



November 30, 2022

Alberta Environment and Parks (AEP)  
Monitoring Branch  
11<sup>th</sup> Floor Oxbridge Place  
9820-106 Street  
Edmonton, Alberta  
T5K 2J6

RE: Monthly Ambient Air Monitoring Report  
October 2022  
Clean Harbors Canada, Inc. Approval 10348-03-00

To whom it may concern:

Clean Harbors Canada, Inc. (Clean Harbors) is presenting this Monthly Ambient Air Monitoring Report, which was prepared by GHD (Consultant), for the reporting period of October 2022, to Alberta Environment and Parks (AEP). The Clean Harbors Ryley Industrial Waste Management Facility (Facility) is located in SE 09-050-17 W4M near Ryley, Alberta.

This ambient air monitoring program is conducted in accordance with the requirements outlined in the Facility's Environmental Protection and Enhancement Act (EPEA) Approval, Approval No. 10348-03-00 (Approval). As part of the Approval requirements, the Facility submitted a proposal for a New Ambient Air Monitoring Program, which was subsequently approved on June 24, 2009 by the AEP (formally AENV). Operating under the Approval and the approved proposal, Clean Harbors operates two ambient air monitoring stations: AEP Station ID 00010348-I-1 and AEP Station ID 00010348-C-1.

Included in this report are the following:

- Summary of the ambient air monitoring program for October 2022
- Summary of AMD Electronic Transfer System submittals
- Results for Particulate Matter  $\leq 10$  microns ( $PM_{10}$ ) reported in  $\mu\text{g}/\text{m}^3$
- Results for water-soluble cations; metal or anions if the  $PM_{10}$  results were  $>50 \mu\text{g}/\text{m}^3$
- Results for Total Non-Methane Organic Compounds (TNMOC) and Volatile Organic Compounds (VOC)
- Wind frequency distribution tables, wind rose and monthly uptime



Should there be any questions and comments regarding this report, please do not hesitate to contact the undersigned.

Yours truly,

**CLEAN HARBORS CANADA INC.**

A handwritten signature in blue ink that reads "Stan Yuha". The signature is written in a cursive, flowing style.

Stan Yuha

Facility Manager  
Ryley Facility



Alberta Environment and Parks (AEP)  
Monthly Ambient Air Monitoring Report  
October 2022  
Report Completed on November 30, 2022

Clean Harbors Environmental Services Inc.  
Approval Number: 10348-03-00  
Ryley Facility, Alberta

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## **Appendices**

- Appendix A     Meteorological Station Calibration Report
- Appendix B     Sampling Field Sheets
- Appendix C     Wind Class Frequency Distribution Graphs and Wind Rose
- Appendix D     Chain of Custody Forms and Laboratory Analytical Reports

# 1. Introduction

The Facility operates two ambient air monitoring stations to assess ambient air quality at and around the Facility. One intermittent monitoring station, known as the Ryley Lift Station (AEP Station ID 00010348-I-1), is located on Secondary Road 854, approximately 350 metres southeast of the Facility. At this location, samples are collected and analyzed for the following: particulate matter less than or equal to 10 micrometers ( $\mu\text{m}$ ) in diameter ( $\text{PM}_{10}$ ), volatile organic compounds (VOCs), and total non-methane organic compounds (TNMOC). Additionally,  $\text{PM}_{10}$  samples that exceed 50 micrograms per cubic metre ( $50 \mu\text{g}/\text{m}^3$ ) are analyzed for a target list of metals, anions, and cations. Sampling is conducted every 12 days as required by the Facility's Approval.

The second station, located at the Facility (AEP Station ID 00010348-C-1), is a continuous meteorological station that collects wind speed and wind direction data.

All sampling and monitoring is conducted in accordance with the Facility's Approval and the Alberta Air Monitoring Directive, 2016 (AMD).

## 1.1 Contact Information

As required by AMD Chapter 9, Section 2, contact information is provided for the following Facility personnel and Contractors that assisted with the performance of the Facility's Air Monitoring Program.

Name: Mr. Stan Yuha  
Title: Plant Manager  
Company: Clean Harbors  
Responsibilities: Report Certifier/ETS Submitter  
Address: PO Box 390, Ryley, AB T0B 4A0  
Phone: 780-663-2509  
Email: yuha.stan@cleanharbors.com

Name: Mr. Todd Webb  
Title: Laboratory Chemist  
Company: Clean Harbors  
Responsibilities: Station Field Operator and Field Sampler  
Address: PO Box 390, Ryley, AB T0B 4A0  
Phone: 780-663-2513  
Email: webb.todd@cleanharbors.com

Name: Mr. Pooya Shariaty  
Title: Senior Air Quality Engineer/Project Manager  
Company: GHD Limited  
Responsibilities: Senior QA/QC  
Address: 3445-114<sup>th</sup> Ave. SE, Suite 103 Calgary, AB  
Phone: 403-538-7479  
Email: Pooya.shariaty@ghd.com

Name: Ms. Stepheney Davey  
 Title: Air Quality Engineer in Training  
 Company: GHD Limited  
 Responsibilities: Maintenance/Calibration Services/Report Preparer/ETS Submitter  
 Address: 9426 – 51<sup>st</sup> Avenue NW, Suite 101 Edmonton, AB  
 Phone: 780-229-3687  
 Email: Stepheney.davey@ghd.com

Company: Innotech  
 Responsibilities: Laboratory Analytical Services  
 Address: PO Bag 4000, Vegreville, Alberta  
 Phone: 780-632-8211  
 Email: EAS.Results@albertainnovates.ca

## 2. Summary of Ambient Air Monitoring Activities

The following ambient air monitoring activities were conducted during the month of October 2022.

<b>Activity</b>	<b>Completed (Y/N)</b>	<b>Date(s)</b>
Wind Speed/Direction Sensor Calibration	N	March 18, 2022 <sup>(1)</sup>
Changes to the Wind Speed/Direction Sensor	N	-
PM <sub>10</sub> Sampling Station Calibration	N	-
Changes to the PM <sub>10</sub> Sampling Station	N	-
PM <sub>10</sub> Samples Collected	Y	October 2, 2022 October 14, 2022 October 26, 2022
VOC and TNMOC Samples Collected	Y	October 2, 2022 October 14, 2022 October 26, 2022
Metal Analysis Conducted	Y	October 14, 2022 <sup>2</sup>
Maintenance Activities	Y	October 2, 2022 October 14, 2022 October 26, 2022
Dust Suppression Activities	N	-

Note: (1) The wind speed/direction sensor was checked for calibration on March 18, 2022 and was shown to be within the allowable tolerances and was then re-installed after calibration.

(2) Results from Test 810, conducted on October 14, 2022, resulted in PM<sub>10</sub> levels higher than 50 µg/m<sup>3</sup>. Therefore, a metal analysis was conducted as per the Facility approval.

### **3. Summary of Electronic Transfer System (ETS) Submittals**

In addition to the October 2022 monthly report, the following summarized items were submitted to the ETS:

#### **3.1 AMD XML Schema**

An XML formatted Schema file was submitted to the AEP via the ETS portal. The XML Schema file contains the results from AEP Station ID 00010348-I-1 and AEP Station ID 00010348-C-1.

#### **3.2 Ambient Air Monitoring Program Laboratory Reports**

One laboratory report in PDF file format was submitted to the AEP via the ETS portal. The PDF file contains the results from AEP Station ID 00010348-I-1.

#### **3.3 Ambient Air Monitoring Program Calibration Reports**

One calibration report in PDF file format was submitted to the AEP via the ETS portal. The PDF file contains the results from AEP Station ID 00010348-C-1.

### **4. Calibration and Operation & Maintenance (O&M) Activities**

#### **4.1 Meteorological Station for Wind Speed and Direction (AEP Station ID 00010348-C-1)**

The meteorological station was taken down and calibrated on March 18, 2022. The station was shown to be within all allowable tolerances, as required by the manufacturer. Provided in Appendix A is the calibration report and record of installation.

There were no changes to the meteorological station during October 2022.

#### **4.2 PM<sub>10</sub> Sampling Station (AEP Station ID 00010348-I-1)**

Maintenance activities for the Partisol Federal Reference Method PM<sub>10</sub> Sampler included inlet cleaning and leak checks that were conducted before each sampling event in October 2022. The pre-sampling maintenance activities are recorded in the field sampling sheets provided in Appendix B.

### **5. Ambient Air Monitoring Results**

The following section presents the results from the ambient air monitoring program for AEP Station ID 00010348-C-1 and AEP Station ID 00010348-I-1 conducted in October 2022. Where applicable, comparisons were made to Alberta Ambient Air Quality Objectives (AAAQO) for parameters that had 24-hour average objectives. These parameters include o,m,p-xylene, hexane, and toluene. For



all other parameters, AAAQO have not been established or the limits have averaging periods other than 24-hours.

## **5.1 Meteorological Data for Wind Speed and Direction (AEP Station ID 00010348-C-1)**

In accordance with the Approval and the AMD, the Facility is required to collect wind speed and directional data continuously when operations are occurring on site. Table 1 presents the hourly and 24-hour average wind speeds for October 2022. Table 2 presents the hourly and 24-hour average wind direction data (degrees from north) for October 2022. Table 3 presents the Wind Class Frequency Distribution for October 2022. Appendix C provides a graphical representation of the Wind Class Frequency Distribution and the Wind Roses based on Tables 1, 2 and 3.

### **5.1.1 Data Verification and Validation and Uptime**

Based on the verification and validation process conducted for the meteorological data that was collected in October 2022, it was determined that 100 percent of the data is valid, which represents 100 percent uptime of the meteorological station. This is above the 90 percent uptime limit required for compliance, as per the Approval.

## **5.2 PM<sub>10</sub> Concentrations (AEP Station ID 00010348-I-1)**

Table 4 presents the results of the sampling conducted for PM<sub>10</sub>. Appendix B provides the field sheets completed for each sampling event. Appendix D provides the chain of custody forms and laboratory analytical reports.

AAAQO are specified for total suspended particulates (TSP) at 100 µg/m<sup>3</sup> and PM<sub>2.5</sub> at 29 µg/m<sup>3</sup> (24-hour averaging period). There is currently no AAAQO specified for PM<sub>10</sub> for a 24-hour averaging period in Alberta. In accordance with the Facility's Approval, PM<sub>10</sub> samples that exceed 50 µg/m<sup>3</sup> are analyzed for a target list of metals, anions, and cations.

## **5.3 Metal Concentrations**

Two of the three PM<sub>10</sub> samples collected in October 2022 were below 50 µg/m<sup>3</sup> and as such analysis for metals, anions, and cations was not conducted on those samples. Test 810 was shown to have elevated PM<sub>10</sub> concentrations of 121.304 µg/m<sup>3</sup>, which is over the 50 µg/m<sup>3</sup> threshold. This sample was sent for additional analysis and the results for this test can be found in Table 6 of this report.

## **5.4 VOC and TNMOC Concentrations**

Table 5 presents the VOC and TNMOC concentrations measured in October 2022. There are three VOC parameters that have corresponding AAAQO with 24-hour averaging periods including o,p,m-xylene, hexane and toluene. There were no exceedances for these parameters in October 2022. Appendix B provides the field sheets completed for each sampling event. Appendix D provides the chain of custody forms and laboratory analytical reports.

## 5.5 Dust Suppression

There were no dust suppression activities, which include using leachate spread on the surface of the active landfill, conducted during October 2022.

## 6. Conclusions

The following summarizes the Ambient Air Monitoring Program that was conducted in October 2022.

- 1 The PM<sub>10</sub> concentrations measured on October 2, October 14, and October 26, 2022 were 27.074 µg/m<sup>3</sup>, 121.304 µg/m<sup>3</sup>, and 12.343 µg/m<sup>3</sup>, respectively.
- 2 The PM<sub>10</sub> concentration measured for test 810, conducted on October 14, 2022, was above the 50 µg/m<sup>3</sup> threshold outlined in the Facility's approval. Because of the elevated PM<sub>10</sub> concentration, this sample was sent for additional analysis of metals, cations and anions. The results of this test showed that all parameters were below any applicable Alberta Ambient Air Quality Objectives (AAAQO).
- 3 Based on the ambient air monitoring results, no exceedances were detected for parameters with applicable AAAQO, which included o,m,p-xylene, hexane and toluene. There are no applicable AAAQO for other parameters that were monitored in October 2022.
- 4 During October 2022, the wind station operated at 100 percent uptime. Based on the data verification and validation procedure conducted, this is in compliance with the minimum 90 percent uptime required by the AMD.

Clean Harbors will continue perform their Facility's Ambient Air Monitoring Program in accordance with their Approval and the AMD and evaluate the data to determine impacts on the ambient air quality.

## 7. Certification

Per the requirements of AMD, Chapter 9, Section 2.3, the following certification is provided for the October 2022 Ambient Air Monitoring Report.

"I certify that I have reviewed and verified this report and that the information is complete, accurate and representative of the monitoring results, reporting timeframe and the specified analysis, summarization and reporting requirements."



Stan Yuha

Plant Manager/Report Certifier

## **Tables**

TABLE 1

**Average Wind Speed (metres/second)**  
**AEP Station ID 00010348-C-1**  
**Clean Harbors Canada, Inc.**  
**Monthly Ambient Air Monitoring Report**  
**October 2022**

Ryley Wind Speed Data (m/s) - Month of October 2022																								
Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.2	0.5	0.5	0.6	2.3	0.3	0.4	0.8	2.2	3.3	2.7	2.2	3.0	3.7	4.7	5.4	4.9	4.7	3.1	2.9	2.5	2.2	3.3	3.8
2	2.9	3.0	4.3	5.2	4.3	3.9	3.9	4.1	3.7	3.3	4.1	3.7	3.0	1.8	3.2	4.6	4.4	4.4	2.5	2.1	3.5	3.0	2.1	1.9
3	2.5	2.5	1.9	1.9	2.1	1.7	1.6	1.5	1.3	1.4	3.0	3.1	2.5	2.6	2.6	3.8	4.7	4.4	3.5	2.9	2.6	2.6	2.2	2.0
4	2.4	2.2	1.2	1.3	0.7	2.2	2.4	2.6	2.9	3.1	4.1	4.4	5.4	5.2	5.9	5.8	5.2	4.6	3.0	2.7	2.0	1.9	1.4	2.4
5	2.2	2.0	2.4	2.7	2.5	3.7	1.2	2.3	2.6	3.9	4.9	5.0	5.2	5.0	5.0	4.9	4.6	4.1	3.1	3.3	2.6	2.2	2.5	3.1
6	2.6	2.6	2.2	2.5	3.8	4.1	4.6	4.0	3.7	5.0	5.8	5.5	6.2	6.6	6.9	6.4	5.4	5.3	2.8	2.2	1.9	2.2	1.9	3.2
7	3.2	3.8	3.4	3.1	2.8	2.8	2.9	3.3	2.7	2.3	2.0	1.5	1.8	1.6	1.5	2.0	1.5	1.5	1.1	2.5	3.4	4.0	3.2	3.6
8	4.8	5.6	5.5	5.8	5.3	5.2	5.0	3.7	3.7	3.4	2.8	1.5	1.1	2.2	2.0	3.0	3.3	4.1	2.3	3.0	3.4	3.1	3.5	4.3
9	3.9	3.9	3.7	3.7	4.4	4.4	3.8	3.2	3.8	3.6	2.7	2.1	2.5	2.2	2.6	3.5	4.0	3.4	2.3	2.4	3.5	4.7	4.2	3.6
10	5.4	5.0	5.0	5.7	6.6	6.3	5.5	4.2	4.6	5.3	5.3	4.9	4.9	5.0	7.9	2.1	2.4	5.2	6.9	5.0	7.1	10.2	10.7	7.4
11	6.2	7.8	7.0	5.5	6.7	7.6	7.0	4.7	4.0	6.9	9.1	8.6	9.1	9.2	9.7	11.1	11.0	10.1	7.0	4.4	6.0	6.8	6.5	8.0
12	8.7	5.5	5.3	4.1	4.6	4.1	4.4	4.5	3.6	5.3	6.7	7.4	9.3	10.0	11.0	11.4	9.2	9.5	5.4	3.2	3.4	3.9	3.9	4.1
13	4.4	5.2	4.9	3.8	4.2	5.2	5.6	4.8	4.2	5.5	4.4	3.4	5.3	5.8	4.9	4.3	4.6	4.6	4.2	4.9	6.2	5.5	5.2	5.0
14	4.6	4.8	4.8	4.7	5.4	4.5	3.6	4.1	4.2	5.6	7.7	9.3	11.2	11.1	10.8	12.3	11.8	12.7	12.8	9.7	5.6	4.2	4.0	4.5
15	4.6	5.0	4.8	4.7	4.6	4.4	3.3	2.6	3.1	2.9	3.4	2.0	1.2	1.4	1.3	1.1	1.9	2.6	2.5	2.7	2.5	2.7	2.7	3.3
16	3.5	3.9	4.4	4.9	4.2	4.1	3.5	3.7	3.5	4.4	5.2	3.7	3.5	3.9	4.0	4.2	4.4	4.3	3.4	3.2	3.2	3.4	3.4	3.7
17	3.9	4.0	3.9	3.6	3.8	3.1	2.8	2.9	2.5	2.0	2.6	3.1	3.4	3.6	3.6	3.8	2.9	1.9	2.0	2.5	2.8	2.0	2.0	2.6
18	1.2	1.4	1.7	1.4	2.3	3.7	4.5	4.2	4.2	3.1	3.5	4.1	4.4	4.3	4.3	3.3	1.4	1.6	1.6	1.9	2.3	2.3	2.4	2.0
19	1.9	5.1	3.0	1.1	2.1	2.2	2.3	1.3	2.3	2.4	2.5	5.2	2.9	3.2	2.3	1.9	1.4	1.6	3.2	4.5	5.3	4.7	4.8	4.1
20	4.8	5.2	4.7	3.8	4.2	3.9	8.2	12.6	7.5	7.1	6.4	7.7	9.9	10.6	9.9	9.9	9.2	7.4	5.9	4.2	4.3	4.7	4.9	4.2
21	4.3	4.8	5.0	5.5	4.7	5.2	4.4	4.8	5.2	6.1	6.4	8.0	8.8	7.5	6.5	6.8	6.3	4.4	3.3	3.3	3.3	3.5	4.7	3.3
22	2.3	2.3	1.5	1.2	1.4	2.1	1.6	1.8	2.4	2.0	1.8	2.3	1.4	0.9	1.3	2.4	1.6	1.2	1.6	1.2	2.1	1.8	0.6	1.2
23	1.7	2.4	1.2	1.1	1.7	1.3	1.9	1.9	1.5	1.6	1.2	1.5	1.9	1.3	0.9	1.0	1.8	1.6	2.0	2.3	1.7	2.5	2.7	3.1
24	3.0	3.6	2.8	3.3	5.2	5.3	4.6	5.6	5.0	5.0	5.2	5.0	4.2	4.3	4.0	3.8	1.8	1.0	0.6	1.0	0.8	0.7	1.6	1.5
25	2.0	2.1	1.1	1.3	1.3	2.1	2.1	2.1	2.9	2.4	3.3	3.9	5.6	7.0	8.2	8.9	7.9	4.3	2.4	3.0	3.5	3.1	2.4	1.0
26	1.2	0.9	1.6	2.3	2.7	2.1	2.7	2.9	2.6	2.5	2.3	1.8	2.6	2.6	2.4	3.2	3.0	1.4	1.7	2.5	3.0	3.7	5.1	4.8
27	5.0	4.3	4.8	4.6	4.7	5.0	4.4	3.9	5.1	4.8	5.8	7.1	7.0	6.4	6.0	6.8	9.0	7.1	4.3	6.7	5.1	3.9	3.3	4.3
28	4.8	4.6	4.2	6.5	2.6	2.9	2.4	3.1	3.2	2.8	2.6	2.7	3.6	4.3	4.4	5.2	4.7	3.4	2.9	5.3	4.3	2.4	2.7	4.3
29	4.9	5.1	4.2	5.2	5.3	4.6	4.4	5.6	7.3	6.6	7.8	11.7	12.7	12.1	11.0	7.1	4.4	2.5	2.1	4.2	4.3	4.7	6.4	5.8
30	4.8	4.5	5.0	5.5	4.2	4.7	4.5	4.7	4.5	4.2	4.6	5.6	6.6	4.1	3.7	3.1	4.1	6.4	9.4	8.0	6.7	8.9	7.2	5.1
31	4.5	4.6	4.1	4.7	5.7	6.1	5.1	4.4	3.8	4.0	3.2	3.2	3.6	3.3	2.7	2.2	2.5	1.9	3.0	3.1	2.7	3.1	3.4	2.8

**TABLE 2**

**Average Wind Direction (degrees from North)  
 AEP Station ID 00010348-C-1  
 Clean Harbors Canada, Inc.  
 Monthly Ambient Air Monitoring Report  
 October 2022**

<b>Ryley Wind Direction Data (degrees, blowing from) - Month of October 2022</b>																								
<b>Day/Hour</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>
1	205	148	206	217	291	161	181	187	154	148	161	164	149	147	158	157	158	169	158	153	155	161	180	182
2	182	177	173	177	178	172	166	168	181	206	226	230	264	139	54	56	54	41	313	338	156	38	197	175
3	249	341	207	167	305	332	323	256	48	81	128	150	146	132	106	93	99	100	114	123	137	145	146	149
4	157	164	177	205	270	209	262	291	293	298	323	331	328	327	323	323	317	301	338	342	341	254	246	300
5	303	310	62	95	104	76	90	74	65	82	83	82	88	89	89	80	83	86	105	115	115	105	97	127
6	129	129	144	130	143	163	172	153	151	165	171	169	169	166	170	177	185	191	184	170	162	178	223	245
7	262	261	282	288	289	285	283	270	264	275	276	261	294	277	234	272	252	263	223	203	214	216	230	233
8	236	237	238	238	247	247	248	265	266	276	292	290	271	308	285	310	315	322	298	284	282	292	277	281
9	283	284	292	291	286	282	289	292	284	288	304	304	298	280	251	260	251	237	217	194	201	202	215	221
10	232	233	231	230	230	226	227	220	219	231	232	249	270	300	311	313	50	167	307	285	308	317	323	316
11	309	303	305	302	302	305	304	299	292	304	311	306	318	319	310	316	318	321	311	305	301	303	300	307
12	306	292	304	298	291	292	290	287	308	305	320	329	331	329	330	328	327	330	332	322	293	285	284	275
13	274	257	262	271	253	249	236	225	218	236	245	262	286	284	279	272	261	260	249	241	252	275	269	265
14	271	282	283	276	283	283	273	270	273	288	304	312	322	317	307	322	325	332	337	343	282	319	306	180
15	336	334	335	336	342	341	319	315	322	324	314	226	131	65	117	81	83	108	109	105	122	135	124	137
16	135	122	126	138	131	139	138	129	145	153	167	176	164	148	155	150	153	148	133	135	143	145	158	154
17	156	153	161	156	158	147	150	151	169	166	195	181	187	210	198	192	217	233	232	186	200	236	241	196
18	189	251	241	226	230	240	250	261	262	282	281	303	324	304	307	330	292	290	279	278	289	292	283	281
19	267	236	223	134	153	164	175	209	184	211	183	168	223	239	241	211	215	210	223	241	255	266	260	278
20	250	252	249	263	273	286	311	322	308	298	290	287	310	316	313	316	306	304	303	295	254	270	278	278
21	260	254	251	254	274	282	273	275	287	286	286	299	305	309	303	302	303	305	293	281	264	267	253	291
22	310	316	299	249	279	270	289	278	309	325	322	112	223	285	286	158	63	57	50	22	23	218	320	280
23	66	113	58	51	286	322	316	312	304	307	309	312	303	171	108	117	144	140	160	167	186	152	160	162
24	167	162	155	157	164	165	144	141	161	170	169	176	163	156	154	161	186	176	102	127	131	156	262	256
25	251	236	241	249	248	270	294	258	243	228	238	265	297	311	301	308	310	308	292	276	268	255	279	284
26	194	171	147	143	144	146	139	133	172	169	177	215	196	210	265	310	320	309	174	169	168	176	178	204
27	227	224	231	235	230	236	227	208	223	224	230	239	237	236	226	218	192	193	215	252	329	300	270	254
28	238	236	289	305	218	188	182	218	212	201	207	250	277	241	211	234	252	240	226	233	225	210	214	199
29	192	190	196	193	196	200	215	247	286	318	299	309	313	309	303	287	275	244	191	189	186	176	178	184
30	189	191	191	193	213	207	215	231	241	232	233	238	249	257	243	234	212	241	313	330	322	315	296	270
31	264	265	283	263	243	248	243	240	237	242	250	248	276	257	258	217	190	124	112	118	117	104	117	89

TABLE 3

**Wind Frequency Distribution**  
**AEP Station ID 00010348-C-1**  
**Clean Harbors Canada, Inc.**  
**Monthly Ambient Air Monitoring Report**  
**October 2022**

Frequency Distribution Report: Ryley, Alberta - October 2022									
Direction	Angle	Wind Speed (m/s) and Number of Occurrences (minutes)						%	Total Occurrences by Direction
		< 0.5	0.5 to < 1.5	1.5 to < 2.5	2.5 to < 3.5	3.5 to < 4.5	>= 4.5		
North	> 337.5 - 22.5	43	416	796	341	264	529	5.4%	2389
Northeast	> 22.5 - 67.5	67	382	339	159	61	60	2.4%	1068
East	> 67.5 - 112.5	72	138	370	473	368	420	4.1%	1841
Southeast	> 112.5 - 157.5	38	306	1144	1835	1155	534	11.2%	5012
South	> 157.5 - 202.5	109	522	1472	1582	1526	2102	16.4%	7313
Southwest	> 202.5 - 247.5	86	428	1013	1302	1585	2841	16.3%	7255
West	> 247.5 - 292.5	80	622	1391	1977	2739	3354	22.8%	10163
Northwest	> 292.5 - 337.5	65	608	1350	1121	967	5488	21.5%	9599
Missing/Invalid Hours								0.0%	0
Total Occurrences by Speed		560	3422	7875	8790	8665	15328		<b>44640</b>
Occurrences by %		1.3%	7.7%	17.6%	19.7%	19.4%	34.3%	<b>100.00%</b>	

TABLE 4

**Particulate Matter PM<sub>10</sub> Results**  
**AEP Station ID 00010348-I-1**  
**Clean Harbors Canada, Inc.**  
**Monthly Ambient Air Monitoring Report**  
**October 2022**

<b>Filter ID</b>	C1162146	C9698038	C1162145
<b>Test ID</b>	809	810 <sup>(1)</sup>	811
<b>Sample Start Date/Time</b>	22/10/02 00:00:00	22/10/14 00:00:00	22/10/26 00:00:00
<b>Sample End Date/Time</b>	22/10/03 00:00:00	22/10/15 00:00:00	22/10/27 00:00:00
<b>Sampling Time (hours)</b>	24	24	24
<b>Flow Rate (l/min)</b>	16.7	16.7	16.7
<b>Volume (m<sup>3</sup>)</b>	22.9	23	23.9
<b>PM<sub>10</sub> Mass (mg)</b>	0.620	2.79	0.295
<b>PM<sub>10</sub> Concentration (ug/m<sup>3</sup>)</b>	27.074	121.304	12.343
<b>Sampler Name</b>	2000 FRM-AE / 200FB209860905	2000 FRM-AE / 200FB209860905	2000 FRM-AE / 200FB209860905

Notes:

(1) Test ID 810 PM10 filter appeared brown and very dirty post sampling

TABLE 5

**VOC and TNMOC Analytical Results**  
**AEP Station ID 00010348-I-1**  
**Clean Harbors Canada, Inc.**  
**Monthly Ambient Air Monitoring Report**  
**October 2022**

Parameter	Units	Date	2-Oct-22	14-Oct-22	26-Oct-22
		Sample ID AAAQO <sup>(1)</sup>	809	810	811
Total Non-Methane Organic Carbon	ppmv	-	< 0.08	< 0.08	< 0.08
1,2,3-Trimethylbenzene	ppbv	-	< 0.08	0.12	< 0.08
1,2,4-Trimethylbenzene	ppbv	-	< 0.05	< 0.04	< 0.05
1,3,5-Trimethylbenzene	ppbv	-	< 0.05	< 0.04	< 0.05
1-Butene/Isobutylene	ppbv	-	0.95	2.09	0.87
1-Hexene/2-Methyl-1-pentene	ppbv	-	< 0.11	< 0.10	< 0.11
1-Pentene	ppbv	-	< 0.05	0.2	< 0.05
2,2,4-Trimethylpentane	ppbv	-	< 0.03	0.12	0.06
2,2-Dimethylbutane	ppbv	-	< 0.03	< 0.03	< 0.03
2,3,4-Trimethylpentane	ppbv	-	< 0.03	< 0.03	< 0.03
2,3-Dimethylbutane	ppbv	-	< 0.15	< 0.14	< 0.14
2,3-Dimethylpentane	ppbv	-	< 0.03	< 0.03	0.06
2,4-Dimethylpentane	ppbv	-	< 0.05	< 0.04	< 0.05
2-Methylheptane	ppbv	-	< 0.03	< 0.03	< 0.03
2-Methylhexane	ppbv	-	< 0.05	0.15	0.08
2-Methylpentane	ppbv	-	< 0.03	< 0.03	0.09
3-Methylheptane	ppbv	-	< 0.05	0.13	< 0.05
3-Methylhexane	ppbv	-	0.04	0.16	0.09
3-Methylpentane	ppbv	-	0.07	0.22	0.1
Benzene	ppbv	-	< 0.05	0.09	0.13
cis-2-Butene	ppbv	-	0.06	< 0.04	< 0.05
cis-2-Pentene	ppbv	-	< 0.03	0.87	< 0.03
Cyclohexane	ppbv	-	0.06	0.27	0.07
Cyclopentane	ppbv	-	< 0.03	0.2	0.08
Ethylbenzene	ppbv	-	< 0.05	0.17	0.09
Isobutane	ppbv	-	0.75	0.78	0.72
Isopentane	ppbv	-	0.38	1.01	0.75
Isoprene	ppbv	-	0.07	< 0.03	< 0.03
Isopropylbenzene	ppbv	-	< 0.06	0.07	< 0.06
m,p-Xylene	ppbv	161	< 0.06	1.01	0.3
m-Diethylbenzene	ppbv	-	< 0.03	< 0.03	< 0.03
m-Ethyltoluene	ppbv	-	< 0.05	0.13	< 0.05
Methylcyclohexane	ppbv	-	0.06	0.31	0.13
Methylcyclopentane	ppbv	-	< 0.08	0.25	0.1
n-Butane	ppbv	-	2.36	2.82	2.83
n-Decane	ppbv	-	< 0.10	0.15	< 0.09
n-Dodecane	ppbv	-	< 0.5	< 0.4	< 0.5
n-Heptane	ppbv	-	< 0.06	0.27	0.1
n-Hexane	ppbv	1990	0.08	0.43	0.17
n-Nonane	ppbv	-	< 0.06	0.16	< 0.06
n-Octane	ppbv	-	0.04	0.26	0.05
n-Pentane	ppbv	-	0.63	0.8	0.69
n-Propylbenzene	ppbv	-	< 0.10	< 0.09	< 0.09
n-Undecane	ppbv	-	< 0.8	< 0.8	< 0.8
o-Ethyltoluene	ppbv	-	< 0.03	0.1	< 0.03
o-Xylene	ppbv	161	< 0.05	0.36	0.1
p-Diethylbenzene	ppbv	-	< 0.03	< 0.03	< 0.03
p-Ethyltoluene	ppbv	-	< 0.06	0.16	< 0.06
Styrene	ppbv	-	0.07	0.48	< 0.06
Toluene	ppbv	106	0.06	1.2	0.6
trans-2-Butene	ppbv	-	0.16	0.44	0.15
trans-2-Pentene	ppbv	-	< 0.03	< 0.03	< 0.03
Total VOCs <sup>(2)</sup>	ppbv	-	8.920	17.940	11.080

## Notes:

(1) Alberta Ambient Air Quality Objectives for a 24 hour averaging period.

(2) Total VOCs are calculated under the assumption that values under the detection limit are equal to the detection limit, as per the AMD.



TABLE 6

**Metals Analytical Results**  
**AEP Station ID 00010348-I-1**  
**Clean Harbors Canada, Inc.**  
**Monthly Ambient Air Monitoring Report**  
**October 2022**

Parameter	Date		14-Oct-22		AAAQO <sup>(2)</sup> (ug/m <sup>3</sup> )
	Sample ID	Lab Results <sup>(1)</sup>	810	(ug/m <sup>3</sup> )	
Antimony	17.0	17 ng/Filter		7.39E-04	-
Arsenic	30.3	30.3 ng/Filter		1.32E-03	0.01 (Annual Average)
Barium	2010	2010 ng/Filter		8.74E-02	-
Beryllium	2.12	2.12 ng/Filter		9.22E-05	-
Boron	251	251 ng/Filter		1.09E-02	-
Cadmium	12.7	12.7 ng/Filter		5.52E-04	-
Chromium	716	716 ng/Filter		3.11E-02	1.00 (1-Hour Average)
Cobalt	40.8	40.8 ng/Filter		1.77E-03	-
Copper	539	539 ng/Filter		2.34E-02	-
Ammonium	2.35	2.35 ug/Filter		1.02E-01	-
Chloride	2.24	2.24 ug/Filter		9.74E-02	-
Nitrate	4.95	4.95 ug/Filter		2.15E-01	-
Sulfate	29.2	29.2 ug/Filter		1.27E+00	-
Iron	87400	87400 ng/Filter		3.80E+00	-
Lead	1050	1050 ng/Filter		4.57E-02	-
Mercury	0.18	0.18 ug/Filter		7.83E-06	-
Nickel	683	683 ng/Filter		2.97E-02	-
Selenium	15.6	15.6 ng/Filter		6.78E-04	-
Silver	5.49	5.49 ng/Filter		2.39E-04	-
Thallium	1.05	1.05 ng/Filter		4.57E-05	-
Uranium	3.63	3.63 ng/Filter		1.58E-04	-
Vanadium	1020	1020 ng/Filter		4.43E-02	-
Zinc	11600	11600 ng/Filter		5.04E-01	-
Zirconium	308	308 ng/Filter		1.34E-02	-
Calcium	282	282 ug/Filter		1.23E+01	-
Magnesium	7.90	7.9 ug/Filter		3.43E-01	-
Potassium	3.10	3.1 ug/Filter		1.35E-01	-
Sodium	5.73	5.73 ug/Filter		2.49E-01	-
<b>Sampling Time (hours)</b>	24				
<b>Flow Rate (l/min)</b>	16.7				
<b>Volume Sampled (m<sup>3</sup>)</b>	23				

## Notes:

(1) These results are from a 24 hour averaging period that took place on October 14, 2022.

(2) Alberta Ambient Air Quality Objectives

# **Appendix A**

## **Meteorological Station Calibration Report**

R. M. YOUNG COMPANY WIND SENSOR CALIBRATION CERTIFICATE

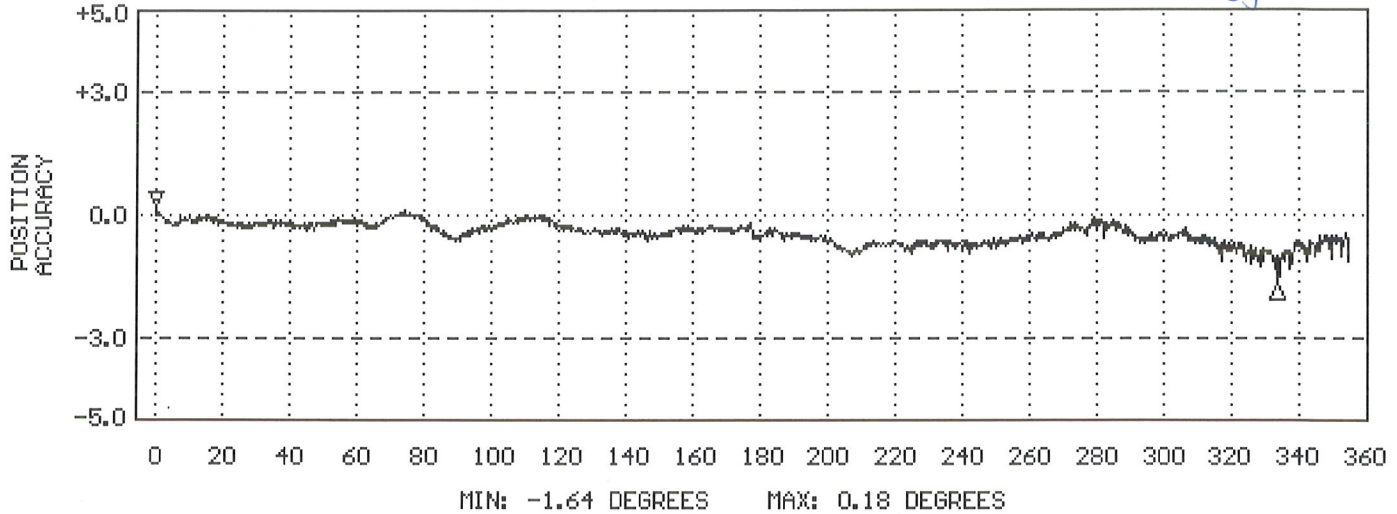
SENSOR: 05305-10A WIND MONITOR-AQ  
SENSOR SERIAL NUMBER: WM149768  
BEARINGS: SHIELDED/OIL LUBE  
DATE: AUG 3 2016

WIND SPEED THRESHOLD TEST: PASS  
LOW WIND SPEED AMPLITUDE/FREQUENCY TEST: PASS  
HIGH WIND SPEED AMPLITUDE/FREQUENCY TEST: PASS  
VANE TORQUE TEST: PASS  
SPECIAL NOTES:  
SPECIAL NOTES:

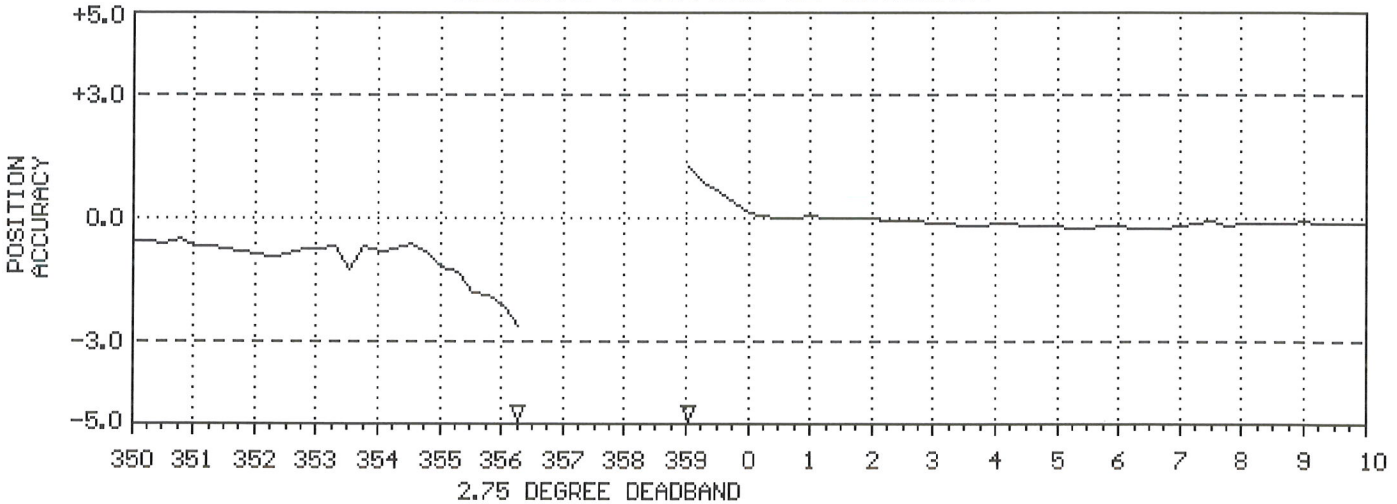
*[Signature]*  
Insp. By

Installed Nov. 8/16  
By S.Y. dy.

AZIMUTH POSITION vs ACCURACY



AZIMUTH POSITION vs ACCURACY



NOTE: Azimuth Position vs Accuracy graphs are accurate to within 0.5 degrees. The accuracy shown in the potentiometer deadband region between 355 and 0 degrees is the result of no resistance change while position changes. The gap represents the actual deadband (open circuit).



## GHD Wind Calibration Form

Site and Instrument Information						
<u>Site</u>			<u>Wind Monitor</u>			
Location:	Facility		Make:	RM Young		
Calibration Date:	Mar 18, 2022		Model:	05305		
Tech.:	P. Shariaty & S. Davey		Serial #:	149768		
Instrument:	Continuous Wind Monitor		Calibration due:	Annually		
Time:	10:15 AM - 2:00 PM		Temperature:	4°C		
Pre-Calibration Inspection				Y/N		
Is the wind direction < +/- 10° from compass observation?				Y		
Is siting aligned?				Y		
Does the propeller rotate 360° with no friction?				Y		
Does the vane rotate 360° with no friction?				Y		
Calibration Information						
Direction (degrees °)			Anemometer Speed (m/s)			
Test Angle (°)	Recorded Angle (°)	Within +/- 5°? (Y/N)	Test Speed (m/s)	Recorded Speed (m/s)	Within +/- 3 (m/s)? (Y/N)	
180	181	Y	26.1	26.0	Y	
210	213	Y	20.5	20.4	Y	
240	242	Y	15.4	15.3	Y	
270	272	Y	10.2	10.2	Y	
300	303	Y	5.1	5.1	Y	
330	332	Y				
0	4	Y				
30	31	Y				
60	61	Y				
90	90	Y				
120	122	Y				
150	151	Y				
Comments				Conversion Factors		
Wind monitor (SN:149768) was removed from tower, inspected and the calibration was checked on March 18, 2022. Mechanical bearings and shaft alignment were inspected. Bearings were replaced and instrument was cleaned of any dust buildup. Alignment was in good condition. Other than the bearings and cleaning, no additional maintenance was required. It is recommended that instrument be cleaned biannually and bearings checked/replaced at the 2023 calibration interval. After calibration check, wind monitor was re-installed and sited back to original position.				<b>m/s</b>	<b>RPM</b>	
				19.456	3800	
				15.360	3000	
				12.800	2500	
				9.216	1800	
				7.680	1500	
				5.632	1100	
Calibration Adjustment Required?: No				4.096	800	
				2.560	500	
				1.024	200	

# **Appendix B**

## **Sampling Field Sheets**

**FIELD SHEET  
VOLATILE ORGANIC COMPOUNDS  
CLEAN HARBORS CANADA INC  
RYLEY, ALBERTA**

A) GENERAL INFORMATION

Sample Identification Number: Organic Test 809  
 Sample Canister Location: Ryley Lift Station -Shed  
 Sampled by: T. Webb  
 Sampler Name: Test 809  
 Sample Date: 22/10/02 yy/mm/dd  
 Shipping Date to Laboratory: 22/10/03  
 Canister Type (ie. 1 Litre/6 Litre/Other): 6L  
 Canister Serial No.: 28907  
 Flow Controller Serial No.: H/L578699/A0334390-5

B) SAMPLE SET UP

	Set up Conditions	Sample Retrieval
Date:	22/09/28	22/10/03
Ambient Temperature °C (inside shed):	32.8	10.9
Barometric Pressure (mm Hg):	699	706
Canister Pressure Gauge Reading (- Inches Hg):	(-)27.2	(-)6
Sample Time:	24	24

C) OBSERVATIONS

Was there significant precipitation (e.g., >1/2-inch rain) within 24 hours prior to (or during) the sampling event? No

Describe general weather conditions during sampling event: Mostly sunny

Describe facility operations that may affect sampling event: None

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

FIELD SHEET			
PM <sub>10</sub> (Partisol Monitoring Unit)			
CLEAN HARBORS CANADA INC			
RILEY, ALBERTA			
<b>A) GENERAL INFORMATION</b>			
Filter ID:	C1162146		
PO Number:	228348		
Partisol Sampler ID/Serial Number:	2000 FRM-AE / 200FB209860905		
Test number :	Particulate Test 809		
Sample Date:	22/10/02	yy/mm/dd	
Shipping Date to Laboratory:	22/10/03		
<b>B) SAMPLING INFORMATION</b>			
<b>SAMPLE START</b>			
Sampling Start Date:	22/10/02		
Sampling Start Time:	00:00		
Current Instrument Date:	22/09/28		
Current Instrument Time:	15:20		
Ambient Temperature °C:	31.2		
Barometric Pressure ( mm Hg):	699		
Leak Check:	Pass	(Pass/Fail)	
Clean PM10 Inlet:	Yes	(Yes/No)	
Weather Conditions Sampling date :	Mostly Sunny		
Weather Conditions set up:	Sunny		
<b>SAMPLE RETRIEVAL</b>			
Sampled by	T. Webb		
Sampling End Date:	22/10/03		
Sampling End Time:	00:00		
Current Instrument Date:	22/10/03		
Current Instrument Time:	6:54		
Run Status:	OK	(Ensure Run Status is OK)	
Total Sampling Time (Hours):	24		
Volume Sampled (m <sup>3</sup> ):	22.9		
Average Flow Rate (L/min):	16.7 L/min		
AmbT °C :	6.3		
Barometric Pressure ( mm Hg) :	706		
Sample Filter Temperature °C :	5.4		
Flow Rate Coefficient of Variation (%CV):	0.3		
Weather Conditions :	partly cloudy		
Leak Check:	Pass	(Pass/Fail)	
<b>FIELD BLANK</b>			
Was a field blank collected	No	(Once every quarter)	
Filter ID:			
Filter Batch Number:			
Current Instrument Date:			
Current Instrument Time:			
<b>C) OBSERVATIONS</b>			
Was there significant precipitation (e.g., >1/2-inch rain) within 24 hours prior to (or during) the sampling event?	No		
Describe facility operations that may affect sampling event:			
Comments:			

**FIELD SHEET  
VOLATILE ORGANIC COMPOUNDS  
CLEAN HARBORS CANADA INC  
RYLEY, ALBERTA**

**A) GENERAL INFORMATION**

Sample Identification Number: Organic Test 810  
 Sample Canister Location: Ryley Lift Station -Shed  
 Sampled by: T. Webb  
 Sampler Name: Test 810  
 Sample Date: 22/10/14 yy/mm/dd  
 Shipping Date to Laboratory: 22/10/17  
 Canister Type (ie. 1 Litre/6 Litre/Other): 6L  
 Canister Serial No.: 29021  
 Flow Controller Serial No.: H/L578699/A0334390-5

**B) SAMPLE SET UP**

	Set up Conditions	Sample Retrieval
Date:	22/10/13	22/10/17
Ambient Temperature °C (inside shed):	22.9	9.6
Barometric Pressure (mm Hg):	703	703
Canister Pressure Gauge Reading (- Inches Hg):	(-)27.1	(-)4
Sample Time:	24	24

**C) OBSERVATIONS**

Was there significant precipitation (e.g., >1/2-inch rain) within 24 hours prior to (or during) the sampling event? No

Describe general weather conditions during sampling event: Mostly cloudy

Describe facility operations that may affect sampling event: None

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



FIELD SHEET			
PM <sub>10</sub> (Partisol Monitoring Unit)			
CLEAN HARBORS CANADA INC			
RILEY, ALBERTA			
<b>A) GENERAL INFORMATION</b>			
Filter ID:	C9698038		
PO Number:	228348		
Partisol Sampler ID/Serial Number:	2000 FRM-AE / 200FB209860905		
Test number :	Particulate Test 810		
Sample Date:	22/10/14	yy/mm/dd	
Shipping Date to Laboratory:	22/10/17		
<b>B) SAMPLING INFORMATION</b>			
<b>SAMPLE START</b>			
Sampling Start Date:	22/10/14		
Sampling Start Time:	00:00		
Current Instrument Date:	22/10/13		
Current Instrument Time:	13:26		
Ambient Temperature °C:	19.5		
Barometric Pressure ( mm Hg):	703		
Leak Check:	Pass	(Pass/Fail)	
Clean PM10 Inlet:	Yes	(Yes/No)	
Weather Conditions Sampling date :	Mostly Cloudy		
Weather Conditions set up:	Mostly Sunny		
<b>SAMPLE RETRIEVAL</b>			
Sampled by	T. Webb		
Sampling End Date:	22/10/15		
Sampling End Time:	00:00		
Current Instrument Date:	22/10/17		
Current Instrument Time:	7:12		
Run Status:	OK	(Ensure Run Status is OK)	
Total Sampling Time (Hours):	24		
Volume Sampled (m <sup>3</sup> ):	23		
Average Flow Rate (L/min):	16.7 L/min		
AmbT °C :	-0.1		
Barometric Pressure ( mm Hg) :	703		
Sample Filter Temperature °C :	-0.5		
Flow Rate Coefficient of Variation (%CV):	0		
Weather Conditions :	Clear, sunny		
Leak Check:	Pass	(Pass/Fail)	
<b>FIELD BLANK</b>			
Was a field blank collected	No	(Once every quarter)	
Filter ID:			
Filter Batch Number:			
Current Instrument Date:			
Current Instrument Time:			
<b>C) OBSERVATIONS</b>			
Was there significant precipitation (e.g., >1/2-inch rain) within 24 hours prior to (or during) the sampling event?	No		
Describe facility operations that may affect sampling event:			
Comments:	PM10 filter looks brown and very dirty		

**FIELD SHEET**  
**VOLATILE ORGANIC COMPOUNDS**  
**CLEAN HARBORS CANADA INC**  
**RYLEY, ALBERTA**

A) GENERAL INFORMATION

Sample Identification Number: Organic Test 811  
 Sample Canister Location: Ryley Lift Station -Shed  
 Sampled by: T. Webb  
 Sampler Name: Test 811  
 Sample Date: 22/10/26 yy/mm/dd  
 Shipping Date to Laboratory: 22/10/28  
 Canister Type (ie. 1 Litre/6 Litre/Other): 6L  
 Canister Serial No.: 32256  
 Flow Controller Serial No.: H/L578699/A0334390-5

B) SAMPLE SET UP

	Set up Conditions	Sample Retrieval
Date:	22/10/26	22/10/27
Ambient Temperature °C (inside shed):	14.5	10.7
Barometric Pressure (mm Hg):	696	688
Canister Pressure Gauge Reading (- Inches Hg):	(-)27.1	(-)4
Sample Time:	24	24

C) OBSERVATIONS

Was there significant precipitation (e.g., >1/2-inch rain) within 24 hours prior to (or during) the sampling event? No

Describe general weather conditions during sampling event: Mostly cloudy

Describe facility operations that may affect sampling event: None

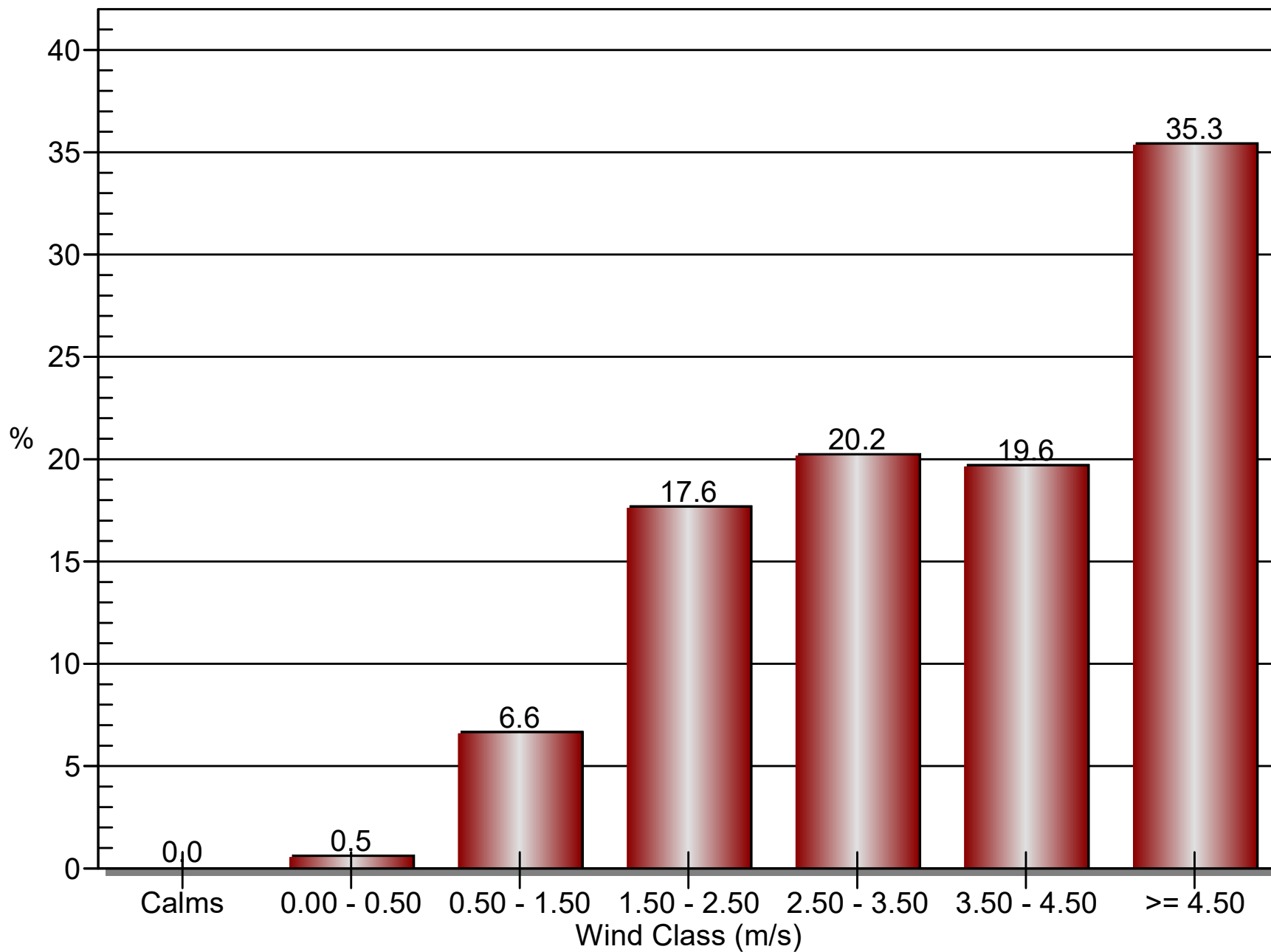
Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

FIELD SHEET			
PM <sub>10</sub> (Partisol Monitoring Unit)			
CLEAN HARBORS CANADA INC			
RILEY, ALBERTA			
<b>A) GENERAL INFORMATION</b>			
Filter ID:	C1162145		
PO Number:	228348		
Partisol Sampler ID/Serial Number:	2000 FRM-AE / 200FB209860905		
Test number :	Particulate Test 811		
Sample Date:	22/10/26	yy/mm/dd	
Shipping Date to Laboratory:	22/10/28		
<b>B) SAMPLING INFORMATION</b>			
<b>SAMPLE START</b>			
Sampling Start Date:	22/10/26		
Sampling Start Time:	00:00		
Current Instrument Date:	22/10/25		
Current Instrument Time:	13:54		
Ambient Temperature °C:	6.7		
Barometric Pressure ( mm Hg):	696		
Leak Check:	Pass	(Pass/Fail)	
Clean PM10 Inlet:	Yes	(Yes/No)	
Weather Conditions Sampling date :	Mostly Cloudy		
Weather Conditions set up:	Mostly Cloudy		
<b>SAMPLE RETRIEVAL</b>			
Sampled by	T. Webb		
Sampling End Date:	22/10/27		
Sampling End Time:	00:00		
Current Instrument Date:	22/10/27		
Current Instrument Time:	7:35		
Run Status:	OK	(Ensure Run Status is OK)	
Total Sampling Time (Hours):	24		
Volume Sampled (m <sup>3</sup> ):	23.9		
Average Flow Rate (L/min):	16.7 L/min		
AmbT °C :	5.8		
Barometric Pressure ( mm Hg) :	688		
Sample Filter Temperature °C :	4.9		
Flow Rate Coefficient of Variation (%CV):	0		
Weather Conditions :	Mostly cloudy		
Leak Check:	Pass	(Pass/Fail)	
<b>FIELD BLANK</b>			
Was a field blank collected	No	(Once every quarter)	
Filter ID:			
Filter Batch Number:			
Current Instrument Date:			
Current Instrument Time:			
<b>C) OBSERVATIONS</b>			
Was there significant precipitation (e.g., >1/2-inch rain) within 24 hours prior to (or during) the sampling event?	No		
Describe facility operations that may affect sampling event:			
Comments:			

# **Appendix C**

## **Wind Class Frequency Distribution Graphs and Wind Rose**

# Wind Class Frequency Distribution

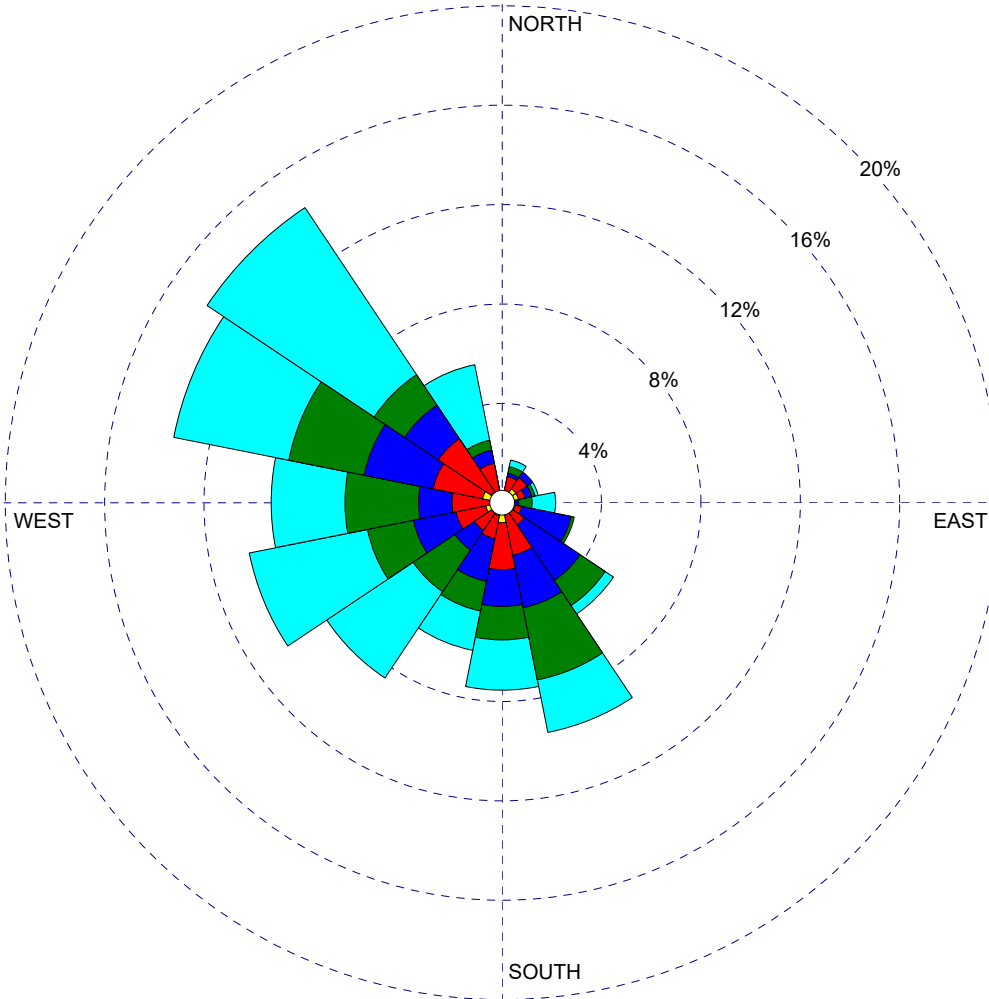


WIND ROSE PLOT:

**Wind Rose Plot - Ryley, AB  
October 2022**

DISPLAY:

**Wind Speed  
Direction (blowing from)**



WIND SPEED  
(m/s)

- >= 4.50
- 3.50 - 4.50
- 2.50 - 3.50
- 1.50 - 2.50
- 0.50 - 1.50
- 0.00 - 0.50

Calms: 0.00%

COMMENTS:

DATA PERIOD:

**Start Date: 10/1/2022 - 00:00  
End Date: 10/31/2022 - 23:00**

COMPANY NAME:

**Clean Harbors**

MODELER:

**GHD**

CALM WINDS:

**0.00%**

TOTAL COUNT:

**743 hrs.**

AVG. WIND SPEED:

**4.02 m/s**

DATE:

**11/7/2022**

PROJECT NO.:

**11114644**



# **Appendix D**

## **Chain of Custody Forms and Laboratory Analytical Reports**



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 Canada T9C 1T4  
 (780) 632-8211

# ENVIRONMENTAL ANALYTICAL SERVICES

## TEST REPORT

<p><b>RESULTS:</b> Todd Webb          Clean Harbors Environmental          PO Box 390          2 km N of Hwy 14 on Sec Road 854 50114 RR 173          Ryley          AB TOB 4A0</p> <p><b>INVOICE:</b> Robbi Gooding          PO Box 390          2 km N of Hwy 14 on Sec Road 854 50114 RR 173          Ryley          AB TOB 4A0</p>	<p><b>CLIENT SAMPLE ID</b>          PM10 Test # 809, C1162146</p> <p><b>MATRIX:</b>          Air Filter</p> <p><b>CANISTER ID:</b></p> <p><b>PRIORITY:</b> Normal</p> <p><b>DESCRIPTION:</b> PM 10 Filter</p> <p><b>DATE SAMPLED:</b> 02-Oct-22 0:00</p> <p><b>REPORT CREATED:</b> 25-Oct-22</p>	<p><b>DATE RECEIVED:</b> 05-Oct-22</p> <p><b>REPORT NUMBER:</b> 22100028</p> <p><b>VERSION:</b> Version 01</p>
--	--	--

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
22100028-002	Particulate Weight		0.620 mg	0.004	AC-029	06-Oct-22



<b>CLIENT SAMPLE ID</b> VOCs and TNMOC Test # 809	<b>CANISTER ID</b> 28907	<b>Matrix</b> Ambient Air	<b>DATE SAMPLED</b> 02-Oct-22 0:00
<b>DESCRIPTION:</b> Canister			
<b>REPORT NUMBER:</b> 22100028	<b>REPORT CREATED:</b> 25-Oct-22		<b>VERSION:</b> Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22100028-001	Total Non-Methane Organic Carbon	K, T, U	< 0.08	ppmv	0.08	NA-028	06-Oct-22
22100028-001	1,2,3-Trimethylbenzene	K, T, U	< 0.08	ppbv	0.08	AC-058	07-Oct-22
22100028-001	1,2,4-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	07-Oct-22
22100028-001	1,3,5-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	07-Oct-22
22100028-001	1-Butene/Isobutylene		0.95	ppbv	0.10	AC-058	07-Oct-22
22100028-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.11	ppbv	0.11	AC-058	07-Oct-22
22100028-001	1-Pentene	K, T, U	< 0.05	ppbv	0.05	AC-058	07-Oct-22
22100028-001	2,2,4-Trimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Oct-22
22100028-001	2,2-Dimethylbutane	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Oct-22
22100028-001	2,3,4-Trimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Oct-22
22100028-001	2,3-Dimethylbutane	K, T, U	< 0.15	ppbv	0.15	AC-058	07-Oct-22
22100028-001	2,3-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Oct-22
22100028-001	2,4-Dimethylpentane	K, T, U	< 0.05	ppbv	0.05	AC-058	07-Oct-22
22100028-001	2-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Oct-22
22100028-001	2-Methylhexane	K, T, U	< 0.05	ppbv	0.05	AC-058	07-Oct-22
22100028-001	2-Methylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Oct-22
22100028-001	3-Methylheptane	K, T, U	< 0.05	ppbv	0.05	AC-058	07-Oct-22
22100028-001	3-Methylhexane	I	0.04	ppbv	0.03	AC-058	07-Oct-22
22100028-001	3-Methylpentane	I	0.07	ppbv	0.03	AC-058	07-Oct-22
22100028-001	Benzene	K, T, U	< 0.05	ppbv	0.05	AC-058	07-Oct-22
22100028-001	cis-2-Butene	I	0.06	ppbv	0.05	AC-058	07-Oct-22
22100028-001	cis-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Oct-22
22100028-001	Cyclohexane	I	0.06	ppbv	0.06	AC-058	07-Oct-22
22100028-001	Cyclopentane	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Oct-22
22100028-001	Ethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	07-Oct-22

Report certified by: Rebecca Dasilva, Account Coordinator

On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: October 25, 2022

Inquiries: (780) 632 8455

E-mail: EAS.Results@innotechalberta.ca

<b>CLIENT SAMPLE ID</b> VOCs and TNMOC Test # 809	<b>CANISTER ID</b> 28907	<b>Matrix</b> Ambient Air	<b>DATE SAMPLED</b> 02-Oct-22 0:00
<b>DESCRIPTION:</b> Canister			
<b>REPORT NUMBER:</b> 22100028	<b>REPORT CREATED:</b> 25-Oct-22		<b>VERSION:</b> Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22100028-001	Isobutane		0.75	ppbv	0.05	AC-058	07-Oct-22
22100028-001	Isopentane		0.38	ppbv	0.06	AC-058	07-Oct-22
22100028-001	Isoprene	I	0.07	ppbv	0.03	AC-058	07-Oct-22
22100028-001	Isopropylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	07-Oct-22
22100028-001	m,p-Xylene	K, T, U	< 0.06	ppbv	0.06	AC-058	07-Oct-22
22100028-001	m-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Oct-22
22100028-001	m-Ethyltoluene	K, T, U	< 0.05	ppbv	0.05	AC-058	07-Oct-22
22100028-001	Methylcyclohexane	I	0.06	ppbv	0.03	AC-058	07-Oct-22
22100028-001	Methylcyclopentane	K, T, U	< 0.08	ppbv	0.08	AC-058	07-Oct-22
22100028-001	n-Butane		2.36	ppbv	0.03	AC-058	07-Oct-22
22100028-001	n-Decane	K, T, U	< 0.10	ppbv	0.10	AC-058	07-Oct-22
22100028-001	n-Dodecane	K, T, U	< 0.5	ppbv	0.5	AC-058	07-Oct-22
22100028-001	n-Heptane	K, T, U	< 0.06	ppbv	0.06	AC-058	07-Oct-22
22100028-001	n-Hexane	I	0.08	ppbv	0.05	AC-058	07-Oct-22
22100028-001	n-Octane	I	0.04	ppbv	0.03	AC-058	07-Oct-22
22100028-001	n-Pentane		0.63	ppbv	0.06	AC-058	07-Oct-22
22100028-001	n-Propylbenzene	K, T, U	< 0.10	ppbv	0.10	AC-058	07-Oct-22
22100028-001	n-Undecane	K, T, U	< 0.8	ppbv	0.8	AC-058	07-Oct-22
22100028-001	n-Nonane	K, T, U	< 0.06	ppbv	0.06	AC-058	07-Oct-22
22100028-001	o-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Oct-22
22100028-001	o-Xylene	K, T, U	< 0.05	ppbv	0.05	AC-058	07-Oct-22
22100028-001	p-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Oct-22
22100028-001	p-Ethyltoluene	K, T, U	< 0.06	ppbv	0.06	AC-058	07-Oct-22
22100028-001	Styrene	I	0.07	ppbv	0.06	AC-058	07-Oct-22
22100028-001	Toluene	I	0.06	ppbv	0.05	AC-058	07-Oct-22

Report certified by: Rebecca Dasilva, Account Coordinator

On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: October 25, 2022

Inquiries: (780) 632 8455

E-mail: EAS.Results@innotechalberta.ca



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# ENVIRONMENTAL ANALYTICAL SERVICES

## TEST REPORT

<b>CLIENT SAMPLE ID</b> VOCs and TNMOC Test # 809	<b>CANISTER ID</b> 28907	<b>Matrix</b> Ambient Air	<b>DATE SAMPLED</b> 02-Oct-22 0:00
<b>DESCRIPTION:</b> Canister			
<b>REPORT NUMBER:</b> 22100028	<b>REPORT CREATED:</b> 25-Oct-22		<b>VERSION:</b> Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
22100028-001	trans-2-Butene	I	0.16 ppbv	0.05	AC-058	07-Oct-22
22100028-001	trans-2-Pentene	K, T, U	< 0.03 ppbv	0.03	AC-058	07-Oct-22

Report certified by: Rebecca Dasilva, Account Coordinator

On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: October 25, 2022

Inquiries: (780) 632 8455

E-mail: EAS.Results@innotechalberta.ca



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## ENVIRONMENTAL ANALYTICAL SERVICES

### TEST REPORT

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### Revision History

Order ID	Ver	Date	Reason
22100028	01	25-Oct-22	Report created

## **Methods**

<b>Method</b>	<b>Description</b>
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
NA-028	Determination of Total Non-methane Hydrocarbons and Total Hydrocarbons in Ambient Air by Gas Chromatography Flame Ionization Detector

## **Qualifiers**

<b>Data Qualifier</b>	<b>Translation</b>
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B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank



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## ENVIRONMENTAL ANALYTICAL SERVICES

### TEST REPORT

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### Order Comments

22100028

Send results to Stan Yuha. Test # 809.



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## ENVIRONMENTAL ANALYTICAL SERVICES

### TEST REPORT

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### Sample Comments





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## ENVIRONMENTAL ANALYTICAL SERVICES

### TEST REPORT

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### **Result Comments**

*Note:*

- 1. Results relate only to items tested and apply to the sample as received.*
- 2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.*



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# ENVIRONMENTAL ANALYTICAL SERVICES

## TEST REPORT

<p><b>RESULTS:</b> Todd Webb          Clean Harbors Environmental          PO Box 390          2 km N of Hwy 14 on Sec Road 854 50114 RR 173          Ryley          AB TOB 4A0</p> <p><b>INVOICE:</b> Stephanie Dennis</p>	<p style="text-align: center;"><b>CLIENT SAMPLE ID</b>          Filter # C9698038 - Test # 810</p> <p><b>MATRIX:</b> Air Filter</p> <p><b>CANISTER ID:</b></p> <p><b>PRIORITY:</b> Normal</p> <p><b>DESCRIPTION:</b> PM 10 Filter - For further analysis</p> <p><b>DATE SAMPLED:</b> 14-Oct-22 0:00      <b>DATE RECEIVED:</b> 25-Oct-22</p> <p><b>REPORT CREATED:</b> 29-Nov-22      <b>REPORT NUMBER:</b> 22100247</p> <p style="text-align: right;"><b>VERSION:</b> Version 01</p>
---	---

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
22100247-001	Antimony		17.0 ng/Filter	0.03	AC-021	16-Nov-22
22100247-001	Arsenic		30.3 ng/Filter	0.03	AC-021	16-Nov-22
22100247-001	Barium		2010 ng/Filter	0.3	AC-021	16-Nov-22
22100247-001	Beryllium		2.12 ng/Filter	0.06	AC-021	16-Nov-22
22100247-001	Boron		251 ng/Filter	0.6	AC-021	16-Nov-22
22100247-001	Cadmium		12.7 ng/Filter	0.08	AC-021	16-Nov-22
22100247-001	Chromium		716 ng/Filter	2	AC-021	16-Nov-22
22100247-001	Cobalt		40.8 ng/Filter	0.05	AC-021	16-Nov-22
22100247-001	Copper		539 ng/Filter	2	AC-021	16-Nov-22
22100247-001	Iron		87400 ng/Filter	8	AC-021	16-Nov-22
22100247-001	Lead		1050 ng/Filter	0.07	AC-021	16-Nov-22
22100247-001	Zirconium		308 ng/Filter	0.1	AC-021	16-Nov-22
22100247-001	Nickel		683 ng/Filter	0.5	AC-021	16-Nov-22
22100247-001	Selenium		15.6 ng/Filter	0.4	AC-021	16-Nov-22
22100247-001	Silver		5.49 ng/Filter	0.05	AC-021	16-Nov-22
22100247-001	Uranium		3.63 ng/Filter	0.020	AC-021	16-Nov-22
22100247-001	Vanadium		1020 ng/Filter	0.04	AC-021	16-Nov-22
22100247-001	Mercury	I	0.18 ng/Filter	0.07	AC-021	16-Nov-22

Report certified by: Rebecca Dasilva, Account Coordinator

On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: November 29, 2022

Inquiries: (780) 632 8455

E-mail: EAS.Results@innotechalberta.ca

<b>CLIENT SAMPLE ID</b> Filter # C9698038 - Test # 810	<b>CANISTER ID</b>	<b>Matrix</b> Air Filter	<b>DATE SAMPLED</b> 14-Oct-22 0:00
<b>DESCRIPTION:</b> PM 10 Filter - For further analysis			
<b>REPORT NUMBER:</b> 22100247	<b>REPORT CREATED:</b> 29-Nov-22		<b>VERSION:</b> Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
22100247-001	Zinc		11600 ng/Filter	1	AC-021	16-Nov-22
22100247-001	Thallium		1.05 ng/Filter	0.02	AC-021	16-Nov-22
22100247-001	Ammonium		2.35 ug/Filter	0.048	AC-026	11-Nov-22
22100247-001	Chloride		2.24 ug/Filter	0.200	AC-026	11-Nov-22
22100247-001	Nitrate		4.95 ug/Filter	0.30	AC-026	11-Nov-22
22100247-001	Sulfate		29.2 ug/Filter	0.300	AC-026	11-Nov-22
22100247-001	Calcium		282 ug/Filter	0.14	NA-049	16-Nov-22
22100247-001	Magnesium		7.90 ug/Filter	0.0005	NA-049	16-Nov-22
22100247-001	Potassium		3.10 ug/Filter	0.023	NA-049	16-Nov-22
22100247-001	Sodium		5.73 ug/Filter	0.01	NA-049	16-Nov-22



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## ENVIRONMENTAL ANALYTICAL SERVICES

### TEST REPORT

### Revision History

Order ID	Ver	Date	Reason
22100247	01	29-Nov-22	Report created

## **Methods**

<b>Method</b>	<b>Description</b>
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
NA-049	Determination of water soluble cations on Teflon air filters by ICP-MS.

## Qualifiers

### Data Qualifier Translation

---

B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank



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## ENVIRONMENTAL ANALYTICAL SERVICES

### TEST REPORT

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### Order Comments

22100247

Filter was over 1.2 mg, reference order # 22100147. Send results to Stan Yuha.



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## ENVIRONMENTAL ANALYTICAL SERVICES

### TEST REPORT

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### Sample Comments





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## ENVIRONMENTAL ANALYTICAL SERVICES

### TEST REPORT

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### **Result Comments**

*Note:*

- 1. Results relate only to items tested and apply to the sample as received.*
- 2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.*



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# ENVIRONMENTAL ANALYTICAL SERVICES

## TEST REPORT

<p><b>RESULTS:</b> Todd Webb          Clean Harbors Environmental          PO Box 390          2 km N of Hwy 14 on Sec Road 854 50114 RR 173          Ryley          AB TOB 4A0</p> <p><b>INVOICE:</b> Robbi Gooding          PO Box 390          2 km N of Hwy 14 on Sec Road 854 50114 RR 173          Ryley          AB TOB 4A0</p>	<p style="text-align: center;"><b>CLIENT SAMPLE ID</b>          PM10 Test # 810 - Filter # C9698038</p> <p><b>MATRIX:</b> Air Filter</p> <p><b>CANISTER ID:</b></p> <p><b>PRIORITY:</b> Normal</p> <p><b>DESCRIPTION:</b> PM10 Filter</p> <p><b>DATE SAMPLED:</b> 14-Oct-22 0:00      <b>DATE RECEIVED:</b> 18-Oct-22</p> <p><b>REPORT CREATED:</b> 02-Nov-22      <b>REPORT NUMBER:</b> 22100147</p> <p style="text-align: right;"><b>VERSION:</b> Version 01</p>
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Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
22100147-002	Particulate Weight		2.79 mg	0.004	AC-029	20-Oct-22

Report certified by: Rebecca Dasilva, Account Coordinator

On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: November 2, 2022

Inquiries: (780) 632 8455

E-mail: EAS.Results@innotechalberta.ca

<b>CLIENT SAMPLE ID</b> VOCs and TNMOC Test # 810	<b>CANISTER ID</b> 29021	<b>Matrix</b> Ambient Air	<b>DATE SAMPLED</b> 14-Oct-22 0:00
<b>DESCRIPTION:</b> Air Canister			
<b>REPORT NUMBER:</b> 22100147	<b>REPORT CREATED:</b> 02-Nov-22		<b>VERSION:</b> Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
22100147-001	Total Non-Methane Organic Carbon	K, T, U	< 0.08 ppmv	0.08	NA-028	19-Oct-22
22100147-001	1,2,3-Trimethylbenzene	I	0.12 ppbv	0.08	AC-058	19-Oct-22
22100147-001	1,2,4-Trimethylbenzene	K, T, U	< 0.04 ppbv	0.04	AC-058	19-Oct-22
22100147-001	1,3,5-Trimethylbenzene	K, T, U	< 0.04 ppbv	0.04	AC-058	19-Oct-22
22100147-001	1-Butene/Isobutylene		2.09 ppbv	0.09	AC-058	19-Oct-22
22100147-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.10 ppbv	0.10	AC-058	19-Oct-22
22100147-001	1-Pentene		0.20 ppbv	0.04	AC-058	19-Oct-22
22100147-001	2,2,4-Trimethylpentane	I	0.12 ppbv	0.03	AC-058	19-Oct-22
22100147-001	2,2-Dimethylbutane	K, T, U	< 0.03 ppbv	0.03	AC-058	19-Oct-22
22100147-001	2,3,4-Trimethylpentane	K, T, U	< 0.03 ppbv	0.03	AC-058	19-Oct-22
22100147-001	2,3-Dimethylbutane	K, T, U	< 0.14 ppbv	0.14	AC-058	19-Oct-22
22100147-001	2,3-Dimethylpentane	K, T, U	< 0.03 ppbv	0.03	AC-058	19-Oct-22
22100147-001	2,4-Dimethylpentane	K, T, U	< 0.04 ppbv	0.04	AC-058	19-Oct-22
22100147-001	2-Methylheptane	K, T, U	< 0.03 ppbv	0.03	AC-058	19-Oct-22
22100147-001	2-Methylhexane	I	0.15 ppbv	0.04	AC-058	19-Oct-22
22100147-001	2-Methylpentane	K, T, U	< 0.03 ppbv	0.03	AC-058	19-Oct-22
22100147-001	3-Methylheptane	I	0.13 ppbv	0.04	AC-058	19-Oct-22
22100147-001	3-Methylhexane		0.16 ppbv	0.03	AC-058	19-Oct-22
22100147-001	3-Methylpentane		0.22 ppbv	0.03	AC-058	19-Oct-22
22100147-001	Benzene	I	0.09 ppbv	0.04	AC-058	19-Oct-22
22100147-001	cis-2-Butene	K, T, U	< 0.04 ppbv	0.04	AC-058	19-Oct-22
22100147-001	cis-2-Pentene		0.87 ppbv	0.03	AC-058	19-Oct-22
22100147-001	Cyclohexane	I	0.27 ppbv	0.06	AC-058	19-Oct-22
22100147-001	Cyclopentane		0.20 ppbv	0.03	AC-058	19-Oct-22
22100147-001	Ethylbenzene	I	0.17 ppbv	0.04	AC-058	19-Oct-22

Report certified by: Rebecca Dasilva, Account Coordinator

On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: November 2, 2022

Inquiries: (780) 632 8455

E-mail: EAS.Results@innotechalberta.ca

<b>CLIENT SAMPLE ID</b> VOCs and TNMOC Test # 810	<b>CANISTER ID</b> 29021	<b>Matrix</b> Ambient Air	<b>DATE SAMPLED</b> 14-Oct-22 0:00
<b>DESCRIPTION:</b> Air Canister			
<b>REPORT NUMBER:</b> 22100147	<b>REPORT CREATED:</b> 02-Nov-22		<b>VERSION:</b> Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
22100147-001	Isobutane		0.78 ppbv	0.04	AC-058	19-Oct-22
22100147-001	Isopentane		1.01 ppbv	0.06	AC-058	19-Oct-22
22100147-001	Isoprene	K, T, U	< 0.03 ppbv	0.03	AC-058	19-Oct-22
22100147-001	Isopropylbenzene	I	0.07 ppbv	0.06	AC-058	19-Oct-22
22100147-001	m,p-Xylene		1.01 ppbv	0.06	AC-058	19-Oct-22
22100147-001	m-Diethylbenzene	K, T, U	< 0.03 ppbv	0.03	AC-058	19-Oct-22
22100147-001	m-Ethyltoluene	I	0.13 ppbv	0.04	AC-058	19-Oct-22
22100147-001	Methylcyclohexane		0.31 ppbv	0.03	AC-058	19-Oct-22
22100147-001	Methylcyclopentane		0.25 ppbv	0.08	AC-058	19-Oct-22
22100147-001	n-Butane		2.82 ppbv	0.03	AC-058	19-Oct-22
22100147-001	n-Decane	I	0.15 ppbv	0.09	AC-058	19-Oct-22
22100147-001	n-Dodecane	K, T, U	< 0.4 ppbv	0.4	AC-058	19-Oct-22
22100147-001	n-Heptane	I	0.27 ppbv	0.06	AC-058	19-Oct-22
22100147-001	n-Hexane		0.43 ppbv	0.04	AC-058	19-Oct-22
22100147-001	n-Octane		0.26 ppbv	0.03	AC-058	19-Oct-22
22100147-001	n-Pentane		0.80 ppbv	0.06	AC-058	19-Oct-22
22100147-001	n-Propylbenzene	K, T, U	< 0.09 ppbv	0.09	AC-058	19-Oct-22
22100147-001	n-Undecane	K, T, U	< 0.8 ppbv	0.8	AC-058	19-Oct-22
22100147-001	n-Nonane		0.16 ppbv	0.06	AC-058	19-Oct-22
22100147-001	o-Ethyltoluene	I	0.10 ppbv	0.03	AC-058	19-Oct-22
22100147-001	o-Xylene		0.36 ppbv	0.04	AC-058	19-Oct-22
22100147-001	p-Diethylbenzene	K, T, U	< 0.03 ppbv	0.03	AC-058	19-Oct-22
22100147-001	p-Ethyltoluene	I	0.16 ppbv	0.06	AC-058	19-Oct-22
22100147-001	Styrene		0.48 ppbv	0.06	AC-058	19-Oct-22
22100147-001	Toluene		1.20 ppbv	0.04	AC-058	19-Oct-22

Report certified by: Rebecca Dasilva, Account Coordinator

On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: November 2, 2022

Inquiries: (780) 632 8455

E-mail: EAS.Results@innotechalberta.ca



PO Bag 4000  
Vegreville, Alberta  
Canada T9C 1T4  
(780) 632-8211

# ENVIRONMENTAL ANALYTICAL SERVICES

## TEST REPORT

<b>CLIENT SAMPLE ID</b> VOCs and TNMOC Test # 810	<b>CANISTER ID</b> 29021	<b>Matrix</b> Ambient Air	<b>DATE SAMPLED</b> 14-Oct-22 0:00
<b>DESCRIPTION:</b> Air Canister			
<b>REPORT NUMBER:</b> 22100147	<b>REPORT CREATED:</b> 02-Nov-22		<b>VERSION:</b> Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
22100147-001	trans-2-Butene		0.44 ppbv	0.04	AC-058	19-Oct-22
22100147-001	trans-2-Pentene	K, T, U	< 0.03 ppbv	0.03	AC-058	19-Oct-22

Report certified by: Rebecca Dasilva, Account Coordinator

On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: November 2, 2022

Inquiries: (780) 632 8455

E-mail: EAS.Results@innotechalberta.ca



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## ENVIRONMENTAL ANALYTICAL SERVICES

### TEST REPORT

### Revision History

Order ID	Ver	Date	Reason
22100147	01	02-Nov-22	Report created

## **Methods**

<b>Method</b>	<b>Description</b>
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
NA-028	Determination of Total Non-methane Hydrocarbons and Total Hydrocarbons in Ambient Air by Gas Chromatography Flame Ionization Detector

## Qualifiers

### Data Qualifier Translation

---

B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank





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## ENVIRONMENTAL ANALYTICAL SERVICES

### TEST REPORT

Page 8 of 10

### Order Comments

22100147

Test 810. Send results to Stan Yuha.



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## ENVIRONMENTAL ANALYTICAL SERVICES

### TEST REPORT

Page 9 of 10

### Sample Comments



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## ENVIRONMENTAL ANALYTICAL SERVICES

### TEST REPORT

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### **Result Comments**

*Note:*

- 1. Results relate only to items tested and apply to the sample as received.*
- 2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.*



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# ENVIRONMENTAL ANALYTICAL SERVICES

## TEST REPORT

<p><b>RESULTS:</b> Todd Webb          Clean Harbors Environmental          PO Box 390          2 km N of Hwy 14 on Sec Road 854 50114 RR 173          Ryley          AB TOB 4A0</p> <p><b>INVOICE:</b> Robbi Gooding          PO Box 390          2 km N of Hwy 14 on Sec Road 854 50114 RR 173          Ryley          AB TOB 4A0</p>	<p style="text-align: center;"><b>CLIENT SAMPLE ID</b>          PM10 Test # 811, C1162145</p> <p><b>CANISTER ID:</b></p> <p><b>PRIORITY:</b> Normal</p> <p><b>DESCRIPTION:</b> PM 10 Filter</p> <p><b>DATE SAMPLED:</b> 26-Oct-22 0:00</p> <p><b>REPORT CREATED:</b> 17-Nov-22</p>	<p style="text-align: center;"><b>Matrix</b>          Air Filter</p> <p><b>DATE RECEIVED:</b> 31-Oct-22</p> <p><b>REPORT NUMBER:</b> 22100297</p> <p><b>VERSION:</b> Version 01</p>
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Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
22100297-002	Particulate Weight		0.295 mg	0.004	AC-029	02-Nov-22

<b>CLIENT SAMPLE ID</b> VOCs and TNMOC Test # 811	<b>CANISTER ID</b> 32256	<b>Matrix</b> Ambient Air	<b>DATE SAMPLED</b> 26-Oct-22 0:00
<b>DESCRIPTION:</b> Air Canister			
<b>REPORT NUMBER:</b> 22100297	<b>REPORT CREATED:</b> 17-Nov-22		<b>VERSION:</b> Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22100297-001	Total Non-Methane Organic Carbon	K, T, U	< 0.08	ppmv	0.08	NA-028	01-Nov-22
22100297-001	1,2,3-Trimethylbenzene	K, T, U	< 0.08	ppbv	0.08	AC-058	03-Nov-22
22100297-001	1,2,4-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	03-Nov-22
22100297-001	1,3,5-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	03-Nov-22
22100297-001	1-Butene/Isobutylene		0.87	ppbv	0.09	AC-058	03-Nov-22
22100297-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.11	ppbv	0.11	AC-058	03-Nov-22
22100297-001	1-Pentene	K, T, U	< 0.05	ppbv	0.05	AC-058	03-Nov-22
22100297-001	2,2,4-Trimethylpentane	I	0.06	ppbv	0.03	AC-058	03-Nov-22
22100297-001	2,2-Dimethylbutane	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Nov-22
22100297-001	2,3,4-Trimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Nov-22
22100297-001	2,3-Dimethylbutane	K, T, U	< 0.14	ppbv	0.14	AC-058	03-Nov-22
22100297-001	2,3-Dimethylpentane	I	0.06	ppbv	0.03	AC-058	03-Nov-22
22100297-001	2,4-Dimethylpentane	K, T, U	< 0.05	ppbv	0.05	AC-058	03-Nov-22
22100297-001	2-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Nov-22
22100297-001	2-Methylhexane	I	0.08	ppbv	0.05	AC-058	03-Nov-22
22100297-001	2-Methylpentane	I	0.09	ppbv	0.03	AC-058	03-Nov-22
22100297-001	3-Methylheptane	K, T, U	< 0.05	ppbv	0.05	AC-058	03-Nov-22
22100297-001	3-Methylhexane	I	0.09	ppbv	0.03	AC-058	03-Nov-22
22100297-001	3-Methylpentane	I	0.10	ppbv	0.03	AC-058	03-Nov-22
22100297-001	Benzene	I	0.13	ppbv	0.05	AC-058	03-Nov-22
22100297-001	cis-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	03-Nov-22
22100297-001	cis-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Nov-22
22100297-001	Cyclohexane	I	0.07	ppbv	0.06	AC-058	03-Nov-22
22100297-001	Cyclopentane	I	0.08	ppbv	0.03	AC-058	03-Nov-22
22100297-001	Ethylbenzene	I	0.09	ppbv	0.05	AC-058	03-Nov-22

Report certified by: Rebecca Dasilva, Account Coordinator

On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: November 17, 2022

Inquiries: (780) 632 8455

E-mail: EAS.Results@innotechalberta.ca

<b>CLIENT SAMPLE ID</b> VOCs and TNMOC Test # 811	<b>CANISTER ID</b> 32256	<b>Matrix</b> Ambient Air	<b>DATE SAMPLED</b> 26-Oct-22 0:00
<b>DESCRIPTION:</b> Air Canister			
<b>REPORT NUMBER:</b> 22100297	<b>REPORT CREATED:</b> 17-Nov-22		<b>VERSION:</b> Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22100297-001	Isobutane		0.72	ppbv	0.05	AC-058	03-Nov-22
22100297-001	Isopentane		0.75	ppbv	0.06	AC-058	03-Nov-22
22100297-001	Isoprene	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Nov-22
22100297-001	Isopropylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	03-Nov-22
22100297-001	m,p-Xylene	I	0.30	ppbv	0.06	AC-058	03-Nov-22
22100297-001	m-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Nov-22
22100297-001	m-Ethyltoluene	K, T, U	< 0.05	ppbv	0.05	AC-058	03-Nov-22
22100297-001	Methylcyclohexane	I	0.13	ppbv	0.03	AC-058	03-Nov-22
22100297-001	Methylcyclopentane	I	0.10	ppbv	0.08	AC-058	03-Nov-22
22100297-001	n-Butane		2.83	ppbv	0.03	AC-058	03-Nov-22
22100297-001	n-Decane	K, T, U	< 0.09	ppbv	0.09	AC-058	03-Nov-22
22100297-001	n-Dodecane	K, T, U	< 0.5	ppbv	0.5	AC-058	03-Nov-22
22100297-001	n-Heptane	I	0.10	ppbv	0.06	AC-058	03-Nov-22
22100297-001	n-Hexane	I	0.17	ppbv	0.05	AC-058	03-Nov-22
22100297-001	n-Octane	I	0.05	ppbv	0.03	AC-058	03-Nov-22
22100297-001	n-Pentane		0.69	ppbv	0.06	AC-058	03-Nov-22
22100297-001	n-Propylbenzene	K, T, U	< 0.09	ppbv	0.09	AC-058	03-Nov-22
22100297-001	n-Undecane	K, T, U	< 0.8	ppbv	0.8	AC-058	03-Nov-22
22100297-001	n-Nonane	K, T, U	< 0.06	ppbv	0.06	AC-058	03-Nov-22
22100297-001	o-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Nov-22
22100297-001	o-Xylene	I	0.10	ppbv	0.05	AC-058	03-Nov-22
22100297-001	p-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Nov-22
22100297-001	p-Ethyltoluene	K, T, U	< 0.06	ppbv	0.06	AC-058	03-Nov-22
22100297-001	Styrene	K, T, U	< 0.06	ppbv	0.06	AC-058	03-Nov-22
22100297-001	Toluene		0.60	ppbv	0.05	AC-058	03-Nov-22

Report certified by: Rebecca Dasilva, Account Coordinator

On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: November 17, 2022

Inquiries: (780) 632 8455

E-mail: EAS.Results@innotechalberta.ca



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# ENVIRONMENTAL ANALYTICAL SERVICES

## TEST REPORT

<b>CLIENT SAMPLE ID</b> VOCs and TNMOC Test # 811	<b>CANISTER ID</b> 32256	<b>Matrix</b> Ambient Air	<b>DATE SAMPLED</b> 26-Oct-22 0:00
<b>DESCRIPTION:</b> Air Canister			
<b>REPORT NUMBER:</b> 22100297	<b>REPORT CREATED:</b> 17-Nov-22		<b>VERSION:</b> Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
22100297-001	trans-2-Butene	I	0.15 ppbv	0.05	AC-058	03-Nov-22
22100297-001	trans-2-Pentene	K, T, U	< 0.03 ppbv	0.03	AC-058	03-Nov-22

Report certified by: Rebecca Dasilva, Account Coordinator

On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: November 17, 2022

Inquiries: (780) 632 8455

E-mail: EAS.Results@innotechalberta.ca



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## ENVIRONMENTAL ANALYTICAL SERVICES

### TEST REPORT

Page 5 of 10

### Revision History

Order ID	Ver	Date	Reason
22100297	01	17-Nov-22	Report created



## **Methods**

<b>Method</b>	<b>Description</b>
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
NA-028	Determination of Total Non-methane Hydrocarbons and Total Hydrocarbons in Ambient Air by Gas Chromatography Flame Ionization Detector

## **Qualifiers**

### **Data Qualifier Translation**

---

B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank



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## ENVIRONMENTAL ANALYTICAL SERVICES

### TEST REPORT

Page 8 of 10

### Order Comments

22100297

Results also to Stan Yuha. Invoiec also to Stephanie Dennis. Project ID: Test 811.



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Canada T9C 1T4  
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## ENVIRONMENTAL ANALYTICAL SERVICES

### TEST REPORT

Page 9 of 10

### Sample Comments



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## ENVIRONMENTAL ANALYTICAL SERVICES

### TEST REPORT

Page 10 of 10

### **Result Comments**

*Note:*

- 1. Results relate only to items tested and apply to the sample as received.*
- 2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.*



Sample ID: 22100028-001 Priority: Normal



Customer ID: Clean Harbours  
Cust Samp ID: VOCs and TNMOC Test #: 809

**Client Report.**

Company: Clean Harbours Canada, Inc  
Address: PO Box 390, 50114 Range Road 173, Ryley, AB T0B 4A0  
Contact: Todd Webb or Stan Yuha  
Phone: 780-663-2513 or 780-663-3828  
Email: [Webb.Todd@cleanharbours.com](mailto:Webb.Todd@cleanharbours.com), [Yuha.Stan@cleanharbours.com](mailto:Yuha.Stan@cleanharbours.com)

**Client Billing Information**

Contact: Robbi Gooding  
Phone: 780-663-3828  
Email: [Gooding.Robbi@cleanharbours.com](mailto:Gooding.Robbi@cleanharbours.com)  
Project ID: Test 809  
PO #: 0000228348

**Turnaround Time**

X Normal (10 business days)  
**Rush**  
Note: Rush service not available for all tests.  
Confirm rush requests with InnoTech Alberta.

**Special Instructions/Comments**

Date Received – Lab Use Only



*JWS*

Lab Sample No.	Client Sample ID	Sample Source/Description	Canister Number/Sampler ID	Date Sampled (dd/mm/yy) From / To	Time Sampled (24 hour) From / To	Analysis Requested
1	VOCs and TNMOC Test Number: 809	Canister	28907	02/10/22 03/10/22	00:00 00:00	VOC PAMS & TNMOC
2	PM10 Test Number: 809	PM10 filter	C1162146	02/10/22 03/10/22	00:00 00:00	FLT Particulate Weight

Client Authorization: *[Signature]* Laboratory Personnel: \_\_\_\_\_  
(Signature) (Signature)

This "Chain of Custody" form is subject to InnoTech Alberta standard terms and conditions.

Sample ID: 22100028-002 Priority: Normal



Customer ID: Clean Harbours  
PM10 Test #: 809, C1162146

# Filter Shipping Record

Sent To: Clean Harbours  
PO Box 390  
Ryley, AB T0B 4A0  
(1/2 mile north, Hwy 854)  
Todd Webb  
780-663-2513

Date: August 16/20  
Project: Clean Harbours  
Prepared by: *Todd Webb*



Filter Size	# of Filters in Cassettes	Filter IDs
47 mm	1	C1162146

Returns: coolers, large and small containers may be shipped to: Innotech, PO Bag 4000, HWY 16A & 75th Street, Vegreville, AB T9C 1T4

Sample ID: 22100028-001 Priority: Normal



Customer ID: Clean Harbours

Cust Samp ID: VOCs and TNMOC Test # 809



Canister ID: 28907

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: DSQ3 on: MAY 10 2022

Evacuated: AUG 02 2022 Recertified: \_\_\_\_\_  
(Use within: 3 months from evacuation or recertification date)

Laboratory Contact Number: 780-632-8403

Sample ID: <u>Test 809</u>
Sampled By: <u>T. Webb</u>
Starting Vacuum: <u>-27.2</u> "Hg
End Vacuum: <u>+6</u> "Hg/psig



AIN OF CUSTODY FORM

Environmental Analytical Services  
 Highway 16A & 75 Street  
 Vegreville, AB T9C 1T4  
 Phone: 780-632-8403  
 Email: [EAS.Reception@innotechalberta.ca](mailto:EAS.Reception@innotechalberta.ca)  
[www.innotechalberta.ca](http://www.innotechalberta.ca)



Customer ID: Clean Harbours  
 Cust Samp ID: VOCs and TNMOC Test # 810

<p><b>Client Reporting Information</b></p> <p>Company: Clean Harbours Canada, Inc                  Address: PO Box 390, 50114 Range Road 173, Ryley, AB T0B 4A0                  Contact: Todd Webb or Stan Yuha                  Phone: 780-663-2513 or 780-663-3828                  Email: <a href="mailto:Webb.Todd@cleanharbours.com">Webb.Todd@cleanharbours.com</a>, <a href="mailto:Yuha.Stan@cleanharbours.com">Yuha.Stan@cleanharbours.com</a></p>	<p><b>Client Billing Information</b></p> <p>Contact: Robbi Gooding                  Phone: 780-663-3828                  Email: <a href="mailto:Gooding.Robbj@cleanharbours.com">Gooding.Robbj@cleanharbours.com</a>                  Project ID: Test 810                  PO #: 0000228348</p>	<p><b>Turnaround Time</b></p> <p>X Normal (10 business days)  <span style="color: red;">Rush</span></p> <p>Note: Rush service not available for all tests.                  Confirm rush requests with InnoTech Alberta.</p>
<p>Special Instructions/Comments</p> <div style="border: 2px solid blue; padding: 5px; display: inline-block; margin: 10px auto; width: fit-content;"> <p style="margin: 0;"><b>RECEIVED</b>  <span style="color: red; font-weight: bold;">OCT 18 2022</span></p> </div> <p>Date Received – Lab Use Only</p>		

Lab Sample No.	Client Sample ID	Sample Source/Description	Canister Number/Sampler ID	Date Sampled (dd/mm/yy) From / To	Time Sampled (24 hour) From / To	Analysis Requested
	VOCs and TNMOC Test Number: 810	Canister	29021	14/10/22	00:00	VOC PAMS & TNMOC
	PM10 Test Number: 810	PM10 filter	C9698038	15/10/22	00:00	FLT Particulate Weight

Client Authorization: \_\_\_\_\_ Laboratory Personnel: \_\_\_\_\_  
 (Signature) (Signature)

This "Chain of Custody" form is subject to InnoTech Alberta standard terms and conditions.

Sample ID: 22100147-002 Priority: Normal



Customer ID: Clean Harbours

Cust Samp ID: PM10 Test # 810 - Filter # C9698038

# Filter Shipping Record



Date: July 8-2022

Project: Clean Harbours

Prepared by: TJ Juleta

Sent To: Clean Harbours  
PO Box 390  
Ryley, AB T0B 4A0  
(1/2 mile north, Hwy 854)  
Todd Webb  
780-663-2513

Filter Size	# of Filters in Cassettes	Filter IDs
47 mm	1	C9698038

Returns: coolers, large and small containers may be shipped to: Innotech, PO Bag 4000, HWY 16A & 75th Street, Vegreville, AB T9C 1T4



Canister ID: 29021.

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: TSQ4 on: APR 13 2022

Evacuated: MAY 05 2022 Recertified: AUG 02 2022

(Use within: 3 months from evacuation or recertification date)

Laboratory Contact Number: 780-632-8403

Sample ID: Test 810

Sampled By: T. Webb

Starting Vacuum:

-27.1 "Hg

End Vacuum: KG

-4 "Hg/psig

Sample ID: 22100147-001 Priority: Normal



Customer ID: Clean Harbours

Cust Samp ID: VOCs and TNMOC Test # 810

Sample ID: 22100247-001 Priority: Normal



Customer ID: Clean Harbours

Cust Samp ID: Filter # C9698038 Test # 810


### AIN OF CUSTODY FORM

Environmental Analytical Services  
Highway 16A & 75 Street  
Vegreville, AB T9C 1T4

Phone: 780-632-8403  
Email: EAS.Reception@innotechalberta.ca  
[www.innotechalberta.ca](http://www.innotechalberta.ca)

<b>Client Reporting Information</b> Company: Clean Harbours Canada, Inc Address: PO Box 390, 50114 Range Road 173, Ryley, AB T0B 4A0 Contact: Todd Webb or Stan Yuha Phone: 780-663-2513 or 780-663-3828 Email: <a href="mailto:Webb.Todd@cleanharbours.com">Webb.Todd@cleanharbours.com</a> , <a href="mailto:Yuha.Stan@cleanharbours.com">Yuha.Stan@cleanharbours.com</a>		<b>Client Billing Information</b> Contact: Robbi Gooding Phone: 780-663-3828 Email: <a href="mailto:Gooding.Robbi@cleanharbours.com">Gooding.Robbi@cleanharbours.com</a> Project ID: Test 810 PO #: 0000228348		<b>Turnaround Time</b> <input checked="" type="checkbox"/> Normal (10 business days) <input type="checkbox"/> <b>Rush</b> Note: Rush service not available for all tests. Confirm rush requests with InnoTech Alberta.			
<b>Special Instructions/Comments</b> <p>Filter was over 1.2 mg and is being sent for further analysis - ions &amp; metals. SWP, Oct 25/22</p>						Date Received - Lab Use Only <div style="border: 2px solid blue; padding: 5px; display: inline-block;"> <b>RECEIVED</b>  <b>OCT 18 2022</b> </div>	

Lab Sample No.	Client Sample ID	Sample Source/Description	Canister Number/Sampler ID	Date Sampled (dd/mm/yy) From / To	Time Sampled (24 hour) From / To	Analysis Requested
	VOCs and TNMOC Test Number: 810	Canister	29021	14/10/22 15/10/22	00:00 00:00	VOC PAMS & TNMOC
①	PM10 Test Number: 810	PM10 filter	C9698038	14/10/22 15/10/22	00:00 00:00	FLI Particulate Weight ions & metals

Client Authorization:  Laboratory Personnel: \_\_\_\_\_ (Signature)

This "Chain of Custody" form is subject to InnoTech Alberta standard terms and conditions.

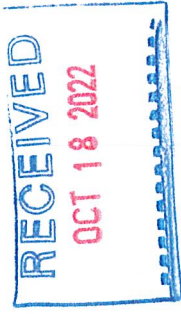
Sample ID: 22100247-001 Priority: Normal



Customer ID: Clean Harbours

Cust Samp ID: Filter # C9698038 Test # 810

# Filter Shipping Record



Date: July 8-2022

Project: Clean Harbours

Prepared by: TJ Jenkins

Sent To: Clean Harbours

PO Box 390

Ryley, AB T0B 4A0

(1/2 mile north, Hwy 854)

Todd Webb

780-663-2513

Filter Size	# of Filters in Cassettes	Filter IDs
47 mm	1	C9698038

Returns: coolers, large and small containers may be shipped to: Innotech, PO Bag 4000, HWY 16A & 75th Street, Vegreville, AB T9C 1T4



**Sample ID: 22100297-001** Priority: Normal **CUSTODY FORM**

Environmental Analytical Services  
Highway 16A & 75 Street  
Vegreville, AB T9C 1T4

Phone: 780-632-8403  
Email: [EAS.Reception@innotechalberta.ca](mailto:EAS.Reception@innotechalberta.ca)  
[www.innotechalberta.ca](http://www.innotechalberta.ca)



A S I

Customer ID: Clean Harbours

Cust Samp ID: VOCs and TNMOC Test # 811

**Client Billing Information**

Contact: Robbi Gooding, Stephanie Dennis

Phone: 780-663-3828

Email: [Gooding.Robbi@cleanharbours.com](mailto:Gooding.Robbi@cleanharbours.com),  
[Dennis.Stephanie@cleanharbours.com](mailto:Dennis.Stephanie@cleanharbours.com)

Project ID: Test 811

PO #: 0000228348

**Turnaround Time**

X Normal (10 business days)

**Rush**

Note: Rush service not available for all tests.  
Confirm rush requests with InnoTech Alberta.

Date Received – Lab Use Only



Lab Sample No.	Client Sample ID	Sample Source/ Description	Canister Number/ Sampler ID	Date Sampled (dd/mm/yy) From / To	Time Sampled (24 hour) From / To	Analysis Requested
1	VOCs and TNMOC Test Number: 811	Canister	32256	26/10/22	00:00	VOC PAMS & TNMOC
			C1162145	27/10/22	00:00	
2	PM10 Test Number: 811	PM10 filter				FLT Particulate Weight

**Special Instructions/Comments**

Company: Clean Harbours Canada, Inc  
Address: PO Box 390, 50114 Range Road 173,  
Ryley, AB T0B 4A0  
Contact: Todd Webb or Stan Yuha  
Phone: 780-663-2513 or 780-663-3828  
Email: [Webb.Todd@cleanharbours.com](mailto:Webb.Todd@cleanharbours.com),  
[Yuha.Stan@cleanharbours.com](mailto:Yuha.Stan@cleanharbours.com)

Client Authorization: \_\_\_\_\_  
(Signature)

Laboratory Personnel: \_\_\_\_\_  
(Signature)

This "Chain of Custody" form is subject to InnoTech Alberta standard terms and conditions.

Sample ID: 22100297-001 Priority: Normal



Customer ID: Clean Harbours  
 Cust Ssamp ID: VOCs and TNMOC Test # 811

Sent To: Clean Harbours  
 PO Box 390  
 Ryley, AB T0B 4A0  
 (1/2 mile north, Hwy 854)  
 Todd Webb  
 780-663-2513

## Filter Shipping Record

Date:

Project:

Prepared by:



Clean Harbours

*TJ Perence*

Filter Size	# of Filters in Cassettes	Filter IDs
47 mm	1	C1162145

Returns: coolers, large and small containers may be shipped to: Innotech, PO Bag 4000, HWY 16A & 75th Street, Vegreville, AB T9C 1T4

Sample ID: 22100297-001 Priority: Normal



Customer ID: Clean Harbours

Cust Samp ID: VOCs and TNMOC Test # 811



Canister ID: 32256

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ3 on: AUG 04 2022

Evacuated: SEP 08 2022 Recertified: \_\_\_\_\_

(Use within: 3 months from evacuation or recertification date)

Laboratory Contact Number: 780-632-8403

Sample ID: Test 811

Sampled By: T. Webb

Starting Vacuum: -27.1 "Hg

End Vacuum: -4 "Hg/psig *STOP*



**END OF REPORT**