2	1948.4	1950.3
11:38:34 AM	13.2	13.2	12.9	12.9	1682.8	1684.5
11:39:34 AM	13.1	13.1	12.7	12.7	1434.1	1435.5
11:40:34 AM	13.4	13.5	12.6	12.6	1552.5	1554.1
11:41:34 AM	12.9	12.9	13.5	13.5	2222.9	2225.1
11:42:34 AM	13.1	13.1	13.1	13.1	1822.2	1824.0
11:43:34 AM	13.0	13.0	13.1	13.1	1896.7	1898.6
11:44:34 AM	13.1	13.1	12.9	12.8	1896.8	1898.6
11:45:34 AM	13.0	13.0	13.1	13.1	1972.1	1974.0
11:46:34 AM	13.1	13.1	13.0	13.0	1951.5	1953.4
11:47:34 AM	13.2	13.2	12.7	12.6	1522.9	1524.5
11:48:34 AM	12.8	12.8	13.0	12.9	1969.0	1970.9
11:49:34 AM	13.2	13.2	12.5	12.5	1503.6	1505.1
11:50:34 AM	13.3	13.3	12.3	12.3	1359.3	1360.7
11:51:34 AM	13.1	13.1	12.6	12.6	1417.7	1419.2
11:52:34 AM	13.2	13.2	12.2	12.2	1412.5	1413.9
11:53:34 AM	13.2	13.2	12.2	12.1	1390.9	1392.3
11:54:34 AM	13.2	13.2	12.1	12.0	1387.3	1388.7
11:55:34 AM	13.4	13.4	12.0	11.9	1283.5	1284.8

Test: 2

Date	9-Apr-25					
Analyzer	O2		CO2		CO	
Zero Value *(Cv)*	0.00		0.00		0.00	
Direct *(C Dir)*	0.04		0.01		-0.40	
Calibration Error *(ACE)*	0.25%	*PASS*	0.05%	*PASS*	-0.03%	*PASS*
System Initial *(Csi)*	0.17		0.11		-0.50	
System Post *(Csf)*	0.17		0.11		-0.50	
Average *(Co)*	0.17		0.11		-0.50	
System Bias Initial *(SBi)*	0.8%	*PASS*	0.5%	*PASS*	0.0%	*PASS*
System Bias Post *(SBf)*	0.8%	*PASS*	0.5%	*PASS*	0.0%	*PASS*
Drift Assessment *(D)*	0.00%	*PASS*	0.00%	*PASS*	0.00%	*PASS*
Mid						
Mid Value *(Cv)*	10.00		10.00		750.00	
Direct *(C Dir)*	10.01		9.99		753.00	
Calibration Error *(ACE)*	0.06%	*PASS*	-0.05%	*PASS*	0.20%	*PASS*
System Initial *(Csi)*						
System Post *(Csf)*						
Average *(Cm)*	-		-		-	
System Bias Initial *(SBi)*	N/A	-	N/A	-	N/A	-
System Bias Post *(SBf)*	N/A	-	N/A	-	N/A	-
Drift Assessment *(D)*	N/A	-	N/A	-	N/A	-
High						
High Value *(CS/Cv)*	16.00		20.00		1500.00	
Direct *(C Dir)*	16.02		20.04		1507.00	
Calibration Error *(ACE)*	0.12%	*PASS*	0.20%	*PASS*	0.47%	*PASS*
System Initial *(Csi)*	15.94		19.97		1496.00	
System Post *(Csf)*	15.94		19.97		1496.00	
Average *(Cm)*	15.94		20.0		1496.0	
System Bias Initial *(SBi)*	-0.5%	*PASS*	-0.4%	*PASS*	-0.7%	*PASS*
System Bias Post *(SBf)*	-0.5%	*PASS*	-0.4%	*PASS*	-0.7%	*PASS*
Drift Assessment *(D)*	0.00%	*PASS*	0.00%	*PASS*	0.00%	*PASS*
Analyser Span (Range)	25		30		2000	
Average	12.89	12.90	12.92	12.90	1,647.71	1,652.07
Time	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**
11:55:34 AM	13.4	13.4	12.0	11.9	1283.5	1287.0
11:56:34 AM	13.3	13.4	12.2	12.2	1313.6	1317.2
11:57:34 AM	13.3	13.4	11.8	11.8	1119.2	1122.3
11:58:34 AM	13.1	13.2	12.5	12.5	1969.0	1974.1
11:59:34 AM	13.1	13.1	12.4	12.4	1419.5	1423.3
12:00:34 PM	13.1	13.1	12.3	12.3	1372.9	1376.6
12:01:34 PM	12.9	12.9	12.4	12.4	1661.9	1666.3
12:02:34 PM	13.1	13.2	12.2	12.1	1296.6	1300.1
12:03:34 PM	13.3	13.3	12.0	12.0	1224.8	1228.2
12:04:34 PM	13.3	13.3	12.3	12.2	1377.2	1380.9
12:05:34 PM	13.2	13.2	12.2	12.2	1382.1	1385.9
12:06:34 PM	13.0	13.0	12.5	12.5	1568.9	1573.1
12:07:34 PM	13.0	13.0	12.6	12.5	1668.7	1673.1
12:08:34 PM	13.0	13.0	12.6	12.6	2180.2	2185.8
12:09:34 PM	13.2	13.2	12.3	12.3	1253.3	1256.8
12:10:34 PM	12.9	12.9	12.4	12.4	1716.2	1720.7
12:11:34 PM	13.3	13.3	11.9	11.9	1251.2	1254.7
12:12:34 PM	13.0	13.0	12.9	12.9	2111.7	2117.1
12:13:34 PM	12.8	12.8	12.9	12.9	1995.6	2000.7
12:14:34 PM	13.0	13.1	12.6	12.5	1775.6	1780.2
12:15:34 PM	12.8	12.9	12.6	12.5	1869.1	1874.0
12:16:34 PM	12.8	12.8	13.0	12.9	1863.8	1868.7
12:17:34 PM	13.1	13.2	12.4	12.3	1359.6	1363.3
12:18:34 PM	12.9	12.9	12.8	12.8	1793.9	1798.6
12:19:34 PM	12.8	12.8	13.1	13.1	1868.2	1873.0
12:20:34 PM	13.2	13.2	12.3	12.3	1145.4	1148.6
12:21:34 PM	13.1	13.1	12.6	12.5	1556.3	1560.5
12:22:34 PM	13.0	13.0	12.6	12.6	1369.3	1373.0
12:23:34 PM	12.9	12.9	13.1	13.1	1757.9	1762.6
12:24:34 PM						
12:25:34 PM						
12:26:34 PM						
12:27:34 PM						
12:28:34 PM						
12:29:34 PM						
12:30:34 PM						
12:31:34 PM						
12:32:34 PM						
12:33:34 PM						
12:34:34 PM						
12:35:34 PM						
12:36:34 PM						
12:37:34 PM						
12:38:34 PM						
12:39:34 PM						
12:40:34 PM						
12:41:34 PM						
12:42:34 PM	13.2	13.2	12.9	12.9	1420.6	1424.4
12:43:34 PM	13.0	13.0	13.3	13.3	1927.1	1932.1
12:44:34 PM	12.9	12.9	13.3	13.3	1726.1	1730.6
12:45:34 PM	12.8	12.8	13.4	13.4	2132.1	2137.6
12:46:34 PM	13.1	13.2	12.9	12.9	1408.7	1412.4
12:47:34 PM	12.8	12.9	13.3	13.2	1841.7	1846.5
12:48:34 PM	13.0	13.0	13.0	12.9	1592.6	1596.8
12:49:34 PM	13.0	13.1	13.2	13.2	1967.6	1972.7
12:50:34 PM	13.0	13.0	13.0	13.0	1671.5	1675.9
12:51:34 PM	13.0	13.0	13.1	13.1	1821.1	1825.9
12:52:34 PM	13.0	13.0	13.0	12.9	2006.5	2011.7
12:53:34 PM	12.9	13.0	13.1	13.1	1673.6	1678.0
12:54:34 PM	12.8	12.8	13.3	13.3	2215.9	2221.6
12:55:34 PM	12.9	12.9	13.1	13.1	1961.5	1966.6
12:56:34 PM	13.0	13.0	13.0	13.0	1646.3	1650.6
12:57:34 PM	13.0	13.0	12.8	12.8	1550.7	1554.8
12:58:34 PM	12.7	12.7	13.3	13.3	2229.8	2235.5
12:59:34 PM	13.0	13.0	13.0	13.0	1814.2	1819.0
1:00:34 PM	13.0	13.0	12.9	12.9	1602.3	1606.5
1:01:34 PM	12.9	12.9	12.6	12.6	1630.4	1634.7
1:02:34 PM	13.0	13.0	12.9	12.9	1696.9	1701.4
1:03:34 PM	13.0	13.0	13.0	13.0	1758.4	1763.0
1:04:34 PM	13.0	13.0	13.0	13.0	1827.2	1831.9
1:05:34 PM	13.0	13.0	12.8	12.8	1927.7	1932.7
1:06:34 PM	13.3	13.3	12.3	12.3	1455.6	1459.5
1:07:34 PM	12.9	12.9	12.8	12.8	1840.5	1845.3
1:08:34 PM	13.0	13.0	12.6	12.5	2335.6	2341.6
1:09:34 PM	13.0	13.0	12.3	12.3	1622.1	1626.4
1:10:34 PM	13.1	13.1	12.4	12.4	1390.8	1394.6
1:11:34 PM	13.2	13.2	12.2	12.1	1182.4	1185.7
1:12:34 PM	12.8	12.8	13.1	13.1	1533.5	1537.6
1:13:34 PM	13.0	13.1	12.4	12.4	1223.4	1226.7
1:14:34 PM	13.1	13.1	12.3	12.3	1311.7	1315.3
1:15:34 PM	13.4	13.5	11.7	11.6	1074.7	1077.7
1:16:34 PM	13.1	13.1	12.3	12.3	1579.5	1583.7
1:17:34 PM	12.9	12.9	12.6	12.6	1729.7	1734.3
1:18:34 PM	12.7	12.7	13.0	13.0	2280.1	2285.9
1:19:34 PM	12.7	12.7	13.1	13.1	2111.5	2116.9
1:20:34 PM	13.2	13.3	12.3	12.3	1491.0	1495.0
1:21:34 PM	12.9	12.9	12.8	12.8	1747.9	1752.5
1:22:34 PM	12.8	12.8	13.1	13.0	1490.6	1494.5
1:23:34 PM	13.1	13.1	12.7	12.7	1343.3	1346.9
1:24:34 PM	13.2	13.2	12.3	12.3	1124.8	1128.0
1:25:34 PM	13.0	13.1	12.4	12.3	1329.5	1333.1
1:26:34 PM	13.1	13.2	12.5	12.5	1376.8	1380.5
1:27:34 PM	13.1	13.1	12.4	12.3	1246.0	1249.4
1:28:34 PM	12.9	12.9	12.7	12.7	1872.5	1877.4
1:29:34 PM	12.9	12.9	12.4	12.4	1685.6	1690.0
1:30:34 PM	13.0	13.0	12.2	12.1	1167.5	1170.7
1:31:34 PM	12.9	12.9	12.7	12.7	1298.8	1302.4
1:32:34 PM	13.0	13.0	12.8	12.7	1362.9	1366.6
1:33:34 PM	12.8	12.8	12.9	12.9	1545.2	1549.3
1:34:34 PM	13.0	13.0	12.4	12.4	1260.0	1263.5
1:35:34 PM	13.0	13.1	12.4	12.4	1156.5	1159.7
1:36:34 PM	12.8	12.8	12.9	12.9	1538.9	1543.0
1:37:34 PM	13.0	13.0	12.6	12.6	1340.6	1344.2
1:38:34 PM	13.0	13.0	12.5	12.5	1460.4	1464.3
1:39:34 PM	12.6	12.7	13.2	13.2	2076.2	2081.6
1:40:34 PM	12.9	12.9	12.7	12.7	1524.6	1528.7
1:41:34 PM	12.6	12.6	13.4	13.4	1952.6	1957.6
1:42:34 PM	12.8	12.8	12.9	12.9	1610.6	1614.8
1:43:34 PM	12.8	12.8	13.0	13.0	1968.3	1973.4
1:44:34 PM	13.0	13.0	12.8	12.7	1589.1	1593.4
1:45:34 PM	12.8	12.8	13.2	13.1	1685.5	1689.9
1:46:34 PM						
1:47:34 PM						
1:48:34 PM						
1:49:34 PM						
1:50:34 PM						
1:51:34 PM						
1:52:34 PM						
1:53:34 PM						
1:54:34 PM						
1:55:34 PM						
1:56:34 PM						
1:57:34 PM						
1:58:34 PM						
1:59:34 PM						
2:00:34 PM						
2:01:34 PM						
2:02:34 PM						
2:03:34 PM						
2:04:34 PM						
2:05:34 PM	12.1	12.1	14.5	14.5	2719.4	2726.2
2:06:34 PM	12.3	12.3	14.1	14.1	2232.8	2238.6
2:07:34 PM	12.2	12.2	14.0	14.0	2434.0	2440.2
2:08:34 PM	12.2	12.2	14.4	14.4	2233.6	2239.4
2:09:34 PM	12.3	12.3	14.3	14.3	1876.0	1880.9
2:10:34 PM	12.2	12.2	14.4	14.4	1954.6	1959.7
2:11:34 PM	12.4	12.4	14.2	14.2	1721.8	1726.3
2:12:34 PM	12.4	12.4	14.0	14.0	1464.8	1468.7
2:13:34 PM	12.4	12.4	14.0	14.0	1411.3	1415.1
2:14:34 PM	12.3	12.3	14.1	14.1	1470.8	1474.8
2:15:34 PM	12.4	12.5	13.7	13.7	1460.3	1464.2
2:16:34 PM	12.5	12.5	13.9	13.9	1762.4	1767.0
2:17:34 PM	12.7	12.7	13.6	13.6	1716.5	1721.0
2:18:34 PM	12.9	12.9	13.0	13.0	1416.4	1420.3
2:19:34 PM	12.8	12.8	13.5	13.4	1510.4	1514.4
2:20:34 PM	12.3	12.3	13.8	13.8	2001.0	2006.2
2:21:34 PM	12.9	13.0	12.9	12.9	1600.8	1605.1
2:22:34 PM	13.0	13.0	12.9	12.9	1340.8	1344.4
2:23:34 PM	12.8	12.8	13.0	13.0	1500.1	1504.1
2:24:34 PM	13.0	13.0	12.5	12.5	1440.0	1443.9
2:25:34 PM	12.9	12.9	13.0	13.0	1554.4	1558.5
2:26:34 PM	12.8	12.8	13.2	13.2	1831.4	1836.2
2:27:34 PM	13.3	13.3	12.0	12.0	1096.7	1099.8
2:28:34 PM	13.1	13.1	12.4	12.4	1217.7	1221.1
2:29:34 PM	13.2	13.2	12.3	12.3	1260.3	1263.8
2:30:34 PM	13.3	13.3	12.5	12.5	1589.4	1593.6
2:31:34 PM	13.2	13.2	12.3	12.3	1224.6	1228.0
2:32:34 PM	13.0	13.0	12.9	12.9	1500.3	1504.3
2:33:34 PM	12.8	12.8	13.1	13.1	1645.3	1649.7
2:34:34 PM	12.8	12.8	12.9	12.9	1339.1	1342.7
2:35:34 PM	12.7	12.7	13.4	13.4	1883.7	1888.6
2:36:34 PM	12.8	12.8	13.4	13.4	1569.9	1574.1
2:37:34 PM	12.8	12.9	13.1	13.1	1434.7	1438.5
2:38:34 PM	12.5	12.6	13.4	13.3	1962.0	1967.1
2:39:34 PM	12.6	12.6	13.5	13.5	1910.3	1915.3
2:40:34 PM	12.6	12.6	13.7	13.7	1829.5	1834.2
2:41:34 PM	12.7	12.7	13.3	13.3	1592.2	1596.4
2:42:34 PM	12.7	12.7	13.6	13.6	1962.6	1967.7
2:43:34 PM	12.7	12.8	13.1	13.1	1744.4	1749.0
2:44:34 PM	12.7	12.7	13.0	13.0	1677.8	1682.2
2:45:34 PM	12.6	12.6	13.5	13.5	1874.7	1879.6
2:46:34 PM	12.7	12.7	13.3	13.3	1908.0	1912.9
2:47:34 PM	12.5	12.6	13.8	13.7	2165.5	2171.0
2:48:34 PM	12.4	12.4	13.9	13.8	2201.5	2207.2

Test: 3

Date	11-Apr-25					
Analyzer	**O2**		**CO2**		**CO**	
Zero Value *(Cv)*	0.00		0.00		0.00	
Direct *(C Dir)*	0.00		0.00		0.40	
Calibration Error *(ACE)*	0.00%	*PASS*	0.00%	*PASS*	0.03%	*PASS*
System Initial *(Csi)*	0.20		0.10		0.80	
System Post *(Csf)*	0.30		0.20		-1.30	
Average *(Co)*	0.25		0.15		-0.25	
System Bias Initial *(SBi)*	1.3%	*PASS*	0.5%	*PASS*	0.0%	*PASS*
System Bias Post *(SBf)*	1.9%	*PASS*	1.0%	*PASS*	-0.1%	*PASS*
Drift Assessment *(D)*	0.63%	*PASS*	0.50%	*PASS*	-0.14%	*PASS*
Mid						
Mid Value *(Cv)*	10.00		10.00		750.00	
Direct *(C Dir)*	10.00		10.00		752.00	
Calibration Error *(ACE)*	0.00%	*PASS*	0.00%	*PASS*	0.13%	*PASS*
System Initial *(Csi)*						
System Post *(Csf)*						
Average *(Cm)*	-		-		-	
System Bias Initial *(SBi)*	N/A	-	N/A	-	N/A	-
System Bias Post *(SBf)*	N/A	-	N/A	-	N/A	-
Drift Assessment *(D)*	N/A	-	N/A	-	N/A	-
High						
High Value *(CS/Cv)*	16.00		20.00		1500.00	
Direct *(C Dir)*	16.00		20.00		1508.00	
Calibration Error *(ACE)*	0.00%	*PASS*	0.00%	*PASS*	0.53%	*PASS*
System Initial *(Csi)*	15.90		19.90		1498.00	
System Post *(Csf)*	16.10		19.90		1491.00	
Average *(Cm)*	16		19.9		1494.5	
System Bias Initial *(SBi)*	-0.6%	*PASS*	-0.5%	*PASS*	-0.7%	*PASS*
System Bias Post *(SBf)*	0.6%	*PASS*	-0.5%	*PASS*	-1.1%	*PASS*
Drift Assessment *(D)*	1.25%	*PASS*	0.00%	*PASS*	-0.47%	*PASS*
Analyser Span (Range)	25		30		2000	
Average	13.37	13.33	12.29	12.30	1,542.75	1,548.42
Time	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**
8:15:34	13.2	13.2	13.3	13.3	1583.4	1589.2
8:16:34	13.3	13.3	13.3	13.3	1769.5	1776.0
8:17:34	13.6	13.5	12.7	12.7	1618.8	1624.8
8:18:34	13.6	13.6	12.6	12.6	1663.5	1669.6
8:19:34	13.8	13.8	12.2	12.2	1449.6	1454.9
8:20:34	13.6	13.5	12.8	12.8	1739.3	1745.7
8:21:34	13.7	13.7	12.5	12.5	1597.5	1603.4
8:22:34	13.7	13.7	12.4	12.5	1611.3	1617.2
8:23:34	13.8	13.8	12.2	12.2	1642.7	1648.7
8:24:34	13.8	13.8	12.1	12.1	1650.0	1656.0
8:25:34	13.8	13.8	12.0	12.0	1589.0	1594.9
8:26:34	13.8	13.8	12.1	12.1	1615.8	1621.8
8:27:34	13.8	13.8	12.3	12.3	1805.3	1811.8
8:28:34	13.6	13.6	12.5	12.5	2106.1	2113.8
8:29:34	13.8	13.7	12.1	12.1	1757.6	1764.0
8:30:34	13.7	13.6	12.2	12.2	1673.9	1680.0
8:31:34	13.9	13.8	11.8	11.8	1614.0	1619.9
8:32:34	13.1	13.1	13.4	13.4	2186.1	2194.0
8:33:34	12.9	12.9	13.6	13.6	1992.9	2000.2
8:34:34	12.7	12.7	13.6	13.6	1996.6	2003.9
8:35:34	12.7	12.7	13.7	13.7	2021.5	2028.8
8:36:34	12.7	12.7	13.7	13.7	2859.1	2869.4
8:37:34	12.9	12.8	13.4	13.5	2791.6	2801.7
8:38:34	13.2	13.1	12.6	12.6	2289.1	2297.4
8:39:34	13.3	13.2	12.6	12.6	1924.6	1931.6
8:40:34	13.2	13.1	12.6	12.6	2019.1	2026.4
8:41:34	13.4	13.3	12.2	12.2	1712.9	1719.1
8:42:34	13.2	13.2	12.3	12.3	1712.5	1718.8
8:43:34	13.3	13.2	12.4	12.4	1833.0	1839.7
8:44:34	13.2	13.1	12.2	12.2	1980.3	1987.5
8:45:34	13.2	13.1	12.1	12.1	1709.2	1715.4
8:46:34	13.4	13.4	11.8	11.8	1493.5	1499.0
8:47:34	13.5	13.5	11.4	11.4	1611.5	1617.4
8:48:34	13.6	13.6	11.1	11.1	1424.7	1430.0
8:49:34	13.3	13.3	11.5	11.5	1399.8	1405.0
8:50:34	13.6	13.6	10.9	10.9	969.1	972.7
8:51:34	13.3	13.3	11.3	11.3	1285.1	1289.9
8:52:34	13.6	13.6	10.5	10.5	808.8	811.9
8:53:34	13.3	13.2	11.8	11.8	1735.4	1741.8
8:54:34	13.6	13.6	11.6	11.6	1290.0	1294.8
8:55:34	13.8	13.8	11.3	11.3	1165.8	1170.1
8:56:34	13.7	13.7	11.3	11.2	1029.8	1033.7
8:57:34	13.7	13.6	11.4	11.4	1007.8	1011.6
8:58:34	13.9	13.9	11.1	11.1	926.2	929.7
8:59:34	14.0	14.0	10.7	10.7	883.0	886.4
9:00:34	13.9	13.8	11.1	11.1	1017.7	1021.5
9:01:34	14.0	13.9	11.0	11.0	977.0	980.7
9:02:34	14.1	14.0	10.9	10.9	927.3	930.8
9:03:34	13.6	13.6	12.1	12.1	1152.8	1157.1
9:04:34	13.1	13.1	12.4	12.4	1197.0	1201.5
9:05:34	13.0	13.0	12.4	12.4	1598.3	1604.2
9:06:34	13.0	12.9	12.2	12.2	2023.4	2030.7
9:07:34	13.0	12.9	12.4	12.5	2832.6	2842.8
9:08:34	13.5	13.5	11.5	11.4	1369.3	1374.4
9:09:34	13.5	13.5	11.7	11.7	1355.6	1360.6
9:10:34	13.1	13.1	12.1	12.1	1515.2	1520.8
9:11:34	13.5	13.5	11.6	11.6	1017.7	1021.5
9:12:34	13.1	13.1	12.1	12.1	1111.3	1115.4
9:13:34	13.4	13.4	12.4	12.4	1050.7	1054.6
9:14:34	12.5	12.4	13.0	13.0	1584.6	1590.4
9:15:34	15.0	15.0	9.1	9.1	984.5	988.2
9:16:34	15.2	15.2	9.0	9.0	1073.0	1077.0
9:17:34	15.3	15.3	8.9	8.9	987.9	991.6
9:18:34	15.1	15.1	9.1	9.1	1332.9	1337.8
9:19:34	15.3	15.3	9.1	9.0	1080.9	1084.9
9:20:34	14.7	14.6	7.0	6.9	847.9	851.2
9:21:34	13.2	13.2	12.8	12.8	1332.1	1337.1
9:22:34	13.0	12.9	13.1	13.1	1563.1	1568.8
9:23:34	13.1	13.0	13.5	13.5	1674.7	1680.9
9:24:34	13.2	13.1	12.9	12.9	1503.2	1508.7
9:25:34	13.2	13.2	12.8	12.8	1411.2	1416.4
9:26:34	13.3	13.3	12.7	12.7	1300.3	1305.1
9:27:34	13.0	12.9	13.4	13.4	1637.7	1643.7
9:28:34	12.9	12.9	13.4	13.4	1744.2	1750.5
9:29:34	12.9	12.9	13.4	13.4	2252.2	2260.4
9:30:34	13.1	13.0	13.0	13.1	1421.4	1426.7
9:31:34	12.9	12.8	13.3	13.3	1576.0	1581.8
9:32:34	12.9	12.8	13.1	13.1	1558.0	1563.8
9:33:34	13.2	13.1	13.1	13.1	1425.4	1430.7
9:34:34	13.0	12.9	13.2	13.2	1651.1	1657.2
9:35:34	13.1	13.0	13.1	13.1	1400.7	1405.8
9:36:34	12.8	12.7	13.6	13.6	2004.2	2011.5
9:37:34	12.9	12.9	13.3	13.3	1519.7	1525.3
9:38:34	12.9	12.9	13.3	13.4	1590.7	1596.5
9:39:34	13.0	13.0	13.2	13.2	1480.5	1486.0
9:40:34	13.0	12.9	13.3	13.3	1615.7	1621.6
9:41:34	13.0	13.0	13.2	13.2	1567.0	1572.8
9:42:34	13.2	13.1	13.1	13.1	1428.1	1433.4
9:43:34	13.1	13.1	12.9	12.9	1354.7	1359.7
9:44:34	12.9	12.9	13.3	13.3	1550.6	1556.3
9:45:34	13.0	13.0	12.9	12.9	1441.7	1447.1
9:46:34	13.1	13.0	12.8	12.8	1393.1	1398.3
9:47:34	13.0	13.0	13.1	13.1	1448.5	1453.9
9:48:34	12.9	12.9	13.2	13.2	1747.7	1754.1
9:49:34	13.0	13.0	12.8	12.8	1490.2	1495.7
9:50:34	13.1	13.1	12.5	12.5	1414.1	1419.3
9:51:34	12.9	12.9	12.8	12.8	1469.4	1474.8
9:52:34	13.0	12.9	12.9	12.9	1524.8	1530.4
9:53:34	12.9	12.8	12.9	12.9	1664.5	1670.6
9:54:34	13.2	13.1	12.5	12.5	1372.9	1378.0
9:55:34	13.0	13.0	12.6	12.6	1440.4	1445.7
9:56:34	13.1	13.0	12.7	12.7	1381.8	1386.9
9:57:34	12.2	12.2	14.2	14.2	1663.6	1669.7
9:58:34	12.0	12.0	14.7	14.8	1846.6	1853.4

APPENDIX H

Volatile Organic Compound Sampling

Kiln Stack

Units	Test #1			Test #2			Test #3			Average		
Sample ID :	Pair ID = A080537 + A080127			Pair ID = A087911 + A066832			Pair ID = A081209 + A081162			-		
Sampling Date : -	Apr 8, 25			Apr 8, 25			Apr 9, 25			-		
Sampling Start Time : -	11:27 AM			1:09 PM			11:39 AM			-		
Sampling End Time : -	12:27 PM			2:09 PM			12:39 PM			-		
Sample Volume[1] : Rm^3	0.021			0.021			0.021			0.021		
Stack Flow Rate[1], [2] Rm^3/s	77.0			72.8			74.3			74.7		
Compound [4]	**Lab Data** (µg)	**Concentration** (µg/m^3)	**Emission Rate** (mg/s)	**Lab Data** (µg)	**Concentration** (µg/m^3)	**Emission Rate** (mg/s)	**Lab Data** (µg)	**Concentration** (µg/m^3)	**Emission Rate** (mg/s)	**Concentration** (µg/m^3)	**Conc. corrected to 11% O_2 [3]** (µg/m^3)	**Emission Rate** (mg/s)
Acetone [5] Test #2, [6] Test #3	< 0.250	< 11.66	< 0.898	0.220	10.4	0.757	45.0	2169	161	< 730	< 939	< 54.3
Benzene [6] Test #3	0.0110	0.513	0.0395	< 0.010	< 0.5	< 0.03	12.0	578	43.0	< 193	< 248	< 14.4
Bromodichloromethane	< 0.010	< 0.47	< 0.036	< 0.010	< 0.5	< 0.03	< 0.01	< 0.5	< 0.04	< 0.474	< 0.609	< 0.0354
Bromoform	< 0.025	< 1.17	< 0.090	< 0.025	< 1.2	< 0.09	< 0.03	< 1.2	< 0.09	< 1.18	< 1.52	< 0.0884
Bromomethane	< 0.050	< 2.33	< 0.180	< 0.050	< 2.4	< 0.17	0.370	17.8	1.33	< 7.51	< 9.65	< 0.559
Butanone, 2 - [6] Test #3	< 0.100	< 4.66	< 0.359	< 0.100	< 4.7	< 0.34	16.0	771	57.3	< 260	< 334	< 19.3
Carbon Tetrachloride	< 0.010	< 0.47	< 0.036	< 0.010	< 0.5	< 0.03	< 0.01	< 0.5	< 0.04	< 0.474	< 0.609	< 0.0354
Chloroform	< 0.010	< 0.47	< 0.036	< 0.010	< 0.5	< 0.03	< 0.01	< 0.5	< 0.04	< 0.474	< 0.609	< 0.0354
Cumene (Isopropylbenzene)	< 0.010	< 0.47	< 0.036	< 0.010	< 0.5	< 0.03	0.190	9.16	0.681	< 3.37	< 4.33	< 0.250
Dibromochloromethane (Chlorodibromomethane)	< 0.025	< 1.17	< 0.090	< 0.025	< 1.2	< 0.09	< 0.03	< 1.2	< 0.09	< 1.18	< 1.52	< 0.0884
Dichlorodifluoromethane [5] Test #1	0.0130	0.606	0.0467	< 0.025	< 1.2	< 0.09	< 0.03	< 1.2	< 0.09	< 0.998	< 1.28	< 0.0741
Dichloroethane, 1,2 -	< 0.010	< 0.47	< 0.036	< 0.010	< 0.5	< 0.03	< 0.01	< 0.5	< 0.04	< 0.474	< 0.609	< 0.0354
Dichloroethene, 1,1 -	< 0.010	< 0.47	< 0.036	< 0.010	< 0.5	< 0.03	< 0.01	< 0.5	< 0.04	< 0.474	< 0.609	< 0.0354
Dichloroethene, Trans - 1,2	< 0.010	< 0.47	< 0.036	< 0.010	< 0.5	< 0.03	< 0.01	< 0.5	< 0.04	< 0.474	< 0.609	< 0.0354
Dichloropropane, 1,2 -	< 0.010	< 0.47	< 0.036	< 0.010	< 0.5	< 0.03	< 0.01	< 0.5	< 0.04	< 0.474	< 0.609	< 0.0354
Ethylbenzene [6] Test #3	< 0.010	< 0.47	< 0.036	< 0.010	< 0.5	< 0.03	3.70	178	13.3	< 59.7	< 76.8	< 4.44
Ethylene Dibromide (1,2-Dibromoethane)	< 0.025	< 1.17	< 0.090	< 0.025	< 1.2	< 0.09	< 0.03	< 1.2	< 0.09	< 1.18	< 1.52	< 0.0884
Mesitylene (1,3,5-Trimethylbenzene) [7] Test #3	< 0.010	< 0.47	< 0.036	< 0.010	< 0.5	< 0.03	0.820	39.5	2.94	< 13.5	< 17.3	< 1.00
Methylene Chloride [6]	18.000	839	64.6	8.20	388	28.2	3.10	149	11.1	459	590	34.6
Styrene [6] Test #3	< 0.010	< 0.47	< 0.036	< 0.010	< 0.5	< 0.03	4.90	236	17.6	< 79.0	< 102	< 5.88
Tetrachloroethene	< 0.010	< 0.47	< 0.036	< 0.010	< 0.5	< 0.03	< 0.01	< 0.5	< 0.04	< 0.474	< 0.609	< 0.0354
Toluene [5] Test #1, [6] Test #3	0.0180	0.839	0.0646	0.0880	4.16	0.303	8.30	400	29.7	135	174	10.0
Trichloroethane, 1,1,1 -	< 0.025	< 1.17	< 0.090	< 0.025	< 1.2	< 0.09	< 0.03	< 1.2	< 0.09	< 1.18	< 1.52	< 0.0884
Trichloroethene	< 0.010	< 0.47	< 0.036	< 0.010	< 0.5	< 0.03	< 0.01	< 0.5	< 0.04	< 0.474	< 0.609	< 0.0354
Trichlorofluoromethane [5] Test #1, Test #2	0.0100	0.466	0.0359	0.00570	0.270	0.0196	< 0.05	< 2.4	< 0.18	< 1.05	< 1.35	< 0.0782
Vinyl Chloride	< 0.025	< 1.17	< 0.090	< 0.025	< 1.2	< 0.09	0.320	15.4	1.15	< 5.92	< 7.62	< 0.441
Xylenes, m-, p- and o [6] Test #3	< 0.030	< 1.40	< 0.108	< 0.030	< 1.4	< 0.10	8.00	386	28.7	< 129	< 166	< 9.62

Notes:

Analytical laboratory results - Butadiene, 1,3 - and Trichlorotrifluoroethane were not reported.

' < ' indicates that the laboratory results were less than the Reportable Detection Limit (RDL). This RDL was used to calculate the concentration and emission rate.

[1] Sample volume, volumetric flow rate, and concentration based on dry referenced conditions (101.3 kPa, 25 °C, and Actual Oxygen)

[2] Average of the measured volumetric flow rates from isokinetic testing

[3] Correct O_2 to 11% equation ***a*((20.9-11)/(20.9-b))*** *a=concentration @ original O_2 b=original O_2 %*

Analytical Notes:

[4] Butadiene, 1,3 - and Trichlorotrifluoroethane were not reported by the analytical laboratory.

[5] The result is less than the laboratory reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

[6] The result exceeded the laboratory calibration range.

[7] The laboratory internal standard response or retention time was outside of acceptable limits.

Volatile Organic Compound Sampling

Facility:	SMC St. Marys	**Operator:**	AT
City:	St. Marys	**Entered by:**	MB
Source:	Kiln Stack	**Checked by:**	AT
Run:	Test #1	**Test Date:**	April 8, 2025
Method:	USEPA Method 0030	**PBar:**	28.72
		DGM Y:	1.025

Time (min)	**Orifice Press.** ("H_2O)	**Meter Volume** (L)	**Meter Temp** (^oF)	**Vacuum** (in Hg)	**Condenser Temp** (°F)	**Sampling Rate** (L/min)
Pair ID =	**A080537 + A080127**			Pre-test Leak Check: Good		
START TIME:	**11:27**					
0	0.6	0.136	35	0.0	37	0.33
5	0.6	1.8	35	0.0	36	0.34
10	0.6	3.5	35	0.0	36	0.32
15	0.6	5.1	35	0.0	36	0.34
20	0.6	6.8	35	0.0	36	0.34
25	0.6	8.5	35	0.0	36	0.34
30	0.6	10.2	34	0.0	35	0.32
35	0.6	11.8	34	0.0	35	0.34
40	0.6	13.5	34	0.0	36	0.34
45	0.6	15.2	34	0.0	36	0.32
50	0.6	16.8	34	0.0	36	0.34
55	0.6	18.5	34	0.0	36	0.33
60	0.6	20.172	34	0.0	36	
END TIME:	**12:27**					
				Post-test Leak Check: Good		
Average	0.6	-	34.5	0.0	35.9	0.33
Total Volume Actual (m^3)		0.020				
Total Volume Reference (Rm^3)		**0.021**				

Volatile Organic Compound Sampling

Facility:	SMC St. Marys	**Operator:**	AT
City:	St. Marys	**Entered by:**	MB
Source:	Kiln Stack	**Checked by:**	AT
Run:	Test #2	**Test Date:**	April 8, 2025
Method:	USEPA Method 0030	**PBar:**	28.72
		DGM Y:	1.025

Time (min)	**Orifice Press.** ("H_2O)	**Meter Volume** (L)	**Meter Temp** (^oF)	**Vacuum** (in Hg)	**Condensor Temp** (°F)	**Sampling Rate** (L/min)
Pair ID =	**A087911 + A066832**			Pre-test Leak Check: Good		
START TIME:	**13:09**					
0	0.6	0.127	35	0.0	38	0.33
5	0.6	1.8	35	0.0	38	0.32
10	0.6	3.4	35	0.0	38	0.34
15	0.6	5.1	35	0.0	38	0.32
20	0.6	6.7	35	0.0	38	0.34
25	0.6	8.4	36	0.0	37	0.32
30	0.6	10.0	36	0.0	37	0.34
35	0.6	11.7	36	0.0	37	0.32
40	0.6	13.3	36	0.0	37	0.34
45	0.6	15.0	36	0.0	37	0.32
50	0.6	16.6	36	0.0	37	0.34
55	0.6	18.3	36	0.0	37	0.33
60	0.6	19.936	36	0.0	38	
END TIME:	**14:09**					
				Post-test Leak Check: Good		
Average	0.6	-	35.6	0.0	37.4	0.33
Total Volume Actual (m^3)		0.020				
Total Volume Reference (Rm^3)		**0.021**				

Volatile Organic Compound Sampling

Facility:	SMC St. Marys	**Operator:**	AT
City:	St. Marys	**Entered by:**	MB
Source:	Kiln Stack	**Checked by:**	AT
Run:	Test #3	**Test Date:**	April 9, 2025
Method:	USEPA Method 0030	**PBar:**	29.00
		DGM Y:	1.025

Time (min)	**Orifice Press.** ("H_2O)	**Meter Volume** (L)	**Meter Temp** (^oF)	**Vacuum** (in Hg)	**Condensor Temp** (°F)	**Sampling Rate** (L/min)
Pair ID =	**A081209 + A081162**			Pre-test Leak Check:	Good	
START TIME:	**11:39**					
0	0.6	0.112	47	0.0	33	0.34
5	0.6	1.8	48	0.0	33	0.32
10	0.6	3.4	49	0.0	33	0.34
15	0.6	5.1	50	0.0	34	0.32
20	0.6	6.7	51	0.0	34	0.34
25	0.6	8.4	51	0.0	34	0.34
30	0.6	10.1	52	0.0	34	0.32
35	0.6	11.7	53	0.0	35	0.34
40	0.6	13.4	54	0.0	35	0.32
45	0.6	15.0	55	0.0	35	0.34
50	0.6	16.7	56	0.0	35	0.34
55	0.6	18.4	57	0.0	35	0.32
60	0.6	20.009	57	0.0	35	
END TIME:	**12:39**					
				Post-test Leak Check:	Good	
Average	0.6	-	52.3	0.0	34.2	0.33
Total Volume Actual (m^3)		0.020				
Total Volume Reference (Rm^3)		**0.021**				

APPENDIX I

ALS Canada Ltd.

right solutions.
right partner.

CERTIFICATE OF ANALYSIS

Work Order	:	**BU2500945**			
Client	:	**RWDI Air Inc.**	Laboratory	:	ALS Environmental - Burlington
Contact	:	Oluwatobi Odumoye	Account Manager	:	Robert Chin
Address	:	600 Southgate Drive Guelph Ontario Canada N1G 4P6	Address	:	1435 Norjohn Court, Unit 1 Burlington ON Canada L7L 0E6
Telephone	:	519 823 1311	Telephone	:	+1 905 331 3111
Project	:	2509873 SMC St. Mary's	Date Samples Received	:	15-Apr-2025 11:35
PO	:	2509873	Date Analysis Commenced	:	24-Apr-2025
C-O-C number	:	----	Issue Date	:	07-May-2025 16:52
Sampler	:	Adam Tran			
Site	:	----			
Quote number	:	SMC St Marys			
No. of samples received	:	7			
No. of samples analysed	:	7			

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Milithza Silva	Manager - Inorganics	Inorganics, Burlington, Ontario
Milithza Silva	Manager - Inorganics	Metals, Burlington, Ontario

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key:

CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
g	grams
mg	milligrams
total µg	total micrograms
µg/L	micrograms per litre
µg/sample	micrograms per sample

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

Mn recovery in the LCS is outside ALS DQOs probably due to contamination but Matris Spike results were within acceptance criteria. No impact to data quality is suspected. SA 06-May-25.

Analytical Results

Sub-Matrix: Impinger
(Matrix: Air)

Analyte	CAS Number	Method/Lab	LOR	Unit	M5/29 CSI Test 1	M5/29 CSI Test 2	M5/29 CSI Test 3	M5/29 ECA Test 1	M5/29 ECA Test 2
				Client sampling date / time	08-Apr-2025 00:00	08-Apr-2025 00:00	08-Apr-2025 00:00	08-Apr-2025 00:00	08-Apr-2025 00:00
					BU2500945-001	BU2500945-002	BU2500945-003	BU2500945-004	BU2500945-005
					Result	Result	Result	Result	Result
Particulates									
mass, acetone [FRONT]	----	E898A/BU	0.40	g	129	60.3	64.9	65.1	36.3
particulate matter, acetone impinger [FRONT]	----	E897A/BU	0.4	mg	121	111	78.5	83.3	59.1
Particulate matter, filter	----	E890/BU	0.6	mg	125	132	102	25.5	83.5
Metals									
Arsenic	7440-38-2	EC457/BU	1.1	total µg	<1.1	<1.1	<1.1	1.8	1.3
Barium	7440-39-3	EC457/BU	5.6	total µg	29.0	25.7	19.5	43.0	34.7
Beryllium	7440-41-7	EC457/BU	0.22	total µg	<0.22	<0.22	<0.22	<0.22	<0.22
Cadmium	7440-43-9	EC457/BU	0.11	total µg	1.37	1.06	0.92	1.24	1.87
Chromium	7440-47-3	EC457/BU	1.1	total µg	59.1	23.5	16.9	660	314
Cobalt	7440-48-4	EC457/BU	0.22	total µg	1.28	1.20	0.75	2.04	1.55
Copper	7440-50-8	EC457/BU	1.1	total µg	16.1	7.4	10.4	30.2	24.9
Lead	7439-92-1	EC457/BU	0.56	total µg	46.1	46.1	41.4	50.1	67.9
Manganese	7439-96-5	EC457/BU	0.56	total µg	123	115	79.8	152	96.9
Molybdenum	7439-98-7	EC457/BU	0.22	total µg	14.7	12.4	12.5	38.6	25.8
Nickel	7440-02-0	EC457/BU	0.22	total µg	19.2	10.3	9.13	78.3	45.5
Selenium	7782-49-2	EC457/BU	2.2	total µg	<2.2	<2.2	<2.2	<2.2	<2.2
Silver	7440-22-4	EC457/BU	0.22	total µg	0.76	0.50	0.49	1.96	1.63
Thallium	7440-28-0	EC457/BU	0.22	total µg	17.6	19.1	16.1	11.2	9.86
Vanadium	7440-62-2	EC457/BU	1.1	total µg	39.6	35.6	26.0	42.9	42.2
Zinc	7440-66-6	EC457/BU	6.7	total µg	151	136	115	81.3	110

Analytical Results

Sub-Matrix: Impinger
(Matrix: Air)

Analyte	CAS Number	Method/Lab	LOR	Unit	M5/29 CSI Test 1	M5/29 CSI Test 2	M5/29 CSI Test 3	M5/29 ECA Test 1	M5/29 ECA Test 2
				Client sampling date / time	08-Apr-2025 00:00	08-Apr-2025 00:00	08-Apr-2025 00:00	08-Apr-2025 00:00	08-Apr-2025 00:00
					BU2500945-001	BU2500945-002	BU2500945-003	BU2500945-004	BU2500945-005
					Result	Result	Result	Result	Result
Method 29 Metals: Fraction 1A (HF)									
Arsenic	7440-38-2	E457A/BU	1.0	µg/sample	1.1	<1.0	<1.0	1.8	1.3
Barium	7440-39-3	E457A/BU	5.0	µg/sample	29.0	25.7	19.5	43.0	34.7
Beryllium	7440-41-7	E457A/BU	0.20	µg/sample	<0.20	<0.20	<0.20	<0.20	<0.20
Cadmium	7440-43-9	E457A/BU	0.10	µg/sample	1.28	1.06	0.92	0.83	1.77
Chromium	7440-47-3	E457A/BU	1.0	µg/sample	58.4	22.8	16.9	653	312
Cobalt	7440-48-4	E457A/BU	0.20	µg/sample	1.17	0.91	0.75	1.75	1.34
Copper	7440-50-8	E457A/BU	1.0	µg/sample	7.8	5.3	8.3	17.9	12.9
Lead	7439-92-1	E457A/BU	0.50	µg/sample	41.6	44.6	40.7	32.3	63.2
Manganese	7439-96-5	E457A/BU	0.50	µg/sample	110	106	76.1	68.7	86.6
Molybdenum	7439-98-7	E457A/BU	0.20	µg/sample	14.7	12.4	12.5	38.2	25.7
Nickel	7440-02-0	E457A/BU	0.20	µg/sample	18.1	9.39	8.14	75.9	44.0
Selenium	7782-49-2	E457A/BU	2.0	µg/sample	<2.0	<2.0	<2.0	<2.0	<2.0
Silver	7440-22-4	E457A/BU	0.20	µg/sample	0.76	0.50	0.49	1.83	1.63
Thallium	7440-28-0	E457A/BU	0.20	µg/sample	16.3	18.7	16.0	10.4	9.51
Vanadium	7440-62-2	E457A/BU	1.0	µg/sample	37.6	35.1	26.0	40.4	40.9
Zinc	7440-66-6	E457A/BU	6.0	µg/sample	139	128	109	52.7	89.4
Method 29 Metals: Fraction 2A (HNO3/H2O2)									
Arsenic	7440-38-2	E457B/BU	0.50	µg/sample	<0.50	<0.50	<0.50	<0.50	<0.50
Barium	7440-39-3	E457B/BU	2.5	µg/sample	<2.5	<2.5	<2.5	<2.5	<2.5

Analytical Results

Sub-Matrix: **Impinger**
(Matrix: **Air)**

Analyte	CAS Number	Method/Lab	LOR	Unit	M5/29 CSI Test 1	M5/29 CSI Test 2	M5/29 CSI Test 3	M5/29 ECA Test 1	M5/29 ECA Test 2
				Client sampling date / time	08-Apr-2025 00:00	08-Apr-2025 00:00	08-Apr-2025 00:00	08-Apr-2025 00:00	08-Apr-2025 00:00
					BU2500945-001	BU2500945-002	BU2500945-003	BU2500945-004	BU2500945-005
					Result	Result	Result	Result	Result
Method 29 Metals: Fraction 2A (HNO3/H2O2)									
Beryllium	7440-41-7	E457B/BU	0.10	µg/sample	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium	7440-43-9	E457B/BU	0.050	µg/sample	0.088	<0.050	<0.050	0.414	0.102
Chromium	7440-47-3	E457B/BU	0.50	µg/sample	0.67	0.74	<0.50	6.80	1.85
Cobalt	7440-48-4	E457B/BU	0.10	µg/sample	0.11	0.29	<0.10	0.29	0.21
Copper	7440-50-8	E457B/BU	0.50	µg/sample	8.33	2.07	2.08	12.3	12.0
Lead	7439-92-1	E457B/BU	0.25	µg/sample	4.52	1.52	0.73	17.8	4.73
Manganese	7439-96-5	E457B/BU	0.25	µg/sample	12.8	8.62	3.72	83.3	10.3
Molybdenum	7439-98-7	E457B/BU	0.10	µg/sample	<0.10	<0.10	<0.10	0.35	0.12
Nickel	7440-02-0	E457B/BU	0.10	µg/sample	1.14	0.87	0.99	2.37	1.47
Selenium	7782-49-2	E457B/BU	1.0	µg/sample	1.1	1.0	1.1	<1.0	<1.0
Silver	7440-22-4	E457B/BU	0.10	µg/sample	<0.10	<0.10	<0.10	0.13	<0.10
Thallium	7440-28-0	E457B/BU	0.10	µg/sample	1.33	0.36	0.13	0.84	0.35
Vanadium	7440-62-2	E457B/BU	0.50	µg/sample	2.00	0.52	<0.50	2.49	1.25
Zinc	7440-66-6	E457B/BU	3.0	µg/sample	12.3	8.2	6.0	28.6	20.5
Method 29 Mercury: Fraction 1B (HF)									
Mercury	7439-97-6	E521A/BU	0.022	µg/sample	0.068	0.053	0.037	0.608	0.176
Method 29 Mercury: Fraction 2B (KMnO4/H2SO4)									
Mercury	7439-97-6	E521B/BU	0.75	µg/L	<0.75	<0.75	<0.75	<0.75	<0.75
Mercury	7439-97-6	EC521B/BU	0.0750	µg/sample	<0.480	<0.412	<0.480	<0.502	<0.465

Analytical Results

Sub-Matrix: **Impinger**
(Matrix: Air)

Analyte	CAS Number	Method/Lab	LOR	Unit	M5/29 CSI Test 1	M5/29 CSI Test 2	M5/29 CSI Test 3	M5/29 ECA Test 1	M5/29 ECA Test 2
				Client sampling date / time	08-Apr-2025 00:00	08-Apr-2025 00:00	08-Apr-2025 00:00	08-Apr-2025 00:00	08-Apr-2025 00:00
					BU2500945-001	BU2500945-002	BU2500945-003	BU2500945-004	BU2500945-005
					Result	Result	Result	Result	Result
Method 29 Mercury: Fraction 3A (KMnO4/H2SO4))									
Mercury	7439-97-6	E521C/BU	0.15	µg/L	<0.15	<0.15	<0.15	<0.15	<0.15
Mercury	7439-97-6	EC521C/BU	0.015	µg/sample	<0.014	<0.009	<0.014	<0.015	<0.011
Method 29 Mercury: Fraction 3B (KMnO4/H2SO4)									
Mercury	7439-97-6	E521D/BU	0.075	µg/L	29.2	30.8	29.1	8.91	13.6
Mercury	7439-97-6	EC521D/BU	0.0075	µg/sample	14.6	15.4	14.6	4.46	6.80
Method 29 Mercury: Fraction 3C (KMnO4/H2SO4)									
Mercury	7439-97-6	E521E/BU	0.75	µg/L	1.38	2.49	1.76	12.7	8.92
Mercury	7439-97-6	EC521E/BU	0.075	µg/sample	0.228	0.411	0.290	2.10	1.47

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Analytical Results

Sub-Matrix: **Impinger**
(Matrix: Air)

Analyte	CAS Number	Method/Lab	LOR	Unit	M5/29 ECA Test 3	M5/29 Blank	----	----	----
				Client sampling date / time	08-Apr-2025 00:00	08-Apr-2025 00:00	----	----	----
					BU2500945-006	BU2500945-007	----	----	----
					Result	Result	----	----	----
Particulates									
mass, acetone [FRONT]	----	E898A/BU	0.40	g	65.3	37.2	----	----	----
particulate matter, acetone impinger [FRONT]	----	E897A/BU	0.4	mg	48.2	<0.4	----	----	----
Particulate matter, filter	----	E890/BU	0.6	mg	87.4	<0.6	----	----	----
Metals									
Arsenic	7440-38-2	EC457/BU	1.1	total µg	<1.1	<1.1	----	----	----
Barium	7440-39-3	EC457/BU	5.6	total µg	24.8	<5.6	----	----	----

Analytical Results

Sub-Matrix: Impinger
(Matrix: Air)

Analyte	CAS Number	Method/Lab	LOR	Unit	M5/29 ECA Test 3	M5/29 Blank	----	----	----
				Client sampling date / time	08-Apr-2025 00:00	08-Apr-2025 00:00	----	----	----
					BU2500945-006	BU2500945-007	----	----	----
					Result	Result	----	----	----
Metals									
Beryllium	7440-41-7	EC457/BU	0.22	total µg	<0.22	<0.22	----	----	----
Cadmium	7440-43-9	EC457/BU	0.11	total µg	1.64	<0.11	----	----	----
Chromium	7440-47-3	EC457/BU	1.1	total µg	110	<1.1	----	----	----
Cobalt	7440-48-4	EC457/BU	0.22	total µg	1.57	<0.22	----	----	----
Copper	7440-50-8	EC457/BU	1.1	total µg	14.2	2.4	----	----	----
Lead	7439-92-1	EC457/BU	0.56	total µg	70.4	<0.56	----	----	----
Manganese	7439-96-5	EC457/BU	0.56	total µg	79.4	<0.56	----	----	----
Molybdenum	7439-98-7	EC457/BU	0.22	total µg	17.4	10.7	----	----	----
Nickel	7440-02-0	EC457/BU	0.22	total µg	40.2	2.60	----	----	----
Selenium	7782-49-2	EC457/BU	2.2	total µg	<2.2	<2.2	----	----	----
Silver	7440-22-4	EC457/BU	0.22	total µg	0.96	<0.22	----	----	----
Thallium	7440-28-0	EC457/BU	0.22	total µg	5.91	<0.22	----	----	----
Vanadium	7440-62-2	EC457/BU	1.1	total µg	22.6	<1.1	----	----	----
Zinc	7440-66-6	EC457/BU	6.7	total µg	110	<6.7	----	----	----
Method 29 Metals: Fraction 1A (HF)									
Arsenic	7440-38-2	E457A/BU	1.0	µg/sample	<1.0	<1.0	----	----	----
Barium	7440-39-3	E457A/BU	5.0	µg/sample	24.8	<5.0	----	----	----
Beryllium	7440-41-7	E457A/BU	0.20	µg/sample	<0.20	<0.20	----	----	----
Cadmium	7440-43-9	E457A/BU	0.10	µg/sample	1.64	<0.10	----	----	----
Chromium	7440-47-3	E457A/BU	1.0	µg/sample	108	<1.0	----	----	----

Analytical Results

Sub-Matrix: Impinger
(Matrix: Air)

Analyte	CAS Number	Method/Lab	LOR	Unit	M5/29 ECA Test 3	M5/29 Blank	----	----	----
				Client sampling date / time	08-Apr-2025 00:00	08-Apr-2025 00:00	----	----	----
					BU2500945-006	BU2500945-007	----	----	----
					Result	Result	----	----	----
Method 29 Metals: Fraction 1A (HF)									
Cobalt	7440-48-4	E457A/BU	0.20	µg/sample	1.28	<0.20	----	----	----
Copper	7440-50-8	E457A/BU	1.0	µg/sample	7.6	1.0	----	----	----
Lead	7439-92-1	E457A/BU	0.50	µg/sample	69.6	<0.50	----	----	----
Manganese	7439-96-5	E457A/BU	0.50	µg/sample	70.9	<0.50	----	----	----
Molybdenum	7439-98-7	E457A/BU	0.20	µg/sample	17.4	10.7	----	----	----
Nickel	7440-02-0	E457A/BU	0.20	µg/sample	38.6	2.43	----	----	----
Selenium	7782-49-2	E457A/BU	2.0	µg/sample	<2.0	<2.0	----	----	----
Silver	7440-22-4	E457A/BU	0.20	µg/sample	0.96	<0.20	----	----	----
Thallium	7440-28-0	E457A/BU	0.20	µg/sample	5.91	<0.20	----	----	----
Vanadium	7440-62-2	E457A/BU	1.0	µg/sample	22.6	<1.0	----	----	----
Zinc	7440-66-6	E457A/BU	6.0	µg/sample	92.9	<6.0	----	----	----
Method 29 Metals: Fraction 2A (HNO3/H2O2)									
Arsenic	7440-38-2	E457B/BU	0.50	µg/sample	<0.50	<0.50	----	----	----
Barium	7440-39-3	E457B/BU	2.5	µg/sample	<2.5	<2.5	----	----	----
Beryllium	7440-41-7	E457B/BU	0.10	µg/sample	<0.10	<0.10	----	----	----
Cadmium	7440-43-9	E457B/BU	0.050	µg/sample	<0.050	<0.050	----	----	----
Chromium	7440-47-3	E457B/BU	0.50	µg/sample	1.66	<0.50	----	----	----
Cobalt	7440-48-4	E457B/BU	0.10	µg/sample	0.29	<0.10	----	----	----
Copper	7440-50-8	E457B/BU	0.50	µg/sample	6.64	1.45	----	----	----

Analytical Results

Sub-Matrix: Impinger
(Matrix: Air)

Analyte	CAS Number	Method/Lab	LOR	Unit	M5/29 ECA Test 3	M5/29 Blank	----	----	----
				Client sampling date / time	08-Apr-2025 00:00	08-Apr-2025 00:00	----	----	----
					BU2500945-006	BU2500945-007	----	----	----
					Result	Result	----	----	----
Method 29 Metals: Fraction 2A (HNO3/H2O2)									
Lead	7439-92-1	E457B/BU	0.25	µg/sample	0.80	<0.25	----	----	----
Manganese	7439-96-5	E457B/BU	0.25	µg/sample	8.52	<0.25	----	----	----
Molybdenum	7439-98-7	E457B/BU	0.10	µg/sample	<0.10	<0.10	----	----	----
Nickel	7440-02-0	E457B/BU	0.10	µg/sample	1.55	0.17	----	----	----
Selenium	7782-49-2	E457B/BU	1.0	µg/sample	<1.0	<1.0	----	----	----
Silver	7440-22-4	E457B/BU	0.10	µg/sample	<0.10	<0.10	----	----	----
Thallium	7440-28-0	E457B/BU	0.10	µg/sample	<0.10	<0.10	----	----	----
Vanadium	7440-62-2	E457B/BU	0.50	µg/sample	<0.50	<0.50	----	----	----
Zinc	7440-66-6	E457B/BU	3.0	µg/sample	16.7	<3.0	----	----	----
Method 29 Mercury: Fraction 1B (HF)									
Mercury	7439-97-6	E521A/BU	0.022	µg/sample	0.049	<0.022	----	----	----
Method 29 Mercury: Fraction 2B (KMnO4/H2SO4)									
Mercury	7439-97-6	E521B/BU	0.75	µg/L	<0.75	<0.75	----	----	----
Mercury	7439-97-6	EC521B/BU	0.0750	µg/sample	<0.529	<0.0555	----	----	----
Method 29 Mercury: Fraction 3A (KMnO4/H2SO4))									
Mercury	7439-97-6	E521C/BU	0.15	µg/L	<0.15	----	----	----	----
Mercury	7439-97-6	EC521C/BU	0.015	µg/sample	<0.010	----	----	----	----
Method 29 Mercury: Fraction 3B (KMnO4/H2SO4)									
Mercury	7439-97-6	E521D/BU	0.075	µg/L	8.96	<0.075	----	----	----
Mercury	7439-97-6	EC521D/BU	0.0075	µg/sample	4.48	<0.0098	----	----	----

Analytical Results

Sub-Matrix: Impinger
(Matrix: Air)

Analyte	CAS Number	Method/Lab	LOR	Unit	M5/29 ECA Test 3	M5/29 Blank	----	----	----
				Client sampling date / time	08-Apr-2025 00:00	08-Apr-2025 00:00	----	----	----
					BU2500945-006	BU2500945-007	----	----	----
					Result	Result	----	----	----
Method 29 Mercury: Fraction 3C (KMnO4/H2SO4)									
Mercury	7439-97-6	E521E/BU	0.75	µg/L	12.5	<0.75	----	----	----
Mercury	7439-97-6	EC521E/BU	0.075	µg/sample	2.06	<0.079	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **BU2500945**	Page	: 1 of 15
Client	: **RWDI Air Inc.**	Laboratory	: ALS Environmental - Burlington
Contact	: Oluwatobi Odumoye	Account Manager	: Robert Chin
Address	: 600 Southgate Drive Guelph ON Canada N1G 4P6	Address	: 1435 Norjohn Court, Unit 1 Burlington, Ontario Canada L7L 0E6
Telephone	: 519 823 1311	Telephone	: +1 905 331 3111
Project	: 2509873 SMC St. Mary's	Date Samples Received	: 15-Apr-2025 11:35
PO	: 2509873	Issue Date	: 07-May-2025 16:52
C-O-C number	: ----		
Sampler	: Adam Tran		
Site	:		
Quote number	: SMC St Marys		
No. of samples received	: 7		
No. of samples analysed	: 7		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Duplicate outliers occur.
- No Matrix Spike outliers occur.
- No Matrix Spike Duplicate (MSD) outliers occur - please see following pages for full details.
- Method Blank value outliers occur - please see following pages for full details.
- Laboratory Control Sample (LCS) outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Air**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Method Blank (MB) Values								
Method 29 Metals: Fraction 1A (HF)	QC-MRG2-1980324 001	----	Nickel	7440-02-0	E457A	2.35 µg/sample B	0.6 µg/sample	Blank result exceeds permitted value

Result Qualifiers

Qualifier	*Description*
B	*Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.*

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Laboratory Control Sample (LCS) Recoveries								
Method 29 Metals: Fraction 1A (HF)	QC-MRG2-1980324 002	----	Barium	7440-39-3	E457A	69.2 % LCS-L	80.0-120%	Recovery less than lower control limit
Method 29 Metals: Fraction 1A (HF)	QC-MRG2-1980324 002	----	Chromium	7440-47-3	E457A	71.3 % LCS-L	80.0-120%	Recovery less than lower control limit
Method 29 Metals: Fraction 1A (HF)	QC-MRG2-1980324 002	----	Manganese	7439-96-5	E457A	368 % RRQC	80.0-120%	Recovery greater than upper control limit

Result Qualifiers

Qualifier	*Description*
LCS-L	*Lab Control Sample recovery was below ALS DQO. Reference Material and/or Matrix Spike results were acceptable. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.*
RRQC	*Refer to report comments for information regarding this QC result.*

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Air**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis: Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Method 29 Metals: Fraction 2A by ICPMS										
M29 : 5% HNO3 + 10% H2O2 (Impingers) M5/29 Blank	E457B	08-Apr-2025	05-May-2025	28 days	28 days	✓	06-May-2025	28 days	28 days	✓
Metals : Method 29 Metals: Fraction 2A by ICPMS										
M29 : 5% HNO3 + 10% H2O2 (Impingers) M5/29 CSI Test 1	E457B	08-Apr-2025	05-May-2025	28 days	28 days	✓	06-May-2025	28 days	28 days	✓
Metals : Method 29 Metals: Fraction 2A by ICPMS										
M29 : 5% HNO3 + 10% H2O2 (Impingers) M5/29 CSI Test 2	E457B	08-Apr-2025	05-May-2025	28 days	28 days	✓	06-May-2025	28 days	28 days	✓
Metals : Method 29 Metals: Fraction 2A by ICPMS										
M29 : 5% HNO3 + 10% H2O2 (Impingers) M5/29 CSI Test 3	E457B	08-Apr-2025	05-May-2025	28 days	28 days	✓	06-May-2025	28 days	28 days	✓
Metals : Method 29 Metals: Fraction 2A by ICPMS										
M29 : 5% HNO3 + 10% H2O2 (Impingers) M5/29 ECA Test 1	E457B	08-Apr-2025	05-May-2025	28 days	28 days	✓	06-May-2025	28 days	28 days	✓
Metals : Method 29 Metals: Fraction 2A by ICPMS										
M29 : 5% HNO3 + 10% H2O2 (Impingers) M5/29 ECA Test 2	E457B	08-Apr-2025	05-May-2025	28 days	28 days	✓	06-May-2025	28 days	28 days	✓
Metals : Method 29 Metals: Fraction 2A by ICPMS										
M29 : 5% HNO3 + 10% H2O2 (Impingers) M5/29 ECA Test 3	E457B	08-Apr-2025	05-May-2025	28 days	28 days	✓	06-May-2025	28 days	28 days	✓

Matrix: **Air**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Method 29 Mercury: Fraction 1B (HF) : Method 29 Mercury: Fraction 1B (HF) by CVAAS										
M29 : 0.1N HNO3 (Probe Rinse) M5/29 Blank	E521A	08-Apr-2025	05-May-2025	28 days	28 days	✓	05-May-2025	28 days	28 days	✓
Method 29 Mercury: Fraction 1B (HF) : Method 29 Mercury: Fraction 1B (HF) by CVAAS										
M29 : 0.1N HNO3 (Probe Rinse) M5/29 CSI Test 1	E521A	08-Apr-2025	05-May-2025	28 days	28 days	✓	05-May-2025	28 days	28 days	✓
Method 29 Mercury: Fraction 1B (HF) : Method 29 Mercury: Fraction 1B (HF) by CVAAS										
M29 : 0.1N HNO3 (Probe Rinse) M5/29 CSI Test 2	E521A	08-Apr-2025	05-May-2025	28 days	28 days	✓	05-May-2025	28 days	28 days	✓
Method 29 Mercury: Fraction 1B (HF) : Method 29 Mercury: Fraction 1B (HF) by CVAAS										
M29 : 0.1N HNO3 (Probe Rinse) M5/29 CSI Test 3	E521A	08-Apr-2025	05-May-2025	28 days	28 days	✓	05-May-2025	28 days	28 days	✓
Method 29 Mercury: Fraction 1B (HF) : Method 29 Mercury: Fraction 1B (HF) by CVAAS										
M29 : 0.1N HNO3 (Probe Rinse) M5/29 ECA Test 1	E521A	08-Apr-2025	05-May-2025	28 days	28 days	✓	05-May-2025	28 days	28 days	✓
Method 29 Mercury: Fraction 1B (HF) : Method 29 Mercury: Fraction 1B (HF) by CVAAS										
M29 : 0.1N HNO3 (Probe Rinse) M5/29 ECA Test 2	E521A	08-Apr-2025	05-May-2025	28 days	28 days	✓	05-May-2025	28 days	28 days	✓
Method 29 Mercury: Fraction 1B (HF) : Method 29 Mercury: Fraction 1B (HF) by CVAAS										
M29 : 0.1N HNO3 (Probe Rinse) M5/29 ECA Test 3	E521A	08-Apr-2025	05-May-2025	28 days	28 days	✓	05-May-2025	28 days	28 days	✓
Method 29 Mercury: Fraction 2B (KMnO4/H2SO4) : Method 29 Mercury: Fraction 2B by CVAAS										
M29 : 5% HNO3 + 10% H2O2 (Impingers) M5/29 Blank	E521B	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	05-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 2B (KMnO4/H2SO4) : Method 29 Mercury: Fraction 2B by CVAAS										
M29 : 5% HNO3 + 10% H2O2 (Impingers) M5/29 CSI Test 1	E521B	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	05-May-2025	28 days	23 days	✓

Matrix: **Air**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation* Preparation Date	Holding Times Rec	Holding Times Actual	Eval	*Analysis* Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Method 29 Mercury: Fraction 2B (KMnO4/H2SO4) : Method 29 Mercury: Fraction 2B by CVAAS										
M29 : 5% HNO3 + 10% H2O2 (Impingers) M5/29 CSI Test 2	E521B	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	05-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 2B (KMnO4/H2SO4) : Method 29 Mercury: Fraction 2B by CVAAS										
M29 : 5% HNO3 + 10% H2O2 (Impingers) M5/29 CSI Test 3	E521B	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	05-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 2B (KMnO4/H2SO4) : Method 29 Mercury: Fraction 2B by CVAAS										
M29 : 5% HNO3 + 10% H2O2 (Impingers) M5/29 ECA Test 1	E521B	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	05-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 2B (KMnO4/H2SO4) : Method 29 Mercury: Fraction 2B by CVAAS										
M29 : 5% HNO3 + 10% H2O2 (Impingers) M5/29 ECA Test 2	E521B	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	05-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 2B (KMnO4/H2SO4) : Method 29 Mercury: Fraction 2B by CVAAS										
M29 : 5% HNO3 + 10% H2O2 (Impingers) M5/29 ECA Test 3	E521B	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	05-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 3A (KMnO4/H2SO4)) : Method 29 Mercury: Fraction 3A by CVAAS										
M29 : 0.1N HNO3 (Impinger Rinse) M5/29 CSI Test 1	E521C	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	05-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 3A (KMnO4/H2SO4)) : Method 29 Mercury: Fraction 3A by CVAAS										
M29 : 0.1N HNO3 (Impinger Rinse) M5/29 CSI Test 2	E521C	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	05-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 3A (KMnO4/H2SO4)) : Method 29 Mercury: Fraction 3A by CVAAS										
M29 : 0.1N HNO3 (Impinger Rinse) M5/29 CSI Test 3	E521C	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	05-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 3A (KMnO4/H2SO4)) : Method 29 Mercury: Fraction 3A by CVAAS										
M29 : 0.1N HNO3 (Impinger Rinse) M5/29 ECA Test 1	E521C	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	05-May-2025	28 days	23 days	✓

Matrix: **Air**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
Container / Client Sample ID(s)			*Preparation Date*	*Holding Times Rec*	*Holding Times Actual*	*Eval*	*Analysis Date*	*Holding Times Rec*	*Holding Times Actual*	*Eval*
Method 29 Mercury: Fraction 3A (KMnO4/H2SO4)) : Method 29 Mercury: Fraction 3A by CVAAS										
M29 : 0.1N HNO3 (Impinger Rinse) M5/29 ECA Test 2	E521C	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	05-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 3A (KMnO4/H2SO4)) : Method 29 Mercury: Fraction 3A by CVAAS										
M29 : 0.1N HNO3 (Impinger Rinse) M5/29 ECA Test 3	E521C	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	05-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 3B (KMnO4/H2SO4) : Method 29 Mercury: Fraction 3B by CVAAS										
M29 : 4% KMNO4 + 10% H2SO4 (Impingers) M5/29 Blank	E521D	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	02-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 3B (KMnO4/H2SO4) : Method 29 Mercury: Fraction 3B by CVAAS										
M29 : 4% KMNO4 + 10% H2SO4 (Impingers) M5/29 CSI Test 1	E521D	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	02-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 3B (KMnO4/H2SO4) : Method 29 Mercury: Fraction 3B by CVAAS										
M29 : 4% KMNO4 + 10% H2SO4 (Impingers) M5/29 CSI Test 2	E521D	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	02-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 3B (KMnO4/H2SO4) : Method 29 Mercury: Fraction 3B by CVAAS										
M29 : 4% KMNO4 + 10% H2SO4 (Impingers) M5/29 CSI Test 3	E521D	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	02-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 3B (KMnO4/H2SO4) : Method 29 Mercury: Fraction 3B by CVAAS										
M29 : 4% KMNO4 + 10% H2SO4 (Impingers) M5/29 ECA Test 1	E521D	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	02-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 3B (KMnO4/H2SO4) : Method 29 Mercury: Fraction 3B by CVAAS										
M29 : 4% KMNO4 + 10% H2SO4 (Impingers) M5/29 ECA Test 2	E521D	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	02-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 3B (KMnO4/H2SO4) : Method 29 Mercury: Fraction 3B by CVAAS										
M29 : 4% KMNO4 + 10% H2SO4 (Impingers) M5/29 ECA Test 3	E521D	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	02-May-2025	28 days	23 days	✓

Matrix: **Air**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis: Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Method 29 Mercury: Fraction 3C (KMnO4/H2SO4) : Method 29 Mercury: Fraction 3C by CVAAS										
M29 : 8N HCl (Impinger Rinse) M5/29 Blank	E521E	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	02-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 3C (KMnO4/H2SO4) : Method 29 Mercury: Fraction 3C by CVAAS										
M29 : 8N HCl (Impinger Rinse) M5/29 CSI Test 1	E521E	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	02-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 3C (KMnO4/H2SO4) : Method 29 Mercury: Fraction 3C by CVAAS										
M29 : 8N HCl (Impinger Rinse) M5/29 CSI Test 2	E521E	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	02-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 3C (KMnO4/H2SO4) : Method 29 Mercury: Fraction 3C by CVAAS										
M29 : 8N HCl (Impinger Rinse) M5/29 CSI Test 3	E521E	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	02-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 3C (KMnO4/H2SO4) : Method 29 Mercury: Fraction 3C by CVAAS										
M29 : 8N HCl (Impinger Rinse) M5/29 ECA Test 1	E521E	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	02-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 3C (KMnO4/H2SO4) : Method 29 Mercury: Fraction 3C by CVAAS										
M29 : 8N HCl (Impinger Rinse) M5/29 ECA Test 2	E521E	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	02-May-2025	28 days	23 days	✓
Method 29 Mercury: Fraction 3C (KMnO4/H2SO4) : Method 29 Mercury: Fraction 3C by CVAAS										
M29 : 8N HCl (Impinger Rinse) M5/29 ECA Test 3	E521E	08-Apr-2025	30-Apr-2025	28 days	23 days	✓	02-May-2025	28 days	23 days	✓
Method 29 Metals: Fraction 1A (HF) : Method 29 Metals: Fraction 1A (hydrofluoric) by ICPMS										
M29 : 0.1N HNO3 (Probe Rinse) M5/29 Blank	E457A	08-Apr-2025	05-May-2025	28 days	28 days	✓	06-May-2025	28 days	28 days	✓
Method 29 Metals: Fraction 1A (HF) : Method 29 Metals: Fraction 1A (hydrofluoric) by ICPMS										
M29 : 0.1N HNO3 (Probe Rinse) M5/29 CSI Test 1	E457A	08-Apr-2025	05-May-2025	28 days	28 days	✓	06-May-2025	28 days	28 days	✓

Matrix: **Air**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Method 29 Metals: Fraction 1A (HF) : Method 29 Metals: Fraction 1A (hydrofluoric) by ICPMS										
M29 : 0.1N HNO3 (Probe Rinse) M5/29 CSI Test 2	E457A	08-Apr-2025	05-May-2025	28 days	28 days	✓	06-May-2025	28 days	28 days	✓
Method 29 Metals: Fraction 1A (HF) : Method 29 Metals: Fraction 1A (hydrofluoric) by ICPMS										
M29 : 0.1N HNO3 (Probe Rinse) M5/29 CSI Test 3	E457A	08-Apr-2025	05-May-2025	28 days	28 days	✓	06-May-2025	28 days	28 days	✓
Method 29 Metals: Fraction 1A (HF) : Method 29 Metals: Fraction 1A (hydrofluoric) by ICPMS										
M29 : 0.1N HNO3 (Probe Rinse) M5/29 ECA Test 1	E457A	08-Apr-2025	05-May-2025	28 days	28 days	✓	06-May-2025	28 days	28 days	✓
Method 29 Metals: Fraction 1A (HF) : Method 29 Metals: Fraction 1A (hydrofluoric) by ICPMS										
M29 : 0.1N HNO3 (Probe Rinse) M5/29 ECA Test 2	E457A	08-Apr-2025	05-May-2025	28 days	28 days	✓	06-May-2025	28 days	28 days	✓
Method 29 Metals: Fraction 1A (HF) : Method 29 Metals: Fraction 1A (hydrofluoric) by ICPMS										
M29 : 0.1N HNO3 (Probe Rinse) M5/29 ECA Test 3	E457A	08-Apr-2025	05-May-2025	28 days	28 days	✓	06-May-2025	28 days	28 days	✓
Particulates : Particulates in Stack Emission Acetone Rinse by Gravimetry										
M5/M29 : Acetone (Probe Rinse) M5/29 Blank	E897A	08-Apr-2025	----	----	----		29-Apr-2025	----	----	
Particulates : Particulates in Stack Emission Acetone Rinse by Gravimetry										
M5/M29 : Acetone (Probe Rinse) M5/29 CSI Test 1	E897A	08-Apr-2025	----	----	----		29-Apr-2025	----	----	
Particulates : Particulates in Stack Emission Acetone Rinse by Gravimetry										
M5/M29 : Acetone (Probe Rinse) M5/29 CSI Test 2	E897A	08-Apr-2025	----	----	----		29-Apr-2025	----	----	
Particulates : Particulates in Stack Emission Acetone Rinse by Gravimetry										
M5/M29 : Acetone (Probe Rinse) M5/29 CSI Test 3	E897A	08-Apr-2025	----	----	----		29-Apr-2025	----	----	

Matrix: **Air**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Extraction / Preparation: Holding Times Rec	Extraction / Preparation: Holding Times Actual	Extraction / Preparation: Eval	Analysis: Analysis Date	Analysis: Holding Times Rec	Analysis: Holding Times Actual	Analysis: Eval
Particulates : Particulates in Stack Emission Acetone Rinse by Gravimetry										
M5/M29 : Acetone (Probe Rinse) M5/29 ECA Test 1	E897A	08-Apr-2025	----	----	----		29-Apr-2025	----	----	
Particulates : Particulates in Stack Emission Acetone Rinse by Gravimetry										
M5/M29 : Acetone (Probe Rinse) M5/29 ECA Test 2	E897A	08-Apr-2025	----	----	----		29-Apr-2025	----	----	
Particulates : Particulates in Stack Emission Acetone Rinse by Gravimetry										
M5/M29 : Acetone (Probe Rinse) M5/29 ECA Test 3	E897A	08-Apr-2025	----	----	----		29-Apr-2025	----	----	
Particulates : Particulates in Stack Emission Filter by Gravimetry										
M5/M29 : Quartz Filter M5/29 Blank	E890	08-Apr-2025	----	----	----		25-Apr-2025	----	----	
Particulates : Particulates in Stack Emission Filter by Gravimetry										
M5/M29 : Quartz Filter M5/29 CSI Test 1	E890	08-Apr-2025	----	----	----		25-Apr-2025	----	----	
Particulates : Particulates in Stack Emission Filter by Gravimetry										
M5/M29 : Quartz Filter M5/29 CSI Test 2	E890	08-Apr-2025	----	----	----		25-Apr-2025	----	----	
Particulates : Particulates in Stack Emission Filter by Gravimetry										
M5/M29 : Quartz Filter M5/29 CSI Test 3	E890	08-Apr-2025	----	----	----		25-Apr-2025	----	----	
Particulates : Particulates in Stack Emission Filter by Gravimetry										
M5/M29 : Quartz Filter M5/29 ECA Test 1	E890	08-Apr-2025	----	----	----		25-Apr-2025	----	----	
Particulates : Particulates in Stack Emission Filter by Gravimetry										
M5/M29 : Quartz Filter M5/29 ECA Test 2	E890	08-Apr-2025	----	----	----		25-Apr-2025	----	----	

Matrix: **Air**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation* Preparation Date	Holding Times Rec	Holding Times Actual	Eval	*Analysis* Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Particulates : Particulates in Stack Emission Filter by Gravimetry										
M5/M29 : Quartz Filter M5/29 ECA Test 3	E890	08-Apr-2025	----	----	----		25-Apr-2025	----	----	
Particulates : Stack Emission Acetone Rinse Mass by Gravimetry										
M5/M29 : Acetone (Probe Rinse) M5/29 Blank	E898A	08-Apr-2025	----	----	----		24-Apr-2025	----	----	
Particulates : Stack Emission Acetone Rinse Mass by Gravimetry										
M5/M29 : Acetone (Probe Rinse) M5/29 CSI Test 1	E898A	08-Apr-2025	----	----	----		24-Apr-2025	----	----	
Particulates : Stack Emission Acetone Rinse Mass by Gravimetry										
M5/M29 : Acetone (Probe Rinse) M5/29 CSI Test 2	E898A	08-Apr-2025	----	----	----		24-Apr-2025	----	----	
Particulates : Stack Emission Acetone Rinse Mass by Gravimetry										
M5/M29 : Acetone (Probe Rinse) M5/29 CSI Test 3	E898A	08-Apr-2025	----	----	----		24-Apr-2025	----	----	
Particulates : Stack Emission Acetone Rinse Mass by Gravimetry										
M5/M29 : Acetone (Probe Rinse) M5/29 ECA Test 1	E898A	08-Apr-2025	----	----	----		24-Apr-2025	----	----	
Particulates : Stack Emission Acetone Rinse Mass by Gravimetry										
M5/M29 : Acetone (Probe Rinse) M5/29 ECA Test 2	E898A	08-Apr-2025	----	----	----		24-Apr-2025	----	----	
Particulates : Stack Emission Acetone Rinse Mass by Gravimetry										
M5/M29 : Acetone (Probe Rinse) M5/29 ECA Test 3	E898A	08-Apr-2025	----	----	----		24-Apr-2025	----	----	

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Air**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Method 29 Metals: Fraction 1A (hydrofluoric) by ICPMS	E457A	1980324	1	11	9.0	5.0	✓
Method 29 Metals: Fraction 2A by ICPMS	E457B	1980333	1	12	8.3	5.0	✓
Method 29 Mercury: Fraction 1B (HF) by CVAAS	E521A	1980325	1	11	9.0	5.0	✓
Method 29 Mercury: Fraction 2B by CVAAS	E521B	1973613	1	12	8.3	5.0	✓
Method 29 Mercury: Fraction 3A by CVAAS	E521C	1973616	1	7	14.2	5.0	✓
Method 29 Mercury: Fraction 3B by CVAAS	E521D	1973614	1	12	8.3	5.0	✓
Method 29 Mercury: Fraction 3C by CVAAS	E521E	1973615	1	12	8.3	5.0	✓
Particulates in Stack Emission Filter by Gravimetry	E890	1961659	1	11	9.0	5.0	✓
Particulates in Stack Emission Acetone Rinse by Gravimetry	E897A	1960802	1	11	9.0	5.0	✓
Stack Emission Acetone Rinse Mass by Gravimetry	E898A	1960801	1	11	9.0	5.0	✓
Laboratory Control Samples (LCS)							
Method 29 Metals: Fraction 1A (hydrofluoric) by ICPMS	E457A	1980324	1	11	9.0	5.0	✓
Method 29 Metals: Fraction 2A by ICPMS	E457B	1980333	1	12	8.3	5.0	✓
Method 29 Mercury: Fraction 1B (HF) by CVAAS	E521A	1980325	1	11	9.0	5.0	✓
Method 29 Mercury: Fraction 2B by CVAAS	E521B	1973613	1	12	8.3	5.0	✓
Method 29 Mercury: Fraction 3A by CVAAS	E521C	1973616	1	7	14.2	5.0	✓
Method 29 Mercury: Fraction 3B by CVAAS	E521D	1973614	1	12	8.3	5.0	✓
Method 29 Mercury: Fraction 3C by CVAAS	E521E	1973615	1	12	8.3	5.0	✓
Method Blanks (MB)							
Method 29 Metals: Fraction 1A (hydrofluoric) by ICPMS	E457A	1980324	1	11	9.0	5.0	✓
Method 29 Metals: Fraction 2A by ICPMS	E457B	1980333	1	12	8.3	5.0	✓
Method 29 Mercury: Fraction 1B (HF) by CVAAS	E521A	1980325	1	11	9.0	5.0	✓
Method 29 Mercury: Fraction 2B by CVAAS	E521B	1973613	1	12	8.3	5.0	✓
Method 29 Mercury: Fraction 3A by CVAAS	E521C	1973616	1	7	14.2	5.0	✓
Method 29 Mercury: Fraction 3B by CVAAS	E521D	1973614	1	12	8.3	5.0	✓
Method 29 Mercury: Fraction 3C by CVAAS	E521E	1973615	1	12	8.3	5.0	✓
Particulates in Stack Emission Filter by Gravimetry	E890	1961659	1	11	9.0	5.0	✓
Particulates in Stack Emission Acetone Rinse by Gravimetry	E897A	1960802	1	11	9.0	5.0	✓
Stack Emission Acetone Rinse Mass by Gravimetry	E898A	1960801	1	11	9.0	5.0	✓
Matrix Spikes (MS)							
Method 29 Metals: Fraction 1A (hydrofluoric) by ICPMS	E457A	1980324	1	11	9.0	5.0	✓
Method 29 Metals: Fraction 2A by ICPMS	E457B	1980333	1	12	8.3	5.0	✓
Method 29 Mercury: Fraction 1B (HF) by CVAAS	E521A	1980325	1	11	9.0	5.0	✓
Method 29 Mercury: Fraction 2B by CVAAS	E521B	1973613	1	12	8.3	5.0	✓
Method 29 Mercury: Fraction 3A by CVAAS	E521C	1973616	1	7	14.2	5.0	✓

Matrix: **Air**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Method 29 Mercury: Fraction 3B by CVAAS	E521D	1973614	1	12	8.3	5.0	✓
Method 29 Mercury: Fraction 3C by CVAAS	E521E	1973615	1	12	8.3	5.0	✓
Matrix Spike Duplicates (MSD)							
Method 29 Metals: Fraction 1A (hydrofluoric) by ICPMS	E457A	1980324	1	11	9.0	5.0	✓
Method 29 Metals: Fraction 2A by ICPMS	E457B	1980333	1	12	8.3	5.0	✓
Method 29 Mercury: Fraction 1B (HF) by CVAAS	E521A	1980325	1	11	9.0	5.0	✓
Method 29 Mercury: Fraction 2B by CVAAS	E521B	1973613	1	12	8.3	5.0	✓
Method 29 Mercury: Fraction 3A by CVAAS	E521C	1973616	1	7	14.2	5.0	✓
Method 29 Mercury: Fraction 3B by CVAAS	E521D	1973614	1	12	8.3	5.0	✓
Method 29 Mercury: Fraction 3C by CVAAS	E521E	1973615	1	12	8.3	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by “mod”).

Analytical Methods	*Method / Lab*	*Matrix*	*Method Reference*	*Method Descriptions*
Method 29 Metals: Fraction 1A (hydrofluoric) by ICPMS	E457A ALS Environmental - Burlington	Air	EPA Method 29 (preparation), EPA Method 6020B (analytical)	Front-half (FH) sample fractions are combined for closed-vessel microwave digestion in hydrofluoric acid. After digestion, samples are submitted to instruments for analysis by ICP-MS.
Method 29 Metals: Fraction 2A by ICPMS	E457B ALS Environmental - Burlington	Air	EPA Method 29 (preparation), EPA Method 6020B (analytical)	Back-half (BH) samples are digested using an open vessel procedure. After digestion, samples are submitted to instruments for analysis by ICP-MS.
Method 29 Mercury: Fraction 1B (HF) by CVAAS	E521A ALS Environmental - Burlington	Air	EPA Method 29 (preparation), EPA Method 7470A (analysis)	After microwave digestion, a sub-sample is re-digested in oxidizing reagents, using an open-vessel hotblock method. Samples are treated with a reductant to facilitate analysis by CVAA.
Method 29 Mercury: Fraction 2B by CVAAS	E521B ALS Environmental - Burlington	Air	EPA Method 29 (preparation), EPA Method 7470A (analytical)	A sub-sample is digested in oxidizing reagents, using an open-vessel hotblock method. Samples are treated with a reductant to facilitate analysis by CVAA.
Method 29 Mercury: Fraction 3A by CVAAS	E521C ALS Environmental - Burlington	Air	EPA Method 29 (preparation), EPA 7470A (analytical)	A sub-sample is digested in oxidizing reagents, using an open-vessel hotblock method. Samples are treated with a reductant to facilitate analysis by CVAA.
Method 29 Mercury: Fraction 3B by CVAAS	E521D ALS Environmental - Burlington	Air	EPA Method 29 (preparation), EPA Method 7470A (analysis)	Samples are filtered, and rinsed, to remove solids. A sub-sample of the filtrate is digested in oxidizing reagents, using an open-vessel hotblock method. Samples are treated with a reductant to facilitate analysis by CVAA.
Method 29 Mercury: Fraction 3C by CVAAS	E521E ALS Environmental - Burlington	Air	EPA Method 29 (preparation), EPA Method 7470A (analytical)	Filter and solids from the filtration of Fraction 3B are placed into a vessel and covered with 8N HCl. This is then re-filtered and a sub-sample of the filtrate is digested in oxidizing reagents, using an open-vessel hotblock method. Samples are treated with a reductant to facilitate analysis by CVAA.
Particulates in Stack Emission Filter by Gravimetry	E890 ALS Environmental - Burlington	Air	EPA Method 5 (mod.)	Gravimetric analysis of particulate air samples collected on filters.
Particulates in Stack Emission Acetone Rinse by Gravimetry	E897A ALS Environmental - Burlington	Air	EPA Method 5 (mod.)	Gravimetric analysis of particulate air samples collected in acetone rinses.
Stack Emission Acetone Rinse Mass by Gravimetry	E898A ALS Environmental - Burlington	Air	EPA Method 5 (mod.)	Gravimetric analysis of acetone mass from rinses.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Metals in Stack Analysis (M29)	EC457 ALS Environmental - Burlington	Air	Result summation	Summation of front half and back-half to provide "combined" result.
Hg Fraction 2B (Method 29) - CALC	EC521B ALS Environmental - Burlington	Air	unit conversion	Convert ug/L to ug/sample
Hg Fraction 3A (Method 29) - CALC	EC521C ALS Environmental - Burlington	Air	unit conversion	Convert ug/L to ug/sample
Hg Fraction 3B (Method 29) - CALC	EC521D ALS Environmental - Burlington	Air	unit conversion	Convert ug/L to ug/sample
Hg Fraction 3C (Method 29) - CALC	EC521E ALS Environmental - Burlington	Air	unit conversion	Convert ug/L to ug/sample

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sample preparation (HF) for Fraction 1A/1B Stack Metals	EP457A ALS Environmental - Burlington	Air	EPA Method 29 (preparation)	Samples are digested using hydrofluoric acid in a closed vessel procedure. Analysis by ICP-MS (1A) or CVAA (1B) follows.
Sample preparation for Fraction 2A/2B Stack Metals	EP457B ALS Environmental - Burlington	Air	EPA Method 29 (preparation)	Samples are digested using an open vessel procedure. Analysis by ICP-MS (2A) or CVAA (2B) follows.

QUALITY CONTROL REPORT

Work Order	: **BU2500945**	Page	: 1 of 12
Client	: RWDI Air Inc.	Laboratory	: ALS Environmental - Burlington
Contact	: Oluwatobi Odumoye	Account Manager	: Robert Chin
Address	: 600 Southgate Drive Guelph ON Canada N1G 4P6	Address	: 1435 Norjohn Court, Unit 1 Burlington, Ontario Canada L7L 0E6
Telephone	: 519 823 1311	Telephone	: +1 905 331 3111
Project	: 2509873 SMC St. Mary's	Date Samples Received	: 15-Apr-2025 11:35
PO	: 2509873	Date Analysis Commenced	: 24-Apr-2025
C-O-C number	: ----	Issue Date	: 07-May-2025 16:52
Sampler	: Adam Tran		
Site	:		
Quote number	: SMC St Marys		
No. of samples received	: 7		
No. of samples analysed	: 7		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Matrix Spike Duplicate (MSD) Report; Relative Percent Difference (RPD)
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Milithza Silva	Manager - Inorganics	Burlington Inorganics, Burlington, Ontario
Milithza Silva	Manager - Inorganics	Burlington Metals, Burlington, Ontario

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Air**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Particulates (QC Lot: 1960801)											
BU2500945-001	M5/29 CSI Test 1	mass, acetone [FRONT]	----	E898A	0.40	g	129	129	0.00%	10%	----
Particulates (QC Lot: 1960802)											
BU2500945-001	M5/29 CSI Test 1	particulate matter, acetone impinger [FRONT]	----	E897A	0.4	mg	121	121	0.00%	10%	----
Particulates (QC Lot: 1961659)											
BU2500945-001	M5/29 CSI Test 1	Particulate matter, filter	----	E890	0.6	mg	125	125	0.00%	20%	----
Metals (QC Lot: 1980333)											
BU2500945-001	M5/29 CSI Test 1	Arsenic	7440-38-2	E457B	0.50	µg/sample	<0.50	<0.50	0	Diff <2x LOR	J
		Barium	7440-39-3	E457B	2.5	µg/sample	<2.5	<2.5	0	Diff <2x LOR	J
		Beryllium	7440-41-7	E457B	0.10	µg/sample	<0.10	<0.10	0	Diff <2x LOR	J
		Cadmium	7440-43-9	E457B	0.050	µg/sample	0.088	0.087	0.002	Diff <2x LOR	J
		Chromium	7440-47-3	E457B	0.50	µg/sample	0.67	0.70	0.02	Diff <2x LOR	J
		Cobalt	7440-48-4	E457B	0.10	µg/sample	0.11	0.12	0.01	Diff <2x LOR	J
		Copper	7440-50-8	E457B	0.50	µg/sample	8.33	8.50	2.05%	20%	----
		Lead	7439-92-1	E457B	0.25	µg/sample	4.52	4.40	2.69%	20%	----
		Manganese	7439-96-5	E457B	0.25	µg/sample	12.8	13.0	1.28%	20%	----
		Nickel	7440-02-0	E457B	0.10	µg/sample	1.14	1.18	3.37%	20%	----
		Selenium	7782-49-2	E457B	1.0	µg/sample	1.1	1.1	0.02	Diff <2x LOR	J
		Silver	7440-22-4	E457B	0.10	µg/sample	<0.10	<0.10	0	Diff <2x LOR	J
		Thallium	7440-28-0	E457B	0.10	µg/sample	1.33	1.29	3.08%	20%	----
		Zinc	7440-66-6	E457B	3.0	µg/sample	12.3	12.6	0.3	Diff <2x LOR	J
Method 29 Metals: Fraction 1A (HF) (QC Lot: 1980324)											
BU2500945-001	M5/29 CSI Test 1	Arsenic	7440-38-2	E457A	1.0	µg/sample	1.1	<1.0	0.09	Diff <2x LOR	J
		Barium	7440-39-3	E457A	5.0	µg/sample	29.0	27.6	1.3	Diff <2x LOR	J
		Beryllium	7440-41-7	E457A	0.20	µg/sample	<0.20	<0.20	0	Diff <2x LOR	J
		Cadmium	7440-43-9	E457A	0.10	µg/sample	1.28	1.33	3.22%	20%	----
		Chromium	7440-47-3	E457A	1.0	µg/sample	58.4	55.6	4.97%	20%	----
		Cobalt	7440-48-4	E457A	0.20	µg/sample	1.17	1.06	0.10	Diff <2x LOR	J
		Copper	7440-50-8	E457A	1.0	µg/sample	7.8	7.7	0.04	Diff <2x LOR	J
		Lead	7439-92-1	E457A	0.50	µg/sample	41.6	42.3	1.60%	20%	----
		Manganese	7439-96-5	E457A	0.50	µg/sample	110	106	3.47%	20%	----

Sub-Matrix: **Air**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
					Laboratory Duplicate (DUP) Report						
Method 29 Metals: Fraction 1A (HF) (QC Lot: 1980324) - continued											
BU2500945-001	M5/29 CSI Test 1	Nickel	7440-02-0	E457A	0.20	µg/sample	18.1	17.2	4.67%	20%	----
		Selenium	7782-49-2	E457A	2.0	µg/sample	<2.0	<2.0	0	Diff <2x LOR	J
		Silver	7440-22-4	E457A	0.20	µg/sample	0.76	0.75	0.02	Diff <2x LOR	J
		Thallium	7440-28-0	E457A	0.20	µg/sample	16.3	16.5	1.04%	20%	----
		Zinc	7440-66-6	E457A	6.0	µg/sample	139	136	1.67%	20%	----
Method 29 Mercury: Fraction 1B (HF) (QC Lot: 1980325)											
BU2500945-001	M5/29 CSI Test 1	Mercury	7439-97-6	E521A	0.022	µg/sample	0.068	0.067	0.002	Diff <2x LOR	J
Method 29 Mercury: Fraction 2B (KMnO4/H2SO4) (QC Lot: 1973613)											
BU2500945-001	M5/29 CSI Test 1	Mercury	7439-97-6	E521B	0.75	µg/L	<0.75	<0.75	0	Diff <2x LOR	J
Method 29 Mercury: Fraction 3A (KMnO4/H2SO4)) (QC Lot: 1973616)											
BU2500945-001	M5/29 CSI Test 1	Mercury	7439-97-6	E521C	0.15	µg/L	<0.15	<0.15	0	Diff <2x LOR	J
Method 29 Mercury: Fraction 3B (KMnO4/H2SO4) (QC Lot: 1973614)											
BU2500945-001	M5/29 CSI Test 1	Mercury	7439-97-6	E521D	0.750	µg/L	29.2	29.7	1.53%	20%	----
Method 29 Mercury: Fraction 3C (KMnO4/H2SO4) (QC Lot: 1973615)											
BU2500945-001	M5/29 CSI Test 1	Mercury	7439-97-6	E521E	0.75	µg/L	1.38	1.39	0.01	Diff <2x LOR	J

Qualifiers

Qualifier	*Description*
J	*Duplicate results and limits are expressed in terms of absolute difference.*

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Air**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Particulates (QCLot: 1960801)						
mass, acetone [FRONT]	----	E898A	0.4	g	24.7	----
Particulates (QCLot: 1960802)						
particulate matter, acetone impinger [FRONT]	----	E897A	0.4	mg	<0.4	----
Particulates (QCLot: 1961659)						
Particulate matter, filter	----	E890	0.6	mg	<0.6	----
Metals (QCLot: 1980333)						
Arsenic	7440-38-2	E457B	0.5	µg/sample	<0.50	----
Barium	7440-39-3	E457B	2.5	µg/sample	<2.5	----
Beryllium	7440-41-7	E457B	0.1	µg/sample	<0.10	----
Cadmium	7440-43-9	E457B	0.05	µg/sample	<0.050	----
Chromium	7440-47-3	E457B	0.5	µg/sample	<0.50	----
Cobalt	7440-48-4	E457B	0.1	µg/sample	<0.10	----
Copper	7440-50-8	E457B	0.5	µg/sample	<0.50	----
Lead	7439-92-1	E457B	0.25	µg/sample	<0.25	----
Manganese	7439-96-5	E457B	0.25	µg/sample	<0.25	----
Nickel	7440-02-0	E457B	0.1	µg/sample	<0.10	----
Selenium	7782-49-2	E457B	1	µg/sample	<1.0	----
Silver	7440-22-4	E457B	0.1	µg/sample	<0.10	----
Thallium	7440-28-0	E457B	0.1	µg/sample	<0.10	----
Zinc	7440-66-6	E457B	3	µg/sample	<3.0	----
Method 29 Metals: Fraction 1A (HF) (QCLot: 1980324)						
Arsenic	7440-38-2	E457A	1	µg/sample	<1.0	----
Barium	7440-39-3	E457A	5	µg/sample	<5.0	----
Beryllium	7440-41-7	E457A	0.2	µg/sample	<0.20	----
Cadmium	7440-43-9	E457A	0.1	µg/sample	<0.10	----
Chromium	7440-47-3	E457A	1	µg/sample	<1.0	----
Cobalt	7440-48-4	E457A	0.2	µg/sample	<0.20	----
Copper	7440-50-8	E457A	1	µg/sample	<1.0	----
Lead	7439-92-1	E457A	0.5	µg/sample	<0.50	----
Manganese	7439-96-5	E457A	0.5	µg/sample	<0.50	----
Nickel	7440-02-0	E457A	0.2	µg/sample	# 2.35	B
Selenium	7782-49-2	E457A	2	µg/sample	<2.0	----

Sub-Matrix: **Air**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Method 29 Metals: Fraction 1A (HF) (QCLot: 1980324) - continued						
Silver	7440-22-4	E457A	0.2	µg/sample	<0.20	----
Thallium	7440-28-0	E457A	0.2	µg/sample	<0.20	----
Zinc	7440-66-6	E457A	6	µg/sample	<6.0	----
Method 29 Mercury: Fraction 1B (HF) (QCLot: 1980325)						
Mercury	7439-97-6	E521A	0.022	µg/sample	<0.022	----
Method 29 Mercury: Fraction 2B (KMnO4/H2SO4) (QCLot: 1973613)						
Mercury	7439-97-6	E521B	0.75	µg/L	<0.75	----
Method 29 Mercury: Fraction 3A (KMnO4/H2SO4)) (QCLot: 1973616)						
Mercury	7439-97-6	E521C	0.15	µg/L	<0.15	----
Method 29 Mercury: Fraction 3B (KMnO4/H2SO4) (QCLot: 1973614)						
Mercury	7439-97-6	E521D	0.075	µg/L	<0.075	----
Method 29 Mercury: Fraction 3C (KMnO4/H2SO4) (QCLot: 1973615)						
Mercury	7439-97-6	E521E	0.75	µg/L	<0.75	----

Qualifiers

Qualifier	*Description*
B	*Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.*

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Air**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 1980333)									
Arsenic	7440-38-2	E457B	0.5	µg/sample	100 µg/sample	98.4	80.0	120	----
Barium	7440-39-3	E457B	2.5	µg/sample	25 µg/sample	95.2	80.0	120	----
Beryllium	7440-41-7	E457B	0.1	µg/sample	10 µg/sample	91.4	80.0	120	----
Cadmium	7440-43-9	E457B	0.05	µg/sample	10 µg/sample	93.7	80.0	120	----
Chromium	7440-47-3	E457B	0.5	µg/sample	25 µg/sample	98.9	80.0	120	----
Cobalt	7440-48-4	E457B	0.1	µg/sample	25 µg/sample	96.1	80.0	120	----
Copper	7440-50-8	E457B	0.5	µg/sample	25 µg/sample	96.4	80.0	120	----
Lead	7439-92-1	E457B	0.25	µg/sample	50 µg/sample	94.4	80.0	120	----
Manganese	7439-96-5	E457B	0.25	µg/sample	25 µg/sample	99.2	80.0	120	----
Nickel	7440-02-0	E457B	0.1	µg/sample	50 µg/sample	94.9	80.0	120	----
Selenium	7782-49-2	E457B	1	µg/sample	100 µg/sample	93.4	80.0	120	----
Silver	7440-22-4	E457B	0.1	µg/sample	10 µg/sample	86.2	80.0	120	----
Thallium	7440-28-0	E457B	0.1	µg/sample	100 µg/sample	95.6	80.0	120	----
Zinc	7440-66-6	E457B	3	µg/sample	50 µg/sample	95.5	80.0	120	----
Method 29 Metals: Fraction 1A (HF) (QCLot: 1980324)									
Arsenic	7440-38-2	E457A	1	µg/sample	50 µg/sample	102	80.0	120	----
Barium	7440-39-3	E457A	5	µg/sample	12.5 µg/sample	# 69.2	80.0	120	LCS-L
Beryllium	7440-41-7	E457A	0.2	µg/sample	5 µg/sample	82.1	80.0	120	----
Cadmium	7440-43-9	E457A	0.1	µg/sample	5 µg/sample	90.5	80.0	120	----
Chromium	7440-47-3	E457A	1	µg/sample	12.5 µg/sample	# 71.3	80.0	120	LCS-L
Cobalt	7440-48-4	E457A	0.2	µg/sample	12.5 µg/sample	96.0	80.0	120	----
Copper	7440-50-8	E457A	1	µg/sample	12.5 µg/sample	99.3	80.0	120	----
Lead	7439-92-1	E457A	0.5	µg/sample	25 µg/sample	92.9	80.0	120	----
Manganese	7439-96-5	E457A	0.5	µg/sample	12.5 µg/sample	# 368	80.0	120	RRQC
Nickel	7440-02-0	E457A	0.2	µg/sample	25 µg/sample	95.1	80.0	120	----
Selenium	7782-49-2	E457A	2	µg/sample	50 µg/sample	93.3	80.0	120	----
Silver	7440-22-4	E457A	0.2	µg/sample	5 µg/sample	83.4	80.0	120	----
Thallium	7440-28-0	E457A	0.2	µg/sample	50 µg/sample	91.6	80.0	120	----
Zinc	7440-66-6	E457A	6	µg/sample	25 µg/sample	96.9	80.0	120	----
Method 29 Mercury: Fraction 1B (HF) (QCLot: 1980325)									
Mercury	7439-97-6	E521A	0.022	µg/sample	0.3 µg/sample	93.8	90.0	110	----

Sub-Matrix: **Air**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report: Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Target Concentration	LCS	Low	High	
Method 29 Mercury: Fraction 2B (KMnO4/H2SO4) (QCLot: 1973613)									
Mercury	7439-97-6	E521B	0.75	µg/L	10 µg/L	94.4	90.0	110	----
Method 29 Mercury: Fraction 3A (KMnO4/H2SO4)) (QCLot: 1973616)									
Mercury	7439-97-6	E521C	0.15	µg/L	2 µg/L	94.0	90.0	110	----
Method 29 Mercury: Fraction 3B (KMnO4/H2SO4) (QCLot: 1973614)									
Mercury	7439-97-6	E521D	0.075	µg/L	1 µg/L	91.4	90.0	110	----
Method 29 Mercury: Fraction 3C (KMnO4/H2SO4) (QCLot: 1973615)									
Mercury	7439-97-6	E521E	0.75	µg/L	10 µg/L	94.4	80.0	120	----

Qualifiers

Qualifier	*Description*
LCS-L	*Lab Control Sample recovery was below ALS DQO. Reference Material and/or Matrix Spike results were acceptable. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.*
RRQC	*Refer to report comments for information regarding this QC result.*

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Air**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	**Client sample ID**	**Analyte**	**CAS Number**	**Method**	**Concentration**	**Target**	**MS**	**Low**	**High**	**Qualifier**
Metals (QCLot: 1980333)										
BU2500945-001	M5/29 CSI Test 1	Arsenic	7440-38-2	E457B	104 µg/sample	100 µg/sample	104	80.0	120	----
		Barium	7440-39-3	E457B	23.7 µg/sample	25 µg/sample	94.8	80.0	120	----
		Beryllium	7440-41-7	E457B	9.41 µg/sample	10 µg/sample	94.1	80.0	120	----
		Cadmium	7440-43-9	E457B	9.79 µg/sample	10 µg/sample	97.9	80.0	120	----
		Chromium	7440-47-3	E457B	25.3 µg/sample	25 µg/sample	101	80.0	120	----
		Cobalt	7440-48-4	E457B	24.6 µg/sample	25 µg/sample	98.5	80.0	120	----
		Copper	7440-50-8	E457B	25.1 µg/sample	25 µg/sample	100	80.0	120	----
		Lead	7439-92-1	E457B	49.0 µg/sample	50 µg/sample	97.9	80.0	120	----
		Manganese	7439-96-5	E457B	24.8 µg/sample	25 µg/sample	99.4	80.0	120	----
		Nickel	7440-02-0	E457B	49.2 µg/sample	50 µg/sample	98.5	80.0	120	----
		Selenium	7782-49-2	E457B	120 µg/sample	100 µg/sample	120	80.0	120	----
		Silver	7440-22-4	E457B	8.67 µg/sample	10 µg/sample	86.7	80.0	120	----
		Thallium	7440-28-0	E457B	95.2 µg/sample	100 µg/sample	95.2	80.0	120	----
		Zinc	7440-66-6	E457B	49.6 µg/sample	50 µg/sample	99.3	80.0	120	----
Method 29 Metals: Fraction 1A (HF) (QCLot: 1980324)										
BU2500945-001	M5/29 CSI Test 1	Arsenic	7440-38-2	E457A	51.2 µg/sample	50 µg/sample	102	80.0	120	----
		Barium	7440-39-3	E457A	ND µg/sample	----	ND	80.0	120	----
		Beryllium	7440-41-7	E457A	4.58 µg/sample	5 µg/sample	91.6	80.0	120	----
		Cadmium	7440-43-9	E457A	4.94 µg/sample	5 µg/sample	98.8	80.0	120	----
		Chromium	7440-47-3	E457A	ND µg/sample	----	ND	80.0	120	----
		Cobalt	7440-48-4	E457A	12.0 µg/sample	12.5 µg/sample	96.4	80.0	120	----
		Copper	7440-50-8	E457A	11.8 µg/sample	12.5 µg/sample	94.7	80.0	120	----
		Lead	7439-92-1	E457A	ND µg/sample	----	ND	80.0	120	----
		Manganese	7439-96-5	E457A	ND µg/sample	----	ND	80.0	120	----
		Nickel	7440-02-0	E457A	23.8 µg/sample	25 µg/sample	95.2	80.0	120	----
		Selenium	7782-49-2	E457A	49.1 µg/sample	50 µg/sample	98.3	80.0	120	----
		Silver	7440-22-4	E457A	4.47 µg/sample	5 µg/sample	89.4	80.0	120	----
		Thallium	7440-28-0	E457A	48.2 µg/sample	50 µg/sample	96.4	80.0	120	----
		Zinc	7440-66-6	E457A	ND µg/sample	----	ND	80.0	120	----
Method 29 Mercury: Fraction 1B (HF) (QCLot: 1980325)										
BU2500945-001	M5/29 CSI Test 1	Mercury	7439-97-6	E521A	0.256 µg/sample	0.3 µg/sample	85.5	75.0	125	----
Method 29 Mercury: Fraction 2B (KMnO4/H2SO4) (QCLot: 1973613)										
BU2500945-001	M5/29 CSI Test 1	Mercury	7439-97-6	E521B	9.39 µg/L	10 µg/L	93.9	75.0	125	----
Method 29 Mercury: Fraction 3A (KMnO4/H2SO4)) (QCLot: 1973616)										
BU2500945-001	M5/29 CSI Test 1	Mercury	7439-97-6	E521C	1.77 µg/L	2 µg/L	88.6	75.0	125	----

Sub-Matrix: **Air**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Method 29 Mercury: Fraction 3B (KMnO4/H2SO4) (QCLot: 1973614)										
BU2500945-001	M5/29 CSI Test 1	Mercury	7439-97-6	E521D	ND µg/L	----	ND	80.0	120	----
Method 29 Mercury: Fraction 3C (KMnO4/H2SO4) (QCLot: 1973615)										
BU2500945-001	M5/29 CSI Test 1	Mercury	7439-97-6	E521E	9.09 µg/L	10 µg/L	90.9	80.0	120	----

Matrix Spike Duplicate (MSD) Report

A Matrix Spike Duplicate (MSD) is a duplicate of a Matrix Spike (MS), which has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spike Duplicates provide information regarding method precision. ALS DQOs for Matrix Spike Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD).

Sub-Matrix: **Air**

					Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	MSD Result	RPD(%) or Difference	MSD Limits	Qualifier
Metals (QC Lot: 1980333)											
QC-198033-005		Arsenic	7440-38-2	E457B	0.50	µg/sample	104	107	2.84%	20%	----
		Barium	7440-39-3	E457B	2.5	µg/sample	25.3	25.6	1.26%	20%	----
		Beryllium	7440-41-7	E457B	0.10	µg/sample	9.39	9.63	2.52%	20%	----
		Cadmium	7440-43-9	E457B	0.050	µg/sample	9.88	9.98	1.02%	20%	----
		Chromium	7440-47-3	E457B	0.50	µg/sample	26.0	26.6	2.93%	20%	----
		Cobalt	7440-48-4	E457B	0.10	µg/sample	24.7	25.3	2.51%	20%	----
		Copper	7440-50-8	E457B	0.50	µg/sample	33.5	34.3	3.92%	20%	----
		Lead	7439-92-1	E457B	0.25	µg/sample	53.5	55.2	3.12%	20%	----
		Manganese	7439-96-5	E457B	0.25	µg/sample	37.6	38.2	2.58%	20%	----
		Nickel	7440-02-0	E457B	0.10	µg/sample	50.4	51.7	2.51%	20%	----
		Selenium	7782-49-2	E457B	1.0	µg/sample	121	132	8.76%	20%	K
		Silver	7440-22-4	E457B	0.10	µg/sample	8.69	8.89	2.28%	20%	----
		Thallium	7440-28-0	E457B	0.10	µg/sample	96.6	98.6	2.18%	20%	----
		Zinc	7440-66-6	E457B	3.0	µg/sample	61.9	63.4	2.68%	20%	----
Method 29 Metals: Fraction 1A (HF) (QC Lot: 1980324)											
QC-MRG2-1-005		Arsenic	7440-38-2	E457A	1.0	µg/sample	52.3	52.2	0.00%	20%	----
		Barium	7440-39-3	E457A	5.0	µg/sample	39.9	39.2	----%	Diff <2x LOR	----
		Beryllium	7440-41-7	E457A	0.20	µg/sample	4.58	4.76	3.96%	20%	----
		Cadmium	7440-43-9	E457A	0.10	µg/sample	6.22	5.94	5.83%	20%	----
		Chromium	7440-47-3	E457A	1.0	µg/sample	68.2	66.4	----%	Diff <2x LOR	----
		Cobalt	7440-48-4	E457A	0.20	µg/sample	13.2	13.1	1.04%	20%	----
		Copper	7440-50-8	E457A	1.0	µg/sample	19.6	19.5	0.848%	20%	----
		Lead	7439-92-1	E457A	0.50	µg/sample	66.0	65.5	----%	Diff <2x LOR	----
		Manganese	7439-96-5	E457A	0.50	µg/sample	120	118	----%	Diff <2x LOR	----
		Nickel	7440-02-0	E457A	0.20	µg/sample	41.9	41.0	3.74%	20%	----
		Selenium	7782-49-2	E457A	2.0	µg/sample	50.1	52.0	3.69%	20%	----
		Silver	7440-22-4	E457A	0.20	µg/sample	5.23	5.20	0.786%	20%	----
		Thallium	7440-28-0	E457A	0.20	µg/sample	64.5	65.9	2.76%	20%	----
		Zinc	7440-66-6	E457A	6.0	µg/sample	160	157	----%	Diff <2x LOR	----
Method 29 Mercury: Fraction 1B (HF) (QC Lot: 1980325)											
QC-MRG2-1-005		Mercury	7439-97-6	E521A	0.022	µg/sample	0.325	0.324	0.117%	20%	----

Sub-Matrix: **Air**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	MSD Result	RPD(%) or Difference	MSD Limits	Qualifier
					Matrix Spike Duplicate (MSD) Report						
Method 29 Mercury: Fraction 2B (KMnO4/H2SO4) (QC Lot: 1973613)											
QC-197361-005		Mercury	7439-97-6	E521B	0.75	µg/L	9.94	9.88	0.641%	20%	----
Method 29 Mercury: Fraction 3A (KMnO4/H2SO4)) (QC Lot: 1973616)											
QC-197361-005		Mercury	7439-97-6	E521C	0.15	µg/L	1.88	1.90	1.01%	20%	----
Method 29 Mercury: Fraction 3B (KMnO4/H2SO4) (QC Lot: 1973614)											
QC-197361-005		Mercury	7439-97-6	E521D	0.750	µg/L	38.4	38.7	----%	Diff <2x LOR	----
Method 29 Mercury: Fraction 3C (KMnO4/H2SO4) (QC Lot: 1973615)											
QC-197361-005		Mercury	7439-97-6	E521E	0.75	µg/L	10.5	10.4	0.441%	20%	----

Qualifiers

Qualifier	*Description*
K	*Matrix Spike recovery outside ALS DQO due to sample matrix effects.*

ALS Environmental

Chain of Custody / Analytical Request Form

1435 Norjohn Court, Unit 1, Burlington, Ontario, Canada, L7L 0E6
Tel +1-905-331-3111 Fax +1-905-331-4567 www.alsglobal.com

Report To		Report Format / Distribution		Service Requested
Company:	RWDI	☑ Standard ☐ Other:		☑ Regular Service
Contact:	Tobi Odumoye	☑ PDF ☑ Excel ☐ Digital ☐ Fax		☐ Rush Service (with prior consultation) - surcharge applies
Address:	600 Southgate Drive, Guleph	Email 1:	karri.legarrie@rwdi.com	☐ Other - Please contact ALS
Phone:	519-823-1311 Fax:	Email 2:	oluwatobi.odumoye@rwdi.com	
Invoice To	Same as Report ? ☑ Yes ☐ No	Client / Project Information		
Company:		Job #:	2509873	
Contact:		Location:	SMC St Marys	
Address:		PO:	2509873	
Phone:	Fax:	Sampled by:	Adam Tran	
Lab Work Order #		ALS Contact:	Robert Chin	

Analysis Request

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	EPS 1-RM-2	OSTC M5	US EPA M29	US EPA M26	NCASI 98.01	NCASI A105					Hazardous? Provide Details	Highly Contaminated?	Number of Containers
1	SVOC Blank	11-Apr-2025		Air	X												6
2	SVOC - Raw Mill On - [Test 1, Test 2, Test 3]	8-9/Apr/2025		Air	X												18
3	SVOC - Raw Mill Off - [Test 1, Test 2, Test 3]	10-Apr-2025		Air	X												18
4	M5,M29 Blank	11-Apr-2025		Air		X	X										7
5	M5,M29 - Raw Mill On - [Test 1, Test 2, Test 3]	8-9/Apr/2025		Air		X	X										21
6	M5,M29 - Raw Mill Off - [Test 1, Test 2, Test 3]	10-Apr-2025		Air		X	X										21
7	M26 Blank	9-Apr-2025		Air				X									1
8	M26 [Test 1, Test 2, Test 3]	9-Apr-2025		Air				X									3
9	NCASI 98.01 Blank	11-Apr-2025		Air					X								1
10	NCASI 98.01 [Test 1, Test 2, Test 3]	11-Apr-2025		Air					X								3
11	NCASI A105 Blank	11-Apr-2025		Air						X							1
12	NCASI A105 [[Test 1, Test 2, Test 3]]	11-Apr-2025		Air						X							3
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	

Environmental Division
Burlington
Work Order Reference
BU2500945
Telephone : +1 905 331 3111

Special Instructions / Regulations / Hazardous Details

EPS 1/RM-2 - compounds separte list to follow. US EPA M29 - metals separate list to follow
US EPA M26 - HCl, NH3. NCASI 98.01 Alcohols - Methanol, Phenol. NCASI A105 Aldehydes - Acrolein, Acetaldehyde, Propion

By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided by ALS

Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
			Aaron Burton	15-Apr 2025	11:35	1.8 °C				

ALS Canada Ltd.

right solutions. right partner.

CERTIFICATE OF ANALYSIS

Work Order	: **BU2500944**		
Client	: **RWDI Air Inc.**	Laboratory	: ALS Environmental - Burlington
Contact	: Oluwatobi Odumoye	Account Manager	: Robert Chin
Address	: 600 Southgate Drive Guelph Ontario Canada N1G 4P6	Address	: 1435 Norjohn Court, Unit 1 Burlington ON Canada L7L 0E6
Telephone	: 519 823 1311	Telephone	: +1 905 331 3111
Project	: 2509873 SMC St. Mary's	Date Samples Received	: 15-Apr-2025 11:35
PO	: 2509873	Date Analysis Commenced	: 16-Apr-2025
C-O-C number	: ----	Issue Date	: 24-Apr-2025 12:42
Sampler	: Adam Tran		
Site	: ----		
Quote number	: SMC St Marys		
No. of samples received	: 8		
No. of samples analysed	: 8		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Gamini Nadu	Analyst	Inorganics, Burlington, Ontario
Milithza Silva	Manager - Inorganics	Inorganics, Burlington, Ontario

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key:

CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
L	litres
mg/L	milligrams per litre
mg/sample	milligrams per sample

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

Sub-Matrix: Impinger
(Matrix: Air)

Analyte	CAS Number	Method/Lab	LOR	Unit	M26 H2SO4 Test 1	M26 H2SO4 Test 2	M26 H2SO4 Test 3	M26 H2SO4 Blank	M26 NaOH Test 1
Client sampling date / time					09-Apr-2025 00:00	09-Apr-2025 00:00	09-Apr-2025 00:00	09-Apr-2025 00:00	09-Apr-2025 00:00
					BU2500944-001	BU2500944-002	BU2500944-003	BU2500944-004	BU2500944-005
					Result	Result	Result	Result	Result
Physical Tests									
Volume, impinger	n/a	EF003.I/BU	0.0010	L	0.0540	0.0520	0.0520	0.0440	0.0280
Inorganics									
Ammonia (as NH3)	8013-59-0	E253/BU	0.470	mg/L	16.8	16.8	19.7	<0.472	----
Ammonia, total (as NH3)	7664-41-7	EC253/BU	0.020	mg/sample	0.907	0.874	1.02	<0.020	----
Chloride, average	16887-00-6	E252/BU	0.47	mg/L	7.82	15.2	17.3	<0.47	2.42
Chloride, replicate 1	16887-00-6	E252/BU	0.47	mg/L	7.80	15.2	17.3	<0.47	2.43
Chloride, replicate 2	16887-00-6	E252/BU	0.47	mg/L	7.83	15.2	17.3	<0.47	2.40
Hydrogen chloride, average	7647-01-0	EC252/BU	0.015	mg/sample	0.434	0.811	0.926	<0.021	----
Hydrogen chloride, replicate 1	7647-01-0	EC252/BU	0.015	mg/sample	0.433	0.811	0.926	<0.021	----
Hydrogen chloride, replicate 2	7647-01-0	EC252/BU	0.015	mg/sample	0.435	0.811	0.926	<0.021	----
Chlorine, average	7782-50-5	EC252/BU	0.014	mg/sample	----	----	----	----	0.068
Chlorine, replicate 1	7782-50-5	EC252/BU	0.014	mg/sample	----	----	----	----	0.068
Chlorine, replicate 2	7782-50-5	EC252/BU	0.014	mg/sample	----	----	----	----	0.067

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Analytical Results

Sub-Matrix: Impinger
(Matrix: Air)

Analyte	CAS Number	Method/Lab	LOR	Unit	M26 NaOH Test 2	M26 NaOH Test 3	M26 NaOH Blank	----	----
Client sampling date / time					09-Apr-2025 00:00	09-Apr-2025 00:00	09-Apr-2025 00:00	----	----
					BU2500944-006	**BU2500944-007**	**BU2500944-008**	**----**	**----**
					Result	Result	Result	----	----
Physical Tests									
Volume, impinger	n/a	EF003.I/BU	0.0010	L	0.0460	0.0350	0.0380	----	----
Inorganics									
Chloride, average	16887-00-6	E252/BU	0.47	mg/L	1.92	0.78	0.48	----	----
Chloride, replicate 1	16887-00-6	E252/BU	0.47	mg/L	1.91	0.77	0.49	----	----
Chloride, replicate 2	16887-00-6	E252/BU	0.47	mg/L	1.94	0.79	0.48	----	----
Chlorine, average	7782-50-5	EC252/BU	0.014	mg/sample	0.088	0.028	0.018	----	----
Chlorine, replicate 1	7782-50-5	EC252/BU	0.014	mg/sample	0.088	0.027	0.019	----	----
Chlorine, replicate 2	7782-50-5	EC252/BU	0.014	mg/sample	0.089	0.028	0.018	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **BU2500944**	Page	: 1 of 7
Client	: **RWDI Air Inc.**	Laboratory	: ALS Environmental - Burlington
Contact	: Oluwatobi Odumoye	Account Manager	: Robert Chin
Address	: 600 Southgate Drive Guelph ON Canada N1G 4P6	Address	: 1435 Norjohn Court, Unit 1 Burlington, Ontario Canada L7L 0E6
Telephone	: 519 823 1311	Telephone	: +1 905 331 3111
Project	: 2509873 SMC St. Mary's	Date Samples Received	: 15-Apr-2025 11:35
PO	: 2509873	Issue Date	: 24-Apr-2025 12:42
C-O-C number	: ----		
Sampler	: Adam Tran		
Site	:		
Quote number	: SMC St Marys		
No. of samples received	: 8		
No. of samples analysed	: 8		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Air**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times Rec*	*Holding Times Actual*	*Eval*	*Analysis Date*	*Holding Times Rec*	*Holding Times Actual*	*Eval*
Inorganics : Ammonia by IC (CTM-027)										
M26/A: Amber Glass (0.1N H2SO4) M26 H2SO4 Blank	E253	09-Apr-2025	16-Apr-2025	14 days	7 days	✓	16-Apr-2025	14 days	7 days	✓
Inorganics : Ammonia by IC (CTM-027)										
M26/A: Amber Glass (0.1N H2SO4) M26 H2SO4 Test 1	E253	09-Apr-2025	16-Apr-2025	14 days	7 days	✓	16-Apr-2025	14 days	7 days	✓
Inorganics : Ammonia by IC (CTM-027)										
M26/A: Amber Glass (0.1N H2SO4) M26 H2SO4 Test 2	E253	09-Apr-2025	16-Apr-2025	14 days	7 days	✓	16-Apr-2025	14 days	7 days	✓
Inorganics : Ammonia by IC (CTM-027)										
M26/A: Amber Glass (0.1N H2SO4) M26 H2SO4 Test 3	E253	09-Apr-2025	16-Apr-2025	14 days	7 days	✓	16-Apr-2025	14 days	7 days	✓
Inorganics : Ion Chromatography Analysis (M26/26A Anions)										
M26/A: Amber Glass (0.1N H2SO4) M26 H2SO4 Blank	E252	09-Apr-2025	22-Apr-2025	28 days	14 days	✓	22-Apr-2025	28 days	14 days	✓
Inorganics : Ion Chromatography Analysis (M26/26A Anions)										
M26/A: Amber Glass (0.1N H2SO4) M26 H2SO4 Test 1	E252	09-Apr-2025	22-Apr-2025	28 days	14 days	✓	22-Apr-2025	28 days	14 days	✓
Inorganics : Ion Chromatography Analysis (M26/26A Anions)										
M26/A: Amber Glass (0.1N H2SO4) M26 H2SO4 Test 2	E252	09-Apr-2025	22-Apr-2025	28 days	14 days	✓	22-Apr-2025	28 days	14 days	✓

Matrix: **Air**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Inorganics : Ion Chromatography Analysis (M26/26A Anions)										
M26/A: Amber Glass (0.1N H2SO4) M26 H2SO4 Test 3	E252	09-Apr-2025	22-Apr-2025	28 days	14 days	✓	22-Apr-2025	28 days	14 days	✓
Inorganics : Ion Chromatography Analysis (M26/26A Anions)										
M26/A: Amber Glass (0.1 NaOH, sodium thiosulfate) M26 NaOH Blank	E252	09-Apr-2025	22-Apr-2025	28 days	14 days	✓	22-Apr-2025	28 days	14 days	✓
Inorganics : Ion Chromatography Analysis (M26/26A Anions)										
M26/A: Amber Glass (0.1 NaOH, sodium thiosulfate) M26 NaOH Test 1	E252	09-Apr-2025	22-Apr-2025	28 days	14 days	✓	22-Apr-2025	28 days	14 days	✓
Inorganics : Ion Chromatography Analysis (M26/26A Anions)										
M26/A: Amber Glass (0.1 NaOH, sodium thiosulfate) M26 NaOH Test 2	E252	09-Apr-2025	22-Apr-2025	28 days	14 days	✓	22-Apr-2025	28 days	14 days	✓
Inorganics : Ion Chromatography Analysis (M26/26A Anions)										
M26/A: Amber Glass (0.1 NaOH, sodium thiosulfate) M26 NaOH Test 3	E252	09-Apr-2025	22-Apr-2025	28 days	14 days	✓	22-Apr-2025	28 days	14 days	✓
Physical Tests : Stack Emission Impinger volume (L)										
M26/A: Amber Glass (0.1N H2SO4) M26 H2SO4 Blank	EF003.I	09-Apr-2025	----	----	----		16-Apr-2025	----	----	
Physical Tests : Stack Emission Impinger volume (L)										
M26/A: Amber Glass (0.1N H2SO4) M26 H2SO4 Test 1	EF003.I	09-Apr-2025	----	----	----		16-Apr-2025	----	----	
Physical Tests : Stack Emission Impinger volume (L)										
M26/A: Amber Glass (0.1N H2SO4) M26 H2SO4 Test 2	EF003.I	09-Apr-2025	----	----	----		16-Apr-2025	----	----	
Physical Tests : Stack Emission Impinger volume (L)										
M26/A: Amber Glass (0.1N H2SO4) M26 H2SO4 Test 3	EF003.I	09-Apr-2025	----	----	----		16-Apr-2025	----	----	

Matrix: **Air**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Stack Emission Impinger volume (L)										
M26/A: Amber Glass (0.1 NaOH, sodium thiosulfate) M26 NaOH Blank	EF003.I	09-Apr-2025	----	----	----		16-Apr-2025	----	----	
Physical Tests : Stack Emission Impinger volume (L)										
M26/A: Amber Glass (0.1 NaOH, sodium thiosulfate) M26 NaOH Test 1	EF003.I	09-Apr-2025	----	----	----		16-Apr-2025	----	----	
Physical Tests : Stack Emission Impinger volume (L)										
M26/A: Amber Glass (0.1 NaOH, sodium thiosulfate) M26 NaOH Test 2	EF003.I	09-Apr-2025	----	----	----		16-Apr-2025	----	----	
Physical Tests : Stack Emission Impinger volume (L)										
M26/A: Amber Glass (0.1 NaOH, sodium thiosulfate) M26 NaOH Test 3	EF003.I	09-Apr-2025	----	----	----		16-Apr-2025	----	----	

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Air**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Ion Chromatography Analysis (M26/26A Anions)	E252	1960782	1	8	12.5	5.0	✓
Ammonia by IC (CTM-027)	E253	1953474	1	4	25.0	5.0	✓
Laboratory Control Samples (LCS)							
Ion Chromatography Analysis (M26/26A Anions)	E252	1960782	1	8	12.5	5.0	✓
Ammonia by IC (CTM-027)	E253	1953474	1	4	25.0	5.0	✓
Method Blanks (MB)							
Ion Chromatography Analysis (M26/26A Anions)	E252	1960782	1	8	12.5	5.0	✓
Ammonia by IC (CTM-027)	E253	1953474	1	4	25.0	5.0	✓
Matrix Spikes (MS)							
Ion Chromatography Analysis (M26/26A Anions)	E252	1960782	1	8	12.5	5.0	✓
Ammonia by IC (CTM-027)	E253	1953474	1	4	25.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by “mod”).

Analytical Methods	*Method / Lab*	*Matrix*	*Method Reference*	*Method Descriptions*
Ion Chromatography Analysis (M26/26A Anions)	E252 ALS Environmental - Burlington	Air	USEPA Methods 26 and 26A	Client supplied liquid samples are split and buffered (acidic media) then sub-sampled (or sub-sampled directly for basic media) for IC analysis. Results are reported as hydrogen halides (acidic media) or halogens (basic media).
Ammonia by IC (CTM-027)	E253 ALS Environmental - Burlington	Air	EPA Method CTM-027 (mod)	Client-supplied acidic samples are sub-sampled for analysis, after a total volume is determined. Analytical results are reported as Total Ammonia, from the quantified Ammonium (NH4+) ion.
Ion Chromatography Analysis (M26/26A Anions)	EC252 ALS Environmental - Burlington	Air	unit conversion	Convert mg/L to mg/sample
Ammonia by IC (Method CTM-027)	EC253 ALS Environmental - Burlington	Air	unit conversion	Conversion from mg/L to mg/sample
Stack Emission Impinger volume (L)	EF003.I ALS Environmental - Burlington	Air		Volume of impinger contents is measured in the laboratory for use in later calculations.

ALS Canada Ltd.

QUALITY CONTROL REPORT

Work Order	: **BU2500944**	Page	: 1 of 4
Client	: RWDI Air Inc.	Laboratory	: ALS Environmental - Burlington
Contact	: Oluwatobi Odumoye	Account Manager	: Robert Chin
Address	: 600 Southgate Drive Guelph ON Canada N1G 4P6	Address	: 1435 Norjohn Court, Unit 1 Burlington, Ontario Canada L7L 0E6
Telephone	: 519 823 1311	Telephone	: +1 905 331 3111
Project	: 2509873 SMC St. Mary's	Date Samples Received	: 15-Apr-2025 11:35
PO	: 2509873	Date Analysis Commenced	: 16-Apr-2025
C-O-C number	: ----	Issue Date	: 24-Apr-2025 12:42
Sampler	: Adam Tran		
Site	:		
Quote number	: SMC St Marys		
No. of samples received	: 8		
No. of samples analysed	: 8		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Gamini Nadu	Analyst	Burlington Inorganics, Burlington, Ontario
Milithza Silva	Manager - Inorganics	Burlington Inorganics, Burlington, Ontario

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Air**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Inorganics (QC Lot: 1953474)											
BU2500944-001	M26 H2SO4 Test 1	Ammonia (as NH3)	8013-59-0	E253	0.472	mg/L	16.8	16.7	0.746%	20%	----
Inorganics (QC Lot: 1960782)											
BU2500944-001	M26 H2SO4 Test 1	Chloride, average	16887-00-6	E252	0.47	mg/L	7.82	7.82	0.128%	20%	----
		Chloride, replicate 1	16887-00-6	E252	0.47	mg/L	7.80	7.83	0.288%	20%	----
		Chloride, replicate 2	16887-00-6	E252	0.47	mg/L	7.83	7.82	0.165%	20%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Air**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Inorganics (QCLot: 1953474)						
Ammonia (as NH3)	8013-59-0	E253	0.47	mg/L	<0.472	----
Inorganics (QCLot: 1960782)						
Chloride, average	16887-00-6	E252	0.47	mg/L	<0.47	----
Chloride, replicate 1	16887-00-6	E252	0.47	mg/L	<0.47	----
Chloride, replicate 2	16887-00-6	E252	0.47	mg/L	<0.47	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Air**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Inorganics (QCLot: 1953474)									
Ammonia (as NH3)	8013-59-0	E253	0.47	mg/L	9.44 mg/L	105	90.0	110	----
Inorganics (QCLot: 1960782)									
Chloride, average	16887-00-6	E252	0.47	mg/L	15 mg/L	101	90.0	110	----
Chloride, replicate 1	16887-00-6	E252	0.47	mg/L	15 mg/L	99.3	90.0	110	----
Chloride, replicate 2	16887-00-6	E252	0.47	mg/L	15 mg/L	102	90.0	110	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Air**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Inorganics (QCLot: 1953474)										
BU2500944-001	M26 H2SO4 Test 1	Ammonia (as NH3)	8013-59-0	E253	ND mg/L	----	ND	85.0	115	----
Inorganics (QCLot: 1960782)										
BU2500944-001	M26 H2SO4 Test 1	Chloride, average	16887-00-6	E252	16.1 mg/L	15 mg/L	108	90.0	110	----
		Chloride, replicate 1	16887-00-6	E252	16.2 mg/L	15 mg/L	108	90.0	110	----
		Chloride, replicate 2	16887-00-6	E252	16.1 mg/L	15 mg/L	107	90.0	110	----

ALS Environmental

Chain of Custody / Analytical Request Form

1435 Norjohn Court, Unit 1, Burlington, Ontario, Canada, L7L 0E6

Tel +1-905-331-3111 Fax +1-905-331-4567 www.alsglobal.com

Report To

Company:	RWDI
Contact:	Tobi Odumoye
Address:	600 Southgate Drive, Guleph
Phone:	519-823-1311 Fax:

Invoice To Same as Report ? ☑ Yes ☐ No

Company:	
Contact:	
Address:	
Phone:	Fax:

Lab Work Order #

Report Format / Distribution

☑ Standard ☐ Other:

☑ PDF ☑ Excel ☐ Digital ☐ Fax

Email 1: kami.legarrie@rwdi.com

Email 2: oluwatobi.odumoye@rwdi.com

Client / Project Information

Job #:	2509873
Location:	SMC St Marys
PO:	2509873
Sampled by:	Adam Tran

ALS Contact: Robert Chin

Service Requested

☑ Regular Service

☐ Rush Service (with prior consultation) - surcharge applies

☐ Other - Please contact ALS

Analysis Request

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	EPS 1-RM-2	OSTC M5	US EPA M29	US EPA M26	NCASI 98.01	NCASI A105	Hazardous? Provide Details	Highly Contaminated?	Number of Containers
1	SVOC Blank	11-Apr-2025		Air	X								6
2	SVOC - Raw Mill On - [Test 1, Test 2, Test 3]	8-9/Apr/2025		Air	X								18
3	SVOC - Raw Mill Off - [Test 1, Test 2, Test 3]	10-Apr-2025		Air	X								18
4	M5,M29 Blank	11-Apr-2025		Air		X	X						7
5	M5,M29 - Raw Mill On - [Test 1, Test 2, Test 3]	8-9/Apr/2025		Air		X	X						21
6	M5,M29 - Raw Mill Off - [Test 1, Test 2, Test 3]	10-Apr-2025		Air		X	X						21
7	M26 Blank	9-Apr-2025		Air				X					1
8	M26 [Test 1, Test 2, Test 3]	9-Apr-2025		Air				X					3
9	NCASI 98.01 Blank	11-Apr-2025		Air					X				1
10	NCASI 98.01 [Test 1, Test 2, Test 3]	11-Apr-2025		Air					X				3
11	NCASI A105 Blank	11-Apr-2025		Air						X			1
12	NCASI A105 [[Test 1, Test 2, Test 3]]	11-Apr-2025		Air						X			3
13													
14													
15													
16													
17													
18													
19													
20													

Environmental Division
Burlington
Work Order Reference
BU2500944

Telephone : +1 905 331 3111

Special Instructions / Regulations / Hazardous Details

EPS 1/RM-2 - compounds separte list to follow. US EPA M29 - metals separate list to follow

US EPA M26 - HCl, NH3. NCASI 98.01 Alcohols - Methanol, Phenol. NCASI A105 Aldehydes - Acrolein, Acetaldehyde, Propion

By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided by ALS

Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
			Aaron Burton	15-Apr 2025	11:35	1.8 °C				

CERTIFICATE OF ANALYSIS

Work Order	:	**BU2500943**			
Client	:	**RWDI Air Inc.**	Laboratory	:	ALS Environmental - Burlington
Contact	:	Oluwatobi Odumoye	Account Manager	:	Robert Chin
Address	:	600 Southgate Drive Guelph Ontario Canada N1G 4P6	Address	:	1435 Norjohn Court, Unit 1 Burlington ON Canada L7L 0E6
Telephone	:	519 823 1311	E-mail	:	Robert.Chin@ALSGlobal.com
Project	:	2509873 SMC St. Mary's	Telephone	:	+1 905 331 3111
PO	:	2509873	Date Samples Received	:	15-Apr-2025 11:35
C-O-C number	:	----	Date Analysis Commenced	:	21-Apr-2025
Sampler	:	Adam Tran	Issue Date	:	02-Jun-2025 13:01
Site	:	----			
Quote number	:	SMC St Marys			
No. of samples received	:	4			
No. of samples analysed	:	4			

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Stephen Kennedy	Department Manager - Organics	Organics, Burlington, Ontario

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key:

CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
µg/sample	micrograms per sample

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

Sub-Matrix: **Impinger**
(Matrix: **Air)**

Analyte	CAS Number	Method/Lab	LOR	Unit	NCASI A105 Test 1	NCASI A105 Test 2	NCASI A105 Test 3	NCASI A105 Blank	----
				Client sampling date / time	11-Apr-2025 00:00	11-Apr-2025 00:00	11-Apr-2025 00:00	11-Apr-2025 00:00	----
					BU2500943-001	BU2500943-002	BU2500943-003	BU2500943-004	----
					Result	Result	Result	Result	----
Aldehydes									
Acetaldehyde	75-07-0	E690/BU	0.10	µg/sample	884	843	683	4.57	----
Acrolein	107-02-8	E690/BU	0.10	µg/sample	174	166	129	<0.50	----
Propionaldehyde	123-38-6	E690/BU	0.10	µg/sample	279	243	203	4.46	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **BU2500943**	Page	: 1 of 5
Client	: **RWDI Air Inc.**	Laboratory	: ALS Environmental - Burlington
Contact	: Oluwatobi Odumoye	Account Manager	: Robert Chin
Address	: 600 Southgate Drive Guelph ON Canada N1G 4P6	Address	: 1435 Norjohn Court, Unit 1 Burlington, Ontario Canada L7L 0E6
Telephone	: 519 823 1311	Telephone	: +1 905 331 3111
Project	: 2509873 SMC St. Mary's	Date Samples Received	: 15-Apr-2025 11:35
PO	: 2509873	Issue Date	: 02-Jun-2025 13:02
C-O-C number	: ----		
Sampler	: Adam Tran		
Site	:		
Quote number	: SMC St Marys		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Air**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aldehydes : Aldehydes in Air via BHA solution by GC-MS										
Amber glass/Teflon lined closed cap NCASI A105 Blank	E690	11-Apr-2025	21-Apr-2025	21 days	11 days	✓	05-May-2025	40 days	14 days	✓
Aldehydes : Aldehydes in Air via BHA solution by GC-MS										
Amber glass/Teflon lined closed cap NCASI A105 Test 1	E690	11-Apr-2025	21-Apr-2025	21 days	11 days	✓	05-May-2025	40 days	14 days	✓
Aldehydes : Aldehydes in Air via BHA solution by GC-MS										
Amber glass/Teflon lined closed cap NCASI A105 Test 2	E690	11-Apr-2025	21-Apr-2025	21 days	11 days	✓	05-May-2025	40 days	14 days	✓
Aldehydes : Aldehydes in Air via BHA solution by GC-MS										
Amber glass/Teflon lined closed cap NCASI A105 Test 3	E690	11-Apr-2025	21-Apr-2025	21 days	11 days	✓	05-May-2025	40 days	14 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Air**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS)							
Aldehydes in Air via BHA solution by GC-MS	E690	1956467	1	4	25.0	10.0	✓
Method Blanks (MB)							
Aldehydes in Air via BHA solution by GC-MS	E690	1956467	1	4	25.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by “mod”).

Analytical Methods	*Method / Lab*	*Matrix*	*Method Reference*	*Method Descriptions*
Aldehydes in Air via BHA solution by GC-MS	E690 ALS Environmental - Burlington	Air	NCASI A105.01	Sample is collected in BHA Solution. Extracted compounds are analyzed by GC-MS.

Preparation Methods	*Method / Lab*	*Matrix*	*Method Reference*	*Method Descriptions*
Extraction (Soxhlet and liquid-liquid) of Stack for Organic Analytes	EP800 ALS Environmental - Burlington	Air	EPA Method 3540C (Soxhlet) and EPA Method 3510C (L-L)	Samples are extracted with Soxhlet and/or separatory funnel apparatus, followed by appropriate cleanup.

ALS Canada Ltd.

QUALITY CONTROL REPORT

Work Order	: **BU2500943**	Page	: 1 of 2
Client	: RWDI Air Inc.	Laboratory	: ALS Environmental - Burlington
Contact	: Oluwatobi Odumoye	Account Manager	: Robert Chin
Address	: 600 Southgate Drive Guelph ON Canada N1G 4P6	Address	: 1435 Norjohn Court, Unit 1 Burlington, Ontario Canada L7L 0E6
Telephone	: 519 823 1311	Telephone	: +1 905 331 3111
Project	: 2509873 SMC St. Mary's	Date Samples Received	: 15-Apr-2025 11:35
PO	: 2509873	Date Analysis Commenced	: 21-Apr-2025
C-O-C number	: ----	Issue Date	: 02-Jun-2025 13:01
Sampler	: Adam Tran		
Site	:		
Quote number	: SMC St Marys		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Reference Material (RM) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Stephen Kennedy	Department Manager - Organics	Burlington Organics, Burlington, Ontario

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

					Reference Material (RM) Report				
					RM Target	Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Concentration	RM	Low	High	Qualifier
Aldehydes (QCLot: 1956467)									
QC-1956467-002	LCS-LL	Acetaldehyde	75-07-0	E690	12.5 µg/sample	60.1	50.0	150	----
QC-1956467-002	LCS-LL	Acrolein	107-02-8	E690	12.5 µg/sample	88.7	50.0	150	----
QC-1956467-002	LCS-LL	Propionaldehyde	123-38-6	E690	12.5 µg/sample	99.9	50.0	150	----

ALS Environmental

Chain of Custody / Analytical Request Form

1435 Norjohn Court, Unit 1, Burlington, Ontario, Canada, L7L 0E6

Tel +1-905-331-3111 Fax +1-905-331-4567 www.alsglobal.com

Report To		Report Format / Distribution		Service Requested
Company:	RWDI	☑ Standard ☐ Other:		☑ Regular Service
Contact:	Tobi Odumoye	☑ PDF ☑ Excel ☐ Digital ☐ Fax		☐ Rush Service (with prior consultation) - surcharge applies
Address:	600 Southgate Drive, Guleph	Email 1:	karri.legarrie@rwdi.com	☐ Other - Please contact ALS
Phone:	519-823-1311 Fax:	Email 2:	oluwatobi.odumoye@rwdi.com	
Invoice To	Same as Report ? ☑ Yes ☐ No	Client / Project Information		
Company:		Job #:	2509873	
Contact:		Location:	SMC St Marys	
Address:		PO:	2509873	
Phone:	Fax:	Sampled by:	Adam Tran	
Lab Work Order #		ALS Contact:	Robert Chin	

Analysis Request

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	EPS 1-RM-2	OSTC M5	US EPA M29	US EPA M26	NCASI 98.01	NCASI A105					Hazardous? Provide Details	Highly Contaminated?	Number of Containers
1	SVOC Blank	11-Apr-2025		Air	X												6
2	SVOC - Raw Mill On - [Test 1, Test 2, Test 3]	8-9/Apr/2025		Air	X												18
3	SVOC - Raw Mill Off - [Test 1, Test 2, Test 3]	10-Apr-2025		Air	X												18
4	M5,M29 Blank	11-Apr-2025		Air		X	X										7
5	M5,M29 - Raw Mill On - [Test 1, Test 2, Test 3]	8-9/Apr/2025		Air		X	X										21
6	M5,M29 - Raw Mill Off - [Test 1, Test 2, Test 3]	10-Apr-2025		Air		X	X										21
7	M26 Blank	9-Apr-2025		Air				X									1
8	M26 [Test 1, Test 2, Test 3]	9-Apr-2025		Air				X									3
9	NCASI 98.01 Blank	11-Apr-2025		Air					X								1
10	NCASI 98.01 [Test 1, Test 2, Test 3]	11-Apr-2025		Air					X								3
11	NCASI A105 Blank	11-Apr-2025		Air						X							1
12	NCASI A105 [[Test 1, Test 2, Test 3]]	11-Apr-2025		Air						X							3
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	

Environmental Division
Burlington
Work Order Reference
BU2500943

Telephone : +1 905 331 3111

Special Instructions / Regulations / Hazardous Details

EPS 1/RM-2 - compounds separte list to follow. US EPA M29 - metals separate list to follow

US EPA M26 - HCl, NH3. NCASI 98.01 Alcohols - Methanol, Phenol. NCASI A105 Aldehydes - Acrolein, Acetaldehyde, Propion

By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided by ALS

Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
			AAron Aurton	15-Apr 2025	11:35	1.8 °C				

05-May-2025

Robert Chin
ALS
1435 Norjohn Court
Unit 1
Burlington, Ontario L7L0E6

Re: **2509873 SMC St. Mary's; BU2500955** Work Order: **25040201**

Dear Robert,

ALS Environmental received 4 samples on 17-Apr-2025 10:20 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

QC sample results for this data met laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Laboratory Group. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 11.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Hannah Ponder

Electronically approved by: Hannah Ponder

Hannah Ponder

Report of Laboratory Analysis

Client: ALS
Project: 2509873 SMC St. Mary's; BU2500955
Work Order: **25040201**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
25040201-01	NCASI 98.01 Test 1	Air		4/11/2025	4/17/2025 10:20	☐
25040201-02	NCASI 98.01 Test 2	Air		4/11/2025	4/17/2025 10:20	☐
25040201-03	NCASI 98.01 Test 3	Air		4/11/2025	4/17/2025 10:20	☐
25040201-04	NCASI 98.01 Blank	Air		4/11/2025	4/17/2025 10:20	☐

Client: ALS
Project: 2509873 SMC St. Mary's; BU2500955
Work Order: 25040201

Case Narrative

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Results relate only to the items tested and are not blank corrected unless indicated.

QC sample results for this data met laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

ALS Environmental

Date: *05-May-25*

Client: ALS
Project: 2509873 SMC St. Mary's; BU2500955
Work Order: 25040201
Sample ID: NCASI 98.01 Test 1
Lab ID: 25040201-01
Collection Date: 4/11/2025
Matrix: AIR

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANALYSIS BY NCASI 98.01			**NCASI98.01**			Analyst: **TME**
Methanol	ND		10	µg/sample	1	5/1/2025
Phenol	ND		10	µg/sample	1	5/1/2025

Note:

ALS Environmental

Date: *05-May-25*

Client: ALS
Project: 2509873 SMC St. Mary's; BU2500955 **Work Order:** 25040201
Sample ID: NCASI 98.01 Test 2 **Lab ID:** 25040201-02
Collection Date: 4/11/2025 **Matrix:** AIR

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANALYSIS BY NCASI 98.01			**NCASI98.01**			Analyst: **TME**
Methanol	ND		10	µg/sample	1	5/1/2025
Phenol	ND		10	µg/sample	1	5/1/2025

Note:

ALS Environmental

Date: *05-May-25*

Client: ALS
Project: 2509873 SMC St. Mary's; BU2500955 **Work Order:** 25040201
Sample ID: NCASI 98.01 Test 3 **Lab ID:** 25040201-03
Collection Date: 4/11/2025 **Matrix:** AIR

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANALYSIS BY NCASI 98.01			**NCASI98.01**			Analyst: **TME**
Methanol	ND		10	µg/sample	1	5/1/2025
Phenol	ND		10	µg/sample	1	5/1/2025

Note:

ALS Environmental

Date: *05-May-25*

Client: ALS
Project: 2509873 SMC St. Mary's; BU2500955
Work Order: 25040201
Sample ID: NCASI 98.01 Blank
Lab ID: 25040201-04
Collection Date: 4/11/2025
Matrix: AIR

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANALYSIS BY NCASI 98.01			**NCASI98.01**			Analyst: **TME**
Methanol	ND		10	µg/sample	1	5/1/2025
Phenol	ND		10	µg/sample	1	5/1/2025

Note:

ALS Environmental

Date: 05-May-25

Client: ALS
Work Order: 25040201
Project: 2509873 SMC St. Mary's; BU2500955

QC BATCH REPORT

Batch ID: **R240543** Instrument ID **GC4** Method: **NCASI98.01**

MBLK Sample ID: **MB-R240543** Units: **µg/sample** Analysis Date: **5/1/2025**

Client ID: Run ID: **GC4_250501B** SeqNo: **3648298** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Methanol	ND	10								
Phenol	ND	10								

LCS Sample ID: **LCS-R240543** Units: **µg/sample** Analysis Date: **5/1/2025**

Client ID: Run ID: **GC4_250501B** SeqNo: **3648299** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Methanol	82.97	10	79.1	0	105		0			
Phenol	73.2	10	75	0	97.6		0			

The following samples were analyzed in this batch:

25040201-01A	25040201-02A	25040201-03A
25040201-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

Date: 05-May-25

Client: ALS
Project: 2509873 SMC St. Mary's; BU2500955
WorkOrder: **25040201**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
E	EPA Method
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SDL	Sample Detection Limit
SW	SW-846 Method

Units Reported	Description
µg/sample	

ALS Environmental

Sample Receipt Checklist

Client Name: **ALS-BURLINGTON**

Date/Time Received: **17-Apr-25 10:20**

Work Order: **25040201**

Received by: **MB**

Checklist completed by	Alec Bolender	17-Apr-25	Reviewed by:	Hannah Ponder	22-Apr-25
	eSignature	Date		eSignature	Date

Matrices: air impinger

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	7.6	120489	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:			
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

ALS Environmental

Chain of Custody / Analytical Request Form

1435 Norjohn Court, Unit 1, Burlington, Ontario, Canada, L7L 0E6

Tel +1-905-331-3111 Fax +1-905-331-4567 www.alsglobal.com

2504020l

Report To		**Report Format / Distribution**		**Service Requested**
Company:	ALS Environmental	☑ Standard ☐ Other:		☑ Regular Service
Contact:	Robert Chin	☑ PDF ☑ Excel ☐ Digital ☐ Fax		☐ Rush Service (with prior consultation) - surcharge applies
Address:	1435 Norjohn Court, Unit 1	Email 1:	robert.chin@alsglobal.com	☐ Other - Please contact ALS
Phone:	905-331-3111	Email 2:		
Invoice To	Same as Report ? ☑ Yes ☐ No	**Client / Project Information**		
Company:		Job #:	2509873 SMC St. Mary's	
Contact:		Location:		
Address:		PO:	BU2500955	
Phone:		Sampled by:	Adam Tran	
Lab Work Order #		**ALS Contact:**	**Robert Chin**	

Analysis Request

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time	Sample Type	NCASI 98.01									Hazardous? Provide Details	Highly Contaminated?	Number of Containers
1	NCASI 98.01 Test 1	11-Apr-2025		Water	X											1
2	NCASI 98.01 Test 2	11-Apr-2025		Water	X											1
3	NCASI 98.01 Test 3	11-Apr-2025		Water	X											1
4	NCASI 98.01 Blank	11-Apr-2025		Water	X											1

Special Instructions / Regulations / Hazardous Details

Fedex **Targets: Methanol & Phenol** 6 7.6 12489 Ice Packs

By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided by ALS

Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
Aaron Burton	16-Apr-2025		[signature]	4-17-25	10:20	°C				

ALS Environmental

Chain of Custody / Analytical Request Form

1435 Norjohn Court, Unit 1, Burlington, Ontario, Canada, L7L 0E6

Tel +1-905-331-3111 Fax +1-905-331-4567 www.alsglobal.com

Report To		Report Format / Distribution		Service Requested
Company:	RWDI	☑ Standard ☐ Other:		☑ Regular Service
Contact:	Tobi Odumoye	☑ PDF ☑ Excel ☐ Digital ☐ Fax		☐ Rush Service (with prior consultation) - surcharge applies
Address:	600 Southgate Drive, Guleph	Email 1:	karri.legarrie@rwdi.com	☐ Other - Please contact ALS
Phone:	519-823-1311 Fax:	Email 2:	oluwatobi.odumoye@rwdi.com	
Invoice To	Same as Report ? ☑ Yes ☐ No	Client / Project Information		
Company:		Job #:	2509873	
Contact:		Location:	SMC St Marys	
Address:		PO:	2509873	
Phone:	Fax:	Sampled by:	Adam Tran	
Lab Work Order #		ALS Contact:	Robert Chin	

Analysis Request

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	EPS 1-RM-2	OSTC M5	US EPA M29	US EPA M26	NCASI 98.01	NCASI A105					Hazardous? Provide Details	Highly Contaminated?	Number of Containers
1	SVOC Blank	11-Apr-2025		Air	X												6
2	SVOC - Raw Mill On - [Test 1, Test 2, Test 3]	8-9/Apr/2025		Air	X												18
3	SVOC - Raw Mill Off - [Test 1, Test 2, Test 3]	10-Apr-2025		Air	X												18
4	M5,M29 Blank	11-Apr-2025		Air		X	X										7
5	M5,M29 - Raw Mill On - [Test 1, Test 2, Test 3]	8-9/Apr/2025		Air		X	X										21
6	M5,M29 - Raw Mill Off - [Test 1, Test 2, Test 3]	10-Apr-2025		Air		X	X										21
7	M26 Blank	9-Apr-2025		Air				X									1
8	M26 [Test 1, Test 2, Test 3]	9-Apr-2025		Air				X									3
9	NCASI 98.01 Blank	11-Apr-2025		Air					X								1
10	NCASI 98.01 [Test 1, Test 2, Test 3]	11-Apr-2025		Air					X								3
11	NCASI A105 Blank	11-Apr-2025		Air						X							1
12	NCASI A105 [[Test 1, Test 2, Test 3]]	11-Apr-2025		Air						X							3
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	

Environmental Division
Burlington
Work Order Reference
BU2500955

Telephone : +1 905 331 3111

Special Instructions / Regulations / Hazardous Details

EPS 1/RM-2 - compounds separte list to follow. US EPA M29 - metals separate list to follow

US EPA M26 - HCl, NH3. NCASI 98.01 Alcohols - Methanol, Phenol. NCASI A105 Aldehydes - Acrolein, Acetaldehyde, Propion

By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided by ALS

Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
			Aaron Burton	15-Apr 2025	11:35	1.8 °C				

ALS Canada Ltd.

CERTIFICATE OF ANALYSIS

Work Order	:	**BU2500942**			
Client	:	**RWDI Air Inc.**	Laboratory	:	ALS Environmental - Burlington
Contact	:	Oluwatobi Odumoye	Account Manager	:	Robert Chin
Address	:	600 Southgate Drive Guelph Ontario Canada N1G 4P6	Address	:	1435 Norjohn Court, Unit 1 Burlington ON Canada L7L 0E6
Telephone	:	519 823 1311	E-mail	:	Robert.Chin@ALSGlobal.com
Project	:	2509873 SMC St. Mary's	Telephone	:	+1 905 331 3111
PO	:	2509873	Date Samples Received	:	15-Apr-2025 11:35
C-O-C number	:	----	Date Analysis Commenced	:	30-Jun-2025
Sampler	:	Adam Tran	Issue Date	:	03-Jul-2025 13:38
Site	:	SMC St Marys			
Quote number	:	SMC St Marys			
No. of samples received	:	7			
No. of samples analysed	:	7			

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Sabrina Jin		Organics, Burlington, Ontario

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key:

CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
ng/sample	nanograms per sample

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

In exception of SVOC Blank, all results have been reported from the analysis of diluted extracts where additional labelled extraction standard has been added for quantification. In these cases, the reported values are not recovery corrected and reported recoveries of the standard do not represent extraction and preparation recovery. The recoveries of some of the field standards were above the method control limit.

Qualifiers

Qualifier	Description
[B]	The analyte was detected in the Method Blank at >10% of the sample concentration.

Analytical Results

Sub-Matrix: Impinger
(Matrix: Air)

Analyte	CAS Number	Method/Lab	LOR	Unit	SVOC-CSI Test 1	SVOC-CSI Test 2	SVOC-CSI Test 3	SVOC-ECA Test 1	SVOC-ECA Test 2
				Client sampling date / time	08-Apr-2025 00:00	08-Apr-2025 00:00	08-Apr-2025 00:00	08-Apr-2025 00:00	08-Apr-2025 00:00
					BU2500942-001	BU2500942-002	BU2500942-003	BU2500942-004	BU2500942-005
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	83-32-9	E649/BU	2.0	ng/sample	73400	91600	64600	33400	42600
Acenaphthylene	208-96-8	E649/BU	2.0	ng/sample	90100	120000	89000	50900	73800
Anthracene	120-12-7	E649/BU	2.0	ng/sample	162000	181000	147000	12300	46600
Benz(a)anthracene	56-55-3	E649/BU	2.0	ng/sample	59000	77800	72100	<600	4370
Benz(b)anthracene + Chrysene + Triphenylene	n/a	E649/BU	2.0	ng/sample	259000	330000	295000	1050	27900
Benzo(a)fluorene	238-84-6	E649/BU	2.0	ng/sample	8000	9610	6580	<600	<600
Benzo(a)pyrene	50-32-8	E649/BU	2.0	ng/sample	6060	8680	9160	<600	<600
Benzo(b)fluoranthene	205-99-2	E649/BU	2.0	ng/sample	37100	51700	54000	<600	2130
Benzo(b)fluorene	243-17-4	E649/BU	2.0	ng/sample	5100	5110	3370	<600	1350
Benzo(e)pyrene	192-97-2	E649/BU	2.0	ng/sample	57100	79000	78200	<600	2690
Benzo(g,h,i)perylene	191-24-2	E649/BU	2.0	ng/sample	<600	<600	<600	<600	<600
Benzo(j+k)fluoranthenes	n/a	E649/BU	2.0	ng/sample	20100	36100	35600	<600	717
Chloronaphthalene, 2-	91-58-7	E649/BU	2.0	ng/sample	20900	23500	20800	13300	45100
Coronene	191-07-1	E649/BU	10	ng/sample	<600	<600	635	<600	<600
Dibenz(a,c+a,h)anthracenes	n/a	E649/BU	2.0	ng/sample	<600	<600	<600	<600	<600
Dimethylanthracene, 9,10-	781-43-1	E649/BU	2.0	ng/sample	22900	22800	23400	<600	2740
Dimethylbenz(a)anthracene, 7,12-	57-97-6	E649/BU	2.0	ng/sample	<2.0	<2.0	<2.0	<2.0	<2.0
Fluoranthene	206-44-0	E649/BU	2.0	ng/sample	225000	268000	225000	4820	55600
Fluorene	86-73-7	E649/BU	2.0	ng/sample	157000	203000	142000	41000	69500

Analytical Results

Sub-Matrix: Impinger
(Matrix: Air)

Analyte	CAS Number	Method/Lab	LOR	Unit	SVOC-CSI Test 1	SVOC-CSI Test 2	SVOC-CSI Test 3	SVOC-ECA Test 1	SVOC-ECA Test 2
				Client sampling date / time	08-Apr-2025 00:00	08-Apr-2025 00:00	08-Apr-2025 00:00	08-Apr-2025 00:00	08-Apr-2025 00:00
					BU2500942-001	BU2500942-002	BU2500942-003	BU2500942-004	BU2500942-005
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons									
Indeno(1,2,3-c,d)pyrene	193-39-5	E649/BU	2.0	ng/sample	1590	2310	2570	<600	<600
Methylanthracene, 2-	613-12-7	E649/BU	2.0	ng/sample	124000	145000	119000	7620	41100
Methylcholanthrene, 3-	56-49-5	E649/BU	10	ng/sample	<600	1220	<600	<600	<600
Methylnaphthalene, 1-	90-12-0	E649/BU	2.0	ng/sample	414000	492000	362000	312000	384000
Methylnaphthalene, 2-	91-57-6	E649/BU	2.0	ng/sample	527000	616000	467000	404000	490000
Methylphenanthrene, 1-	832-69-9	E649/BU	2.0	ng/sample	168000	200000	160000	12200	53500
Methylphenanthrene, 9-	883-20-5	E649/BU	2.0	ng/sample	106000	123000	100000	4020	21800
Naphthalene	91-20-3	E649/BU	2.0	ng/sample	543000	619000	567000	512000	606000
Perylene	198-55-0	E649/BU	2.0	ng/sample	1380	2270	2420	<600	<600
Phenanthrene	85-01-8	E649/BU	2.0	ng/sample	613000	768000	630000	98500	298000
Picene	213-46-7	E649/BU	10	ng/sample	<600	<600	<600	<600	<600
Pyrene	129-00-0	E649/BU	2.0	ng/sample	136000	167000	135000	3000	33500
Tetralin	119-64-2	E649/BU	2.0	ng/sample	114000	127000	107000	86200	87000
Polycyclic Aromatic Hydrocarbons Surrogates									
Acenaphthylene-d8	93951-97-4	E649/BU	2.0	%	146	145	148	130	120
Anthracene-d10	1719-06-8	E649/BU	2.0	%	102	101	103	99.2	96.6
Benz(a)anthracene-d12	1718-53-2	E649/BU	2.0	%	120	118	112	130	137
Benzo(a)pyrene-d12	63466-71-7	E649/BU	2.0	%	112	108	114	98.3	104
Benzo(b)fluoranthene-d12	93951-98-5	E649/BU	2.0	%	128	122	125	111	120
Benzo(g,h,i)perylene-d12	93951-66-7	E649/BU	2.0	%	94.0	85.9	95.7	88.1	96.8

Analytical Results

Sub-Matrix: Impinger
(Matrix: Air)

Analyte	CAS Number	Method/Lab	LOR	Unit	SVOC-CSI Test 1	SVOC-CSI Test 2	SVOC-CSI Test 3	SVOC-ECA Test 1	SVOC-ECA Test 2
Client sampling date / time					08-Apr-2025 00:00	08-Apr-2025 00:00	08-Apr-2025 00:00	08-Apr-2025 00:00	08-Apr-2025 00:00
					BU2500942-001	BU2500942-002	BU2500942-003	BU2500942-004	BU2500942-005
					Result	Result	Result	Result	Result
Polycyclic Aromatic Hydrocarbons Surrogates									
Benzo(k)fluoranthene-d12	93952-01-3	E649/BU	2.0	%	91.2	87.2	85.9	90.2	92.7
Chrysene-d12	1719-03-5	E649/BU	2.0	%	88.6	88.6	82.2	99.3	97.3
Dibenz(a,h)anthracene-d14	13250-98-1	E649/BU	2.0	%	92.8	86.8	98.9	76.5	86.0
Fluoranthene-d10	93951-69-0	E649/BU	2.0	%	129	124	128	115	115
Fluorene-d10	81103-79-9	E649/BU	2.0	%	96.6	86.1	75.6	149	125
Indeno(1,2,3-cd)pyrene-d12	203578-33-0	E649/BU	2.0	%	92.7	82.8	98.9	76.5	86.0
Methylnaphthalene-d10, 1-	38072-94-5	E649/BU	2.0	%	121	56.0	59.8	78.9	103
Methylnaphthalene-d10, 2-	38072-94-5	E649/BU	2.0	%	119	120	120	105	102
Naphthalene-d8	1146-65-2	E649/BU	2.0	%	118	122	120	107	108
Perylene-d12	1520-96-3	E649/BU	2.0	%	111	107	113	101	105
Phenanthrene-d10	1517-22-2	E649/BU	2.0	%	111	104	110	103	96.5
Terphenyl-d14, p-	1718-51-0	E649/BU	2.0	%	106	113	93.0	134	86.8

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: Impinger
(Matrix: Air)

Analyte	CAS Number	Method/Lab	LOR	Unit	SVOC-ECA Test 3	SVOC Blank	----	----	----
Client sampling date / time					08-Apr-2025 00:00	08-Apr-2025 00:00	----	----	----
					BU2500942-006	BU2500942-007	----	----	----
					Result	Result	----	----	----
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	83-32-9	E649/BU	2.0	ng/sample	33900	18.1	----	----	----
Acenaphthylene	208-96-8	E649/BU	2.0	ng/sample	48400	32.7	----	----	----

Analytical Results

Sub-Matrix: Impinger
(Matrix: Air)

Analyte	CAS Number	Method/Lab	LOR	Unit	SVOC-ECA Test 3	SVOC Blank	----	----	----
				Client sampling date / time	08-Apr-2025 00:00	08-Apr-2025 00:00	----	----	----
					BU2500942-006	BU2500942-007	----	----	----
					Result	Result	----	----	----
Polycyclic Aromatic Hydrocarbons									
Anthracene	120-12-7	E649/BU	2.0	ng/sample	15700	164	----	----	----
Benz(a)anthracene	56-55-3	E649/BU	2.0	ng/sample	<600	<6.0	----	----	----
Benz(b)anthracene + Chrysene + Triphenylene	n/a	E649/BU	2.0	ng/sample	1050	<6.0	----	----	----
Benzo(a)fluorene	238-84-6	E649/BU	2.0	ng/sample	<600	<6.0	----	----	----
Benzo(a)pyrene	50-32-8	E649/BU	2.0	ng/sample	<600	<6.0	----	----	----
Benzo(b)fluoranthene	205-99-2	E649/BU	2.0	ng/sample	<600	<6.0	----	----	----
Benzo(b)fluorene	243-17-4	E649/BU	2.0	ng/sample	<600	<6.0	----	----	----
Benzo(e)pyrene	192-97-2	E649/BU	2.0	ng/sample	<600	<6.0	----	----	----
Benzo(g,h,i)perylene	191-24-2	E649/BU	2.0	ng/sample	<600	<6.0	----	----	----
Benzo(j+k)fluoranthenes	n/a	E649/BU	2.0	ng/sample	<600	<6.0	----	----	----
Chloronaphthalene, 2-	91-58-7	E649/BU	2.0	ng/sample	13400	<6.0	----	----	----
Coronene	191-07-1	E649/BU	10	ng/sample	<600	<10	----	----	----
Dibenz(a,c+a,h)anthracenes	n/a	E649/BU	2.0	ng/sample	<600	<6.0	----	----	----
Dimethylanthracene, 9,10-	781-43-1	E649/BU	2.0	ng/sample	<600	23.6	----	----	----
Dimethylbenz(a)anthracene, 7,12-	57-97-6	E649/BU	2.0	ng/sample	<2.0	<2.0	----	----	----
Fluoranthene	206-44-0	E649/BU	2.0	ng/sample	6400	17.1	----	----	----
Fluorene	86-73-7	E649/BU	2.0	ng/sample	43000	46.4	----	----	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E649/BU	2.0	ng/sample	<600	<6.0	----	----	----
Methylanthracene, 2-	613-12-7	E649/BU	2.0	ng/sample	8970	7.7	----	----	----

Analytical Results

Sub-Matrix: Impinger
(Matrix: Air**)**

Analyte	CAS Number	Method/Lab	LOR	Unit	SVOC-ECA Test 3	SVOC Blank	----	----	----
				Client sampling date / time	08-Apr-2025 00:00	08-Apr-2025 00:00	----	----	----
					BU2500942-006	BU2500942-007	----	----	----
					Result	Result	----	----	----
Polycyclic Aromatic Hydrocarbons									
Methylcholanthrene, 3-	56-49-5	E649/BU	10	ng/sample	<600	<10	----	----	----
Methylnaphthalene, 1-	90-12-0	E649/BU	2.0	ng/sample	289000	144	----	----	----
Methylnaphthalene, 2-	91-57-6	E649/BU	2.0	ng/sample	370000	243	----	----	----
Methylphenanthrene, 1-	832-69-9	E649/BU	2.0	ng/sample	14800	9.0	----	----	----
Methylphenanthrene, 9-	883-20-5	E649/BU	2.0	ng/sample	5580	11.0	----	----	----
Naphthalene	91-20-3	E649/BU	2.0	ng/sample	509000	547 [B]	----	----	----
Perylene	198-55-0	E649/BU	2.0	ng/sample	<600	<6.0	----	----	----
Phenanthrene	85-01-8	E649/BU	2.0	ng/sample	117000	166	----	----	----
Picene	213-46-7	E649/BU	10	ng/sample	<600	<10	----	----	----
Pyrene	129-00-0	E649/BU	2.0	ng/sample	4030	12.3	----	----	----
Tetralin	119-64-2	E649/BU	2.0	ng/sample	78200	181 [B]	----	----	----
Polycyclic Aromatic Hydrocarbons Surrogates									
Acenaphthylene-d8	93951-97-4	E649/BU	2.0	%	122	82.8	----	----	----
Anthracene-d10	1719-06-8	E649/BU	2.0	%	93.4	73.5	----	----	----
Benz(a)anthracene-d12	1718-53-2	E649/BU	2.0	%	129	108	----	----	----
Benzo(a)pyrene-d12	63466-71-7	E649/BU	2.0	%	102	100	----	----	----
Benzo(b)fluoranthene-d12	93951-98-5	E649/BU	2.0	%	116	112	----	----	----
Benzo(g,h,i)perylene-d12	93951-66-7	E649/BU	2.0	%	90.1	92.2	----	----	----
Benzo(k)fluoranthene-d12	93952-01-3	E649/BU	2.0	%	90.4	93.1	----	----	----
Chrysene-d12	1719-03-5	E649/BU	2.0	%	96.0	81.9	----	----	----

Analytical Results

Sub-Matrix: Impinger
(Matrix: Air)

				Client sample ID	SVOC-ECA Test 3	SVOC Blank	----	----	----
				Client sampling date / time	08-Apr-2025 00:00	08-Apr-2025 00:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	BU2500942-006	BU2500942-007	----	----	----
					Result	Result	----	----	----
Polycyclic Aromatic Hydrocarbons Surrogates									
Dibenz(a,h)anthracene-d14	13250-98-1	E649/BU	2.0	%	76.8	96.7	----	----	----
Fluoranthene-d10	93951-69-0	E649/BU	2.0	%	114	87.1	----	----	----
Fluorene-d10	81103-79-9	E649/BU	2.0	%	88.9	128	----	----	----
Indeno(1,2,3-cd)pyrene-d12	203578-33-0	E649/BU	2.0	%	76.8	92.8	----	----	----
Methylnaphthalene-d10, 1-	38072-94-5	E649/BU	2.0	%	93.5	122	----	----	----
Methylnaphthalene-d10, 2-	38072-94-5	E649/BU	2.0	%	101	68.3	----	----	----
Naphthalene-d8	1146-65-2	E649/BU	2.0	%	109	71.1	----	----	----
Perylene-d12	1520-96-3	E649/BU	2.0	%	102	92.0	----	----	----
Phenanthrene-d10	1517-22-2	E649/BU	2.0	%	94.6	71.1	----	----	----
Terphenyl-d14, p-	1718-51-0	E649/BU	2.0	%	138	119	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **BU2500942**	Page	:
Client	: **RWDI Air Inc.**	Laboratory	: ALS Environmental - Burlington
Contact	: Oluwatobi Odumoye	Account Manager	: Robert Chin
Address	: 600 Southgate Drive Guelph ON Canada N1G 4P6	Address	: 1435 Norjohn Court, Unit 1 Burlington, Ontario Canada L7L 0E6
Telephone	: 519 823 1311	Telephone	: +1 905 331 3111
Project	: 2509873 SMC St. Mary's	Date Samples Received	: 15-Apr-2025 11:35
PO	: 2509873	Issue Date	: 03-Jul-2025 13:39
C-O-C number	: ----		
Sampler	: Adam Tran		
Site	: SMC St Marys		
Quote number	: SMC St Marys		
No. of samples received	: 7		
No. of samples analysed	: 7		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Laboratory Control Sample (LCS) outliers occur
- Method Blank value outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Air**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Method Blank (MB) Values								
Polycyclic Aromatic Hydrocarbons	QC-2079302-001	----	Methylnaphthalene, 1-	90-12-0	E649	8.5 ng/sample B	2 ng/sample	Blank result exceeds permitted value
Polycyclic Aromatic Hydrocarbons	QC-2079302-001	----	Methylnaphthalene, 2-	91-57-6	E649	9.9 ng/sample B	2 ng/sample	Blank result exceeds permitted value
Polycyclic Aromatic Hydrocarbons	QC-2079302-001	----	Naphthalene	91-20-3	E649	87.2 ng/sample B	2 ng/sample	Blank result exceeds permitted value
Polycyclic Aromatic Hydrocarbons	QC-2079302-001	----	Tetralin	119-64-2	E649	33.5 ng/sample B	2 ng/sample	Blank result exceeds permitted value

Result Qualifiers

Qualifier	*Description*
B	*Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.*

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Air**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dioxins and Furans : Dioxins and Furans in Stack by GC/HRMS										
XAD Sorbent Trap SVOC Blank	E770	08-Apr-2025	16-Apr-2025	30 days	9 days	✓	28-Apr-2025	30 days	9 days	✓
Dioxins and Furans : Dioxins and Furans in Stack by GC/HRMS										
XAD Sorbent Trap SVOC-CSI Test 1	E770	08-Apr-2025	16-Apr-2025	30 days	9 days	✓	28-Apr-2025	30 days	9 days	✓
Dioxins and Furans : Dioxins and Furans in Stack by GC/HRMS										
XAD Sorbent Trap SVOC-CSI Test 2	E770	08-Apr-2025	16-Apr-2025	30 days	9 days	✓	28-Apr-2025	30 days	9 days	✓
Dioxins and Furans : Dioxins and Furans in Stack by GC/HRMS										
XAD Sorbent Trap SVOC-CSI Test 3	E770	08-Apr-2025	16-Apr-2025	30 days	9 days	✓	28-Apr-2025	30 days	9 days	✓
Dioxins and Furans : Dioxins and Furans in Stack by GC/HRMS										
XAD Sorbent Trap SVOC-ECA Test 1	E770	08-Apr-2025	16-Apr-2025	30 days	9 days	✓	28-Apr-2025	30 days	9 days	✓
Dioxins and Furans : Dioxins and Furans in Stack by GC/HRMS										
XAD Sorbent Trap SVOC-ECA Test 2	E770	08-Apr-2025	16-Apr-2025	30 days	9 days	✓	28-Apr-2025	30 days	9 days	✓
Dioxins and Furans : Dioxins and Furans in Stack by GC/HRMS										
XAD Sorbent Trap SVOC-ECA Test 3	E770	08-Apr-2025	16-Apr-2025	30 days	9 days	✓	28-Apr-2025	30 days	9 days	✓

Matrix: **Air**

Evaluation: ✘ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times: Rec	Holding Times: Actual	Eval	Analysis: Analysis Date	Holding Times: Rec	Holding Times: Actual	Eval
Polychlorinated Biphenyls : PCBs in Stack by GC/HRMS										
XAD Sorbent Trap SVOC Blank	E781	08-Apr-2025	16-Apr-2025	365 days	9 days	✓	23-Apr-2025	365 days	9 days	✓
Polychlorinated Biphenyls : PCBs in Stack by GC/HRMS										
XAD Sorbent Trap SVOC-CSI Test 1	E781	08-Apr-2025	16-Apr-2025	365 days	9 days	✓	23-Apr-2025	365 days	9 days	✓
Polychlorinated Biphenyls : PCBs in Stack by GC/HRMS										
XAD Sorbent Trap SVOC-CSI Test 2	E781	08-Apr-2025	16-Apr-2025	365 days	9 days	✓	23-Apr-2025	365 days	9 days	✓
Polychlorinated Biphenyls : PCBs in Stack by GC/HRMS										
XAD Sorbent Trap SVOC-CSI Test 3	E781	08-Apr-2025	16-Apr-2025	365 days	9 days	✓	23-Apr-2025	365 days	9 days	✓
Polychlorinated Biphenyls : PCBs in Stack by GC/HRMS										
XAD Sorbent Trap SVOC-ECA Test 1	E781	08-Apr-2025	16-Apr-2025	365 days	9 days	✓	23-Apr-2025	365 days	9 days	✓
Polychlorinated Biphenyls : PCBs in Stack by GC/HRMS										
XAD Sorbent Trap SVOC-ECA Test 2	E781	08-Apr-2025	16-Apr-2025	365 days	9 days	✓	23-Apr-2025	365 days	9 days	✓
Polychlorinated Biphenyls : PCBs in Stack by GC/HRMS										
XAD Sorbent Trap SVOC-ECA Test 3	E781	08-Apr-2025	16-Apr-2025	365 days	9 days	✓	23-Apr-2025	365 days	9 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs - Extended List in Stack by GC-MS										
XAD Sorbent Trap SVOC Blank	E649	08-Apr-2025	16-Apr-2025	21 days	9 days	✓	20-Jun-2025	40 days	65 days	✘ EHT
Polycyclic Aromatic Hydrocarbons : PAHs - Extended List in Stack by GC-MS										
XAD Sorbent Trap SVOC-CSI Test 1	E649	08-Apr-2025	16-Apr-2025	21 days	9 days	✓	20-Jun-2025	40 days	65 days	✘ EHT

Matrix: **Air**

Evaluation: ✖ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times* Rec	*Holding Times* Actual	*Eval*	*Analysis Date*	*Holding Times* Rec	*Holding Times* Actual	*Eval*
Polycyclic Aromatic Hydrocarbons : PAHs - Extended List in Stack by GC-MS										
XAD Sorbent Trap SVOC-CSI Test 2	E649	08-Apr-2025	16-Apr-2025	21 days	9 days	✓	20-Jun-2025	40 days	65 days	✖ EHT
Polycyclic Aromatic Hydrocarbons : PAHs - Extended List in Stack by GC-MS										
XAD Sorbent Trap SVOC-CSI Test 3	E649	08-Apr-2025	16-Apr-2025	21 days	9 days	✓	20-Jun-2025	40 days	65 days	✖ EHT
Polycyclic Aromatic Hydrocarbons : PAHs - Extended List in Stack by GC-MS										
XAD Sorbent Trap SVOC-ECA Test 1	E649	08-Apr-2025	16-Apr-2025	21 days	9 days	✓	20-Jun-2025	40 days	65 days	✖ EHT
Polycyclic Aromatic Hydrocarbons : PAHs - Extended List in Stack by GC-MS										
XAD Sorbent Trap SVOC-ECA Test 2	E649	08-Apr-2025	16-Apr-2025	21 days	9 days	✓	20-Jun-2025	40 days	65 days	✖ EHT
Polycyclic Aromatic Hydrocarbons : PAHs - Extended List in Stack by GC-MS										
XAD Sorbent Trap SVOC-ECA Test 3	E649	08-Apr-2025	16-Apr-2025	21 days	9 days	✓	20-Jun-2025	40 days	65 days	✖ EHT

Legend & Qualifier Definitions

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Air**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS)							
PAHs - Extended List in Stack by GC-MS	E649	2079302	1	7	14.2	5.0	✓
Method Blanks (MB)							
PAHs - Extended List in Stack by GC-MS	E649	2079302	1	7	14.2	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	*Method / Lab*	*Matrix*	*Method Reference*	*Method Descriptions*
PAHs - Extended List in Stack by GC-MS	E649 ALS Environmental - Burlington	Air	Modified CARB 429	Polycyclic Aromatic Hydrocarbons (PAHs) are analyzed by GC-MS.
Dioxins and Furans in Stack by GC/HRMS	E770 ALS Environmental - Burlington	Air	USEPA M23	Determination of POLYCHLORINATED DIBENZO-P-DIOXINS and POLYCHLORINATED DIBENZOFURANS from stationary sources.
PCBs in Stack by GC/HRMS	E781 ALS Environmental - Burlington	Air	EPA 1668C	The sample is extracted by Soxhlet extraction. The extracts are prepared using column chromatography, reduced in volume and analyzed by isotope-dilution GC/HRMS

Preparation Methods	*Method / Lab*	*Matrix*	*Method Reference*	*Method Descriptions*
Extraction (Soxhlet and liquid-liquid) of Stack for Organic Analytes	EP800 ALS Environmental - Burlington	Air	EPA Method 3540C (Soxhlet) and EPA Method 3510C (L-L)	Samples are extracted with Soxhlet and/or separatory funnel apparatus, followed by appropriate cleanup.

QUALITY CONTROL REPORT

Work Order	: **BU2500942**		Page	: 1 of 4
Client	: RWDI Air Inc.		Laboratory	: ALS Environmental - Burlington
Contact	: Oluwatobi Odumoye		Account Manager	: Robert Chin
Address	: 600 Southgate Drive Guelph ON Canada N1G 4P6		Address	: 1435 Norjohn Court, Unit 1 Burlington, Ontario Canada L7L 0E6
Telephone	: 519 823 1311		Telephone	: +1 905 331 3111
Project	: 2509873 SMC St. Mary's		Date Samples Received	: 15-Apr-2025 11:35
PO	: 2509873		Date Analysis Commenced	: 16-Apr-2025
C-O-C number	: ----		Issue Date	: 03-Jul-2025 13:38
Sampler	: Adam Tran			
Site	: SMC St Marys			
Quote number	: SMC St Marys			
No. of samples received	: 7			
No. of samples analysed	: 7			

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Philip Elder	Technical Manager	Burlington Organics, Burlington, Ontario
Sabrina Jin	Analyst	Burlington Organics, Burlington, Ontario

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Air**

Analyte	*CAS Number*	*Method*	*LOR*	*Unit*	*Result*	*Qualifier*
Polycyclic Aromatic Hydrocarbons (QCLot: 2079302)						
Acenaphthene	83-32-9	E649	2	ng/sample	<6.0	----
Acenaphthylene	208-96-8	E649	2	ng/sample	<6.0	----
Anthracene	120-12-7	E649	2	ng/sample	<6.0	----
Benz(a)anthracene	56-55-3	E649	2	ng/sample	<6.0	----
Benz(b)anthracene + Chrysene + Triphenylene	n/a	E649	2	ng/sample	<6.0	----
Benzo(a)fluorene	238-84-6	E649	2	ng/sample	<6.0	----
Benzo(a)pyrene	50-32-8	E649	2	ng/sample	<6.0	----
Benzo(b)fluoranthene	205-99-2	E649	2	ng/sample	<6.0	----
Benzo(b)fluorene	243-17-4	E649	2	ng/sample	<6.0	----
Benzo(e)pyrene	192-97-2	E649	2	ng/sample	<6.0	----
Benzo(g,h,i)perylene	191-24-2	E649	2	ng/sample	<6.0	----
Benzo(j+k)fluoranthenes	n/a	E649	2	ng/sample	<6.0	----
Chloronaphthalene, 2-	91-58-7	E649	2	ng/sample	<6.0	----
Coronene	191-07-1	E649	10	ng/sample	<10	----
Dibenz(a,c+a,h)anthracenes	n/a	E649	2	ng/sample	<6.0	----
Dimethylanthracene, 9,10-	781-43-1	E649	2	ng/sample	<6.0	----
Dimethylbenz(a)anthracene, 7,12-	57-97-6	E649	2	ng/sample	<2.0	----
Fluoranthene	206-44-0	E649	2	ng/sample	<6.0	----
Fluorene	86-73-7	E649	2	ng/sample	<6.0	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E649	2	ng/sample	<6.0	----
Methylanthracene, 2-	613-12-7	E649	2	ng/sample	<6.0	----
Methylcholanthrene, 3-	56-49-5	E649	10	ng/sample	<10	----
Methylnaphthalene, 1-	90-12-0	E649	2	ng/sample	# 8.5	B
Methylnaphthalene, 2-	91-57-6	E649	2	ng/sample	# 9.9	B
Methylphenanthrene, 1-	832-69-9	E649	2	ng/sample	<6.0	----
Methylphenanthrene, 9-	883-20-5	E649	2	ng/sample	<6.0	----
Naphthalene	91-20-3	E649	2	ng/sample	# 87.2	B
Perylene	198-55-0	E649	2	ng/sample	<6.0	----
Phenanthrene	85-01-8	E649	2	ng/sample	<6.0	----
Picene	213-46-7	E649	10	ng/sample	<10	----
Pyrene	129-00-0	E649	2	ng/sample	<6.0	----
Tetralin	119-64-2	E649	2	ng/sample	# 33.5	B

Qualifiers

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Air**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 2079302)									
Acenaphthene	83-32-9	E649	2	ng/sample	300 ng/sample	123	50.0	150	----
Acenaphthylene	208-96-8	E649	2	ng/sample	300 ng/sample	115	50.0	150	----
Anthracene	120-12-7	E649	2	ng/sample	300 ng/sample	119	50.0	150	----
Benz(a)anthracene	56-55-3	E649	2	ng/sample	300 ng/sample	122	50.0	150	----
Benz(b)anthracene + Chrysene + Triphenylene	n/a	E649	2	ng/sample	300 ng/sample	112	50.0	150	----
Benzo(a)pyrene	50-32-8	E649	2	ng/sample	300 ng/sample	121	50.0	150	----
Benzo(b)fluoranthene	205-99-2	E649	2	ng/sample	300 ng/sample	99.7	50.0	150	----
Benzo(e)pyrene	192-97-2	E649	2	ng/sample	300 ng/sample	121	50.0	150	----
Benzo(g,h,i)perylene	191-24-2	E649	2	ng/sample	300 ng/sample	113	50.0	150	----
Benzo(j+k)fluoranthenes	n/a	E649	2	ng/sample	300 ng/sample	136	50.0	150	----
Coronene	191-07-1	E649	10	ng/sample	300 ng/sample	123	50.0	150	----
Dibenz(a,c+a,h)anthracenes	n/a	E649	2	ng/sample	300 ng/sample	116	50.0	150	----
Fluoranthene	206-44-0	E649	2	ng/sample	300 ng/sample	122	50.0	150	----
Fluorene	86-73-7	E649	2	ng/sample	300 ng/sample	128	50.0	150	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E649	2	ng/sample	300 ng/sample	123	50.0	150	----
Methylnaphthalene, 1-	90-12-0	E649	2	ng/sample	300 ng/sample	124	50.0	150	----
Methylnaphthalene, 2-	91-57-6	E649	2	ng/sample	300 ng/sample	124	50.0	150	----
Methylphenanthrene, 1-	832-69-9	E649	2	ng/sample	300 ng/sample	114	50.0	150	----
Naphthalene	91-20-3	E649	2	ng/sample	300 ng/sample	132	50.0	150	----
Perylene	198-55-0	E649	2	ng/sample	300 ng/sample	122	50.0	150	----
Phenanthrene	85-01-8	E649	2	ng/sample	300 ng/sample	120	50.0	150	----
Pyrene	129-00-0	E649	2	ng/sample	300 ng/sample	113	50.0	150	----

1435 Norjohn Court, Unit 1, Burlington, ON, Canada L7L 0E6
Phone: 905-331-3111, FAX: 905-331-4567

Certificate of Analysis

ALS Project Contact:	Robert Chin	**Client Name:**	RWDI Air Inc.
ALS Project ID:	RWDI100	**Client Address:**	600 Southgate Drive
ALS WO#:	BU2500942		Guelph, ON
Date of Report	14-May-25		N1G 4P6
Date of Sample Receipt	15-Apr-25	**Client Contact:**	Oluwatobi Odumoye
		Client Project ID:	2509873 SMC St. Mary's

COMMENTS: **PCDD/F by EPA M23**

Certified by:

Sabrina Jin
Technical Specialist

ALS Life Sciences

Sample Analysis summary Report

Sample Name	**SVOC-CSI Test 1**	**SVOC-CSI Test 2**	**SVOC-CSI Test 3**	**SVOC-ECA Test 1**	**SVOC-ECA Test 2**	**SVOC-ECA Test 3**
ALS Sample ID	BU2500942-001	BU2500942-002	BU2500942-003	BU2500942-004	BU2500942-005	BU2500942-006
Sample Size	1	1	1	1	1	1
Sample size units	Sample	Sample	Sample	Sample	Sample	Sample
Percent Moisture	n/a	n/a	n/a	n/a	n/a	n/a
Sample Matrix	Impinger	Impinger	Impinger	Impinger	Impinger	Impinger
Sampling Date	8-Apr-25	8-Apr-25	8-Apr-25	8-Apr-25	8-Apr-25	8-Apr-25
Extraction Date	16-Apr-25	16-Apr-25	16-Apr-25	16-Apr-25	16-Apr-25	16-Apr-25
Target Analytes	**pg**	**pg**	**pg**	**pg**	**pg**	**pg**
2,3,7,8-TCDD	132	137	148	<0.74	16.2	<1.9
1,2,3,7,8-PeCDD	225	<230	323	<0.51	14.0	0.851
1,2,3,4,7,8-HxCDD	111	124	166	<0.40	5.94	<0.89
1,2,3,6,7,8-HxCDD	196	242	307	<0.68	9.42	<0.85
1,2,3,7,8,9-HxCDD	133	142	193	0.822	<4.1	<0.83
1,2,3,4,6,7,8-HpCDD	574	717	968	4.59	23.0	3.13
OCDD	449	567	729	13.2	26.9	<8.5
2,3,7,8-TCDF	4120	4310	4480	24.6	662	44.8
1,2,3,7,8-PeCDF	1310	1460	1660	4.31	148	7.18
2,3,4,7,8-PeCDF	2720	3050	3840	8.45	260	<11
1,2,3,4,7,8-HxCDF	1280	1500	1830	<2.8	88.4	3.79
1,2,3,6,7,8-HxCDF	877	1070	1250	1.58	52.9	<1.4
2,3,4,6,7,8-HxCDF	1050	1230	1560	<2.5	60.8	<2.1
1,2,3,7,8,9-HxCDF	203	238	296	<0.96	12.3	<1.3
1,2,3,4,6,7,8-HpCDF	1650	1970	2700	<3.7	71.5	4.24
1,2,3,4,7,8,9-HpCDF	139	159	224	<0.55	<5.8	<0.75
OCDF	207	251	352	5.16	11.9	11.6
Field Spike Standards	**% Rec**	**% Rec**	**% Rec**	**% Rec**	**% Rec**	**% Rec**
37Cl4-2,3,7,8-TCDD	97	96	99	100	100	99
13C12-1,2,3,4,7,8-HxCDD	102	101	97	104	105	86
13C12-2,3,4,7,8-PeCDF	102	104	116	103	101	96
13C12-1,2,3,4,7,8-HxCDF	101	102	101	109	107	111
13C12-1,2,3,4,7,8,9-HpCDF	113	110	115	112	112	110
Extraction Standards						
13C12-2,3,7,8-TCDD	87	81	91	105	96	105
13C12-1,2,3,7,8-PeCDD	86	79	90	107	96	105
13C12-1,2,3,6,7,8-HxCDD	85	81	89	103	94	107
13C12-1,2,3,4,6,7,8-HpCDD	84	80	89	107	99	102
13C12-OCDD	81	76	82	102	94	98
13C12-2,3,7,8-TCDF	83	78	85	100	93	103
13C12-1,2,3,7,8-PeCDF	80	72	71	100	92	101
13C12-1,2,3,6,7,8-HxCDF	80	75	81	93	90	94
13C12-1,2,3,4,6,7,8-HpCDF	75	73	77	96	89	93
Cleanup Standard						
13C12-1,2,3,7,8,9-HxCDF	76	79	72	93	77	82
Homologue Group Totals	**pg**	**pg**	**pg**	**pg**	**pg**	**pg**
Total-TCDD	37000	37700	38100	234	4840	556
Total-PeCDD	9700	13000	14300	11.3	771	31.7
Total-HxCDD	5580	6610	8630	7.86	272	1.72
Total-HpCDD	1430	1770	2450	7.80	49.7	3.13
Total-TCDF	71800	72400	69200	561	13600	1000
Total-PeCDF	22900	25800	30600	56.3	2760	104
Total-HxCDF	9230	10900	13300	1.58	651	8.01
Total-HpCDF	2320	2750	3740	<0.55	96.0	4.24
Toxic Equivalency - (WHO 2005)						
Lower Bound PCDD/F TEQ (WHO 2005)	2030	2010	2720	5.42	203	6.00
Mid Point PCDD/F TEQ (WHO 2005)	2030	2240	2720	7.16	203	11.8
Upper Bound PCDD/F TEQ (WHO 2005)	2030	2240	2720	7.44	203	11.9

ALS Life Sciences

Sample Analysis summary Report

Sample Name	**SVOC Blank**
ALS Sample ID	BU2500942-007
Sample Size	1
Sample size units	Sample
Percent Moisture	n/a
Sample Matrix	Impinger
Sampling Date	8-Apr-25
Extraction Date	16-Apr-25
Target Analytes	**pg**
2,3,7,8-TCDD	<0.44
1,2,3,7,8-PeCDD	<0.35
1,2,3,4,7,8-HxCDD	<0.37
1,2,3,6,7,8-HxCDD	0.468
1,2,3,7,8,9-HxCDD	<0.34
1,2,3,4,6,7,8-HpCDD	<1.7
OCDD	<7.2
2,3,7,8-TCDF	<0.33
1,2,3,7,8-PeCDF	<0.74
2,3,4,7,8-PeCDF	<0.33
1,2,3,4,7,8-HxCDF	<0.30
1,2,3,6,7,8-HxCDF	<0.31
2,3,4,6,7,8-HxCDF	<0.30
1,2,3,7,8,9-HxCDF	<0.39
1,2,3,4,6,7,8-HpCDF	0.758
1,2,3,4,7,8,9-HpCDF	<0.79
OCDF	<3.3
Field Spike Standards	**% Rec**
37Cl4-2,3,7,8-TCDD	100
13C12-1,2,3,4,7,8-HxCDD	98
13C12-2,3,4,7,8-PeCDF	104
13C12-1,2,3,4,7,8-HxCDF	108
13C12-1,2,3,4,7,8,9-HpCDF	112
Extraction Standards	
13C12-2,3,7,8-TCDD	91
13C12-1,2,3,7,8-PeCDD	102
13C12-1,2,3,6,7,8-HxCDD	101
13C12-1,2,3,4,6,7,8-HpCDD	102
13C12-OCDD	99
13C12-2,3,7,8-TCDF	91
13C12-1,2,3,7,8-PeCDF	98
13C12-1,2,3,6,7,8-HxCDF	90
13C12-1,2,3,4,6,7,8-HpCDF	94
Cleanup Standard	
13C12-1,2,3,7,8,9-HxCDF	84
Homologue Group Totals	**pg**
Total-TCDD	<0.44
Total-PeCDD	<0.35
Total-HxCDD	0.468
Total-HpCDD	0.855
Total-TCDF	<0.33
Total-PeCDF	0.411
Total-HxCDF	<0.37
Total-HpCDF	<0.79
Toxic Equivalency - (WHO 2005)	
Lower Bound PCDD/F TEQ (WHO 2005)	0.0544
Mid Point PCDD/F TEQ (WHO 2005)	0.697
Upper Bound PCDD/F TEQ (WHO 2005)	1.23

ALS Life Sciences

Quality Control Summary Report

Sample Name	Method Blank	Laboratory Control Sample
ALS Sample ID	QC-MRG3-1952762-001	QC-MRG2-1952762-002
Sample Size	1	1
Sample size units	Sample	n/a
Percent Moisture	n/a	n/a
Sample Matrix	QC	QC
Sampling Date	n/a	n/a
Extraction Date	16-Apr-25	16-Apr-25
Target Analytes	**pg**	**% Rec**
2,3,7,8-TCDD	<1.3	94
1,2,3,7,8-PeCDD	<0.63	106
1,2,3,4,7,8-HxCDD	<0.45	106
1,2,3,6,7,8-HxCDD	<0.43	98
1,2,3,7,8,9-HxCDD	<0.42	102
1,2,3,4,6,7,8-HpCDD	2.83	100
OCDD	<11	100
2,3,7,8-TCDF	<0.84	93
1,2,3,7,8-PeCDF	<0.91	99
2,3,4,7,8-PeCDF	<0.52	101
1,2,3,4,7,8-HxCDF	1.09	95
1,2,3,6,7,8-HxCDF	<0.61	96
2,3,4,6,7,8-HxCDF	1.06	95
1,2,3,7,8,9-HxCDF	0.768	109
1,2,3,4,6,7,8-HpCDF	<6.3	99
1,2,3,4,7,8,9-HpCDF	<0.63	104
OCDF	<6.2	115
Field Spike Standards	**% Rec**	**% Rec**
37Cl4-2,3,7,8-TCDD	NS	NS
13C12-1,2,3,4,7,8-HxCDD	NS	NS
13C12-2,3,4,7,8-PeCDF	NS	NS
13C12-1,2,3,4,7,8-HxCDF	NS	NS
13C12-1,2,3,4,7,8,9-HpCDF	NS	NS
Extraction Standards		
13C12-2,3,7,8-TCDD	63	73
13C12-1,2,3,7,8-PeCDD	72	87
13C12-1,2,3,6,7,8-HxCDD	71	85
13C12-1,2,3,4,6,7,8-HpCDD	73	95
13C12-OCDD	71	95
13C12-2,3,7,8-TCDF	63	76
13C12-1,2,3,7,8-PeCDF	69	82
13C12-1,2,3,6,7,8-HxCDF	67	89
13C12-1,2,3,4,6,7,8-HpCDF	69	90
Cleanup Standard		
13C12-1,2,3,7,8,9-HxCDF	84	94
Homologue Group Totals	**pg**	
Total-TCDD	<1.3	
Total-PeCDD	<0.63	
Total-HxCDD	<0.45	
Total-HpCDD	4.94	
Total-TCDF	<0.71	
Total-PeCDF	1.59	
Total-HxCDF	5.78	
Total-HpCDF	<0.47	
Toxic Equivalency - (WHO 2005)		
Lower Bound PCDD/F TEQ (WHO 2005)	0.320	
Mid Point PCDD/F TEQ (WHO 2005)	1.70	
Upper Bound PCDD/F TEQ (WHO 2005)	2.78	

ALS Life Sciences

Sample Analysis Report

Sample Name	**SVOC-CSI Test 1**	Sampling Date	8-Apr-25		
ALS Sample ID	BU2500942-001	Extraction Date	16-Apr-25		Approved:
Analysis Method	EPA M23	Sample Size	1	Sample	*M.Elchawiche*
Analysis Type	Sample	Percent Moisture	n/a		--e-signature--
Sample Matrix	Impinger	Split Ratio	6		02-May-2025

Run Information	**Run 1**
Filename	12-250428A10
Run Date	28-Apr-25 20:58
Final Volume	10 uL
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-12 ZB-DX1188879

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
2,3,7,8-TCDD	1	28.51	132	4.7			30
1,2,3,7,8-PeCDD	1	31.57	225	2.8			30
1,2,3,4,7,8-HxCDD	0.1	33.79	111	5.7			30
1,2,3,6,7,8-HxCDD	0.1	33.86	196	5.5			30
1,2,3,7,8,9-HxCDD	0.1	34.06	133	5.3			30
1,2,3,4,6,7,8-HpCDD	0.01	36.41	574	2.7			30
OCDD	0.0003	39.44	449	2.2			60
2,3,7,8-TCDF	0.1	27.96	4120	3.0			30
1,2,3,7,8-PeCDF	0.03	30.84	1310	2.5			30
2,3,4,7,8-PeCDF	0.3	31.46	2720	2.3	M		30
1,2,3,4,7,8-HxCDF	0.1	33.21	1280	2.5			30
1,2,3,6,7,8-HxCDF	0.1	33.31	877	2.5			30
2,3,4,6,7,8-HxCDF	0.1	33.74	1050	2.5			30
1,2,3,7,8,9-HxCDF	0.1	34.45	203	3.1			30
1,2,3,4,6,7,8-HpCDF	0.01	35.44	1650	2.6			30
1,2,3,4,7,8,9-HpCDF	0.01	37.06	139	3.3			30
OCDF	0.0003	39.79	207	3.9			60

Field Spike Standards	**pg**		**% Rec**	**Limits**
37Cl4-2,3,7,8-TCDD	800	28.51	97	70-130
13C12-1,2,3,4,7,8-HxCDD	8000	33.77	102	70-130
13C12-2,3,4,7,8-PeCDF	8000	31.44	102	70-130
13C12-1,2,3,4,7,8-HxCDF	8000	33.21	101	70-130
13C12-1,2,3,4,7,8,9-HpCDF	8000	37.05	113	70-130
Extraction Standards				
13C12-2,3,7,8-TCDD	6000	28.50	87	40-130
13C12-1,2,3,7,8-PeCDD	6000	31.56	86	40-130
13C12-1,2,3,6,7,8-HxCDD	6000	33.85	85	40-130
13C12-1,2,3,4,6,7,8-HpCDD	6000	36.40	84	25-130
13C12-OCDD	12000	39.42	81	25-130
13C12-2,3,7,8-TCDF	6000	27.94	83	40-130
13C12-1,2,3,7,8-PeCDF	6000	30.83	80	40-130
13C12-1,2,3,6,7,8-HxCDF	6000	33.29	80	40-130
13C12-1,2,3,4,6,7,8-HpCDF	6000	35.43	75	25-130
Cleanup Standard	**pg**			
13C12-1,2,3,7,8,9-HxCDF	6000	34.43	76	40-130

Homologue Group Totals	**# peaks**	**Conc. pg**	**EDL pg**	
Total-TCDD	19	37000	4.7	30
Total-PeCDD	9	9700	2.8	30
Total-HxCDD	8	5580	5.7	30
Total-HpCDD	2	1430	2.7	30
Total-TCDF	25	71800	3.0	30
Total-PeCDF	17	22900	2.5	30
Total-HxCDF	11	9230	3.1	30
Total-HpCDF	4	2320	3.3	30

Toxic Equivalency - (WHO 2005)	**pg**
Lower Bound PCDD/F TEQ (WHO 2005)	2030
Mid Point PCDD/F TEQ (WHO 2005)	2030
Upper Bound PCDD/F TEQ (WHO 2005)	2030

EDL — Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF — Indicates the Toxic Equivalency Factor; TEQ — Indicates the Toxic Equivalency
M — Indicates that a peak has been manually integrated.

LQL — Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
EMPC — Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Sample Analysis Report

Sample Name	**SVOC-CSI Test 2**	Sampling Date	8-Apr-25	
ALS Sample ID	BU2500942-002	Extraction Date	16-Apr-25	Approved:
Analysis Method	EPA M23	Sample Size	1 Sample	*M.Elchawiche*
Analysis Type	Sample	Percent Moisture	n/a	--e-signature--
Sample Matrix	Impinger	Split Ratio	6	02-May-2025

Run Information	**Run 1**
Filename	12-250428A11
Run Date	28-Apr-25 21:44
Final Volume	10 uL
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-12 ZB-DX1188879

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
2,3,7,8-TCDD	1	28.51	137	2.2			30
1,2,3,7,8-PeCDD	1	31.57	<230	2.6	R	230	30
1,2,3,4,7,8-HxCDD	0.1	33.77	124	2.9			30
1,2,3,6,7,8-HxCDD	0.1	33.86	242	2.8			30
1,2,3,7,8,9-HxCDD	0.1	34.06	142	2.7			30
1,2,3,4,6,7,8-HpCDD	0.01	36.41	717	2.8			30
OCDD	0.0003	39.44	567	2.7			60
2,3,7,8-TCDF	0.1	27.96	4310	2.3			30
1,2,3,7,8-PeCDF	0.03	30.84	1460	6.3			30
2,3,4,7,8-PeCDF	0.3	31.46	3050	5.8			30
1,2,3,4,7,8-HxCDF	0.1	33.21	1500	3.0			30
1,2,3,6,7,8-HxCDF	0.1	33.31	1070	2.9			30
2,3,4,6,7,8-HxCDF	0.1	33.72	1230	3.0			30
1,2,3,7,8,9-HxCDF	0.1	34.44	238	3.7			30
1,2,3,4,6,7,8-HpCDF	0.01	35.44	1970	2.7			30
1,2,3,4,7,8,9-HpCDF	0.01	37.06	159	3.3			30
OCDF	0.0003	39.80	251	5.2			60
Field Spike Standards	**pg**		**% Rec**	**Limits**			
37Cl4-2,3,7,8-TCDD	800	28.51	96	70-130			
13C12-1,2,3,4,7,8-HxCDD	8000	33.77	101	70-130			
13C12-2,3,4,7,8-PeCDF	8000	31.44	104	70-130			
13C12-1,2,3,4,7,8-HxCDF	8000	33.19	102	70-130			
13C12-1,2,3,4,7,8,9-HpCDF	8000	37.05	110	70-130			
Extraction Standards							
13C12-2,3,7,8-TCDD	6000	28.50	81	40-130			
13C12-1,2,3,7,8-PeCDD	6000	31.56	79	40-130			
13C12-1,2,3,6,7,8-HxCDD	6000	33.85	81	40-130			
13C12-1,2,3,4,6,7,8-HpCDD	6000	36.40	80	25-130			
13C12-OCDD	12000	39.41	76	25-130			
13C12-2,3,7,8-TCDF	6000	27.94	78	40-130			
13C12-1,2,3,7,8-PeCDF	6000	30.83	72	40-130			
13C12-1,2,3,6,7,8-HxCDF	6000	33.29	75	40-130			
13C12-1,2,3,4,6,7,8-HpCDF	6000	35.43	73	25-130			
Cleanup Standard	**pg**						
13C12-1,2,3,7,8,9-HxCDF	6000	34.41	79	40-130			

Homologue Group Totals	**# peaks**	**Conc. pg**	**EDL pg**	
Total-TCDD	18	37700	2.2	30
Total-PeCDD	8	13000	2.6	30
Total-HxCDD	7	6610	2.9	30
Total-HpCDD	2	1770	2.8	30
Total-TCDF	27	72400	2.3	30
Total-PeCDF	18	25800	6.3	30
Total-HxCDF	11	10900	3.7	30
Total-HpCDF	4	2750	3.3	30

Toxic Equivalency - (WHO 2005)	**pg**
Lower Bound PCDD/F TEQ (WHO 2005)	2010
Mid Point PCDD/F TEQ (WHO 2005)	2240
Upper Bound PCDD/F TEQ (WHO 2005)	2240

EDL — Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.

TEF — Indicates the Toxic Equivalency Factor

TEQ — Indicates the Toxic Equivalency

R — Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.

LQL — Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.

EMPC — Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Sample Analysis Report

Sample Name	**SVOC-CSI Test 3**	Sampling Date	8-Apr-25	
ALS Sample ID	BU2500942-003	Extraction Date	16-Apr-25	
Analysis Method	EPA M23	Sample Size	1	Sample
Analysis Type	Sample	Percent Moisture	n/a	
Sample Matrix	Impinger	Split Ratio	6	

Approved:
M.Elchawiche
--e-signature--
02-May-2025

Run Information	**Run 1**
Filename	12-250428A12
Run Date	28-Apr-25 22:29
Final Volume	10 uL
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-12 ZB-DX1188879

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
2,3,7,8-TCDD	1	28.53	148	2.7			30
1,2,3,7,8-PeCDD	1	31.58	323	49			30
1,2,3,4,7,8-HxCDD	0.1	33.80	166	3.3			30
1,2,3,6,7,8-HxCDD	0.1	33.87	307	3.2			30
1,2,3,7,8,9-HxCDD	0.1	34.07	193	3.1			30
1,2,3,4,6,7,8-HpCDD	0.01	36.42	968	2.6			30
OCDD	0.0003	39.46	729	2.7			60
2,3,7,8-TCDF	0.1	27.99	4480	2.6			30
1,2,3,7,8-PeCDF	0.03	30.86	1660	4.3			30
2,3,4,7,8-PeCDF	0.3	31.46	3840	4.0			30
1,2,3,4,7,8-HxCDF	0.1	33.23	1830	2.4			30
1,2,3,6,7,8-HxCDF	0.1	33.32	1250	2.4			30
2,3,4,6,7,8-HxCDF	0.1	33.74	1560	2.4			30
1,2,3,7,8,9-HxCDF	0.1	34.46	296	3.0			30
1,2,3,4,6,7,8-HpCDF	0.01	35.45	2700	2.8			30
1,2,3,4,7,8,9-HpCDF	0.01	37.07	224	3.5			30
OCDF	0.0003	39.81	352	6.5			60

Field Spike Standards	**pg**		**% Rec**	**Limits**
37Cl4-2,3,7,8-TCDD	800	28.53	99	70-130
13C12-1,2,3,4,7,8-HxCDD	8000	33.79	97	70-130
13C12-2,3,4,7,8-PeCDF	8000	31.46	116	70-130
13C12-1,2,3,4,7,8-HxCDF	8000	33.22	101	70-130
13C12-1,2,3,4,7,8,9-HpCDF	8000	37.06	115	70-130
Extraction Standards				
13C12-2,3,7,8-TCDD	6000	28.51	91	40-130
13C12-1,2,3,7,8-PeCDD	6000	31.57	90	40-130
13C12-1,2,3,6,7,8-HxCDD	6000	33.86	89	40-130
13C12-1,2,3,4,6,7,8-HpCDD	6000	36.41	89	25-130
13C12-OCDD	12000	39.44	82	25-130
13C12-2,3,7,8-TCDF	6000	27.96	85	40-130
13C12-1,2,3,7,8-PeCDF	6000	30.84	71	40-130
13C12-1,2,3,6,7,8-HxCDF	6000	33.31	81	40-130
13C12-1,2,3,4,6,7,8-HpCDF	6000	35.44	77	25-130
Cleanup Standard	**pg**			
13C12-1,2,3,7,8,9-HxCDF	6000	34.44	72	40-130

Homologue Group Totals	**# peaks**	**Conc. pg**	**EDL pg**	
Total-TCDD	19	38100	2.7	30
Total-PeCDD	9	14300	49	30
Total-HxCDD	7	8630	3.3	30
Total-HpCDD	2	2450	2.6	30
Total-TCDF	26	69200	2.6	30
Total-PeCDF	17	30600	4.3	30
Total-HxCDF	12	13300	3.0	30
Total-HpCDF	4	3740	3.5	30

Toxic Equivalency - (WHO 2005)	**pg**
Lower Bound PCDD/F TEQ (WHO 2005)	2720
Mid Point PCDD/F TEQ (WHO 2005)	2720
Upper Bound PCDD/F TEQ (WHO 2005)	2720

EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF Indicates the Toxic Equivalency Factor   TEQ Indicates the Toxic Equivalency

LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Sample Analysis Report

Sample Name	**SVOC-ECA Test 1**	Sampling Date	8-Apr-25	
ALS Sample ID	BU2500942-004	Extraction Date	16-Apr-25	Approved:
Analysis Method	EPA M23	Sample Size	1 Sample	*M.Elchawiche*
Analysis Type	Sample	Percent Moisture	n/a	--e-signature--
Sample Matrix	Impinger	Split Ratio	6	02-May-2025

Run Information	**Run 1**
Filename	12-250429A12
Run Date	29-Apr-25 18:29
Final Volume	10 uL
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-12 ZB-DX1188879

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
2,3,7,8-TCDD	1	28.49	<0.74	0.51	J,R	0.74	30
1,2,3,7,8-PeCDD	1	31.54	<0.51	0.51	M,U	0.50	30
1,2,3,4,7,8-HxCDD	0.1	NotFnd	<0.40	0.40	U		30
1,2,3,6,7,8-HxCDD	0.1	33.85	<0.68	0.38	J,R	0.68	30
1,2,3,7,8,9-HxCDD	0.1	34.04	0.822	0.37	M,J		30
1,2,3,4,6,7,8-HpCDD	0.01	36.41	4.59	0.49	J,B		30
OCDD	0.0003	39.43	13.2	0.74	J		60
2,3,7,8-TCDF	0.1	27.93	24.6	1.2	J		30
1,2,3,7,8-PeCDF	0.03	30.83	4.31	0.49	J		30
2,3,4,7,8-PeCDF	0.3	31.43	8.45	0.45	J		30
1,2,3,4,7,8-HxCDF	0.1	33.19	<2.8	0.20	J,R	2.8	30
1,2,3,6,7,8-HxCDF	0.1	33.29	1.58	0.20	J		30
2,3,4,6,7,8-HxCDF	0.1	33.71	<2.5	0.20	J,R	2.5	30
1,2,3,7,8,9-HxCDF	0.1	34.43	<0.96	0.25	M,J,R	0.96	30
1,2,3,4,6,7,8-HpCDF	0.01	35.43	<3.7	0.44	J,R	3.7	30
1,2,3,4,7,8,9-HpCDF	0.01	37.05	<0.55	0.55	U	0.44	30
OCDF	0.0003	39.80	5.16	1.4	M,J		60

Field Spike Standards	**pg**		**% Rec**	**Limits**
37Cl4-2,3,7,8-TCDD	800	28.50	100	70-130
13C12-1,2,3,4,7,8-HxCDD	8000	33.76	104	70-130
13C12-2,3,4,7,8-PeCDF	8000	31.43	103	70-130
13C12-1,2,3,4,7,8-HxCDF	8000	33.18	109	70-130
13C12-1,2,3,4,7,8,9-HpCDF	8000	37.05	112	70-130
Extraction Standards				
13C12-2,3,7,8-TCDD	6000	28.47	105	40-130
13C12-1,2,3,7,8-PeCDD	6000	31.54	107	40-130
13C12-1,2,3,6,7,8-HxCDD	6000	33.83	103	40-130
13C12-1,2,3,4,6,7,8-HpCDD	6000	36.40	107	25-130
13C12-OCDD	12000	39.42	102	25-130
13C12-2,3,7,8-TCDF	6000	27.92	100	40-130
13C12-1,2,3,7,8-PeCDF	6000	30.82	100	40-130
13C12-1,2,3,6,7,8-HxCDF	6000	33.27	93	40-130
13C12-1,2,3,4,6,7,8-HpCDF	6000	35.41	96	25-130
Cleanup Standard	**pg**			
13C12-1,2,3,7,8,9-HxCDF	6000	34.41	93	40-130

Homologue Group Totals	**# peaks**	**Conc. pg**	**EDL pg**	**Flags**	**LQL**
Total-TCDD	6	234	0.51		30
Total-PeCDD	3	11.3	0.51		30
Total-HxCDD	2	7.86	0.40		30
Total-HpCDD	2	7.80	0.49		30
Total-TCDF	24	561	1.2		30
Total-PeCDF	11	56.3	0.49		30
Total-HxCDF	1	1.58	0.25		30
Total-HpCDF	0	<0.55	0.55	U	30

Toxic Equivalency - (WHO 2005)	**pg**
Lower Bound PCDD/F TEQ (WHO 2005)	5.42
Mid Point PCDD/F TEQ (WHO 2005)	7.16
Upper Bound PCDD/F TEQ (WHO 2005)	7.44

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor
TEQ	Indicates the Toxic Equivalency
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	indicates that a target analyte was detected below the calibrated range.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.
B	Indicates that this target was detected in the blank at greater than 10% of the sample concentration.
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Sample Analysis Report

Sample Name	**SVOC-ECA Test 2**	Sampling Date	8-Apr-25		
ALS Sample ID	BU2500942-005	Extraction Date	16-Apr-25		Approved:
Analysis Method	EPA M23	Sample Size	1	Sample	*M.Elchawiche*
Analysis Type	Sample	Percent Moisture	n/a		--e-signature--
Sample Matrix	Impinger	Split Ratio	6		02-May-2025

Run Information	**Run 1**
Filename	12-250429A14
Run Date	29-Apr-25 20:00
Final Volume	10 uL
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-12 ZB-DX1188879

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
2,3,7,8-TCDD	1	28.51	16.2	0.95	J		30
1,2,3,7,8-PeCDD	1	31.57	14.0	0.77	J		30
1,2,3,4,7,8-HxCDD	0.1	33.79	5.94	0.60	J		30
1,2,3,6,7,8-HxCDD	0.1	33.86	9.42	0.57	J		30
1,2,3,7,8,9-HxCDD	0.1	34.07	<4.1	0.56	J,R	4.1	30
1,2,3,4,6,7,8-HpCDD	0.01	36.42	23.0	0.62	J,B		30
OCDD	0.0003	39.47	26.9	1.0	J		60
2,3,7,8-TCDF	0.1	27.94	662	1.1			30
1,2,3,7,8-PeCDF	0.03	30.84	148	0.80			30
2,3,4,7,8-PeCDF	0.3	31.46	260	0.75			30
1,2,3,4,7,8-HxCDF	0.1	33.21	88.4	0.66			30
1,2,3,6,7,8-HxCDF	0.1	33.31	52.9	0.64			30
2,3,4,6,7,8-HxCDF	0.1	33.74	60.8	0.66			30
1,2,3,7,8,9-HxCDF	0.1	34.45	12.3	0.81	J		30
1,2,3,4,6,7,8-HpCDF	0.01	35.44	71.5	0.64			30
1,2,3,4,7,8,9-HpCDF	0.01	37.07	<5.8	0.80	J,R	5.8	30
OCDF	0.0003	39.81	11.9	1.0	J		60

Field Spike Standards	**pg**		**% Rec**	**Limits**
37Cl4-2,3,7,8-TCDD	800	28.51	100	70-130
13C12-1,2,3,4,7,8-HxCDD	8000	33.77	105	70-130
13C12-2,3,4,7,8-PeCDF	8000	31.44	101	70-130
13C12-1,2,3,4,7,8-HxCDF	8000	33.19	107	70-130
13C12-1,2,3,4,7,8,9-HpCDF	8000	37.06	112	70-130
Extraction Standards				
13C12-2,3,7,8-TCDD	6000	28.49	96	40-130
13C12-1,2,3,7,8-PeCDD	6000	31.56	96	40-130
13C12-1,2,3,6,7,8-HxCDD	6000	33.86	94	40-130
13C12-1,2,3,4,6,7,8-HpCDD	6000	36.41	99	25-130
13C12-OCDD	12000	39.45	94	25-130
13C12-2,3,7,8-TCDF	6000	27.93	93	40-130
13C12-1,2,3,7,8-PeCDF	6000	30.83	92	40-130
13C12-1,2,3,6,7,8-HxCDF	6000	33.29	90	40-130
13C12-1,2,3,4,6,7,8-HpCDF	6000	35.44	89	25-130
Cleanup Standard	**pg**			
13C12-1,2,3,7,8,9-HxCDF	6000	34.43	77	40-130

Homologue Group Totals	**# peaks**	**Conc. pg**	**EDL pg**	**LQL**
Total-TCDD	17	4840	0.95	30
Total-PeCDD	9	771	0.77	30
Total-HxCDD	6	272	0.60	30
Total-HpCDD	2	49.7	0.62	30
Total-TCDF	28	13600	1.1	30
Total-PeCDF	15	2760	0.80	30
Total-HxCDF	11	651	0.81	30
Total-HpCDF	3	96.0	0.80	30

Toxic Equivalency - (WHO 2005)	**pg**
Lower Bound PCDD/F TEQ (WHO 2005)	203
Mid Point PCDD/F TEQ (WHO 2005)	203
Upper Bound PCDD/F TEQ (WHO 2005)	203

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor
TEQ	Indicates the Toxic Equivalency
J	indicates that a target analyte was detected below the calibrated range.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.
B	Indicates that this target was detected in the blank at greater than 10% of the sample concentration.
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Sample Analysis Report

Sample Name	**SVOC-ECA Test 3**	Sampling Date	8-Apr-25
ALS Sample ID	BU2500942-006	Extraction Date	16-Apr-25
Analysis Method	EPA M23	Sample Size	1 Sample
Analysis Type	Sample	Percent Moisture	n/a
Sample Matrix	Impinger	Split Ratio	6

Approved:
M.Elchawiche
--e-signature--
02-May-2025

Run Information	**Run 1**
Filename	12-250429A13
Run Date	29-Apr-25 19:14
Final Volume	10 uL
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-12 ZB-DX1188879

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
2,3,7,8-TCDD	1	28.51	<1.9	0.73	J,R	1.9	30
1,2,3,7,8-PeCDD	1	31.57	0.851	0.52	M,J		30
1,2,3,4,7,8-HxCDD	0.1	NotFnd	<0.89	0.89	U		30
1,2,3,6,7,8-HxCDD	0.1	33.87	<0.85	0.85	M,U		30
1,2,3,7,8,9-HxCDD	0.1	NotFnd	<0.83	0.83	U		30
1,2,3,4,6,7,8-HpCDD	0.01	36.42	3.13	1.4	J,B		30
OCDD	0.0003	39.46	<8.5	0.80	J,R	8.5	60
2,3,7,8-TCDF	0.1	27.94	44.8	0.38			30
1,2,3,7,8-PeCDF	0.03	30.84	7.18	1.7	J		30
2,3,4,7,8-PeCDF	0.3	31.46	<11	1.6	J,R	11	30
1,2,3,4,7,8-HxCDF	0.1	33.21	3.79	1.0	J,B		30
1,2,3,6,7,8-HxCDF	0.1	33.31	<1.4	1.0	J,R	1.4	30
2,3,4,6,7,8-HxCDF	0.1	33.72	<2.1	1.0	M,J,R	2.1	30
1,2,3,7,8,9-HxCDF	0.1	34.43	<1.3	1.3	U	0.74	30
1,2,3,4,6,7,8-HpCDF	0.01	35.44	4.24	0.53	J		30
1,2,3,4,7,8,9-HpCDF	0.01	37.08	<0.75	0.67	M,J,R	0.75	30
OCDF	0.0003	39.82	11.6	0.77	M,J		60

Field Spike Standards	**pg**		**% Rec**	**Limits**
37Cl4-2,3,7,8-TCDD	800	28.51	99	70-130
13C12-1,2,3,4,7,8-HxCDD	8000	33.77	86	70-130
13C12-2,3,4,7,8-PeCDF	8000	31.44	96	70-130
13C12-1,2,3,4,7,8-HxCDF	8000	33.19	111	70-130
13C12-1,2,3,4,7,8,9-HpCDF	8000	37.06	110	70-130
Extraction Standards				
13C12-2,3,7,8-TCDD	6000	28.49	105	40-130
13C12-1,2,3,7,8-PeCDD	6000	31.56	105	40-130
13C12-1,2,3,6,7,8-HxCDD	6000	33.85	107	40-130
13C12-1,2,3,4,6,7,8-HpCDD	6000	36.41	102	25-130
13C12-OCDD	12000	39.44	98	25-130
13C12-2,3,7,8-TCDF	6000	27.93	103	40-130
13C12-1,2,3,7,8-PeCDF	6000	30.83	101	40-130
13C12-1,2,3,6,7,8-HxCDF	6000	33.29	94	40-130
13C12-1,2,3,4,6,7,8-HpCDF	6000	35.44	93	25-130
Cleanup Standard	**pg**			
13C12-1,2,3,7,8,9-HxCDF	6000	34.43	82	40-130

Homologue Group Totals	**# peaks**	**Conc. pg**	**EDL pg**	
Total-TCDD	8	556	0.73	30
Total-PeCDD	5	31.7	0.52	30
Total-HxCDD	2	1.72	0.89	30
Total-HpCDD	1	3.13	1.4	30
Total-TCDF	24	1000	0.38	30
Total-PeCDF	11	104	1.7	30
Total-HxCDF	4	8.01	1.3	30
Total-HpCDF	1	4.24	0.67	30

Toxic Equivalency - (WHO 2005)	**pg**
Lower Bound PCDD/F TEQ (WHO 2005)	6.00
Mid Point PCDD/F TEQ (WHO 2005)	11.8
Upper Bound PCDD/F TEQ (WHO 2005)	11.9

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor
TEQ	Indicates the Toxic Equivalency
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	indicates that a target analyte was detected below the calibrated range.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.
B	Indicates that this target was detected in the blank at greater than 10% of the sample concentration.
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Sample Analysis Report

Sample Name	**SVOC Blank**	Sampling Date	8-Apr-25		
ALS Sample ID	BU2500942-007	Extraction Date	16-Apr-25		Approved:
Analysis Method	EPA M23	Sample Size	1	Sample	*M.Elchawiche*
Analysis Type	Sample	Percent Moisture	n/a		--e-signature--
Sample Matrix	Impinger	Split Ratio	6		02-May-2025

Run Information	**Run 1**
Filename	12-250429A11
Run Date	29-Apr-25 17:43
Final Volume	10 uL
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-12 ZB-DX1188879

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
2,3,7,8-TCDD	1	NotFnd	<0.44	0.44	U		30
1,2,3,7,8-PeCDD	1	NotFnd	<0.35	0.35	U		30
1,2,3,4,7,8-HxCDD	0.1	NotFnd	<0.37	0.37	U		30
1,2,3,6,7,8-HxCDD	0.1	33.85	0.468	0.35	M,J		30
1,2,3,7,8,9-HxCDD	0.1	34.06	<0.34	0.34	M,U	0.30	30
1,2,3,4,6,7,8-HpCDD	0.01	36.40	<1.7	0.40	M,J,R	1.7	30
OCDD	0.0003	39.39	<7.2	1.1	M,J,R	7.2	60
2,3,7,8-TCDF	0.1	27.90	<0.33	0.33	M,U	0.20	30
1,2,3,7,8-PeCDF	0.03	30.83	<0.74	0.36	M,J,R	0.74	30
2,3,4,7,8-PeCDF	0.3	31.44	<0.33	0.33	M,U	0.23	30
1,2,3,4,7,8-HxCDF	0.1	33.18	<0.30	0.30	M,U	0.29	30
1,2,3,6,7,8-HxCDF	0.1	33.29	<0.31	0.29	M,J,R	0.31	30
2,3,4,6,7,8-HxCDF	0.1	NotFnd	<0.30	0.30	U		30
1,2,3,7,8,9-HxCDF	0.1	34.43	<0.39	0.37	M,J,R	0.39	30
1,2,3,4,6,7,8-HpCDF	0.01	35.43	0.758	0.63	J		30
1,2,3,4,7,8,9-HpCDF	0.01	37.05	<0.79	0.79	M,U	0.74	30
OCDF	0.0003	39.77	<3.3	0.51	M,J,R	3.3	60

Field Spike Standards	**pg**		**% Rec**	**Limits**
37Cl4-2,3,7,8-TCDD	800	28.50	100	70-130
13C12-1,2,3,4,7,8-HxCDD	8000	33.76	98	70-130
13C12-2,3,4,7,8-PeCDF	8000	31.43	104	70-130
13C12-1,2,3,4,7,8-HxCDF	8000	33.18	108	70-130
13C12-1,2,3,4,7,8,9-HpCDF	8000	37.04	112	70-130
Extraction Standards				
13C12-2,3,7,8-TCDD	6000	28.49	91	40-130
13C12-1,2,3,7,8-PeCDD	6000	31.54	102	40-130
13C12-1,2,3,6,7,8-HxCDD	6000	33.85	101	40-130
13C12-1,2,3,4,6,7,8-HpCDD	6000	36.39	102	25-130
13C12-OCDD	12000	39.39	99	25-130
13C12-2,3,7,8-TCDF	6000	27.93	91	40-130
13C12-1,2,3,7,8-PeCDF	6000	30.82	98	40-130
13C12-1,2,3,6,7,8-HxCDF	6000	33.28	90	40-130
13C12-1,2,3,4,6,7,8-HpCDF	6000	35.41	94	25-130
Cleanup Standard	**pg**			
13C12-1,2,3,7,8,9-HxCDF	6000	34.41	84	40-130

Homologue Group Totals	**# peaks**	**Conc. pg**	**EDL pg**		**LQL**
Total-TCDD	0	<0.44	0.44	U	30
Total-PeCDD	0	<0.35	0.35	U	30
Total-HxCDD	1	0.468	0.37		30
Total-HpCDD	1	0.855	0.40		30
Total-TCDF	0	<0.33	0.33	U	30
Total-PeCDF	1	0.411	0.36		30
Total-HxCDF	0	<0.37	0.37	U	30
Total-HpCDF	0	<0.79	0.79	U	30

Toxic Equivalency - (WHO 2005)	**pg**
Lower Bound PCDD/F TEQ (WHO 2005)	0.0544
Mid Point PCDD/F TEQ (WHO 2005)	0.697
Upper Bound PCDD/F TEQ (WHO 2005)	1.23

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor — TEQ Indicates the Toxic Equivalency
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	indicates that a target analyte was detected below the calibrated range.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	**Method Blank**	Sampling Date	n/a	
ALS Sample ID	QC-MRG3-1952762-001	Extraction Date	16-Apr-25	Approved:
Analysis Method	EPA M23	Sample Size	1 Sample	*M.Elchawiche*
Analysis Type	Blank	Percent Moisture	n/a	--e-signature--
Sample Matrix	QC	Split Ratio	6	02-May-2025

Run Information	**Run 1**
Filename	12-250429A10
Run Date	29-Apr-25 16:57
Final Volume	10 uL
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-12 ZB-DX1188879

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
2,3,7,8-TCDD	1	NotFnd	<1.3	1.3	U		30
1,2,3,7,8-PeCDD	1	31.60	<0.63	0.63	M,U	0.62	30
1,2,3,4,7,8-HxCDD	0.1	33.79	<0.45	0.45	M,U		30
1,2,3,6,7,8-HxCDD	0.1	33.88	<0.43	0.43	M,U	0.22	30
1,2,3,7,8,9-HxCDD	0.1	34.09	<0.42	0.42	M,J,R	0.42	30
1,2,3,4,6,7,8-HpCDD	0.01	36.46	2.83	1.0	J		30
OCDD	0.0003	39.51	<11	0.99	M,J,R	11	60
2,3,7,8-TCDF	0.1	27.90	<0.84	0.71	M,J,R	0.84	30
1,2,3,7,8-PeCDF	0.03	30.84	<0.91	0.56	M,J,R	0.91	30
2,3,4,7,8-PeCDF	0.3	31.47	<0.52	0.52	M,U	0.35	30
1,2,3,4,7,8-HxCDF	0.1	33.22	1.09	0.46	J		30
1,2,3,6,7,8-HxCDF	0.1	33.32	<0.61	0.45	M,J,R	0.61	30
2,3,4,6,7,8-HxCDF	0.1	33.75	1.06	0.46	M,J		30
1,2,3,7,8,9-HxCDF	0.1	34.45	0.768	0.56	M,J		30
1,2,3,4,6,7,8-HpCDF	0.01	35.48	<6.3	0.37	J,R	6.3	30
1,2,3,4,7,8,9-HpCDF	0.01	37.11	<0.63	0.47	J,R	0.63	30
OCDF	0.0003	39.86	<6.2	1.3	M,J,R	6.2	60

Field Spike Standards	**pg**		**% Rec**	**Limits**
37Cl4-2,3,7,8-TCDD	0		NS	
13C12-1,2,3,4,7,8-HxCDD	0		NS	
13C12-2,3,4,7,8-PeCDF	0		NS	
13C12-1,2,3,4,7,8-HxCDF	0		NS	
13C12-1,2,3,4,7,8,9-HpCDF	0		NS	
Extraction Standards				
13C12-2,3,7,8-TCDD	6000	28.50	63	40-130
13C12-1,2,3,7,8-PeCDD	6000	31.56	72	40-130
13C12-1,2,3,6,7,8-HxCDD	6000	33.87	71	40-130
13C12-1,2,3,4,6,7,8-HpCDD	6000	36.45	73	25-130
13C12-OCDD	12000	39.50	71	25-130
13C12-2,3,7,8-TCDF	6000	27.93	63	40-130
13C12-1,2,3,7,8-PeCDF	6000	30.83	69	40-130
13C12-1,2,3,6,7,8-HxCDF	6000	33.31	67	40-130
13C12-1,2,3,4,6,7,8-HpCDF	6000	35.46	69	25-130
Cleanup Standard	**pg**			
13C12-1,2,3,7,8,9-HxCDF	6000	34.45	84	40-130

Homologue Group Totals	**# peaks**	**Conc. pg**	**EDL pg**		
Total-TCDD	0	<1.3	1.3	U	30
Total-PeCDD	0	<0.63	0.63	U	30
Total-HxCDD	0	<0.45	0.45	U	30
Total-HpCDD	2	4.94	1.0		30
Total-TCDF	0	<0.71	0.71	U	30
Total-PeCDF	2	1.59	0.56		30
Total-HxCDF	5	5.78	0.56		30
Total-HpCDF	0	<0.47	0.47	U	30

Toxic Equivalency - (WHO 2005)	**pg**
Lower Bound PCDD/F TEQ (WHO 2005)	0.320
Mid Point PCDD/F TEQ (WHO 2005)	1.70
Upper Bound PCDD/F TEQ (WHO 2005)	2.78

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor
TEQ	Indicates the Toxic Equivalency
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	indicates that a target analyte was detected below the calibrated range.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure
NS	Indicates that this compound was not added.

ALS Life Sciences

Laboratory Control Sample Analysis Report

Sample Name	**Laboratory Control Sample**	Sampling Date	n/a	
ALS Sample ID	QC-MRG2-1952762-002	Extraction Date	16-Apr-25	Approved:
Analysis Method	EPA M23	Sample Size	1 n/a	*M.Elchawiche*
Analysis Type	LCS	Percent Moisture	n/a	--e-signature--
Sample Matrix	QC	Split Ratio	6	02-May-2025

Run Information	**Run 1**
Filename	12-250428A03
Run Date	28-Apr-25 17:10
Final Volume	10 uL
Dilution Factor	1
Analysis Units	%
Instrument - Column	HRMS-12 ZB-DX1188879

Target Analytes	**pg**	**Ret. Time**	**% Rec**	**Limits**	**Flags**
2,3,7,8-TCDD	600	28.53	94	70-130	
1,2,3,7,8-PeCDD	3000	31.57	106	70-130	
1,2,3,4,7,8-HxCDD	3000	33.79	106	70-130	
1,2,3,6,7,8-HxCDD	3000	33.87	98	70-130	
1,2,3,7,8,9-HxCDD	3000	34.07	102	70-130	
1,2,3,4,6,7,8-HpCDD	3000	36.41	100	70-130	
OCDD	6000	39.44	100	70-130	
2,3,7,8-TCDF	600	27.97	93	70-130	
1,2,3,7,8-PeCDF	3000	30.84	99	70-130	
2,3,4,7,8-PeCDF	3000	31.46	101	70-130	
1,2,3,4,7,8-HxCDF	3000	33.22	95	70-130	
1,2,3,6,7,8-HxCDF	3000	33.31	96	70-130	
2,3,4,6,7,8-HxCDF	3000	33.74	95	70-130	
1,2,3,7,8,9-HxCDF	3000	34.44	109	70-130	
1,2,3,4,6,7,8-HpCDF	3000	35.45	99	70-130	
1,2,3,4,7,8,9-HpCDF	3000	37.06	104	70-130	
OCDF	6000	39.80	115	70-130	
Field Spike Standards	**pg**		**% Rec**	**Limits**	
37Cl4-2,3,7,8-TCDD	0		NS		
13C12-1,2,3,4,7,8-HxCDD	0		NS		
13C12-2,3,4,7,8-PeCDF	0		NS		
13C12-1,2,3,4,7,8-HxCDF	0		NS		
13C12-1,2,3,4,7,8,9-HpCDF	0		NS		
Extraction Standards					
13C12-2,3,7,8-TCDD	6000	28.51	73	40-130	
13C12-1,2,3,7,8-PeCDD	6000	31.56	87	40-130	
13C12-1,2,3,6,7,8-HxCDD	6000	33.86	85	40-130	
13C12-1,2,3,4,6,7,8-HpCDD	6000	36.40	95	25-130	
13C12-OCDD	12000	39.43	95	25-130	
13C12-2,3,7,8-TCDF	6000	27.96	76	40-130	
13C12-1,2,3,7,8-PeCDF	6000	30.84	82	40-130	
13C12-1,2,3,6,7,8-HxCDF	6000	33.29	89	40-130	
13C12-1,2,3,4,6,7,8-HpCDF	6000	35.44	90	25-130	
Cleanup Standard	**pg**				
13C12-1,2,3,7,8,9-HxCDF	6000	34.43	94	40-130	

NS Indicates that this compound was not added.

ALS Life Sciences
1435 Norjohn Court, Unit 1, Burlington, ON, Canada L7L 0E6
Phone: 905-331-3111, FAX: 905-331-4567

Certificate of Analysis

ALS Project Contact:	Robert Chin	**Client Name:**	RWDI Air Inc.
ALS Project ID:	RWDI100	**Client Address:**	600 Southgate Drive
ALS WO#:	BU2500942		Guelph, ON
Date of Report	14-May-25		N1G 4P6
Date of Sample Receipt	15-Apr-25	**Client Contact:**	Oluwatobi Odumoye
		Client Project ID:	2509873 SMC St. Mary's

COMMENTS: **PCB Congeners by EPA 1668C**

PCB Congener Group Totals and Total PCB are a sum of detected values, including EMPC values, consistent with USEPA CLP SOW CBC1.2

Certified by:

Sabrina Jin
Technical Specialist

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	SVOC-CSI Test 1	SVOC-CSI Test 2	SVOC-CSI Test 3	SVOC-ECA Test 1	SVOC-ECA Test 2	SVOC-ECA Test 3
ALS Sample ID	BU2500942-001	BU2500942-002	BU2500942-003	BU2500942-004	BU2500942-005	BU2500942-006
Sample Size	1	1	1	1	1	1
Sample size units	sample	sample	sample	sample	sample	sample
Percent Moisture	n/a	n/a	n/a	n/a	n/a	n/a
Sample Matrix	Impinger	Impinger	Impinger	Impinger	Impinger	Impinger
Sampling Date	8-Apr-25	8-Apr-25	8-Apr-25	8-Apr-25	8-Apr-25	8-Apr-25
Extraction Date	16-Apr-25	16-Apr-25	16-Apr-25	16-Apr-25	16-Apr-25	16-Apr-25
Target Analytes	**pg**	**pg**	**pg**	**pg**	**pg**	**pg**
PCB-081	588	651	575	<19	172	<37
PCB-077	6990	7280	7170	244	1610	322
PCB-123	678	893	698	<30	<160	31.5
PCB-118	30200	30700	29300	1210	7550	1590
PCB-114	952	935	890	27.1	246	58.4
PCB-105	16500	17200	17300	<320	3590	<510
PCB-126	926	999	1110	<12	170	<20
PCB-167	3420	3550	3780	65.5	670	105
PCB-156/157	8120	8830	8680	107	1410	158
PCB-169	245	268	295	<11	29.1	<18
PCB-189	2260	2320	2520	23.2	273	<16
Extraction Standards	**% Rec**	**% Rec**	**% Rec**	**% Rec**	**% Rec**	**% Rec**
13C12-PCB-081	84	73	82	73	58	69
13C12-PCB-077	84	75	81	80	58	78
13C12-PCB-123	77	71	88	77	99	78
13C12-PCB-118	87	76	91	84	108	84
13C12-PCB-114	84	71	85	80	103	83
13C12-PCB-105	79	68	73	75	100	77
13C12-PCB-126	86	76	94	87	55	92
13C12-PCB-167	86	77	99	78	97	77
13C12-PCB-156/157	89	74	99	78	93	76
13C12-PCB-169	107	99	130	84	84	90
13C12-PCB-189	102	91	116	80	104	85
Field Spike Standards						
13C12-PCB-031	84	80	90	85	89	90
13C12-PCB-095	92	91	92	80	81	79
13C12-PCB-153	91	91	98	97	98	92
Cleanup Standards						
13C12-PCB-028	78	80	80	62	78	54
13C12-PCB-111	74	75	69	65	80	60
13C12-PCB-178	49	54	57	43	61	37
Toxic Equivalency - (WHO 2005)						
Lower Bound PCB TEQ	103	111	123	0.0674	18.5	0.0905
Mid Point PCB TEQ	103	111	123	0.849	18.5	2.66
Upper Bound PCB TEQ	103	111	123	1.61	18.5	2.66

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	**SVOC Blank**
ALS Sample ID	BU2500942-007
Sample Size	1
Sample size units	sample
Percent Moisture	n/a
Sample Matrix	Impinger
Sampling Date	8-Apr-25
Extraction Date	16-Apr-25

Target Analytes	**pg**
PCB-081	<7.7
PCB-077	<8.0
PCB-123	<4.5
PCB-118	36.9
PCB-114	<4.5
PCB-105	<9.8
PCB-126	<4.2
PCB-167	<3.7
PCB-156/157	<5.6
PCB-169	<3.4
PCB-189	<4.4
Extraction Standards	**% Rec**
13C12-PCB-081	82
13C12-PCB-077	82
13C12-PCB-123	93
13C12-PCB-118	97
13C12-PCB-114	93
13C12-PCB-105	87
13C12-PCB-126	102
13C12-PCB-167	91
13C12-PCB-156/157	88
13C12-PCB-169	108
13C12-PCB-189	100
Field Spike Standards	
13C12-PCB-031	95
13C12-PCB-095	80
13C12-PCB-153	93
Cleanup Standards	
13C12-PCB-028	57
13C12-PCB-111	68
13C12-PCB-178	78

Toxic Equivalency - (WHO 2005)	
Lower Bound PCB TEQ	0.00111
Mid Point PCB TEQ	0.264
Upper Bound PCB TEQ	0.527

ALS Life Sciences

Quality Control Summary Report

Sample Name	**MB**
ALS Sample ID	QC-MRGG2-1952762-001
Sample Size	1
Sample size units	sample
Percent Moisture	n/a
Sample Matrix	QC
Sampling Date	n/a
Extraction Date	16-Apr-25

Target Analytes	**pg/g**
PCB-081	<8.3
PCB-077	<8.3
PCB-123	<6.8
PCB-118	<5.4
PCB-114	<6.5
PCB-105	<6.3
PCB-126	<6.0
PCB-167	<2.9
PCB-156/157	<3.9
PCB-169	<2.6
PCB-189	<3.2
Extraction Standards	**% Rec**
13C12-PCB-081	46
13C12-PCB-077	47
13C12-PCB-123	49
13C12-PCB-118	58
13C12-PCB-114	51
13C12-PCB-105	53
13C12-PCB-126	58
13C12-PCB-167	60
13C12-PCB-156/157	63
13C12-PCB-169	73
13C12-PCB-189	73
Field Spike Standards	
13C12-PCB-031	NS
13C12-PCB-095	NS
13C12-PCB-153	NS
Cleanup Standards	
13C12-PCB-028	47
13C12-PCB-111	53
13C12-PCB-178	63

Toxic Equivalency - (WHO 2005)	
Lower Bound PCB TEQ	0.00
Mid Point PCB TEQ	0.341
Upper Bound PCB TEQ	0.682

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	**LCS**
ALS Sample ID	QC-MRGG2-1952762-
Sample Size	1
Sample size units	n/a
Percent Moisture	n/a
Sample Matrix	QC
Sampling Date	n/a
Extraction Date	16-Apr-25

Target Analytes	**% Rec**
PCB-081	101
PCB-077	100
PCB-123	106
PCB-118	93
PCB-114	101
PCB-105	104
PCB-126	98
PCB-167	96
PCB-156/157	95
PCB-169	97
PCB-189	100
Extraction Standards	**% Rec**
13C12-PCB-081	44
13C12-PCB-077	46
13C12-PCB-123	48
13C12-PCB-118	56
13C12-PCB-114	51
13C12-PCB-105	55
13C12-PCB-126	63
13C12-PCB-167	62
13C12-PCB-156/157	66
13C12-PCB-169	81
13C12-PCB-189	83
Field Spike Standards	
13C12-PCB-031	NS
13C12-PCB-095	NS
13C12-PCB-153	NS
Cleanup Standards	
13C12-PCB-028	39
13C12-PCB-111	44
13C12-PCB-178	59

ALS Life Sciences

Sample Analysis Report

Sample Name	**SVOC-CSI Test 1**	Sampling Date	8-Apr-25	
ALS Sample ID	BU2500942-001	Extraction Date	16-Apr-25	Approved:
Analysis Method	EPA 1668C	Sample Size	1 sample	*Henna Saeed*
Analysis Type	Sample	Percent Moisture	n/a	--e-signature--
Sample Matrix	Impinger	Split Ratio	6	13-May-2025

Run Information	**Run 1**	**Run 2**
Filename	5-250423A22	5-250508A24
Run Date	24-Apr-25 01:28	09-May-25 05:07
Final Volume	25 ul	25 uL
Dilution Factor	1	1
Analysis Units	pg	pg
Instrument - Column	HRMS 5 SPBOCTYL291719-06	HRMS 5 SPBOCTYL291719-06

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
PCB-081	0.0003							21.79	588	11			150
PCB-077	0.0001							22.09	6990	11			150
PCB-123	0.00003	23.20	678	64	M		150						
PCB-118	0.00003	23.37	30200	52			150						
PCB-114	0.00003	23.67	952	59			150						
PCB-105	0.00003	24.03	16500	55			150						
PCB-126	0.1							25.48	926	13			150
PCB-167	0.00003	26.49	3420	34			150						
PCB-156/157	0.00003	27.11	8120	46			300						
PCB-169	0.03							28.65	245	8.4			150
PCB-189	0.00003	30.02	2260	33			150						

Extraction Standards	**pg**	**Time**	**% Rec**	**Limits**	**Time**	**% Rec**	**Limits**
13C12-PCB-081	6000				21.78	84	10-145
13C12-PCB-077	6000				22.08	84	10-145
13C12-PCB-123	6000	23.19	77	10-145			
13C12-PCB-118	6000	23.36	87	10-145			
13C12-PCB-114	6000	23.66	84	10-145			
13C12-PCB-105	6000	24.01	79	10-145			
13C12-PCB-126	6000				25.46	86	10-145
13C12-PCB-167	6000	26.48	86	10-145			
13C12-PCB-156/157	12000	27.11	89	10-145			
13C12-PCB-169	6000				28.64	107	10-145
13C12-PCB-189	6000	30.01	102	10-145			
Field Spike Standards							
13C12-PCB-031	8000	15.95	84	70-130			
13C12-PCB-095	8000	19.25	92	70-130			
13C12-PCB-153	8000	24.28	91	70-130			
Cleanup Standards							
13C12-PCB-028	6000	16.11	78	5-145			
13C12-PCB-111	6000	22.14	74	10-145			
13C12-PCB-178	6000	25.16	49	10-145			

Toxic Equivalency - (WHO 2005)

Lower Bound PCB TEQ	103
Mid Point PCB TEQ	103
Upper Bound PCB TEQ	103

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor TEQ Indicates the Toxic Equivalency
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that the analyte was positively identifed. The associated numerical result is an estimate.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Sample Analysis Report

Sample Name	**SVOC-CSI Test 2**	Sampling Date	8-Apr-25	
ALS Sample ID	BU2500942-002	Extraction Date	16-Apr-25	Approved:
Analysis Method	EPA 1668C	Sample Size	1 sample	*Henna Saeed*
Analysis Type	Sample	Percent Moisture	n/a	--e-signature--
Sample Matrix	Impinger	Split Ratio	6	13-May-2025

Run Information	**Run 1**	**Run 2**
Filename	5-250423A23	5-250508A25
Run Date	24-Apr-25 02:10	09-May-25 05:50
Final Volume	25 ul	25 uL
Dilution Factor	1	1
Analysis Units	pg	pg
Instrument - Column	HRMS 5 SPBOCTYL291719-06	HRMS 5 SPBOCTYL291719-06

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
PCB-081	0.0003							21.78	651	15			150
PCB-077	0.0001							22.07	7280	15			150
PCB-123	0.00003	23.17	893	50	M		150						
PCB-118	0.00003	23.36	30700	44			150						
PCB-114	0.00003	23.66	935	52			150						
PCB-105	0.00003	24.00	17200	51			150						
PCB-126	0.1							25.46	999	19			150
PCB-167	0.00003	26.48	3550	34			150						
PCB-156/157	0.00003	27.09	8830	47			300						
PCB-169	0.03							28.64	268	9.7	M		150
PCB-189	0.00003	30.01	2320	26			150						

Extraction Standards	**pg**	**Time**	**% Rec**	**Limits**	**Time**	**% Rec**	**Limits**
13C12-PCB-081	6000				21.77	73	10-145
13C12-PCB-077	6000				22.06	75	10-145
13C12-PCB-123	6000	23.18	71	10-145			
13C12-PCB-118	6000	23.35	76	10-145			
13C12-PCB-114	6000	23.65	71	10-145			
13C12-PCB-105	6000	23.99	68	10-145			
13C12-PCB-126	6000				25.45	76	10-145
13C12-PCB-167	6000	26.47	77	10-145			
13C12-PCB-156/157	12000	27.09	74	10-145			
13C12-PCB-169	6000				28.63	99	10-145
13C12-PCB-189	6000	30.01	91	10-145			
Field Spike Standards							
13C12-PCB-031	8000	15.94	80	70-130			
13C12-PCB-095	8000	19.24	91	70-130			
13C12-PCB-153	8000	24.27	91	70-130			
Cleanup Standards							
13C12-PCB-028	6000	16.10	80	5-145			
13C12-PCB-111	6000	22.12	75	10-145			
13C12-PCB-178	6000	25.15	54	10-145			

Toxic Equivalency - (WHO 2005)

Lower Bound PCB TEQ	111
Mid Point PCB TEQ	111
Upper Bound PCB TEQ	111

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor — TEQ Indicates the Toxic Equivalency
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that the analyte was positively identifed. The associated numerical result is an estimate.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Sample Analysis Report

Sample Name	**SVOC-CSI Test 3**	Sampling Date	8-Apr-25	
ALS Sample ID	BU2500942-003	Extraction Date	16-Apr-25	Approved:
Analysis Method	EPA 1668C	Sample Size	1 sample	*Henna Saeed*
Analysis Type	Sample	Percent Moisture	n/a	--e-signature--
Sample Matrix	Impinger	Split Ratio	6	13-May-2025

Run Information	**Run 1**	**Run 2**
Filename	5-250423A24	5-250508A26
Run Date	24-Apr-25 02:52	09-May-25 06:32
Final Volume	25 ul	25 uL
Dilution Factor	1	1
Analysis Units	pg	pg
Instrument - Column	HRMS 5 SPBOCTYL291719-06	HRMS 5 SPBOCTYL291719-06

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
PCB-081	0.0003							21.78	575	34			150
PCB-077	0.0001							22.07	7170	34			150
PCB-123	0.00003	23.28	698	52	M		150						
PCB-118	0.00003	23.46	29300	45			150						
PCB-114	0.00003	23.76	890	51			150						
PCB-105	0.00003	24.11	17300	64			150						
PCB-126	0.1							25.46	1110	40			150
PCB-167	0.00003	26.58	3780	49			150						
PCB-156/157	0.00003	27.19	8680	69			300						
PCB-169	0.03							28.64	295	20	M		150
PCB-189	0.00003	30.11	2520	45			150						

Extraction Standards	**pg**	**Time**	**% Rec**	**Limits**	**Time**	**% Rec**	**Limits**
13C12-PCB-081	6000				21.76	82	10-145
13C12-PCB-077	6000				22.06	81	10-145
13C12-PCB-123	6000	23.28	88	10-145			
13C12-PCB-118	6000	23.44	91	10-145			
13C12-PCB-114	6000	23.75	85	10-145			
13C12-PCB-105	6000	24.10	73	10-145			
13C12-PCB-126	6000				25.45	94	10-145
13C12-PCB-167	6000	26.56	99	10-145			
13C12-PCB-156/157	12000	27.19	99	10-145			
13C12-PCB-169	6000				28.63	130	10-145
13C12-PCB-189	6000	30.11	116	10-145			
Field Spike Standards							
13C12-PCB-031	8000	16.01	90	70-130			
13C12-PCB-095	8000	19.32	92	70-130			
13C12-PCB-153	8000	24.36	98	70-130			
Cleanup Standards							
13C12-PCB-028	6000	16.18	80	5-145			
13C12-PCB-111	6000	22.22	69	10-145			
13C12-PCB-178	6000	25.23	57	10-145			

Toxic Equivalency - (WHO 2005)

Lower Bound PCB TEQ	123
Mid Point PCB TEQ	123
Upper Bound PCB TEQ	123

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor — TEQ Indicates the Toxic Equivalency
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that the analyte was positively identifed. The associated numerical result is an estimate.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Sample Analysis Report

Sample Name	**SVOC-ECA Test 1**	Sampling Date	8-Apr-25	
ALS Sample ID	BU2500942-004	Extraction Date	16-Apr-25	Approved:
Analysis Method	EPA 1668C	Sample Size	1 sample	*Henna Saeed*
Analysis Type	Sample	Percent Moisture	n/a	--e-signature--
Sample Matrix	Impinger	Split Ratio	6	13-May-2025

Run Information	**Run 1**
Filename	5-250423A25
Run Date	24-Apr-25 03:35
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS 5 SPBOCTYL291719-06

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
PCB-081	0.0003	21.89	<19	18	J,R	19	150
PCB-077	0.0001	22.17	244	17			150
PCB-123	0.00003	23.12	<30	14	M,J,R	30	150
PCB-118	0.00003	23.31	1210	11			150
PCB-114	0.00003	23.63	27.1	13	J		150
PCB-105	0.00003	23.96	<320	14	R	320	150
PCB-126	0.1	NotFnd	<12	12	U		150
PCB-167	0.00003	26.43	65.5	11	J		150
PCB-156/157	0.00003	27.05	107	15	J		300
PCB-169	0.03	28.68	<11	11	M,U		150
PCB-189	0.00003	29.98	23.2	14	M,J		150

Extraction Standards	**pg**	**Time**	**% Rec**	**Limits**
13C12-PCB-081	6000	21.86	73	10-145
13C12-PCB-077	6000	22.16	80	10-145
13C12-PCB-123	6000	23.13	77	10-145
13C12-PCB-118	6000	23.30	84	10-145
13C12-PCB-114	6000	23.60	80	10-145
13C12-PCB-105	6000	23.95	75	10-145
13C12-PCB-126	6000	25.52	87	10-145
13C12-PCB-167	6000	26.42	78	10-145
13C12-PCB-156/157	12000	27.05	78	10-145
13C12-PCB-169	6000	28.69	84	10-145
13C12-PCB-189	6000	29.97	80	10-145
Field Spike Standards				
13C12-PCB-031	8000	15.97	85	70-130
13C12-PCB-095	8000	19.22	80	70-130
13C12-PCB-153	8000	24.22	97	70-130
Cleanup Standards				
13C12-PCB-028	6000	16.13	62	5-145
13C12-PCB-111	6000	22.08	65	10-145
13C12-PCB-178	6000	25.10	43	10-145

Toxic Equivalency - (WHO 2005)

Lower Bound PCB TEQ	0.0674
Mid Point PCB TEQ	0.849
Upper Bound PCB TEQ	1.61

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor — TEQ Indicates the Toxic Equivalency
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that the analyte was positively identifed. The associated numerical result is an estimate.
R	Indicates that the ion abundance ratio for this analyte did not meet the control limit. The reported value represents an estimated concentration.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Sample Analysis Report

Sample Name	**SVOC-ECA Test 2**	Sampling Date	8-Apr-25		
ALS Sample ID	BU2500942-005	Extraction Date	16-Apr-25		Approved:
Analysis Method	EPA 1668C	Sample Size	1	sample	*Henna Saeed*
Analysis Type	Sample	Percent Moisture	n/a		--e-signature--
Sample Matrix	Impinger	Split Ratio	6		13-May-2025

Run Information	**Run 1**	**Run 2**
Filename	5-250423A26	5-250508A27
Run Date	24-Apr-25 04:17	09-May-25 07:14
Final Volume	25 ul	25 uL
Dilution Factor	1	1
Analysis Units	pg	pg
Instrument - Column	HRMS 5 SPBOCTYL291719-06	HRMS 5 SPBOCTYL291719-06

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
PCB-081	0.0003							21.78	172	11			150
PCB-077	0.0001							22.07	1610	11			150
PCB-123	0.00003	23.12	<160	32	M,R	160	150						
PCB-118	0.00003	23.29	7550	28			150						
PCB-114	0.00003	23.59	246	30			150						
PCB-105	0.00003	23.94	3590	31			150						
PCB-126	0.1							25.46	170	11			150
PCB-167	0.00003	26.41	670	18			150						
PCB-156/157	0.00003	27.03	1410	27			300						
PCB-169	0.03							28.63	29.1	8.3	M,J		150
PCB-189	0.00003	29.97	273	15			150						

Extraction Standards	**pg**	**Time**	**% Rec**	**Limits**	**Time**	**% Rec**	**Limits**
13C12-PCB-081	6000				21.77	58	10-145
13C12-PCB-077	6000				22.06	58	10-145
13C12-PCB-123	6000	23.11	99	10-145			
13C12-PCB-118	6000	23.28	108	10-145			
13C12-PCB-114	6000	23.58	103	10-145			
13C12-PCB-105	6000	23.93	100	10-145			
13C12-PCB-126	6000				25.45	55	10-145
13C12-PCB-167	6000	26.39	97	10-145			
13C12-PCB-156/157	12000	27.03	93	10-145			
13C12-PCB-169	6000				28.63	84	10-145
13C12-PCB-189	6000	29.95	104	10-145			
Field Spike Standards							
13C12-PCB-031	8000	15.91	89	70-130			
13C12-PCB-095	8000	19.18	81	70-130			
13C12-PCB-153	8000	24.19	98	70-130			
Cleanup Standards							
13C12-PCB-028	6000	16.06	78	5-145			
13C12-PCB-111	6000	22.04	80	10-145			
13C12-PCB-178	6000	25.09	61	10-145			

Toxic Equivalency - (WHO 2005)

Lower Bound PCB TEQ	18.5
Mid Point PCB TEQ	18.5
Upper Bound PCB TEQ	18.5

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor
TEQ	Indicates the Toxic Equivalency
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that the analyte was positively identifed. The associated numerical result is an estimate.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Sample Analysis Report

Sample Name	**SVOC-ECA Test 3**	Sampling Date	8-Apr-25	
ALS Sample ID	BU2500942-006	Extraction Date	16-Apr-25	Approved:
Analysis Method	EPA 1668C	Sample Size	1 sample	*Henna Saeed*
Analysis Type	Sample	Percent Moisture	n/a	--e-signature--
Sample Matrix	Impinger	Split Ratio	6	13-May-2025

Run Information	**Run 1**
Filename	5-250423A27
Run Date	24-Apr-25 04:59
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS 5 SPBOCTYL291719-06

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
PCB-081	0.0003	21.91	<37	28	J,R	37	150
PCB-077	0.0001	22.20	322	25			150
PCB-123	0.00003	23.16	31.5	23	M,J		150
PCB-118	0.00003	23.34	1590	20			150
PCB-114	0.00003	23.65	58.4	21	J		150
PCB-105	0.00003	23.99	<510	22	R	510	150
PCB-126	0.1	25.56	<20	20	M,J,R	20	150
PCB-167	0.00003	26.44	105	14	J		150
PCB-156/157	0.00003	27.07	158	20	J		300
PCB-169	0.03	28.74	<18	13	M,J,R,1.	18	150
PCB-189	0.00003	29.99	<16	12	M,J,R	16	150

Extraction Standards	**pg**	**Time**	**% Rec**	**Limits**
13C12-PCB-081	6000	21.90	69	10-145
13C12-PCB-077	6000	22.19	78	10-145
13C12-PCB-123	6000	23.16	78	10-145
13C12-PCB-118	6000	23.32	84	10-145
13C12-PCB-114	6000	23.63	83	10-145
13C12-PCB-105	6000	23.98	77	10-145
13C12-PCB-126	6000	25.55	92	10-145
13C12-PCB-167	6000	26.43	77	10-145
13C12-PCB-156/157	12000	27.07	76	10-145
13C12-PCB-169	6000	28.71	90	10-145
13C12-PCB-189	6000	29.99	85	10-145
Field Spike Standards				
13C12-PCB-031	8000	16.03	90	70-130
13C12-PCB-095	8000	19.27	79	70-130
13C12-PCB-153	8000	24.24	92	70-130
Cleanup Standards				
13C12-PCB-028	6000	16.19	54	5-145
13C12-PCB-111	6000	22.11	60	10-145
13C12-PCB-178	6000	25.11	37	10-145

Toxic Equivalency - (WHO 2005)

Lower Bound PCB TEQ	0.0905
Mid Point PCB TEQ	2.66
Upper Bound PCB TEQ	2.66

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor TEQ Indicates the Toxic Equivalency
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that the analyte was positively identifed. The associated numerical result is an estimate.
R	Indicates that the ion abundance ratio for this analyte did not meet the control limit. The reported value represents an estimated concentration.
1.	This result is an EMPC
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Sample Analysis Report

Sample Name	**SVOC Blank**	Sampling Date	8-Apr-25	
ALS Sample ID	BU2500942-007	Extraction Date	16-Apr-25	Approved:
Analysis Method	EPA 1668C	Sample Size	1 sample	*Henna Saeed*
Analysis Type	Sample	Percent Moisture	n/a	--e-signature--
Sample Matrix	Impinger	Split Ratio	6	13-May-2025

Run Information	**Run 1**
Filename	5-250423A28
Run Date	24-Apr-25 05:41
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS 5 SPBOCTYL291719-06

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
PCB-081	0.0003	NotFnd	<7.7	7.7	U		150
PCB-077	0.0001	22.11	<8.0	8.0	U	6.1	150
PCB-123	0.00003	NotFnd	<4.5	4.5	U		150
PCB-118	0.00003	23.26	36.9	4.0	J		150
PCB-114	0.00003	NotFnd	<4.5	4.5	U		150
PCB-105	0.00003	23.92	<9.8	4.6	J,R	9.8	150
PCB-126	0.1	NotFnd	<4.2	4.2	U		150
PCB-167	0.00003	NotFnd	<3.7	3.7	U		150
PCB-156/157	0.00003	NotFnd	<5.6	5.6	U		300
PCB-169	0.03	NotFnd	<3.4	3.4	U		150
PCB-189	0.00003	NotFnd	<4.4	4.4	U		150

Extraction Standards	**pg**	**Time**	**% Rec**	**Limits**
13C12-PCB-081	6000	21.80	82	10-145
13C12-PCB-077	6000	22.10	82	10-145
13C12-PCB-123	6000	23.08	93	10-145
13C12-PCB-118	6000	23.25	97	10-145
13C12-PCB-114	6000	23.55	93	10-145
13C12-PCB-105	6000	23.90	87	10-145
13C12-PCB-126	6000	25.49	102	10-145
13C12-PCB-167	6000	26.38	91	10-145
13C12-PCB-156/157	12000	27.01	88	10-145
13C12-PCB-169	6000	28.67	108	10-145
13C12-PCB-189	6000	29.94	100	10-145
Field Spike Standards				
13C12-PCB-031	8000	15.84	95	70-130
13C12-PCB-095	8000	19.13	80	70-130
13C12-PCB-153	8000	24.17	93	70-130
Cleanup Standards				
13C12-PCB-028	6000	16.00	57	5-145
13C12-PCB-111	6000	22.03	68	10-145
13C12-PCB-178	6000	25.06	78	10-145

Toxic Equivalency - (WHO 2005)

Lower Bound PCB TEQ	0.00111
Mid Point PCB TEQ	0.264
Upper Bound PCB TEQ	0.527

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor TEQ Indicates the Toxic Equivalency
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that the analyte was positively identifed. The associated numerical result is an estimate.
R	Indicates that the ion abundance ratio for this analyte did not meet the control limit. The reported value represents an estimated concentration.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	**MB**	Sampling Date	n/a	
ALS Sample ID	QC-MRGG2-1952762-001	Extraction Date	16-Apr-25	Approved:
Analysis Method	EPA 1668C	Sample Size	1 sample	*Henna Saeed*
Analysis Type	Blank	Percent Moisture	n/a	--e-signature--
Sample Matrix	QC	Split Ratio	6	13-May-2025

Run Information	**Run 1**
Filename	5-250423A21
Run Date	24-Apr-25 00:46
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg/g
Instrument - Column	HRMS 5 SPBOCTYL291719-06

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg/g**	**EDL pg/g**	**Flags**	**EMPC pg/g**	**LQL**
PCB-081	0.0003	NotFnd	<8.3	8.3	U		150
PCB-077	0.0001	NotFnd	<8.3	8.3	U		150
PCB-123	0.00003	NotFnd	<6.8	6.8	U		150
PCB-118	0.00003	NotFnd	<5.4	5.4	U		150
PCB-114	0.00003	NotFnd	<6.5	6.5	U		150
PCB-105	0.00003	23.89	<6.3	6.3	U	5.7	150
PCB-126	0.1	NotFnd	<6.0	6.0	U		150
PCB-167	0.00003	NotFnd	<2.9	2.9	U		150
PCB-156/157	0.00003	NotFnd	<3.9	3.9	U		300
PCB-169	0.03	NotFnd	<2.6	2.6	U		150
PCB-189	0.00003	NotFnd	<3.2	3.2	U		150

Extraction Standards	**pg**	**Time**	**% Rec**	**Limits**
13C12-PCB-081	6000	21.79	46	10-145
13C12-PCB-077	6000	22.09	47	10-145
13C12-PCB-123	6000	23.07	49	10-145
13C12-PCB-118	6000	23.24	58	10-145
13C12-PCB-114	6000	23.54	51	10-145
13C12-PCB-105	6000	23.89	53	10-145
13C12-PCB-126	6000	25.48	58	10-145
13C12-PCB-167	6000	26.37	60	10-145
13C12-PCB-156/157	12000	27.00	63	10-145
13C12-PCB-169	6000	28.65	73	10-145
13C12-PCB-189	6000	29.92	73	10-145
Field Spike Standards				
13C12-PCB-031	0		NS	
13C12-PCB-095	0		NS	
13C12-PCB-153	0		NS	
Cleanup Standards				
13C12-PCB-028	6000	16.00	47	5-145
13C12-PCB-111	6000	22.01	53	10-145
13C12-PCB-178	6000	25.05	63	10-145

Toxic Equivalency - (WHO 2005)

Lower Bound PCB TEQ	0.00
Mid Point PCB TEQ	0.341
Upper Bound PCB TEQ	0.682

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor TEQ Indicates the Toxic Equivalency
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
NS	Indicates that this compound was not added.
J	Indicates that the analyte was positively identifed. The associated numerical result is an estimate.
R	Indicates that the ion abundance ratio for this analyte did not meet the control limit. The reported value represents an estimated concentration.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Laboratory Control Sample Analysis Report

Sample Name	**LCS**	Sampling Date	n/a	
ALS Sample ID	QC-MRGG2-1952762-002	Extraction Date	16-Apr-25	Approved:
Analysis Method	EPA 1668C	Sample Size	1 n/a	*Henna Saeed*
Analysis Type	LCS	Percent Moisture	n/a	--e-signature--
Sample Matrix	QC	Split Ratio	6	13-May-2025

Run Information	**Run 1**
Filename	5-250423A19
Run Date	23-Apr-25 23:22
Final Volume	25 ul
Dilution Factor	1
Analysis Units	% Rec
Instrument - Column	HRMS 5 SPBOCTYL291719-06

Target Analytes	**pg**	**Ret. Time**	**% Rec**	**Limits**	**Flags**
PCB-081	3000	21.80	101	60-135	
PCB-077	3000	22.11	100	60-135	
PCB-123	3000	23.09	106	60-135	
PCB-118	3000	23.25	93	60-135	
PCB-114	3000	23.57	101	60-135	
PCB-105	3000	23.92	104	60-135	
PCB-126	3000	25.49	98	60-135	
PCB-167	3000	26.38	96	60-135	
PCB-156/157	6000	27.02	95	60-135	
PCB-169	3000	28.67	97	60-135	
PCB-189	3000	29.94	100	60-135	
Extraction Standards		**Time**	**% Rec**	**Limits**	
13C12-PCB-081	6000	21.79	44	40-145	
13C12-PCB-077	6000	22.09	46	40-145	
13C12-PCB-123	6000	23.07	48	40-145	
13C12-PCB-118	6000	23.24	56	40-145	
13C12-PCB-114	6000	23.55	51	40-145	
13C12-PCB-105	6000	23.90	55	40-145	
13C12-PCB-126	6000	25.48	63	40-145	
13C12-PCB-167	6000	26.37	62	40-145	
13C12-PCB-156/157	12000	27.01	66	40-145	
13C12-PCB-169	6000	28.65	81	40-145	
13C12-PCB-189	6000	29.92	83	40-145	
Field Spike Standards					
13C12-PCB-031	0		NS		
13C12-PCB-095	0		NS		
13C12-PCB-153	0		NS		
Cleanup Standards					
13C12-PCB-028	6000	16.00	39	15-145	
13C12-PCB-111	6000	22.01	44	40-145	
13C12-PCB-178	6000	25.05	59	40-145	

NS Indicates that this compound was not added.

ALS Environmental

Chain of Custody / Analytical Request Form

1435 Norjohn Court, Unit 1, Burlington, Ontario, Canada, L7L 0E6
Tel +1-905-331-3111 Fax +1-905-331-4567 www.alsglobal.com

Report To		Report Format / Distribution		Service Requested
Company:	RWDI	☑ Standard ☐ Other:		☑ Regular Service
Contact:	Tobi Odumoye	☑ PDF ☑ Excel ☐ Digital ☐ Fax		☐ Rush Service (with prior consultation) - surcharge applies
Address:	600 Southgate Drive, Guleph	Email 1:	kami.legarrie@rwdi.com	☐ Other - Please contact ALS
Phone:	519-823-1311 Fax:	Email 2:	oluwatobi.odumoye@rwdi.com	
Invoice To	Same as Report ? ☑ Yes ☐ No	Client / Project Information		
Company:		Job #:	2509873	
Contact:		Location:	SMC St Marys	
Address:		PO:	2509873	
Phone:	Fax:	Sampled by:	Adam Tran	
Lab Work Order #		ALS Contact:	Robert Chin	

Analysis Request

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	EPS 1-RM-2	OSTC M5	US EPA M29	US EPA M26	NCASI 98.01	NCASI A105	Hazardous? Provide Details	Highly Contaminated?	Number of Containers
1	SVOC Blank	11-Apr-2025		Air	X								6
2	SVOC - Raw Mill On - [Test 1, Test 2, Test 3]	8-9/Apr/2025		Air	X								18
3	SVOC - Raw Mill Off - [Test 1, Test 2, Test 3]	10-Apr-2025		Air	X								18
4	M5,M29 Blank	11-Apr-2025		Air		X	X						7
5	M5,M29 - Raw Mill On - [Test 1, Test 2, Test 3]	8-9/Apr/2025		Air		X	X						21
6	M5,M29 - Raw Mill Off - [Test 1, Test 2, Test 3]	10-Apr-2025		Air		X	X						21
7	M26 Blank	9-Apr-2025		Air				X					1
8	M26 [Test 1, Test 2, Test 3]	9-Apr-2025		Air				X					3
9	NCASI 98.01 Blank	11-Apr-2025		Air					X				1
10	NCASI 98.01 [Test 1, Test 2, Test 3]	11-Apr-2025		Air					X				3
11	NCASI A105 Blank	11-Apr-2025		Air						X			1
12	NCASI A105 [[Test 1, Test 2, Test 3]]	11-Apr-2025		Air						X			3
13													
14													
15													
16													
17													
18													
19													
20													

Environmental Division
Burlington
Work Order Reference
BU2500942

Telephone : +1 905 331 3111

Special Instructions / Regulations / Hazardous Details

EPS 1/RM-2 - compounds separte list to follow. US EPA M29 - metals separate list to follow
US EPA M26 - HCl, NH3. NCASI 98.01 Alcohols - Methanol, Phenol. NCASI A105 Aldehydes - Acrolein, Acetaldehyde, Propion

Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
			Aaron Burton	15-Apr 2025	11:35	1.8 °C				

eurofins | Environment Testing

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

ANALYTICAL REPORT

PREPARED FOR

Attn: Tobi Odumoye
RWDI – Air Inc
600 Southgate Drive
Guelph, Ontario N1G 4P6

Generated 4/30/2025 8:51:46 AM

JOB DESCRIPTION

RWDI: AIR SMC St Marys

JOB NUMBER

140-41580-1

Eurofins Knoxville
5815 Middlebrook Pike
Knoxville TN 37921

See page two for job notes and contact information.

myEOL

Eurofins Knoxville

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

Authorization

Aurielle C. Fitzgerald

Generated
4/30/2025 8:51:46 AM

Authorized for release by
Aurielle Fitzgerald, Project Management Assistant I
Aurielle.Fitzgerald@et.eurofinsus.com
Designee for
Courtney Adkins, Project Manager II
Courtney.Adkins@et.eurofinsus.com
(865)291-3019

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Table of Contents

Client: RWDI – Air Inc
Project/Site: RWDI: AIR SMC St Marys

Job ID: 140-41580-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*3	ISTD response or retention time outside acceptable limits.
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 140-41580-1 — Eurofins Knoxville

Job Narrative
140-41580-1

Receipt

The samples were received on 4/16/2025 9:50 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 5.5º C.

GC/MS VOA

Method 8260B: Surrogate recovery for the following sample was outside of acceptance limits: ST MARYS RAW MILL ON VOST TEST 3 TENAX/TENAX CHARCOAL (140-41580-3). The entire sample was consumed during analysis or extraction, therefore, the data have been reported.

Method 8260B: Internal standard (ISTD) response for the following sample was outside of acceptance limits: ST MARYS RAW MILL ON VOST TEST 3 TENAX/TENAX CHARCOAL (140-41580-3). The sample(s) was not re-analyzed due the sample being completely consumed during analysis.

Method 8260B: The results for various analyte(s) are estimated due to mass spectrometer saturation in the following listed sample: ST MARYS RAW MILL ON VOST TEST 3 TENAX/TENAX CHARCOAL (140-41580-3). The extrapolation of results above the quantitation range can lead to significant quantitative error, especially when peak saturation is observed.

Method 8260B: The concentration(s) of methylene chloride in the following samples exceeded the calibration range of the instrument: ST MARYS RAW MILL ON VOST TEST 1 TENAX/TENAX CHARCOAL (140-41580-1) and ST MARYS RAW MILL ON VOST TEST 2 TENAX/TENAX CHARCOAL (140-41580-2). Reanalysis at a dilution was not possible because the entire sample was consumed during analysis.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client Sample ID: ST MARYS RAW MILL ON VOST TEST 1 TENAX/TENAX CHARCOAL
Lab Sample ID: 140-41580-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.011		0.010	0.0036	ug/Sample	1		8260B	Total/NA
Dichlorodifluoromethane	0.013	J	0.025	0.013	ug/Sample	1		8260B	Total/NA
Methylene Chloride	18	E	0.10	0.086	ug/Sample	1		8260B	Total/NA
Toluene	0.018	J	0.025	0.012	ug/Sample	1		8260B	Total/NA
Trichlorofluoromethane	0.010	J	0.050	0.0053	ug/Sample	1		8260B	Total/NA

Client Sample ID: ST MARYS RAW MILL ON VOST TEST 2 TENAX/TENAX CHARCOAL
Lab Sample ID: 140-41580-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.22	J	0.25	0.15	ug/Sample	1		8260B	Total/NA
Methylene Chloride	8.2	E	0.10	0.086	ug/Sample	1		8260B	Total/NA
Toluene	0.088		0.025	0.012	ug/Sample	1		8260B	Total/NA
Trichlorofluoromethane	0.0057	J	0.050	0.0053	ug/Sample	1		8260B	Total/NA

Client Sample ID: ST MARYS RAW MILL ON VOST TEST 3 TENAX/TENAX CHARCOAL
Lab Sample ID: 140-41580-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	45	E	0.25	0.15	ug/Sample	1		8260B	Total/NA
Benzene	12	E	0.010	0.0036	ug/Sample	1		8260B	Total/NA
Bromobenzene	0.019		0.010	0.0045	ug/Sample	1		8260B	Total/NA
Bromomethane	0.37		0.050	0.028	ug/Sample	1		8260B	Total/NA
2-Butanone (MEK)	16	E	0.10	0.066	ug/Sample	1		8260B	Total/NA
n-Butylbenzene	0.40	*3	0.025	0.0058	ug/Sample	1		8260B	Total/NA
sec-Butylbenzene	0.12	*3	0.025	0.0054	ug/Sample	1		8260B	Total/NA
Carbon disulfide	6.6	E	0.025	0.0055	ug/Sample	1		8260B	Total/NA
Chlorobenzene	1.1		0.010	0.0036	ug/Sample	1		8260B	Total/NA
Chloroethane	0.37		0.050	0.022	ug/Sample	1		8260B	Total/NA
Chloromethane	2.5	E	0.050	0.046	ug/Sample	1		8260B	Total/NA
1,2-Dichlorobenzene	0.012	*3	0.010	0.0071	ug/Sample	1		8260B	Total/NA
1,3-Dichlorobenzene	0.033	*3	0.010	0.0070	ug/Sample	1		8260B	Total/NA
1,4-Dichlorobenzene	0.019	*3	0.010	0.0043	ug/Sample	1		8260B	Total/NA
Ethylbenzene	3.7	E	0.010	0.0028	ug/Sample	1		8260B	Total/NA
2-Hexanone	7.8		0.10	0.061	ug/Sample	1		8260B	Total/NA
Isopropylbenzene	0.19		0.010	0.0030	ug/Sample	1		8260B	Total/NA
4-Isopropyltoluene	0.14	*3	0.010	0.0048	ug/Sample	1		8260B	Total/NA
Methylene Chloride	3.1	E	0.10	0.086	ug/Sample	1		8260B	Total/NA
Naphthalene	0.19	*3	0.10	0.021	ug/Sample	1		8260B	Total/NA
N-Propylbenzene	5.5	E *3	0.010	0.0045	ug/Sample	1		8260B	Total/NA
Styrene	4.9	E	0.010	0.0066	ug/Sample	1		8260B	Total/NA
Toluene	8.3	E	0.025	0.012	ug/Sample	1		8260B	Total/NA
1,2,4-Trimethylbenzene	2.2	E *3	0.010	0.0038	ug/Sample	1		8260B	Total/NA
1,3,5-Trimethylbenzene	0.82	*3	0.010	0.0026	ug/Sample	1		8260B	Total/NA
Vinyl chloride	0.32		0.025	0.0064	ug/Sample	1		8260B	Total/NA
o-Xylene	2.7	E	0.010	0.0035	ug/Sample	1		8260B	Total/NA
m,p-Xylene	5.3	E	0.020	0.0070	ug/Sample	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MEDIA CHECK A-2675 TENAX,A-2676 TENAX/CHARCOAL

Lab Sample ID: 140-41580-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methylene Chloride	0.20		0.10	0.086	ug/Sample	1		8260B	Total/NA
Toluene	0.012	J	0.025	0.012	ug/Sample	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: RWDI – Air Inc
Project/Site: RWDI: AIR SMC St Marys

Job ID: 140-41580-1

Client Sample ID: ST MARYS RAW MILL ON VOST TEST 1 TENAX/TENAX CHARCOAL

Lab Sample ID: 140-41580-1

Date Collected: 04/08/25 00:00
Date Received: 04/16/25 09:50
Sample Container: Tube

Matrix: Air

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.25	0.15	ug/Sample			04/21/25 16:16	1
Benzene	**0.011**		0.010	0.0036	ug/Sample			04/21/25 16:16	1
Bromobenzene	ND		0.010	0.0045	ug/Sample			04/21/25 16:16	1
Bromochloromethane	ND		0.025	0.0081	ug/Sample			04/21/25 16:16	1
Bromodichloromethane	ND		0.010	0.0017	ug/Sample			04/21/25 16:16	1
Bromoform	ND		0.025	0.0055	ug/Sample			04/21/25 16:16	1
Bromomethane	ND		0.050	0.028	ug/Sample			04/21/25 16:16	1
2-Butanone (MEK)	ND		0.10	0.066	ug/Sample			04/21/25 16:16	1
n-Butylbenzene	ND		0.025	0.0058	ug/Sample			04/21/25 16:16	1
sec-Butylbenzene	ND		0.025	0.0054	ug/Sample			04/21/25 16:16	1
tert-Butylbenzene	ND		0.010	0.0051	ug/Sample			04/21/25 16:16	1
Carbon disulfide	ND		0.025	0.0055	ug/Sample			04/21/25 16:16	1
Carbon tetrachloride	ND		0.010	0.0075	ug/Sample			04/21/25 16:16	1
Chlorobenzene	ND		0.010	0.0036	ug/Sample			04/21/25 16:16	1
Chlorodibromomethane	ND		0.025	0.0037	ug/Sample			04/21/25 16:16	1
Chloroethane	ND		0.050	0.022	ug/Sample			04/21/25 16:16	1
Chloroform	ND		0.010	0.0081	ug/Sample			04/21/25 16:16	1
Chloromethane	ND		0.050	0.046	ug/Sample			04/21/25 16:16	1
2-Chlorotoluene	ND		0.010	0.0039	ug/Sample			04/21/25 16:16	1
4-Chlorotoluene	ND		0.010	0.0044	ug/Sample			04/21/25 16:16	1
1,2-Dibromo-3-Chloropropane	ND		0.050	0.011	ug/Sample			04/21/25 16:16	1
1,2-Dibromoethane (EDB)	ND		0.025	0.0073	ug/Sample			04/21/25 16:16	1
Dibromomethane	ND		0.025	0.0042	ug/Sample			04/21/25 16:16	1
1,2-Dichlorobenzene	ND		0.010	0.0071	ug/Sample			04/21/25 16:16	1
1,3-Dichlorobenzene	ND		0.010	0.0070	ug/Sample			04/21/25 16:16	1
1,4-Dichlorobenzene	ND		0.010	0.0043	ug/Sample			04/21/25 16:16	1
Dichlorodifluoromethane	**0.013**	**J**	0.025	0.013	ug/Sample			04/21/25 16:16	1
1,1-Dichloroethane	ND		0.010	0.0027	ug/Sample			04/21/25 16:16	1
1,2-Dichloroethane	ND		0.010	0.0060	ug/Sample			04/21/25 16:16	1
1,1-Dichloroethene	ND		0.010	0.0043	ug/Sample			04/21/25 16:16	1
cis-1,2-Dichloroethene	ND		0.010	0.0032	ug/Sample			04/21/25 16:16	1
trans-1,2-Dichloroethene	ND		0.010	0.0037	ug/Sample			04/21/25 16:16	1
1,2-Dichloropropane	ND		0.010	0.0018	ug/Sample			04/21/25 16:16	1
1,3-Dichloropropane	ND		0.010	0.0020	ug/Sample			04/21/25 16:16	1
2,2-Dichloropropane	ND		0.010	0.0050	ug/Sample			04/21/25 16:16	1
1,1-Dichloropropene	ND		0.010	0.0049	ug/Sample			04/21/25 16:16	1
cis-1,3-Dichloropropene	ND		0.010	0.0025	ug/Sample			04/21/25 16:16	1
trans-1,3-Dichloropropene	ND		0.010	0.0034	ug/Sample			04/21/25 16:16	1
Ethylbenzene	ND		0.010	0.0028	ug/Sample			04/21/25 16:16	1
Hexachlorobutadiene	ND		0.025	0.018	ug/Sample			04/21/25 16:16	1
2-Hexanone	ND		0.10	0.061	ug/Sample			04/21/25 16:16	1
Isopropylbenzene	ND		0.010	0.0030	ug/Sample			04/21/25 16:16	1
4-Isopropyltoluene	ND		0.010	0.0048	ug/Sample			04/21/25 16:16	1
Methylene Chloride	**18**	**E**	0.10	0.086	ug/Sample			04/21/25 16:16	1
4-Methyl-2-pentanone (MIBK)	ND		0.10	0.036	ug/Sample			04/21/25 16:16	1
Naphthalene	ND		0.10	0.021	ug/Sample			04/21/25 16:16	1
N-Propylbenzene	ND		0.010	0.0045	ug/Sample			04/21/25 16:16	1

Client Sample ID: ST MARYS RAW MILL ON VOST TEST 1 TENAX/TENAX CHARCOAL

Lab Sample ID: 140-41580-1

Date Collected: 04/08/25 00:00
Matrix: Air
Date Received: 04/16/25 09:50
Sample Container: Tube

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		0.010	0.0066	ug/Sample			04/21/25 16:16	1
1,1,1,2-Tetrachloroethane	ND		0.010	0.0018	ug/Sample			04/21/25 16:16	1
1,1,2,2-Tetrachloroethane	ND		0.025	0.010	ug/Sample			04/21/25 16:16	1
Tetrachloroethene	ND		0.010	0.0060	ug/Sample			04/21/25 16:16	1
Toluene	**0.018**	**J**	0.025	0.012	ug/Sample			04/21/25 16:16	1
1,2,3-Trichlorobenzene	ND		0.025	0.025	ug/Sample			04/21/25 16:16	1
1,2,4-Trichlorobenzene	ND		0.025	0.021	ug/Sample			04/21/25 16:16	1
1,1,1-Trichloroethane	ND		0.025	0.0097	ug/Sample			04/21/25 16:16	1
1,1,2-Trichloroethane	ND		0.025	0.0076	ug/Sample			04/21/25 16:16	1
Trichloroethene	ND		0.010	0.0066	ug/Sample			04/21/25 16:16	1
Trichlorofluoromethane	**0.010**	**J**	0.050	0.0053	ug/Sample			04/21/25 16:16	1
1,2,3-Trichloropropane	ND		0.025	0.010	ug/Sample			04/21/25 16:16	1
1,2,4-Trimethylbenzene	ND		0.010	0.0038	ug/Sample			04/21/25 16:16	1
1,3,5-Trimethylbenzene	ND		0.010	0.0026	ug/Sample			04/21/25 16:16	1
Vinyl chloride	ND		0.025	0.0064	ug/Sample			04/21/25 16:16	1
o-Xylene	ND		0.010	0.0035	ug/Sample			04/21/25 16:16	1
m,p-Xylene	ND		0.020	0.0070	ug/Sample			04/21/25 16:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*73*		*50 - 127*		*04/21/25 16:16*	*1*
4-Bromofluorobenzene (Surr)	*70*		*50 - 122*		*04/21/25 16:16*	*1*
Dibromofluoromethane (Surr)	*90*		*50 - 134*		*04/21/25 16:16*	*1*
Toluene-d8 (Surr)	*89*		*57 - 134*		*04/21/25 16:16*	*1*

Client Sample ID: ST MARYS RAW MILL ON VOST TEST 2 TENAX/TENAX CHARCOAL

Lab Sample ID: 140-41580-2

Date Collected: 04/08/25 00:00
Matrix: Air
Date Received: 04/16/25 09:50
Sample Container: Tube

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**0.22**	**J**	0.25	0.15	ug/Sample			04/21/25 16:40	1
Benzene	ND		0.010	0.0036	ug/Sample			04/21/25 16:40	1
Bromobenzene	ND		0.010	0.0045	ug/Sample			04/21/25 16:40	1
Bromochloromethane	ND		0.025	0.0081	ug/Sample			04/21/25 16:40	1
Bromodichloromethane	ND		0.010	0.0017	ug/Sample			04/21/25 16:40	1
Bromoform	ND		0.025	0.0055	ug/Sample			04/21/25 16:40	1
Bromomethane	ND		0.050	0.028	ug/Sample			04/21/25 16:40	1
2-Butanone (MEK)	ND		0.10	0.066	ug/Sample			04/21/25 16:40	1
n-Butylbenzene	ND		0.025	0.0058	ug/Sample			04/21/25 16:40	1
sec-Butylbenzene	ND		0.025	0.0054	ug/Sample			04/21/25 16:40	1
tert-Butylbenzene	ND		0.010	0.0051	ug/Sample			04/21/25 16:40	1
Carbon disulfide	ND		0.025	0.0055	ug/Sample			04/21/25 16:40	1
Carbon tetrachloride	ND		0.010	0.0075	ug/Sample			04/21/25 16:40	1
Chlorobenzene	ND		0.010	0.0036	ug/Sample			04/21/25 16:40	1
Chlorodibromomethane	ND		0.025	0.0037	ug/Sample			04/21/25 16:40	1
Chloroethane	ND		0.050	0.022	ug/Sample			04/21/25 16:40	1

Client Sample ID: ST MARYS RAW MILL ON VOST TEST 2 TENAX/TENAX CHARCOAL
Lab Sample ID: 140-41580-2

Date Collected: 04/08/25 00:00
Matrix: Air
Date Received: 04/16/25 09:50
Sample Container: Tube

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND		0.010	0.0081	ug/Sample			04/21/25 16:40	1
Chloromethane	ND		0.050	0.046	ug/Sample			04/21/25 16:40	1
2-Chlorotoluene	ND		0.010	0.0039	ug/Sample			04/21/25 16:40	1
4-Chlorotoluene	ND		0.010	0.0044	ug/Sample			04/21/25 16:40	1
1,2-Dibromo-3-Chloropropane	ND		0.050	0.011	ug/Sample			04/21/25 16:40	1
1,2-Dibromoethane (EDB)	ND		0.025	0.0073	ug/Sample			04/21/25 16:40	1
Dibromomethane	ND		0.025	0.0042	ug/Sample			04/21/25 16:40	1
1,2-Dichlorobenzene	ND		0.010	0.0071	ug/Sample			04/21/25 16:40	1
1,3-Dichlorobenzene	ND		0.010	0.0070	ug/Sample			04/21/25 16:40	1
1,4-Dichlorobenzene	ND		0.010	0.0043	ug/Sample			04/21/25 16:40	1
Dichlorodifluoromethane	ND		0.025	0.013	ug/Sample			04/21/25 16:40	1
1,1-Dichloroethane	ND		0.010	0.0027	ug/Sample			04/21/25 16:40	1
1,2-Dichloroethane	ND		0.010	0.0060	ug/Sample			04/21/25 16:40	1
1,1-Dichloroethene	ND		0.010	0.0043	ug/Sample			04/21/25 16:40	1
cis-1,2-Dichloroethene	ND		0.010	0.0032	ug/Sample			04/21/25 16:40	1
trans-1,2-Dichloroethene	ND		0.010	0.0037	ug/Sample			04/21/25 16:40	1
1,2-Dichloropropane	ND		0.010	0.0018	ug/Sample			04/21/25 16:40	1
1,3-Dichloropropane	ND		0.010	0.0020	ug/Sample			04/21/25 16:40	1
2,2-Dichloropropane	ND		0.010	0.0050	ug/Sample			04/21/25 16:40	1
1,1-Dichloropropene	ND		0.010	0.0049	ug/Sample			04/21/25 16:40	1
cis-1,3-Dichloropropene	ND		0.010	0.0025	ug/Sample			04/21/25 16:40	1
trans-1,3-Dichloropropene	ND		0.010	0.0034	ug/Sample			04/21/25 16:40	1
Ethylbenzene	ND		0.010	0.0028	ug/Sample			04/21/25 16:40	1
Hexachlorobutadiene	ND		0.025	0.018	ug/Sample			04/21/25 16:40	1
2-Hexanone	ND		0.10	0.061	ug/Sample			04/21/25 16:40	1
Isopropylbenzene	ND		0.010	0.0030	ug/Sample			04/21/25 16:40	1
4-Isopropyltoluene	ND		0.010	0.0048	ug/Sample			04/21/25 16:40	1
Methylene Chloride	**8.2**	**E**	0.10	0.086	ug/Sample			04/21/25 16:40	1
4-Methyl-2-pentanone (MIBK)	ND		0.10	0.036	ug/Sample			04/21/25 16:40	1
Naphthalene	ND		0.10	0.021	ug/Sample			04/21/25 16:40	1
N-Propylbenzene	ND		0.010	0.0045	ug/Sample			04/21/25 16:40	1
Styrene	ND		0.010	0.0066	ug/Sample			04/21/25 16:40	1
1,1,1,2-Tetrachloroethane	ND		0.010	0.0018	ug/Sample			04/21/25 16:40	1
1,1,2,2-Tetrachloroethane	ND		0.025	0.010	ug/Sample			04/21/25 16:40	1
Tetrachloroethene	ND		0.010	0.0060	ug/Sample			04/21/25 16:40	1
Toluene	**0.088**		0.025	0.012	ug/Sample			04/21/25 16:40	1
1,2,3-Trichlorobenzene	ND		0.025	0.025	ug/Sample			04/21/25 16:40	1
1,2,4-Trichlorobenzene	ND		0.025	0.021	ug/Sample			04/21/25 16:40	1
1,1,1-Trichloroethane	ND		0.025	0.0097	ug/Sample			04/21/25 16:40	1
1,1,2-Trichloroethane	ND		0.025	0.0076	ug/Sample			04/21/25 16:40	1
Trichloroethene	ND		0.010	0.0066	ug/Sample			04/21/25 16:40	1
Trichlorofluoromethane	**0.0057**	**J**	0.050	0.0053	ug/Sample			04/21/25 16:40	1
1,2,3-Trichloropropane	ND		0.025	0.010	ug/Sample			04/21/25 16:40	1
1,2,4-Trimethylbenzene	ND		0.010	0.0038	ug/Sample			04/21/25 16:40	1
1,3,5-Trimethylbenzene	ND		0.010	0.0026	ug/Sample			04/21/25 16:40	1
Vinyl chloride	ND		0.025	0.0064	ug/Sample			04/21/25 16:40	1
o-Xylene	ND		0.010	0.0035	ug/Sample			04/21/25 16:40	1

Client Sample ID: ST MARYS RAW MILL ON VOST TEST 2 TENAX/TENAX CHARCOAL

Lab Sample ID: 140-41580-2

Date Collected: 04/08/25 00:00
Date Received: 04/16/25 09:50
Sample Container: Tube
Matrix: Air

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m,p-Xylene	ND		0.020	0.0070	ug/Sample			04/21/25 16:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*54*		*50 - 127*		*04/21/25 16:40*	*1*
4-Bromofluorobenzene (Surr)	*59*		*50 - 122*		*04/21/25 16:40*	*1*
Dibromofluoromethane (Surr)	*70*		*50 - 134*		*04/21/25 16:40*	*1*
Toluene-d8 (Surr)	*72*		*57 - 134*		*04/21/25 16:40*	*1*

Client Sample ID: ST MARYS RAW MILL ON VOST TEST 3 TENAX/TENAX CHARCOAL

Lab Sample ID: 140-41580-3

Date Collected: 04/09/25 00:00
Date Received: 04/16/25 09:50
Sample Container: Tube
Matrix: Air

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**45**	**E**	0.25	0.15	ug/Sample			04/21/25 17:07	1
Benzene	**12**	**E**	0.010	0.0036	ug/Sample			04/21/25 17:07	1
Bromobenzene	**0.019**		0.010	0.0045	ug/Sample			04/21/25 17:07	1
Bromochloromethane	ND		0.025	0.0081	ug/Sample			04/21/25 17:07	1
Bromodichloromethane	ND		0.010	0.0017	ug/Sample			04/21/25 17:07	1
Bromoform	ND		0.025	0.0055	ug/Sample			04/21/25 17:07	1
Bromomethane	**0.37**		0.050	0.028	ug/Sample			04/21/25 17:07	1
2-Butanone (MEK)	**16**	**E**	0.10	0.066	ug/Sample			04/21/25 17:07	1
n-Butylbenzene	**0.40**	***3**	0.025	0.0058	ug/Sample			04/21/25 17:07	1
sec-Butylbenzene	**0.12**	***3**	0.025	0.0054	ug/Sample			04/21/25 17:07	1
tert-Butylbenzene	ND	*3	0.010	0.0051	ug/Sample			04/21/25 17:07	1
Carbon disulfide	**6.6**	**E**	0.025	0.0055	ug/Sample			04/21/25 17:07	1
Carbon tetrachloride	ND		0.010	0.0075	ug/Sample			04/21/25 17:07	1
Chlorobenzene	**1.1**		0.010	0.0036	ug/Sample			04/21/25 17:07	1
Chlorodibromomethane	ND		0.025	0.0037	ug/Sample			04/21/25 17:07	1
Chloroethane	**0.37**		0.050	0.022	ug/Sample			04/21/25 17:07	1
Chloroform	ND		0.010	0.0081	ug/Sample			04/21/25 17:07	1
Chloromethane	**2.5**	**E**	0.050	0.046	ug/Sample			04/21/25 17:07	1
2-Chlorotoluene	ND	*3	0.010	0.0039	ug/Sample			04/21/25 17:07	1
4-Chlorotoluene	ND	*3	0.010	0.0044	ug/Sample			04/21/25 17:07	1
1,2-Dibromo-3-Chloropropane	ND	*3	0.050	0.011	ug/Sample			04/21/25 17:07	1
1,2-Dibromoethane (EDB)	ND		0.025	0.0073	ug/Sample			04/21/25 17:07	1
Dibromomethane	ND		0.025	0.0042	ug/Sample			04/21/25 17:07	1
1,2-Dichlorobenzene	**0.012**	***3**	0.010	0.0071	ug/Sample			04/21/25 17:07	1
1,3-Dichlorobenzene	**0.033**	***3**	0.010	0.0070	ug/Sample			04/21/25 17:07	1
1,4-Dichlorobenzene	**0.019**	***3**	0.010	0.0043	ug/Sample			04/21/25 17:07	1
Dichlorodifluoromethane	ND		0.025	0.013	ug/Sample			04/21/25 17:07	1
1,1-Dichloroethane	ND		0.010	0.0027	ug/Sample			04/21/25 17:07	1
1,2-Dichloroethane	ND		0.010	0.0060	ug/Sample			04/21/25 17:07	1
1,1-Dichloroethene	ND		0.010	0.0043	ug/Sample			04/21/25 17:07	1
cis-1,2-Dichloroethene	ND		0.010	0.0032	ug/Sample			04/21/25 17:07	1
trans-1,2-Dichloroethene	ND		0.010	0.0037	ug/Sample			04/21/25 17:07	1

Client Sample Results

Client: RWDI – Air Inc
Project/Site: RWDI: AIR SMC St Marys

Job ID: 140-41580-1

Client Sample ID: ST MARYS RAW MILL ON VOST TEST 3 TENAX/TENAX CHARCOAL
Lab Sample ID: 140-41580-3
Date Collected: 04/09/25 00:00
Matrix: Air
Date Received: 04/16/25 09:50
Sample Container: Tube

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	ND		0.010	0.0018	ug/Sample			04/21/25 17:07	1
1,3-Dichloropropane	ND		0.010	0.0020	ug/Sample			04/21/25 17:07	1
2,2-Dichloropropane	ND		0.010	0.0050	ug/Sample			04/21/25 17:07	1
1,1-Dichloropropene	ND		0.010	0.0049	ug/Sample			04/21/25 17:07	1
cis-1,3-Dichloropropene	ND		0.010	0.0025	ug/Sample			04/21/25 17:07	1
trans-1,3-Dichloropropene	ND		0.010	0.0034	ug/Sample			04/21/25 17:07	1
Ethylbenzene	**3.7**	**E**	0.010	0.0028	ug/Sample			04/21/25 17:07	1
Hexachlorobutadiene	ND	*3	0.025	0.018	ug/Sample			04/21/25 17:07	1
2-Hexanone	**7.8**		0.10	0.061	ug/Sample			04/21/25 17:07	1
Isopropylbenzene	**0.19**		0.010	0.0030	ug/Sample			04/21/25 17:07	1
4-Isopropyltoluene	**0.14**	***3**	0.010	0.0048	ug/Sample			04/21/25 17:07	1
Methylene Chloride	**3.1**	**E**	0.10	0.086	ug/Sample			04/21/25 17:07	1
4-Methyl-2-pentanone (MIBK)	ND		0.10	0.036	ug/Sample			04/21/25 17:07	1
Naphthalene	**0.19**	***3**	0.10	0.021	ug/Sample			04/21/25 17:07	1
N-Propylbenzene	**5.5**	**E *3**	0.010	0.0045	ug/Sample			04/21/25 17:07	1
Styrene	**4.9**	**E**	0.010	0.0066	ug/Sample			04/21/25 17:07	1
1,1,1,2-Tetrachloroethane	ND		0.010	0.0018	ug/Sample			04/21/25 17:07	1
1,1,2,2-Tetrachloroethane	ND		0.025	0.010	ug/Sample			04/21/25 17:07	1
Tetrachloroethene	ND		0.010	0.0060	ug/Sample			04/21/25 17:07	1
Toluene	**8.3**	**E**	0.025	0.012	ug/Sample			04/21/25 17:07	1
1,2,3-Trichlorobenzene	ND	*3	0.025	0.025	ug/Sample			04/21/25 17:07	1
1,2,4-Trichlorobenzene	ND	*3	0.025	0.021	ug/Sample			04/21/25 17:07	1
1,1,1-Trichloroethane	ND		0.025	0.0097	ug/Sample			04/21/25 17:07	1
1,1,2-Trichloroethane	ND		0.025	0.0076	ug/Sample			04/21/25 17:07	1
Trichloroethene	ND		0.010	0.0066	ug/Sample			04/21/25 17:07	1
Trichlorofluoromethane	ND		0.050	0.0053	ug/Sample			04/21/25 17:07	1
1,2,3-Trichloropropane	ND	*3	0.025	0.010	ug/Sample			04/21/25 17:07	1
1,2,4-Trimethylbenzene	**2.2**	**E *3**	0.010	0.0038	ug/Sample			04/21/25 17:07	1
1,3,5-Trimethylbenzene	**0.82**	***3**	0.010	0.0026	ug/Sample			04/21/25 17:07	1
Vinyl chloride	**0.32**		0.025	0.0064	ug/Sample			04/21/25 17:07	1
o-Xylene	**2.7**	**E**	0.010	0.0035	ug/Sample			04/21/25 17:07	1
m,p-Xylene	**5.3**	**E**	0.020	0.0070	ug/Sample			04/21/25 17:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*245*	*S1+*	*50 - 127*		*04/21/25 17:07*	*1*
4-Bromofluorobenzene (Surr)	*656*	**3 S1+*	*50 - 122*		*04/21/25 17:07*	*1*
Dibromofluoromethane (Surr)	*80*		*50 - 134*		*04/21/25 17:07*	*1*
Toluene-d8 (Surr)	*101*		*57 - 134*		*04/21/25 17:07*	*1*

Client Sample ID: MEDIA CHECK A-2675 TENAX,A-2676 TENAX/CHARCOAL
Lab Sample ID: 140-41580-4
Date Collected: 04/08/25 00:00
Matrix: Air
Date Received: 04/16/25 09:50
Sample Container: Tube

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.25	0.15	ug/Sample			04/21/25 15:51	1

Client Sample ID: MEDIA CHECK A-2675 TENAX,A-2676 TENAX/CHARCOAL

Lab Sample ID: 140-41580-4

Date Collected: 04/08/25 00:00
Matrix: Air
Date Received: 04/16/25 09:50
Sample Container: Tube

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.010	0.0036	ug/Sample			04/21/25 15:51	1
Bromobenzene	ND		0.010	0.0045	ug/Sample			04/21/25 15:51	1
Bromochloromethane	ND		0.025	0.0081	ug/Sample			04/21/25 15:51	1
Bromodichloromethane	ND		0.010	0.0017	ug/Sample			04/21/25 15:51	1
Bromoform	ND		0.025	0.0055	ug/Sample			04/21/25 15:51	1
Bromomethane	ND		0.050	0.028	ug/Sample			04/21/25 15:51	1
2-Butanone (MEK)	ND		0.10	0.066	ug/Sample			04/21/25 15:51	1
n-Butylbenzene	ND		0.025	0.0058	ug/Sample			04/21/25 15:51	1
sec-Butylbenzene	ND		0.025	0.0054	ug/Sample			04/21/25 15:51	1
tert-Butylbenzene	ND		0.010	0.0051	ug/Sample			04/21/25 15:51	1
Carbon disulfide	ND		0.025	0.0055	ug/Sample			04/21/25 15:51	1
Carbon tetrachloride	ND		0.010	0.0075	ug/Sample			04/21/25 15:51	1
Chlorobenzene	ND		0.010	0.0036	ug/Sample			04/21/25 15:51	1
Chlorodibromomethane	ND		0.025	0.0037	ug/Sample			04/21/25 15:51	1
Chloroethane	ND		0.050	0.022	ug/Sample			04/21/25 15:51	1
Chloroform	ND		0.010	0.0081	ug/Sample			04/21/25 15:51	1
Chloromethane	ND		0.050	0.046	ug/Sample			04/21/25 15:51	1
2-Chlorotoluene	ND		0.010	0.0039	ug/Sample			04/21/25 15:51	1
4-Chlorotoluene	ND		0.010	0.0044	ug/Sample			04/21/25 15:51	1
1,2-Dibromo-3-Chloropropane	ND		0.050	0.011	ug/Sample			04/21/25 15:51	1
1,2-Dibromoethane (EDB)	ND		0.025	0.0073	ug/Sample			04/21/25 15:51	1
Dibromomethane	ND		0.025	0.0042	ug/Sample			04/21/25 15:51	1
1,2-Dichlorobenzene	ND		0.010	0.0071	ug/Sample			04/21/25 15:51	1
1,3-Dichlorobenzene	ND		0.010	0.0070	ug/Sample			04/21/25 15:51	1
1,4-Dichlorobenzene	ND		0.010	0.0043	ug/Sample			04/21/25 15:51	1
Dichlorodifluoromethane	ND		0.025	0.013	ug/Sample			04/21/25 15:51	1
1,1-Dichloroethane	ND		0.010	0.0027	ug/Sample			04/21/25 15:51	1
1,2-Dichloroethane	ND		0.010	0.0060	ug/Sample			04/21/25 15:51	1
1,1-Dichloroethene	ND		0.010	0.0043	ug/Sample			04/21/25 15:51	1
cis-1,2-Dichloroethene	ND		0.010	0.0032	ug/Sample			04/21/25 15:51	1
trans-1,2-Dichloroethene	ND		0.010	0.0037	ug/Sample			04/21/25 15:51	1
1,2-Dichloropropane	ND		0.010	0.0018	ug/Sample			04/21/25 15:51	1
1,3-Dichloropropane	ND		0.010	0.0020	ug/Sample			04/21/25 15:51	1
2,2-Dichloropropane	ND		0.010	0.0050	ug/Sample			04/21/25 15:51	1
1,1-Dichloropropene	ND		0.010	0.0049	ug/Sample			04/21/25 15:51	1
cis-1,3-Dichloropropene	ND		0.010	0.0025	ug/Sample			04/21/25 15:51	1
trans-1,3-Dichloropropene	ND		0.010	0.0034	ug/Sample			04/21/25 15:51	1
Ethylbenzene	ND		0.010	0.0028	ug/Sample			04/21/25 15:51	1
Hexachlorobutadiene	ND		0.025	0.018	ug/Sample			04/21/25 15:51	1
2-Hexanone	ND		0.10	0.061	ug/Sample			04/21/25 15:51	1
Isopropylbenzene	ND		0.010	0.0030	ug/Sample			04/21/25 15:51	1
4-Isopropyltoluene	ND		0.010	0.0048	ug/Sample			04/21/25 15:51	1
Methylene Chloride	**0.20**		0.10	0.086	ug/Sample			04/21/25 15:51	1
4-Methyl-2-pentanone (MIBK)	ND		0.10	0.036	ug/Sample			04/21/25 15:51	1
Naphthalene	ND		0.10	0.021	ug/Sample			04/21/25 15:51	1
N-Propylbenzene	ND		0.010	0.0045	ug/Sample			04/21/25 15:51	1
Styrene	ND		0.010	0.0066	ug/Sample			04/21/25 15:51	1

Client Sample ID: MEDIA CHECK A-2675 TENAX,A-2676 TENAX/CHARCOAL

Lab Sample ID: 140-41580-4

Date Collected: 04/08/25 00:00
Matrix: Air
Date Received: 04/16/25 09:50
Sample Container: Tube

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.010	0.0018	ug/Sample			04/21/25 15:51	1
1,1,2,2-Tetrachloroethane	ND		0.025	0.010	ug/Sample			04/21/25 15:51	1
Tetrachloroethene	ND		0.010	0.0060	ug/Sample			04/21/25 15:51	1
Toluene	**0.012**	**J**	0.025	0.012	ug/Sample			04/21/25 15:51	1
1,2,3-Trichlorobenzene	ND		0.025	0.025	ug/Sample			04/21/25 15:51	1
1,2,4-Trichlorobenzene	ND		0.025	0.021	ug/Sample			04/21/25 15:51	1
1,1,1-Trichloroethane	ND		0.025	0.0097	ug/Sample			04/21/25 15:51	1
1,1,2-Trichloroethane	ND		0.025	0.0076	ug/Sample			04/21/25 15:51	1
Trichloroethene	ND		0.010	0.0066	ug/Sample			04/21/25 15:51	1
Trichlorofluoromethane	ND		0.050	0.0053	ug/Sample			04/21/25 15:51	1
1,2,3-Trichloropropane	ND		0.025	0.010	ug/Sample			04/21/25 15:51	1
1,2,4-Trimethylbenzene	ND		0.010	0.0038	ug/Sample			04/21/25 15:51	1
1,3,5-Trimethylbenzene	ND		0.010	0.0026	ug/Sample			04/21/25 15:51	1
Vinyl chloride	ND		0.025	0.0064	ug/Sample			04/21/25 15:51	1
o-Xylene	ND		0.010	0.0035	ug/Sample			04/21/25 15:51	1
m,p-Xylene	ND		0.020	0.0070	ug/Sample			04/21/25 15:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*74*		*50 - 127*		*04/21/25 15:51*	*1*
4-Bromofluorobenzene (Surr)	*77*		*50 - 122*		*04/21/25 15:51*	*1*
Dibromofluoromethane (Surr)	*95*		*50 - 134*		*04/21/25 15:51*	*1*
Toluene-d8 (Surr)	*93*		*57 - 134*		*04/21/25 15:51*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	RL	MDL
1,1,1,2-Tetrachloroethane	0.010 ug/Sample	0.0018 ug/Sample
1,1,1-Trichloroethane	0.025 ug/Sample	0.0097 ug/Sample
1,1,2,2-Tetrachloroethane	0.025 ug/Sample	0.010 ug/Sample
1,1,2-Trichloroethane	0.025 ug/Sample	0.0076 ug/Sample
1,1-Dichloroethane	0.010 ug/Sample	0.0027 ug/Sample
1,1-Dichloroethene	0.010 ug/Sample	0.0043 ug/Sample
1,1-Dichloropropene	0.010 ug/Sample	0.0049 ug/Sample
1,2,3-Trichlorobenzene	0.025 ug/Sample	0.025 ug/Sample
1,2,3-Trichloropropane	0.025 ug/Sample	0.010 ug/Sample
1,2,4-Trichlorobenzene	0.025 ug/Sample	0.021 ug/Sample
1,2,4-Trimethylbenzene	0.010 ug/Sample	0.0038 ug/Sample
1,2-Dibromo-3-Chloropropane	0.050 ug/Sample	0.011 ug/Sample
1,2-Dibromoethane (EDB)	0.025 ug/Sample	0.0073 ug/Sample
1,2-Dichlorobenzene	0.010 ug/Sample	0.0071 ug/Sample
1,2-Dichloroethane	0.010 ug/Sample	0.0060 ug/Sample
1,2-Dichloropropane	0.010 ug/Sample	0.0018 ug/Sample
1,3,5-Trimethylbenzene	0.010 ug/Sample	0.0026 ug/Sample
1,3-Dichlorobenzene	0.010 ug/Sample	0.0070 ug/Sample
1,3-Dichloropropane	0.010 ug/Sample	0.0020 ug/Sample
1,4-Dichlorobenzene	0.010 ug/Sample	0.0043 ug/Sample
2,2-Dichloropropane	0.010 ug/Sample	0.0050 ug/Sample
2-Butanone (MEK)	0.10 ug/Sample	0.066 ug/Sample
2-Chlorotoluene	0.010 ug/Sample	0.0039 ug/Sample
2-Hexanone	0.10 ug/Sample	0.061 ug/Sample
4-Chlorotoluene	0.010 ug/Sample	0.0044 ug/Sample
4-Isopropyltoluene	0.010 ug/Sample	0.0048 ug/Sample
4-Methyl-2-pentanone (MIBK)	0.10 ug/Sample	0.036 ug/Sample
Acetone	0.25 ug/Sample	0.15 ug/Sample
Benzene	0.010 ug/Sample	0.0036 ug/Sample
Bromobenzene	0.010 ug/Sample	0.0045 ug/Sample
Bromochloromethane	0.025 ug/Sample	0.0081 ug/Sample
Bromodichloromethane	0.010 ug/Sample	0.0017 ug/Sample
Bromoform	0.025 ug/Sample	0.0055 ug/Sample
Bromomethane	0.050 ug/Sample	0.028 ug/Sample
Carbon disulfide	0.025 ug/Sample	0.0055 ug/Sample
Carbon tetrachloride	0.010 ug/Sample	0.0075 ug/Sample
Chlorobenzene	0.010 ug/Sample	0.0036 ug/Sample
Chlorodibromomethane	0.025 ug/Sample	0.0037 ug/Sample
Chloroethane	0.050 ug/Sample	0.022 ug/Sample
Chloroform	0.010 ug/Sample	0.0081 ug/Sample
Chloromethane	0.050 ug/Sample	0.046 ug/Sample
cis-1,2-Dichloroethene	0.010 ug/Sample	0.0032 ug/Sample
cis-1,3-Dichloropropene	0.010 ug/Sample	0.0025 ug/Sample
Dibromomethane	0.025 ug/Sample	0.0042 ug/Sample
Dichlorodifluoromethane	0.025 ug/Sample	0.013 ug/Sample
Ethylbenzene	0.010 ug/Sample	0.0028 ug/Sample
Hexachlorobutadiene	0.025 ug/Sample	0.018 ug/Sample
Isopropylbenzene	0.010 ug/Sample	0.0030 ug/Sample
m,p-Xylene	0.020 ug/Sample	0.0070 ug/Sample
Methylene Chloride	0.10 ug/Sample	0.086 ug/Sample
Naphthalene	0.10 ug/Sample	0.021 ug/Sample
n-Butylbenzene	0.025 ug/Sample	0.0058 ug/Sample
N-Propylbenzene	0.010 ug/Sample	0.0045 ug/Sample

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	RL	MDL
o-Xylene	0.010 ug/Sample	0.0035 ug/Sample
sec-Butylbenzene	0.025 ug/Sample	0.0054 ug/Sample
Styrene	0.010 ug/Sample	0.0066 ug/Sample
tert-Butylbenzene	0.010 ug/Sample	0.0051 ug/Sample
Tetrachloroethene	0.010 ug/Sample	0.0060 ug/Sample
Toluene	0.025 ug/Sample	0.012 ug/Sample
trans-1,2-Dichloroethene	0.010 ug/Sample	0.0037 ug/Sample
trans-1,3-Dichloropropene	0.010 ug/Sample	0.0034 ug/Sample
Trichloroethene	0.010 ug/Sample	0.0066 ug/Sample
Trichlorofluoromethane	0.050 ug/Sample	0.0053 ug/Sample
Vinyl chloride	0.025 ug/Sample	0.0064 ug/Sample

Surrogate Summary

Client: RWDI – Air Inc
Project/Site: RWDI: AIR SMC St Marys

Job ID: 140-41580-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Air **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(50-127)	(50-122)	(50-134)	(57-134)
140-41580-1	ST MARYS RAW MILL ON VOS	73	70	90	89
140-41580-2	ST MARYS RAW MILL ON VOST TEST 2 TENAX/TENAX CHARCOAL	54	59	70	72
140-41580-3	ST MARYS RAW MILL ON VOST TEST 3 TENAX/TENAX CHARCOAL	245 S1+	656 *3 S1+	80	101
140-41580-4	MEDIA CHECK A-2675 TENAX,A-2676 TENAX/CHARCOAL	74	77	95	93
LCS 140-98601/3	Lab Control Sample	76	75	93	91
LCSD 140-98601/4	Lab Control Sample Dup	76	67	92	92
MB 140-98601/6	Method Blank	71	74	90	89

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

QC Sample Results

Client: RWDI – Air Inc
Project/Site: RWDI: AIR SMC St Marys

Job ID: 140-41580-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 140-98601/6
Matrix: Air
Analysis Batch: 98601

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.25	0.15	ug/Sample			04/21/25 15:11	1
Benzene	ND		0.010	0.0036	ug/Sample			04/21/25 15:11	1
Bromobenzene	ND		0.010	0.0045	ug/Sample			04/21/25 15:11	1
Bromochloromethane	ND		0.025	0.0081	ug/Sample			04/21/25 15:11	1
Bromodichloromethane	ND		0.010	0.0017	ug/Sample			04/21/25 15:11	1
Bromoform	ND		0.025	0.0055	ug/Sample			04/21/25 15:11	1
Bromomethane	ND		0.050	0.028	ug/Sample			04/21/25 15:11	1
2-Butanone (MEK)	ND		0.10	0.066	ug/Sample			04/21/25 15:11	1
n-Butylbenzene	ND		0.025	0.0058	ug/Sample			04/21/25 15:11	1
sec-Butylbenzene	ND		0.025	0.0054	ug/Sample			04/21/25 15:11	1
tert-Butylbenzene	ND		0.010	0.0051	ug/Sample			04/21/25 15:11	1
Carbon disulfide	ND		0.025	0.0055	ug/Sample			04/21/25 15:11	1
Carbon tetrachloride	ND		0.010	0.0075	ug/Sample			04/21/25 15:11	1
Chlorobenzene	ND		0.010	0.0036	ug/Sample			04/21/25 15:11	1
Chlorodibromomethane	ND		0.025	0.0037	ug/Sample			04/21/25 15:11	1
Chloroethane	ND		0.050	0.022	ug/Sample			04/21/25 15:11	1
Chloroform	ND		0.010	0.0081	ug/Sample			04/21/25 15:11	1
Chloromethane	ND		0.050	0.046	ug/Sample			04/21/25 15:11	1
2-Chlorotoluene	ND		0.010	0.0039	ug/Sample			04/21/25 15:11	1
4-Chlorotoluene	ND		0.010	0.0044	ug/Sample			04/21/25 15:11	1
1,2-Dibromo-3-Chloropropane	ND		0.050	0.011	ug/Sample			04/21/25 15:11	1
1,2-Dibromoethane (EDB)	ND		0.025	0.0073	ug/Sample			04/21/25 15:11	1
Dibromomethane	ND		0.025	0.0042	ug/Sample			04/21/25 15:11	1
1,2-Dichlorobenzene	ND		0.010	0.0071	ug/Sample			04/21/25 15:11	1
1,3-Dichlorobenzene	ND		0.010	0.0070	ug/Sample			04/21/25 15:11	1
1,4-Dichlorobenzene	ND		0.010	0.0043	ug/Sample			04/21/25 15:11	1
Dichlorodifluoromethane	ND		0.025	0.013	ug/Sample			04/21/25 15:11	1
1,1-Dichloroethane	ND		0.010	0.0027	ug/Sample			04/21/25 15:11	1
1,2-Dichloroethane	ND		0.010	0.0060	ug/Sample			04/21/25 15:11	1
1,1-Dichloroethene	ND		0.010	0.0043	ug/Sample			04/21/25 15:11	1
cis-1,2-Dichloroethene	ND		0.010	0.0032	ug/Sample			04/21/25 15:11	1
trans-1,2-Dichloroethene	ND		0.010	0.0037	ug/Sample			04/21/25 15:11	1
1,2-Dichloropropane	ND		0.010	0.0018	ug/Sample			04/21/25 15:11	1
1,3-Dichloropropane	ND		0.010	0.0020	ug/Sample			04/21/25 15:11	1
2,2-Dichloropropane	ND		0.010	0.0050	ug/Sample			04/21/25 15:11	1
1,1-Dichloropropene	ND		0.010	0.0049	ug/Sample			04/21/25 15:11	1
cis-1,3-Dichloropropene	ND		0.010	0.0025	ug/Sample			04/21/25 15:11	1
trans-1,3-Dichloropropene	ND		0.010	0.0034	ug/Sample			04/21/25 15:11	1
Ethylbenzene	ND		0.010	0.0028	ug/Sample			04/21/25 15:11	1
Hexachlorobutadiene	ND		0.025	0.018	ug/Sample			04/21/25 15:11	1
2-Hexanone	ND		0.10	0.061	ug/Sample			04/21/25 15:11	1
Isopropylbenzene	ND		0.010	0.0030	ug/Sample			04/21/25 15:11	1
4-Isopropyltoluene	ND		0.010	0.0048	ug/Sample			04/21/25 15:11	1
Methylene Chloride	ND		0.10	0.086	ug/Sample			04/21/25 15:11	1
4-Methyl-2-pentanone (MIBK)	ND		0.10	0.036	ug/Sample			04/21/25 15:11	1
Naphthalene	ND		0.10	0.021	ug/Sample			04/21/25 15:11	1
N-Propylbenzene	ND		0.010	0.0045	ug/Sample			04/21/25 15:11	1
Styrene	ND		0.010	0.0066	ug/Sample			04/21/25 15:11	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 140-98601/6
Matrix: Air
Analysis Batch: 98601

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.010	0.0018	ug/Sample			04/21/25 15:11	1
1,1,2,2-Tetrachloroethane	ND		0.025	0.010	ug/Sample			04/21/25 15:11	1
Tetrachloroethene	ND		0.010	0.0060	ug/Sample			04/21/25 15:11	1
Toluene	ND		0.025	0.012	ug/Sample			04/21/25 15:11	1
1,2,3-Trichlorobenzene	ND		0.025	0.025	ug/Sample			04/21/25 15:11	1
1,2,4-Trichlorobenzene	ND		0.025	0.021	ug/Sample			04/21/25 15:11	1
1,1,1-Trichloroethane	ND		0.025	0.0097	ug/Sample			04/21/25 15:11	1
1,1,2-Trichloroethane	ND		0.025	0.0076	ug/Sample			04/21/25 15:11	1
Trichloroethene	ND		0.010	0.0066	ug/Sample			04/21/25 15:11	1
Trichlorofluoromethane	ND		0.050	0.0053	ug/Sample			04/21/25 15:11	1
1,2,3-Trichloropropane	ND		0.025	0.010	ug/Sample			04/21/25 15:11	1
1,2,4-Trimethylbenzene	ND		0.010	0.0038	ug/Sample			04/21/25 15:11	1
1,3,5-Trimethylbenzene	ND		0.010	0.0026	ug/Sample			04/21/25 15:11	1
Vinyl chloride	ND		0.025	0.0064	ug/Sample			04/21/25 15:11	1
o-Xylene	ND		0.010	0.0035	ug/Sample			04/21/25 15:11	1
m,p-Xylene	ND		0.020	0.0070	ug/Sample			04/21/25 15:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*71*		*50 - 127*		*04/21/25 15:11*	*1*
4-Bromofluorobenzene (Surr)	*74*		*50 - 122*		*04/21/25 15:11*	*1*
Dibromofluoromethane (Surr)	*90*		*50 - 134*		*04/21/25 15:11*	*1*
Toluene-d8 (Surr)	*89*		*57 - 134*		*04/21/25 15:11*	*1*

Lab Sample ID: LCS 140-98601/3
Matrix: Air
Analysis Batch: 98601

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	1.20	0.707		ug/Sample		59	20 - 191
Benzene	0.300	0.336		ug/Sample		112	68 - 128
Bromobenzene	0.300	0.289		ug/Sample		96	53 - 120
Bromochloromethane	0.300	0.325		ug/Sample		108	53 - 120
Bromodichloromethane	0.300	0.302		ug/Sample		101	52 - 122
Bromoform	0.300	0.211		ug/Sample		70	40 - 120
Bromomethane	0.600	0.776		ug/Sample		129	40 - 187
2-Butanone (MEK)	1.20	0.699		ug/Sample		58	20 - 150
n-Butylbenzene	0.300	0.308		ug/Sample		103	57 - 140
sec-Butylbenzene	0.300	0.322		ug/Sample		107	70 - 128
tert-Butylbenzene	0.300	0.329		ug/Sample		110	67 - 122
Carbon disulfide	0.300	0.413		ug/Sample		138	40 - 157
Carbon tetrachloride	0.300	0.336		ug/Sample		112	67 - 135
Chlorobenzene	0.300	0.328		ug/Sample		109	65 - 120
Chlorodibromomethane	0.300	0.273		ug/Sample		91	50 - 120
Chloroethane	0.600	0.648		ug/Sample		108	43 - 163
Chloroform	0.300	0.322		ug/Sample		107	63 - 123
Chloromethane	0.600	0.616		ug/Sample		103	44 - 176
2-Chlorotoluene	0.300	0.306		ug/Sample		102	59 - 120
4-Chlorotoluene	0.300	0.313		ug/Sample		104	57 - 120

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 140-98601/3
Matrix: Air
Analysis Batch: 98601

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dibromo-3-Chloropropane	0.300	0.104		ug/Sample		35	10 - 120
1,2-Dibromoethane (EDB)	0.300	0.233		ug/Sample		78	20 - 120
Dibromomethane	0.300	0.273		ug/Sample		91	50 - 120
1,2-Dichlorobenzene	0.300	0.238		ug/Sample		79	20 - 124
1,3-Dichlorobenzene	0.300	0.295		ug/Sample		98	30 - 132
1,4-Dichlorobenzene	0.300	0.277		ug/Sample		92	30 - 129
Dichlorodifluoromethane	0.600	0.669		ug/Sample		112	25 - 146
1,1-Dichloroethane	0.300	0.316		ug/Sample		105	66 - 128
1,2-Dichloroethane	0.300	0.271		ug/Sample		90	36 - 124
1,1-Dichloroethene	0.300	0.347		ug/Sample		116	77 - 131
cis-1,2-Dichloroethene	0.300	0.350		ug/Sample		117	67 - 123
trans-1,2-Dichloroethene	0.300	0.385		ug/Sample		128	78 - 128
1,2-Dichloropropane	0.300	0.301		ug/Sample		100	55 - 124
1,3-Dichloropropane	0.300	0.254		ug/Sample		85	50 - 120
2,2-Dichloropropane	0.300	0.345		ug/Sample		115	59 - 141
1,1-Dichloropropene	0.300	0.345		ug/Sample		115	70 - 136
cis-1,3-Dichloropropene	0.300	0.317		ug/Sample		106	45 - 125
trans-1,3-Dichloropropene	0.300	0.279		ug/Sample		93	40 - 120
Ethylbenzene	0.300	0.337		ug/Sample		112	72 - 127
Hexachlorobutadiene	0.300	0.404		ug/Sample		135	52 - 167
2-Hexanone	1.20	0.625		ug/Sample		52	30 - 151
Isopropylbenzene	0.300	0.334		ug/Sample		111	40 - 152
4-Isopropyltoluene	0.300	0.331		ug/Sample		110	66 - 126
Methylene Chloride	0.300	0.399		ug/Sample		133	60 - 134
4-Methyl-2-pentanone (MIBK)	1.20	0.719		ug/Sample		60	30 - 175
Naphthalene	0.300	0.100		ug/Sample		33	20 - 120
N-Propylbenzene	0.300	0.324		ug/Sample		108	69 - 123
Styrene	0.300	0.312		ug/Sample		104	57 - 120
1,1,1,2-Tetrachloroethane	0.300	0.308		ug/Sample		103	53 - 120
1,1,2,2-Tetrachloroethane	0.300	0.187		ug/Sample		62	30 - 120
Tetrachloroethene	0.300	0.356		ug/Sample		119	80 - 133
Toluene	0.300	0.331		ug/Sample		110	70 - 120
1,2,3-Trichlorobenzene	0.300	0.166		ug/Sample		55	20 - 123
1,2,4-Trichlorobenzene	0.300	0.215		ug/Sample		72	20 - 140
1,1,1-Trichloroethane	0.300	0.338		ug/Sample		113	65 - 131
1,1,2-Trichloroethane	0.300	0.264		ug/Sample		88	41 - 120
Trichloroethene	0.300	0.372		ug/Sample		124	80 - 141
Trichlorofluoromethane	0.600	0.678		ug/Sample		113	58 - 147
1,2,3-Trichloropropane	0.300	0.184		ug/Sample		61	30 - 120
1,2,4-Trimethylbenzene	0.300	0.297		ug/Sample		99	56 - 120
1,3,5-Trimethylbenzene	0.300	0.315		ug/Sample		105	62 - 121
Vinyl chloride	0.600	0.714		ug/Sample		119	64 - 142
o-Xylene	0.300	0.328		ug/Sample		109	64 - 120
m,p-Xylene	0.300	0.334		ug/Sample		111	74 - 126

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*76*		*50 - 127*
4-Bromofluorobenzene (Surr)	*75*		*50 - 122*

Client: RWDI – Air Inc
Project/Site: RWDI: AIR SMC St Marys

Job ID: 140-41580-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 140-98601/3
Matrix: Air
Analysis Batch: 98601

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane (Surr)	93		50 - 134
Toluene-d8 (Surr)	91		57 - 134

Lab Sample ID: LCSD 140-98601/4
Matrix: Air
Analysis Batch: 98601

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetone	1.20	0.699		ug/Sample		58	20 - 191	1	50
Benzene	0.300	0.330		ug/Sample		110	68 - 128	2	22
Bromobenzene	0.300	0.250		ug/Sample		83	53 - 120	14	38
Bromochloromethane	0.300	0.319		ug/Sample		106	53 - 120	2	36
Bromodichloromethane	0.300	0.295		ug/Sample		98	52 - 122	2	35
Bromoform	0.300	0.186		ug/Sample		62	40 - 120	13	50
Bromomethane	0.600	0.773		ug/Sample		129	40 - 187	0	35
2-Butanone (MEK)	1.20	0.710		ug/Sample		59	20 - 150	2	50
n-Butylbenzene	0.300	0.238		ug/Sample		79	57 - 140	25	31
sec-Butylbenzene	0.300	0.270		ug/Sample		90	70 - 128	18	26
tert-Butylbenzene	0.300	0.293		ug/Sample		98	67 - 122	12	26
Carbon disulfide	0.300	0.400		ug/Sample		133	40 - 157	3	23
Carbon tetrachloride	0.300	0.328		ug/Sample		109	67 - 135	2	23
Chlorobenzene	0.300	0.313		ug/Sample		104	65 - 120	5	26
Chlorodibromomethane	0.300	0.257		ug/Sample		86	50 - 120	6	43
Chloroethane	0.600	0.641		ug/Sample		107	43 - 163	1	32
Chloroform	0.300	0.311		ug/Sample		104	63 - 123	3	27
Chloromethane	0.600	0.608		ug/Sample		101	44 - 176	1	50
2-Chlorotoluene	0.300	0.271		ug/Sample		90	59 - 120	12	29
4-Chlorotoluene	0.300	0.274		ug/Sample		91	57 - 120	13	30
1,2-Dibromo-3-Chloropropane	0.300	0.0651		ug/Sample		22	10 - 120	46	50
1,2-Dibromoethane (EDB)	0.300	0.214		ug/Sample		71	20 - 120	8	43
Dibromomethane	0.300	0.264		ug/Sample		88	50 - 120	3	42
1,2-Dichlorobenzene	0.300	0.185		ug/Sample		62	20 - 124	25	49
1,3-Dichlorobenzene	0.300	0.244		ug/Sample		81	30 - 132	19	39
1,4-Dichlorobenzene	0.300	0.222		ug/Sample		74	30 - 129	22	42
Dichlorodifluoromethane	0.600	0.649		ug/Sample		108	25 - 146	3	42
1,1-Dichloroethane	0.300	0.312		ug/Sample		104	66 - 128	1	24
1,2-Dichloroethane	0.300	0.262		ug/Sample		87	36 - 124	4	37
1,1-Dichloroethene	0.300	0.339		ug/Sample		113	77 - 131	2	22
cis-1,2-Dichloroethene	0.300	0.347		ug/Sample		116	67 - 123	1	27
trans-1,2-Dichloroethene	0.300	0.371		ug/Sample		124	78 - 128	4	23
1,2-Dichloropropane	0.300	0.294		ug/Sample		98	55 - 124	2	31
1,3-Dichloropropane	0.300	0.239		ug/Sample		80	50 - 120	6	38
2,2-Dichloropropane	0.300	0.340		ug/Sample		113	59 - 141	1	25
1,1-Dichloropropene	0.300	0.339		ug/Sample		113	70 - 136	2	21
cis-1,3-Dichloropropene	0.300	0.307		ug/Sample		102	45 - 125	3	36
trans-1,3-Dichloropropene	0.300	0.265		ug/Sample		88	40 - 120	5	40
Ethylbenzene	0.300	0.323		ug/Sample		108	72 - 127	4	23
Hexachlorobutadiene	0.300	0.300		ug/Sample		100	52 - 167	30	50

Client: RWDI – Air Inc
Project/Site: RWDI: AIR SMC St Marys

Job ID: 140-41580-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 140-98601/4
Matrix: Air
Analysis Batch: 98601

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Hexanone	1.20	0.559		ug/Sample		47	30 - 151	11	50
Isopropylbenzene	0.300	0.311		ug/Sample		104	40 - 152	7	28
4-Isopropyltoluene	0.300	0.271		ug/Sample		90	66 - 126	20	28
Methylene Chloride	0.300	0.392		ug/Sample		131	60 - 134	2	41
4-Methyl-2-pentanone (MIBK)	1.20	0.685		ug/Sample		57	30 - 175	5	50
Naphthalene	0.300	0.0614	J	ug/Sample		20	20 - 120	48	50
N-Propylbenzene	0.300	0.289		ug/Sample		96	69 - 123	12	25
Styrene	0.300	0.283		ug/Sample		94	57 - 120	10	39
1,1,1,2-Tetrachloroethane	0.300	0.293		ug/Sample		98	53 - 120	5	35
1,1,2,2-Tetrachloroethane	0.300	0.159		ug/Sample		53	30 - 120	16	50
Tetrachloroethene	0.300	0.351		ug/Sample		117	80 - 133	1	24
Toluene	0.300	0.325		ug/Sample		108	70 - 120	2	22
1,2,3-Trichlorobenzene	0.300	0.101		ug/Sample		34	20 - 123	48	50
1,2,4-Trichlorobenzene	0.300	0.136		ug/Sample		45	20 - 140	45	50
1,1,1-Trichloroethane	0.300	0.331		ug/Sample		110	65 - 131	2	23
1,1,2-Trichloroethane	0.300	0.251		ug/Sample		84	41 - 120	5	38
Trichloroethene	0.300	0.363		ug/Sample		121	80 - 141	2	32
Trichlorofluoromethane	0.600	0.653		ug/Sample		109	58 - 147	4	26
1,2,3-Trichloropropane	0.300	0.147		ug/Sample		49	30 - 120	22	50
1,2,4-Trimethylbenzene	0.300	0.251		ug/Sample		84	56 - 120	17	35
1,3,5-Trimethylbenzene	0.300	0.276		ug/Sample		92	62 - 121	13	30
Vinyl chloride	0.600	0.693		ug/Sample		116	64 - 142	3	33
o-Xylene	0.300	0.308		ug/Sample		103	64 - 120	6	37
m,p-Xylene	0.300	0.316		ug/Sample		105	74 - 126	5	38

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*76*		*50 - 127*
4-Bromofluorobenzene (Surr)	*67*		*50 - 122*
Dibromofluoromethane (Surr)	*92*		*50 - 134*
Toluene-d8 (Surr)	*92*		*57 - 134*

QC Association Summary

Client: RWDI – Air Inc
Project/Site: RWDI: AIR SMC St Marys

Job ID: 140-41580-1

GC/MS VOA

Analysis Batch: 98601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-41580-1	ST MARYS RAW MILL ON VOST TEST 1 TENA)	Total/NA	Air	8260B	
140-41580-2	ST MARYS RAW MILL ON VOST TEST 2 TENA)	Total/NA	Air	8260B	
140-41580-3	ST MARYS RAW MILL ON VOST TEST 3 TENA)	Total/NA	Air	8260B	
140-41580-4	MEDIA CHECK A-2675 TENAX,A-2676 TENAX/(	Total/NA	Air	8260B	
MB 140-98601/6	Method Blank	Total/NA	Air	8260B	
LCS 140-98601/3	Lab Control Sample	Total/NA	Air	8260B	
LCSD 140-98601/4	Lab Control Sample Dup	Total/NA	Air	8260B	

Client Sample ID: ST MARYS RAW MILL ON VOST TEST 1 TENAX/TENAX CHARCOAL

Lab Sample ID: 140-41580-1

Date Collected: 04/08/25 00:00
Date Received: 04/16/25 09:50

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	98601	04/21/25 16:16	BTB	EET KNX
	Instrument ID: MX									

Client Sample ID: ST MARYS RAW MILL ON VOST TEST 2 TENAX/TENAX CHARCOAL

Lab Sample ID: 140-41580-2

Date Collected: 04/08/25 00:00
Date Received: 04/16/25 09:50

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	98601	04/21/25 16:40	BTB	EET KNX
	Instrument ID: MX									

Client Sample ID: ST MARYS RAW MILL ON VOST TEST 3 TENAX/TENAX CHARCOAL

Lab Sample ID: 140-41580-3

Date Collected: 04/09/25 00:00
Date Received: 04/16/25 09:50

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	98601	04/21/25 17:07	BTB	EET KNX
	Instrument ID: MX									

Client Sample ID: MEDIA CHECK A-2675 TENAX,A-2676 TENAX/CHARCOAL

Lab Sample ID: 140-41580-4

Date Collected: 04/08/25 00:00
Date Received: 04/16/25 09:50

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	98601	04/21/25 15:51	BTB	EET KNX
	Instrument ID: MX									

Client Sample ID: Method Blank

Lab Sample ID: MB 140-98601/6

Date Collected: N/A
Date Received: N/A

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	98601	04/21/25 15:11	BTB	EET KNX
	Instrument ID: MX									

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 140-98601/3

Date Collected: N/A
Date Received: N/A

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	98601	04/21/25 13:16	BTB	EET KNX
	Instrument ID: MX									

Client Sample ID: Lab Control Sample Dup　　　　**Lab Sample ID: LCSD 140-98601/4**
Date Collected: N/A　　　　**Matrix: Air**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	1 Sample	25 mL	98601	04/21/25 14:00	BTB	EET KNX
	Instrument ID: MX									

Laboratory References:

EET KNX = Eurofins Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Accreditation/Certification Summary

Client: RWDI – Air Inc Job ID: 140-41580-1
Project/Site: RWDI: AIR SMC St Marys

Laboratory: Eurofins Knoxville

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
	AFCEE	N/A	
ANAB	Dept. of Defense ELAP	L2311	02-13-27
ANAB	Dept. of Energy	L2311.01	02-13-27
ANAB	ISO/IEC 17025	L2311	02-13-27
Arkansas DEQ	State	88-0688	06-17-25
Colorado	State	TN00009	02-28-26
Connecticut	State	PH-0223	10-01-26
Florida	NELAP	E87177	06-30-25
Georgia (DW)	State	906	07-27-25
Hawaii	State	NA	07-27-25
Kansas	NELAP	E-10349	10-31-25
Kentucky (DW)	State	90101	12-31-25
Louisiana (All)	NELAP	03079	06-30-25
Louisiana (DW)	State	LA019	12-31-25
Maryland	State	277	03-31-26
Michigan	State	9933	07-27-25
Nevada	State	TN00009	07-31-25
New Hampshire	NELAP	2999	01-18-26
New Jersey	NELAP	TN001	06-30-25
New York	NELAP	10781	04-01-26
North Carolina (DW)	State	21705	07-31-25
North Carolina (WW/SW)	State	64	12-31-25
Oklahoma	State	9415	08-31-25
Oregon	NELAP	TNI0189	01-01-26
Pennsylvania	NELAP	68-00576	12-31-25
Tennessee	State	02014	07-28-25
Texas	NELAP	T104704380	08-31-25
US Fish & Wildlife	US Federal Programs	058448	07-31-25
USDA	US Federal Programs	525-22-279-18762	10-06-25
Utah	NELAP	TN00009	07-31-25
Virginia	NELAP	460176	09-14-25
Washington	State	C593	01-19-26
West Virginia (DW)	State	9955C	01-31-26
West Virginia DEP	State	345	04-30-26
Wisconsin	State	998044300	08-31-25

Method Summary

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET KNX

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET KNX = Eurofins Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Sample Summary

Client: RWDI – Air Inc
Project/Site: RWDI: AIR SMC St Marys

Job ID: 140-41580-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-41580-1	ST MARYS RAW MILL ON VOST TEST 1 TENAX/TENAX CHARCOAL	Air	04/08/25 00:00	04/16/25 09:50
140-41580-2	ST MARYS RAW MILL ON VOST TEST 2 TENAX/TENAX CHARCOAL	Air	04/08/25 00:00	04/16/25 09:50
140-41580-3	ST MARYS RAW MILL ON VOST TEST 3 TENAX/TENAX CHARCOAL	Air	04/09/25 00:00	04/16/25 09:50
140-41580-4	MEDIA CHECK A-2675 TENAX,A-2676 TENAX/CHARCOAL	Air	04/08/25 00:00	04/16/25 09:50

Eurofins TestAmerica, Knoxville
5815 Middlebrook Pike

Knoxville, TN 37921-5947
phone 865.291.3000 fax 865.584.4315

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other:

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Karri Legarrie	Site Contact: Tobi Odumoye	Date: 2025-04-15	COC No:
RWDI Air Inc	Email: karri.legarrie@rwdi.com	Lab Contact:	Carrier: FedEx	1 of 1 COCs
600 Southgate Drive	Tel/Fax:			Sampler: Adam Tran
Guelph, ON, CANADA N1G 4P6	**Analysis Turnaround Time**			**For Lab Use Only:**
519-823-1311 Phone	☐ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
519-823-1316 FAX	TAT if different from Below ______			Lab Sampling:
Project Name: SMC St Marys	☑ 2 weeks			
Site: St Marys	☐ 1 week			Job / SDG No.:
P O # 2509873	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	VOST - SW846 Method 0030	Sample Specific Notes:
St Marys Raw Mill On VOST Test 1	4/8/2025	--	G	VOST	2			x	Tube Pair # A080537, A080127
St Marys Raw Mill On VOST Test 2	4/8/2025	--	G	VOST	2			x	Tube Pair # A087911, A066832
St Marys Raw Mill On VOST Test 3	4/9/2025	--	G	VOST	2			x	Tube Pair # A081209, A081162
No Custody seal									
Received at Rt 5.4/CT	5.5°C								
CAR 4-16-25									
Fedex IP# 880570130737									

140-41580 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ______

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ______ Months

Special Instructions/QC Requirements & Comments:
Ontario, Canada regulatatory testing

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: ______ Corr'd: ______		Therm ID No.: ______
Relinquished by: Adam Tran	Company: RWDI	Date/Time: 2025/04/15	Received by: MM	Company: ETA KNX	Date/Time: 4-16-25 0950
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Loc: 140
41580

EUROFINS KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST Log In Number:

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Are the shipping containers intact?	/			☐ Containers, Broken	
2. Were ambient air containers received intact?			/	☐ Checked in lab	
3. The coolers/containers custody seal if present, is it intact?			/	☐ Yes ☐ NA	
4. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : SC 77 Correction factor: +0.1°C	/			☐ Cooler Out of Temp, Client Contacted, Proceed/Cancel ☐ Cooler Out of Temp, Same Day Receipt	
5. Were all of the sample containers received intact?	/			☐ Containers, Broken	
6. Were samples received in appropriate containers?	/			☐ Containers, Improper; Client Contacted; Proceed/Cancel	
7. Do sample container labels match COC? (IDs, Dates, Times)	/			☐ COC & Samples Do Not Match ☐ COC Incorrect/Incomplete ☐ COC Not Received	
8. Were all of the samples listed on the COC received?	/			☐ Sample Received, Not on COC ☐ Sample on COC, Not Received	
9. Is the date/time of sample collection noted?	/			☐ COC; No Date/Time; Client Contacted	
10. Was the sampler identified on the COC?	/			☐ Sampler Not Listed on COC	Labeling Verified by: Date:
11. Is the client and project name/# identified?	/			☐ COC Incorrect/Incomplete	
12. Are tests/parameters listed for each sample?	/			☐ COC No tests on COC	pH test strip lot number:
13. Is the matrix of the samples noted?	/			☐ COC Incorrect/Incomplete	
14. Was COC relinquished? (Signed/Dated/Timed)	/			☐ COC Incorrect/Incomplete	
15. Were samples received within holding time?	/			☐ Holding Time - Receipt	
16. Were samples received with correct chemical preservative (excluding Encore)?			/	☐ pH Adjusted, pH Included (See box 16A) ☐ Incorrect Preservative	
17. Were VOA samples received without headspace?			/	☐ Headspace (VOA only)	
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number:			/	☐ Residual Chlorine	
19. For 1613B water samples is pH<9?			/	☐ If no, notify lab to adjust	
20. For rad samples was sample activity info. Provided?			/	☐ Project missing info	

	Box 16A: pH Preservation	Box 18A: Residual Chlorine
Preservative:		
Lot Number:		
Exp Date:		
Analyst:		
Date:		
Time:		

Project #: 14007945 PM Instructions:

Sample Receiving Associate: [signature] Date: 4-16-25

QA026R33.doc, 11/10/23

4/30/2025

15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

APPENDIX J

Linde Gas & Equipment Inc.
6055 Brent Drive
Toledo OH 43611
Tel: +1 (419) 729-7732
Fax: +1 (419) 729-2411
PGVP ID: F12022

Making our world more productive

DocNumber: 491685

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information

LINDE PKG PARIS P H 80271
41 CONSOLIDATED DR
PARIS ON N3L 3G2

Certificate Issuance Date: 08/24/2022
Linde Order Number: 77987718
Part Number: NI CD10CO35E-AS
Customer PO Number: 72170939 Kitchener

Fill Date: 08/19/2022
Lot Number: 700012231F4
Cylinder Style & Outlet: AS CGA 590
Cylinder Pressure and Volume: 2000 psig 148 ft3

Certified Concentration

ProSpec EZ Cert

Expiration Date:	08/24/2030	NIST Traceable
Cylinder Number:	**DT0047098**	Expanded Uncertainty
9.99 %	**Oxygen**	**± 0.03 %**
9.74 %	**Carbon dioxide**	**± 0.06 %**
201 ppm	**Carbon monoxide**	**± 1 ppm**
Balance	**Nitrogen**	

Certification Information:

Certification Date: 08/24/2022 *Term:* 96 Months *Expiration Date:* 08/24/2030

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Uncertainty above is expressed as absolute expanded uncertainty at a level of confidence of approximately 95% with a coverage factor k = 2. Do Not Use this Standard if Pressure is less than 100 PSIG.

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. *Component:* **Oxygen**

Requested Concentration: 10.0 %
Certified Concentration: 9.99 %
Instrument Used: Servomex 575
Analytical Method: Paramagnetic
Last Multipoint Calibration: 08/05/2022

Reference Standard: Type / Cylinder #: GMIS / EB0117195
Concentration / Uncertainty: 22.51 % ±0.01 %
Expiration Date: 12/02/2027
Traceable to: SRM # / Sample # / Cylinder #: 2659a / 71-D-XX / CALO15785
SRM Concentration / Uncertainty: 20.720% / ±.043%
SRM Expiration Date: 08/23/2021

First Analysis Data:						**Date**	08/24/2022
Z:	0	**R:**	22.5	**C:**	9.99	**Conc:**	9.99
R:	22.51	**Z:**	0	**C:**	9.99	**Conc:**	9.99
Z:	0	**C:**	9.98	**R:**	22.51	**Conc:**	9.98
UOM:	%			**Mean Test Assay:**		9.99	%

Second Analysis Data:						**Date**	
Z:	0	**R:**	0	**C:**	0	**Conc:**	0
R:	0	**Z:**	0	**C:**	0	**Conc:**	0
Z:	0	**C:**	0	**R:**	0	**Conc:**	0
UOM:	%			**Mean Test Assay:**			%

2. *Component:* **Carbon dioxide**

Requested Concentration: 10.0 %
Certified Concentration: 9.74 %
Instrument Used: Horiba VA-5000
Analytical Method: NDIR
Last Multipoint Calibration: 07/25/2022

Reference Standard: Type / Cylinder #: PRM / DT0032694
Concentration / Uncertainty: 19.99 % ±0.04 %
Expiration Date: 01/02/2028
Traceable to: SRM # / Sample # / Cylinder #: PRM#FF276163 / PRM#FF276163 / FF276163
SRM Concentration / Uncertainty: 20.008% / ± 0.028%
SRM Expiration Date: 04/01/2020

First Analysis Data:						**Date**	08/24/2022
Z:	0	**R:**	19.99	**C:**	9.74	**Conc:**	9.74
R:	20	**Z:**	0	**C:**	9.75	**Conc:**	9.75
Z:	0	**C:**	9.74	**R:**	20	**Conc:**	9.74
UOM:	%			**Mean Test Assay:**		9.74	%

Second Analysis Data:						**Date**	
Z:	0	**R:**	0	**C:**	0	**Conc:**	0
R:	0	**Z:**	0	**C:**	0	**Conc:**	0
Z:	0	**C:**	0	**R:**	0	**Conc:**	0
UOM:	%			**Mean Test Assay:**			%

3. *Component:* **Carbon monoxide**

Requested Concentration: 200 ppm
Certified Concentration: 201 ppm
Instrument Used: Horiba VA-5000
Analytical Method: NDIR
Last Multipoint Calibration: 07/25/2022

Reference Standard: Type / Cylinder #: GMIS / EB0020579
Concentration / Uncertainty: 250.3 ppm ±0.7 ppm
Expiration Date: 03/16/2026
Traceable to: SRM # / Sample # / Cylinder #: 2636a / 57-F-15 / FF30792
SRM Concentration / Uncertainty: 247.1 ppm / ±0.5 ppm
SRM Expiration Date: 03/26/2018

First Analysis Data:						**Date**	08/24/2022
Z:	0	**R:**	250.2	**C:**	201	**Conc:**	201
R:	250.3	**Z:**	0	**C:**	201	**Conc:**	201
Z:	0	**C:**	201	**R:**	250.2	**Conc:**	201
UOM:	ppm			**Mean Test Assay:**		201	ppm

Second Analysis Data:						**Date**	
Z:	0	**R:**	0	**C:**	0	**Conc:**	0
R:	0	**Z:**	0	**C:**	0	**Conc:**	0
Z:	0	**C:**	0	**R:**	0	**Conc:**	0
UOM:	ppm			**Mean Test Assay:**			ppm

Mike Monnette

Analyzed By **Mike Monnette**

Edward E Zucal

Certified By **Edward E Zucal**

Making our world more productive

DocNumber: 581350

Linde Gas & Equipment Inc.
5700 S. Alameda Street
Los Angeles CA 90058
Tel: 323-585-2154
Fax: 714-542-6689
PGVP ID: F22024

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information

LINDE PKG PARIS P H 80271
41 CONSOLIDATED DR
PARIS ON N3L 3G2

Certificate Issuance Date: 10/01/2024
Linde Order Number: 42685196
Part Number: NI CD25CO7E-AS
Customer PO Number: 72922393 Hamilton

Fill Date: 09/11/2024
Lot Number: 70086425501
Cylinder Style & Outlet: AS CGA 590
Cylinder Pressure and Volume: 2000 psig 165 ft3

Certified Concentration

ProSpec EZ Cert

Expiration Date:	**10/01/2032**	NIST Traceable
Cylinder Number:	**CC700504**	Expanded Uncertainty
25.37 %	**Carbon dioxide**	**± 0.07 %**
1966 ppm	**Carbon monoxide**	**± 7 ppm**
20.98 %	**Oxygen**	**± 0.06 %**
Balance	**Nitrogen**	

Certification Information:

Certification Date: 10/01/2024 *Term:* 96 Months *Expiration Date:* 10/01/2032

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Uncertainty above is expressed as absolute expanded uncertainty at a level of confidence of approximately 95% with a coverage factor k = 2. Do Not Use this Standard if Pressure is less than 100 PSIG.

CO2 responses have been corrected for Oxygen IR Broadening effect. CO responses have been corrected for CO2 interference. CO responses have been corrected for O2 interference. O2 responses have been corrected for CO2 interference.

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. *Component:* Carbon dioxide

Requested Concentration: 25 %
Certified Concentration: 25.37 %
Instrument Used: Horiba VIA-510 S/N 20C194WK
Analytical Method: NDIR
Last Multipoint Calibration: 09/30/2024

Reference Standard: Type / Cylinder #: GMIS / CC305911
Concentration / Uncertainty: 26.96 % ±0.05 %
Expiration Date: 03/29/2031
Traceable to: SRM # / Sample # / Cylinder #: RGM#CC193512 / N/A / CC193512
SRM Concentration / Uncertainty: 26.99% / ±0.05%
SRM Expiration Date: 05/15/2023

First Analysis Data:						**Date**	10/01/2024
Z:	0	**R:**	26.96	**C:**	25.43	**Conc:**	25.4
R:	27.03	**Z:**	0	**C:**	25.44	**Conc:**	25.41
Z:	0	**C:**	25.35	**R:**	27	**Conc:**	25.32
UOM:	%			**Mean Test Assay:**		25.37	%

Second Analysis Data:						**Date**	
Z:	0	**R:**	0	**C:**	0	**Conc:**	0
R:	0	**Z:**	0	**C:**	0	**Conc:**	0
Z:	0	**C:**	0	**R:**	0	**Conc:**	0
UOM:	%			**Mean Test Assay:**			%

2. *Component:* Carbon monoxide

Requested Concentration: 2000 ppm
Certified Concentration: 1966 ppm
Instrument Used: Horiba VIA-510 S/N 576876015
Analytical Method: NDIR
Last Multipoint Calibration: 09/30/2024

Reference Standard: Type / Cylinder #: GMIS / CC78206
Concentration / Uncertainty: 3017 ppm ±10 ppm
Expiration Date: 09/19/2031
Traceable to: SRM # / Sample # / Cylinder #: SRM 2638a / 55-F-06 / FF30713
SRM Concentration / Uncertainty: 4935 PPM / ±11 PPM
SRM Expiration Date: 09/30/2027

First Analysis Data:						**Date**	10/01/2024
Z:	0	**R:**	3017	**C:**	1966	**Conc:**	1965
R:	3017	**Z:**	0	**C:**	1968	**Conc:**	1967
Z:	0	**C:**	1966	**R:**	3021	**Conc:**	1965
UOM:	ppm			**Mean Test Assay:**		1966	ppm

Second Analysis Data:						**Date**	
Z:	0	**R:**	0	**C:**	0	**Conc:**	0
R:	0	**Z:**	0	**C:**	0	**Conc:**	0
Z:	0	**C:**	0	**R:**	0	**Conc:**	0
UOM:	ppm			**Mean Test Assay:**			ppm

3. *Component:* Oxygen

Requested Concentration: 21 %
Certified Concentration: 20.98 %
Instrument Used: Siemens Oxymat 6E S/N 7MB20211AA000CA1
Analytical Method: Paramagnetic
Last Multipoint Calibration: 09/04/2024

Reference Standard: Type / Cylinder #: GMIS / DT0040804
Concentration / Uncertainty: 20.86 % ±0.05 %
Expiration Date: 09/09/2032
Traceable to: SRM # / Sample # / Cylinder #: 2659a / 71-D-23 / CAL015788
SRM Concentration / Uncertainty: 20.720 % / ±0.043 %
SRM Expiration Date: 02/28/2026

First Analysis Data:						**Date**	10/01/2024
Z:	0	**R:**	20.86	**C:**	21	**Conc:**	20.98
R:	20.88	**Z:**	0	**C:**	21	**Conc:**	20.98
Z:	0	**C:**	21.01	**R:**	20.9	**Conc:**	20.99
UOM:	%			**Mean Test Assay:**		20.98	%

Second Analysis Data:						**Date**	
Z:	0	**R:**	0	**C:**	0	**Conc:**	0
R:	0	**Z:**	0	**C:**	0	**Conc:**	0
Z:	0	**C:**	0	**R:**	0	**Conc:**	0
UOM:	%			**Mean Test Assay:**			%

Analyzed By Miriam Bahena — **Miriam Bahena**

Certified By Nelson Ma — **Nelson Ma**

Dry Gas Meter Calibration Certificate

DGM Console ID: H
DGM Serial #: -
Calibration Date: 2025-01-31
Calibrated by SM

Barometric Pressure	723.81	mmHg
	96.50	kPa
Ambient T	21.7	°C
%r.H	25.00%	
W	0.00401	lb/lb
B_{wo}	0.0064	ft³/ft³

LEAK CHECK	DGM (ft³)	WGM (L)
intial value	0.00	13.9
final value	0.22	14.20
time (1 min)	1	1
Pass/Fail	PASS	PASS

Dry Gas Meter Values									Wet Gas Meter Values											OSTC	US EPA	
Δ H	**Δ H**	**Initial Vol.**	**Final Vol.**	**Volume (Vd**	**Temp inlet**	**Temp outlet**	**emp Avg (tc**	**Time**	**Δ M**	**Δ M**	**Initial Vol.**	**Final Vol.**	**Volume (Vw**	**Temp inlet**	**Temp outlet**	**Temp (tw)**	**Calibration Factors**		**Tolerance**	**Tolerance A**	**Tolerance B**
(in. H_2O)	**(cm H_2O)**	**(ft³)**	**(ft³)**	**(m³)**	**(°F)**	**(°F)**	**(°C)**	**(min)**	**Pa**	**(cm H_2O)**	**(L)**	**(L)**	**(m³)**	**(°C)**	**(°C)**	**(°C)**	**Y**	**Δ $H_@$**	**Y (<±2%)**	**(>0.95, <1.0**	**Y (0.03)**
0.25	0.635	0.00	5.84	0.165	71	72	21.9	20	20	0.20	14.20	172.90	0.159	22	22.0	22.00	0.953	1.921	-1.1%	VALID	VALID
0.25	0.635	0.00	5.81	0.165	72	71	21.9	20	20	0.20	172.90	330.60	0.158	22	22.0	22.00	0.951	1.946	-1.3%	VALID	VALID
0.25	0.635	0.00	5.81	0.164	71	71	21.7	20	20	0.20	330.60	488.70	0.158	22	22.0	22.00	0.954	1.938	-1.0%	VALID	VALID
0.5	1.270	0.00	8.24	0.233	71	71	21.7	20	20	0.20	488.70	714.70	0.226	21.0	22.0	21	0.963	1.886	0.0%	VALID	VALID
0.5	1.270	0.00	8.23	0.233	71	71	21.7	20	20	0.20	714.70	940.20	0.226	22	22.0	21	0.962	1.895	-0.2%	VALID	VALID
0.5	1.270	0.00	8.24	0.233	71	73	22.2	20	20	0.20	940.20	1165.70	0.226	22	22.5	22.25	0.960	1.907	-0.4%	VALID	VALID
1	2.540	0.00	8.72	0.247	75	76	24.2	15	40	0.41	1485.10	1723.90	0.239	23	23.0	23	0.963	1.914	-0.1%	VALID	VALID
1	2.540	0.00	8.72	0.247	76	76	24.4	15	40	0.41	1723.90	1962.60	0.239	23	23.0	23	0.963	1.914	-0.1%	VALID	VALID
1	2.540	0.00	8.72	0.247	76	76	24.4	15	40	0.41	1962.60	2201.60	0.239	23	23.0	23	0.964	1.909	0.1%	VALID	VALID
2	5.080	0.00	9.68	0.274	72	72	22.2	12	60	0.61	2209.90	2478.80	0.269	22	22.0	22	0.971	1.941	0.8%	VALID	VALID
2	5.080	0.00	9.61	0.272	72	72	22.2	12	60	0.61	2478.80	2745.50	0.267	22	22.0	22	0.970	1.973	0.6%	VALID	VALID
2	5.080	0.00	9.89	0.280	72	72	22.2	12	60	0.61	2745.50	3019.80	0.274	22	22.0	22	0.970	1.866	0.6%	VALID	VALID
4	10.160	0.00	11.22	0.318	72	74	22.8	10	80	0.82	3019.80	3333.20	0.313	22	23.0	22.5	0.972	2.008	0.8%	VALID	VALID
4	10.160	0.00	11.29	0.320	74	75	23.6	10	80	0.82	3333.20	3647.70	0.315	23	23.0	23	0.970	1.995	0.6%	VALID	VALID
4	10.160	0.00	11.36	0.322	75	75	23.9	10	80	0.82	3647.70	3963.90	0.316	23	23.0	23	0.970	1.971	0.7%	VALID	VALID
																AVERAGE =	**0.9637**	**1.9323**			

Psychrometric Calculator
http://www.hvac-calculator.net/index.php?v=2

Dry Gas Meter Calibration Certificate

DGM Console ID: D
DGM Serial #: -
Calibration Date: 7-Feb-25
Calibrated by PB

Barometric Pressure	765.81	mmHg
	102.10	kPa
Ambient T	21.67	°C
%r.H	21.00%	
W	0.003	lb/lb
B_{wo}	0.0048100	ft³/ft³

LEAK CHECK	DGM (ft³)	WGM (L)
intial value	0.00	Pass
final value	0.02	Pass
time (1 min)	1	1
Pass/Fail	PASS	PASS

Dry Gas Meter Values									Wet Gas Meter Values										OSTC	US EPA	
Δ H	Δ H	Initial Vol.	Final Vol.	Volume (Vd	Temp inlet	Temp outlet	emp Avg (t	Time	Δ M	Δ M	Initial Vol.	Final Vol.	Volume (Vw	Temp inlet	Temp outlet	Temp (tw)	Calibration Factors		Tolerance	Tolerance A	Tolerance B
(in. H_2O)	(cm H_2O)	(ft³)	(ft³)	(m³)	(°F)	(°F)	(°C)	(min)	Pa	(cm H_2O)	(L)	(L)	(m³)	(°C)	(°C)	(°C)	Y	Δ $H_@$	Y (<±2%)	(>0.95, <1.0	Y (0.03)
0.25	0.635	0.26	5.96	0.16	70	70	21.1	20	20	0.204	144.80	307.50	0.16	22.2	22.22	22.22	0.999	1.729	-0.9%	VALID	VALID
0.25	0.635	5.96	11.68	0.16	70	72	21.7	20	20	0.204	307.50	470.20	0.16	22.2	22.78	22.49	0.997	1.729	-1.0%	VALID	VALID
0.25	0.635	11.68	17.39	0.16	72	72	22.2	20	20	0.204	470.20	632.80	0.16	22.8	22.78	22.78	0.999	1.732	-0.9%	VALID	VALID
0.5	1.270	17.39	24.87	0.21	72	74	22.8	20	20	0.204	632.80	846.20	0.21	22.8	23.33	23.055	1.001	2.013	-0.7%	VALID	VALID
0.5	1.270	24.87	32.70	0.22	74	74	23.3	20	20	0.204	846.20	1069.00	0.22	23.3	22.78	23.055	1.001	1.843	-0.7%	VALID	VALID
0.5	1.270	32.70	40.66	0.23	70	71	21.4	20	20	0.204	1069.00	1297.00	0.23	22.0	22.00	22	1.004	1.759	-0.4%	VALID	VALID
1	2.540	0.00	8.29	0.23	71	72	21.9	15	40	0.408	1297.00	1535.90	0.24	22.0	23.00	22.5	1.009	1.809	0.2%	VALID	VALID
1	2.540	0.00	8.25	0.23	72	73	22.5	15	40	0.408	1535.90	1773.60	0.24	23.0	23.00	23	1.008	1.830	0.1%	VALID	VALID
1	2.540	0.00	8.26	0.23	73	73	22.8	15	40	0.408	1773.60	2011.00	0.24	23.0	23.00	23	1.007	1.833	0.0%	VALID	VALID
2	5.080	0.00	9.30	0.26	73	73	22.8	12	60	0.612	2011.00	2280.30	0.27	23.0	23.00	23	1.013	1.831	0.5%	VALID	VALID
2	5.080	0.00	9.28	0.26	73	73	22.8	12	60	0.612	2280.30	2549.20	0.27	23.0	23.00	23	1.014	1.837	0.6%	VALID	VALID
2	5.080	0.00	9.29	0.26	73	73	22.8	12	60	0.612	2549.20	2818.00	0.27	23.0	23.00	23	1.012	1.838	0.5%	VALID	VALID
4	10.160	0.00	10.88	0.31	73	73	22.8	10	80	0.816	2818.00	3135.50	0.32	23.0	23.00	23	1.016	1.847	0.8%	VALID	VALID
4	10.160	10.88	21.78	0.31	73	73	22.8	10	80	0.816	3135.50	3453.80	0.32	23.0	23.00	23	1.017	1.838	0.9%	VALID	VALID
4	10.160	21.78	32.69	0.31	73		22.8	10	80	0.816	3453.80	3772.20	0.32	23.0	23.00	23	1.016	1.837	0.9%	VALID	VALID
																	AVERAGE =	1.007	1.820		

Psychrometric Calculator
http://www.hvac-calculator.net/index.php?v=2

Environics

69 Industrial Park Rd E, Tolland CT 06084
https://www.environics.com/service-request
(860) 872-1111 info@environics.com

SERVICE REPORT

ATTN: Oluwatobi Odumoye, RWDI Air Inc.

DATE OF SERVICE: 1/28/2025
MODEL NUMBER: 4040
SERIAL NUMBER: 9110

SERVICE TYPE: **RECALIBRATION**
NEXT CALIBRATION DUE: **1/29/2026**

CONDITIONS AS OBSERVED AND WORK PERFORMED:

- Unit powers up properly.
- Unit cleaned and Purged, data verified.
- All valves checked, ok.
- Checked for any software updates
- Voltages checked – 5v, -15v, +15v, 24v.
- Battery voltage checked.
- Unit leak tested.
- Tested all MFC's with each port.
- Zeros on each MFC checked/adjusted.
- Spans checked/adjusted on all MFCs.
- As-found verification run on all MFCs.
- All MFCs recalibrated.
- Verified all MFCs @ 5 standard points, passed within 0.5%
- All cables and screw/nuts tightened, ok.

Service Technician

Environics
69 Industrial Park Rd E, Tolland CT 06084
https://www.environics.com/service-request
(860) 872-1111 info@environics.com

ENVIRONICS FLOW CONTROLLER CALIBRATION REPORT

Unit Summary		Std Conditions		MFC Summary	
Model #:	4040	Temp:	32°F	MFC #:	1
Unit SN :	9110	Pressure:	29.92 in. Hg	MFC FS Flow:	10000
		Gas:	NITROGEN	MFC S/N:	0963707020

Flow Calibration Data is not performance data. This data is used by the system operating mode to improve the flow accuracy. The Flow Verification Data is performance data.

Flow Calibration Data

	Set Flow	True Flow
5%	500	493.119
10%	1000	1000.936
20%	2000	2034.074
30%	3000	3062.205
40%	4000	4088.177
50%	5000	5103.014
60%	6000	6123.827
70%	7000	7148.563
80%	8000	8144.084
90%	9000	9160.612
100%	10000	10168.550

All values in SCCM

Flow Verification Data

	Set Flow	True Flow	% dev
99%	9900	9909.452	0.10%
85%	8500	8503.509	0.04%
55%	5500	5509.475	0.17%
25%	2500	2497.957	-0.08%
10%	1000	996.356	-0.36%

All values in SCCM

This calibration complies with ISO 17025-2005 [non-accredited] and is traceable to the National Institute of Standards and Technology (NIST). Calibration and verification are accomplished exclusively by qualified personnel following controlled procedures under ISO 9001:2015. For questions or concerns, contact Customer Service via our website, email or by phone, weekdays from 8AM - 4PM.

Verified by: Paul Stansel

Date: 1/28/25

Environics®

69 Industrial Park Rd E, Tolland CT 06084
https://www.environics.com/service-request
(860) 872-1111 info@environics.com

ENVIRONICS FLOW CONTROLLER CALIBRATION REPORT

Unit Summary		Std Conditions		MFC Summary	
Model #:	4040	Temp:	32°F	MFC #:	2
Unit SN :	9110	Pressure:	29.92 in. Hg	MFC FS Flow:	10000
		Gas:	NITROGEN	MFC S/N:	0963707021

Flow Calibration Data is not performance data. This data is used by the system operating mode to improve the flow accuracy. The Flow Verification Data is performance data.

Flow Calibration Data

	Set Flow	True Flow
5%	500	529.231
10%	1000	1068.753
20%	2000	2133.342
30%	3000	3183.154
40%	4000	4214.712
50%	5000	5236.318
60%	6000	6243.737
70%	7000	7257.552
80%	8000	8233.789
90%	9000	9236.595
100%	10000	10219.119

All values in SCCM

Flow Verification Data

	Set Flow	True Flow	% dev
99%	9900	9916.200	0.16%
85%	8500	8508.471	0.10%
55%	5500	5504.922	0.09%
25%	2500	2496.246	-0.15%
10%	1000	996.509	-0.35%

All values in SCCM

This calibration complies with ISO 17025-2005 [non-accredited] and is traceable to the National Institute of Standards and Technology (NIST). Calibration and verification are accomplished exclusively by qualified personnel following controlled procedures under ISO 9001:2015. For questions or concerns, contact Customer Service via our website, email or by phone, weekdays from 8AM - 4PM.

Verified by: Paul Stansel

Date: 1/28/25

Environics
69 Industrial Park Rd E, Tolland CT 06084
https://www.environics.com/service-request
(860) 872-1111 info@environics.com

ENVIRONICS FLOW CONTROLLER CALIBRATION REPORT

Unit Summary		Std Conditions		MFC Summary	
Model #:	4040	Temp:	32°F	MFC #:	3
Unit SN :	9110	Pressure:	29.92 in. Hg	MFC FS Flow:	1000
		Gas:	NITROGEN	MFC S/N:	0963709009

Flow Calibration Data is not performance data. This data is used by the system operating mode to improve the flow accuracy. The Flow Verification Data is performance data.

Flow Calibration Data

	Set Flow	True Flow
5%	50	48.193
10%	100	98.925
20%	200	201.870
30%	300	304.112
40%	400	406.503
50%	500	508.003
60%	600	611.235
70%	700	713.510
80%	800	814.475
90%	900	915.398
100%	1000	1016.872

All values in SCCM

Flow Verification Data

	Set Flow	True Flow	% dev
99%	990	991.088	0.11%
85%	850	850.057	0.01%
55%	550	550.842	0.15%
25%	250	249.982	-0.01%
10%	100	99.821	-0.18%

All values in SCCM

This calibration complies with ISO 17025-2005 [non-accredited] and is traceable to the National Institute of Standards and Technology (NIST). Calibration and verification are accomplished exclusively by qualified personnel following controlled procedures under ISO 9001:2015. For questions or concerns, contact Customer Service via our website, email or by phone, weekdays from 8AM - 4PM.

Verified by: Paul Stansel

Date: 1/28/25

Environics

69 Industrial Park Rd E, Tolland CT 06084
https://www.environics.com/service-request
(860) 872-1111 info@environics.com

ENVIRONICS FLOW CONTROLLER CALIBRATION REPORT

Unit Summary		Std Conditions		MFC Summary	
Model #:	4040	Temp:	32°F	MFC #:	4
Unit SN :	9110	Pressure:	29.92 in. Hg	MFC FS Flow:	100
		Gas:	NITROGEN	MFC S/N:	0963711002

Flow Calibration Data is not performance data. This data is used by the system operating mode to improve the flow accuracy. The Flow Verification Data is performance data.

Flow Calibration Data

	Set Flow	True Flow
5%	5	4.830
10%	10	9.937
20%	20	20.151
30%	30	30.361
40%	40	40.606
50%	50	50.689
60%	60	60.887
70%	70	71.100
80%	80	81.266
90%	90	91.543
100%	100	101.790

All values in SCCM

Flow Verification Data

	Set Flow	True Flow	% dev
99%	99	99.277	0.28%
85%	85	85.072	0.08%
55%	55	55.091	0.17%
25%	25	25.035	0.14%
10%	10	9.969	-0.31%

All values in SCCM

This calibration complies with ISO 17025-2005 [non-accredited] and is traceable to the National Institute of Standards and Technology (NIST). Calibration and verification are accomplished exclusively by qualified personnel following controlled procedures under ISO 9001:2015. For questions or concerns, contact Customer Service via our website, email or by phone, weekdays from 8AM - 4PM.

Verified by: Paul Stansel Date: 1/28/25

RWDI- EPA Method 205 Field Evaluation (as per Section 3.2)

High-Level Supply Gas Cylinder number: CC700504
Concentration: 2098 %

	Environics Condition #1					
	Time	Environics Concentration	Analyzer Response	Absolute Difference	Percentage Difference[1]	Response Variation[2]
1	18:09	10.00	10.20	0.20	2.00%	0.00%
2	18:15	10.00	10.20	0.20	2.00%	0.00%
3	18:20	10.00	10.20	0.20	2.00%	0.00%
		Average	10.20	0.20	2.00%	

[1]Analyzer response can not average more than 2% from the Environics concentration: Pass
[2]No analyzer response can differ more than 2% from the average of the analyzer responses: Pass

	Environics Condition #2					
	Time	Environics Concentration	Analyzer Response	Absolute Difference	Percentage Difference[1]	Response Variation[2]
1	18:07	16.00	16.20	0.20	1.25%	0.06%
2	18:13	16.00	16.17	0.17	1.06%	-0.12%
3	18:17	16.00	16.20	0.20	1.25%	0.06%
		Average	16.19	0.19	1.19%	

[1]Analyzer response can not average more than 2% from the Environics concentration: Pass
[2]No analyzer response can differ more than 2% from the average of the analyzer responses: Pass

Direct Gas Cylinder number: DT0047098
Concentration: 10.0 %

	Direct Gas Cylinder					
	Time	Cylinder Concentration	Analyzer Response	Absolute Difference	Percentage Difference[1]	Response Variation[2]
1	18:23	9.99	10.07	0.08	0.80%	0.10%
2	18:26	9.99	10.06	0.07	0.70%	0.00%
3	18:29	9.99	10.05	0.06	0.60%	-0.10%
		Average	10.06	0.07	0.70%	

[1]Analyzer response can not average more than 2% from the Environics concentration: Pass
[2]No analyzer response can differ more than 2% from the average of the analyzer responses: Pass

Calibration Date:	20-Feb-25
DGM Console ID:	30B Console A
DGM Serial #:	Hg-220-2126
Barometric Pressure:	98.06 kPa
W (lb/lb)	0.00319
%r.H 18.00% **B_{wo} (ft³/ft³)**	0.0051 **\mbient T:** 22.7 C
Calibration Done By:	SM

Leak Check	Side A	WGM
Initial Volume	0.00	485.10
Final Volume	3.84	489.00
Time	1 min	1 min
Pass/Fail	PASS	PASS

Side A

Dry Gas Meter Values										ΔM	Wet Gas Meter Values						Calibration		US EPA	
	Rotameter	Volume (Vd)			Temperature				Time		Volume (Vw)			Temp (t_w)			Factor	Tolerance	Tolerance A	Tolerance B
ΔH	iddle of Ba	Initial	Final	Total	inlet	outlet	Avg (t_d)				Initial	Final	Total	inlet	outlet	Avg (t_w)				
(" H_2O)	(L/min)	(L)	(L)	(L)	(°F)	(°F)	(°F)	(°C)	(min)	(hPa H_2O)	(L)	(L)	(L)	(°C)	(°C)	(°C)	Y	± 2%	>0.95, <1.(	Y (0.03)
0.8	0.5	0.000	13.63	13.63	62	66	64.0	17.8	20	5	489.00	503.40	14.40	22	22	22	1.039	#DIV/0!	VALID	VALID
0.8	0.5	13.629	27.15	13.52	66	69	67.5	19.7	20	5	503.40	517.20	13.80	22	23	22.25	1.010	#DIV/0!	VALID	VALID
0.8	0.5	0.000	13.51	13.51	69	71	70.0	21.1	20	5	517.20	531.00	13.80	23	23	22.75	1.014	#DIV/0!	VALID	VALID
Average				13.55			67.2						14.00			22.3	1.021			
	1.0	0.000	12.82	12.82	74	75	74.5	23.6	10	10	570.10	583.4	13.30	24	24	24	1.041	#DIV/0!	VALID	VALID
1.2	1.0	0.000	12.87	12.87	75	76	75.5	24.2	10	10	583.40	596.40	13.00	24	24	24	1.012	#DIV/0!	VALID	VALID
1.2	1.0	0.000	12.87	12.87	76	76	76.0	24.4	10	10	596.40	609.40	13.00	24	24	24	1.014	#DIV/0!	VALID	VALID
Average				12.85			75.3						13.10			24.0	1.022			
2.4	1.9	0.000	21.50	21.50	76	76	76.0	24.4	10	20	609.40	631.20	21.80	24	24	24	1.024	#DIV/0!	VALID	VALID
2.4	1.9	0.000	21.59	21.59	76	76	76.0	24.4	10	20	631.20	653.10	21.90	24	23	23.25	1.027	#DIV/0!	VALID	VALID
2.4	1.9	0.000	21.54	21.54	76	76	76.0	24.4	10	20	653.10	674.90	21.80	22.5	23	22.5	1.027	#DIV/0!	VALID	VALID
Average				21.54			76.0						21.83			23.3	1.026			
3.1	2.4	0.000	15.56	15.56	76	77	76.5	24.7	6	40	674.90	690.60	15.70	22	23	22.25	1.045	#DIV/0!	VALID	VALID
3.1	2.4	0.000	15.64	15.64	76	76	76.0	24.4	6	40	722.50	738.20	15.70	22	22	22	1.039	#DIV/0!	VALID	VALID
3.1	2.4	0.000	15.63	15.63	76	76	76.0	24.4	6	40	738.20	754.00	15.80	22	22	22	1.046	#DIV/0!	VALID	VALID
Average				15.61			76.2						15.73			22.1	1.043			
																AVERAGE =	1.028			

Leak Check	Side B	WGM
Initial Value	0.00	754.00
Final Value	2.47	756.30
Time	1 min	1 min
Pass/Fail	PASS	PASS

Side B

Dry Gas Meter Values										ΔM	Wet Gas Meter Values						Calibration		US EPA	
	Rotameter	Volume (Vd)			Temperature				Time		Volume (Vw)			Temp (t_w)			Factor	Tolerance	Tolerance A	Tolerance B
ΔH	iddle of Ba	Initial	Final	Total	inlet	outlet	Avg (t_d)				Initial	Final	Total	inlet	outlet	Avg (t_w)				
(" H_2O)	(L/min)	(L)	(L)	(L)	(°F)	(°F)	(°F)	(°C)	(min)	(hPa H_2O)	(L)	(L)	(L)	(°C)	(°C)	(°C)	Y	± 2%	>0.95, <1.(	Y (0.03)
0.8	0.5	0.000	7.38	7.38	76	77	76.5	24.7	20	5	756.30	763.90	7.60	23	23	23	1.033	#DIV/0!	VALID	VALID
0.8	0.5	0.000	7.43	7.43	77	75	76.0	24.4	20	5	778.60	786.10	7.50	22	22	22	1.016	#DIV/0!	VALID	VALID
0.8	0.5	0.000	7.40	7.40	77	77	77.0	25.0	20	5	771.10	778.60	7.50	22	22	22	1.021	#DIV/0!	VALID	VALID
Average				7.40			76.5						7.53			22.3	1.023			
1.2	1.0	0.000	7.88	7.88	70	70	70.0	21.1	10	10	794.00	802.1	8.10	20.5	21	20.5	1.033	#DIV/0!	VALID	VALID
1.2	1.0	0.000	7.92	7.92	70	71	70.5	21.4	10	10	915.70	923.80	8.10	21	22	21.5	1.024	#DIV/0!	VALID	VALID
1.2	1.0	0.000	7.95	7.95	71	71	71.0	21.7	10	10	809.80	817.9	8.10	22	22	22	1.020	#DIV/0!	VALID	VALID
Average				7.91			70.5						8.10			21.3	1.026			
2.4	1.9	0.000	18.14	18.14	72	72	72.0	22.2	10	20	817.90	836.10	18.20	22.5	22	22.25	1.012	#DIV/0!	VALID	VALID
2.4	1.9	0.000	18.23	18.23	72	74	73.0	22.8	10	20	836.10	854.50	18.40	22	22	22	1.021	#DIV/0!	VALID	VALID
2.4	1.9	0.000	18.22	18.22	74	75	74.5	23.6	10	20	854.50	872.90	18.40	22	23	22.25	1.023	#DIV/0!	VALID	VALID
Average				18.20			73.2						18.33			22.2	1.019			
3.1	2.4	0.000	14.21	14.21	75	75	75.0	23.9	6	40	872.90	887.20	14.30	23	23	23	1.037	#DIV/0!	VALID	VALID
3.1	2.4	0.000	14.24	14.24	75	75	75.0	23.9	6	40	887.20	901.60	14.40	23	23	23	1.042	#DIV/0!	VALID	VALID
3.1	2.4	0.000	14.21	14.21	75	75	75.0	23.9	6	40	901.60	915.70	14.10	23	23	23	1.022	#DIV/0!	VALID	VALID
Average				14.22			75.0						14.27			23.0	1.033			
																AVERAGE =	1.025			

Psychrometric Calculator:
http://www.hvac-calculator.net/index.php?v=2

S-Type Pitot Tube Calibration

Pitot ID: RWDI 8' #1 | **Date:** 2/3/2025
Calibrated By: MB | **$C_{p\,(std)}$:** 0.998
Temperature (°F): 70.0 | **Static Pressure ("H_2O):** -0.28
Barometric Pressure ("Hg): 29.67 | **Average C_p:** 0.851

Fan Speed (Hz)	Velocity (FPM)	$\Delta P_{(std)}$	Side A $\Delta P_{(s)}$	Side A $C_{p(s)}$	Side A Devation $C_{p(s)} - C_{p(avg)}$	Side B $\Delta P_{(s)}$	Side B $C_{p(s)}$	Side B Devation $C_{p(s)} - C_{p(avg)}$
20	1416	0.13	0.18	0.843	-0.004	0.19	0.820	-0.026
33	2533	0.40	0.55	0.851	0.015	0.55	0.855	0.007
45	3445	0.74	1.00	0.859	0.011	1.00	0.861	0.015
60	4566	1.30	1.85	0.837	-0.011	1.80	0.848	0.002
				0.847		Average	**0.846**	

Difference between $C_{p(A)}$ and $C_{p(B)}$ = **0.0014**

PASS

Nozzle Diameter (in.)	Fan Speed (Hz)	Velocity (FPM)	$\Delta P_{(std)}$	$\Delta P_{(s)}$	$C_{p(s)}$	Average $C_{P(s)}$
.125"	52	4004	1.00	1.40	0.843	0.846
	60	4566	1.30	1.80	0.848	
.187"	33	2517	0.40	0.52	0.870	0.855
	45	3433	0.74	1.00	0.858	
	60	4566	1.30	1.85	0.837	
.250"	20	1387	0.12	0.17	0.838	0.857
	27	1982	0.25	0.33	0.867	
	33	2533	0.40	0.53	0.867	
.375"	20	1387	0.12	0.17	0.838	0.858
	27	2022	0.26	0.33	0.877	
.500"	16	939	0.06	0.08	0.855	0.847
	20	1387	0.12	0.17	0.838	

S-Type Pitot Tube Calibration

Pitot ID: RWDI 9' #1
Date: 1/17/2025
Calibrated By: MB
$C_{p\,(std)}$: 0.998
Temperature (°F): 71.0
Static Pressure ("H_2O): -0.475
Barometric Pressure ("Hg): 29.85
Average C_p: 0.836

			Side A			Side B		
Fan Speed (Hz)	**Velocity (FPM)**	**$\Delta P_{(std)}$**	**$\Delta P_{(s)}$**	**$C_{p(s)}$**	**Devation $C_{p(s)} - C_{p(avg)}$**	**$\Delta P_{(s)}$**	**$C_{p(s)}$**	**Devation $C_{p(s)} - C_{p(avg)}$**
20	1387	0.12	0.17	0.851	0.013	0.18	0.826	-0.009
33	2501	0.39	0.55	0.840	0.004	0.54	0.848	0.023
45	3468	0.75	1.10	0.824	-0.014	1.05	0.843	0.008
60	4566	1.30	1.85	0.837	-0.001	1.90	0.826	-0.010
			Average	**0.838**			**0.836**	

Difference between $C_{p(A)}$ and $C_{p(B)}$ = **0.0022**

PASS

Nozzle Diameter (in.)	**Fan Speed (Hz)**	**Velocity (FPM)**	**$\Delta P_{(std)}$**	**$\Delta P_{(s)}$**	**$C_{p(s)}$**	**Average $C_{P(s)}$**
.125"	52	4004	1.00	1.40	0.843	0.837
	60	4653	1.35	1.95	0.830	
.187"	33	2501	0.39	0.57	0.829	0.833
	45	3468	0.75	1.05	0.843	
	60	4566	1.30	1.90	0.826	
.250"	20	1471	0.14	0.19	0.841	0.834
	27	2081	0.27	0.39	0.830	
	33	2595	0.42	0.61	0.832	
.375"	20	1444	0.13	0.19	0.837	0.834
	27	2002	0.25	0.36	0.832	
.500"	16	1021	0.07	0.09	0.848	0.837
	20	1387	0.12	0.18	0.826	

APPENDIX K

RWDI AIR Inc.
Consulting Engineers

Moisture Analysis Data Sheet

Project #: 2509873 Project: SMC St. Mary's ECA

Date: 8-April-25 Test: T, M29

Filter ID: QZ12521

Sample Loc. Kiln Exhaust XAD Trap ID: N/A

Train ID: M29

Pre-weights By: PB Post-weights By: SM

Impinger #	Impinger Contents	Final Weight (g)	Initial Weight (g)	Net Condensate (g)
1	5%HNO3 + 10% H2O2	950.8	753.9	
2	5%HNO3 + 10% H2O2	826.3	732.3	
3	Empty	661.0	640.7	
4	H2SO4/KMnO4	741.5	732.4	
5	H2SO4/KMnO4	757.4	753.2	
6	Silica	904.3	875.5	
7				
8				
TOTAL				

Balance QA Check:

	Actual (g)	Measured (g)	Error < 0.5 g	Initials
Pre-weights	500.0	500.3	✓	SM
Post-weights	500.0	500.0	✓	SA

Comments:

Nozzle Measurements:
1 0.20
2
3
4

Avg

Sydney Meunier
Signature

8-April-25
Date

— Isokinetic Sampling Train Data Sheet — ECA

Operator Signature: (signed)

Job Name SMC St. Mary's ECA	Plant: SMC St. Mary's	Test No.: T1M29	Start Time: 9:37	Stack D.: 2.4m	
Job Numb 2509873	Source: Kiln Exhaust	Operators: PB	Finish Time: 12:53	Pre -Pitot Check: ✓	(< 0.1" @ 3.0" for 15 sec)
Client: SMC	Traverse: 1	Traverse Dir.: Out-In	Date: 8-Apr-2025	Port length 8"	Page: 1 of 2

Dn: 0.200 Cp: 0.838 Bws: 11 dH@: 1.820 Y: 1.007 Pbar: 28.72 Pstatic: -1.2 CO_2: 12 O_2: 12 Pitot ID 9' #1

Console ID I

Pt. (#)	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Gas Meter Reading Desired (ft^3)	Gas Meter Reading Actual (ft^3)	Stack Temp. (°F)	Probe Temp. (°F) 223 - 273 °F	Box Temp. (°F) 223 - 273 °F	Imp. Temp. (°F) < 68 °F	Meter Inlet (°F)	Meter Outlet (°F)	Vac. Press. ("Hg)	Comments
1	0	2.30	0	–	0	253	249	250	25	33		0	
	2.5	2.30	2.20	2.03	1.86	252	249	252	29	31		-3	
	5	2.30	2.20	3.88	3.78	253	248	251	29	31		-3	
2	7.5	2.30	2.20		5.69	253	251	250	30	32		-3	
	10	2.30	2.20		7.61	255	250	248	31	31		-3	
	12.5	2.30	2.20		9.53	254	250	249	31	32		-3	
3	15	2.30	2.20		11.44	255	247	248	32	33		-3	
	17.5	2.30	2.30		13.40	256	243	248	32	33		-3	
	20	2.30	2.30		15.35	256	245	250	32	34		-3	
4	22.5	2.30	2.30		17.30	256	250	251	33	34		-3	
	25	2.30	2.30		19.26	255	252	252	33	34		-3	
	27.5	2.30	2.30		21.22	256	253	250	33	35		-3	
5	30	2.30	2.30		23.17	255	250	249	33	35		-3	
	32.5	2.30	2.40		25.13	253	249	249	33	35		-3	
	35	2.30	2.40		27.12	252	249	250	33	35		-3	
6	37.5	2.30	2.40		29.12	253	248	250	33	35		-3	
	40	2.30	2.40		31.12	254	247	250	33	35		-3	
	42.5	2.30	2.40		33.11	254	249	248	33	36		-3	
7	45	2.30	2.40		35.10	255	250	248	33	35		-3	
	47.5	2.30	2.40		37.09	255	250	247	33	35		-3	
	50	2.30	2.40		39.07	255	250	252	33	35		-3	
8	52.5	2.30	2.40		41.04	254	251	251	33	35		-3	
	55	2.30	2.50		43.05	253	249	250	33	35		-3	
	57.5	2.30	2.50		45.07	251	250	251	33	36		-3	
9	60	2.30	2.50		47.11	251	250	251	33	35		-3	
	62.5	2.30	2.50		49.12	252	251	251	33	35		-3	
	65	2.30	2.50		51.13	252	252	251	33	35		-3	
10	67.5	2.30	2.50		53.14	251	250	252	33	35		-3	
	70	2.30	2.50		55.16	252	248	248	33	35		-3	
	72.5	2.30	2.50		57.17	251	247	249	33	35		-3	
11	75	2.30	2.50		59.18	252	246	250	33	35		-3	
	77.5	2.30	2.50		61.18	251	248	250	33	35		-3	
	80	2.30	2.50		63.18	251	248	247	33	36		-3	
12	82.5	2.30	2.50		65.17	250	250	250	33	36		-3	
	85	2.30	2.50		67.17	250	252	250	33	36		-3	
	87.5	2.30	2.50		69.17	253	251	250	33	36		-3	
	90	2.30	2.50		71.20	252	250	251	33	36		-3	

Pretest Leak Check	Rate (cfm) 0.02	at -10 vacuum ("Hg)	Leak Vol Start 0	Leak Vol. End 60.02	Post -Pitot Check: ✓	(< 0.1" @ 3.0" for 15 sec)
Posttest Leak Check	Rate (cfm) 0.02	at -10 vacuum ("Hg)	Leak Vol Start 0	Leak Vol. End 60.02		

RWDI

— Isokinetic Sampling Train Data Sheet — ECA

Operator Signature: [signature]

Job Name SMC St. Mary's ECA | Plant: SMC St. Mary's | Test No.: T1 M29 | Start Time: 9:37 | Stack D.: 2.4m

Job Numb 2509873 | Source: Kiln Exhaust | Operators: PB | Finish Time: 12:53 | Pre-Pitot Check: ✓ (< 0.1" @ 3.0" for 15 sec)

Client: SMC | Traverse: 2 | Traverse Dir.: Out In | Date: 8-Apr-2025 | Port length 8' | Page: 2 of 2

Dn: 0.200 | Cp: 0.833 | Bws: 11 | dH@: 1.820 | Y: 1.002 | Pbar: 28.72 | Pstatic: -1.2 | CO_2: 12 | O_2: 12 | Pitot ID 9'

Console ID I

Pt. (#)	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Gas Meter Reading Desired (ft^3)	Gas Meter Reading Actual (ft^3)	Stack Temp. (°F)	Probe Temp. (°F) 223 - 273 °F	Box Temp. (°F) 223 - 273 °F	Imp. Temp. (°F) < 68 °F	Meter Inlet (°F)	Meter Outlet (°F)	Vac. Press. ("Hg)	Comments
1	0	2.30	0	–	71.20	269	251	251	34	36	[illegible]	0	Resumed @ 11:23
	2.5	1.70	2.20	73.22	73.10	268	253	251	36	35		-3	
	5	1.20	1.70	74.83	74.84	270	250	252	38	38		-2	
2	7.5	1.70	1.70	76.57	76.47	268	255	253	39	35		-2	
	10	1.70	1.70	78.20	78.10	263	254	247	41	35		-2	
	12.5	1.70	1.70	79.83	79.72	267	250	249	42	35		-2	
3	15	1.70	1.80	81.46	81.38	270	254	231	44	35		-2	
	17.5	1.70	1.90	83.11	83.04	268	252	238	45	36		-2	
	20	1.70	1.80	84.78	84.70	269	252	225	47	36		-2	
4	22.5	1.70	1.80	86.44	86.36	268	251	226	48	37		-2	
	25	1.70	1.80	88.10	88.02	266	250	228	49	37		-2	
	27.5	1.70	1.80	89.82	89.80	270	249	229	49	37		-2	
5	30	1.70	1.80	91.54	91.54	267	245	232	49	37		-2	
	32.5	1.70	1.90	93.28	93.27	269	250	232	50	38		-2	
	35	1.70	1.90	95.01	95.00	268	252	232	50	38		-2	
6	37.5	1.70	1.90	96.75	96.74	269	250	228	50	38		-2	
	40	1.70	1.90	98.48	98.47	269	248	228	50	38		-2	
	42.5	1.70	1.90	100.21	100.20	265	253	231	50	38		-2	
7	45	1.70	1.90	101.95	101.92	268	247	235	50	38		-2	
	47.5	1.80	1.90	103.67	103.64	271	253	237	52	39		-2	
	50	1.80	1.90	105.44	105.36	271	249	237	54	39		-2	
8	52.5	1.80	1.90	107.16	107.09	271	254	236	55	39		-2	
	55	1.80	1.90	108.89	108.81	27[illegible]	255	235	58	40		-2	
	57.5	1.80	1.90	110.61	110.53	271	249	237	58	40		-2	
9	60	1.80	2.00	112.33	112.31	268	255	237	60	40		-2	
	62.5	1.80	2.00	114.11	114.10	269	250	237	62	40		-2	
	65	1.80	2.00	115.90	115.88	266	250	232	63	40		-2	
10	67.5	1.80	2.00	117.69	117.67	270	252	244	65	40		-2	
	70	1.80	2.00	119.47	119.46	270	249	242	66	40		-2	
	72.5	1.80	2.00	121.26	121.30	268	253	237	67	41		-2	
11	75	1.80	2.00	123.11	123.02	271	252	238	68	41		-2	
	77.5	1.80	2.00	124.82	124.81	271	250	239	68	41		-2	
	80	1.80	2.00	126.61	126.59	273	256	239	68	40		-2	
12	82.5	1.80	2.00	128.34	128.32	272	248	244	68	44		-2	
	85	1.80	2.00	130.17	130.17	270	251	242	68	41		-2	
	87.5	1.80	2.00	131.97	131.93	269	252	240	68	42		-2	
	90	1.80	2.00	133.74	133.70	270	249	237	68	42		-2	Stopped @ 12:54

Pretest Leak Check Rate (cfm) < 0.02 at -10 vacuum ("Hg) Leak Vol Start 0.00 Leak Vol. End < 0.02

Posttest Leak Check Rate (cfm) < 0.02 at -10 vacuum ("Hg) Leak Vol Start 133.70 Leak Vol. End 133.96

Post-Pitot Check: ✓ (< 0.1" @ 3.0" for 15 sec)

RWDI AIR Inc.
Consulting Engineers

Moisture Analysis Data Sheet

Project #:	2509873	Project:	SMC St. Mary's ECA
Date:	8-April-2025	Test:	T2M29
		Filter ID:	Q272567
Sample Loc.	Kiln Exhaust	XAD Trap ID:	N/A
		Train ID:	M29
Pre-weights By:	SM	Post-weights By:	SM

Impinger #	Impinger Contents	Final Weight (g)	Initial Weight (g)	Net Condensate (g)
1	5%HNO3 + 10% H2O2	925.3	754.6	
2	5%HNO3 + 10% H2O2	828.2	746.1	
3	Empty	662.8	639.9	
4	H2SO4/KMnO4	755.5	739.1	
5	H2SO4/KMnO4	763.1	757.0	
6	Silica	896.5	864.4	
7				
8				
TOTAL				

Balance QA Check:

	Actual (g)	Measured (g)	Error < 0.5 g	Initials
Pre-weights	500.0	500.0	✓	SM
Post-weights	500.0	500.1	✓	SM

Comments:

Nozzle Measurements:
1 0.20
2
3
4

Avg

Sydney Munro
Signature

8-April-2025
Date

— Isokinetic Sampling Train Data Sheet — ECA

Operator Signature: [signature]

Job Name SMC St. Mary's ECA
Job Numb 2509873
Client: SMC

Plant: SMC St. Mary's
Source: Kiln Exhaust
Traverse: 1

Test No.: T2 M29
Operators: PB
Traverse Dir.: out-In

Start Time: 14:28
Finish Time: 10:17 (9-Apr)
Date: 8-Apr-2025

Stack D.: 2.4m
Pre -Pitot Check: ✓ (< 0.1" @ 3.0" for 15 sec)
Port length 8"
Page: 1 of 2

Dn: 0.200 Cp: 0.833 Bws: 11 dH@: 1.820 Y: 1.007 Pbar: 28.72 Pstatic: -1.2 CO_2: 12 O_2: 12 Pitot ID 9' #1

Console ID T

Pt. (#)	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Gas Meter Reading Desired (ft^3)	Gas Meter Reading Actual (ft^3)	Stack Temp. (°F)	Probe Temp. (°F) 223 - 273 °F	Box Temp. (°F) 223 - 273 °F	Imp. Temp. (°F) < 68 °F	Meter Inlet (°F)	Meter Outlet (°F)	Vac. Press. ("Hg)	Comments RAW MILL OFF
1	0	2.00	0	-	0	315	250	242	46	41		0	Started @ 14:28
	2.5	2.00	1.80	1.97	1.69	316	252	239	47	40		-3	
	5	2.00	2.00	3.66	3.49	318	253	238	48	40		-3	
2	7.5	1.90	2.10	5.46	5.33	318	252	239	49	41		-3	
	10	1.90	2.10	7.25	7.17	319	252	279	52	40		-3	
	12.5	1.90	2.10	9.09	9.05	319	250	238	55	41		-3	
3	15	1.90	2.10	10.97	10.83	320	250	238	58	41		-3	
	17.5	1.90	2.10	12.76	12.64	321	254	240	61	41		-3	
	20	1.90	2.10	14.56	14.45	322	250	240	64	42		-3	- 18:46: RAW MILL OFF
4	22.5	1.90	2.10	16.38	16.26	323	254	241	66	42		-3	ON 8-APR-2025
	25	1.90	2.10	18.19	18.05	323	249	246	70	42		-3	
	27.5	1.90	2.10	19.98	19.85	325	258	247	74	43		-3	- RAW MILL ON
5	30	1.90	2.10	21.79	21.65	325	250	249	79	44		-3	ON 9-APR-2025
	32.5	1.90	2.10	23.59	23.45	326	256	249	81	44		-3	
	35	1.90	2.10	25.40	25.25	327	246	251	78	45		-3	
6	37.5	1.90	2.10	27.25	27.12	327	252	248	79	45		-3	
	40	1.90	2.10	29.07	28.97	328	254	251	80	45		-3	
	42.5	1.90	2.10	30.92	30.80	328	246	249	78	46		-3	
7	45	1.90	2.10	32.75	32.66	328	246	248	73	47		-3	
	47.5	1.90	2.10	34.60	34.51	329	244	240	68	47		-3	
	50	1.90	2.10	36.45	36.36	329	247	239	65	47		-3	
8	52.5	1.90	2.10	38.30	38.21	330	254	239	62	46		-3	
	55	1.90	2.10	40.16	40.05	330	254	238	57	46		-3	
	57.5	1.90	2.10	42.00	41.90	330	250	241	54	46		-3	
9	60	1.90	2.10	43.86	43.73	330	251	239	53	46		-3	15:07 → Fuels off
	62.5	1.90	2.10	45.69	45.50	260	249	248	35	48		-3	Paused @ 15:30
	65	1.90	2.10	47.37	47.40	260	250	250	35	47		-3	345.319 GF (ft³)
10	67.5	1.90	2.10	49.27	49.26	260	254	251	35	47		-3	Resumed @ 8:07
	70	1.90	2.10	51.13	51.11	262	246	251	36	46		-3	on 9-Apr-2025
	72.5	1.90	2.10	52.98	52.96	262	252	251	37	46		-3	
11	75	1.90	2.10	54.83	54.81	261	250	251	39	46		-3	
	77.5	1.90	2.10	56.68	56.60	261	253	252	41	46		-4	
	80	1.90	2.10	58.47	58.46	262	250	251	43	46		-4	
12	82.5	1.90	2.10	60.33	60.33	262	253	251	44	47		-4	
	85	1.90	2.10	62.21	62.21	262	248	252	45	47		-4	
	87.5	1.90	2.10	64.09	64.09	260	252	251	46	47		-4	
	90	1.90	2.10	65.96	65.96	261	250	252	46	48		-4	Paused @ 8:35
												-4	

Pretest Leak Check Rate (cfm) 0.02 at 10 vacuum ("Hg) Leak Vol Start 0 Leak Vol. End 0.15

Posttest Leak Check Rate (cfm) - at ✓ vacuum ("Hg) Leak Vol Start - Leak Vol. End -

Post -Pitot Check: ✓ (< 0.1" @ 3.0" for 15 sec)

— Isokinetic Sampling Train Data Sheet — ECA

Operator Signature: [signature]

Job Name SMC St. Mary's ECA | Plant: SMC St. Mary's | Test No.: T2 M29 | Start Time: 14:28 | Stack D.: 2.4m
Job Numb 2509873 | Source: Kiln Exhaust | Operators: PB | Finish Time: 10:17 | Pre -Pitot Check: ✓ (< 0.1" @ 3.0" for 15 sec)
Client: SMC | Traverse: 2 | Traverse Dir.: out-In | Date: 9-Apr-2025 | Port length 8" | Page: 2 of 2

Dn: 0.200 | Cp: 0.838 | Bws: 11 | dH@: 1.820 | Y: 1.007 | Pbar: 28.72 | Pstatic: -1.2 | CO_2: 12 | O_2: 12 | Pitot ID 9' #1

Console ID I

Pt. (#)	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Gas Meter Reading Desired (ft^3)	Gas Meter Reading Actual (ft^3)	Stack Temp. (°F)	Probe Temp. (°F) 223 - 273 °F	Box Temp. (°F) 223 - 273 °F	Imp. Temp. (°F) < 68 °F	Meter Inlet (°F)	Meter Outlet (°F)	Vac. Press. ("Hg)	Comments
1	0	1.90	2.10	–	65.96	260	250	251	41	49		-4	Started @ 8:46
	2.5	1.90	2.10	67.79	67.79	263	253	252	44	48		-4	
	5	1.90	2.10	69.62	69.62	261	248	252	45	48		-4	
2	7.5	1.90	2.10	71.44	71.44	261	257	252	47	49		-4	
	10	1.90	2.10	73.27	73.27	262	241	250	49	49		-4	
	12.5	1.90	2.10	75.10	75.10	262	255	252	50	49		-4	
3	15	1.90	2.10	76.93	76.93	261	246	252	51	50		-4	
	17.5	1.90	2.10	78.75	78.74	262	255	251	51	50		-4	
	20	1.90	2.10	80.57	80.56	261	246	252	52	50		-4	
4	22.5	1.90	2.10	82.39	82.39	260	254	251	52	51		-4	
	25	1.90	2.10	84.22	84.24	261	247	250	51	52		-4	
	27.5	1.90	2.10	86.08	86.11	263	254	251	51	52		-4	
5	30	1.90	2.10	87.94	87.95	262	251	252	50	52		-4	
	32.5	1.90	2.10	89.79	89.80	263	253	251	50	53		-4	
	35	1.90	2.10	91.64	91.65	265	249	253	50	53		-4	
6	37.5	1.90	2.10	93.49	93.50	265	250	252	50	53		-4	
	40	1.90	2.10	95.34	95.34	265	254	253	50	53		-4	
	42.5	1.90	2.10	97.18	97.19	266	247	251	50	54		-4	
7	45	1.90	2.10	99.04	99.03	265	254	252	50	54		-4	
	47.5	1.90	2.10	100.87	100.87	265	246	252	51	54		-4	
	50	1.90	2.10	102.71	102.70	262	254	251	51	55		-4	
8	52.5	1.90	2.10	104.54	104.52	263	249	251	51	55		-4	
	55	1.90	2.10	106.36	106.36	263	257	252	51	56		-4	
	57.5	1.90	2.10	109.20	108.19	265	244	252	52	56		-4	
9	60	1.90	2.10	110.03	110.02	263	253	251	52	56		-4	
	62.5	1.90	2.10	111.87	111.85	264	248	252	53	56		-4	
	65	1.90	2.10	113.70	113.68	265	253	251	54	57		-4	
10	67.5	1.90	2.10	115.54	115.52	263	246	249	54	57		-4	
	70	1.90	2.10	117.36	117.34	265	253	250	53	58		-4	
	72.5	1.90	2.10	119.19	119.19	266	246	251	53	58		-4	
11	75	1.90	2.10	121.04	121.03	268	250	250	53	58		-4	
	77.5	1.90	2.10	122.88	122.87	267	252	252	53	58		-4	
	80	1.90	2.10	124.72	124.72	268	251	252	54	58		-4	
12	82.5	1.90	2.10	126.56	126.56	269	253	252	55	58		-4	
	85	1.90	2.10	128.41	128.40	269	250	252	56	58		-4	
	87.5	1.90	2.10	130.25	130.28	267	252	252	57	58		-4	
	90	1.90	2.10	132.09	132.09	266	248	252	58	59		-4	stopped @ 10:17

Pretest Leak Check Rate (cfm) – at – vacuum ("Hg) | Leak Vol Start – | Leak Vol. End – | Post -Pitot Check: ✓ (< 0.1" @ 3.0" for 15 sec)
Posttest Leak Check Rate (cfm) 0.01 at 10 vacuum ("Hg) | Leak Vol Start 132.09 | Leak Vol. End 132.15

RWDI AIR Inc.
Consulting Engineers

Moisture Analysis Data Sheet

Project #:	2509873	Project:	SMC St. Mary's ECA
Date:	9-April-2025	Test:	T_3 M29
		Filter ID:	Q221 2566
Sample Loc.	Kiln Exhaust	XAD Trap ID:	N/A
		Train ID:	M29
Pre-weights By:	SM	Post-weights By:	SM

Impinger #	Impinger Contents	Final Weight (g)	Initial Weight (g)	Net Condensate (g)
1	5%HNO3 + 10% H2O2	989.3	759.2	
2	5%HNO3 + 10% H2O2	867.5	742.5	
3	Empty	671.1	660.4	
4	H2SO4/KMnO4	755.1	746.9	
5	H2SO4/KMnO4	768.1	765.3	
6	Silica	892.6	856.2	
7				
8				
TOTAL				

Balance QA Check:

	Actual (g)	Measured (g)	Error < 0.5 g	Initials
Pre-weights	500.0	500.0	✓	SM
Post-weights	500.0	500.1	✓	SM

Comments:

Nozzle Measurements:
1 0.200
2
3
4

Avg

Signature

9-April-2025
Date

— Isokinetic Sampling Train Data Sheet — ECA

Operator Signature: [signature]

Job Name SMC St. Mary's ECA	Plant: SMC St. Mary's	Test No.: T3 M29	Start Time: 11:42
Job Numb 2509873	Source: Kiln Exhaust	Operators: PB	Finish Time: 14:53
Client: SMC	Traverse: 1	Traverse Dir.: out→in	Date: 9-Apr-2025

Stack D.: 2.4m
Pre -Pitot Check: ✓ (< 0.1" @ 3.0" for 15 sec)
Port length 8"
Page: 1 of 2

Dn: 0.300 Cp: ~~0.84~~ 0.833 Bws: 11 dH@: 1.820 Y: 1.007 Pbar: 28.72 Pstatic: -1.2 CO_2: 12.00 O_2: 13.50 Pitot ID 9' #1

Console ID I

Pt. (#)	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Gas Meter Reading Desired (ft^3)	Gas Meter Reading Actual (ft^3)	Stack Temp. (°F)	Probe Temp. (°F) 223 - 273 °F	Box Temp. (°F) 223 - 273 °F	Imp. Temp. (°F) < 68 °F	Meter Inlet (°F)	Meter Outlet (°F)	Vac. Press. ("Hg)	Comments
1	0	2.00	0	–	0	268	249	253	44	62		0	Started @ 11:42
	2.5	2.00	2.10	1.98	1.87	266	251	252	43	60		-3	
	5	2.00	2.10	3.85	3.80	266	248	252	43	60		-3	
2	7.5	2.00	2.10	5.78	5.75	265	253	252	43	60		-3	
	10	2.00	2.10	7.73	7.72	265	253	250	45	61		-3	
	12.5	2.00	2.10	9.70	9.60	264	254	252	46	61		-3	
3	15	2.00	2.10	11.59	11.55	265	255	252	45	61		-3	
	17.5	2.00	2.10	13.53	13.46	264	259	252	46	62		-3	
	20	2.00	2.10	15.45	15.44	264	236	250	46	62		-3	
4	22.5	2.00	2.10	17.43	17.41	264	250	251	47	63		-3	
	25	2.00	2.10	19.40	19.38	266	249	250	45	64		-3	
	27.5	2.00	2.10	21.37	21.34	266	252	250	46	64		-3	
5	30	2.00	2.10	23.33	23.30	266	249	251	46	64		-3	
	32.5	2.00	2.10	25.29	25.26	267	257	252	46	65		-3	
	35	2.00	2.10	27.26	27.22	267	242	251	47	65		-3	
6	37.5	2.00	2.10	29.22	29.16	266	257	251	47	65		-3	
	40	2.00	2.10	31.16	31.11	268	242	251	48	66		-3	
	42.5	2.00	2.10	33.11	33.04	267	259	252	48	66		-3	
7	45	2.00	2.10	35.04	34.97	268	242	251	48	67		-3	
	47.5	2.00	2.10	36.97	36.90	268	256	251	49	68		-3	
	50	2.00	2.10	38.91	38.83	268	244	251	50	68		-3	
8	52.5	2.00	2.10	40.84	40.76	268	258	250	50	69		-3	
	55	2.00	2.10	42.77	42.69	268	240	252	50	70		-3	
	57.5	2.00	2.10	44.70	44.61	267	258	250	51	70		-3	
9	60	2.00	2.10	46.63	46.56	267	239	249	50	71		-3	
	62.5	2.00	2.10	48.58	48.50	265	250	250	50	71		-3	
	65	2.00	2.10	50.52	50.44	266	251	250	50	72		-3	
10	67.5	2.00	2.10	52.47	52.38	266	253	253	51	72		-3	
	70	2.00	2.10	54.41	54.34	267	247	252	52	71		-3	
	72.5	2.00	2.10	56.36	56.29	267	258	252	53	72		-3	
11	75	2.00	2.10	58.31	58.25	268	241	251	54	72		-3	
	77.5	2.00	2.10	60.27	60.20	267	256	250	55	72		-3	
	80	2.00	2.10	62.22	62.14	267	242	251	56	72		-3	
12	82.5	2.00	2.10	64.16	64.09	267	256	250	57	73		-3	
	85	2.00	2.10	66.12	66.03	268	246	251	58	73		-3	
	87.5	2.00	2.10	68.06	67.97	268	255	250	60	73		-3	
	90	2.00	2.10	70.00	69.98	267	244	254	59	74		-3	Paused @ 13:12

Pretest Leak Check Rate (cfm) 0.02 at -10 vacuum ("Hg) Leak Vol Start 0 Leak Vol. End 0.84

Posttest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol. End ✓

Post -Pitot Check: ✓ (< 0.1" @ 3.0" for 15 sec)

— Isokinetic Sampling Train Data Sheet — ECA

Operator Signature: [signature]

Job Name SMC St. Mary's ECA
Job Numb 2509873
Client: SMC

Plant: SMC St. Mary's
Source: Kiln Exhaust
Traverse: 2

Test No.: T3 Mea
Operators: PB
Traverse Dir.: out-in

Start Time: 11:42
Finish Time: 14:53
Date: 9-Apr-2025

Stack D.: 2.4m
Pre -Pitot Check: ✓ (< 0.1" @ 3.0" for 15 sec)
Port length 8"
Page: 2 of 2

Dn: 0.200 Cp: ~~0.8??~~ 0.833 Bws: 11 dH@: 1.820 Y: 1.007 Pbar: 28.72 Pstatic: -1.2 CO_2: 12 O_2: 13.50 Pitot ID 9' #1

Console ID I

Pt. (#)	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Gas Meter Reading Desired (ft^3)	Gas Meter Reading Actual (ft^3)	Stack Temp. (°F)	Probe Temp. (°F) 223 - 273 °F	Box Temp. (°F) 223 - 273 °F	Imp. Temp. (°F) < 68 °F	Meter Inlet (°F)	Meter Outlet (°F)	Vac. Press. ("Hg)	Comments
1	0	1.90	2.10	-	69.95	269	248	251	51	75		0	Resumed @ 13:23
	2.5	1.90	2.10	71.93	71.94	270	251	251	53	73		-4	
	5	1.90	2.10	73.91	73.92	270	250	250	54	72		-4	
2	7.5	1.90	2.10	75.89	75.90	271	252	251	57	72		-4	
	10	1.90	2.10	77.87	77.88	272	243	251	59	71		-4	
	12.5	1.90	2.10	79.84	79.86	271	256	251	60	70		-4	
3	15	1.90	2.10	81.82	81.80	271	245	252	62	70		-4	
	17.5	1.90	2.10	83.76	83.73	272	254	251	63	70		-4	
	20	1.90	2.10	85.69	85.69	271	246	250	64	70		-4	
4	22.5	2.00	2.10	87.65	87.65	269	247	250	63	71		-4	
	25	2.00	2.10	89.67	89.61	271	249	250	63	71		-4	
	27.5	2.00	2.10	91.62	91.58	273	253	249	61	71		-4	
5	30	2.00	2.10	93.59	93.53	274	250	252	62	71		-3	
	32.5	2.00	2.10	95.54	95.48	275	247	249	61	70		-3	
	35	2.00	2.10	97.49	97.44	255	253	251	61	70		-3	
6	37.5	1.70	2.10	99.47	99.38	250	247	251	62	70		-3	
	40	1.70	1.90	101.26	101.27	251	250	250	61	70		-3	
	42.5	1.70	1.90	103.15	103.09	250	250	251	62	69		-3	
7	45	1.80	2.00	104.97	104.93	257	251	250	62	69		-3	
	47.5	1.80	2.00	106.80	106.79	262	251	251	62	69		-3	
	50	1.80	2.00	108.71	108.65	264	250	251	62	69		-3	
8	52.5	1.80	2.00	110.56	110.50	264	253	251	63	69		-4	
	55	1.80	2.00	112.41	112.38	266	248	252	65	68		-4	
	57.5	1.80	2.00	114.29	114.26	271	252	250	65	68		-4	
9	60	2.00	2.00	116.16	116.14	273	251	253	67	68		-4	
	62.5	2.00	2.00	118.14	118.05	273	245	250	62	68		-4	
	65	2.00	2.00	120.05	119.92	274	255	251	67	68		-4	
10	67.5	2.00	2.10	121.92	121.86	272	239	252	68	69		-4	
	70	2.00	2.10	123.87	123.81	273	250	250	68	69		-4	
	72.5	2.00	2.10	125.81	125.78	271	241	252	66	69		-4	
11	75	2.00	2.10	127.79	127.70	272	246	249	68	70		-4	
	77.5	2.00	2.10	129.71	129.63	273	252	251	68	70		-4	
	80	2.00	2.10	131.64	131.57	271	247	252	68	70		-4	
12	82.5	2.00	2.10	133.58	133.52	270	252	250	68	71		-4	
	85	2.00	2.10	135.54	135.45	271	246	251	69	71		-4	
	87.5	2.00	2.10	137.46	137.39	271	249	249	68	72		-4	
	90	2.00	2.10	139.41	139.38	271	251	250	65	72		-4	Stopped @ 14:53

Pretest Leak Check Rate (cfm) <0.02 at -10 vacuum ("Hg) Leak Vol Start 0.00 Leak Vol. End <0.02
Posttest Leak Check Rate (cfm) <0.02 at -10 vacuum ("Hg) Leak Vol Start 139.38 Leak Vol. End 139.53

Post -Pitot Check: ✓ (< 0.1" @ 3.0" for 15 sec)

RWDI AIR Inc.
Consulting Engineers

Moisture Analysis Data Sheet

Project #: 2509873 Project: SMC ECA
Date: April - 8 - 2025 Test: T, SVOC
Filter ID: N/A
Sample Loc. Kiln Exhaust XAD Trap ID: #2
Train ID: SVOC

Pre-weights By: SM Post-weights By: SM

Impinger #	Impinger Contents	Final Weight (g)	Initial Weight (g)	Net Condensate (g)
1	Condenser	274.0	271.5	
2	XAD	328.5	324.5	
3	KO	794.4	493.9	
4	EG	764.2	743.0	
5	MT	691.9	691.0	
6	Silica Gel	846.0	832.4	
7				
8				
TOTAL				

Balance QA Check:

	Actual (g)	Measured (g)	Error < 0.5 g	Initials
Pre-weights	500.0	500.3	✓	SM
Post-weights	500.0	500.1	✓	SM

Comments:

Nozzle Measurements:
1 0.20
2
3
4

Avg

Signature

8-April-25
Date

— Isokinetic Sampling Train Data Sheet — ECA

Operator Signature: [signature]

Job Name SMC St. Mary's ECA	Plant: SMC St. Mary's	Test No.: T1	Start Time: 9:37	Stack D.: 2.4m	
Job Numb 2509873	Source: Kiln Exhaust	Operators: AD	Finish Time:	Pre -Pitot Check: ✓	(< 0.1" @ 3.0" for 15 sec)
Client: SMC	Traverse: 1	Traverse Dir.: In-Out	Date: April 8/25	Port length: 6	Page: 1 of 2

Dn: 0.20 Cp: 0.855 Bws: 11% dH@: 1.9323 Y: 0.9637 Pbar: 28.72 Pstatic: -1.2 CO_2: 12. O_2: 12 Pitot ID 8' [illegible]

Console ID H

Pt. (#)	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Gas Meter Reading Desired (ft^3)	Gas Meter Reading Actual (ft^3)	Stack Temp. (°F)	Probe Temp. (°F) 223 - 273 °F	Box Temp. (°F) 223 - 273 °F	Imp. Temp. (°F) < 68 °F	Meter Inlet (°F)	Meter Outlet (°F)	Cond. Temp. (°F) < 68 °F	Vac. Press. ("Hg)	Comments
1	0	1.50	1.50		0.36	241	245	250	34		33	33	-2	
	2.5	1.50	1.50		2.02	251	249	251	37		33	33	-3	
	5	1.50	1.50		3.63	250	250	251	~~33~~ 37		33	33	-3	
2	7.5	1.60	1.50		5.38	240	248	247	42		33	33	-3	
	10	1.50	1.50		7.02	241	247	252	42		33	~~34~~ 33	-4	
	12.5	1.50	1.60		8.72	240	246	249	43		33	33	-4	
3	15	1.50	1.60		10.39	240	245	250	43		33	33	-4	
	17.5	1.50	1.60		12.09	240	246	250	44		33	33	-4	
	20	1.45	1.60		13.80	240	246	250	46		33	34	-4	[illegible] at
4	22.5	1.45	1.60		15.50	242	249	251	46		33	34	-4	
	25	1.45	1.60		17.19	243	247	250	46		33	34	-4	11:07
	27.5	1.45	1.60		18.87	247	246	250	46		33	34	-4	
5	30	1.45	1.60		20.60	242	246	251	45		33	34	-3	
	32.5	1.45	1.60		22.30	243	249	250	45		33	34	-3	
	35	1.45	1.60		24.02	243	246	250	45		33	34	-3	
6	37.5	1.45	1.60		25.73	243	247	251	46		34	34	-3	
	40	1.45	1.60		27.42	241	247	251	46		34	34	-3	
	42.5	1.45	1.60		29.11	241	248	252	46		34	34	-3	
7	45	1.45	1.60		30.82	241	245	248	46		35	34	-3	
	47.5	1.45	1.60		32.52	242	246	253	46		35	35	-3	
	50	1.45	1.60		34.19	242	247	250	46		35	35	-3	
8	52.5	1.45	1.60		35.93	247	247	252	47		36	36	-3	
	55	1.45	1.60		37.63	242	247	252	47		36	38	-3	
	57.5	1.45	1.60		39.32	241	246	250	47		36	38	-3	
9	60	1.45	1.60		41.05	247	246	245	47		36	38	-3	
	62.5	1.45	1.60		42.78	240	247	248	47		36	38	-3	
	65	1.45	1.60		44.47	241	246	240	50		36	38	-3	
10	67.5	1.46	1.60		46.15	~~253~~ 243	245	240	51		36	39	-3	
	70	1.46	1.60		47.84	246	245	253	51		36	39	-3	
	72.5	1.45	1.60		49.53	241	245	247	50		36	39	-3	
11	75	1.45	1.60		51.20	244	248	253	50		36	39	-3	
	77.5	1.46	1.60		52.89	247	246	252	50		35	40	-3	
	80	1.46	1.60		~~54.28~~ 54.51	247	246	250	50		35	40	-3	
12	82.5	1.46	1.60		56.28	245	250	241	50		35	40	-3	
	85	1.43	1.60		57.98	245	249	244	50		35	40	-4	
	87.5	1.45	1.60		59.70	244	250	258	50		35	40	-4	
	90				61.35									

Pretest Leak Check Rate (cfm) 0.02 at -10 vacuum ("Hg) Leak Vol Start 0 Leak Vol. End 0.196

Posttest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol. End

Post -Pitot Check: — (< 0.1" @ 3.0" for 15 sec)

— Isokinetic Sampling Train Data Sheet — ECA

Operator Signature: [signature]

Job Name SMC St. Mary's ECA | Plant: SMC St. Mary's | Test No.: T1 | Start Time: – | Stack D.: 2.4m
Job Numb 2509873 | Source: Kiln Exhaust | Operators: – | Finish Time: 12:53 | Pre -Pitot Check: – (< 0.1" @ 3.0" for 15 sec)
Client: SMC | Traverse: – | Traverse Dir.: – | Date: – | Port length: – | Page: 2 of 2

Dn: – Cp: – Bws: – dH@: – Y: – Pbar: – Pstatic: – CO_2: – O_2: – Pitot ID –

Console ID –

Pt. (#)	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Gas Meter Reading Desired (ft^3)	Gas Meter Reading Actual (ft^3)	Stack Temp. (°F)	Probe Temp. (°F) 223 - 273 °F	Box Temp. (°F) 223 - 273 °F	Imp. Temp. (°F) < 68 °F	Meter Inlet (°F)	Meter Outlet (°F)	Cond. Temp. (°F) < 68 °F	Vac. Press. ("Hg)	Comments
1	0	1.45	1.60		61.35	244	250	258	50		35	40	-4	Resume
	2.5	1.45	1.60		63.05	238	240	256	50		33	40	-3	11:23
	5	1.46	1.60		64.72	240	242	244	50		33	40	-3	
2	7.5	1.45	1.60		66.46	242	242	252	54		35	40	-4	
	10	1.43	1.60		68.13	238	246	250	54		35	40	-4	
	12.5	1.45	1.60		69.89	238	241	248	54		35	40	-4	
3	15	1.45	1.60		71.61	238	240	237	54		35	40	-4	
	17.5	1.45	1.60		73.34	238	240	243	50		35	40	-4	
	20	1.45	1.60		75.03	239	240	236	50		34	40	-4	
4	22.5	1.45	1.60		76.74	239	243	237	45		34	40	-4	
	25	1.45	1.60		78.44	239	244	239	45		34	40	-4	
	27.5	1.45	1.60		80.17	240	244	231	45		34	40	-4	
5	30	1.45	1.60		81.89	240	244	234	44		37	36	-4	
	32.5	1.43	1.60		83.55	240	237	252	44		33	36	-4	
	35	1.45	1.60		85.23	240	237	252	44		33	36	-4	
6	37.5	1.45	1.60		86.91	240	244	252	44		33	36	-4	
	40	1.45	1.60		88.75	240	245	244	44		33	36	-4	
	42.5	1.45	1.60		90.41	240	243	244	44		33	36	-4	
7	45	1.45	1.60		92.08	241	246	236	44		33	36	-4	
	47.5	1.45	1.65		93.76	241	241	248	44		32	35	-4	
	50	1.45	1.60		95.44	242	247	248	44		32	35	-4	
8	52.5	1.45	1.60		97.12	242	243	242	44		32	35	-4	
	55	1.45	1.60		98.82	247	245	246	44		32	35	-4	
	57.5	1.45	1.60		100.55	244	248	250	42		32	34	-4	
9	60	1.45	1.60		102.20	238	245	247	42		32	34	-4	
	62.5	1.45	1.60		103.94	237	244	251	40		32	34	-4	
	65	1.45	1.60		105.60	237	243	253	40		32	34	-4	
10	67.5	1.45	1.60		107.2	238	240	243	40		35	36	-4	
	70	1.43	1.60		108.98	238	240	237	40		34	36	-4	
	72.5	1.45	1.60		110.65	239	241	240	40		44	36	-4	
11	75	1.45	1.60		112.39	239	245	255	40		44	36	-4	
	77.5	1.43	1.60		114.15	240	245	252	40		44	34	-4	
	80	1.45	1.60		115.83	240	245	254	40		44	34	-4	
12	82.5	1.45	1.60		117.54	240	245	252	40		44	34	-4	
	85	1.43	1.60		119.26	241	245	240	40		44	34	-4	
	87.5	1.43	1.60		120.95	242	245	245	40		44	34	-4	
	90				122.65									

Pretest Leak Check Rate (cfm) – at – vacuum ("Hg) Leak Vol Start – Leak Vol. End – Post -Pitot Check: – (< 0.1" @ 3.0" for 15 sec)
Posttest Leak Check Rate (cfm) 0.02 at -10 vacuum ("Hg) Leak Vol Start 122.65 Leak Vol. End 122.75

RWDI AIR Inc.
Consulting Engineers

Moisture Analysis Data Sheet

Project #: 2509873 Project: SMC ECA

Date: 8-April-2025 Test: T2SVOC

Filter ID: N/A

Sample Loc. Kiln Exhaust XAD Trap ID: #7 - ~~needs [illegible]~~

Train ID: SVOC - 7

Pre-weights By: SM Post-weights By: SM

Impinger #	Impinger Contents	Final Weight (g)	Initial Weight (g)	Net Condensate (g)
1	Condenser	287.0	~~285.4~~	285.1
2	XAD	362.3	357.3	
3	KO	813.4	495.5	
4	EG	790.5	766.1	
5	MT	637.8	638.3	
6	Silica Gel	892.6	882.4	
7				
8				
TOTAL				

Balance QA Check:

	Actual (g)	Measured (g)	Error < 0.5 g	Initials
Pre-weights	500.0	500.1	✓	SM
Post-weights	500.0	500.2	✓	SM

Comments:

Nozzle Measurements:
1 0.2
2
3
4

Avg

Signature

8-April-2025
Date

— Isokinetic Sampling Train Data Sheet — ECA

Operator Signature: [signature]

Job Name SMC St. Mary's ECA	Plant: SMC St. Mary's	Test No.: T2 SVR	Start Time: 2:28	Stack D.: 2.4m
Job Numb 2509873	Source: Kiln Exhaust	Operators: MB	Finish Time:	Pre -Pitot Check: ✓ (< 0.1" @ 3.0" for 15 sec)
Client: SMC	Traverse: 1	Traverse Dir.: S-N	Date: April 2025	Port length: 6 — Page: 1 of 2
Dn: .402	Cp: ~~0.836~~ ~~0.85~~ 0.855	Bws: 11	dH@: 1.9327 — Y: 0.9637	Pbar: 28.72 — Pstatic: -1.2 — CO_2: 12 — O_2: 12 — Pitot ID: 8' B
				Console ID: #

Pt. (#)	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Gas Meter Reading Desired (ft^3)	Gas Meter Reading Actual (ft^3)	Stack Temp. (°F)	Probe Temp. (°F) 223 - 273 °F	Box Temp. (°F) 223 - 273 °F	Imp. Temp. (°F) < 68 °F	Meter Inlet (°F)	Meter Outlet (°F)	Cond. Temp. (°F) < 68 °F	Vac. Press. ("Hg)	Comments
1	0	1.10	1.10		0	314	245	250	31		43	33	-3	
	2.5	1.10	1.15		1.49	314	244	250	31		43	33	-4	~~1:46~~ - end of test
	5	1.10	1.15		2.96	314	244	250	31		43	33	-4	
2	7.5	1.10	1.15		4.33	314	244	250	31		43	33	-4	flow mill off at
	10	1.10	1.20		5.77	319	245	250	31		43	33	-4	
	12.5	1.10	1.20		7.07	319	244	250	33		43	33	-4	
3	15	1.10	1.10		8.45	319	244	250	33		42	33	-4	start
	17.5	1.10	1.20		9.94	320	244	252	33		42	33	-4	
	20	1.10	1.20		11.31	319	244	250	33		42	33	-4	
4	22.5	1.10	1.20		12.70	319	244	250	33		42	33	-4	
	25	1.10	1.20		14.20	324	245	250	33		42	33	-4	3:07 = all fuels off
	27.5	1.10	1.10		15.74	326	245	250	33		42	35	-4	
5	30	1.10	1.10		17.25	326	245	250	33		42	33	-4	
	32.5	1.10	1.10		18.75	~~326~~ 327	249	249	34		44	29	-4	pause at 3:30
	35	1.10	1.10		20.45	~~327~~ 328	249	249	34		44	29	-4	
6	37.5	1.10	1.10		21.98	~~328~~ 329	247	249	34		44	29	-4	
	40	1.10	1.10		23.37	~~329~~ 329	247	249	34		44	29	-4	
	42.5	1.10	1.10		24.75	330	248	235	34		44	29	-4	
7	45	1.05	1.10		26.24	330	246	230	34		44	29	-4	
	47.5	1.05	1.10		27.70	334	245	230	35		45	25	-4	Resume
	50	1.05	1.10		29.16	332	245	240	35		45	29	-4	
8	52.5	1.05	1.10		30.69	332	245	245	35		45	29	-4	8:07
	55	1.05	1.10		32.38	332	245	246	35		45	29	-4	
	57.5	1.05	1.10		33.71	332	245	246	35		45	29	-4	next day
9	60	1.05	1.10		35.01	334	245	246	35		45	29	-4	
	62.5	~~1.40~~ 1.05	~~1.45~~ 1.10		~~37.~~ 36.34	240	244	245	35		45	29	-4	
	65	1.40	1.45		37.80	240	239	246	33		46	30	-5	Pause
10	67.5	1.45	1.50		39.46	240	244	248	33		40	30	-5	
	70	1.46	1.40		41.08	241	246	250	32		41	30	-5	8:35
	72.5	1.43	1.40		42.62	241	246	251	32		41	30	-5	
11	75	1.50	1.50		44.28	242	246	249	36		40	38	-6	
	77.5	1.50	1.50		45.99	242	244	250	40		40	44	-6	
	80	1.50	1.60		47.65	242	245	249	42		40	44	-6	
12	82.5	1.50	1.60		49.36	242	245	250	42		40	44	-6	
	85	1.55	1.70		51.10	242	245	250	42		40	44	-6	
	87.5	1.55	1.70		52.83	241	243	250	42		40	44	-6	
	90													

Pretest Leak Check Rate (cfm) 0.02 at -10 vacuum ("Hg) Leak Vol Start 0 Leak Vol. End 0.01

Posttest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol. End —

Post -Pitot Check: ✓ (< 0.1" @ 3.0" for 15 sec)

— Isokinetic Sampling Train Data Sheet — ECA

Operator Signature: MB

Job Name SMC St. Mary's ECA | Plant: SMC St. Mary's | Test No.: T2 Sure | Start Time: – | Stack D.: 2.4m
Job Numb 2509873 | Source: Kiln Exhaust | Operators: MB | Finish Time: 10:17 | Pre-Pitot Check: ✓ (< 0.1" @ 3.0" for 15 sec)
Client: SMC | Traverse: 2 | Traverse Dir.: Tr-Out | Date: – | Port length: 6 | Page: 2 of 2

Dn: – Cp: – Bws: – dH@: – Y: – Pbar: – Pstatic: – CO_2: – O_2: – Pitot ID –

Console ID

Pt. (#)	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Gas Meter Reading Desired (ft^3)	Gas Meter Reading Actual (ft^3)	Stack Temp. (°F)	Probe Temp. (°F) 223 - 273 °F	Box Temp. (°F) 223 - 273 °F	Imp. Temp. (°F) < 68 °F	Meter Inlet (°F)	Meter Outlet (°F)	Cond. Temp. (°F) < 68 °F	Vac. Press. ("Hg)	Comments
1	0	1.55	1.70		54.35	241	243	251	42		40	44	-6	
	2.5	1.50	1.70		56.23	241	246	270	42		40	44	-6	
	5	1.55	1.70		58.08	241	246	271	42		40	44	-6	
2	7.5	1.45	1.70		59.90	241	246	271	42		40	44	-6	
	10	1.45	1.70		61.55	242	240	270	42		40	44	-6	
	12.5	1.50	1.70		63.34	242	246	269	42		40	46	-6	
3	15	1.50	1.70		65.17	242	246	272	42		40	46	-6	
	17.5	1.50	1.65		66.91	242	245	272	44		40	50	-6	
	20	1.50	1.65		68.69	241	240	273	44		40	50	-6	
4	22.5	1.50	1.65		70.43	240	240	272	44		40	50	-6	
	25	1.45	1.70		72.24	241	240	272	44		40	50	-6	
	27.5	1.45	1.70		73.93	241	240	272	44		40	50	-6	
5	30	1.45	1.70		75.60	241	240	270	46		40	48	-6	
	32.5	1.45	1.70		77.38	244	240	265	46		42	48	-6	
	35	1.45	1.70		79.17	244	245	271	44		40	44	-6	
6	37.5	1.50	1.65		80.94	244	245	271	44		40	44	-6	Raw mill
	40	1.55	1.65		82.75	245	248	272	44		40	44	-6	on today
	42.5	1.55	1.65		84.59	245	248	272	44		40	44	-6	
7	45	1.55	1.60		86.34	245	248	272	44		40	44	-6	
	47.5	1.50	1.65		88.04	245	248	272	44		40	44	-6	
	50	1.50	1.65		89.72	244	244	270	44		40	44	-6	
8	52.5	1.50	1.65		91.47	243	244	270	46		40	48	-6	
	55	1.50	1.65		93.19	244	247	272	46		42	48	-6	
	57.5	1.50	1.65		94.92	244	247	272	46		42	48	-6	
9	60	1.50	1.65		96.61	244	247	272	46		42	48	-6	
	62.5	1.50	1.60		98.29	244	243	272	46		42	48	-6	
	65	1.50	1.60		100.05	245	245	270	46		42	48	-6	
10	67.5	1.50	1.60	101.85	~~101.83~~	245	245	272	50		46	50	-6	
	70	1.50	1.60		103.63	245	243	272	50		46	50	-6	
	72.5	1.50	1.60		105.40	246	250	273	50		46	50	-6	
11	75	1.50	1.60		107.18	247	250	271	50		46	50	-6	
	77.5	1.50	1.65		108.94	247	245	271	52		45	50	-6	
	80	1.50	1.65		110.71	247	245	270	52		45	50	-6	
12	82.5	1.50	1.60		112.46	247	245	273	52		45	51	-6	
	85	1.50	1.60		114.24	245	~~247~~ 245	273	52		45	51	-6	
	87.5	1.50	1.60		115.99	248	245	270	52		46	50	-6	
	90				117.76									

Pretest Leak Check Rate (cfm) – at – vacuum ("Hg) Leak Vol Start – Leak Vol. End –
Posttest Leak Check Rate (cfm) 0.02 at -10 vacuum ("Hg) Leak Vol Start 117.76 Leak Vol. End 117.82

Post-Pitot Check: ✓ (< 0.1" @ 3.0" for 15 sec)

RWDI AIR Inc.
Consulting Engineers

Moisture Analysis Data Sheet

Project #: 2509873
Project: SMC ECA
Date: 9-April-2025
Test: T_3 SVOC
Filter ID: N/A
Sample Loc. Kiln Exhaust
XAD Trap ID: #11
Train ID: SVOC - ~~7~~ 8
Pre-weights By: SM
Post-weights By: SM

Impinger #	Impinger Contents	Final Weight (g)	Initial Weight (g)	Net Condensate (g)
1	Condenser	239.7	238.9	
2	XAD	368.8	364.7	
3	KO	786.6	498.1	
4	EG	767.5	739.5	
5	MT	624.3	624.4	
6	Silica Gel	849.4	843.0	
7				
8				
	TOTAL			

Balance QA Check:

	Actual (g)	Measured (g)	Error < 0.5 g	Initials
Pre-weights	500.0	499.8	✓	SM
Post-weights	500.0	499.9	✓	SM

Comments:

Nozzle Measurements:
1 0.220
2
3
4

Avg

Sydney Meunier
Signature

9-April-2025
Date

— Isokinetic Sampling Train Data Sheet — ECA

Operator Signature: [signature]

Job Name SMC St. Mary's ECA | Plant: SMC St. Mary's | Test No.: T3 SVOC | Start Time: 11:42 | Stack D.: 2.4m

Job Numb 2509873 | Source: Kiln Exhaust | Operators: MB | Finish Time: | Pre -Pitot Check: ✓ (< 0.1" @ 3.0" for 15 sec)

Client: SMC | Traverse: 1 | Traverse Dir.: 1-04 | Date: 4/9/25 | Port length: 6 | Page: 1 of 2

Dn: 0.200 | Cp: 0.855 | Bws: 11 | dH@: 1.9323 | Y: 0.9637 | Pbar: 29.00 | Pstatic: -1.2 | CO_2: 12 | O_2: 13.5 | Pitot ID 81

Console ID H

Pt. (#)	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Gas Meter Reading Desired (ft^3)	Gas Meter Reading Actual (ft^3)	Stack Temp. (°F)	Probe Temp. (°F) 223 - 273 °F	Box Temp. (°F) 223 - 273 °F	Imp. Temp. (°F) < 68 °F	Meter Inlet (°F)	Meter Outlet (°F)	Cond. Temp. (°F) < 68 °F	Vac. Press. ("Hg)	Comments
1	0	0.95	1.50		0.18	247	245	270	45		40	45	-4	
	2.5	0.95	1.50		1.55	246	245	272	45		40	45	-4	
	5	0.95	1.50		2.90	246	245	272	45		40	45	-4	
2	7.5	1.20	1.50		4.33	244	245	270	45		40	45	-4	
	10	1.20	1.50		5.83	244	245	270	45		40	45	-4	
	12.5	1.20	1.50		7.44	244	245	270	45		40	45	-4	
3	15	1.35	1.50		8.97	244	245	270	45		46	45	-4	
	17.5	1.30	1.60		10.61	244	250	271	46		41	45	-4	Dense
	20	1.35	1.60		12.20	245	250	271	46		41	45	-4	
4	22.5	1.50	1.60		13.90	245	250	271	46		41	45	-4	1:12
	25	1.50	1.60		15.66	245	252	272	47		43	46	-4	
	27.5	1.50	1.60		17.48	246	251	272	47		43	46	-4	
5	30	1.55	1.60		19.24	246	251	272	47		43	46	-4	
	32.5	1.55	1.50		21.04	246	251	271	49		44	46	-4	
	35	1.50	1.50		22.91	247	251	270	49		42	48	-4	
6	37.5	1.70	1.50		24.76	247	245	273	49		42	48	-4	
	40	1.75	1.50		26.64	247	245	270	49		42	48	-4	
	42.5	1.75	1.50		28.52	247	245	270	50		44	49	-4	
7	45	1.95	1.45		30.35	248	240	265	50		44	49	-4	
	47.5	1.95	1.45		32.30	248	250	268	50		44	49	-4	
	50	1.95	1.45		34.32	248	254	272	50		44	49	-4	
8	52.5	1.80	1.45		36.29	249	254	270	50		44	49	-4	
	55	1.80	1.45		38.25	239	254	270	50		44	49	-4	
	57.5	1.4	1.45		40.10	248	250	271	50		48	50	-4	
9	60	1.55	1.45		42.11	247	240	270	50		48	50	-4	
	62.5	1.55	1.45		43.71	247	245	270	50		48	50	-4	
	65	1.45	1.45		45.5	246	249	270	50		48	50	-4	
10	67.5	1.20	1.45		47.50	246	249	270	50		48	50	-4	
	70	1.20	1.45		49.15	246	250	270	50		49	52	-4	
	72.5	1.20	1.45		50.81	247	250	270	50		49	52	-4	
11	75	1.10	1.50		52.30	247	250	270	50		49	52	-4	
	77.5	1.10	1.60		53.88	248	254	273	52		54	53	-4	
	80	1.10	1.50		55.35	248	252	271	52		56	53	-4	
12	82.5	1.00	1.60		56.75	248	249	265	52		54	53	-4	
	85	1.05	1.60		58.25	248	249	269	52		54	53	-4	
	87.5	1.05	1.60		59.65	249	244	271	54		56	57	-4	
	90	1.00			61.19									

Pretest Leak Check Rate (cfm) 0.02 at -10 vacuum ("Hg) Leak Vol Start 0 Leak Vol. End 0.02 Post -Pitot Check: ✓ (< 0.1" @ 3.0" for 15 sec)

Posttest Leak Check Rate (cfm) – at – vacuum ("Hg) Leak Vol Start – Leak Vol. End –

— Isokinetic Sampling Train Data Sheet — ECA

Operator Signature: [signature]

Job Name SMC St. Mary's ECA | Plant: SMC St. Mary's | Test No.: T2SVOC | Start Time: – | Stack D.: 2.4m
Job Numb 2509873 | Source: Kiln Exhaust | Operators: – | Finish Time: 2:53 | Pre -Pitot Check: – (< 0.1" @ 3.0" for 15 sec)
Client: SMC | Traverse: 2 | Traverse Dir.: – | Date: – | Port length: – | Page: 2 of 2

Dn: – Cp: – Bws: – dH@: – Y: – Pbar: – Pstatic: – CO_2: – O_2: – Pitot ID –

Console ID –

Pt. (#)	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Gas Meter Reading Desired (ft^3)	Gas Meter Reading Actual (ft^3)	Stack Temp. (°F)	Probe Temp. (°F) 223 - 273 °F	Box Temp. (°F) 223 - 273 °F	Imp. Temp. (°F) < 68 °F	Meter Inlet (°F)	Meter Outlet (°F)	Cond. Temp. (°F) < 68 °F	Vac. Press. ("Hg)	Comments
1	0	0.90	1.60		61.19	248	244	271	54		56	51	-4	
	2.5	0.90	1.60		62.63	250	244	270	54		56	53	-4	
	5	0.90	1.60		64.09	251	248	270	55		56	54	-5	
2	7.5	1.10	1.60		65.44	252	249	271	55		56	54	-5	
	10	1.10	1.60		66.92	252	250	260	55		56	54	-5	Test Resume
	12.5	1.10	1.60		68.70	252	250	265	55		56	54	-5	1:23
3	15	1.40	1.60		69.97	252	250	270	55		56	54	-5	
	17.5	1.40	1.60		71.77	251	250	270	55		56	54	-5	
	20	1.40	1.60		73.51	251	249	271	55		56	54	-5	End
4	22.5	1.55	1.60		75.20	251	249	265	56		56	53	-5	
	25	1.55	1.60		77.06	251	249	266	56		56	53	-5	2:53
	27.5	1.55	1.60		78.83	253	250	269	56		56	53	-5	
5	30	1.65	1.60		80.71	253	250	271	56		59	54	-5	
	32.5	1.70	1.60		82.63	255	250	271	56		59	54	-5	
	35	1.70	1.66		84.55	255	250	270	56		59	54	-5	
6	37.5	1.85	1.60		86.50	256	250	270	56		59	54	-5	
	40	1.85	1.56		88.52	256	250	270	56		59	54	-5	
	42.5	1.85	1.50		90.49	255	250	270	56		59	54	-5	
7	45	1.95	1.50		92.44	255	250	265	58		60	54	-5	
	47.5	1.95	1.50		94.50	256	245	268	58		60	54	-5	
	50	1.75	1.50		96.50	256	249	269	58		60	54	-5	
8	52.5	1.75	1.50		98.55	255	250	271	59		62	54	-5	
	55	1.65	1.50		100.53	255	250	271	59		62	54	-5	
	57.5	1.45	1.50		102.44	255	250	271	59		62	54	-5	
9	60	1.35	1.50		104.35	256	250	270	60		64	56	-5	
	62.5	1.40	1.50		106.20	256	245	270	60		64	56	-5	
	65	1.20	1.60		107.99	256	249	270	60		64	56	-5	
10	67.5	1.20	1.60		109.77	255	250	271	60		64	56	-5	
	70	1.20	1.60		111.37	255	250	272	60		64	56	-5	
	72.5	1.20	1.60		112.99	255	251	272	61		66	59	-5	
11	75	1.10	1.60		114.64	255	251	273	61		66	59	-5	
	77.5	1.10	1.60		116.30	255	251	273	62		66	61	-5	
	80	1.10	1.60		117.89	255	251	273	62		66	61	-5	
12	82.5	1.10	1.60		119.49	255	251	273	62		66	61	-5	
	85	1.05	1.66		121.09	255	251	273	62		66	61	-5	
	87.5	1.10	1.60		122.66	255	251	273	62		66	61	-5	
	90	1.05			124.29									

Pretest Leak Check Rate (cfm) – at – vacuum ("Hg) Leak Vol Start – Leak Vol. End – Post -Pitot Check: – (< 0.1" @ 3.0" for 15 sec)
Posttest Leak Check Rate (cfm) 0.02 at -10 vacuum ("Hg) Leak Vol Start 124.29 Leak Vol. End 124.40

CONTINUOUS EMISSION MONITORING
SYSTEM CALIBRATION AND DRIFT CALIBRATION

Client:	SMC ST MARYS	Date:	2025/04/08
Project Number:	2509873	Start Time:	1600
Sample Location:	KILN STACK	Finish Time:	1700

	O_2 %	CO_2 %	CO ppm	NO_x	SO_2	THC
	16.0	20.0	1500			
	10.0	10.0	750			
Range	25	30	2000			
TIME 15.40						
Direct Zero	0.0	0.0	0.2	-	-	
Low Span	-	-	-			
Mid. Span	10.04	10.08	754			
High Span	16.01	20.02	1503			
TIME 15.50						
System Zero	0.11	0.09	0.5			
Span	16.16	19.97	1492			
TIME						
Zero	0.17	0.14	-0.6			
Span	16.09	19.99	1487			
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						

Leak Check ✓
Line Temp 120° C
Filter Temp ✓
Chiller Temp 4°C

Drift Criterion: <3% of Span

Bias Criterion: <5% of Span

Converter Check	NO_2 Value	NO reading	NO_2 Reading	NO_x reading	> 90%
			N/A		

Response Time (sec) 42

Notes: HORIBA PG350

Line Temp 120°C
Filter Temp ✓
Chiller Temp 4°C

ENVIRONICS 9110
COMBUST MIX CC700504

CONTINUOUS EMISSION MONITORING
SYSTEM CALIBRATION AND DRIFT CALIBRATION

Client:	SMC ST MARYS	Date:	2025/04/09
Project Number:	2509873	Start Time:	0915
Sample Location:	KILN STACK	Finish Time:	1448

	O_2 %	CO_2 %	CO ppm	NO_x	SO_2	THC
	16.0	20.0	1500			
	10.0	10.0	750			
Range	25	30	2000			
TIME 0845						
Direct Zero	0.04	0.01	-0.4			
Low Span	-	-	-	-	-	
Mid. Span	10.01	9.99	753			
High Span	16.02	20.04	1507			
TIME						
System Zero	0.14	0.06	0.3			
Span	15.99	20.02	1501			
TIME						
Zero	0.17	0.11	-0.5			
Span	15.94	19.97	1496			
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						

Leak Check ✓
Line Temp 120°C
Filter Temp ✓
Chiller Temp 4°C

Drift Criterion: <3% of Span
Bias Criterion: <5% of Span

Converter Check	NO_2 Value	NO reading	NO_2 Reading	NO_x reading	> 90%
			N/A		

Line Temp ✓
Filter Temp 120°C
Chiller Temp 4°C

Response Time (sec) 41 s

Notes: HORIBA PG350
ENVIRONICS 9100
COMBUSTIMIX CC700540

CONTINUOUS EMISSION MONITORING
SYSTEM CALIBRATION AND DRIFT CALIBRATION

Client:	SMC STMARYS	Date:	2025/04/11
Project Number:	2509873	Start Time:	0815
Sample Location:	KILN STACK	Finish Time:	11:30

Leak Check ✓
Line Temp 120°C
Filter Temp ✓
Chiller Temp 4°C

		O_2 %	CO_2 %	CO ll/m	NO_x	SO_2	THC
		16.0	20.0	1500			
		10.0	10.0	750			
Range		25	30	2000			
TIME 0750							
Direct	Zero	0.0	0.0	0.4	-	-	
	Low Span	-	-	-			
	Mid. Span	10.0	10.0	752			
	High Span	16.0	20.0	1508			
TIME 0810							
System	Zero	0.2	0.1	0.8			
	Span	15.9	19.9	1498			
TIME							
	Zero	0.3	0.2	-1.3			
	Span	16.1	19.9	1491			
TIME							
	Zero						
	Span						
TIME							
	Zero						
	Span						
TIME							
	Zero						
	Span						
TIME							
	Zero						
	Span						
TIME							
	Zero						
	Span						
TIME							
	Zero						
	Span						
TIME							
	Zero						
	Span						
TIME							
	Zero						
	Span						
TIME							
	Zero						
	Span						
TIME							
	Zero						
	Span						
TIME							
	Zero						
	Span						

Line Temp 120°C
Filter Temp ✓
Chiller Temp 4°C

Drift Criterion: <3% of Span

Bias Criterion: <5% of Span

Converter Check	NO_2 Value	NO reading	NO_2 Reading	NO_x reading	> 90%
			N/A		

Response Time (sec)	38

Notes: HORIBA PG350
ENVIRONICS 9110
COMBUST MIX CC700504

M26 Sampling

Project #: 2509873	Client: SMC STMARY	Console ID : 303 DGM A
Date: 2025/04/09	Test: ECA M26 T1→T3	Console Y : 1.028
Sample Location: KILN EXH.	RAW MILL ON	Operator : AT

Time (min)	Orifice Press ("H_2O)	Meter Volume (L)	Meter Temp (°C)/(°F) Inlet	Meter Temp (°C)/(°F) Outlet	Vacuum (in Hg)	Filter Box Temp (°C)/(°F)	Probe Temp (°C)/(°F)	Condensor Temp (°C)/(°F)	Sampling Rate (L/min)
Test 1	Start Time: 09.36		Date: 2025/04/09			Pbar: 29.0		Leak Check:	✓
0	2.0	0104	37	N/A	1	N/A	N/A	33	1.5
5	2.0	7.7	37					34	
10	2.0	15	38					34	
15	2.0	23	38					35	
20	2.0	30	39					35	
25	2.0	38	39					35	
30	2.0	45	40					35	
35	2.0	53	41					35	
40	2.0	61	41					36	
45	2.0	68	42					36	
50	2.0	76	43					36	
55	2.0	83	43					36	
60	2.0	90.962	43		✓			36	✓
Test 1	End Time: 10.36							Leak Check:	✓

Time (min)	Orifice Press ("H_2O)	Meter Volume (L)	Meter Temp (°C)/(°F) Inlet	Meter Temp (°C)/(°F) Outlet	Vacuum (in Hg)	Filter Box Temp (°C)/(°F)	Probe Temp (°C)/(°F)	Condensor Temp (°C)/(°F)	Sampling Rate (L/min)
Test 2	Start Time: 12.09		Date: 2025/04/09			Pbar: 29.0		Leak Check:	✓
0	2.0	0.230	46	N/A	1	N/A	N/A	38	1.5
5	2.0	8	47					38	
10	2.0	15	48					39	
15	2.0	23	48					39	
20	2.0	30	48					40	
25	2.0	37	49					40	
30	2.0	45	49					40	
35	2.0	52	50					40	
40	2.0	60	52					40	
45	2.0	67	52					41	
50	2.0	74	53					41	
55	2.0	82	54					42	
60	2.0	89.438	55		✓			42	✓
Test 2	End Time 13.09							Leak Check:	✓

Time (min)	Orifice Press ("H_2O)	Meter Volume (L)	Meter Temp (°C)/(°F) Inlet	Meter Temp (°C)/(°F) Outlet	Vacuum (in Hg)	Filter Box Temp (°C)/(°F)	Probe Temp (°C)/(°F)	Condensor Temp (°C)/(°F)	Sampling Rate (L/min)
Test 3	Start Time: 1322		Date: 2025/04/09			Pbar: 29.0		Leak Check:	✓
0	2.0	0.335	56	N/A	1	N/A	N/A	40	1.5
5	2.0	8	57					40	
10	2.0	15	56					40	
15	2.0	23	55					40	
20	2.0	30	54					40	
25	2.0	38	53					39	
30	2.0	45	53					39	
35	2.0	53	53					39	
40	2.0	60	53					38	
45	2.0	68	52					38	
50	2.0	76	52					38	
55	2.0	83	51					38	
60	2.0	90.474	51		✓			38	✓
Test 3	End Time: 14.22							Leak Check:	✓

NCASI 98.01 Sampling

Project #: 2509873	Client: SMC St. Mary's	Console ID : 30B - A PUMA
Date: 11-Apr-2025	Test: 98-01 T1 -> T3	Console **Y** : 1.028
Sample Location: Kiln Exhaust		Operator : PB, MB, AT

Time (min)	Orifice Press ("H_2O)	Meter Volume (L)	Meter Temp (°C)/(°F) Inlet	Meter Temp (°C)/(°F) Outlet	Vacuum (in Hg)	Condensor Temp (°C)/(°F)	Sampling Rate (L/min)	
Test 1	Start Time: 8:09	Date: 11-Apr-2025			Pbar: 28.91		Leak Check: ✓	
0	0	0		57	0	32	1.0	
5	1.0	5.10		57		32		
10	1.0	10.07		57		32		
15	1.0	15.13		57		32		
20	1.0	20.16		58		32		
25	1.0	25.22		58		32		
30	1.0	30.27		59		32		
35	1.0	35.30		59		33		
40	1.0	40.34		59		33		
45	1.0	45.37		59		33		
50	1.0	50.41		59		33		
55	1.0	55.58		59		33		
60	1.0	60.50		60		34		
Test 1	End Time: 9:09						Leak Check: ✓	
Test 2	Start Time: 9:36	Date: 2025/04/11			Pbar: 28.91		Leak Check: ✓	
0	0	0		60	0	32	1.0	
5	1.0	5.42		60		33		
10	1.0	10.84		60		33		
15	1.0	16.31		60		33		
20	1.0	21.67		61		33		
25	1.0	27.07		60		33		
30	1.0	32.52		61		34		
35	1.0	37.97		61		34		
40	1.0	43.36		61		34		
45	1.0	48.76		61		34		
50	1.0	54.21		61		34		
55	1.0	59.69		61		34		
60	1.0	65.032		62		34	1.0	
Test 2	End Time 10:26						Leak Check: ✓	
Test 3	Start Time: 10:55	Date: 2025/04/11			Pbar: 28.91		Leak Check: ✓	
0	1.0	0.024		62	0	34	1.0	
5	1.0	5.17		62		34		
10	1.0	10.46		62		34		
15	1.0	15.48		63		34		
20	1.0	20.64		63		34		
25	1.0	25.91		63		34		
30	1.0	31.04		63		34		
35	1.0	36.22		63		34		
40	1.0	41.39		63		34		
45	1.0	46.58		63		34		
50	1.0	51.80		63		34		
55	1.0	56.99		63		34		
60	1.0	62.080		63		34	1.0	
Test 3	End Time: 11:55						Leak Check: ✓	

NCASI A105 Sampling

Project #: 2509873	Client: SMC St. Mary's	Console ID : 308-A DGMB
Date: 11-Apr-2025	Test: A105 T1 → T3	Console Y : 1.025
Sample Location: Kiln Exhaust		Operator : PB, MB, AT

Time (min)	Orifice Press ("H_2O)	Meter Volume (L)	Meter Temp (°C)/(°F) Inlet	Meter Temp (°C)/(°F) Outlet	Vacuum (in Hg)	Condensor Temp (°C)/(°F)	Sampling Rate (L/min)	
Test 1	Start Time: 8:09		Date: 2025/04/11			Pbar: 28.91		Leak Check: ✓
0	0	0	58	58	0	33	0.5	
5	2.0	2.32		58		33		
10	2.0	5.09		58		33		
15	2.0	7.54		59		33		
20	2.0	10.07		59		34		
25	2.0	12.60		59		34		
30	2.0	15.05		59		33		
35	2.0	17.60		60		34		
40	2.0	20.14		60		34		
45	2.0	22.59		60		35		
50	2.0	25.14		60		35		
55	2.0	27.64		60		35		
60	2.0	30.15	64	61		35		
Test 1	End Time: 9:09							Leak Check: ✓
Test 2	Start Time: 9:36		Date: 2025/04/11			Pbar: 28.91		Leak Check: ✓
0	0	0		60	0	33	0.5	
5	2.0	2.80		60		33		
10	2.0	5.58		60		33		
15	2.0	8.40		60		33		
20	2.0	11.21		60		33		
25	2.0	13.99		61		33		
30	2.0	16.75		61		33		
35	2.0	19.59		61		32		
40	2.0	22.38		62		33		
45	2.0	25.22		62		33		
50	2.0	27.98		62		34		
55	2.0	30.69		62		34		
60	2.0	33.525		62		34	0.5	
Test 2	End Time 10:36							Leak Check: ✓
Test 3	Start Time: 10:55		Date: 2025/04/11			Pbar: 28.91		Leak Check: ✓
0	0	6.024		63	0	34	0.5	
5	2.0	7.71		63		34		
10	2.0	8.33		63		34		
15	2.0	7.99		63		35		
20	2.0	10.57		63		34		
25	2.0	13.27		64		34		
30	2.0	15.93		64		34		
35	2.0	18.56		63		34		
40	2.0	21.25		65		35		
45	2.0	23.88		65		35		
50	2.0	26.52		65		34		
55	2.0	29.17		65		34		
60	2.0	31.823		65		34	0.5	
Test 3	End Time: 11:55							Leak Check: ✓

VOST Sampling

Project #: 2509873	Client: SMC St. Mary's	Console ID: 303(A) DGM B
Date: 2025/04/08→09	Test: VOST T1→T3	Console Y: 1.025
Sample Location: Kiln Exhaust		Operator: AT

Test 1 Start Time: 1127 Date: 2025/04/09 Pbar: 28.72 Pair ID: Leak Check: ✓

Time (min)	Orifice Press ("H_2O)	Meter Volume (L)	Meter Temp (°C)/(°F) Inlet	Meter Temp Outlet	Vacuum (in Hg)	Condensor Temp (°C)/(°F)	Sampling Rate (L/min)	
0	0.6	0.130	35	N/A	0	37	0.25	
5	0.6	1.8	35			36		
10	0.6	3.5	35			36		
15	0.6	5.1	35			36		A080537
20	0.6	6.8	35			36		+
25	0.6	8.5	35			36		A080127
30	0.6	10.2	34			35		
35	0.6	11.8	34			35		
40	0.6	13.5	34			36		
45	0.6	15.2	34			36		
50	0.6	16.8	34			36		
55	0.6	18.5	34			36		
60	0.6	20.172	34			36		

Test 1 End Time: 1227 Leak Check: ✓

Test 2 Start Time: 13:09 Date: 2025/04/08 Pbar: 28.72 Pair ID: Leak Check: ✓

Time (min)	Orifice Press ("H_2O)	Meter Volume (L)	Meter Temp Inlet	Meter Temp Outlet	Vacuum (in Hg)	Condensor Temp	Sampling Rate (L/min)	
0	0.6	0.127	35	N/A	0	38	0.25	
5	0.6	1.8	35			38		
10	0.6	3.4	35			38		
15	0.6	5.1	35			38		A087911
20	0.6	6.7	35			38		+
25	0.6	8.4	36			37		A066832
30	0.6	10.0	36			37		
35	0.6	11.7	36			37		
40	0.6	13.3	36			37		
45	0.6	15.0	36			37		
50	0.6	16.6	36			37		
55	0.6	18.3	36			37		
60	0.6	19.936	36			38		

Test 2 End Time 14:09 Leak Check: ✓

Test 3 Start Time: 11:39 Date: 2025/04/09 Pbar: 29.0 Pair ID: Leak Check: ✓

Time (min)	Orifice Press ("H_2O)	Meter Volume (L)	Meter Temp Inlet	Meter Temp Outlet	Vacuum (in Hg)	Condensor Temp	Sampling Rate (L/min)	
0	0.6	0.112	47	N/A	0	33	0.25	
5	0.6	1.8	48			33		
10	0.6	3.4	49			33		
15	0.6	5.1	50			34		A081209
20	0.6	6.7	51			34		+
25	0.6	8.4	51			34		A081162
30	0.6	10.1	52			34		
35	0.6	11.7	53			35		
40	0.6	13.4	54			35		
45	0.6	15.0	55			35		
50	0.6	16.7	56			35		
55	0.6	18.4	57			35		
60	0.6	20.009	57			35		

Test 3 End Time: 12:39 Leak Check: ✓

APPENDIX L

Condition 11 ECA 6394-D78PR2- Source Testing

Condition 11 of ECA 6394-D78PR2 requires that the facility shall perform source testing in accordance with the procedure in Schedule G….

11a. Source testing shall be conducted no later than twelve months from the date of commencement of operation at the Alternative Low Carbon Fuels up to 175 tons per day

Use of ALCF on site commenced on May 9, 2024
Source Testing was performed between April 6 and 11, 2025

G. 1. The company shall submit 3 months prior to the source testing a pre test plan for the Soure Testing.

The Pretest Plan was submitted to the MECP on January 10, 2025
The MECP completed review of the Pretest Plan on January 28, 2025

G.5.3 The company shall submit records of operating conditions at the time of Source Testing and other

3. records of operating conditions at the time of Source Testing and other information including but not limited to:
   a. an executive summary
   b. a summary of the results of the fuel analysis program specified in Condition 8.9 of this Approval;
   c. a summary of records specified in condition 8.11 of this Approval and records of operating conditions at the time of Source Testing, including but not limited to:
      i. Clinker production rate in tonnes/hour
      ii. Conventional Fuels fired in the Cement Kiln in tonnes/hour
      iii. Each category of the Alternative Low-Carbon Fuels described in condition 7.1 of the Approval fired in the Cement Kiln in tonnes/day;
      iv. Fuel Adjunct Material and Industrial By-Product Material input into the Cement Kiln in tonnes/day;
   d. any other records that may affect the Source Testing results.

4. A summary of all records of the CEM System and CPM System for the parameters specified in Condition 10 of this Approval at the time of Source Testing;

5. A summary table that compares the Source Testing results to the emission estimates described in the Company's application, the ESDM Report and the Performance Limits;

The periods of Source Testing are as follows;

Test Period #	Date	Daily Test Period
T1	**Tuesday, April 8, 2025**	**09:37 - 15:30**
T2	**Wednesday, April 9, 2025**	**08:07 - 14:53**
T3	**Thursday, April 10, 2025**	**07:31 - 18:21**
T4	**Friday, April 11, 2025**	**08:09 - 11:55**

Start Date	4/7/2025	4/7/2025
End Date	4/12/2025	4/12/2025

EXTERNAL EMAIL / EMAIL EXTERNO / COURRIEL EXTERNE
Hi Kara,

Please find below a note of the testing periods from last weeks stack testing.
Appreciate if you could collate and share the relevant plant operating conditions.

Date	Daily Test Period	Type of Test
Tuesday, April 8, 2025	09:37 - 15:30	Compliance
Wednesday, April 9, 2025	08:07 - 14:53	Compliance
Thursday, April 10, 2025	07:31 - 18:21	Corporate
Friday, April 11, 2025	08:09 - 11:55	Compliance

Thanks,

Adam Tran | Senior Scientist Engineer, Source Testing
RWDI
Climate & Performance Engineering
600 Southgate Drive, Guelph, ON N1G 4P6 Canada
C: +1 226-337-3778 | E: adam.tran@rwdi.com | rwdi.com

Climate and performance expertise. When you need it.

From: Kara Pelissero
Sent: Friday, April 4, 2025 9:16 AM
To: Adam Tran
Cc: Karri Legarrie; Oluwatobi Odumoye; Matthew Bradley; Sydney Meunier; Preet Bhamrah
Subject: RE: Source Testing week of April 7, 2025

11. SOURCE TESTING

1. REGULAR ALCF USE (Main Burner)

a. The Company shall perform Source Testing in accordance with the procedure in Schedule G to determine the rate of emission of the test contaminants from the sources specified in Schedule H. Source Testing shall be conducted not later than twelve (12) months from the date of commencement of operation of the Alternative Low-Carbon Fuels feed equipment which permits the use of Alternative Low-Carbon Fuels up to 175 tonnes per day, or within a time frame as directed or agreed to in writing by the District Manager.

b. The Company shall notify the District Manager in writing of the details of the installed equipment, date of installation and date of commencement of operation of the Alternative Low-Carbon Fuels feed equipment which permits the use of Alternative Low-Carbon Fuels up to 175 tonnes per day within two (2) weeks of the installation and the commencement of operation.

c. In addition to Source Testing required under Conditions 11.1.a of this Approval, Source Testing shall be repeated once every calendar year in accordance with the procedure in Schedule G to determine the rate of emission of the test contaminants from the sources specified in Schedule H. Annual Source Testing is not required to be conducted in the year in which Source Testing required under Condition 11.1 was conducted.

d. The Source Testing required under Conditions 11.1.a and 11.1.c of this Approval shall include, as a minimum, the rates of emissions of the test contaminants from the Cement Kiln stack, when the Cement Kiln is co-fired with Conventional Fuels and Alternative Low-Carbon Fuels, at an Alternative Low-Carbon Fuels maximum approved firing rate of 175 tonnes per day, or at a firing rate agreed to in writing by the Manager, subject to the condition that operational checks of the Cement Kiln are accepted by the Company. The Alternative Low-Carbon Fuels used during the Source Testing shall contain a representative blend of the Alternative Low-Carbon Fuels approved under Condition 7 of this Approval, with considerations of the market availability of Alternative Low-Carbon Fuels types and quantities at the time of Source Testing. The blend (s) of Alternative Low-Carbon Fuels and quantity proposed to be used for the Source Testing shall be submitted along with the Pre-Test Plan to the Manager and the Director for approval, along with the details regarding the process for selection of the Alternative Low-Carbon Fuels blend (s) and quantity for Source Testing.

SCHEDULE G

PROCEDURE FOR SOURCE TESTING

1. The Company shall submit, not later than three (3) months prior to the Source Testing required under Conditions 11.1.a, 11.1.e, and 11.2.a of this Approval, a Pre-Test Plan for the Source Testing required under this Approval to the Manager and the Director. In addition to the required information, the Pre-Test plan shall also include information on the blend (s) of Alternative Low-Carbon Fuels and quantity proposed to be used for the Source Testing, along with details regarding the process for selection of the Alternative Low-Carbon Fuels blend (s) and quantity for Source Testing. The Company shall finalize the Pre-Test Plan in consultation with the Manager and the Director.

2. The Company shall not commence the Source Testing until the Manager has accepted the Pre-Test Plan.

3. For subsequent Source Testing under Condition 11.1.c of this Approval:

    1. The Company shall submit either a written notification of intent to use a previously approved Pre-Test Plan (with version reference if there were more than one (1) previously approved Pre-Test Plan), or a new Pre-Test Plan, to the Manager and Director not later than three (3) months of the planned date of the Source Testing for approval. The written notification or the new Pre-Test Plan shall also include information on the blend (s) of Alternative Low-Carbon Fuel and the quantity proposed to be used for the Source Testing, along with details regarding the process for selection of the blend (s) for Source Testing for its finalization in consultation with the Manager and the Director.

    2. If the Company submitted a written notification of intent to use a previously approved Pre-Test Plan, the Manager may either accept the use of a previously approved Pre-Test Plan, or request the submission of a new Pre-Test Plan for approval. The Company shall submit the requested new Pre-Test Plan within two (2) months after the Manager requested the submission.

    3. The Company shall complete the subsequent Source Testing no later than three (3) months after the Manager has either agreed with the written notification or approved the new Pre-Test Plan.

4. The Company shall notify the District Manager, the Manager and the Director in writing of the location, date and time of any impending Source Testing required by this Approval, at least fifteen (15) days prior to the Source Testing.

5. The Company shall submit a report (hardcopy and electronic format) on the Source Testing to the Manager and the District Manager not later than four (4) months after completing the Source Testing, or not later than a time frame agreed in writing with the Manager. The report shall be in the format described in the Source Testing Code, and shall also include, but not be limited to:

    1. an executive summary;
    2. results of Source Testing, including the emission rate, emission concentration and relevant emission factor of the Test Contaminants;

    3. records of operating conditions at the time of Source Testing and other information including but not limited to:

        a. an executive summary
        b. a summary of the results of the fuel analysis program specified in Condition 8.9 of this Approval;
        c. a summary of records specified in condition 8.11 of this Approval and records of operating conditions at the time of Source Testing, including but not limited to:
            i. Clinker production rate in tonnes/hour
            ii. Conventional Fuels fired in the Cement Kiln in tonnes/hour
            iii. Each category of the Alternative Low-Carbon Fuels described in condition 7.1 of the Approval fired in the Cement Kiln in tonnes/day;
            iv. Fuel Adjunct Material and Industrial By-Product Material input into the Cement Kiln in tonnes/day;

d. any other records that may affect the Source Testing results.

4. A summary of all records of the CEM System and CPM System for the parameters specified in Condition 10 of this Approval at the time of Source Testing;

5. A summary table that compares the Source Testing results to the emission estimates described in the Company's application, the ESDM Report and the Performance Limits;

6. The Director may not accept the results of the Source Testing if:

   1. the Source Testing Code or the requirements of the Manager were not followed;

   2. the Company did not notify the District Manager, the Manager and the Director of the Source Testing; or

   3. the Company failed to provide a complete report on the Source Testing.

7. If the Director does not accept the results of the Source Testing, the Director may require re-testing. If re-testing is required, the Pre-Test Plan strategies need to be revised and submitted to the Manager for approval. The actions taken to minimize the possibility of the Source Testing results not being accepted by the Director must be noted in the revision.

8. If the Source Testing results are higher than the emission estimates in the Company's ESDM Report, the Company shall update their ESDM Report in accordance with Section 26 of O. Reg. 419/05 with the results from the Source Testing report and make these records available for review by staff of the Ministry upon request. The updated Emission Summary Table from the updated ESDM Report shall be submitted with the report on the Source Testing.

9. The Company shall ensure that the above mentioned Source Testing report is made available and easily accessible for review by the public at the Facility immediately after the document is submitted to the Ministry.

4/7/2025		
4/13/2025		
	Schedule G.5.3.C.i	**Schedule G.5.3.C.ii**
	Clinker Production in tons / hour	**Conventional Fuel in the kiln in ton/hour**
STM Pi Tag	\\stmcntpi\W1U06F1.Filtered VAL	\\stmcntpi\K1W01F1.VAL
07-Apr-25 00:00:00	71.58494152	8.234735631
07-Apr-25 01:00:00	77.92561436	8.238128284
07-Apr-25 02:00:00	72.51704712	8.238805195
07-Apr-25 03:00:00	72.64948491	8.235101305
07-Apr-25 04:00:00	78.53380912	8.234877605
07-Apr-25 05:00:00	89.7496677	8.256165153
07-Apr-25 06:00:00	77.71327146	8.34351475
07-Apr-25 07:00:00	83.32190294	8.313808313
07-Apr-25 08:00:00	77.63418388	7.334056778
07-Apr-25 09:00:00	66.17801242	6.799351643
07-Apr-25 10:00:00	75.23416276	6.852057184
07-Apr-25 11:00:00	70.30199983	7.013532174
07-Apr-25 12:00:00	81.20303553	7.488035715
07-Apr-25 13:00:00	84.72433363	8.591447768
07-Apr-25 14:00:00	99.15939797	8.299407653
07-Apr-25 15:00:00	60.70599035	7.716945621
07-Apr-25 16:00:00	52.72679589	8.093464401
07-Apr-25 17:00:00	67.66571368	8.088766067
07-Apr-25 18:00:00	104.5634757	8.147440346
07-Apr-25 19:00:00	79.04188766	8.549760292
07-Apr-25 20:00:00	67.56234818	9.087925422
07-Apr-25 21:00:00	83.74471956	9.098150602
07-Apr-25 22:00:00	104.3250716	9.111886304
07-Apr-25 23:00:00	67.20133097	9.18357101
08-Apr-25 00:00:00	90.84663672	9.182501401
08-Apr-25 01:00:00	74.65983364	9.178274253
08-Apr-25 02:00:00	85.97394855	9.176468781
08-Apr-25 03:00:00	78.86198985	7.784294251
08-Apr-25 04:00:00	67.12721125	6.293020871
08-Apr-25 05:00:00	96.55495071	6.032624934
08-Apr-25 06:00:00	105.8397953	5.378428438
08-Apr-25 07:00:00	56.84608058	5.65147637
08-Apr-25 08:00:00	84.55797545	6.457523723
08-Apr-25 09:00:00	59.57942271	5.502799303
08-Apr-25 10:00:00	68.12453751	5.459745975
08-Apr-25 11:00:00	66.71574695	5.108827225
08-Apr-25 12:00:00	65.60604901	4.947667493
08-Apr-25 13:00:00	68.45838928	4.939518595
08-Apr-25 14:00:00	71.51419201	4.960125853
08-Apr-25 15:00:00	64.29938316	7.720286439
08-Apr-25 16:00:00	72.65248326	8.278622583
08-Apr-25 17:00:00	66.62071404	5.918805121
08-Apr-25 18:00:00	77.46606954	5.807044171
08-Apr-25 19:00:00	88.64822734	6.067142875
08-Apr-25 20:00:00	79.71840954	6.181897154
08-Apr-25 21:00:00	77.74824348	5.981627358
08-Apr-25 22:00:00	65.49962807	5.433346343
08-Apr-25 23:00:00	73.6047422	4.377943616
09-Apr-25 00:00:00	98.87156767	4.203904802
09-Apr-25 01:00:00	125.7953707	4.219010138
09-Apr-25 02:00:00	72.83921574	4.380162932
09-Apr-25 03:00:00	87.47778072	4.381822975
09-Apr-25 04:00:00	58.52935886	4.594374473
09-Apr-25 05:00:00	79.32111664	4.679586644
09-Apr-25 06:00:00	67.62438883	4.823863132
09-Apr-25 07:00:00	77.53904368	4.902334152
09-Apr-25 08:00:00	58.73643848	4.885894367
09-Apr-25 09:00:00	59.01665592	4.887428612
09-Apr-25 10:00:00	72.03612276	4.804718141
09-Apr-25 11:00:00	71.9599977	4.634924228
09-Apr-25 12:00:00	56.19713419	4.809994077
09-Apr-25 13:00:00	65.67840958	4.803058279
09-Apr-25 14:00:00	74.972753	4.460903118
09-Apr-25 15:00:00	69.04594595	4.432707369
09-Apr-25 16:00:00	94.06303406	4.433430685
09-Apr-25 17:00:00	94.56149292	4.434768464
09-Apr-25 18:00:00	84.89394972	4.514705765
09-Apr-25 19:00:00	74.67111884	4.962676498

09-Apr-25 20:00:00	94.90962102	5.057894296
09-Apr-25 21:00:00	81.07897949	5.230684198
09-Apr-25 22:00:00	79.36612625	4.883426397
09-Apr-25 23:00:00	77.92165909	4.640773586
10-Apr-25 00:00:00	83.08347648	5.33737381
10-Apr-25 01:00:00	84.98292051	4.62973815
10-Apr-25 02:00:00	76.46666431	4.635727807
10-Apr-25 03:00:00	101.8388392	4.630592695
10-Apr-25 04:00:00	78.97049005	4.637458586
10-Apr-25 05:00:00	81.66239777	4.630131988
10-Apr-25 06:00:00	85.75734584	4.628590086
10-Apr-25 07:00:00	75.3318204	4.629517318
10-Apr-25 08:00:00	86.45777724	4.631196466
10-Apr-25 09:00:00	77.92430278	4.635365346
10-Apr-25 10:00:00	66.41318734	4.75453174
10-Apr-25 11:00:00	66.66057641	4.934143502
10-Apr-25 12:00:00	74.89196132	5.672264092
10-Apr-25 13:00:00	86.67716599	7.631042755
10-Apr-25 14:00:00	79.04699605	4.723713434
10-Apr-25 15:00:00	41.9985004	4.727747429
10-Apr-25 16:00:00	72.01955344	4.719945303
10-Apr-25 17:00:00	80.67516645	4.60847591
10-Apr-25 18:00:00	89.17069181	4.472381677
10-Apr-25 19:00:00	81.60407668	4.435834238
10-Apr-25 20:00:00	77.36652629	4.435573796
10-Apr-25 21:00:00	80.08282817	4.47675608
10-Apr-25 22:00:00	74.67065345	4.762037166
10-Apr-25 23:00:00	80.79240001	4.436615249
11-Apr-25 00:00:00	79.20977249	4.439557874
11-Apr-25 01:00:00	84.48469467	4.343593862
11-Apr-25 02:00:00	92.91034656	4.245882318
11-Apr-25 03:00:00	88.03957621	4.406493585
11-Apr-25 04:00:00	72.1513789	4.389921785
11-Apr-25 05:00:00	100.2559415	4.332023825
11-Apr-25 06:00:00	75.61957105	4.213440418
11-Apr-25 07:00:00	84.68429859	4.160500054
11-Apr-25 08:00:00	95.25603649	4.309956735
11-Apr-25 09:00:00	56.83614111	4.318854807
11-Apr-25 10:00:00	56.19932079	4.232365949
11-Apr-25 11:00:00	70.51866393	4.117538614
11-Apr-25 12:00:00	71.75775369	3.829577523
11-Apr-25 13:00:00	75.9915994	3.659868606
11-Apr-25 14:00:00	85.95638123	3.645617293
11-Apr-25 15:00:00	81.53671195	3.470416661
11-Apr-25 16:00:00	86.59795652	3.608724063
11-Apr-25 17:00:00	77.71690941	3.742279516
11-Apr-25 18:00:00	88.1405002	3.898574856
11-Apr-25 19:00:00	84.70469102	3.865467855
11-Apr-25 20:00:00	93.45744505	3.671877739
11-Apr-25 21:00:00	67.85546061	3.688637859
11-Apr-25 22:00:00	81.2834115	3.714128523
11-Apr-25 23:00:00	107.1074382	3.583403234

	4/7/2025						
	4/13/2025						
		Schedule G.5.3.C.i	**ALCF Rate per type recorded on site**		**ALCF Rate per type recorded on site**		
Birthday	Date/Time	**ALCF Firing Rate**	**% Plastic**	**% Wood**	**Plastic TPH**	**Wood TPH**
45754.00	07-Apr-25 00:00:00	0.00	0%	0%	0.00	0.00
45754.00	07-Apr-25 01:00:00	0.00	0%	0%	0.00	0.00
45754.00	07-Apr-25 02:00:00	0.00	0%	0%	0.00	0.00
45754.00	07-Apr-25 03:00:00	0.00	0%	0%	0.00	0.00
45754.00	07-Apr-25 04:00:00	0.00	0%	0%	0.00	0.00
45754.00	07-Apr-25 05:00:00	0.00	0%	0%	0.00	0.00
45754.00	07-Apr-25 06:00:00	0.00	0%	0%	0.00	0.00
45754.00	07-Apr-25 07:00:00	0.00	0%	0%	0.00	0.00
45754.00	07-Apr-25 08:00:00	1.47	100%	0%	1.47	0.00
45754.00	07-Apr-25 09:00:00	2.00	100%	0%	2.00	0.00
45754.00	07-Apr-25 10:00:00	2.00	100%	0%	2.00	0.00
45754.00	07-Apr-25 11:00:00	2.00	100%	0%	2.00	0.00
45754.00	07-Apr-25 12:00:00	1.41	100%	0%	1.41	0.00
45754.00	07-Apr-25 13:00:00	0.00	0%	0%	0.00	0.00
45754.00	07-Apr-25 14:00:00	0.00	0%	0%	0.00	0.00
45754.00	07-Apr-25 15:00:00	0.00	0%	0%	0.00	0.00
45754.00	07-Apr-25 16:00:00	0.00	0%	0%	0.00	0.00
45754.00	07-Apr-25 17:00:00	0.00	0%	0%	0.00	0.00
45754.00	07-Apr-25 18:00:00	0.00	0%	0%	0.00	0.00
45754.00	07-Apr-25 19:00:00	0.00	0%	0%	0.00	0.00
45754.00	07-Apr-25 20:00:00	0.00	0%	0%	0.00	0.00
45754.00	07-Apr-25 21:00:00	0.00	0%	0%	0.00	0.00
45754.00	07-Apr-25 22:00:00	0.00	0%	0%	0.00	0.00
45754.00	07-Apr-25 23:00:00	0.00	0%	0%	0.00	0.00
45755.00	08-Apr-25 00:00:00	0.00	0%	0%	0.00	0.00
45755.00	08-Apr-25 01:00:00	0.00	0%	0%	0.00	0.00
45755.00	08-Apr-25 02:00:00	0.00	0%	0%	0.00	0.00
45755.00	08-Apr-25 03:00:00	1.56	75%	25%	1.17	0.39
45755.00	08-Apr-25 04:00:00	3.84	75%	25%	2.88	0.96
45755.00	08-Apr-25 05:00:00	4.00	75%	25%	3.00	1.00
45755.00	08-Apr-25 06:00:00	4.00	75%	25%	3.00	1.00
45755.00	08-Apr-25 07:00:00	3.37	75%	25%	2.53	0.84
45755.00	08-Apr-25 08:00:00	2.46	75%	25%	1.84	0.61
45755.00	08-Apr-25 09:00:00	4.00	75%	25%	3.00	1.00
45755.00	08-Apr-25 10:00:00	4.00	75%	25%	3.00	1.00
45755.00	08-Apr-25 11:00:00	4.00	75%	25%	3.00	1.00
45755.00	08-Apr-25 12:00:00	4.00	75%	25%	3.00	1.00
45755.00	08-Apr-25 13:00:00	3.85	75%	25%	2.89	0.96
45755.00	08-Apr-25 14:00:00	4.00	75%	25%	3.00	1.00
45755.00	08-Apr-25 15:00:00	0.30	75%	25%	0.23	0.08
45755.00	08-Apr-25 16:00:00	0.00	75%	25%	0.00	0.00
45755.00	08-Apr-25 17:00:00	3.79	75%	25%	2.84	0.95
45755.00	08-Apr-25 18:00:00	4.00	75%	25%	3.00	1.00

Row Labels	Sum of Plastic TPH	Sum of Wood TPH
45754	8.879636128	0
45755	53.40803944	17.80267981
45756	98.52373457	9.849157428
45757	112.4983209	0
45758	119.9618171	0
Grand Total	393.271548	27.65183724

45755.00	08-Apr-25 19:00:00	4.00	75%	25%	3.00	1.00
45755.00	08-Apr-25 20:00:00	4.00	75%	25%	3.00	1.00
45755.00	08-Apr-25 21:00:00	4.00	75%	25%	3.00	1.00
45755.00	08-Apr-25 22:00:00	4.00	75%	25%	3.00	1.00
45755.00	08-Apr-25 23:00:00	4.00	75%	25%	3.00	1.00
45756.00	09-Apr-25 00:00:00	4.00	75%	25%	3.00	1.00
45756.00	09-Apr-25 01:00:00	4.00	75%	25%	3.00	1.00
45756.00	09-Apr-25 02:00:00	4.00	75%	25%	3.00	1.00
45756.00	09-Apr-25 03:00:00	4.00	75%	25%	3.00	1.00
45756.00	09-Apr-25 04:00:00	4.00	75%	25%	3.00	1.00
45756.00	09-Apr-25 05:00:00	4.00	75%	25%	3.00	1.00
45756.00	09-Apr-25 06:00:00	3.62	75%	25%	2.71	0.90
45756.00	09-Apr-25 07:00:00	3.76	75%	25%	2.82	0.94
45756.00	09-Apr-25 08:00:00	4.00	75%	25%	3.00	1.00
45756.00	09-Apr-25 09:00:00	4.00	75%	25%	3.00	1.00
45756.00	09-Apr-25 10:00:00	4.29	100%	0%	4.29	0.00
45756.00	09-Apr-25 11:00:00	5.00	100%	0%	5.00	0.00
45756.00	09-Apr-25 12:00:00	5.00	100%	0%	5.00	0.00
45756.00	09-Apr-25 13:00:00	5.00	100%	0%	5.00	0.00
45756.00	09-Apr-25 14:00:00	5.01	100%	0%	5.01	0.00
45756.00	09-Apr-25 15:00:00	5.01	100%	0%	5.01	0.00
45756.00	09-Apr-25 16:00:00	5.01	100%	0%	5.01	0.00
45756.00	09-Apr-25 17:00:00	5.01	100%	0%	5.01	0.00
45756.00	09-Apr-25 18:00:00	5.00	100%	0%	5.00	0.00
45756.00	09-Apr-25 19:00:00	5.00	100%	0%	5.00	0.00
45756.00	09-Apr-25 20:00:00	5.01	100%	0%	5.01	0.00
45756.00	09-Apr-25 21:00:00	4.62	100%	0%	4.62	0.00
45756.00	09-Apr-25 22:00:00	5.01	100%	0%	5.01	0.00
45756.00	09-Apr-25 23:00:00	5.00	100%	0%	5.00	0.00
45757.00	10-Apr-25 00:00:00	3.67	100%	0%	3.67	0.00
45757.00	10-Apr-25 01:00:00	5.00	100%	0%	5.00	0.00
45757.00	10-Apr-25 02:00:00	5.00	100%	0%	5.00	0.00
45757.00	10-Apr-25 03:00:00	5.00	100%	0%	5.00	0.00
45757.00	10-Apr-25 04:00:00	5.00	100%	0%	5.00	0.00
45757.00	10-Apr-25 05:00:00	5.00	100%	0%	5.00	0.00
45757.00	10-Apr-25 06:00:00	5.00	100%	0%	5.00	0.00
45757.00	10-Apr-25 07:00:00	5.00	100%	0%	5.00	0.00
45757.00	10-Apr-25 08:00:00	5.01	100%	0%	5.01	0.00
45757.00	10-Apr-25 09:00:00	5.01	100%	0%	5.01	0.00
45757.00	10-Apr-25 10:00:00	5.01	100%	0%	5.01	0.00
45757.00	10-Apr-25 11:00:00	5.00	100%	0%	5.00	0.00
45757.00	10-Apr-25 12:00:00	3.82	100%	0%	3.82	0.00
45757.00	10-Apr-25 13:00:00	0.55	100%	0%	0.55	0.00
45757.00	10-Apr-25 14:00:00	5.00	100%	0%	5.00	0.00
45757.00	10-Apr-25 15:00:00	5.00	100%	0%	5.00	0.00
45757.00	10-Apr-25 16:00:00	5.01	100%	0%	5.01	0.00
45757.00	10-Apr-25 17:00:00	5.00	100%	0%	5.00	0.00

45757.00	10-Apr-25 18:00:00	5.00	100%	0%	5.00	0.00
45757.00	10-Apr-25 19:00:00	5.00	100%	0%	5.00	0.00
45757.00	10-Apr-25 20:00:00	5.00	100%	0%	5.00	0.00
45757.00	10-Apr-25 21:00:00	5.01	100%	0%	5.01	0.00
45757.00	10-Apr-25 22:00:00	4.37	100%	0%	4.37	0.00
45757.00	10-Apr-25 23:00:00	5.00	100%	0%	5.00	0.00
45758.00	11-Apr-25 00:00:00	5.00	100%	0%	5.00	0.00
45758.00	11-Apr-25 01:00:00	5.00	100%	0%	5.00	0.00
45758.00	11-Apr-25 02:00:00	5.00	100%	0%	5.00	0.00
45758.00	11-Apr-25 03:00:00	4.86	100%	0%	4.86	0.00
45758.00	11-Apr-25 04:00:00	5.00	100%	0%	5.00	0.00
45758.00	11-Apr-25 05:00:00	5.00	100%	0%	5.00	0.00
45758.00	11-Apr-25 06:00:00	5.00	100%	0%	5.00	0.00
45758.00	11-Apr-25 07:00:00	5.01	100%	0%	5.01	0.00
45758.00	11-Apr-25 08:00:00	5.01	100%	0%	5.01	0.00
45758.00	11-Apr-25 09:00:00	5.00	100%	0%	5.00	0.00
45758.00	11-Apr-25 10:00:00	5.01	100%	0%	5.01	0.00
45758.00	11-Apr-25 11:00:00	5.00	100%	0%	5.00	0.00
45758.00	11-Apr-25 12:00:00	5.00	100%	0%	5.00	0.00
45758.00	11-Apr-25 13:00:00	5.00	100%	0%	5.00	0.00
45758.00	11-Apr-25 14:00:00	5.00	100%	0%	5.00	0.00
45758.00	11-Apr-25 15:00:00	5.01	100%	0%	5.01	0.00
45758.00	11-Apr-25 16:00:00	5.00	100%	0%	5.00	0.00
45758.00	11-Apr-25 17:00:00	5.00	100%	0%	5.00	0.00
45758.00	11-Apr-25 18:00:00	5.01	100%	0%	5.01	0.00
45758.00	11-Apr-25 19:00:00	5.00	100%	0%	5.00	0.00
45758.00	11-Apr-25 20:00:00	5.00	100%	0%	5.00	0.00
45758.00	11-Apr-25 21:00:00	5.00	100%	0%	5.00	0.00
45758.00	11-Apr-25 22:00:00	5.00	100%	0%	5.00	0.00
45758.00	11-Apr-25 23:00:00	5.00	100%	0%	5.00	0.00

4/7/2025
4/12/2025

Schedule G.5.3.C.iv

	Fuel Adjunct Material	**Industrial Byproduct Material**																	
	n/a not used	Total Limestone	Crushed Clay	Total Sandstone	Total Silica Residue	Total Silica	Alumina, Low Alkali	Total Noval / FCC	Total Iron	Total Sand	Total Recycled Iron	Sand Filter Cake	Total Bottom Ash	Shale	Total Alumina Soil	Total Raw Clay	Total Flyash	Total Raw Mill Material	Total Kiln Feed
4/7/2025	n/a not used	2475.135	132.218	186.674	0	0	0	0	40.151	0	0	0	82.707	583.329	40.736	0	0	3540.95	2978.408
4/8/2025	n/a not used	1773.527	96.18	157.776	0	0	0	0	31.888	0	0	0	82.424	446.315	40.597	0	0	2628.707	2878.319
4/9/2025	n/a not used	2616.853	143.662	227.884	0	8.327	0	0	47.225	0	0	0	122.563	658.871	60.367	0	0	3885.752	3068.822
4/10/2025	n/a not used	1517.718	81.604	101.583	0	19.672	0	0	25.982	0	0	0	47.411	346.395	23.352	0	28.714	2192.431	3073.889
4/11/2025	n/a not used	3571.494	197.262	276.01	0	0	97.621	0	61.025	0	0	0	97.621	867.796	0	0	158.674	5327.503	3118.966

Birthday	date/time	RM Feed	Kiln Feed
45754.00	07-Apr-25 00:00:00	1.246209	122
45754.00	07-Apr-25 01:00:00	1.29324	122
45754.00	07-Apr-25 02:00:00	1.177613	119.7067
45754.00	07-Apr-25 03:00:00	1.209324	118
45754.00	07-Apr-25 04:00:00	94.80814	120.17
45754.00	07-Apr-25 05:00:00	219.2264	120.5505
45754.00	07-Apr-25 06:00:00	221.7993	121.4946
45754.00	07-Apr-25 07:00:00	222.3423	125.2509
45754.00	07-Apr-25 08:00:00	222.5209	123.3263
45754.00	07-Apr-25 09:00:00	217.2729	122.0667
45754.00	07-Apr-25 10:00:00	222.0829	119.6214
45754.00	07-Apr-25 11:00:00	221.5862	117.9441
45754.00	07-Apr-25 12:00:00	221.6207	119.3791
45754.00	07-Apr-25 13:00:00	221.6071	117.7519
45754.00	07-Apr-25 14:00:00	221.4474	107.2668
45754.00	07-Apr-25 15:00:00	221.4112	102.3736
45754.00	07-Apr-25 16:00:00	221.4015	103.6983
45754.00	07-Apr-25 17:00:00	221.381	114.2462
45754.00	07-Apr-25 18:00:00	221.036	119.647
45754.00	07-Apr-25 19:00:00	221.0417	114.8978
45754.00	07-Apr-25 20:00:00	220.7852	109.4008
45754.00	07-Apr-25 21:00:00	1.091559	117.8669
45754.00	07-Apr-25 22:00:00	1.054435	123.8699
45754.00	07-Apr-25 23:00:00	1.048291	123.4194
45755.00	08-Apr-25 00:00:00	1.043804	124.8785
45755.00	08-Apr-25 01:00:00	2.74527	126.3312
45755.00	08-Apr-25 02:00:00	1.064227	129.1348
45755.00	08-Apr-25 03:00:00	1.133366	121.613
45755.00	08-Apr-25 04:00:00	9.192325	124.5661
45755.00	08-Apr-25 05:00:00	224.9044	126.4368
45755.00	08-Apr-25 06:00:00	219.8656	109.9107
45755.00	08-Apr-25 07:00:00	216.4045	113.5058
45755.00	08-Apr-25 08:00:00	210.4051	112.941
45755.00	08-Apr-25 09:00:00	210.0672	114.4092

Row Labels	Sum of RM Feed	Sum of Kiln Feed
45754	3641.491675	2825.949089
45755	2826.54527	2828.004927
45756	4283.59435	2901.915064
45757	2222.142718	3016.633609
45758	5331.798475	2992.11778
Grand Total	18305.57249	14564.62047

45755.00	08-Apr-25 10:00:00	209.4995	116.7139
45755.00	08-Apr-25 11:00:00	209.5542	115.4473
45755.00	08-Apr-25 12:00:00	207.6425	113.2755
45755.00	08-Apr-25 13:00:00	178.2459	114.7121
45755.00	08-Apr-25 14:00:00	0.499541	112.31
45755.00	08-Apr-25 15:00:00	12.23557	111.8536
45755.00	08-Apr-25 16:00:00	0.403126	111.3664
45755.00	08-Apr-25 17:00:00	0.344374	118.138
45755.00	08-Apr-25 18:00:00	0.297069	124.7543
45755.00	08-Apr-25 19:00:00	0.298642	125.1321
45755.00	08-Apr-25 20:00:00	204.5642	119.5359
45755.00	08-Apr-25 21:00:00	234.4447	112.6681
45755.00	08-Apr-25 22:00:00	235.8383	117.2439
45755.00	08-Apr-25 23:00:00	235.8519	111.1266
45756.00	09-Apr-25 00:00:00	235.6156	126.8098
45756.00	09-Apr-25 01:00:00	235.7693	122.1574
45756.00	09-Apr-25 02:00:00	234.3265	124.6133
45756.00	09-Apr-25 03:00:00	235.8369	114.4088
45756.00	09-Apr-25 04:00:00	235.8648	117.32
45756.00	09-Apr-25 05:00:00	235.8133	117.0717
45756.00	09-Apr-25 06:00:00	235.7725	114.9092
45756.00	09-Apr-25 07:00:00	235.4523	110.0067
45756.00	09-Apr-25 08:00:00	235.3576	110.834
45756.00	09-Apr-25 09:00:00	235.0311	115
45756.00	09-Apr-25 10:00:00	234.8642	115.0128
45756.00	09-Apr-25 11:00:00	234.1303	117.3543
45756.00	09-Apr-25 12:00:00	234.5808	118.8864
45756.00	09-Apr-25 13:00:00	234.7581	122.4374
45756.00	09-Apr-25 14:00:00	234.8384	120.145
45756.00	09-Apr-25 15:00:00	177.1886	122.3944
45756.00	09-Apr-25 16:00:00	-0.12253	125
45756.00	09-Apr-25 17:00:00	-0.12198	126.0828
45756.00	09-Apr-25 18:00:00	-0.12142	129.647
45756.00	09-Apr-25 19:00:00	-0.12087	123.3589
45756.00	09-Apr-25 20:00:00	-0.12031	127.6337
45756.00	09-Apr-25 21:00:00	114.8094	128.6169
45756.00	09-Apr-25 22:00:00	240.2459	125.2319
45756.00	09-Apr-25 23:00:00	223.9457	126.9827
45757.00	10-Apr-25 00:00:00	223.1766	124.7194
45757.00	10-Apr-25 01:00:00	222.8609	120.42
45757.00	10-Apr-25 02:00:00	222.1001	123.0332
45757.00	10-Apr-25 03:00:00	216.8907	121.3959
45757.00	10-Apr-25 04:00:00	221.0289	127.2312
45757.00	10-Apr-25 05:00:00	1.663358	128
45757.00	10-Apr-25 06:00:00	1.04762	124.7218
45757.00	10-Apr-25 07:00:00	0.716659	125
45757.00	10-Apr-25 08:00:00	0.330497	125.4116
45757.00	10-Apr-25 09:00:00	0.268481	126.6958
45757.00	10-Apr-25 10:00:00	0.427941	126.5869
45757.00	10-Apr-25 11:00:00	0.406224	125.854
45757.00	10-Apr-25 12:00:00	0.439887	129.814
45757.00	10-Apr-25 13:00:00	0.518246	126.0436
45757.00	10-Apr-25 14:00:00	0.394802	112.8368

45757.00	10-Apr-25 15:00:00	9.593995	119.2823
45757.00	10-Apr-25 16:00:00	0.342459	124.0282
45757.00	10-Apr-25 17:00:00	0.219328	129.6803
45757.00	10-Apr-25 18:00:00	0.298317	131
45757.00	10-Apr-25 19:00:00	205.1309	131
45757.00	10-Apr-25 20:00:00	224.7036	131
45757.00	10-Apr-25 21:00:00	223.8795	130.9567
45757.00	10-Apr-25 22:00:00	222.8117	123.922
45757.00	10-Apr-25 23:00:00	222.892	128
45758.00	11-Apr-25 00:00:00	223.0775	122.5084
45758.00	11-Apr-25 01:00:00	222.6804	126.5483
45758.00	11-Apr-25 02:00:00	222.9229	118.79
45758.00	11-Apr-25 03:00:00	222.7593	120.2359
45758.00	11-Apr-25 04:00:00	222.7254	124.844
45758.00	11-Apr-25 05:00:00	222.4964	132
45758.00	11-Apr-25 06:00:00	222.5462	132
45758.00	11-Apr-25 07:00:00	222.2979	132
45758.00	11-Apr-25 08:00:00	222.2039	121.1218
45758.00	11-Apr-25 09:00:00	222.4269	125.0032
45758.00	11-Apr-25 10:00:00	222.507	126
45758.00	11-Apr-25 11:00:00	222.1396	126
45758.00	11-Apr-25 12:00:00	221.7511	126.7105
45758.00	11-Apr-25 13:00:00	221.9639	128.4041
45758.00	11-Apr-25 14:00:00	221.9412	130.3908
45758.00	11-Apr-25 15:00:00	221.856	130.9278
45758.00	11-Apr-25 16:00:00	221.8086	127.6548
45758.00	11-Apr-25 17:00:00	221.8602	126.6217
45758.00	11-Apr-25 18:00:00	221.6254	121.8596
45758.00	11-Apr-25 19:00:00	221.6787	124.3586
45758.00	11-Apr-25 20:00:00	221.5708	115.905
45758.00	11-Apr-25 21:00:00	221.9821	118
45758.00	11-Apr-25 22:00:00	221.0198	125.9341
45758.00	11-Apr-25 23:00:00	221.9573	108.299

ECA 6394-D78PR2 10.1.a.i CEM data for Nox, Opacity, and SO2

The CEM report can be generated using the DAS System which generates values used for regulatory compliance testing.

1-hour report for the period from 4/7/2025 12:00:00 AM to 4/11/2025 11:59:59 PM

Base Interval: 1-hour

Day	Time	NOx (F) (ppmv)		Opacity (%)	SO2 (F) (ppmv)	
7	0:00	304	O	7.21	175.8	
7	1:00	254	O	7.87	210.2	
7	2:00	223	O	7.97	236.1	
7	3:00	266	O	8.19	211.3	
7	4:00	329	O	8.17	241.6	
7	5:00	262	M	7.15	300	
7	6:00	270	O	7.22	314.3	
7	7:00	202	C	7.13	271.2	
7	8:00	232	C	6.99	350	U
7	9:00	228		6.09	293.6	
7	10:00	151		6.41	263.1	
7	11:00	191		5.2	302.5	
7	12:00	241		4.51	323.1	
7	13:00	138		4.1	191.1	
7	14:00	41		2.74	17	
7	15:00	135		8.15	138.3	
7	16:00	329		10.52	202.4	
7	17:00	574		11.93	205.5	
7	18:00	423		11.66	190.3	
7	19:00	210		11.46	192.2	
7	20:00	239		12.58	216.2	
7	21:00	470		12.48	260.9	
7	22:00	395		10.19	209	
7	23:00	265		10.83	226.4	
8	0:00	234		10.99	275	
8	1:00	194		8.65	268.1	
8	2:00	233		9.59	288.5	
8	3:00	190		9.21	305.6	
8	4:00	259		7.19	253.5	
8	5:00	115		7.46	335.1	
8	6:00	94		2.88	94.7	
8	7:00	270		3.47	248.3	
8	8:00	162		3.78	253.7	
8	9:00	281	W	3.6	263.4	W
8	10:00	306	W	3.15	273.1	W
8	11:00	235	W	2.8	257.6	W
8	12:00	269	W	3.56	219.1	W
8	13:00	209	W	3.1	165.4	W
8	14:00	213	W	3.99	175.9	W
8	15:00	255	W	4.37	107.9	W
8	16:00	321	W	5.13	125.6	W
8	17:00	388	W	4.43	203.6	W
8	18:00	332	W	3.81	218.3	W
8	19:00	172	W	4.14	236.5	W
8	20:00	57	W	3.81	324.5	W
8	21:00	31	W	4.02	323	W
8	22:00	7	W	2.26	17.9	W
8	23:00	254	W	6.5	266.9	W
9	0:00	255	W	3.74	330.5	W
9	1:00	97	W	3.23	113.3	W
9	2:00	277	W	4.04	135.7	W
9	3:00	200	W	3.79	139.5	W
9	4:00	258	W	3.98	139.9	W
9	5:00	114	W	4.52	169.1	W
9	6:00	236	W	4.2	126.8	W
9	7:00	117	W	4.48	129.8	W
9	8:00	328	W	4.86	107.6	W
9	9:00	348	W	4.59	136.6	W
9	10:00	317	W	4.25	165.4	W
9	11:00	176	W	3.77	230.4	W
9	12:00	179	W	3.68	256.4	W
9	13:00	232	W	3.34	327.3	W
9	14:00	130	W	3.18	301.8	W
9	15:00	256	W	3.35	240.6	W
9	16:00	411	W	3.85	197.1	W
9	17:00	350	W	3.94	197.8	W
9	18:00	226	W	4.64	228.7	W
9	19:00	196	W	5.1	231.1	W
9	20:00	212	W	5.17	316.2	W

9	21:00	215	W	4.34		314.6	W
9	22:00	83	W	3.13		326	W
9	23:00	135	W	3.1		292.8	W
10	0:00	156	W	3.42		305.7	W
10	1:00	164	W	3.17		231.2	W
10	2:00	197	W	3.01		334	W
10	3:00	92	W	3.15		295.8	W
10	4:00	159	W	3.06		333.9	W
10	5:00	138	W	4.11		317.7	W
10	6:00	125	W	5.26		215.9	W
10	7:00	296	W	5.18		226.2	W
10	8:00	208	W	5.34		239.1	W
10	9:00	164	W	5.44		240.2	W
10	10:00	198		5.45		243.9	
10	11:00	280		5.86		212.4	
10	12:00	289		5.31		218.4	
10	13:00	275		5.6		140	
10	14:00	319		5.15		170.1	
10	15:00	535		4.93		167.6	
10	16:00	699		4.24		167.2	
10	17:00	634		4.12		156.9	
10	18:00	590		4.31		156.1	
10	19:00	378		3.67		227.4	
10	20:00	315		3.4		266.1	
10	21:00	197		3.29		327.3	
10	22:00	172		3.29		302.9	
10	23:00	150		3.38		328.2	
11	0:00	160		4.14		314.3	
11	1:00	204		4.05		315.9	
11	2:00	99		4.27		308.9	
11	3:00	102		3.72		318.9	
11	4:00	268		3.96		250.4	
11	5:00	272		3.25		327.8	
11	6:00	312		3.32		290.9	
11	7:00	351		3.23		304.5	
11	8:00	111		3.04		314.2	
11	9:00	211		3.06		350	U
11	10:00	261		2.9		264.2	
11	11:00	234		2.91		337	
11	12:00	261		2.76		314.3	
11	13:00	341		2.79		270.3	
11	14:00	359		3.08		302.7	
11	15:00	342		3.09		233.1	
11	16:00	180		3.39		243.6	
11	17:00	278		3.26		194.7	
11	18:00	350		3.3		158.1	
11	19:00	365		3.36		143.8	
11	20:00	382		3.56		119.3	
11	21:00	372		3.4		151.2	
11	22:00	460		3.26		187.1	
11	23:00	319		3.4		208.4	
Avg.	Avg.	250		4.99		235.4	
Max.	Max.	699		12.58		350	
Min.	Min.	7		2.26		17	
#Valid	#Valid	111		120		120	

ECA 6394-D78PR2 10.1.a.i Oxygen in the Tower		
Date	Stage 1 O2 - East	Stage 1 O2 - West
07-Apr-25 00:00:00	6.513296416	5.87563529
07-Apr-25 01:00:00	6.492292122	5.88609228
07-Apr-25 02:00:00	6.706485283	5.331944326
07-Apr-25 03:00:00	6.721462281	5.15279969
07-Apr-25 04:00:00	6.779279772	4.952744105
07-Apr-25 05:00:00	6.232419665	4.453943779
07-Apr-25 06:00:00	6.032830433	4.492798134
07-Apr-25 07:00:00	6.11243006	4.145850089
07-Apr-25 08:00:00	6.046811827	3.836330864
07-Apr-25 09:00:00	6.341275471	3.930502282
07-Apr-25 10:00:00	6.297538128	4.052672231
07-Apr-25 11:00:00	6.539523349	4.205653991
07-Apr-25 12:00:00	6.518709316	4.188600663
07-Apr-25 13:00:00	6.886351027	4.881122048
07-Apr-25 14:00:00	6.474661886	4.583456069
07-Apr-25 15:00:00	7.405984842	4.820769787
07-Apr-25 16:00:00	6.962004064	4.549982598
07-Apr-25 17:00:00	7.073746622	4.758881928
07-Apr-25 18:00:00	6.00979656	5.136976041
07-Apr-25 19:00:00	6.345107605	4.899795846
07-Apr-25 20:00:00	7.310041619	4.898036825
07-Apr-25 21:00:00	7.861724965	5.173648448
07-Apr-25 22:00:00	7.217756846	4.613032033
07-Apr-25 23:00:00	6.802225416	4.257237665
08-Apr-25 00:00:00	6.74176218	4.242703761
08-Apr-25 01:00:00	6.431474089	4.051596618
08-Apr-25 02:00:00	6.487177059	4.244518128
08-Apr-25 03:00:00	6.432823866	4.700502371
08-Apr-25 04:00:00	6.415226023	4.329600901
08-Apr-25 05:00:00	5.758381855	4.155760807
08-Apr-25 06:00:00	6.17967168	4.812827613
08-Apr-25 07:00:00	7.160351133	4.741300201
08-Apr-25 08:00:00	7.88781007	4.889095287
08-Apr-25 09:00:00	7.727587928	4.75710097
08-Apr-25 10:00:00	7.347418551	4.249803904
08-Apr-25 11:00:00	7.901702583	4.380593405
08-Apr-25 12:00:00	8.420602659	4.580616421
08-Apr-25 13:00:00	8.670983755	5.048865197
08-Apr-25 14:00:00	8.424119693	5.167540166
08-Apr-25 15:00:00	8.674021303	6.065971746
08-Apr-25 16:00:00	8.348277548	5.862280167
08-Apr-25 17:00:00	7.217997797	4.634557402
08-Apr-25 18:00:00	7.125867132	4.781252978
08-Apr-25 19:00:00	6.983402835	4.887175943
08-Apr-25 20:00:00	5.663949589	4.444081012
08-Apr-25 21:00:00	4.76144746	3.826899299
08-Apr-25 22:00:00	4.394651243	3.76883599
08-Apr-25 23:00:00	5.651097227	4.098061696
09-Apr-25 00:00:00	5.4623746	3.935007392
09-Apr-25 01:00:00	5.410981697	4.51146703
09-Apr-25 02:00:00	7.039586959	5.104332495
09-Apr-25 03:00:00	7.306107427	5.013490372
09-Apr-25 04:00:00	7.784661662	5.046990919
09-Apr-25 05:00:00	7.730881255	4.96365584
09-Apr-25 06:00:00	7.947778925	5.74284804
09-Apr-25 07:00:00	7.996793247	5.873940429
09-Apr-25 08:00:00	8.0857863	5.721320148
09-Apr-25 09:00:00	7.919093374	5.612408231
09-Apr-25 10:00:00	7.599442031	5.617260142
09-Apr-25 11:00:00	6.697209514	4.94828578
09-Apr-25 12:00:00	6.085657426	4.356842086
09-Apr-25 13:00:00	5.575889821	4.146294747
09-Apr-25 14:00:00	5.286495062	3.978547193
09-Apr-25 15:00:00	6.093947225	4.896180768
09-Apr-25 16:00:00	7.063726338	5.803200801
09-Apr-25 17:00:00	7.267181582	5.711694499
09-Apr-25 18:00:00	7.13834175	5.653780389
09-Apr-25 19:00:00	6.305265006	4.999667173
09-Apr-25 20:00:00	6.135414258	4.087282996
09-Apr-25 21:00:00	6.393904587	4.208538148
09-Apr-25 22:00:00	5.856220745	4.283064588
09-Apr-25 23:00:00	6.138263546	4.537858904
10-Apr-25 00:00:00	6.572725697	5.207460487
10-Apr-25 01:00:00	5.618204069	3.952083781

10-Apr-25 02:00:00	6.321518234	4.319201389
10-Apr-25 03:00:00	6.429432254	4.593854336
10-Apr-25 04:00:00	7.201680645	4.741006602
10-Apr-25 05:00:00	7.954035103	5.178396796
10-Apr-25 06:00:00	7.041247059	5.114219682
10-Apr-25 07:00:00	6.69127521	4.96736009
10-Apr-25 08:00:00	6.46452309	4.94066484
10-Apr-25 09:00:00	5.988493615	4.698552152
10-Apr-25 10:00:00	6.183785745	4.88668264
10-Apr-25 11:00:00	6.209221514	4.96668305
10-Apr-25 12:00:00	6.253784427	5.074850384
10-Apr-25 13:00:00	6.888496442	5.732263347
10-Apr-25 14:00:00	6.201718883	4.741840849
10-Apr-25 15:00:00	6.998764817	4.969987957
10-Apr-25 16:00:00	6.849420354	4.991176794
10-Apr-25 17:00:00	6.780750311	5.066943195
10-Apr-25 18:00:00	6.98232447	5.638453887
10-Apr-25 19:00:00	6.421199228	4.884000129
10-Apr-25 20:00:00	5.861512598	4.659573025
10-Apr-25 21:00:00	5.50777743	4.547973721
10-Apr-25 22:00:00	5.806669937	5.26997639
10-Apr-25 23:00:00	5.342158621	4.449198428
11-Apr-25 00:00:00	5.323661476	4.60002162
11-Apr-25 01:00:00	5.575677209	4.563342279
11-Apr-25 02:00:00	5.3152661	4.587710698
11-Apr-25 03:00:00	5.270931411	4.732226976
11-Apr-25 04:00:00	5.499368648	4.097519562
11-Apr-25 05:00:00	5.366561443	3.950064317
11-Apr-25 06:00:00	5.722754478	4.621485118
11-Apr-25 07:00:00	6.226447381	5.186982557
11-Apr-25 08:00:00	5.51104807	4.867331423
11-Apr-25 09:00:00	5.675028975	4.535049346
11-Apr-25 10:00:00	5.737033585	4.736041764
11-Apr-25 11:00:00	5.807900641	4.16070124
11-Apr-25 12:00:00	6.068997133	4.109482302
11-Apr-25 13:00:00	6.407005623	4.693533453
11-Apr-25 14:00:00	6.590522124	5.277312661
11-Apr-25 15:00:00	6.998602123	5.923210332
11-Apr-25 16:00:00	6.265459874	5.487754111
11-Apr-25 17:00:00	6.434400064	5.567004584
11-Apr-25 18:00:00	4.956362135	5.565123579
11-Apr-25 19:00:00	7.058940383	5.91855497
11-Apr-25 20:00:00	7.076620214	6.122258001
11-Apr-25 21:00:00	6.332624975	5.43827947
11-Apr-25 22:00:00	6.808849145	5.507388469
11-Apr-25 23:00:00	5.777215848	4.798010559

ECA6394-D78PR2 10.1.a.ii Carbon Monoxide in the Tower (ppm)		
Date/Time	CO Stage 1 East	CO Stage 1 West
07-Apr-25 00:00:00	1739.665667	2926.79603
07-Apr-25 01:00:00	1740.309507	2926.509302
07-Apr-25 02:00:00	1702.686267	3418.381477
07-Apr-25 03:00:00	1677.076815	3438.23417
07-Apr-25 04:00:00	1664.396919	3370.43736
07-Apr-25 05:00:00	1741.312432	3864.151501
07-Apr-25 06:00:00	1767.723526	3861.18463
07-Apr-25 07:00:00	1893.008301	4179.476838
07-Apr-25 08:00:00	1952.695814	4572.480259
07-Apr-25 09:00:00	2031.249435	4244.420035
07-Apr-25 10:00:00	2101.965032	4592.092342
07-Apr-25 11:00:00	1851.344402	3998.301431
07-Apr-25 12:00:00	1872.201942	3936.607725
07-Apr-25 13:00:00	4007.945985	5931.611668
07-Apr-25 14:00:00	6625.520619	8548.97086
07-Apr-25 15:00:00	1843.662076	3508.784704
07-Apr-25 16:00:00	1725.23382	2831.447279
07-Apr-25 17:00:00	1673.272349	2704.484229
07-Apr-25 18:00:00	1646.822425	2998.662205
07-Apr-25 19:00:00	1790.763567	2897.513839
07-Apr-25 20:00:00	1817.615786	3816.485943
07-Apr-25 21:00:00	1634.141237	3348.951022
07-Apr-25 22:00:00	2216.972963	4367.138935
07-Apr-25 23:00:00	2236.215624	4982.552573
08-Apr-25 00:00:00	2204.786939	5095.115718
08-Apr-25 01:00:00	2800.083301	5488.240738
08-Apr-25 02:00:00	2902.983683	5281.12097
08-Apr-25 03:00:00	2662.458354	5118.587449
08-Apr-25 04:00:00	2130.247107	4401.426041
08-Apr-25 05:00:00	4108.161116	6078.302813
08-Apr-25 06:00:00	5539.815534	5834.81336
08-Apr-25 07:00:00	1780.298117	3636.369626
08-Apr-25 08:00:00	1724.285509	3800.018995
08-Apr-25 09:00:00	1564.677208	3311.463638
08-Apr-25 10:00:00	1600.616989	3769.175761
08-Apr-25 11:00:00	1461.610342	3612.602688
08-Apr-25 12:00:00	1330.835884	3096.109578
08-Apr-25 13:00:00	1536.248845	3255.381867
08-Apr-25 14:00:00	1528.463753	3010.580558
08-Apr-25 15:00:00	1651.814916	2912.92844
08-Apr-25 16:00:00	1582.051342	2867.921268
08-Apr-25 17:00:00	1680.08813	3209.51514
08-Apr-25 18:00:00	1827.382485	3695.284613
08-Apr-25 19:00:00	2206.088974	4574.150661
08-Apr-25 20:00:00	4690.438345	6743.254076
08-Apr-25 21:00:00	5352.095144	7375.691653
08-Apr-25 22:00:00	6770.746343	7993.923016
08-Apr-25 23:00:00	2658.83718	4159.04581
09-Apr-25 00:00:00	2288.937016	4528.400675
09-Apr-25 01:00:00	3931.409771	5749.02855
09-Apr-25 02:00:00	1520.400954	2962.43645
09-Apr-25 03:00:00	1510.066218	3495.191332
09-Apr-25 04:00:00	1466.699103	2952.435992
09-Apr-25 05:00:00	1576.758402	4192.273715
09-Apr-25 06:00:00	1514.470223	2889.644888
09-Apr-25 07:00:00	1540.731627	3597.008721
09-Apr-25 08:00:00	1366.222485	2573.479704
09-Apr-25 09:00:00	1405.360253	2578.560477
09-Apr-25 10:00:00	1518.559868	2696.892327
09-Apr-25 11:00:00	2008.47353	4210.408001
09-Apr-25 12:00:00	2188.180155	4788.359462
09-Apr-25 13:00:00	2173.715251	4911.568735
09-Apr-25 14:00:00	2339.933737	5105.635973
09-Apr-25 15:00:00	1751.099731	3833.518468
09-Apr-25 16:00:00	1456.930225	2832.240598
09-Apr-25 17:00:00	1483.526799	3190.540382
09-Apr-25 18:00:00	1595.075145	3753.293616
09-Apr-25 19:00:00	1821.755376	4396.758082
09-Apr-25 20:00:00	2032.568233	4940.950674
09-Apr-25 21:00:00	2226.736146	5268.992425
09-Apr-25 22:00:00	3689.247492	6507.129991
09-Apr-25 23:00:00	2312.219452	5389.41108
10-Apr-25 00:00:00	2386.43422	4649.811045
10-Apr-25 01:00:00	3455.687599	5325.7109

10-Apr-25 02:00:00	2250.806875	4672.259961
10-Apr-25 03:00:00	2936.972035	5638.979001
10-Apr-25 04:00:00	2164.26169	4960.117504
10-Apr-25 05:00:00	2063.743895	4885.590637
10-Apr-25 06:00:00	2041.1312	4881.886525
10-Apr-25 07:00:00	1802.62411	3809.831599
10-Apr-25 08:00:00	1924.429067	4155.509544
10-Apr-25 09:00:00	2144.756213	4765.852651
10-Apr-25 10:00:00	2208.290778	4671.27162
10-Apr-25 11:00:00	1897.404256	4042.004695
10-Apr-25 12:00:00	1893.81073	4143.903652
10-Apr-25 13:00:00	1977.484369	4062.840705
10-Apr-25 14:00:00	1812.321245	3715.821118
10-Apr-25 15:00:00	1455.089911	2970.399075
10-Apr-25 16:00:00	1415.112334	3191.103875
10-Apr-25 17:00:00	1521.739905	3459.700006
10-Apr-25 18:00:00	1560.784825	3174.181876
10-Apr-25 19:00:00	1862.937987	4236.039145
10-Apr-25 20:00:00	1951.471587	4665.571076
10-Apr-25 21:00:00	2453.482233	5267.098746
10-Apr-25 22:00:00	2538.289213	5095.255949
10-Apr-25 23:00:00	2731.760837	5530.145155
11-Apr-25 00:00:00	2865.529937	5190.529939
11-Apr-25 01:00:00	2396.504928	5199.694062
11-Apr-25 02:00:00	2507.585056	5742.044929
11-Apr-25 03:00:00	2762.865147	5899.320113
11-Apr-25 04:00:00	1932.82781	4836.487409
11-Apr-25 05:00:00	2073.715436	5041.579969
11-Apr-25 06:00:00	1964.214562	4502.928109
11-Apr-25 07:00:00	1750.213742	3858.959368
11-Apr-25 08:00:00	2406.961519	5058.147222
11-Apr-25 09:00:00	2042.363511	4552.206811
11-Apr-25 10:00:00	2027.874876	4374.643744
11-Apr-25 11:00:00	2259.84297	4811.417585
11-Apr-25 12:00:00	2240.123593	4866.526217
11-Apr-25 13:00:00	1990.075234	4341.177259
11-Apr-25 14:00:00	1620.561316	3819.340395
11-Apr-25 15:00:00	1588.435442	3270.887005
11-Apr-25 16:00:00	1712.180603	4499.367037
11-Apr-25 17:00:00	1666.758097	3705.589102
11-Apr-25 18:00:00	1573.118033	2419.026309
11-Apr-25 19:00:00	1527.202447	2972.624584
11-Apr-25 20:00:00	1480.196631	2628.569162
11-Apr-25 21:00:00	1569.670083	3034.073763
11-Apr-25 22:00:00	1597.790251	3109.277361
11-Apr-25 23:00:00	1916.337703	3844.006118

ECA6394-D78PR2 10.1.a.iii Temperature in the Process		
date	Riser Temp	Burner Temp
07-Apr-25 00:00:00	821.0831859	1312.489512
07-Apr-25 01:00:00	821.5678636	1323.382454
07-Apr-25 02:00:00	824.1378034	1315.23093
07-Apr-25 03:00:00	824.1411969	1282.886516
07-Apr-25 04:00:00	825.9384406	1312.298129
07-Apr-25 05:00:00	827.8331798	1381.842395
07-Apr-25 06:00:00	827.6532585	1371.967479
07-Apr-25 07:00:00	827.9966535	1349.731888
07-Apr-25 08:00:00	827.7123448	1329.800376
07-Apr-25 09:00:00	827.746922	[-11057] Not Enough Values For Calculation
07-Apr-25 10:00:00	826.8555175	[-11057] Not Enough Values For Calculation
07-Apr-25 11:00:00	826.93557	[-11057] Not Enough Values For Calculation
07-Apr-25 12:00:00	828.6974825	1242.280853
07-Apr-25 13:00:00	829.4510407	1266.374237
07-Apr-25 14:00:00	830.9053924	1172.125031
07-Apr-25 15:00:00	822.1626569	1201.142492
07-Apr-25 16:00:00	824.2833028	1209.608721
07-Apr-25 17:00:00	826.4361681	1284.285258
07-Apr-25 18:00:00	827.3193359	1284.240802
07-Apr-25 19:00:00	828.3756765	1249.590138
07-Apr-25 20:00:00	827.5322289	1205.422957
07-Apr-25 21:00:00	827.106171	1234.817973
07-Apr-25 22:00:00	831.3951595	1266.91631
07-Apr-25 23:00:00	831.3216793	1249.194068
08-Apr-25 00:00:00	833.3978182	1251.536486
08-Apr-25 01:00:00	834.6707104	1246.353791
08-Apr-25 02:00:00	833.8921439	1198.157262
08-Apr-25 03:00:00	832.9385239	1205.931251
08-Apr-25 04:00:00	831.152535	1226.393481
08-Apr-25 05:00:00	838.7276577	1238.600572
08-Apr-25 06:00:00	834.6581759	1051.250518
08-Apr-25 07:00:00	827.2159065	1196.096992
08-Apr-25 08:00:00	826.7859742	1148.122396
08-Apr-25 09:00:00	829.0249357	1120.547163
08-Apr-25 10:00:00	831.047475	1082.373303
08-Apr-25 11:00:00	829.9841544	1267.731816
08-Apr-25 12:00:00	823.193939	1255.525728
08-Apr-25 13:00:00	824.3717624	1228.546432
08-Apr-25 14:00:00	825.9743603	1175.8279
08-Apr-25 15:00:00	819.2756795	1204.82957
08-Apr-25 16:00:00	821.8099935	1212.483178
08-Apr-25 17:00:00	825.9097321	1219.481117
08-Apr-25 18:00:00	829.273278	1275.244357
08-Apr-25 19:00:00	830.0387551	1226.806116
08-Apr-25 20:00:00	838.5298886	1249.348091
08-Apr-25 21:00:00	843.8646671	1249.182098
08-Apr-25 22:00:00	842.6821754	1313.396345
08-Apr-25 23:00:00	832.5188221	1313.455231
09-Apr-25 00:00:00	835.5209257	1280.244934
09-Apr-25 01:00:00	840.652542	1061.311039
09-Apr-25 02:00:00	827.9802397	938.6296872
09-Apr-25 03:00:00	828.1036646	996.6225038
09-Apr-25 04:00:00	827.2216898	1145.457465
09-Apr-25 05:00:00	829.2332599	1165.430413
09-Apr-25 06:00:00	825.9893806	1158.060066
09-Apr-25 07:00:00	823.3096911	1119.603265
09-Apr-25 08:00:00	820.7943318	1085.556622
09-Apr-25 09:00:00	824.9693305	1210.377873
09-Apr-25 10:00:00	825.1475257	1233.376762
09-Apr-25 11:00:00	826.8122537	1212.805719
09-Apr-25 12:00:00	828.182049	1196.171244
09-Apr-25 13:00:00	831.5404287	1264.569973
09-Apr-25 14:00:00	835.4811731	1253.066132
09-Apr-25 15:00:00	829.7905154	1195.530097
09-Apr-25 16:00:00	822.9233219	1227.649321
09-Apr-25 17:00:00	824.6532213	1225.527322
09-Apr-25 18:00:00	826.6270815	1189.177124
09-Apr-25 19:00:00	826.4608042	1135.632828
09-Apr-25 20:00:00	832.3213111	1186.149312
09-Apr-25 21:00:00	831.5063917	1217.336079
09-Apr-25 22:00:00	836.544976	1201.854
09-Apr-25 23:00:00	833.665069	1210.97954
10-Apr-25 00:00:00	831.2438983	1213.905537
10-Apr-25 01:00:00	832.1784812	1222.009159

10-Apr-25 02:00:00	832.9741769	1236.178334
10-Apr-25 03:00:00	838.2221645	1138.803592
10-Apr-25 04:00:00	834.5309572	1179.257478
10-Apr-25 05:00:00	833.0511285	1176.46068
10-Apr-25 06:00:00	829.9639895	1098.159453
10-Apr-25 07:00:00	826.0590453	1163.815253
10-Apr-25 08:00:00	828.3536633	1193.607623
10-Apr-25 09:00:00	830.4650425	1158.384368
10-Apr-25 10:00:00	829.4725993	1147.844557
10-Apr-25 11:00:00	827.673422	1161.056694
10-Apr-25 12:00:00	830.0396455	1179.88302
10-Apr-25 13:00:00	829.0889837	1236.24646
10-Apr-25 14:00:00	824.4280528	1040.441916
10-Apr-25 15:00:00	823.7978305	1248.744093
10-Apr-25 16:00:00	823.6446008	1297.774495
10-Apr-25 17:00:00	821.2698147	1317.101025
10-Apr-25 18:00:00	819.1075277	1278.65329
10-Apr-25 19:00:00	820.3135451	1279.306774
10-Apr-25 20:00:00	822.4250797	1284.058576
10-Apr-25 21:00:00	824.9112229	1251.492419
10-Apr-25 22:00:00	820.6163415	1219.601728
10-Apr-25 23:00:00	817.5552979	1200.698461
11-Apr-25 00:00:00	812.5188793	1211.453598
11-Apr-25 01:00:00	816.1629396	1228.653019
11-Apr-25 02:00:00	816.3403681	1187.957132
11-Apr-25 03:00:00	816.5561013	1161.288882
11-Apr-25 04:00:00	794.5681084	1034.193902
11-Apr-25 05:00:00	806.0386624	1232.454421
11-Apr-25 06:00:00	816.7682002	1233.676311
11-Apr-25 07:00:00	812.1635137	1229.87787
11-Apr-25 08:00:00	819.0505658	1109.357946
11-Apr-25 09:00:00	805.7592367	1104.976031
11-Apr-25 10:00:00	798.8557052	1210.970366
11-Apr-25 11:00:00	799.3838538	1205.764448
11-Apr-25 12:00:00	799.1387747	1238.322706
11-Apr-25 13:00:00	800.575682	1255.114374
11-Apr-25 14:00:00	801.232993	1112.154115
11-Apr-25 15:00:00	796.9208316	1223.643996
11-Apr-25 16:00:00	795.1793491	1200.498184
11-Apr-25 17:00:00	793.5527435	1236.345777
11-Apr-25 18:00:00	790.8061886	1237.379571
11-Apr-25 19:00:00	787.6322781	1254.210642
11-Apr-25 20:00:00	773.676485	1202.981602
11-Apr-25 21:00:00	763.9325126	1264.844348
11-Apr-25 22:00:00	765.2556519	1321.164154
11-Apr-25 23:00:00	770.2115365	1133.687029

ECA 6394-D78PR2 10.1.a.iv Presure in the Process - Stage 1			
Date/Time	Pressure - Stage 1 Ea	Pressure - Stage 1 W	kiln
07-Apr-25 00:00:00	-374.9919697	-343.7313243	Running
07-Apr-25 01:00:00	-374.5441649	-340.0964397	Running
07-Apr-25 02:00:00	-376.867212	-336.3203169	Running
07-Apr-25 03:00:00	-375.8174145	-334.8880213	Running
07-Apr-25 04:00:00	-376.5321785	-323.3272705	Running
07-Apr-25 05:00:00	-355.863698	-306.9956243	Running
07-Apr-25 06:00:00	-360.4190448	-314.0022453	Running
07-Apr-25 07:00:00	-370.9413353	-316.8780317	Running
07-Apr-25 08:00:00	-359.0474125	-310.8918923	Running
07-Apr-25 09:00:00	-364.5490429	-315.0587012	Running
07-Apr-25 10:00:00	-362.9885036	-315.4720982	Running
07-Apr-25 11:00:00	-357.8746733	-315.3002521	Running
07-Apr-25 12:00:00	-357.4402122	-319.9858227	Running
07-Apr-25 13:00:00	-358.8295908	-305.3106969	Running
07-Apr-25 14:00:00	-344.359199	-275.3716056	Running
07-Apr-25 15:00:00	-325.1699018	-259.8714622	Running
07-Apr-25 16:00:00	-328.0551933	-266.7534838	Running
07-Apr-25 17:00:00	-342.5748022	-281.5504086	Running
07-Apr-25 18:00:00	-352.8628655	-289.3199549	Running
07-Apr-25 19:00:00	-347.2115131	-278.479745	Running
07-Apr-25 20:00:00	-341.6187258	-273.9197944	Running
07-Apr-25 21:00:00	-376.7551212	-311.1178659	Running
07-Apr-25 22:00:00	-377.020618	-306.0201321	Running
07-Apr-25 23:00:00	-375.7994684	-305.3484807	Running
08-Apr-25 00:00:00	-381.9242585	-307.3993758	Running
08-Apr-25 01:00:00	-383.7051552	-308.2731774	Running
08-Apr-25 02:00:00	-386.6071968	-311.1896554	Running
08-Apr-25 03:00:00	-369.7898245	-293.3349095	Running
08-Apr-25 04:00:00	-377.2303274	-303.3828266	Running
08-Apr-25 05:00:00	-352.5659993	-278.4100698	Running
08-Apr-25 06:00:00	-324.46998	-258.6952759	Running
08-Apr-25 07:00:00	-332.7582458	-266.0626314	Running
08-Apr-25 08:00:00	-343.7077019	-272.6473128	Running
08-Apr-25 09:00:00	-344.316179	-273.8418868	Running
08-Apr-25 10:00:00	-343.2372456	-273.5344558	Running
08-Apr-25 11:00:00	-346.7582469	-274.0845382	Running
08-Apr-25 12:00:00	-355.4467679	-278.4899945	Running
08-Apr-25 13:00:00	-370.785115	-289.6732012	Running
08-Apr-25 14:00:00	-383.9546405	-306.3917423	Running
08-Apr-25 15:00:00	-382.2135076	-305.1831254	Running
08-Apr-25 16:00:00	-384.1293896	-305.1287752	Running
08-Apr-25 17:00:00	-387.4711337	-303.4979672	Running
08-Apr-25 18:00:00	-402.9576259	-311.4519511	Running
08-Apr-25 19:00:00	-402.5981576	-310.2497316	Running
08-Apr-25 20:00:00	-358.5580793	-278.3726262	Running
08-Apr-25 21:00:00	-340.978523	-261.522504	Running
08-Apr-25 22:00:00	-337.7341181	-263.2216709	Running
08-Apr-25 23:00:00	-342.8819703	-265.6442378	Running
09-Apr-25 00:00:00	-344.6125424	-265.9470226	Running
09-Apr-25 01:00:00	-346.4079387	-268.2159765	Running
09-Apr-25 02:00:00	-347.9502727	-276.0755944	Running
09-Apr-25 03:00:00	-341.1222174	-266.3600845	Running
09-Apr-25 04:00:00	-346.5957619	-272.1917076	Running
09-Apr-25 05:00:00	-345.5269984	-270.3636954	Running
09-Apr-25 06:00:00	-346.2688777	-273.7808883	Running
09-Apr-25 07:00:00	-343.2013916	-266.7927671	Running
09-Apr-25 08:00:00	-342.1762894	-267.4070381	Running
09-Apr-25 09:00:00	-346.2643277	-270.9424681	Running
09-Apr-25 10:00:00	-344.3150229	-270.68972	Running
09-Apr-25 11:00:00	-343.4873556	-271.1229519	Running
09-Apr-25 12:00:00	-344.3216674	-274.3220203	Running
09-Apr-25 13:00:00	-341.1873964	-277.4600142	Running
09-Apr-25 14:00:00	-345.1243734	-274.3656557	Running
09-Apr-25 15:00:00	-359.4229614	-288.8133712	Running
09-Apr-25 16:00:00	-384.3385746	-322.1688028	Running
09-Apr-25 17:00:00	-387.1858245	-320.2988958	Running
09-Apr-25 18:00:00	-394.7580658	-321.406955	Running
09-Apr-25 19:00:00	-384.8998735	-309.8681997	Running
09-Apr-25 20:00:00	-381.6329626	-310.0752987	Running
09-Apr-25 21:00:00	-375.8355007	-301.390183	Running
09-Apr-25 22:00:00	-365.1673354	-288.8333355	Running
09-Apr-25 23:00:00	-374.0282162	-296.9477064	Running
10-Apr-25 00:00:00	-376.7500017	-300.4179298	Running
10-Apr-25 01:00:00	-371.3224389	-296.2888995	Running

10-Apr-25 02:00:00	-367.2613005	-293.2851481	Running
10-Apr-25 03:00:00	-369.4043847	-293.4736775	Running
10-Apr-25 04:00:00	-374.8857738	-295.0059446	Running
10-Apr-25 05:00:00	-392.4789525	-308.9345476	Running
10-Apr-25 06:00:00	-383.0915809	-304.8271996	Running
10-Apr-25 07:00:00	-386.0581747	-309.2991326	Running
10-Apr-25 08:00:00	-386.744682	-308.4064526	Running
10-Apr-25 09:00:00	-385.288516	-306.4819551	Running
10-Apr-25 10:00:00	-390.844472	-312.2261055	Running
10-Apr-25 11:00:00	-396.0281848	-322.0694071	Running
10-Apr-25 12:00:00	-395.9078301	-319.7675134	Running
10-Apr-25 13:00:00	-376.6470711	-305.2861189	Running
10-Apr-25 14:00:00	-369.1045018	-292.0759878	Running
10-Apr-25 15:00:00	-375.5191246	-301.964909	Running
10-Apr-25 16:00:00	-377.4932195	-302.6912089	Running
10-Apr-25 17:00:00	-383.0608776	-305.0233483	Running
10-Apr-25 18:00:00	-374.4459974	-303.9354657	Running
10-Apr-25 19:00:00	-356.697733	-285.508281	Running
10-Apr-25 20:00:00	-358.4527925	-287.0194277	Running
10-Apr-25 21:00:00	-354.9644666	-288.058238	Running
10-Apr-25 22:00:00	-351.1604767	-286.3230563	Running
10-Apr-25 23:00:00	-360.3653018	-292.6134399	Running
11-Apr-25 00:00:00	-358.7106608	-287.7920765	Running
11-Apr-25 01:00:00	-368.6846993	-289.6314216	Running
11-Apr-25 02:00:00	-369.8262859	-278.8635051	Running
11-Apr-25 03:00:00	-372.5955077	-282.6120564	Running
11-Apr-25 04:00:00	-373.9709492	-297.0734667	Running
11-Apr-25 05:00:00	-390.4101304	-303.7891917	Running
11-Apr-25 06:00:00	-388.916006	-308.1742278	Running
11-Apr-25 07:00:00	-398.4254618	-322.2943034	Running
11-Apr-25 08:00:00	-382.2319238	-314.9917359	Running
11-Apr-25 09:00:00	-400.0955028	-346.968618	Running
11-Apr-25 10:00:00	-398.0841363	-345.5739512	Running
11-Apr-25 11:00:00	-401.4755941	-345.5540022	Running
11-Apr-25 12:00:00	-405.4929563	-354.3844569	Running
11-Apr-25 13:00:00	-415.4840097	-362.8010683	Running
11-Apr-25 14:00:00	-423.1342709	-371.717859	Running
11-Apr-25 15:00:00	-413.9324611	-366.5231063	Running
11-Apr-25 16:00:00	-406.0831485	-358.7803977	Running
11-Apr-25 17:00:00	-417.2176779	-372.5664769	Running
11-Apr-25 18:00:00	-415.3626154	-370.7902191	Running
11-Apr-25 19:00:00	-415.6816332	-371.1068914	Running
11-Apr-25 20:00:00	-401.4460094	-349.4628423	Running
11-Apr-25 21:00:00	-405.379211	-353.3288838	Running
11-Apr-25 22:00:00	-412.4556221	-356.5095174	Running
11-Apr-25 23:00:00	-383.2951012	-334.4037454	Running

ECA 6394-D78PR2 10.1.a.iv Presure in the Process - Kiln and Raw Mill					
Date	Presesure - Riser	Pressure - Kiln Hood	Pressure - Raw Mill	Kiln	Raw Mill
07-Apr-25 00:00:00	-0.853686604	-3.039303515	-9.992819842	Running	Stopped
07-Apr-25 01:00:00	-19.64185085	-3.133968756	-4.733417765	Running	Stopped
07-Apr-25 02:00:00	-18.63118557	-3.053464932	8.296457214	Running	Stopped
07-Apr-25 03:00:00	-17.98955292	-3.078865711	-5.168908119	Running	Stopped
07-Apr-25 04:00:00	-16.78600883	-2.889751811	-6.810084165	Running	Stopped
07-Apr-25 05:00:00	-16.64031791	-3.102270804	-14.77663618	Running	Running
07-Apr-25 06:00:00	-16.37745744	-3.052882356	-13.01807679	Running	Running
07-Apr-25 07:00:00	-16.86072996	-3.091920329	-16.90179847	Running	Running
07-Apr-25 08:00:00	-20.28246388	-2.894390446	-14.0804999	Running	Running
07-Apr-25 09:00:00	-21.0863877	-2.73032165	-20.91575255	Running	Running
07-Apr-25 10:00:00	-20.01221902	-3.049858543	-19.93895185	Running	Running
07-Apr-25 11:00:00	-19.68252937	-3.056960239	-18.59832808	Running	Running
07-Apr-25 12:00:00	-21.62343526	-3.0808589	-20.30840289	Running	Running
07-Apr-25 13:00:00	-22.7433494	-2.761806392	-18.10143352	Running	Running
07-Apr-25 14:00:00	-23.96848805	-3.355301302	-28.71671057	Running	Running
07-Apr-25 15:00:00	-24.80478856	-3.164454236	-43.77594748	Running	Running
07-Apr-25 16:00:00	-23.43601437	-3.196428488	-20.74836831	Running	Running
07-Apr-25 17:00:00	-22.5185596	-3.026865347	-0.86342421	Running	Running
07-Apr-25 18:00:00	-25.03482768	-3.013039986	-6.797623816	Running	Running
07-Apr-25 19:00:00	-25.26407481	-3.082337676	-5.242067973	Running	Running
07-Apr-25 20:00:00	-18.14601489	-3.140163379	-31.4898692	Running	Running
07-Apr-25 21:00:00	-20.73303989	-3.072572608	-51.06038134	Running	Stopped
07-Apr-25 22:00:00	-25.93676077	-2.988576242	-17.13836022	Running	Stopped
07-Apr-25 23:00:00	-27.79925399	-3.058654063	-5.737114906	Running	Stopped
08-Apr-25 00:00:00	-15.6922455	-3.165017585	-4.592148812	Running	Stopped
08-Apr-25 01:00:00	-18.25789989	-3.003773364	-3.712956342	Running	Stopped
08-Apr-25 02:00:00	-24.01873855	-3.053232869	4.768367038	Running	Stopped
08-Apr-25 03:00:00	-24.09218694	-3.198328483	16.80992966	Running	Stopped
08-Apr-25 04:00:00	-21.87185569	-2.872353118	-12.38192298	Running	Stopped
08-Apr-25 05:00:00	-21.04121322	-2.962909559	-5.413310885	Running	Running
08-Apr-25 06:00:00	-10.79355293	-3.234481486	-40.7148787	Running	Running
08-Apr-25 07:00:00	-2.819381645	-2.931246742	-30.1905326	Running	Running
08-Apr-25 08:00:00	-4.092907713	-3.058595354	-18.4758285	Running	Running
08-Apr-25 09:00:00	-5.131505289	-3.000696303	-24.29313442	Running	Running
08-Apr-25 10:00:00	-5.73007795	-2.954852407	-13.58426382	Running	Running
08-Apr-25 11:00:00	-6.383298152	-3.1318052	-19.44916905	Running	Running
08-Apr-25 12:00:00	-7.245429942	-2.995282926	-42.70186731	Running	Running
08-Apr-25 13:00:00	-19.88090489	-2.935656138	-56.32153291	Running	Running
08-Apr-25 14:00:00	-32.01711582	-3.214480021	-16.12651256	Running	Stopped
08-Apr-25 15:00:00	-34.93003318	-3.062907488	-3.031547945	Running	Stopped
08-Apr-25 16:00:00	-32.55257926	-3.095053834	-3.676407326	Running	Stopped
08-Apr-25 17:00:00	-34.14296851	-2.961347721	-6.087052626	Running	Stopped
08-Apr-25 18:00:00	-37.06204645	-2.994092375	-8.771911744	Running	Stopped
08-Apr-25 19:00:00	-41.25108742	-3.002099143	-7.491252009	Running	Stopped
08-Apr-25 20:00:00	-37.13566681	-3.022717343	-15.86454156	Running	Stopped
08-Apr-25 21:00:00	-29.59838301	-3.1746056	-26.007928	Running	Running
08-Apr-25 22:00:00	-17.41396793	-2.998555112	-38.81933016	Running	Running
08-Apr-25 23:00:00	-7.459731724	-3.299894226	-15.57377224	Running	Running
09-Apr-25 00:00:00	-1.159954634	-2.82829553	-9.484265598	Running	Running
09-Apr-25 01:00:00	-15.54858901	-2.588628538	-34.16117331	Running	Running
09-Apr-25 02:00:00	-19.70676388	-2.987413119	-40.08578878	Running	Running
09-Apr-25 03:00:00	-20.90763196	-3.058284227	-39.0413506	Running	Running
09-Apr-25 04:00:00	-21.57404807	-2.961844001	-42.76480603	Running	Running
09-Apr-25 05:00:00	-24.09336112	-3.126837014	-38.487851	Running	Running
09-Apr-25 06:00:00	-23.54361412	-3.12713021	-45.60762341	Running	Running
09-Apr-25 07:00:00	-26.31118194	-3.014704069	-42.76291988	Running	Running
09-Apr-25 08:00:00	-25.40603989	-3.080879876	-42.53709412	Running	Running
09-Apr-25 09:00:00	-25.52936134	-2.995195245	-42.09495027	Running	Running
09-Apr-25 10:00:00	-13.65383377	-2.978724125	-37.43409716	Running	Running
09-Apr-25 11:00:00	-4.089402173	-3.140782714	-37.55647206	Running	Running
09-Apr-25 12:00:00	-4.414155733	-3.016769603	-39.08826405	Running	Running
09-Apr-25 13:00:00	-14.66996113	-2.959400482	-35.8924495	Running	Running
09-Apr-25 14:00:00	-19.91655098	-3.332796785	-23.77925146	Running	Running
09-Apr-25 15:00:00	-21.11855512	-2.951564359	-35.00096632	Running	Running
09-Apr-25 16:00:00	-24.43755401	-3.022465805	-24.17240723	Running	Stopped
09-Apr-25 17:00:00	-25.00328954	-2.956575045	-15.94556023	Running	Stopped
09-Apr-25 18:00:00	-25.90702	-2.984349246	-6.983486577	Running	Stopped
09-Apr-25 19:00:00	-26.38972013	-3.010500482	-6.722835083	Running	Stopped
09-Apr-25 20:00:00	-23.10397913	-3.009063641	2.192825741	Running	Stopped
09-Apr-25 21:00:00	-20.45877611	-3.142544924	8.866710001	Running	Stopped
09-Apr-25 22:00:00	-11.64962949	-3.051658429	-23.13012559	Running	Running
09-Apr-25 23:00:00	-0.582933711	-3.037546217	-21.00404057	Running	Running
10-Apr-25 00:00:00	-0.019310844	-3.216285617	-19.50300909	Running	Running
10-Apr-25 01:00:00	-0.252081816	-3.063306218	-22.48929027	Running	Running

10-Apr-25 02:00:00	-3.903253983	-2.874128626	-15.92661809	Running	Running
10-Apr-25 03:00:00	-16.98442637	-3.046807156	-12.14977837	Running	Running
10-Apr-25 04:00:00	-16.67243325	-2.923857734	-10.54758996	Running	Running
10-Apr-25 05:00:00	-19.14490376	-3.057322119	-43.2730039	Running	Running
10-Apr-25 06:00:00	-17.75079119	-3.120318085	-0.122101752	Running	Stopped
10-Apr-25 07:00:00	-16.32619307	-3.018111712	-11.26084659	Running	Stopped
10-Apr-25 08:00:00	-21.02686842	-3.070652036	-8.945290338	Running	Stopped
10-Apr-25 09:00:00	-22.3712265	-3.068599377	-6.916419289	Running	Stopped
10-Apr-25 10:00:00	-22.33267188	-3.039923604	-0.55884464	Running	Stopped
10-Apr-25 11:00:00	-21.99339247	-3.032331823	-17.02397236	Running	Stopped
10-Apr-25 12:00:00	-20.70127745	-3.055797602	-24.25112025	Running	Stopped
10-Apr-25 13:00:00	-14.67191326	-2.992273777	-37.18129773	Running	Stopped
10-Apr-25 14:00:00	-16.78277162	-3.216533051	-30.26492136	Running	Stopped
10-Apr-25 15:00:00	-10.12791992	-2.999247119	-6.420541261	Running	Stopped
10-Apr-25 16:00:00	-0.949706355	-2.924252826	-12.21679772	Running	Stopped
10-Apr-25 17:00:00	0.039371505	-2.916689387	-9.499391747	Running	Stopped
10-Apr-25 18:00:00	0.033825365	-3.069123568	-8.936432088	Running	Stopped
10-Apr-25 19:00:00	0.028279226	-3.03231683	-30.28134768	Running	Stopped
10-Apr-25 20:00:00	0.022733086	-3.04946312	-37.08609169	Running	Running
10-Apr-25 21:00:00	0.017186946	-2.907682244	-35.18222682	Running	Running
10-Apr-25 22:00:00	0.011640806	-3.15831497	-40.39479144	Running	Running
10-Apr-25 23:00:00	0.006094667	-3.021830755	-38.98434951	Running	Running
11-Apr-25 00:00:00	-0.023765361	-2.949251763	-36.79718807	Running	Running
11-Apr-25 01:00:00	-0.321228104	-2.976310441	-42.33211395	Running	Running
11-Apr-25 02:00:00	-9.304276289	-3.089717406	-28.50195918	Running	Running
11-Apr-25 03:00:00	-6.900517282	-2.951586683	-39.55010916	Running	Running
11-Apr-25 04:00:00	-3.178763831	-3.16395819	-43.51864074	Running	Running
11-Apr-25 05:00:00	-0.298104037	-2.977855891	-35.60501706	Running	Running
11-Apr-25 06:00:00	-0.367536178	-3.149076548	-30.62940758	Running	Running
11-Apr-25 07:00:00	-4.398991326	-2.86552393	-40.93760146	Running	Running
11-Apr-25 08:00:00	-12.90133524	-3.080538159	-32.01205094	Running	Running
11-Apr-25 09:00:00	-3.57963548	-2.964127537	-38.52058823	Running	Running
11-Apr-25 10:00:00	-14.60506096	-3.103234173	-38.06868683	Running	Running
11-Apr-25 11:00:00	-14.18557302	-3.047295085	-33.83433169	Running	Running
11-Apr-25 12:00:00	-9.157821861	-3.128750709	-10.99057872	Running	Running
11-Apr-25 13:00:00	-8.277790251	-3.147431703	-21.99895518	Running	Running
11-Apr-25 14:00:00	-18.2813773	-3.067252285	-24.27377701	Running	Running
11-Apr-25 15:00:00	-5.606309132	-3.074218661	-54.64025241	Running	Running
11-Apr-25 16:00:00	-11.00661783	-3.106075532	-55.00274053	Running	Running
11-Apr-25 17:00:00	-23.82572156	-3.050681493	-52.38727188	Running	Running
11-Apr-25 18:00:00	-6.08053956	-3.078468732	-50.55173001	Running	Running
11-Apr-25 19:00:00	-23.5092389	-3.073957777	-57.37834136	Running	Running
11-Apr-25 20:00:00	-25.0358985	-3.077835023	-39.60494835	Running	Running
11-Apr-25 21:00:00	-24.33602327	-2.974637965	-41.74603399	Running	Running
11-Apr-25 22:00:00	-17.02259542	-2.807297096	-44.9459965	Running	Running
11-Apr-25 23:00:00	-14.20530096	-3.20796783	-53.45363579	Running	Running

	4/7/2025		*wasn't running; have plans to backfill once the analyzer is back online	
	4/12/2025			
Birthday		date	thc	kiln running
	45754.0000	07-Apr-25 00:00:00	0	Running
	45754.0000	07-Apr-25 01:00:00	0	Running
	45754.0000	07-Apr-25 02:00:00	0	Running
	45754.0000	07-Apr-25 03:00:00	0	Running
	45754.0000	07-Apr-25 04:00:00	0	Running
	45754.0000	07-Apr-25 05:00:00	0	Running
	45754.0000	07-Apr-25 06:00:00	0	Running
	45754.0000	07-Apr-25 07:00:00	0	Running
	45754.0000	07-Apr-25 08:00:00	0	Running
	45754.0000	07-Apr-25 09:00:00	0	Running
	45754.0000	07-Apr-25 10:00:00	0	Running
	45754.0000	07-Apr-25 11:00:00	0	Running
	45754.0000	07-Apr-25 12:00:00	0	Running
	45754.0000	07-Apr-25 13:00:00	0	Running
	45754.0000	07-Apr-25 14:00:00	0	Running
	45754.0000	07-Apr-25 15:00:00	0	Running
	45754.0000	07-Apr-25 16:00:00	0	Running
	45754.0000	07-Apr-25 17:00:00	0	Running
	45754.0000	07-Apr-25 18:00:00	0	Running
	45754.0000	07-Apr-25 19:00:00	0	Running
	45754.0000	07-Apr-25 20:00:00	0	Running
	45754.0000	07-Apr-25 21:00:00	0	Running
	45754.0000	07-Apr-25 22:00:00	0	Running
	45754.0000	07-Apr-25 23:00:00	0	Running
	45755.0000	08-Apr-25 00:00:00	0	Running
	45755.0000	08-Apr-25 01:00:00	0	Running
	45755.0000	08-Apr-25 02:00:00	0	Running
	45755.0000	08-Apr-25 03:00:00	0	Running
	45755.0000	08-Apr-25 04:00:00	0	Running
	45755.0000	08-Apr-25 05:00:00	0	Running
	45755.0000	08-Apr-25 06:00:00	0	Running
	45755.0000	08-Apr-25 07:00:00	0	Running
	45755.0000	08-Apr-25 08:00:00	0	Running
	45755.0000	08-Apr-25 09:00:00	0	Running
	45755.0000	08-Apr-25 10:00:00	0	Running
	45755.0000	08-Apr-25 11:00:00	0	Running
	45755.0000	08-Apr-25 12:00:00	0	Running
	45755.0000	08-Apr-25 13:00:00	0	Running
	45755.0000	08-Apr-25 14:00:00	0	Running
	45755.0000	08-Apr-25 15:00:00	0	Running
	45755.0000	08-Apr-25 16:00:00	0	Running
	45755.0000	08-Apr-25 17:00:00	0	Running
	45755.0000	08-Apr-25 18:00:00	0	Running
	45755.0000	08-Apr-25 19:00:00	0	Running
	45755.0000	08-Apr-25 20:00:00	0	Running
	45755.0000	08-Apr-25 21:00:00	0	Running
	45755.0000	08-Apr-25 22:00:00	0	Running
	45755.0000	08-Apr-25 23:00:00	0	Running
	45756.0000	09-Apr-25 00:00:00	0	Running
	45756.0000	09-Apr-25 01:00:00	0	Running
	45756.0000	09-Apr-25 02:00:00	0	Running
	45756.0000	09-Apr-25 03:00:00	0	Running
	45756.0000	09-Apr-25 04:00:00	0	Running
	45756.0000	09-Apr-25 05:00:00	0	Running
	45756.0000	09-Apr-25 06:00:00	0	Running
	45756.0000	09-Apr-25 07:00:00	0	Running
	45756.0000	09-Apr-25 08:00:00	0	Running
	45756.0000	09-Apr-25 09:00:00	0	Running
	45756.0000	09-Apr-25 10:00:00	0	Running
	45756.0000	09-Apr-25 11:00:00	0	Running
	45756.0000	09-Apr-25 12:00:00	0	Running
	45756.0000	09-Apr-25 13:00:00	0	Running
	45756.0000	09-Apr-25 14:00:00	0	Running
	45756.0000	09-Apr-25 15:00:00	0	Running
	45756.0000	09-Apr-25 16:00:00	0	Running
	45756.0000	09-Apr-25 17:00:00	0	Running
	45756.0000	09-Apr-25 18:00:00	0	Running
	45756.0000	09-Apr-25 19:00:00	0	Running
	45756.0000	09-Apr-25 20:00:00	0	Running
	45756.0000	09-Apr-25 21:00:00	0	Running
	45756.0000	09-Apr-25 22:00:00	0	Running
	45756.0000	09-Apr-25 23:00:00	0	Running

	45757.0000	10-Apr-25 00:00:00	0	Running
	45757.0000	10-Apr-25 01:00:00	0	Running
	45757.0000	10-Apr-25 02:00:00	0	Running
	45757.0000	10-Apr-25 03:00:00	0	Running
	45757.0000	10-Apr-25 04:00:00	0	Running
	45757.0000	10-Apr-25 05:00:00	0	Running
	45757.0000	10-Apr-25 06:00:00	0	Running
	45757.0000	10-Apr-25 07:00:00	0	Running
	45757.0000	10-Apr-25 08:00:00	0	Running
	45757.0000	10-Apr-25 09:00:00	0	Running
	45757.0000	10-Apr-25 10:00:00	0	Running
	45757.0000	10-Apr-25 11:00:00	0	Running
	45757.0000	10-Apr-25 12:00:00	0	Running
	45757.0000	10-Apr-25 13:00:00	0	Running
	45757.0000	10-Apr-25 14:00:00	0	Running
	45757.0000	10-Apr-25 15:00:00	0	Running
	45757.0000	10-Apr-25 16:00:00	0	Running
	45757.0000	10-Apr-25 17:00:00	0	Running
	45757.0000	10-Apr-25 18:00:00	0	Running
	45757.0000	10-Apr-25 19:00:00	0	Running
	45757.0000	10-Apr-25 20:00:00	0	Running
	45757.0000	10-Apr-25 21:00:00	0	Running
	45757.0000	10-Apr-25 22:00:00	0	Running
	45757.0000	10-Apr-25 23:00:00	0	Running
	45758.0000	11-Apr-25 00:00:00	0	Running
	45758.0000	11-Apr-25 01:00:00	0	Running
	45758.0000	11-Apr-25 02:00:00	0	Running
	45758.0000	11-Apr-25 03:00:00	0	Running
	45758.0000	11-Apr-25 04:00:00	0	Running
	45758.0000	11-Apr-25 05:00:00	0	Running
	45758.0000	11-Apr-25 06:00:00	0	Running
	45758.0000	11-Apr-25 07:00:00	0	Running
	45758.0000	11-Apr-25 08:00:00	0	Running
	45758.0000	11-Apr-25 09:00:00	0	Running
	45758.0000	11-Apr-25 10:00:00	0	Running
	45758.0000	11-Apr-25 11:00:00	0	Running
	45758.0000	11-Apr-25 12:00:00	0	Running
	45758.0000	11-Apr-25 13:00:00	0	Running
	45758.0000	11-Apr-25 14:00:00	0	Running
	45758.0000	11-Apr-25 15:00:00	0	Running
	45758.0000	11-Apr-25 16:00:00	0	Running
	45758.0000	11-Apr-25 17:00:00	0	Running
	45758.0000	11-Apr-25 18:00:00	0	Running
	45758.0000	11-Apr-25 19:00:00	0	Running
	45758.0000	11-Apr-25 20:00:00	0	Running
	45758.0000	11-Apr-25 21:00:00	0	Running
	45758.0000	11-Apr-25 22:00:00	0	Running
	45758.0000	11-Apr-25 23:00:00	0	Running
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.
#VALUE!				The time is invalid.

#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.

#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.

#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.

#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.

#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.

#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.

#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.

#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.
#VALUE!	The time is invalid.

APPENDIX M

List of Participants

Individuals	Role	Company	Contact Information
Karri Legarrie	Project Management	RWDI	karri.legarrie@rwdi.com
Adam Tran, QSTI	Stack Sampling	RWDI	adam.tran@rwdi.com
Sydney Meunier	Stack Sampling	RWDI	sydney.meunier@rwdi.com
Matthew Bradley	Stack Sampling	RWDI	matthew.bradley@rwdi.com
Preet Bhamrah	Stack Sampling	RWDI	preet.bhamrah@rwdi.com
Kara Pelissero	Environmental Manager	SMC St Marys	kara.pelissero@vcimentos.com
Robert Chin	Lab Analysis	ALS Environmental Laboratory	robert.chin@alsglobal.com
Courtney Adkins	Lab Analysis (VOST)	Eurofins Knoxville Laboratory	Courtney.Adkins@et.eurofinsus.com

Source Evaluation Society

P. O. Box 12124
Research Triangle Park
North Carolina 27709

January 2, 2024

Adam Tran
RWDI Air Inc.
509-1098 Paisley Rd
Guelph ON N1K 0E3
CANADA

Subject: Qualified Source Tester Certificate No. 2024-1168

Qualification Notice - Manual Gas Volume Measurements and Isokinetic Particulate Sampling Methods (exam date: 11/14/24)

Dear Mr Tran:

It is my pleasure to inform you that you have satisfied the requirements of the Source Evaluation Society Qualified Source Test Individual program for group exam(s) listed above. As a member of the successful candidates in this SES program, you should be proud of this distinction within the source emissions testing community. I am confident that you will continue to uphold the standards of technical excellence and ethical conduct embodied in the SES mission statement.

The enclosed Qualification Notice(s) and SES identification card are your permanent record of this achievement. This status is valid for the period shown on the Qualification Notices.

Congratulations on your achievement and I wish you continued success in your future endeavors.

Sincerely yours,

Peter R. Westlin
SES QSTI/QSTO Review Committee Chairman

cc: J. Wade Bice, SES QSTI/QSTO Review Board Member
Glenn England, SES QSTI/QSTO Review Board Member
Karen D. Kajiya-Mills, SES QSTI/QSTO Review Board Member
Theresa M. Lowe, SES QSTI/QSTO Review Committee Administrator
Tommy Lotz, Jr., SES QSTI/QSTO Review Board Member
Bruce C. Randall, SES QSTI/QSTO Review Board Member
J. Wade Bice, SES QSTI/QSTO Review Board Member
Tina Sanderson, SES QSTI/QSTO Review Board Member

Source Evaluation Society

P. O. Box 12124
Research Triangle Park
North Carolina 27709

An idea was introduced at the 2006 SSSAAP conference to list those individuals who have received their QSTI qualification approvals on the SES web site. The SES Board of Directors determined that individuals would have to approve in writing before making public such information. The QSTI Committee would like your permission to post the information shown below on the SES web site for public view. This information will be provided on the website as a link to an Excel spreadsheet. Your information will be listed as below or with any changes you indicate:

Name Company City/State/Zip:	Adam Tran RWDI Air Inc. Guelph ON CANADA N1K 0E3		
Contact Info.:	adam.tran@rwdi.com		
Passed:	Group 1	Exam Date: 11/14/24	Valid From - To: 11/14/2024 to 11/13/2029
QSTI Certificate #:	2024-1168		

You may view the current spreadsheet format at the SES website at www.sesnews.org. If you agree to your name and information being posted, please sign below and email to Theresa Lowe at qstiprogram@gmail.com. Also, if you wish to have your contact information listed other than your email address, please note any changes above (*e.g.*, an address, telephone or a cell phone number, etc.). Any further changes or additions will need to be made in writing and emailed to Theresa Lowe at qstiprogram@gmail.com.

Thank you,

Theresa Lowe
SES QSTI/QSTO Review Committee Administrator

I give the SES QSTI/QSTO Review Committee approval to have my name and information as outlined above to be posted on the SES web site. Any changes have been noted above. This approval extends to any future exams for which I receive a QSTI or QSTO Qualification Approval(s).

Signature: ______________________________ Date: ____________________

DO YOU APPROVE SES RELEASING INFORMATION, UPON REQUEST, ABOUT WHETHER YOU HAVE PASSED A METHOD GROUP EXAM? (The information released will be if you passed an exam and the date of the exam. This information is in support of ASTM D-7036-D.) YES ☐ NO ☐ IF YOU AGREE, PLEASE SIGN BELOW.

Signature: ______________________________ Date: ________________

SOURCE EVALUATION SOCIETY

Qualified Source Testing Individual

LET IT BE KNOWN THAT

ADAM TRAN

HAS SUCCESSFULLY PASSED A COMPREHENSIVE EXAMINATION AND SATISFIED EXPERIENCE REQUIREMENTS IN ACCORDANCE WITH THE GUIDELINES ISSUED BY THE SES QUALIFIED SOURCE TEST INDIVIDUAL REVIEW BOARD FOR

MANUAL GAS VOLUME MEASUREMENTS AND ISOKINETIC PARTICULATE SAMPLING METHODS

ISSUED THIS 14TH DAY OF NOVEMBER 2024 AND EFFECTIVE UNTIL NOVEMBER 13TH, 2029

Peter R. Westlin, QSTI/QSTO Review Board

J. Wade Bice, QSTI/QSTO Review Board

Tommy Lotz, QSTI/QSTO Review Board

Karen D. Kajiya-Mills , QSTI/QSTO Review Board

Tina Sanderson, QSTI/QSTO Review Board

Bruce Randall QSTI/QSTO Review Board

CERTIFICATE NO. 2024-1168

SOURCE EVALUATION SOCIETY CORPORATE SEAL 1995 NORTH CAROLINA