January 26, 2024

Alberta Environment and Protected Areas (AEPA)
Monitoring Branch
11th Floor Oxbridge Place
9820-106 Street
Edmonton, Alberta
T5K 2J6

RE: Revised Monthly Ambient Air Monitoring Report
November 2023
Clean Harbors Canada, Inc. Approval 10348-03-01

To whom it may concern:

Clean Harbors Canada, Inc. (Clean Harbors) is presenting this Revised Monthly Ambient Air Monitoring Report, which was prepared by GHD Limited (Consultant), for the reporting period of November 2023, to Alberta Environment and Protected Areas (AEPA). 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 amended Environmental Protection and Enhancement Act (EPEA) Approval, Approval No. 10348-03-01 (Approval). Clean Harbors' original Ambient Air Monitoring Program for Approval No. 10348-03-00 was initially approved on June 24, 2009. As part of the amended Approval requirements, the Facility submitted an Enhanced Ambient Air Quality Monitoring Program to AEPA (formerly AEP) on September 14, 2022 (no formal approval has been provided by AEPA). Operating under the Approval and the submitted program, Clean Harbors operates the following ambient air monitoring stations:

- Wind
  - Facility Meteorological Station – AEPA Station ID 00010348-C-1
  - Facility Site Station – AEPA Station ID 00010348-C-2
  - Ryley School Station – AEPA Station ID 00010348-C-3
- TSP
  - Facility Site Station – AEPA Station ID 00010348-I-2
  - Ryley School Station – AEPA Station ID 00010348-I-3
  - Highway 854 Lift Station – AEPA Station ID 00010348-I-1
- PM_{10}
  - Highway 854 Lift Station – AEPA Station ID 00010348-I-1

Included in this report are the following:

- Summary of the ambient air monitoring program for November 2023
- Summary of AMD Electronic Transfer System submittals
- Results for Total Suspended Particulate Matter (TSP) reported in µg/m^3
- Results for Particulate Matter $\leq$ 10 microns (PM_{10}) reported in µg/m^3
- Results for metals if the TSP or PM_{10} results were >50 µg/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.

Stan Yuha

Stan Yuha

Facility Manager
Ryley Facility

Alberta Environment and Protected Areas (AEPA)
Revised Monthly Ambient Air Monitoring Report
November 2023
Report Completed on January 26, 2024

Clean Harbors Environmental Services Inc.

Approval Number: 10348-03-01

Ryley Facility, Alberta

CLEAN HARBORS CANADA, INC.
P.O. Box 390, Ryley, Alberta T0B 4A0 Telephone (780) 663-3828

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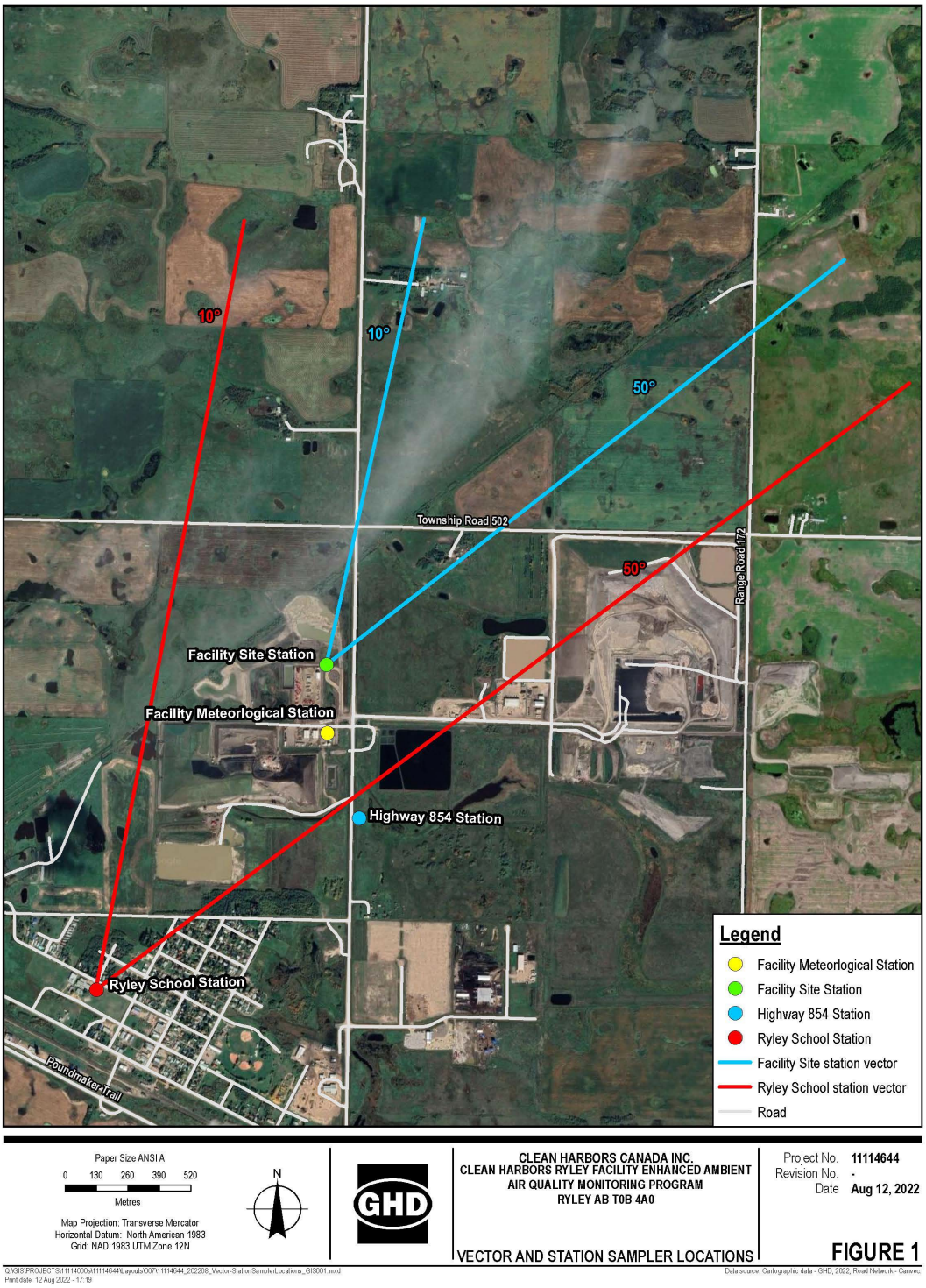
1. Introduction

The Facility operates the following ambient air monitoring stations to assess ambient air quality at and around the Facility as shown in Figure 1.



1. Upwind intermittent ambient air quality monitoring station, known as the Facility Site Station (AEPA Station ID 00010348-I-2), located at 50114 Range Road 173, Ryley, Alberta (53°18'13.11"N and 112°25'5.81"W). At this location, a Tisch TE-5170V VFC High Volume TSP Sampler (TSP Hi-Vol Sampler) is located against the Facility perimeter fence, north of the vehicle staging road.
2. Downwind intermittent ambient air quality monitoring station, known as the Ryley School Station (AEPA Station ID 00010348-I-3), located at 5211 52 Avenue, Ryley, Alberta (53°17'28.99"N and 112°25'55.81"W). At this location, a TSP Hi-Vol Sampler is located on the roof of the Ryley School.

For these two locations, samples are collected and analyzed for the following: total suspended particulate matter (TSP) (typically with diameter less than 35 microns (µm)). Additionally, TSP samples that exceed 50 micrograms per cubic metre (50 µg/m^3) are analyzed for a target list of metals. The samplers are programmed to run for approximately 24-hours. All samples are collected for a total of 24-hours by intermittent sampling when the wind speed is greater than 5 km/hr and wind direction is blowing from the northeast towards the southwest.

3. Intermittent monitoring station, known as the Highway 854 Lift Station (AEPA Station ID 00010348-I-1), located on Secondary Road 854, approximately 350 metres southeast of the Facility (Latitude: 53°17'52.66"N, Longitude: 112°24'57.87"W). At this location, a TSP Hi-Vol Sampler and a Partisol FRM 2000 PM_{10} Sampler (PM_{10} Sampler) will be located on the roof of the lift station. Samples are collected and analyzed for the following: TSP, particulate matter less than or equal to 10 µm in diameter (PM_{10}), volatile organic compounds (VOCs), and total non-methane organic compounds (TNMOC). Additionally, TSP or PM_{10} samples that exceed 50 µg/m^3 are analyzed for a target list of metals. Sampling is conducted once every 6-days for a 24-hour sampling period (midnight to midnight) as required by the Facility's Approval. The 6-day sampling frequency will be in alignment with the Government of Canada, National Air Pollution Surveillance Program (National Air Pollution Surveillance Program – Canada.ca). To correlate PM_{10} data with TSP data, Clean Harbors will continue PM_{10} sampling at the station for a two-year period.

4. Continuous meteorological stations that collect wind speed and wind direction data are also located at the Facility Meteorological Station (AEPA Station ID 00010348-C-1), Upwind Facility Site Station (AEPA Station ID 00010348-C-2), and Downwind Ryley School Station (AEPA Station ID 00010348-C-3). The anemometer equipment used to measure this data includes three R. M. Young 05305-10A Wind Monitor-Aqs.

All sampling and monitoring is conducted in accordance with the Facility's amended Approval (Approval No. 10348-03-01), the Alberta Air Monitoring Directive, 2016 (AMD), and in accordance with the following AEPA standards:

- The *Alberta Stack Sampling Code*, Alberta Environment, 1995, as amended
- The *Methods Manual for Chemical Analysis of Atmospheric Pollutants*, Alberta Environment, 1993, as amended
- The *Air Monitoring Directive*, Alberta Environment, 1989, as amended

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.

Contact Information	
Name	**Mr. Stan Yuha**
Title	Plant Manager
Company	Clean Harbors
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2. Summary of Ambient Air Monitoring Activities

The following ambient air monitoring activities were conducted during the month of November 2023.

Activity	*Completed (Y/N)*	*Date(s)*
Wind – Facility Meteorological Station		
Wind Speed/Direction Sensor Calibration	N	June 30, 2023(1)
Changes to the Wind Speed/Direction Sensor	N	-
Wind – Facility Site Station		
Wind Speed/Direction Sensor Calibration	N	Anemometer Error(2)
Changes to the Wind Speed/Direction Sensor	N	-
Wind – Ryley School Station		
Wind Speed/Direction Sensor Calibration	Y	June 30, 2023
Changes to the Wind Speed/Direction Sensor	N	-
TSP – Facility Site Station		
TSP Hi-Vol Sampler Calibration	Y	October 19, 2023
Changes to the TSP Hi-Vol Sampler	N	-
TSP Samples Collected	Y	November 1 – December 1, 2023
TSP Metal Analysis Conducted	Y	November 1 – December 1, 2023
TSP Sampler Maintenance Activities	Y	November 1, 2023
TSP – Ryley School Station		
TSP Hi-Vol Sampler Calibration	Y	September 28, 2023
Changes to the TSP Hi-Vol Sampler	N	-
TSP Samples Collected	Y	November 1 – December 1, 2023
TSP Metal Analysis Conducted	Y	November 1 – December 1, 2023
TSP Sampler Maintenance Activities	Y	November 1, 2023
TSP, PM_{10}, VOC and TNMOC – Highway 854 Lift Station		
TSP Hi-Vol Sampler Calibration	Y	October 19, 2023
PM_{10} Sampler Calibration	Y	September 28, 2023
Changes to the TSP Hi-Vol Sampler	N	-
Changes to the PM_{10} Sampling Station	N	-
TSP Samples Collected	Y	November 2, 2023 November 8, 2023 November 14, 2023 November 20, 2023 November 26, 2023
PM_{10} Samples Collected	Y	November 2, 2023

Activity	*Completed (Y/N)*	*Date(s)*
		November 8, 2023 November 14, 2023 November 20, 2023 November 26, 2023
VOC and TNMOC Samples Collected	Y	November 2, 2023 November 8, 2023 November 14, 2023 November 20, 2023 November 26, 2023
TSP Metal Analysis Conducted	Y	November 2, 2023 November 20, 2023
PM_{10} Metal Analysis Conducted	Y	November 2, 2023 November 20, 2023
TSP Sampler Maintenance Activities	Y	November 2, 2023 November 8, 2023 November 14, 2023 November 20, 2023 November 26, 2023
PM_{10} Sampler Maintenance Activities	Y	November 2, 2023 November 8, 2023 November 14, 2023 November 20, 2023 November 26, 2023
Other		
Dust Suppression Activities	N	-

Note: (1) The wind speed/direction sensor on the Facility Site Meteorological Station was checked for calibration on June 30, 2023 and was shown to be within the allowable tolerances and was then re-installed after calibration.

(2) Instrument is not currently reporting due to anemometer program corruption. The instrument was calibrated prior to install in the Fall of 2014 for voluntary reporting.

3. Summary of Electronic Transfer System (ETS) Submittals

In addition to the November 2023 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 AEPA via the ETS portal. The XML Schema file contains the results from:

- Wind
  - Facility Meteorological Station – AEPA Station ID 00010348-C-1.

- Facility Site Station – AEPA Station ID 00010348-C-2.
- Ryley School Station – AEPA Station ID 00010348-C-3.

- TSP
  - Facility Site Station – AEPA Station ID 00010348-I-2.
  - Ryley School Station – AEPA Station ID 00010348-I-3.
  - Highway 854 Lift Station – AEPA Station ID 00010348-I-1.
- PM_{10}
  - Highway 854 Lift Station – AEPA Station ID 00010348-I-1.

3.2 Ambient Air Monitoring Program Laboratory Reports

One laboratory report in PDF file format was submitted to the AEPA via the ETS portal. The PDF file contains the results from AEPA Station ID 00010348-I-1, AEPA Station ID 00010348-I-2, and AEPA Station ID 00010348-I-3.

3.3 Ambient Air Monitoring Program Calibration Reports

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

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

4.1 Facility Meteorological Station for Wind Speed and Direction (AEPA Station ID 00010348-C-1)

The Facility Meteorological Station was taken down and calibrated on June 30, 2023. The station was shown to be within all allowable tolerances, as required by the manufacturer, and was then re-installed after calibration. Provided in Appendix A is the calibration report and record of installation.

4.2 Facility Site Station for Wind Speed and Direction (AEPA Station ID 00010348-C-2)

The Facility Site Station was last calibrated upon installation. When installed, the station was shown to be within all allowable tolerances, as required by the manufacturer.

During May 2023, Clean Harbors chose to swap the Ryley School Station (AEPA Station ID 00010348-C-3) anemometer with the Facility Site Station (AEPA Station ID 00010348-C-2) anemometer due to AEPA Station ID 00010348-C-3 anemometer program corruption. Per Approval No. 10348-03-01, Clean Harbors is only required to report "a minimum of one (1) meteorological station in each of the Ryley School and Facility Site intermittent ambient air quality monitoring

stations" thus, reporting from Station ID 00010348-C-2 is not required as Clean Harbors reports from the Facility Meteorological Station (Station ID 00010348-C-1).

4.3 Ryley School Station for Wind Speed and Direction (AEPA Station ID 00010348-C-3)

The Ryley School Station was taken down and calibrated on June 30, 2023. The station was shown to be within all allowable tolerances, as required by the manufacturer, and was then re-installed after calibration. Provided in Appendix A is the calibration report.

4.4 Facility Site Station TSP Hi-Vol Sampler (AEPA Station ID 00010348-I-2)

The sampling activities for the Tisch TE-5170V VFC High Volume TSP Sampler (TSP Hi-Vol Sampler) are recorded in the field sampling sheets provided in Appendix B.

On a quarterly basis, performance audits are completed on the TSP Hi-Vol Sampler. A quarterly audit was performed on October 19, 2023. It is noted that this audit could not be performed on September 28, 2023 due to a electrical cord issue which was fixed prior to the audit on October 19, 2023.

4.5 Ryley School Station TSP Hi-Vol Sampler (AEPA Station ID 00010348-I-3)

The sampling activities for the TSP Hi-Vol Sampler are recorded in the field sampling sheets provided in Appendix B.

On a quarterly basis, performance audits are completed on the TSP Hi-Vol Sampler. A quarterly audit was performed on September 28, 2023.

4.6 Highway 854 Lift Station TSP Hi-Vol Sampler (AEPA Station ID 00010348-I-1)

The sampling activities for the TSP Hi-Vol Sampler are recorded in the field sampling sheets provided in Appendix B.

On a quarterly basis, performance audits are completed on the TSP Hi-Vol Sampler. A quarterly audit was performed on October 19, 2023. It is noted that this an audit was initially performed on September 28, 2023 and a minor leak was identified. Following this, all parts were tightened and checked by Clean Harbors. Another leak check and audit was performed on October 19, 2023 and it was confirmed the leak was no longer present.

4.7 Highway 854 Lift Station PM_{10} Sampler (AEPA Station ID 00010348-I-1)

Maintenance activities for the Thermo Scientific™ Partisol 2000i-Federal Reference Method (FRM) PM_{10} Sampler included inlet cleaning and leak checks that were conducted before each sampling

event in November 2023. The pre-sampling maintenance activities are recorded in the field sampling sheets provided in Appendix B.

On a quarterly basis, performance audits are completed on the TSP Hi-Vol Sampler. A quarterly audit was performed on September 28, 2023.

5. Ambient Air Monitoring Results

The following section presents the results from the ambient air monitoring program for the Facility Meteorological Station (AEPA Station ID 00010348-C-1), Facility Site Station (AEPA Station ID 00010348-C-2), Ryley School Station (AEPA Station ID 00010348-C-3), Highway 854 Lift Station (AEPA Station ID 00010348-I-1), Facility Site Station (AEPA Station ID 00010348-I-2), and Ryley School Station (AEPA Station ID 00010348-I-3) conducted in June 2023. Where applicable, comparisons were made to Alberta Ambient Air Quality Objectives (AAAQO) for parameters that had 24-hour average objectives. These parameters are TSP and some of the VOCs including o,m,p-xylene, hexane, and toluene. For the parameter objectives with averaging periods other than 24-hours, Section 7.1.2 of the Air Quality Model Guideline was used to covert the measured values to the corresponding AAAQO averaging periods prior to comparison. For all other parameters, AAAQO have not been established.

5.1 Meteorological Data for Wind Speed and Direction

In accordance with the Approval and the AMD, the Facility is required to collect wind speed and directional data continuously for the Facility Meteorological Station, Facility Site Station, and Ryley School Station. Tables 1 - 3 present the hourly and 24-hour average wind speeds, Tables 4 - 6 present the hourly and 24-hour most frequent wind direction data (degrees from north), and Tables 7 - 9 present the Wind Class Frequency Distribution for November 2023 from the Facility Meteorological Station, Facility Site Station, and Ryley School Station, respectively. Appendix C provides graphical representations of the Wind Class Frequency Distribution and the Wind Roses based on Tables 1 – 9.

5.1.1 Facility Meteorological Station Data Verification and Validation and Uptime (AEPA Station ID 00010348-C-1)

Based on the verification and validation process conducted for the meteorological data that was collected in November 2023, 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.

5.1.2 Facility Site Station Data Verification and Validation and Uptime (AEPA Station ID 00010348-C-2)

As noted above, Clean Harbors chose to swap the Ryley School Station (AEPA Station ID 00010348-C-3) anemometer with the Facility Site Station (AEPA Station ID 00010348-C-2) anemometer due to AEPA Station ID 00010348-C-3 anemometer program corruption. Per Approval No. 10348-03-01, Clean Harbors is only required to report "a minimum of one (1) meteorological station in each of the Ryley School and Facility Site intermittent ambient air quality monitoring

stations" thus, reporting from Station ID 00010348-C-2 is not required as Clean Harbors reports from the Facility Meteorological Station (Station ID 00010348-C-1).

5.1.3 Ryley School Station Data Verification and Validation and Uptime (AEPA Station ID 00010348-C-3)

Based on the verification and validation process conducted for the meteorological data that was collected in November 2023, 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 TSP Concentrations

AAAQO are specified for TSP at 100 µg/m^3 (24-hour averaging period). In accordance with the Facility's Approval, TSP samples that exceed 50 µg/m^3 are analyzed for a target list of metals. Appendix B provides the field sheets completed for each sampling event. Appendix D provides the chain of custody forms and laboratory analytical reports.

5.2.1 Facility Site Station (AEPA Station ID 00010348-I-2)

Table 10 presents the results of the sampling conducted for TSP from the Facility Site Station. The TSP sample collected in November 2023 was shown to have an elevated TSP concentration of 414.403 µg/m^3, which is above the 100 µg/m^3 AAAQO threshold. The Facility Site Station is downwind from other potential sources in the area (upwind of the Facility sources) and as a result there is likely other contributing factors outside of the Facility causing this exceedance. The Facility Site Station is used as a baseline of the background air quality, and the Ryley School Station and Highway Lift Station are compared to analyze the Facility's effect on the air quality. The TSP exceedance for November 2023 is likely a result of the background air quality and not related to the Facility. As such, no contravention form was submitted due to this exceedance.

5.2.2 Ryley School Station (AEPA Station ID 00010348-I-3)

Table 11 presents the results of the sampling conducted for TSP from the Ryley School Station. The TSP sample collected in November 2023 was shown to have an elevated TSP concentration of 212.156 µg/m^3, which is above the 100 µg/m^3 AAAQO threshold. It should be noted that the Ryley School Station is located downwind of the Facility Site Station and the Ryley School Station only collects samples when the wind direction is blowing from northeast to the southwest. Therefore, the exceedance at the Ryley School station is likely due to the high baseline concentration measured at the Facility Site Station which is likely a result of other contributing factors outside of the Facility. The TSP exceedance for November 2023 is likely a result of the background air quality and not related to the Facility. As such, no contravention form was submitted due to this exceedance.

5.2.3 Highway 854 Lift Station (AEPA Station ID 00010348-I-1)

Table 12 presents the results of the sampling conducted for TSP from the Highway 854 Lift Station. Two out of four samples analyzed in November 2023 were shown to have elevated TSP concentration above the 100 µg/m^3 AAAQO threshold. The TSP exceedance for November 2023 is

likely a result of the background air quality, as discussed above, and not related to the Facility. As such, no contravention form was submitted due to this exceedance.

5.3 PM_{10} Concentrations

AAAQO are specified for TSP at 100 µg/m^3 and Particulate Matter $\leq$ 2.5 microns ($PM_{2.5}$) at 29 µg/m^3 (24-hour averaging period). There is currently no AAAQO specified for PM_{10} for a 24-hour averaging period in Alberta. To correlate PM_{10} data with TSP data, Clean Harbors will continue PM_{10} sampling at the station for a two-year period. In accordance with the Facility's Approval, PM_{10} samples that exceed 50 µg/m^3 are analyzed for a target list of metals. Appendix B provides the field sheets completed for each sampling event. Appendix D provides the chain of custody forms and laboratory analytical reports.

5.3.1 Highway 854 Lift Station (AEPA Station ID 00010348-I-1)

Table 13 presents the results of the sampling conducted for PM_{10}.

5.4 VOC and TNMOC Concentrations

There are three VOC parameters that have corresponding AAAQO with 24-hour averaging periods including o,p,m-xylene, hexane and toluene.. Appendix B provides the field sheets completed for each sampling event. Appendix D provides the chain of custody forms and laboratory analytical reports.

5.4.1 Highway 854 Lift Station (AEPA Station ID 00010348-I-1)

Table 14 presents the VOC and TNMOC concentrations measured in November 2023. There were no exceedances for the parameters with AAAQO in November 2023.

5.5 Metal Concentrations

In accordance with the Facility's Approval, if collected TSP or PM_{10} samples show exceedances over 50 µg/m^3 after gravimetric analysis, a subsequent filter particulate analysis is done using inductively coupled plasma mass spectroscopy (ICP-MS) for 21 trace elements. There are four parameters that have corresponding AAAQO with 1 hour averaging periods including arsenic, chromium, lead, nickel, and manganese. The sample results were converted to a 1-hour averaging period for comparison with the sample AAAQO. If metal analysis was conducted, Appendix B provides the field sheets completed for each sampling event. Appendix D provides the chain of custody forms and laboratory analytical reports.

5.5.1 Facility Site Station (AEPA Station ID 00010348-I-2)

The TSP sample collected in November 2023 was above 50 µg/m^3 and as such, analysis for metals was conducted on the sample. Facility Test #108 (HV-23-02-15) was shown to have an elevated TSP concentration of 414.403 µg/m^3, which is over the 50 µg/m^3 threshold. This sample was sent for additional analysis and the results for this test can be found in Table 15 of this report. There were no exceedances for the parameters with AAAQO in November 2023.

5.5.2 Ryley School Station (AEPA Station ID 00010348-I-3)

The TSP sample collected in November 2023 was above 50 µg/m^3 and as such, analysis for metals was conducted on the sample. School Test #108 (HV-23-02-16) was shown to have an elevated TSP concentration of 212.156 µg/m^3, which is over the 50 µg/m^3 threshold. This sample was sent for additional analysis and the results for this test can be found in Table 16 of this report. There were no exceedances for the parameters with AAAQO in November 2023.

5.5.3 Highway 854 Lift Station (AEPA Station ID 00010348-I-1)

TSP

Three of the four TSP samples analyzed in November 2023 were above 50 µg/m^3 and as such, analysis for metals was conducted on the samples. Facility Test #870 (HVF-23-06-06), Facility Test #872 (HVF-23-06-05), and Facility Test #873 (HVF-23-10-01) were shown to have elevated TSP concentrations of 102.555 µg/m^3, 52.605 µg/m^3, and 223.427 µg/m^3, respectively, which are over the 50 µg/m^3 threshold. These samples were sent for additional analysis and the results for Test #870, Test #872, and Test #873 can be found in Table 17 of this report. There were no exceedances for the parameters with AAAQO in November 2023.

PM_{10}

One of the PM_{10} samples analyzed in November 2023 was above the 50 µg/m^{3}and as such, analysis for metals was conducted on the sample. Facility Test #873 (AT85236) was shown to have an elevated PM_{10} concentration of 90.574 µg/m^3, which is above the 50 µg/m^3 threshold. The PM_{10} concentrations measured for Facility Test #870 (AT85233) and Facility Test #872 (AT85234) were less than the 50 threshold, 43.096 µg/m^3 and 25.105 µg/m^3 respectively; however, as the TSP concentration for the samples were above the 50 µg/m^3 threshold (as noted above), the corresponding PM_{10} samples were sent for analysis. The results for Test #870, Test #872 and Test #873 can be found in Table 18 of this report. There were no exceedances for the parameters with AAAQO in November 2023.

The remainder of the TSP and PM_{10} samples collected in November 2023 were below 50 µg/m^3 and as such analysis for metals was not conducted on those samples.

5.6 Dust Suppression

There were no dust suppression activities, which include using leachate spread on the surface of the active landfill, conducted during November 2023.

6. Conclusions

The following summarizes the Ambient Air Monitoring Program that was conducted in November 2023.

1 During November 2023, the Facility Meteorological Station (AEPA Station ID 00010348-C-1) 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.

2 During November 2023, the continuous Facility Site wind Station was not operational. Per the approval, reporting from Station ID 00010348-C-2 is not required as Clean Harbors reports from the Facility Meteorological Station.

3 During November 2023, the continuous Ryley School 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.

4 The TSP concentration measured at the intermittent Facility Site Station from November 1, 2023 to December 1, 2023 was 414.403 µg/m^3. The AAAQO exceedance for this month is likely a result of the background air quality and not related to the Facility.

5 The TSP concentration measured at the intermittent Ryley School Station from November 1, 2023 to December 1, 2023 was 212.156 µg/m^3. The AAAQO exceedance for this month is likely a result of the background air quality and not related to the Facility.

6 The TSP concentrations measured at the intermittent Highway 854 Lift Station (AEPA Station ID 00010348-I-1) on November 2, November 8, November 14, November 20, and November 26 were 102.555 µg/m^3, 37.513 µg/m^3, 52.605 µg/m^3, 223.427 µg/m^3, and 46.464 µg/m^3, respectively.

7 The PM_{10} concentrations measured at the intermittent Highway 854 Lift Station (AEPA Station ID 00010348-I-1) on November 2, November 8, November 14, November 20, and November 26 were 43.096 µg/m^3, 8.471 µg/m^3, 25.105 µg/m^3, 90.574 µg/m^3, and 13.279 µg/m^3, respectively.

8 Based on the VOC and TMNOC results measured at the intermittent Highway 854 Lift Station (AEPA Station ID 00010348-I-1), 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 November 2023.

9 The TSP concentration measured for Facility Test #108 (HV-23-02-15), conducted from November 1, 2023 to December 1, 2023, was above the 50 µg/m^3 threshold outlined in the Facility's approval. Because of the elevated TSP concentration, this sample was sent for additional analysis of metals. The results of this test showed that all parameters were below any applicable AAAQO (arsenic, chromium, lead, nickel, and manganese).

10 The TSP concentration measured for School Test #108 (HV-23-02-16), conducted from November 1, 2023 to December 1, 2023, was above the 50 µg/m^3 threshold outlined in the Facility's approval. Because of the elevated TSP concentration, this sample was sent for additional analysis of metals. The results of this test showed that all parameters were below any applicable AAAQO (arsenic, chromium, lead, nickel, and manganese).

11 The TSP concentrations measured for Facility Test #870 (HVF-23-06-06), Facility Test #872 (HVF-23-06-05), and Facility Test #873 (HVF-23-10-01) were over the 50 µg/m^3 threshold outlined in the Facility's approval. Because of the elevated TSP concentration, these samples were sent for additional analysis of metals. The results of these tests showed that all parameters for Test #870, Test #872, and Test #873 were below any applicable AAAQO (arsenic, chromium, lead, nickel, and manganese).

12 The PM_{10} concentration measured for Facility Test #873 was over the 50 µg/m^3 threshold outlined in the Facility's approval. Because of the elevated PM_{10} concentration, this sample was sent for additional analysis of metals. The PM_{10} concentrations measured for Facility Test #870 (AT85233), and Facility Test #872 (AT85234) were less than the 50 µg/m^3 threshold; however, as the TSP concentration for this sample was above the 50 µg/m^3 threshold, the corresponding PM_{10} sample was sent for additional analysis. The results of these tests showed that all parameters for Test #870, Test #872, and Test #873 were below any applicable AAAQO (arsenic, chromium, lead, nickel, and manganese).

Clean Harbors will continue to 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 November 2023 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

END OF REPORT

Tables

TABLE 1

Average Wind Speed (metres/second)
AEPA Station ID 00010348-C-1
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
November 2023

Ryley Wind Speed Data (m/s) - Month of November 2023																								
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	1.0	1.2	1.6	1.7	2.0	1.6	1.0	1.2	1.8	2.3	2.4	3.2	3.0	4.0	3.1	3.6	3.7	3.3	2.5	2.6	3.2	2.4	3.0	3.9
2	5.7	4.5	2.4	2.7	3.7	3.2	3.2	3.1	3.6	3.3	3.0	5.3	4.5	3.7	3.6	4.3	4.1	2.1	1.4	2.3	3.0	3.4	2.3	2.0
3	2.2	2.5	2.8	3.6	4.1	4.3	4.1	3.6	3.2	3.7	4.2	3.7	3.4	2.9	3.5	3.2	3.0	2.4	3.9	4.5	2.9	2.9	3.8	4.2
4	3.7	3.4	3.1	1.7	0.9	1.9	1.9	1.9	2.3	2.9	4.5	5.2	6.1	7.3	6.8	6.4	6.1	5.3	4.7	4.2	4.2	3.7	3.1	3.4
5	3.6	2.5	1.3	1.1	0.7	1.9	1.6	0.3	0.8	1.3	1.8	1.8	1.8	2.3	2.8	2.1	0.7	1.3	2.4	1.2	1.3	1.1	2.3	1.9
6	2.8	4.2	3.9	3.9	3.5	2.6	2.1	3.0	4.0	3.9	3.9	3.9	4.8	4.6	4.8	4.6	5.3	5.1	5.8	5.3	6.6	5.2	5.4	5.5
7	5.3	5.4	5.0	4.1	3.6	2.7	2.0	1.9	1.6	1.7	2.0	1.9	2.2	1.9	1.9	2.5	3.0	3.6	4.5	6.8	4.1	3.1	4.5	4.3
8	5.1	4.1	5.0	5.1	5.3	5.1	5.0	5.6	5.3	5.2	5.4	7.4	8.6	8.8	11.4	11.1	10.3	8.5	6.8	4.9	3.8	3.1	3.7	3.1
9	4.2	3.2	2.7	2.4	2.6	0.7	0.4	1.1	1.6	1.8	2.2	2.6	2.7	3.4	3.6	3.9	4.1	3.4	3.5	3.7	4.1	4.4	5.3	5.1
10	5.3	5.3	5.6	5.9	6.2	6.4	7.2	7.0	7.5	6.2	5.6	6.2	5.1	3.9	2.3	2.2	2.2	3.0	3.2	1.9	2.1	3.4	4.0	2.2
11	2.5	2.2	2.6	4.0	4.3	5.4	5.2	5.4	5.1	6.0	5.7	5.7	4.8	2.5	2.1	1.1	1.2	1.7	3.3	4.9	3.9	3.5	5.1	5.9
12	6.1	5.8	5.4	5.3	5.3	5.1	5.6	6.0	4.9	6.0	5.1	5.2	4.4	4.5	3.8	3.5	2.6	1.8	2.2	2.0	2.2	2.9	2.7	2.8
13	4.1	3.9	4.4	4.7	4.3	4.9	4.9	4.4	4.7	6.0	6.0	5.5	4.0	3.4	0.8	1.0	0.6	1.6	4.4	5.6	7.1	6.4	7.9	5.2
14	7.4	10.7	7.6	5.7	6.5	7.4	6.0	5.6	4.7	4.2	5.1	6.0	5.9	6.3	5.2	6.1	4.0	2.9	3.0	3.0	3.2	3.1	4.3	5.8
15	6.4	6.0	5.0	5.1	4.6	4.1	4.5	6.2	6.0	6.2	4.7	7.3	8.3	6.7	5.3	4.6	2.5	2.0	2.3	2.3	2.6	4.0	4.6	4.5
16	5.3	4.5	5.6	5.8	6.3	5.8	4.8	5.0	5.2	5.2	5.2	5.0	4.9	5.0	5.0	6.6	5.8	3.9	2.5	2.2	5.4	3.8	3.4	4.4
17	5.0	5.3	5.8	4.5	5.5	6.5	6.4	6.2	5.3	4.8	4.3	3.4	4.2	5.4	5.6	5.5	2.9	3.3	4.9	4.2	4.6	6.5	6.5	6.7
18	6.4	6.2	5.3	1.3	3.2	2.8	2.7	1.7	1.0	2.5	4.5	4.5	4.7	4.3	3.5	4.7	4.2	3.5	3.2	3.0	2.9	3.1	3.3	3.0
19	2.9	3.4	4.3	5.5	4.5	4.3	5.4	5.1	5.8	4.7	2.9	4.3	3.9	3.7	3.6	3.1	3.5	4.2	5.3	5.2	6.3	6.2	10.8	6.0
20	12.0	12.1	9.6	10.5	11.9	11.3	9.3	9.3	7.7	5.5	7.1	8.9	9.5	7.4	6.3	5.6	3.0	1.8	0.3	1.8	1.6	2.3	2.7	3.3
21	3.7	4.7	4.4	5.0	5.5	6.1	6.6	6.0	6.5	2.3	2.3	3.1	2.2	0.8	1.7	3.8	4.4	3.5	2.7	2.1	4.1	5.1	4.8	4.0
22	3.1	3.1	2.5	1.9	1.7	2.9	4.8	4.9	4.1	3.6	3.7	3.6	2.8	2.8	3.0	2.4	1.8	1.4	1.5	1.4	1.8	1.5	1.9	2.4
23	2.2	2.2	1.8	2.0	2.1	2.3	2.0	1.7	1.9	1.8	1.7	2.3	2.5	3.4	3.7	4.1	2.7	4.4	3.1	4.4	5.4	5.3	5.5	5.0
24	4.8	3.9	2.9	4.2	3.7	3.4	3.6	3.6	5.1	4.9	5.6	5.0	5.0	5.9	4.5	4.4	3.5	3.3	4.9	5.2	5.5	5.3	5.7	5.3
25	4.9	4.8	4.6	5.0	5.1	5.7	6.0	5.2	6.8	9.3	10.0	9.0	9.4	10.9	10.4	9.6	9.4	8.5	6.6	5.3	4.6	3.9	3.7	2.9
26	3.8	4.0	4.1	1.8	3.1	3.4	3.6	5.2	4.7	5.1	5.3	6.9	7.5	8.5	8.3	6.2	3.2	0.0	0.6	3.0	5.0	5.2	4.9	5.2
27	5.8	5.3	4.4	3.4	3.6	3.9	3.9	3.8	4.9	5.7	4.6	4.4	3.8	4.6	5.1	5.3	4.0	5.4	6.2	7.3	6.2	6.1	4.9	6.4
28	5.3	5.5	4.5	4.5	4.3	4.4	5.0	5.8	6.7	6.6	7.2	6.0	5.5	4.3	4.9	4.4	3.7	4.3	2.9	5.0	6.4	5.1	5.1	5.6
29	5.7	6.7	5.3	5.8	6.1	6.0	6.3	5.1	4.5	3.9	5.7	7.7	10.6	10.8	10.1	9.5	7.1	4.4	3.8	4.2	4.9	4.3	3.8	4.2
30	3.2	4.1	3.7	3.4	3.6	4.4	5.4	4.3	4.5	3.9	4.1	3.3	3.1	2.0	1.7	2.0	1.8	2.4	3.0	3.5	2.3	1.5	2.0	3.9

TABLE 2

Average Wind Speed (metres/second)
AEPA Station ID 00010348-C-2
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
November 2023

Ryley Wind Speed Data (m/s) - Month of November 2023																							
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	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
2	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
3	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
4	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
5	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
6	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
7	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
8	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
9	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
10	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
11	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
12	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
13	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
14	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
15	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
16	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
17	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
18	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
19	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
20	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
21	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
22	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
23	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
24	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
25	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
26	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
27	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
28	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
29	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
30	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)

Notes:
- (X) - Equipment Malfunction

TABLE 3

Average Wind Speed (metres/second)
AEPA Station ID 00010348-C-3
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
November 2023

Ryley Wind Speed Data (m/s) - Month of November 2023																								
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	0.6	1.0	1.6	1.0	1.1	0.7	0.8	1.0	1.6	1.8	2.0	2.6	2.7	3.5	2.7	3.0	3.3	2.4	2.3	1.9	2.4	2.3	1.7	1.1
2	1.3	1.0	0.5	0.4	0.8	0.9	1.2	1.1	1.5	1.7	1.9	2.2	1.7	1.8	1.9	1.8	1.4	0.3	0.1	1.0	1.2	1.5	1.3	1.1
3	1.4	1.8	1.9	2.9	3.4	3.6	3.3	3.0	2.6	3.2	3.4	2.9	2.7	1.8	1.7	2.1	1.7	0.4	1.2	0.5	0.4	0.6	0.6	0.8
4	0.7	0.7	0.6	0.3	0.3	1.1	1.2	1.5	2.0	2.5	3.4	4.4	5.3	5.8	5.4	4.9	4.8	3.8	3.5	2.7	3.0	2.8	2.3	2.5
5	3.0	1.7	0.6	0.4	0.3	1.1	0.5	0.2	0.5	0.6	0.7	1.3	1.4	1.4	1.4	1.3	0.6	1.1	1.7	0.9	0.5	0.9	1.6	1.7
6	2.6	3.7	3.7	4.0	2.9	2.2	2.1	2.8	3.5	3.1	3.3	3.4	4.1	3.9	3.9	4.5	4.2	4.7	5.1	5.2	5.0	4.5	4.2	4.5
7	4.6	4.4	4.7	3.1	2.8	2.2	1.6	1.6	1.3	1.5	1.7	1.4	1.3	1.0	1.2	1.2	1.6	2.3	3.1	3.2	1.5	1.4	1.4	2.1
8	2.7	2.3	1.2	2.4	2.0	2.4	2.3	1.5	2.1	3.1	3.6	4.9	5.7	6.3	6.8	6.0	5.6	4.7	4.1	2.5	1.8	1.6	1.5	0.8
9	1.1	0.4	0.3	0.5	0.6	0.3	0.1	0.5	0.6	1.1	2.1	2.0	2.3	3.0	3.5	3.2	3.4	2.5	2.8	3.3	3.9	4.3	4.9	5.3
10	4.7	5.1	5.2	5.2	5.4	5.5	5.9	5.8	6.2	6.0	5.5	4.7	3.7	3.0	2.0	2.1	1.8	2.3	2.2	2.0	2.0	2.7	2.1	2.2
11	2.3	2.7	2.8	3.6	3.7	5.1	4.3	5.5	4.6	6.1	5.1	4.6	3.5	2.1	0.9	0.7	0.4	0.7	1.2	2.4	2.1	1.5	2.2	2.7
12	2.5	3.5	2.8	2.8	2.1	1.0	1.4	1.5	2.1	1.3	1.2	1.9	2.8	2.8	2.6	1.7	0.8	1.1	0.7	0.9	1.7	2.2	2.3	2.7
13	3.3	3.2	3.4	3.1	3.0	3.6	3.6	3.8	3.9	4.3	5.2	4.5	3.9	3.0	0.4	0.6	0.2	0.5	2.5	3.0	3.6	4.6	5.2	2.5
14	4.2	5.8	4.0	2.3	1.9	1.9	1.8	1.7	2.0	1.6	2.3	2.0	2.6	2.9	3.0	3.6	1.5	1.2	1.8	2.2	2.4	1.9	1.7	1.4
15	1.3	1.2	1.0	1.6	2.0	1.0	0.9	1.3	1.0	1.4	2.1	5.1	4.9	4.1	3.2	2.1	1.1	0.9	1.0	1.1	0.7	0.9	0.8	0.7
16	0.9	0.9	0.9	0.8	1.3	1.8	2.0	2.3	1.9	2.3	2.6	1.9	2.3	2.8	3.1	2.5	1.8	1.5	1.6	1.2	1.6	1.5	0.8	1.0
17	0.9	1.2	1.0	1.0	1.5	1.5	1.3	0.9	1.2	1.2	1.2	1.3	3.2	3.5	3.6	1.8	1.2	1.1	1.3	1.6	1.7	1.7	1.7	1.5
18	1.5	1.0	1.0	0.9	1.4	1.2	1.6	1.4	0.7	2.2	3.7	3.6	4.0	3.7	3.3	4.2	3.0	2.5	2.2	2.4	2.3	2.8	2.8	2.8
19	2.4	1.6	0.7	0.8	1.0	0.9	0.7	1.0	1.2	1.1	1.2	2.9	2.4	2.7	2.2	1.5	0.7	0.9	1.2	1.3	1.7	4.2	7.4	3.5
20	8.0	8.1	6.5	7.2	7.7	5.9	4.8	5.1	4.7	3.6	4.3	4.8	5.0	4.1	3.9	2.3	1.2	0.2	0.2	0.7	1.0	1.6	2.2	2.7
21	3.2	3.8	3.1	4.1	4.3	4.3	5.6	5.4	4.7	1.5	1.8	2.3	1.4	0.6	0.9	1.4	1.3	1.3	1.1	0.8	2.1	2.6	2.0	1.4
22	1.4	1.2	0.8	0.3	0.6	0.9	2.0	2.6	2.1	2.2	2.0	2.0	1.8	1.4	1.5	1.1	0.9	0.4	0.9	0.6	1.6	1.5	1.8	2.1
23	2.0	2.1	1.6	1.6	1.7	1.9	1.5	1.3	1.5	1.2	1.5	2.2	2.4	1.8	2.4	2.0	1.4	1.3	1.3	1.4	1.4	1.3	1.7	2.2
24	2.0	2.7	3.0	3.4	3.6	3.0	2.5	1.8	2.7	2.0	2.2	2.1	2.8	2.4	1.7	1.9	1.9	1.4	1.2	1.4	1.5	1.4	2.7	3.2
25	2.4	2.4	1.2	1.0	2.3	3.2	2.5	3.3	4.3	5.2	5.7	4.6	4.8	5.2	5.3	4.3	3.4	3.6	2.5	2.4	2.2	1.9	1.5	0.8
26	0.8	1.3	1.4	0.7	2.3	2.8	2.8	1.8	2.0	2.9	3.5	3.7	3.0	3.1	3.8	2.9	0.7	0.1	0.4	0.6	1.1	0.7	0.8	1.1
27	1.2	1.2	1.2	1.7	1.4	1.3	1.4	1.3	1.6	1.6	1.4	1.5	1.3	1.8	1.7	1.7	1.0	1.8	1.5	1.9	1.3	1.6	1.5	3.1
28	2.1	1.3	0.9	0.9	1.3	2.7	1.7	1.4	1.4	1.7	1.7	2.0	1.8	1.3	1.8	1.4	1.0	0.6	0.9	1.3	1.4	1.9	2.0	2.4
29	2.0	3.0	2.3	2.5	2.4	2.1	2.2	2.3	2.2	1.7	3.5	5.2	6.0	6.5	6.3	5.4	3.7	2.4	1.8	2.4	3.1	2.1	2.1	2.1
30	1.7	2.3	1.7	1.4	1.4	1.5	1.0	1.1	0.8	0.8	1.4	1.9	1.6	1.0	1.3	0.9	1.0	1.4	2.0	1.8	1.9	1.7	2.8	2.9

TABLE 4

Average Wind Direction (degrees from North)
AEPA Station ID 00010348-C-1
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
November 2023

Ryley Wind Direction Data (degrees, blowing from) - Month of November 2023																							
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	69	82	82	110	148	172	132	89	93	105	115	102	102	128	121	117	121	115	117	139	154	158	179	184
2	185	198	240	235	234	264	258	269	268	286	285	312	318	313	309	311	316	313	125	128	24	40	66	107
3	102	104	108	97	98	104	91	100	111	109	120	152	162	189	199	244	246	210	187	204	192	190	213	214
4	233	237	225	241	136	93	82	96	108	86	67	78	84	73	78	77	75	77	76	73	79	76	74	67
5	75	67	125	74	82	270	284	214	218	198	197	261	266	287	310	102	84	67	111	139	134	105	146	115
6	121	103	127	127	131	141	151	134	113	121	129	139	140	132	126	124	127	131	132	134	136	138	133	130
7	128	133	134	138	138	166	168	139	155	161	172	179	194	205	202	221	239	265	272	302	306	250	231	241
8	261	258	233	252	244	242	253	243	251	253	265	289	316	320	321	324	323	322	317	301	304	271	263	259
9	235	220	205	198	195	191	155	84	85	89	104	119	94	81	81	88	88	91	95	96	88	95	92	88
10	85	89	90	89	88	86	85	90	89	100	121	139	150	146	131	119	113	106	129	114	149	154	172	127
11	97	112	103	100	102	90	103	91	83	86	95	99	142	129	206	184	206	121	223	255	260	252	233	242
12	245	253	257	250	245	210	207	185	171	176	208	220	263	313	357	357	357	357	357	357	357	357	357	357
13	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357	209	233	305	294	289	297	280	282	252
14	270	294	271	235	198	202	188	171	178	179	182	184	219	241	237	241	238	185	181	171	170	163	162	159
15	167	163	187	217	264	236	227	166	159	133	241	283	299	297	299	301	291	273	269	273	235	178	174	185
16	231	235	177	170	161	141	161	122	136	154	157	168	169	166	161	164	210	189	172	172	197	256	246	218
17	185	155	148	163	150	211	223	209	180	160	193	185	248	258	258	212	183	177	169	164	160	123	109	120
18	142	156	190	114	111	130	109	142	155	136	129	130	142	138	111	102	105	97	107	109	110	111	113	111
19	133	151	171	202	221	207	205	195	198	230	227	254	248	249	261	241	212	192	190	187	217	274	295	276
20	310	318	306	314	323	317	304	309	305	294	307	311	311	308	303	301	299	305	237	106	123	132	109	90
21	95	96	75	72	80	87	89	94	90	106	102	100	91	135	310	312	310	303	281	299	286	291	295	297
22	284	289	297	315	309	313	318	333	328	336	331	200	265	310	308	313	314	135	110	19	58	87	101	104
23	102	102	86	83	83	110	136	162	164	175	163	169	163	180	180	184	188	202	182	184	185	186	187	184
24	183	179	175	169	165	168	175	189	182	194	190	187	189	207	217	214	248	243	229	232	240	243	256	269
25	263	249	243	233	253	249	248	258	279	305	312	308	307	314	309	311	309	310	307	300	293	276	269	263
26	209	187	199	203	175	170	174	193	236	266	270	297	307	308	310	306	311	258	261	193	186	208	198	187
27	190	191	187	185	185	188	188	188	189	191	188	190	199	216	198	180	192	212	176	179	215	213	225	240
28	243	209	219	223	228	261	253	232	193	179	238	213	177	191	190	209	193	198	182	165	159	227	248	258
29	250	269	261	267	264	275	257	253	265	260	276	288	310	314	311	311	299	277	260	274	290	298	289	288
30	269	276	265	259	251	242	200	235	226	233	239	261	272	261	262	226	189	177	175	170	168	132	159	168

TABLE 5

Average Wind Direction (degrees from North)
AEPA Station ID 00010348-C-2
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
November 2023

Ryley Wind Direction Data (degrees, blowing from) - Month of November 2023																							
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	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
2	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
3	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
4	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
5	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
6	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
7	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
8	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
9	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
10	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
11	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
12	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
13	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
14	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
15	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
16	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
17	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
18	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
19	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
20	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
21	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
22	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
23	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
24	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
25	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
26	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
27	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
28	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
29	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
30	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)

Notes:
- (X) - Equipment Malfunction

TABLE 6

Most Frequent Wind Direction (degrees from North)
AEPA Station ID 00010348-C-3
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
November 2023

Ryley Wind Direction Data (degrees, blowing from) - Month of November 2023																							
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	63	97	92	131	163	170	137	95	108	119	120	115	116	149	131	131	130	126	130	140	162	167	215	221
2	222	234	238	226	236	245	254	249	263	292	287	330	322	317	312	321	326	323	141	123	31	61	97	123
3	121	109	119	114	115	116	114	116	118	117	129	159	177	206	221	256	253	220	218	231	223	223	232	233
4	237	239	239	181	112	85	81	107	115	101	88	105	111	109	109	101	100	98	97	87	99	91	83	82
5	89	69	176	84	182	276	295	229	247	212	229	274	272	297	294	116	142	91	129	129	124	120	156	129
6	125	125	136	129	139	134	142	130	122	123	131	129	125	132	124	126	122	127	124	121	127	129	124	122
7	121	122	125	128	144	164	170	155	167	162	170	193	199	227	213	238	246	267	277	304	297	253	241	247
8	263	261	237	259	243	247	255	233	241	250	269	276	285	284	289	296	298	296	289	295	291	259	256	221
9	244	226	225	226	227	244	173	92	102	117	121	137	122	117	117	118	118	119	122	122	121	125	125	124
10	118	117	117	120	118	120	118	119	121	124	138	154	159	167	145	135	134	129	147	125	158	159	178	139
11	117	148	137	123	124	126	133	127	122	126	129	125	162	159	239	194	225	184	249	265	265	246	242	245
12	243	251	260	253	243	223	229	218	213	228	231	239	270	280	259	237	214	172	122	118	116	109	121	118
13	116	112	106	105	93	105	108	109	108	113	123	125	132	142	203	168	208	292	300	297	295	283	284	258
14	272	280	267	245	229	231	224	220	216	216	219	222	239	243	248	247	243	181	194	195	185	168	212	220
15	221	223	229	251	259	239	235	225	226	227	248	278	282	288	295	300	295	290	282	269	224	226	222	227
16	234	236	227	226	223	220	213	214	215	213	214	218	212	207	206	221	233	219	196	211	234	255	248	242
17	224	224	225	222	227	237	234	226	221	218	227	223	255	256	254	226	216	214	216	212	214	220	222	223
18	222	222	231	155	117	148	111	158	202	144	135	137	147	148	129	120	118	109	122	123	121	120	121	130
19	135	145	220	230	241	229	233	234	232	237	237	262	258	258	266	246	224	219	218	219	235	279	285	273
20	287	285	283	282	287	293	294	291	290	289	290	294	294	295	299	301	303	263	146	120	122	129	118	106
21	115	114	103	104	107	113	118	121	112	129	116	114	119	145	286	317	321	304	293	290	293	300	300	303
22	286	285	279	253	324	332	331	148	220	160	225	145	199	267	302	280	265	189	66	59	79	104	116	120
23	115	116	108	99	101	120	152	178	185	199	179	186	175	207	206	215	220	223	213	218	218	218	218	214
24	215	201	192	188	181	189	197	222	210	219	220	215	213	230	232	235	261	247	239	240	240	241	249	272
25	262	247	229	231	255	249	245	251	276	295	299	298	298	302	302	307	309	303	306	301	300	279	268	243
26	218	212	226	213	190	185	196	227	245	275	278	299	311	309	304	306	306	222	207	221	222	227	223	225
27	222	222	218	207	216	217	221	220	218	220	216	223	226	233	224	221	226	231	223	229	233	234	240	247
28	249	233	236	231	240	264	245	237	231	232	233	230	225	228	226	230	224	223	210	219	227	244	249	252
29	246	251	255	256	255	258	250	252	266	263	277	280	289	293	294	292	294	277	267	282	287	290	288	281
30	271	279	269	262	255	250	234	242	235	243	245	270	263	251	270	232	203	179	185	171	165	135	193	188

TABLE 7

Wind Frequency Distribution
AEPA Station ID 00010348-C-1
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
November 2023

Frequency Distribution Report: Ryley, Alberta - November 2023										
Direction	Angle	Wind Speed (m/s) and Number of Occurences (minutes)							%	Total Occurrences by Direction
		< 0.5	0.5 to < 2.1	2.1 to < 3.6	3.6 to < 5.7	5.7 to < 8.8	8.8 to < 11.1	>= 11.1		
North	> 337.5 - 22.5	89	515	632	797	197	13	19	5.2%	2262
Northeast	> 22.5 - 67.5	71	320	171	163	110	2	0	1.9%	837
East	> 67.5 - 112.5	50	1274	2246	2343	1146	40	0	16.4%	7099
Southeast	> 112.5 - 157.5	58	973	1783	1728	854	4	0	12.5%	5400
South	> 157.5 - 202.5	48	934	2465	4280	1763	7	0	22.0%	9497
Southwest	> 202.5 - 247.5	54	333	1094	3046	1261	4	0	13.4%	5792
West	> 247.5 - 292.5	88	445	1731	2854	1417	123	27	15.5%	6685
Northwest	> 292.5 - 337.5	75	518	914	1296	1409	883	533	13.0%	5628
Missing/Invalid Minutes									0.000%	0
Total Occurences by Speed		533	5312	11036	16507	8157	1076	579		**43200**
Occurences by %		1.2%	12.3%	25.5%	38.2%	18.9%	2.5%	1.3%	**100.000%**	

TABLE 8

Wind Frequency Distribution
AEPA Station ID 00010348-C-2
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
November 2023

Frequency Distribution Report: Ryley, Alberta - November 2023										
Direction	Angle	Wind Speed (m/s) and Number of Occurences (minutes)							%	Total Occurrences by Direction
		< 0.5	0.5 to < 2.1	2.1 to < 3.6	3.6 to < 5.7	5.7 to < 8.8	8.8 to < 11.1	>= 11.1		
North	> 337.5 - 22.5	0	0	0	0	0	0	0	0.0%	0
Northeast	> 22.5 - 67.5	0	0	0	0	0	0	0	0.0%	0
East	> 67.5 - 112.5	0	0	0	0	0	0	0	0.0%	0
Southeast	> 112.5 - 157.5	0	0	0	0	0	0	0	0.0%	0
South	> 157.5 - 202.5	0	0	0	0	0	0	0	0.0%	0
Southwest	> 202.5 - 247.5	0	0	0	0	0	0	0	0.0%	0
West	> 247.5 - 292.5	0	0	0	0	0	0	0	0.0%	0
Northwest	> 292.5 - 337.5	0	0	0	0	0	0	0	0.0%	0
Missing/Invalid Minutes									**100%**	43200
Total Occurences by Speed		0	0	0	0	0	0	0		**43200**
Occurences by %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**100.00%**	

TABLE 9

Wind Frequency Distribution
AEPA Station ID 00010348-C-3
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
November 2023

Frequency Distribution Report: Ryley, Alberta - November 2023										
Direction	Angle	Wind Speed (m/s) and Number of Occurences (minutes)							%	Total Occurrences by Direction
		< 0.5	0.5 to < 2.1	2.1 to < 3.6	3.6 to < 5.7	5.7 to < 8.8	8.8 to < 11.1	>= 11.1		
North	> 337.5 - 22.5	316	790	219	32	0	0	0	3.1%	1357
Northeast	> 22.5 - 67.5	131	212	10	0	0	0	0	0.8%	353
East	> 67.5 - 112.5	130	1496	1253	718	93	2	0	8.5%	3692
Southeast	> 112.5 - 157.5	183	2223	3261	2608	725	7	0	20.8%	9007
South	> 157.5 - 202.5	219	1655	1231	331	6	0	0	8.0%	3442
Southwest	> 202.5 - 247.5	1422	9501	2010	324	12	0	0	30.7%	13269
West	> 247.5 - 292.5	191	3045	2850	1392	621	103	17	19.0%	8219
Northwest	> 292.5 - 337.5	305	1489	961	755	327	21	3	8.9%	3861
Missing/Invalid Minutes									0.0%	0
Total Occurences by Speed		2897	20411	11795	6160	1784	133	20		**43200**
Occurences by %		6.7%	47.2%	27.3%	14.3%	4.1%	0.3%	0.0%	**100.00%**	

TABLE 10

Total Suspended Particulate (TSP) Matter Results
AEPA Station ID 00010348-I-2
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
November 2023

Filter ID	HV-23-02-15
Test ID	Facility Test # 108
Sample Start Date/Time	23/11/01 16:00:00
Sample End Date/Time	23/12/01 14:00:00
Sampling Time (hours)	11.98
Flow Rate (m^3/min)	1.272
Volume (m^3)	914.57
TSP Mass (mg)	379
TSP Concentration (ug/m^3)	414.403
Sampler Name	TE-5170V / P8580 TSP VFC

TABLE 11

Total Suspended Particulate (TSP) Matter Results
AEPA Station ID 00010348-I-3
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
November 2023

Filter ID	HV-23-02-16
Test ID	School Test # 108
Sample Start Date/Time	23/11/01 16:00:00
Sample End Date/Time	23/12/01 14:00:00
Sampling Time (hours)	11.28
Flow Rate (m^3/min)	1.295
Volume (m^3)	876.715
TSP Mass (mg)	186
TSP Concentration (ug/m^3)	212.156
Sampler Name	TE-5170V / P8581 TSP VFC

TABLE 12

Total Suspended Particulate (TSP) Matter Results
AEPA Station ID 00010348-I-1
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
November 2023

Filter ID	HVF-23-06-06	HVF-23-06-04	HVF-23-06-05	HVF-23-10-01	HVF-23-10-05
Test ID	870	871	872	873	874
Sample Start Date/Time	23/11/02 00:00:00	23/11/08 00:00:00	23/011/14 00:00:00	23/11/20 00:00:00	23/11/26 00:00:00
Sample End Date/Time	23/11/03 00:00:00	23/11/09 00:00:00	23/11/15 00:00:00	23/11/21 00:00:00	23/11/27 00:00:00
Sampling Time (hours)	24.18	24.18	23.57	23.95	23.96
Flow Rate (m^3/min)	1.277	1.277	1.277	1.277	1.277
Volume (m^3)	1852.67	1852.67	1805.90	1835.05	1835.82
TSP Mass (mg)	190	69.5	95	410	85.3
TSP Concentration (ug/m^3)	102.555	37.513	52.605	223.427	46.464
Sampler Name	TE-5170V / P11162 TSP VFC	TE-5170V / P11162 TSP VFC	TE-5170V / P11162 TSP VFC	TE-5170V / P11162 TSP VFC	TE-5170V / P11162 TSP VFC

TABLE 13

Particulate Matter PM_{10} Results
AEPA Station ID 00010348-I-1
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
November 2023

Filter ID	AT85233	AT85235	AT85234	AT85236	AT83972
Test ID	870	871	872	873	874
Sample Start Date/Time	23/11/02 00:00:00	23/11/08 00:00:00	23/10/14 00:00:00	23/11/20 00:00:00	23/11/26 00:00:00
Sample End Date/Time	23/11/03 00:00:00	23/11/09 00:00:00	23/10/15 00:00:00	23/11/21 00:00:00	23/11/27 00:00:00
Sampling Time (hours)	24	24	24	24	24
Flow Rate (l/min)	16.7	16.7	16.7	16.7	16.7
Volume (m^3)	23.9	24.2	23.9	24.4	24.4
PM_{10} Mass (mg)	1.03	0.205	0.6	2.21	0.324
PM_{10} Concentration (ug/m^3)	43.096	8.471	25.105	90.574	13.279
Sampler Name	2000 FRM-AE / 200FB209860905	2000 FRM-AE / 200FB209860905	2000 FRM-AE / 200FB209860905	2000 FRM-AE / 200FB209860905	2000 FRM-AE / 200FB209860905

TABLE 14

VOC and TNMOC Analytical Results
AEPA Station ID 00010348-I-1
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
November 2023

Parameter	Units	Date / Sample ID / AAAQO[1]	2-Nov-23 870	8-Nov-23 871	14-Nov-23 872	20-Nov-23 873	26-Nov-23 874
Total Non-Methane Organic Carbon	ppmv	-	< 0.08	< 0.08	< 0.09	< 0.08	< 0.08
1,2,3-Trimethylbenzene	ppbv	-	< 0.08	< 0.08	< 0.09	< 0.08	< 0.08
1,2,4-Trimethylbenzene	ppbv	-	< 0.05	0.19	< 0.05	< 0.05	< 0.05
1,3,5-Trimethylbenzene	ppbv	-	< 0.05	0.05	< 0.05	< 0.05	< 0.05
1-Butene/Isobutylene	ppbv	-	< 0.10	0.34	< 0.10	< 0.09	< 0.10
1-Hexene/2-Methyl-1-pentene	ppbv	-	< 0.12	< 0.11	< 0.12	< 0.11	< 0.11
1-Pentene	ppbv	-	0.06	< 0.05	< 0.05	< 0.05	< 0.05
2,2,4-Trimethylpentane	ppbv	-	0.05	0.05	< 0.03	< 0.03	< 0.03
2,2-Dimethylbutane	ppbv	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
2,3,4-Trimethylpentane	ppbv	-	0.06	0.04	< 0.03	0.08	< 0.03
2,3-Dimethylbutane	ppbv	-	< 0.15	< 0.14	< 0.15	< 0.14	< 0.14
2,3-Dimethylpentane	ppbv	-	0.04	0.11	< 0.03	< 0.03	< 0.03
2,4-Dimethylpentane	ppbv	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylheptane	ppbv	-	< 0.03	0.07	< 0.03	0.06	< 0.03
2-Methylhexane	ppbv	-	0.07	0.36	< 0.05	0.14	< 0.05
2-Methylpentane	ppbv	-	0.27	0.42	0.06	0.49	0.05
3-Methylheptane	ppbv	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
3-Methylhexane	ppbv	-	0.11	0.52	< 0.03	0.15	< 0.03
3-Methylpentane	ppbv	-	0.12	0.07	0.04	0.09	< 0.03
Benzene	ppbv	-	0.15	0.12	0.10	0.23	0.05
cis-2-Butene	ppbv	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
cis-2-Pentene	ppbv	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Cyclohexane	ppbv	-	0.10	0.07	< 0.07	0.17	< 0.06
Cyclopentane	ppbv	-	0.07	0.04	< 0.03	0.06	< 0.03
Ethylbenzene	ppbv	-	0.44	0.92	0.09	0.27	< 0.05
Isobutane	ppbv	-	1.27	0.29	0.49	0.86	0.44
Isopentane	ppbv	-	1.00	0.52	0.33	1.08	0.19
Isoprene	ppbv	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Isopropylbenzene	ppbv	-	< 0.07	< 0.06	< 0.07	< 0.06	< 0.06
m,p-Xylene	ppbv	161	0.86	2.62	0.21	1.07	< 0.06
m-Diethylbenzene	ppbv	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
m-Ethyltoluene	ppbv	-	< 0.05	0.12	< 0.05	< 0.05	< 0.05
Methylcyclohexane	ppbv	-	0.11	0.22	0.04	0.26	< 0.03
Methylcyclopentane	ppbv	-	0.12	< 0.08	< 0.09	0.20	< 0.08
n-Butane	ppbv	-	2.72	0.52	0.92	1.98	0.60
n-Decane	ppbv	-	< 0.10	0.17	< 0.10	< 0.09	< 0.10
n-Dodecane	ppbv	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
n-Heptane	ppbv	-	0.11	0.71	< 0.07	0.15	< 0.06
n-Hexane	ppbv	1990	0.23	0.21	0.10	0.41	< 0.05
n-Nonane	ppbv	-	0.09	0.13	< 0.07	0.09	< 0.06
n-Octane	ppbv	-	0.09	0.11	< 0.03	0.12	< 0.03
n-Pentane	ppbv	-	0.95	0.41	0.25	1.48	0.12
n-Propylbenzene	ppbv	-	< 0.10	< 0.09	< 0.10	< 0.09	< 0.10
n-Undecane	ppbv	-	< 0.8	< 0.8	< 0.9	< 0.8	< 0.8
o-Ethyltoluene	ppbv	-	< 0.03	0.05	< 0.03	< 0.03	< 0.03
o-Xylene	ppbv	161	0.24	0.76	< 0.05	0.27	< 0.05
p-Diethylbenzene	ppbv	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
p-Ethyltoluene	ppbv	-	< 0.07	< 0.06	< 0.07	0.09	0.07
Styrene	ppbv	-	0.08	0.18	< 0.07	< 0.06	< 0.06
Toluene	ppbv	106	1.07	6.67	0.63	1.02	0.26
trans-2-Butene	ppbv	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
trans-2-Pentene	ppbv	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Total VOCs [2]	ppbv	-	13.160	19.410	6.75	13.510	5.230

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 15

TSP Metals Analytical Results
AEPA Station ID 00010348-I-2
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
November 2023

Parameter	Date / Sample ID / Lab Results [1]		1-Nov-23 HV-23-02-15 (ug/m^3)[2]	AAAQO[2] (ug/m^3)
Antimony	537	ng/Filter	1.18E-03	-
Arsenic	1140	ng/Filter	2.50E-03	0.10
Barium	< 300	ng/Filter	6.58E-04	-
Beryllium	173	ng/Filter	3.79E-04	-
Boron	5460000	ng/Filter	1.20E+01	-
Cadmium	778	ng/Filter	1.71E-03	-
Chromium	12500	ng/Filter	2.74E-02	1.0
Cobalt	2330	ng/Filter	5.11E-03	-
Copper	88400	ng/Filter	1.94E-01	-
Iron	5650000	ng/Filter	1.24E+01	-
Lead	22300	ng/Filter	4.89E-02	1.5
Manganese	228000	ng/Filter	5.00E-01	2
Mercury	< 0.70	ng/Filter	1.53E-06	-
Nickel	11400	ng/Filter	2.50E-02	6
Selenium	1270	ng/Filter	2.78E-03	-
Silver	150	ng/Filter	3.29E-04	-
Thallium	42.0	ng/Filter	9.21E-05	-
Tin	209	ng/Filter	4.58E-04	-
Uranium	387	ng/Filter	8.48E-04	-
Vanadium	13300	ng/Filter	2.91E-02	-
Zinc	< 1000	ng/Filter	2.19E-03	-
Zirconium	< 1.0	ng/Filter	2.19E-06	-
Sampling Time (hours)	11.98			
Flow Rate (m3/min)	1.272			
Volume Sampled (m^3)	914.57			

Notes:
(1) These results are from a 11.98 hour averaging period that took place on November 1 to December 1, 2023
(2) Measured data have been converted from the measured 11.98 hour avering period to a 1 hour averaging period based on Alberta's Air Quality Model Guideline Section 7.1.2.

TABLE 16

TSP Metals Analytical Results
AEPA Station ID 00010348-I-3
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
November 2023

	Date		1-Nov-23	
	Sample ID		HV-23-02-16	
Parameter	**Lab Results [1]**		**(ug/m^3)[2]**	**AAAQO[2] (ug/m^3)**
Antimony	132	ng/Filter	2.97E-04	-
Arsenic	242	ng/Filter	5.44E-04	0.10
Barium	< 300	ng/Filter	6.74E-04	-
Beryllium	22.3	ng/Filter	5.01E-05	-
Boron	2170000	ng/Filter	4.88E+00	-
Cadmium	103	ng/Filter	2.32E-04	-
Chromium	2200	ng/Filter	4.95E-03	1.0
Cobalt	777	ng/Filter	1.75E-03	-
Copper	103000	ng/Filter	2.32E-01	-
Iron	2220000	ng/Filter	4.99E+00	-
Lead	1850	ng/Filter	4.16E-03	1.5
Manganese	73400	ng/Filter	1.65E-01	2
Mercury	< 0.70	ng/Filter	1.57E-06	-
Nickel	2710	ng/Filter	6.09E-03	6
Selenium	180	ng/Filter	4.05E-04	-
Silver	64.9	ng/Filter	1.46E-04	-
Thallium	13.8	ng/Filter	3.10E-05	-
Tin	119	ng/Filter	2.68E-04	-
Uranium	65.5	ng/Filter	1.47E-04	-
Vanadium	3450	ng/Filter	7.76E-03	-
Zinc	< 1000	ng/Filter	2.25E-03	-
Zirconium	< 1.0	ng/Filter	2.25E-06	-

Sampling Time (hours)	11.28
Flow Rate (m3/min)	1.295
Volume Sampled (m^3)	876.72

Notes:

(1) These results are from a 11.28 hour averaging period that took place on November 1 to December 1, 2023
(2) Measured data have been converted from the measured 11.28 hour avering period to a 1 hour averaging period based on Alberta's Air Quality Model Guideline Section 7.1.2.

TABLE 17

TSP Metals Analytical Results
AEPA Station ID 00010348-I-1
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
November 2023

	Date			Date			Date			
	Sample ID	2-Nov-23 870		Sample ID	14-Nov-23 872		Sample ID	20-Nov-23 873		
Parameter	**Lab Results [1]**		**(ug/m^3)[3]**	**Lab Results [1]**		**(ug/m^3)[3]**	**Lab Results [1]**		**(ug/m^3)[3]**	**AAAQO[3] (ug/m^3)**
Antimony	521	ng/Filter	6.86E-04	153	ng/Filter	2.05E-04	1380	ng/Filter	1.83E-03	-
Arsenic	2700	ng/Filter	3.56E-03	959	ng/Filter	1.29E-03	5780	ng/Filter	7.66E-03	0.10
Barium	< 300	ng/Filter	3.95E-04	2180000	ng/Filter	2.92E+00	< 300	ng/Filter	3.98E-04	-
Beryllium	184	ng/Filter	2.42E-04	66.6	ng/Filter	8.93E-05	358	ng/Filter	4.75E-04	-
Boron	< 600	ng/Filter	7.90E-04	12500000	ng/Filter	1.68E+01	< 600	ng/Filter	7.96E-04	-
Cadmium	530	ng/Filter	6.98E-04	135	ng/Filter	1.81E-04	2230	ng/Filter	2.96E-03	-
Chromium	13400	ng/Filter	1.76E-02	4250	ng/Filter	5.70E-03	66000	ng/Filter	8.75E-02	1.0
Cobalt	2600	ng/Filter	3.42E-03	941	ng/Filter	1.26E-03	8370	ng/Filter	1.11E-02	-
Copper	466000	ng/Filter	6.14E-01	350000	ng/Filter	4.69E-01	452000	ng/Filter	5.99E-01	-
Iron	6040000	ng/Filter	7.95E+00	2650000	ng/Filter	3.55E+00	15300000	ng/Filter	2.03E+01	-
Lead	24600	ng/Filter	3.24E-02	3790	ng/Filter	5.08E-03	115000	ng/Filter	1.52E-01	1.5
Manganese	215000	ng/Filter	2.83E-01	86800	ng/Filter	1.16E-01	840000	ng/Filter	1.11E+00	2
Mercury	20.6	ng/Filter	2.71E-05	< 0.70	ng/Filter	9.39E-07	26.1	ng/Filter	3.46E-05	-
Nickel	12900	ng/Filter	1.70E-02	3490	ng/Filter	4.68E-03	57200	ng/Filter	7.58E-02	6
Selenium	1850	ng/Filter	2.44E-03	479	ng/Filter	6.43E-04	3680	ng/Filter	4.88E-03	-
Silver	349	ng/Filter	4.60E-04	214	ng/Filter	2.87E-04	1000	ng/Filter	1.33E-03	-
Thallium	61.8	ng/Filter	8.14E-05	18.1	ng/Filter	2.43E-05	93.3	ng/Filter	1.24E-04	-
Tin	387	ng/Filter	5.10E-04	146	ng/Filter	1.96E-04	806	ng/Filter	1.07E-03	-
Uranium	1100	ng/Filter	1.45E-03	149	ng/Filter	2.00E-04	2090	ng/Filter	2.77E-03	-
Vanadium	14300	ng/Filter	1.88E-02	4480	ng/Filter	6.01E-03	36000	ng/Filter	4.77E-02	-
Zinc	< 1000	ng/Filter	1.32E-03	1,440,000.00	ng/Filter	1.93E+00	< 1000	ng/Filter	1.33E-03	-
Sampling Time (hours)	24.18			23.57			23.95			
Flow Rate (l/min)	1.277			1.28			1.28			
Volume Sampled (m^3)	1852.67			1805.90			1835.05			

Notes:

(1) These results are from an approximately 24 hour averaging period that took place on November 2, November 14, and November 20, 2023.
(2) Measured data have been converted from the measured approximately 24 hour avering period to a 1 hour averaging period based on Alberta's Air Quality Model Guideline Section 7.1.2.

TABLE 18

PM10 Metals Analytical Results
AEPA Station ID 00010348-I-1
Clean Harbors Canada, Inc.
Monthly Ambient Air Monitoring Report
November 2023

	Date			Date			Date			
	Sample ID		2-Nov-23 870	Sample ID		14-Nov-23 872	Sample ID		20-Nov-23 873	
Parameter	**Lab Results [1]**		**(ug/m^3)[2]**	**Lab Results [1]**		**(ug/m^3)[2]**	**Lab Results [1]**		**(ug/m^3)[2]**	**AAAQO[2] (ug/m^3)**
Antimony	12.1	ng/Filter	1.23E-03	4.42	ng/Filter	4.50E-04	20.6	ng/Filter	2.06E-03	-
Arsenic	19.9	ng/Filter	2.03E-03	10.2	ng/Filter	1.04E-03	41.5	ng/Filter	4.14E-03	0.10
Barium	550	ng/Filter	5.60E-02	358	ng/Filter	3.65E-02	1440	ng/Filter	1.44E-01	-
Beryllium	1.18	ng/Filter	1.20E-04	0.62	ng/Filter	6.32E-05	3.16	ng/Filter	3.15E-04	-
Boron	123	ng/Filter	1.25E-02	52.0	ng/Filter	5.30E-03	194	ng/Filter	1.94E-02	-
Cadmium	4.28	ng/Filter	4.36E-04	1.43	ng/Filter	1.46E-04	17.1	ng/Filter	1.71E-03	-
Chromium	66	ng/Filter	6.72E-03	12	ng/Filter	1.22E-03	529	ng/Filter	5.28E-02	1.0
Cobalt	21.1	ng/Filter	2.15E-03	6.25	ng/Filter	6.37E-04	44.6	ng/Filter	4.45E-03	-
Copper	288	ng/Filter	2.93E-02	485	ng/Filter	4.94E-02	489	ng/Filter	4.88E-02	-
Iron	34600	ng/Filter	3.52E+00	21500	ng/Filter	2.19E+00	103000	ng/Filter	1.03E+01	-
Lead	97.3	ng/Filter	9.91E-03	29.9	ng/Filter	3.05E-03	1030	ng/Filter	1.03E-01	1.5
Manganese	1020	ng/Filter	1.04E-01	651	ng/Filter	6.63E-02	6030	ng/Filter	6.02E-01	2
Mercury	0.24	ng/Filter	2.44E-05	< 0.07	ng/Filter	7.13E-06	0.10	ng/Filter	9.98E-06	-
Nickel	65.0	ng/Filter	6.62E-03	21.7	ng/Filter	2.21E-03	329	ng/Filter	3.28E-02	6
Selenium	8.6	ng/Filter	8.76E-04	4.8	ng/Filter	4.89E-04	17.7	ng/Filter	1.77E-03	-
Silver	0.77	ng/Filter	7.84E-05	0.45	ng/Filter	4.58E-05	6.71	ng/Filter	6.70E-04	-
Thallium	0.57	ng/Filter	5.81E-05	0.34	ng/Filter	3.46E-05	1.12	ng/Filter	1.12E-04	-
Tin	7.72	ng/Filter	7.86E-04	3.37	ng/Filter	3.43E-04	32.3	ng/Filter	3.22E-03	-
Uranium	6.74	ng/Filter	6.87E-04	1.55	ng/Filter	1.58E-04	17.5	ng/Filter	1.75E-03	-
Vanadium	106	ng/Filter	1.08E-02	47.6	ng/Filter	4.85E-03	270	ng/Filter	2.69E-02	-
Zinc	1320	ng/Filter	1.34E-01	455	ng/Filter	4.64E-02	18600	ng/Filter	1.86E+00	-
Sampling Time (hours)	24			24			24			
Flow Rate (l/min)	16.7			16.7			16.7			
Volume Sampled (m^3)	23.9			23.9			24.4			

Notes:

(1) These results are from an approximately 24 hour averaging period that took place on November 2, November 14, and November 20, 2023.
(2) Measured data have been converted from the measured approximately 24 hour avering period to a 1 hour averaging period based on Alberta's Air Quality Model Guideline Section 7.1.2.

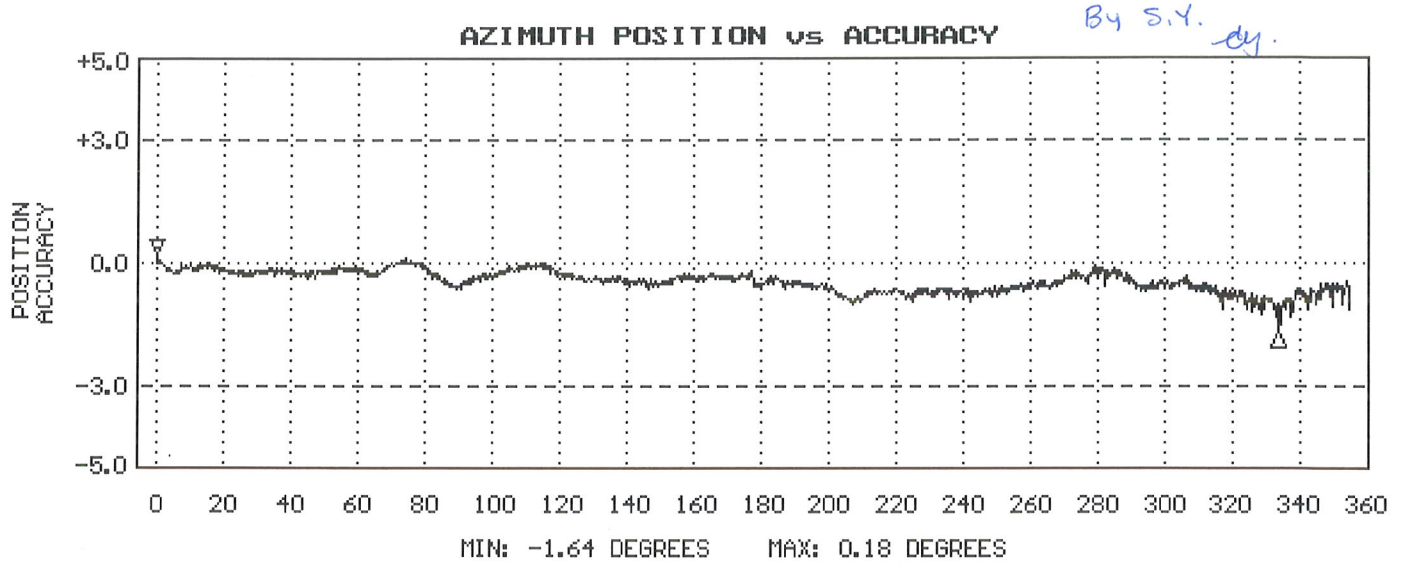
Appendix A
Meteorological Station Calibration Report

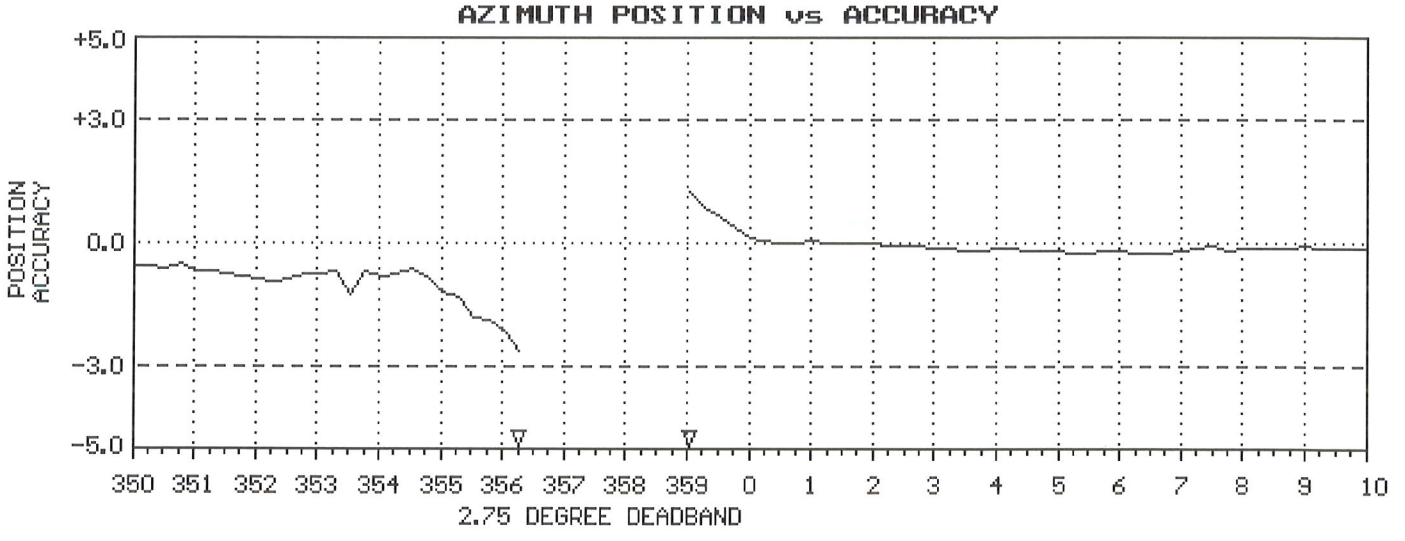
R. M. YOUNG COMPANY WIND SENSOR CALIBRATION CERTIFICATE

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:

Insp. By

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





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

Site		Wind Monitor	
Location:	Ryley School	**Make:**	RM Young
Calibration Date:	Jun 30, 2023	**Model:**	05305
Tech.:	P. Shariaty & S. Davey	**Serial #:**	183487
Instrument:	Continuous Wind Monitor	**Calibration due:**	Annually
Time:	10:00 AM - 11:20 AM	**Temperature:**	22°C

Pre-Calibration Inspection	Y/N
Is the wind direction < +/- 10° from compass observation?	N
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)
0	1	Y	26.112	26.0	Y
30	29	Y	24.576	24.5	Y
330	332	Y	23.040	22.9	Y
60	57	Y	20.480	20.4	Y
90	86	Y	18.944	18.9	Y
0	1	Y	40.960	40.8	Y
180	176	Y			
260	256	Y			

Comments	Conversion Factors	
	m/s	RPM
Wind monitor (SN:183487) was removed from tower, inspected and the calibration was checked on June 30, 2023. Mechanical bearings and shaft alignment were inspected. Bearings were cleaned of any dust buildup. Alignment was in good condition. Wind direction calibration adjustment was required based on the pre-calibration inspection. Other than cleaning and direction calibration, no additional maintenance was required. It is recommended that the instrument be cleaned biannually and bearings checked and replaced (if required) at the next calibration interval. After the calibration check, the wind monitor was re-installed and sited back to the original position.	26.112	5100.0
	24.576	4800.0
	23.040	4500.0
	20.480	4000.0
	18.944	3700.0
	40.960	8000.0
Calibration Adjustment Required?: Yes		

GHD Wind Calibration Form

Site and Instrument Information

Site		Wind Monitor	
Location:	Facility	**Make:**	RM Young
Calibration Date:	Jun 30, 2023	**Model:**	05305
Tech.:	P. Shariaty & S. Davey	**Serial #:**	149768
Instrument:	Continuous Wind Monitor	**Calibration due:**	Annually
Time:	1:05 PM - 1:20 PM	**Temperature:**	25°C

Pre-Calibration Inspection	Y/N
Is the wind direction < +/- 10° from compass observation?	N
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)
0	0	Y	26.1	26.0	Y
30	29	Y	24.6	24.5	Y
60	59	Y	23.0	22.9	Y
180	178	Y	20.5	20.4	Y
			18.9	18.9	Y
			41.0	40.8	Y

Comments	Conversion Factors	
	m/s	RPM
Wind monitor (SN:149768) was removed from tower, inspected and the calibration was checked on June 30, 2023. Mechanical bearings and shaft alignment were inspected. Bearings were cleaned of any dust buildup. Alignment was in good condition. Wind direction calibration adjustment was required based on the pre-calibration inspection. Other than cleaning and direction calibration, no additional maintenance was required. It is recommended that the instrument be cleaned biannually and bearings checked and replaced (if required) at the next calibration interval. After calibration check, wind monitor was re-installed and sited back to original position.	26.112	5100.0
	24.576	4800.0
	23.040	4500.0
	20.480	4000.0
	18.944	3700.0
	40.960	8000.0
Calibration Adjustment Required?: Yes		

Appendix B
Sampling Field Sheets

FIELD SHEET				
PM_{10} (Partisol Monitoring Unit)				
CLEAN HARBORS CANADA INC				
RYLEY, ALBERTA				
A) GENERAL INFORMATION				
Filter ID:	AT85233			
PO Number:	237199			
Partisol Sampler ID/Serial Number:	2000 FRM-AE / 200FB209860905			
Test number :	Particulate Test 870			
Sample Date:	23/11/02		yy/mm/dd	
Shipping Date to Laboratory:	23/11/03			
PM10 Analysis Trigger Weight (mg):	1.20		weight which PM10 conc. > 50 µg/m^3	
B) SAMPLING INFORMATION				
SAMPLE START				
Sampling Start Date:	23/11/02			
Sampling Start Time:	00:00			
Current Instrument Date:	23/10/30			
Current Instrument Time:	10:40			
Ambient Temperature °C:	-2.0			
Barometric Pressure (mm Hg):	710			
Leak Check:	Pass		(Pass/Fail)	
Clean PM10 Inlet:	Yes		(Yes/No)	
Weather Conditions Sampling date :	Mostly Cloudy			
Weather Conditions set up:	Mostly Cloudy			
SAMPLE RETRIEVAL				
Sampled by	T. Webb			
Sampling End Date:	23/11/03			
Sampling End Time:	00:00			
Current Instrument Date:	23/11/03			
Current Instrument Time:	7:16			
Run Status:	Ok		(Ensure Run Status is OK)	
Total Sampling Time (Hours):	24			
Volume Sampled (m^3):	23.9			
Average Flow Rate (L/min):	16.7 L/min			
AmbT °C :	0.4			
Barometric Pressure (mm Hg) :	700			
Sample Filter Temperature °C :	0.4			
Flow Rate Coefficient of Variation (%CV):	0			
Weather Conditions :	Mostly Cloudy			
Leak Check:	Pass		(Pass/Fail)	
FIELD BLANK			(Once every quarter)	
Was a field blank collected	No		(Yes/No)	
Filter ID:				
Filter Batch Number:				
Current Instrument Date:				
Current Instrument Time:				
C) OBSERVATIONS				
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 870	
Sample Canister Location:	Ryley Lift Station -Shed	
Sampled by	T.Webb	
Sampler Name:	Test 870	
Sample Date:	23/11/02	yy/mm/dd
Shipping Date to Laboratory:	23/11/03	
Canister Type (ie. 1 Litre/6 Litre/Other):	6L	
Canister Serial No.:	32217	
Flow Controller Serial No.:	H/L578699/A0334390-5	

B) SAMPLE SET UP

	Set up Conditions	Sample Retrieval
Date:	23/10/30	23/11/03
Ambient Temperature °C (inside shed):	19.7	15.8
Barometric Pressure (mm Hg):	710	700
Canister Pressure Gauge Reading (- Inches Hg):	(-)27.2	(-)7
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:	

CLEAN HARBORS CANADA INC
TSP (High Volume Monitoring Unit)
CLEAN HARBORS CANADA INC
RYLEY, ALBERTA

1. SAMPLING INFORMATION

Sample ID	Test #870			
Lab Filter ID	HVF-23-06-06			
Start Sampling	11 mm	2 dd	0 hr	2023
Stop Sampling	11 mm	3 dd	0 hr	2023
Timer Initial:	1211.84			
Timer Final:	1236.02			
	24.18			
Total Sampling Time	24 hr	11 min	1451	
Average Flow Rate	cfm			
Actual m3/min	1.277			
Air Volume	1852.7 cubic metres			
Net TSP Weight	g			
TSP Concentration	mg/m3			
TSP Analysis Trigger Weight	92.6 mg	weight which TSP conc. > 50 µg/m^3		

3. OBSERVATIONS

Comments:

Instrument Last Calibrated: 19-Oct-23

3. GUIDELINES

- Faceplate must be handtight.
- Flow rate must be ±10 percent of established flow rate.
- Faceplate gasket must be in good condition.
- Rotameter must be free of foreign material.
- Rotameter operation must be stable.
- Sampler motor brushes must be changed every 400 hours of operation.
- TSP analysis triggers when concentration >0.05mg/m3

Sample was collected in accordance with the above guidelines.

Sampler's Signature: _____

Comments: _____

FIELD SHEET				
PM_{10} (Partisol Monitoring Unit)				
CLEAN HARBORS CANADA INC				
RYLEY, ALBERTA				
A) GENERAL INFORMATION				
Filter ID:	AT85235			
PO Number:	237199			
Partisol Sampler ID/Serial Number:	2000 FRM-AE / 200FB209860905			
Test number :	Particulate Test 871			
Sample Date:	23/11/08		yy/mm/dd	
Shipping Date to Laboratory:	23/11/15			
PM10 Analysis Trigger Weight (mg):	1.21		weight which PM10 conc. > 50 µg/m^3	
B) SAMPLING INFORMATION				
SAMPLE START				
Sampling Start Date:	23/11/08			
Sampling Start Time:	00:00			
Current Instrument Date:	23/11/03			
Current Instrument Time:	7:23			
Ambient Temperature °C:	0.4			
Barometric Pressure (mm Hg):	700			
Leak Check:	Pass		(Pass/Fail)	
Clean PM10 Inlet:	Yes		(Yes/No)	
Weather Conditions Sampling date :	passing clouds			
Weather Conditions set up:	partly sunny			
SAMPLE RETRIEVAL				
Sampled by	T. Webb			
Sampling End Date:	23/11/09			
Sampling End Time:	00:00			
Current Instrument Date:	23/11/10			
Current Instrument Time:	15:09			
Run Status:	Ok		(Ensure Run Status is OK)	
Total Sampling Time (Hours):	24			
Volume Sampled (m^3):	24.2			
Average Flow Rate (L/min):	16.7 L/min			
AmbT °C :	3.3			
Barometric Pressure (mm Hg) :	696			
Sample Filter Temperature °C :	3.0			
Flow Rate Coefficient of Variation (%CV):	0.2			
Weather Conditions :	partly sunny			
Leak Check:	Pass		(Pass/Fail)	
FIELD BLANK			(Once every quarter)	
Was a field blank collected	No		(Yes/No)	
Filter ID:				
Filter Batch Number:				
Current Instrument Date:				
Current Instrument Time:				
C) OBSERVATIONS				
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 871	
Sample Canister Location:	Ryley Lift Station -Shed	
Sampled by	T.Webb	
Sampler Name:	Test 871	
Sample Date:	23/11/08	yy/mm/dd
Shipping Date to Laboratory:	23/11/15	
Canister Type (ie. 1 Litre/6 Litre/Other):	6L	
Canister Serial No.:	28932	
Flow Controller Serial No.:	H/L578699/A0334390-5	

B) SAMPLE SET UP

	Set up Conditions	Sample Retrieval
Date:	23/11/03	23/11/10
Ambient Temperature °C (inside shed):	15.8	21.5
Barometric Pressure (mm Hg):	700	696
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:	passing clouds
Describe facility operations that may affect sampling event:	None
Comments:	

CLEAN HARBORS CANADA INC
TSP (High Volume Monitoring Unit)
CLEAN HARBORS CANADA INC
RYLEY, ALBERTA

1. SAMPLING INFORMATION

Sample ID	Test #871			
Lab Filter ID	HVF-23-06-04			
Start Sampling	11 mm	8 dd	0 hr	2023
Stop Sampling	11 mm	9 dd	0 hr	2023
Timer Initial:	1236.02			
Timer Final:	1260.20			
	24.18			
Total Sampling Time	24 hr	11 min	1451	
Average Flow Rate	cfm			
Actual m3/min	1.277			
Air Volume	1852.7 cubic metres			
Net TSP Weight	g			
TSP Concentration	mg/m3			
TSP Analysis Trigger Weight	92.6 mg	weight which TSP conc. > 50 µg/m^3		

3. OBSERVATIONS

Comments:

Instrument Last Calibrated: 19-Oct-23

3. GUIDELINES

- Faceplate must be handtight.
- Flow rate must be ±10 percent of established flow rate.
- Faceplate gasket must be in good condition.
- Rotameter must be free of foreign material.
- Rotameter operation must be stable.
- Sampler motor brushes must be changed every 400 hours of operation.
- TSP analysis triggers when concentration >0.05mg/m3

Sample was collected in accordance with the above guidelines.

Sampler's Signature: _____

Comments: _____

FIELD SHEET				
PM_{10} (Partisol Monitoring Unit)				
CLEAN HARBORS CANADA INC				
RYLEY, ALBERTA				
A) GENERAL INFORMATION				
Filter ID:	AT85234			
PO Number:	237199			
Partisol Sampler ID/Serial Number:	2000 FRM-AE / 200FB209860905			
Test number :	Particulate Test 872			
Sample Date:	23/11/14		yy/mm/dd	
Shipping Date to Laboratory:	23/11/15			
PM10 Analysis Trigger Weight (mg):	1.20		weight which PM10 conc. > 50 µg/m^3	
B) SAMPLING INFORMATION				
SAMPLE START				
Sampling Start Date:	23/11/14			
Sampling Start Time:	00:00			
Current Instrument Date:	23/11/13			
Current Instrument Time:	15:31			
Ambient Temperature °C:	5.8			
Barometric Pressure (mm Hg):	691			
Leak Check:	Pass		(Pass/Fail)	
Clean PM10 Inlet:	Yes		(Yes/No)	
Weather Conditions Sampling date :	partly sunny			
Weather Conditions set up:	partly sunny			
SAMPLE RETRIEVAL				
Sampled by	T. Webb			
Sampling End Date:	23/11/15			
Sampling End Time:	00:00			
Current Instrument Date:	23/11/15			
Current Instrument Time:	9:46			
Run Status:	Ok		(Ensure Run Status is OK)	
Total Sampling Time (Hours):	24			
Volume Sampled (m^3):	23.9			
Average Flow Rate (L/min):	16.7 L/min			
AmbT °C :	-0.1			
Barometric Pressure (mm Hg) :	697			
Sample Filter Temperature °C :	0.0			
Flow Rate Coefficient of Variation (%CV):	0.1			
Weather Conditions :	cloudy			
Leak Check:	Pass		(Pass/Fail)	
FIELD BLANK			(Once every quarter)	
Was a field blank collected	No		(Yes/No)	
Filter ID:				
Filter Batch Number:				
Current Instrument Date:				
Current Instrument Time:				
C) OBSERVATIONS				
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 872	
Sample Canister Location:	Ryley Lift Station -Shed	
Sampled by	T.Webb	
Sampler Name:	Test 872	
Sample Date:	23/11/14	yy/mm/dd
Shipping Date to Laboratory:	23/11/15	
Canister Type (ie. 1 Litre/6 Litre/Other):	6L	
Canister Serial No.:	32224	
Flow Controller Serial No.:	H/L578699/A0334390-5	

B) SAMPLE SET UP

	Set up Conditions	Sample Retrieval
Date:	23/11/13	23/11/15
Ambient Temperature °C (inside shed):	20.9	9.9
Barometric Pressure (mm Hg):	691	697
Canister Pressure Gauge Reading (- Inches Hg):	(-)27.8	(-)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:	partly sunny
Describe facility operations that may affect sampling event:	None
Comments:	

CLEAN HARBORS CANADA INC
TSP (High Volume Monitoring Unit)
CLEAN HARBORS CANADA INC
RYLEY, ALBERTA

1. SAMPLING INFORMATION

Sample ID	Test #872			
Lab Filter ID	HVF-23-06-04			
Start Sampling	11 mm	14 dd	0 hr	2023
Stop Sampling	11 mm	15 dd	0 hr	2023
Timer Initial:	1260.20			
Timer Final:	1283.77			
	23.57			
Total Sampling Time	23 hr	34 min	1414	
Average Flow Rate	cfm			
Actual m3/min	1.277			
Air Volume	1805.9 cubic metres			
Net TSP Weight	g			
TSP Concentration	mg/m3			
TSP Analysis Trigger Weight	90.3 mg	weight which TSP conc. > 50 µg/m^3		

3. OBSERVATIONS

Comments:

Instrument Last Calibrated: 19-Oct-23

3. GUIDELINES

- Faceplate must be handtight.
- Flow rate must be ±10 percent of established flow rate.
- Faceplate gasket must be in good condition.
- Rotameter must be free of foreign material.
- Rotameter operation must be stable.
- Sampler motor brushes must be changed every 400 hours of operation.
- TSP analysis triggers when concentration >0.05mg/m3

Sample was collected in accordance with the above guidelines.

Sampler's Signature: _____

Comments: _____

FIELD SHEET				
PM_{10} (Partisol Monitoring Unit)				
CLEAN HARBORS CANADA INC				
RYLEY, ALBERTA				
A) GENERAL INFORMATION				
Filter ID:	AT85236			
PO Number:	237199			
Partisol Sampler ID/Serial Number:	2000 FRM-AE / 200FB209860905			
Test number :	Particulate Test 873			
Sample Date:	23/11/20		yy/mm/dd	
Shipping Date to Laboratory:	23/11/27			
PM10 Analysis Trigger Weight (mg):	1.22		weight which PM10 conc. > 50 µg/m^3	
B) SAMPLING INFORMATION				
SAMPLE START				
Sampling Start Date:	23/11/20			
Sampling Start Time:	00:00			
Current Instrument Date:	23/11/15			
Current Instrument Time:	9:54			
Ambient Temperature °C:	0.4			
Barometric Pressure (mm Hg):	697			
Leak Check:	Pass		(Pass/Fail)	
Clean PM10 Inlet:	Yes		(Yes/No)	
Weather Conditions Sampling date :	passing clouds			
Weather Conditions set up:	partly sunny			
SAMPLE RETRIEVAL				
Sampled by	T. Webb			
Sampling End Date:	23/11/21			
Sampling End Time:	00:00			
Current Instrument Date:	23/11/24			
Current Instrument Time:	12:56			
Run Status:	Ok		(Ensure Run Status is OK)	
Total Sampling Time (Hours):	24			
Volume Sampled (m^3):	24.4			
Average Flow Rate (L/min):	16.7 L/min			
AmbT °C :	1.9			
Barometric Pressure (mm Hg) :	706			
Sample Filter Temperature °C :	2.6			
Flow Rate Coefficient of Variation (%CV):	0			
Weather Conditions :	partly sunny			
Leak Check:	Pass		(Pass/Fail)	
FIELD BLANK			(Once every quarter)	
Was a field blank collected	No		(Yes/No)	
Filter ID:				
Filter Batch Number:				
Current Instrument Date:				
Current Instrument Time:				
C) OBSERVATIONS				
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 873	
Sample Canister Location:	Ryley Lift Station -Shed	
Sampled by	T.Webb	
Sampler Name:	Test 873	
Sample Date:	23/11/20	yy/mm/dd
Shipping Date to Laboratory:	23/11/27	
Canister Type (ie. 1 Litre/6 Litre/Other):	6L	
Canister Serial No.:	28961	
Flow Controller Serial No.:	H/L578699/A0334390-5	

B) SAMPLE SET UP

	Set up Conditions	Sample Retrieval
Date:	23/11/15	23/11/24
Ambient Temperature °C (inside shed):	9.9	13.4
Barometric Pressure (mm Hg):	697	706
Canister Pressure Gauge Reading (- Inches Hg):	(-)27.1	(-)3
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:	passing clouds
Describe facility operations that may affect sampling event:	None
Comments:	

CLEAN HARBORS CANADA INC
TSP (High Volume Monitoring Unit)
CLEAN HARBORS CANADA INC
RYLEY, ALBERTA

1. SAMPLING INFORMATION

Sample ID	Test #873			
Lab Filter ID	HVF-23-10-01			
Start Sampling	11 mm	20 dd	0 hr	2023
Stop Sampling	11 mm	21 dd	0 hr	2023
Timer Initial:	1283.77			
Timer Final:	1307.72			
	23.95			
Total Sampling Time	23 hr	57 min	1437	
Average Flow Rate	cfm			
Actual m3/min	1.277			
Air Volume	1835.0 cubic metres			
Net TSP Weight	g			
TSP Concentration	mg/m3			
TSP Analysis Trigger Weight	91.8 mg	weight which TSP conc. > 50 µg/m^3		

3. OBSERVATIONS

Comments:

Instrument Last Calibrated: 19-Oct-23

3. GUIDELINES

- Faceplate must be handtight.
- Flow rate must be ±10 percent of established flow rate.
- Faceplate gasket must be in good condition.
- Rotameter must be free of foreign material.
- Rotameter operation must be stable.
- Sampler motor brushes must be changed every 400 hours of operation.
- TSP analysis triggers when concentration >0.05mg/m3

Sample was collected in accordance with the above guidelines.

Sampler's Signature: _____

Comments: _____

FIELD SHEET			
PM_{10} (Partisol Monitoring Unit)			
CLEAN HARBORS CANADA INC			
RYLEY, ALBERTA			
A) GENERAL INFORMATION			
Filter ID:	AT83972		
PO Number:	237199		
Partisol Sampler ID/Serial Number:	2000 FRM-AE / 200FB209860905		
Test number :	Particulate Test 874		
Sample Date:	23/11/26	yy/mm/dd	
Shipping Date to Laboratory:	23/11/28		
PM10 Analysis Trigger Weight (mg):	1.22	weight which PM10 conc. > 50 µg/m^3	
B) SAMPLING INFORMATION			
SAMPLE START			
Sampling Start Date:	23/11/26		
Sampling Start Time:	00:00		
Current Instrument Date:	23/11/24		
Current Instrument Time:	13:03		
Ambient Temperature °C:	2.4		
Barometric Pressure (mm Hg):	706		
Leak Check:	Pass	(Pass/Fail)	
Clean PM10 Inlet:	Yes	(Yes/No)	
Weather Conditions Sampling date :	Cloudy		
Weather Conditions set up:	Partly Sunny		
SAMPLE RETRIEVAL			
Sampled by	T. Webb		
Sampling End Date:	23/11/27		
Sampling End Time:	00:00		
Current Instrument Date:	23/11/27		
Current Instrument Time:	14:45		
Run Status:	Ok	(Ensure Run Status is OK)	
Total Sampling Time (Hours):	24		
Volume Sampled (m^3):	24.4		
Average Flow Rate (L/min):	16.7 L/min		
AmbT °C :	2.8		
Barometric Pressure (mm Hg) :	698		
Sample Filter Temperature °C :	3.4		
Flow Rate Coefficient of Variation (%CV):	0		
Weather Conditions :	Mostly Cloudy		
Leak Check:	Pass	(Pass/Fail)	
FIELD BLANK		(Once every quarter)	
Was a field blank collected	No	(Yes/No)	
Filter ID:			
Filter Batch Number:			
Current Instrument Date:			
Current Instrument Time:			
C) OBSERVATIONS			
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 874	
Sample Canister Location:	Ryley Lift Station -Shed	
Sampled by	T.Webb	
Sampler Name:	Test 874	
Sample Date:	23/11/26	yy/mm/dd
Shipping Date to Laboratory:	23/11/28	
Canister Type (ie. 1 Litre/6 Litre/Other):	6L	
Canister Serial No.:	32259	
Flow Controller Serial No.:	H/L578699/A0334390-5	

B) SAMPLE SET UP

	Set up Conditions	Sample Retrieval
Date:	23/11/24	23/11/27
Ambient Temperature °C (inside shed):	13.4	13.2
Barometric Pressure (mm Hg):	706	698
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:	Cloudy
Describe facility operations that may affect sampling event:	None
Comments:	

CLEAN HARBORS CANADA INC
TSP (High Volume Monitoring Unit)
CLEAN HARBORS CANADA INC
RYLEY, ALBERTA

1. SAMPLING INFORMATION

Sample ID	Test #874			
Lab Filter ID	HVF-23-10-05			
Start Sampling	11 mm	26 dd	0 hr	2023
Stop Sampling	11 mm	27 dd	0 hr	2023
Timer Initial:	1307.72			
Timer Final:	1331.68			
	23.96			
Total Sampling Time	23 hr	58 min	1438	
Average Flow Rate	cfm			
Actual m3/min	1.277			
Air Volume	1835.8 cubic metres			
Net TSP Weight	g			
TSP Concentration	mg/m3			
TSP Analysis Trigger Weight	91.8 mg	weight which TSP conc. > 50 µg/m^3		

3. OBSERVATIONS

Comments:

Instrument Last Calibrated: 19-Oct-23

3. GUIDELINES

- Faceplate must be handtight.
- Flow rate must be ±10 percent of established flow rate.
- Faceplate gasket must be in good condition.
- Rotameter must be free of foreign material.
- Rotameter operation must be stable.
- Sampler motor brushes must be changed every 400 hours of operation.
- TSP analysis triggers when concentration >0.05mg/m3

Sample was collected in accordance with the above guidelines.

Sampler's Signature: _____

Comments: _____

FIELD SHEET
TSP (High Volume Monitoring Unit)
CLEAN HARBORS CANADA INC
RYLEY, ALBERTA

1. SAMPLING INFORMATION

Sample ID	Facility Test # 108			
Lab Filter ID	HV-23-02-15			
Start Sampling	11 mm	1 dd	16 hr	2023
Stop Sampling	12 mm	1 dd	14 hr	2023
Timer Initial:	3232.36			
Timer Final:	3244.34			

Total Sampling Time	11	hr	59	min	719
Average Flow Rate		cfm			
Actual m3/min	1.272				
Air Volume	914.6	cubic metres			
Net TSP Weight		g			
TSP Concentration		mg/m3			

2. SAMPLING INFORMATION

Sample ID	School Test # 108			
Lab Filter ID	HV-23-02-16			
Start Sampling	11 mm	1 dd	16 hr	2023
Stop Sampling	12 mm	1 dd	14 hr	2023
Timer Initial:	2627.02			
Timer Final:	2638.31			

Total Sampling Time	11	hr	17	min	677
Average Flow Rate		cfm			
Actual m3/min	1.295				
Air Volume	876.7	cubic metres			
Net TSP Weight		g			
TSP Concentration		mg/m3			

3. OBSERVATIONS

Comments:

Instrument Last Calibrated: 28-Sep-23

3. GUIDELINES

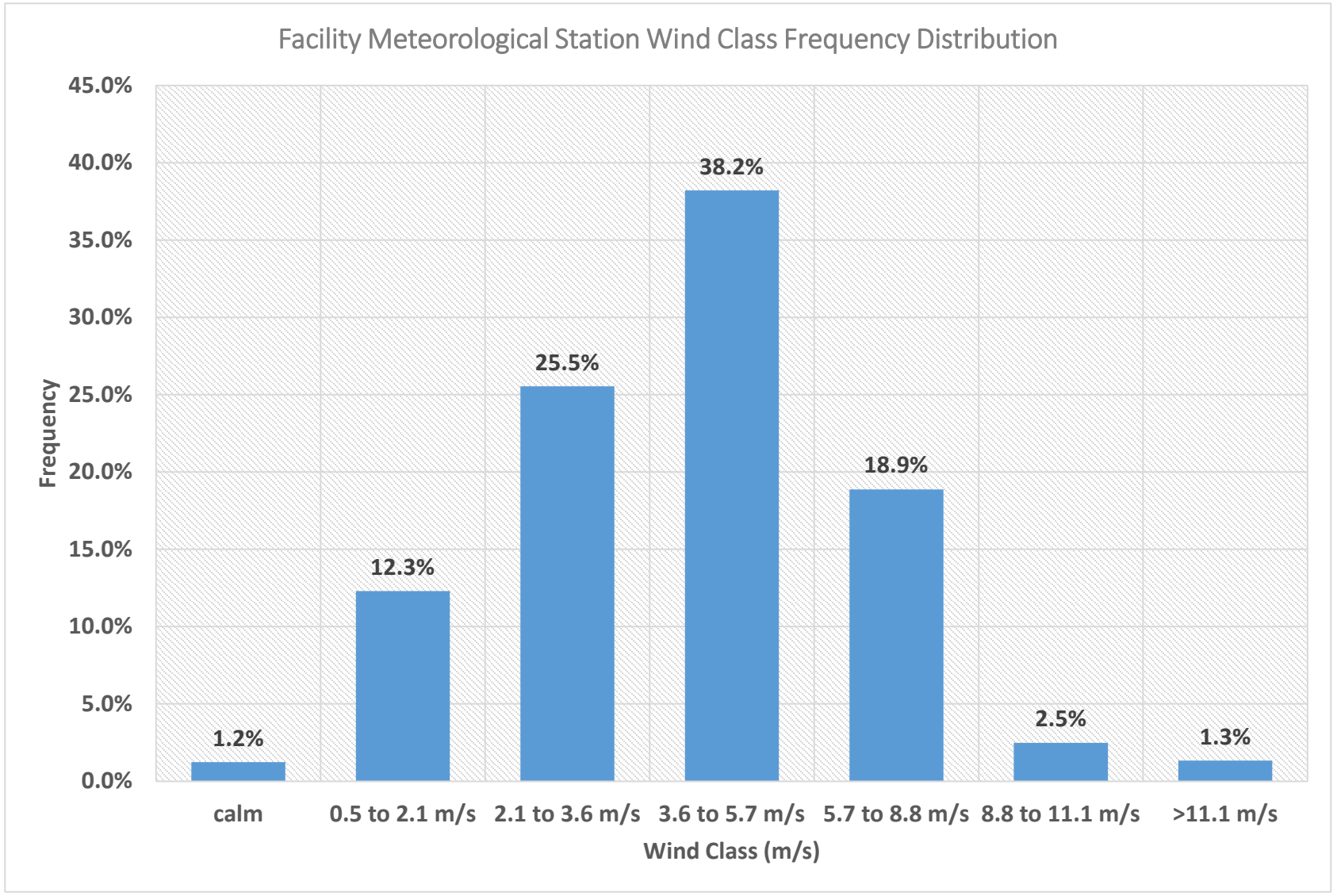
- Faceplate must be handtight.
- Flow rate must be ±10 percent of established flow rate.
- Faceplate gasket must be in good condition.
- Rotameter must be free of foreign material.
- Rotameter operation must be stable.
- Sampler motor brushes must be changed every 400 hours of operation.

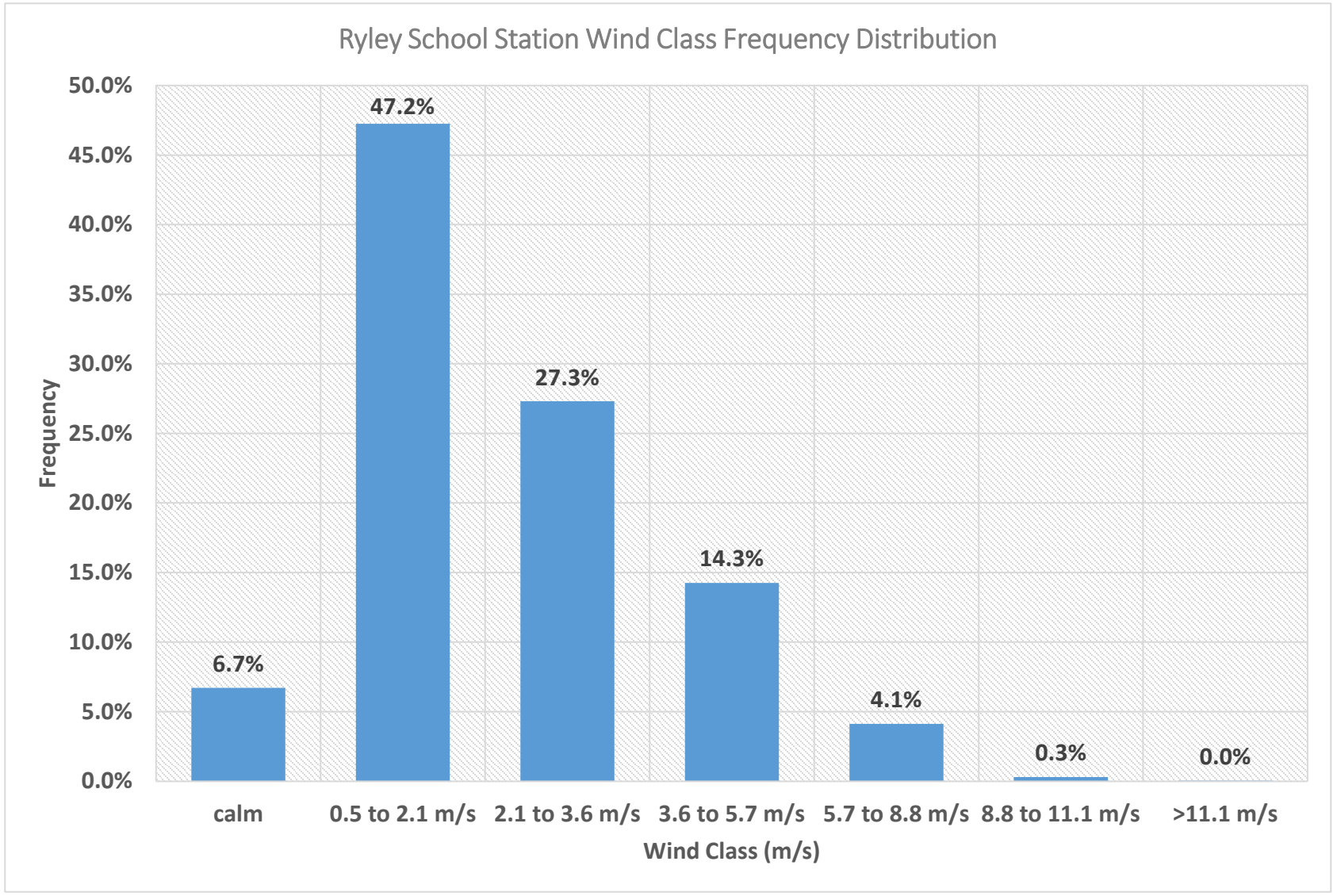
Sample was collected in accordance with the above guidelines.

Sampler's Signature: 

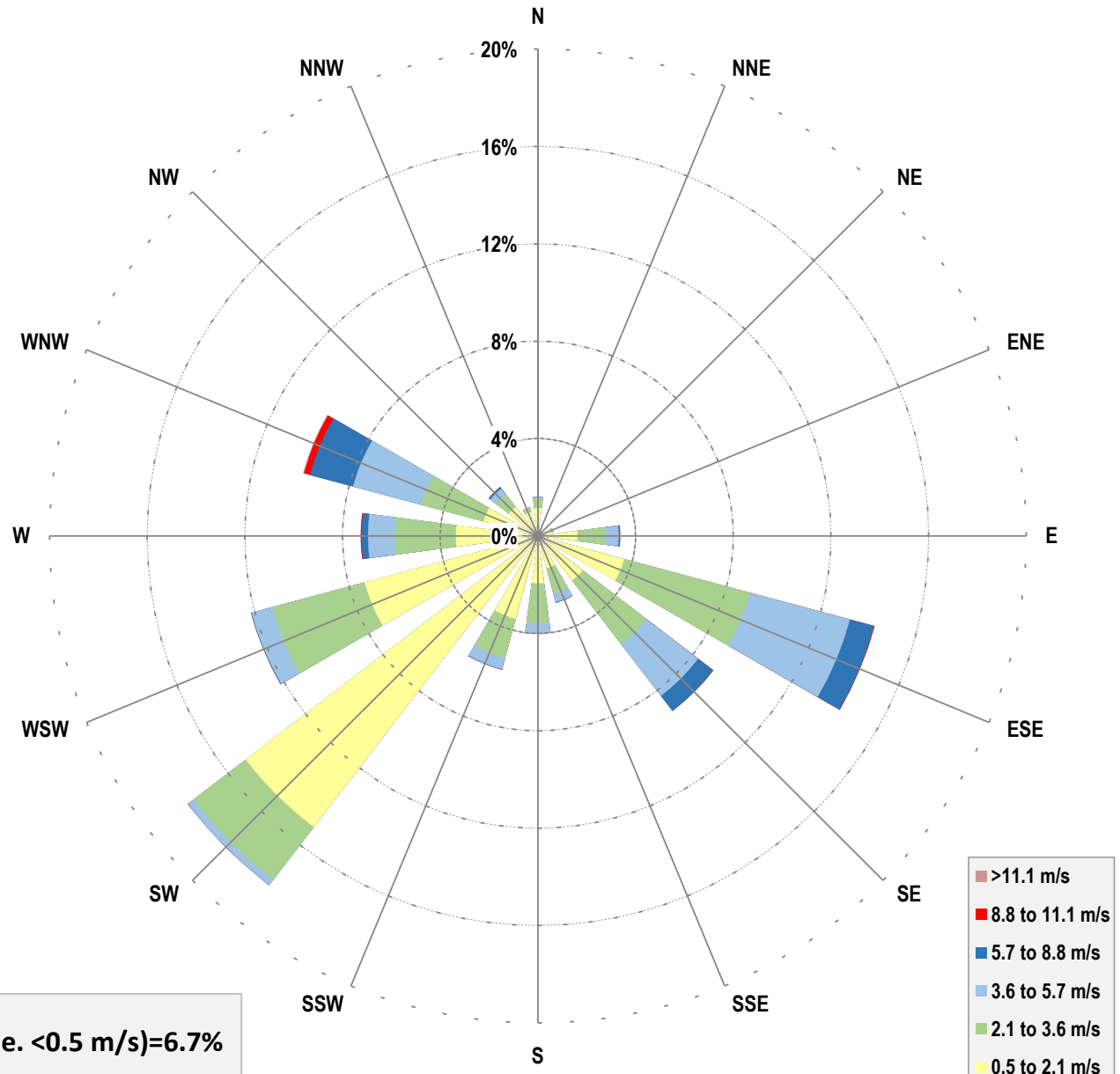
Comments:

Appendix C
Wind Class Frequency Distribution Graphs and Wind Rose


Facility Meteorological Station Wind Class Frequency Distribution
45.0%
40.0%
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
Frequency
1.2%
12.3%
25.5%
38.2%
18.9%
2.5%
1.3%
calm
0.5 to 2.1 m/s
2.1 to 3.6 m/s
3.6 to 5.7 m/s
5.7 to 8.8 m/s
8.8 to 11.1 m/s
>11.1 m/s
Wind Class (m/s)

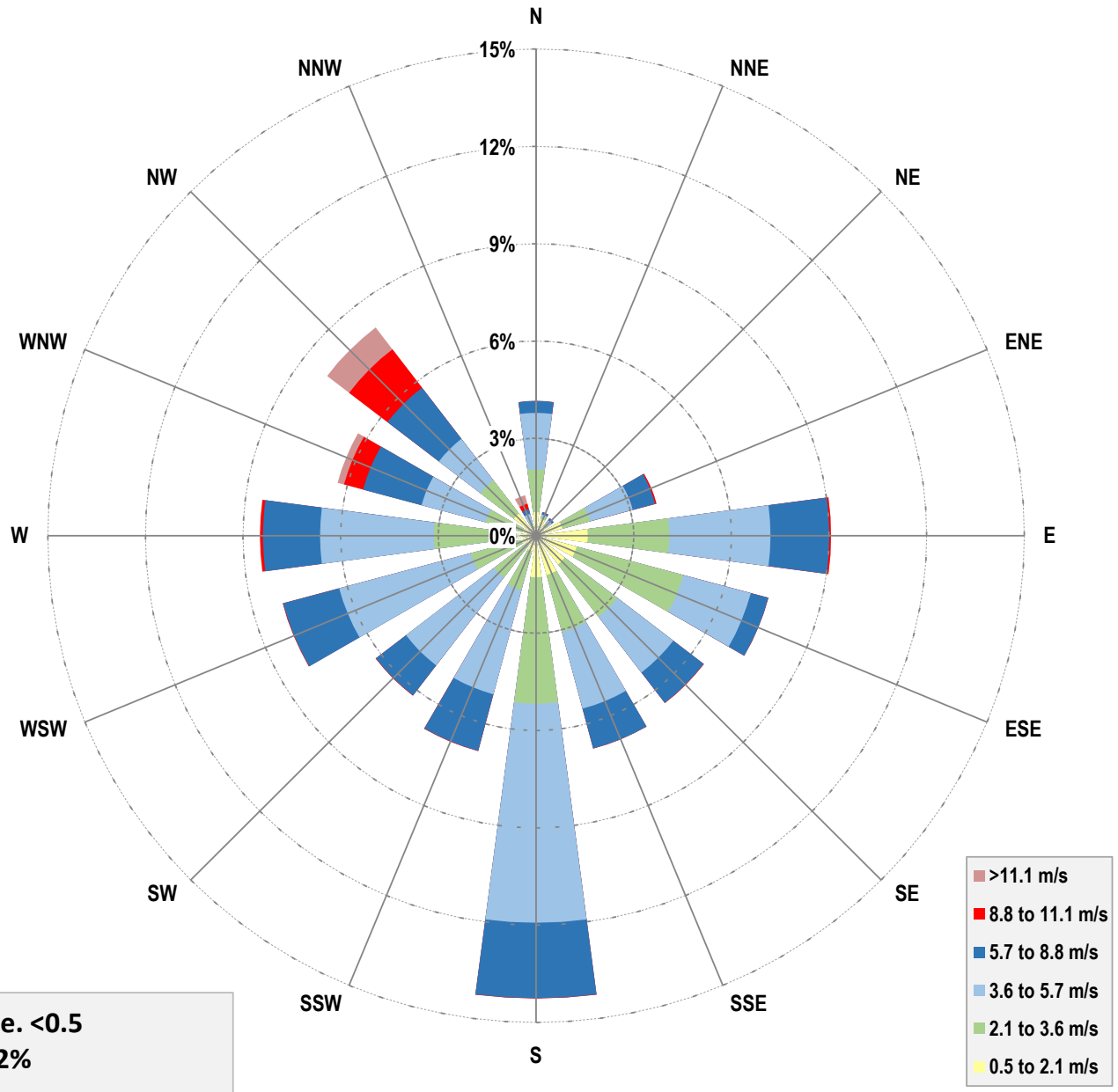

Ryley School Station Wind Class Frequency Distribution
50.0%
45.0%
40.0%
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
Frequency
47.2%
27.3%
14.3%
6.7%
4.1%
0.3%
0.0%
calm
0.5 to 2.1 m/s
2.1 to 3.6 m/s
3.6 to 5.7 m/s
5.7 to 8.8 m/s
8.8 to 11.1 m/s
>11.1 m/s
Wind Class (m/s)

Clean Harbors Ryley School Station
(Nov 1, 2023 – Nov 30, 2023)



calms (i.e. <0.5 m/s)=6.7%

Clean Harbors Facility Meteorological Station
(Nov 1, 2023 – Nov 30, 2023)



calms (i.e. <0.5 m/s)=1.2%

Appendix D
Chain of Custody Forms and Laboratory Analytical Reports

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Todd Webb
Clean Harbors Environmental
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

INVOICE: Stephanie Dennis
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

CLIENT SAMPLE ID: Ryley Facility Test # 108 HVF-23-02-15
Matrix: Air Filter
CANISTER ID:
PRIORITY: Normal
DESCRIPTION:
DATE SAMPLED: 01-Nov-23
DATE RECEIVED: 06-Dec-23
REPORT CREATED: 18-Dec-23
REPORT NUMBER: 23120023
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120023-001	Antimony		537	ng/Filter	0.30	AC-021	15-Dec-23
23120023-001	Arsenic		1140	ng/Filter	0.30	AC-021	15-Dec-23
23120023-001	Barium	K, T, U	< 300	ng/Filter	300	AC-021	15-Dec-23
23120023-001	Beryllium		173	ng/Filter	0.60	AC-021	15-Dec-23
23120023-001	Boron		5460000	ng/Filter	600	AC-021	15-Dec-23
23120023-001	Cadmium		778	ng/Filter	0.80	AC-021	15-Dec-23
23120023-001	Chromium		12500	ng/Filter	20	AC-021	15-Dec-23
23120023-001	Cobalt		2330	ng/Filter	0.50	AC-021	15-Dec-23
23120023-001	Copper		88400	ng/Filter	20	AC-021	15-Dec-23
23120023-001	Iron		5650000	ng/Filter	80	AC-021	15-Dec-23
23120023-001	Lead		22300	ng/Filter	0.70	AC-021	15-Dec-23
23120023-001	Manganese		228000	ng/Filter	1.0	AC-021	15-Dec-23
23120023-001	Mercury	K, T, U	< 0.70	ng/Filter	0.70	AC-021	15-Dec-23
23120023-001	Nickel		11400	ng/Filter	5.0	AC-021	15-Dec-23
23120023-001	Selenium		1270	ng/Filter	4.0	AC-021	15-Dec-23
23120023-001	Silver		150	ng/Filter	0.50	AC-021	15-Dec-23
23120023-001	Thallium		42.0	ng/Filter	0.20	AC-021	15-Dec-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: December 18, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca//

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Vegreville, Alberta
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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
Ryley Facility Test # 108 HVF-23-02-15		Air Filter	01-Nov-23

DESCRIPTION:

REPORT NUMBER: 23120023 **REPORT CREATED:** 18-Dec-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120023-001	Tin		209	ng/Filter	0.20	AC-021	15-Dec-23
23120023-001	Uranium		387	ng/Filter	0.200	AC-021	15-Dec-23
23120023-001	Vanadium		13300	ng/Filter	0.40	AC-021	15-Dec-23
23120023-001	Zinc	K, T, U	< 1000	ng/Filter	1000	AC-021	15-Dec-23
23120023-001	Zirconium	T, U	< 1.0	ng/Filter	1.0	AC-021	14-Dec-23
23120023-001	Particulate Weight		379	mg	0.1	Research	07-Dec-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: December 18, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca//

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
Ryley School Test # 108 HVF-23-02-16		Air Filter	01-Nov-23

DESCRIPTION:

REPORT NUMBER: 23120023 **REPORT CREATED:** 18-Dec-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120023-002	Antimony		132	ng/Filter	0.30	AC-021	15-Dec-23
23120023-002	Arsenic		242	ng/Filter	0.30	AC-021	15-Dec-23
23120023-002	Barium	K, T, U	< 300	ng/Filter	300	AC-021	15-Dec-23
23120023-002	Beryllium		22.3	ng/Filter	0.60	AC-021	15-Dec-23
23120023-002	Boron		2170000	ng/Filter	600	AC-021	15-Dec-23
23120023-002	Cadmium		103	ng/Filter	0.80	AC-021	15-Dec-23
23120023-002	Chromium		2200	ng/Filter	20	AC-021	15-Dec-23
23120023-002	Cobalt		777	ng/Filter	0.50	AC-021	15-Dec-23
23120023-002	Copper		103000	ng/Filter	20	AC-021	15-Dec-23
23120023-002	Iron		2220000	ng/Filter	80	AC-021	15-Dec-23
23120023-002	Lead		1850	ng/Filter	0.70	AC-021	15-Dec-23
23120023-002	Manganese		73400	ng/Filter	1.0	AC-021	15-Dec-23
23120023-002	Mercury	K, T, U	< 0.70	ng/Filter	0.70	AC-021	15-Dec-23
23120023-002	Nickel		2710	ng/Filter	5.0	AC-021	15-Dec-23
23120023-002	Selenium		180	ng/Filter	4.0	AC-021	15-Dec-23
23120023-002	Silver		64.9	ng/Filter	0.50	AC-021	15-Dec-23
23120023-002	Thallium		13.8	ng/Filter	0.20	AC-021	15-Dec-23
23120023-002	Tin		119	ng/Filter	0.20	AC-021	15-Dec-23
23120023-002	Uranium		65.5	ng/Filter	0.200	AC-021	15-Dec-23
23120023-002	Vanadium		3450	ng/Filter	0.40	AC-021	15-Dec-23
23120023-002	Zinc	K, T, U	< 1000	ng/Filter	1000	AC-021	15-Dec-23
23120023-002	Zirconium	T, U	< 1.0	ng/Filter	1.0	AC-021	14-Dec-23
23120023-002	Particulate Weight		186	mg	0.1	Research	07-Dec-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: December 18, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca//

Revision History

Order ID	Ver	Date	Reason
23120023	01	18-Dec-23	Report created

Methods

Method	Description
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
Research	Research method

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
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
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

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

Order Comments

23120023

Send results to Stan Yuha. Quote QT140005

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

Sample Comments

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

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.

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Todd Webb
Clean Harbors Environmental
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

INVOICE: Stephanie Dennis
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

CLIENT SAMPLE ID: HiVol Test #: 870 - Filter # HVF-23-06-06
Matrix: Air Filter
CANISTER ID:
PRIORITY: Normal
DESCRIPTION: HiVol Filter
DATE SAMPLED: 02-Nov-23 0:00
DATE RECEIVED: 06-Nov-23
REPORT CREATED: 21-Nov-23
REPORT NUMBER: 23110061
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110061-003	Antimony		521	ng/Filter	0.30	AC-021	17-Nov-23
23110061-003	Arsenic		2700	ng/Filter	0.30	AC-021	17-Nov-23
23110061-003	Barium	K, T, U	< 300	ng/Filter	300	AC-021	17-Nov-23
23110061-003	Beryllium		184	ng/Filter	0.60	AC-021	17-Nov-23
23110061-003	Boron	K, T, U	< 600	ng/Filter	600	AC-021	17-Nov-23
23110061-003	Cadmium		530	ng/Filter	0.80	AC-021	17-Nov-23
23110061-003	Chromium		13400	ng/Filter	20	AC-021	17-Nov-23
23110061-003	Cobalt		2600	ng/Filter	0.50	AC-021	17-Nov-23
23110061-003	Copper		466000	ng/Filter	20	AC-021	17-Nov-23
23110061-003	Iron		6040000	ng/Filter	80	AC-021	17-Nov-23
23110061-003	Lead		24600	ng/Filter	0.70	AC-021	17-Nov-23
23110061-003	Manganese		215000	ng/Filter	1.0	AC-021	17-Nov-23
23110061-003	Mercury		20.6	ng/Filter	0.70	AC-021	17-Nov-23
23110061-003	Nickel		12900	ng/Filter	5.0	AC-021	17-Nov-23
23110061-003	Selenium		1850	ng/Filter	4.0	AC-021	17-Nov-23
23110061-003	Silver		349	ng/Filter	0.50	AC-021	17-Nov-23
23110061-003	Thallium		61.8	ng/Filter	0.20	AC-021	17-Nov-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: November 21, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
HiVol Test #: 870 - Filter # HVF-23-06-06		Air Filter	02-Nov-23 0:00

DESCRIPTION: HiVol Filter

REPORT NUMBER: 23110061 **REPORT CREATED:** 21-Nov-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110061-003	Tin		387	ng/Filter	0.20	AC-021	17-Nov-23
23110061-003	Uranium		1100	ng/Filter	0.200	AC-021	17-Nov-23
23110061-003	Vanadium		14300	ng/Filter	0.40	AC-021	17-Nov-23
23110061-003	Zinc	K, T, U	< 1000	ng/Filter	1000	AC-021	17-Nov-23
23110061-003	Particulate Weight		190	mg	0.1	Research	08-Nov-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: November 21, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PM10 Test #: 870 - Filter # AT85233		Air Filter	02-Nov-23 0:00

DESCRIPTION: PM10 Filter

REPORT NUMBER: 23110061 **REPORT CREATED:** 21-Nov-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110061-002	Antimony		12.1	ng/Filter	0.03	AC-021	16-Nov-23
23110061-002	Arsenic		19.9	ng/Filter	0.03	AC-021	16-Nov-23
23110061-002	Barium		550	ng/Filter	0.3	AC-021	16-Nov-23
23110061-002	Beryllium		1.18	ng/Filter	0.06	AC-021	16-Nov-23
23110061-002	Boron		123	ng/Filter	0.6	AC-021	16-Nov-23
23110061-002	Cadmium		4.28	ng/Filter	0.08	AC-021	16-Nov-23
23110061-002	Chromium		66	ng/Filter	2	AC-021	16-Nov-23
23110061-002	Cobalt		21.1	ng/Filter	0.05	AC-021	16-Nov-23
23110061-002	Copper		288	ng/Filter	2	AC-021	16-Nov-23
23110061-002	Iron		34600	ng/Filter	8	AC-021	16-Nov-23
23110061-002	Lead		97.3	ng/Filter	0.07	AC-021	16-Nov-23
23110061-002	Manganese		1020	ng/Filter	0.1	AC-021	16-Nov-23
23110061-002	Mercury	I	0.24	ng/Filter	0.07	AC-021	16-Nov-23
23110061-002	Nickel		65.0	ng/Filter	0.5	AC-021	16-Nov-23
23110061-002	Selenium		8.6	ng/Filter	0.4	AC-021	16-Nov-23
23110061-002	Silver		0.77	ng/Filter	0.05	AC-021	16-Nov-23
23110061-002	Thallium		0.57	ng/Filter	0.02	AC-021	16-Nov-23
23110061-002	Tin		7.72	ng/Filter	0.02	AC-021	16-Nov-23
23110061-002	Uranium		6.74	ng/Filter	0.020	AC-021	16-Nov-23
23110061-002	Vanadium		106	ng/Filter	0.04	AC-021	16-Nov-23
23110061-002	Zinc		1320	ng/Filter	1	AC-021	16-Nov-23
23110061-002	Particulate Weight		1.03	mg	0.004	AC-029	07-Nov-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: November 21, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test #: 870	32217	Ambient Air	02-Nov-23 0:00

DESCRIPTION: Canister

REPORT NUMBER: 23110061 **REPORT CREATED:** 21-Nov-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110061-001	Total Non-Methane Organic Carbon	K, T, U	< 0.08	ppmv	0.08	NA-028	07-Nov-23
23110061-001	1,2,3-Trimethylbenzene	K, T, U	< 0.08	ppbv	0.08	AC-058	07-Nov-23
23110061-001	1,2,4-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	07-Nov-23
23110061-001	1,3,5-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	07-Nov-23
23110061-001	1-Butene/Isobutylene	K, T, U	< 0.10	ppbv	0.10	AC-058	07-Nov-23
23110061-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.12	ppbv	0.12	AC-058	07-Nov-23
23110061-001	1-Pentene	I	0.06	ppbv	0.05	AC-058	07-Nov-23
23110061-001	2,2,4-Trimethylpentane	I	0.05	ppbv	0.03	AC-058	07-Nov-23
23110061-001	2,2-Dimethylbutane	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Nov-23
23110061-001	2,3,4-Trimethylpentane	I	0.06	ppbv	0.03	AC-058	07-Nov-23
23110061-001	2,3-Dimethylbutane	K, T, U	< 0.15	ppbv	0.15	AC-058	07-Nov-23
23110061-001	2,3-Dimethylpentane	I	0.04	ppbv	0.03	AC-058	07-Nov-23
23110061-001	2,4-Dimethylpentane	K, T, U	< 0.05	ppbv	0.05	AC-058	07-Nov-23
23110061-001	2-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Nov-23
23110061-001	2-Methylhexane	I	0.07	ppbv	0.05	AC-058	07-Nov-23
23110061-001	2-Methylpentane		0.27	ppbv	0.03	AC-058	07-Nov-23
23110061-001	3-Methylheptane	K, T, U	< 0.05	ppbv	0.05	AC-058	07-Nov-23
23110061-001	3-Methylhexane	I	0.11	ppbv	0.03	AC-058	07-Nov-23
23110061-001	3-Methylpentane	I	0.12	ppbv	0.03	AC-058	07-Nov-23
23110061-001	Benzene	I	0.15	ppbv	0.05	AC-058	07-Nov-23
23110061-001	cis-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	07-Nov-23
23110061-001	cis-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Nov-23
23110061-001	Cyclohexane	I	0.10	ppbv	0.07	AC-058	07-Nov-23
23110061-001	Cyclopentane	I	0.07	ppbv	0.03	AC-058	07-Nov-23
23110061-001	Ethylbenzene		0.44	ppbv	0.05	AC-058	07-Nov-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: November 21, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test #: 870	32217	Ambient Air	02-Nov-23 0:00

DESCRIPTION: Canister

REPORT NUMBER: 23110061 **REPORT CREATED:** 21-Nov-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110061-001	Isobutane		1.27	ppbv	0.05	AC-058	07-Nov-23
23110061-001	Isopentane		1.00	ppbv	0.07	AC-058	07-Nov-23
23110061-001	Isoprene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Nov-23
23110061-001	Isopropylbenzene	K, T, U	< 0.07	ppbv	0.07	AC-058	07-Nov-23
23110061-001	m,p-Xylene		0.86	ppbv	0.07	AC-058	07-Nov-23
23110061-001	m-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Nov-23
23110061-001	m-Ethyltoluene	K, T, U	< 0.05	ppbv	0.05	AC-058	07-Nov-23
23110061-001	Methylcyclohexane	I	0.11	ppbv	0.03	AC-058	07-Nov-23
23110061-001	Methylcyclopentane	I	0.12	ppbv	0.08	AC-058	07-Nov-23
23110061-001	n-Butane		2.72	ppbv	0.03	AC-058	07-Nov-23
23110061-001	n-Decane	K, T, U	< 0.10	ppbv	0.10	AC-058	07-Nov-23
23110061-001	n-Dodecane	K, T, U	< 0.5	ppbv	0.5	AC-058	07-Nov-23
23110061-001	n-Heptane	I	0.11	ppbv	0.07	AC-058	07-Nov-23
23110061-001	n-Hexane	I	0.23	ppbv	0.05	AC-058	07-Nov-23
23110061-001	n-Octane	I	0.09	ppbv	0.03	AC-058	07-Nov-23
23110061-001	n-Pentane		0.95	ppbv	0.07	AC-058	07-Nov-23
23110061-001	n-Propylbenzene	K, T, U	< 0.10	ppbv	0.10	AC-058	07-Nov-23
23110061-001	n-Undecane	K, T, U	< 0.8	ppbv	0.8	AC-058	07-Nov-23
23110061-001	n-Nonane	I	0.09	ppbv	0.07	AC-058	07-Nov-23
23110061-001	o-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Nov-23
23110061-001	o-Xylene	I	0.24	ppbv	0.05	AC-058	07-Nov-23
23110061-001	p-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Nov-23
23110061-001	p-Ethyltoluene	K, T, U	< 0.07	ppbv	0.07	AC-058	07-Nov-23
23110061-001	Styrene	I	0.08	ppbv	0.07	AC-058	07-Nov-23
23110061-001	Toluene		1.07	ppbv	0.05	AC-058	07-Nov-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: November 21, 2023

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test #: 870	32217	Ambient Air	02-Nov-23 0:00

DESCRIPTION: Canister

REPORT NUMBER: 23110061 **REPORT CREATED:** 21-Nov-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110061-001	trans-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	07-Nov-23
23110061-001	trans-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Nov-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: November 21, 2023

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
23110061	01	21-Nov-23	Report created

Methods

Method	Description
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
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
Research	Research method

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
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
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

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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

Order Comments

23110061

Project ID: Test # 870. Send results Stan Yuha.

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Sample Comments

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

RESULTS: Todd Webb
Clean Harbors Environmental
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

INVOICE: Stephanie Dennis
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

CLIENT SAMPLE ID: HiVol Test #: 871, Flt # HVF-23-06-04

Matrix: Air Filter

CANISTER ID:

PRIORITY: Normal

DESCRIPTION: HiVol Filter

DATE SAMPLED: 08-Nov-23 0:00

DATE RECEIVED: 17-Nov-23

REPORT CREATED: 01-Dec-23

REPORT NUMBER: 23110156

VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110156-003	Particulate Weight		69.5	mg	0.1	Research	20-Nov-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: December 1, 2023

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PM10 Test #: 871, Flt # AT85235		Air Filter	08-Nov-23 0:00

DESCRIPTION: PM10 Filter

REPORT NUMBER: 23110156 **REPORT CREATED:** 01-Dec-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110156-002	Particulate Weight		0.205	mg	0.004	AC-029	20-Nov-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: December 1, 2023

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test # 871	28932	Ambient Air	08-Nov-23 0:00

DESCRIPTION: Air Canister

REPORT NUMBER: 23110156 **REPORT CREATED:** 01-Dec-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110156-001	Total Non-Methane Organic Carbon	K, T, U	< 0.08	ppmv	0.08	NA-028	17-Nov-23
23110156-001	1,2,3-Trimethylbenzene	K, T, U	< 0.08	ppbv	0.08	AC-058	21-Nov-23
23110156-001	1,2,4-Trimethylbenzene	I	0.19	ppbv	0.05	AC-058	21-Nov-23
23110156-001	1,3,5-Trimethylbenzene	I	0.05	ppbv	0.05	AC-058	21-Nov-23
23110156-001	1-Butene/Isobutylene		0.34	ppbv	0.09	AC-058	21-Nov-23
23110156-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.11	ppbv	0.11	AC-058	21-Nov-23
23110156-001	1-Pentene	K, T, U	< 0.05	ppbv	0.05	AC-058	21-Nov-23
23110156-001	2,2,4-Trimethylpentane	I	0.05	ppbv	0.03	AC-058	21-Nov-23
23110156-001	2,2-Dimethylbutane	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Nov-23
23110156-001	2,3,4-Trimethylpentane	I	0.04	ppbv	0.03	AC-058	21-Nov-23
23110156-001	2,3-Dimethylbutane	K, T, U	< 0.14	ppbv	0.14	AC-058	21-Nov-23
23110156-001	2,3-Dimethylpentane	I	0.11	ppbv	0.03	AC-058	21-Nov-23
23110156-001	2,4-Dimethylpentane	K, T, U	< 0.05	ppbv	0.05	AC-058	21-Nov-23
23110156-001	2-Methylheptane	I	0.07	ppbv	0.03	AC-058	21-Nov-23
23110156-001	2-Methylhexane		0.36	ppbv	0.05	AC-058	21-Nov-23
23110156-001	2-Methylpentane		0.42	ppbv	0.03	AC-058	21-Nov-23
23110156-001	3-Methylheptane	K, T, U	< 0.05	ppbv	0.05	AC-058	21-Nov-23
23110156-001	3-Methylhexane		0.52	ppbv	0.03	AC-058	21-Nov-23
23110156-001	3-Methylpentane	I	0.07	ppbv	0.03	AC-058	21-Nov-23
23110156-001	Benzene	I	0.12	ppbv	0.05	AC-058	21-Nov-23
23110156-001	cis-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	21-Nov-23
23110156-001	cis-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Nov-23
23110156-001	Cyclohexane	I	0.07	ppbv	0.06	AC-058	21-Nov-23
23110156-001	Cyclopentane	I	0.04	ppbv	0.03	AC-058	21-Nov-23
23110156-001	Ethylbenzene		0.92	ppbv	0.05	AC-058	21-Nov-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: December 1, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test # 871	28932	Ambient Air	08-Nov-23 0:00

DESCRIPTION: Air Canister

REPORT NUMBER: 23110156 **REPORT CREATED:** 01-Dec-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110156-001	Isobutane		0.29	ppbv	0.05	AC-058	21-Nov-23
23110156-001	Isopentane		0.52	ppbv	0.06	AC-058	21-Nov-23
23110156-001	Isoprene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Nov-23
23110156-001	Isopropylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	21-Nov-23
23110156-001	m,p-Xylene		2.62	ppbv	0.06	AC-058	21-Nov-23
23110156-001	m-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Nov-23
23110156-001	m-Ethyltoluene	I	0.12	ppbv	0.05	AC-058	21-Nov-23
23110156-001	Methylcyclohexane		0.22	ppbv	0.03	AC-058	21-Nov-23
23110156-001	Methylcyclopentane	K, T, U	< 0.08	ppbv	0.08	AC-058	21-Nov-23
23110156-001	n-Butane		0.52	ppbv	0.03	AC-058	21-Nov-23
23110156-001	n-Decane		0.17	ppbv	0.09	AC-058	21-Nov-23
23110156-001	n-Dodecane	K, T, U	< 0.5	ppbv	0.5	AC-058	21-Nov-23
23110156-001	n-Heptane		0.71	ppbv	0.06	AC-058	21-Nov-23
23110156-001	n-Hexane	I	0.21	ppbv	0.05	AC-058	21-Nov-23
23110156-001	n-Octane	I	0.11	ppbv	0.03	AC-058	21-Nov-23
23110156-001	n-Pentane		0.41	ppbv	0.06	AC-058	21-Nov-23
23110156-001	n-Propylbenzene	K, T, U	< 0.09	ppbv	0.09	AC-058	21-Nov-23
23110156-001	n-Undecane	K, T, U	< 0.8	ppbv	0.8	AC-058	21-Nov-23
23110156-001	n-Nonane	I	0.13	ppbv	0.06	AC-058	21-Nov-23
23110156-001	o-Ethyltoluene	I	0.05	ppbv	0.03	AC-058	21-Nov-23
23110156-001	o-Xylene		0.76	ppbv	0.05	AC-058	21-Nov-23
23110156-001	p-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Nov-23
23110156-001	p-Ethyltoluene	K, T, U	< 0.06	ppbv	0.06	AC-058	21-Nov-23
23110156-001	Styrene	I	0.18	ppbv	0.06	AC-058	21-Nov-23
23110156-001	Toluene		6.67	ppbv	0.05	AC-058	21-Nov-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: December 1, 2023

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test # 871	28932	Ambient Air	08-Nov-23 0:00

DESCRIPTION: Air Canister

REPORT NUMBER: 23110156 **REPORT CREATED:** 01-Dec-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110156-001	trans-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	21-Nov-23
23110156-001	trans-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Nov-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: December 1, 2023

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
23110156	01	01-Dec-23	Report created

Methods

Method	Description
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
Research	Research method

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
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
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

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

Order Comments

23110156

Project ID: Test # 871. Report also to Stan Yuha.

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

Sample Comments

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

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.

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Todd Webb
Clean Harbors Environmental
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

INVOICE: Stephanie Dennis
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

CLIENT SAMPLE ID: HiVol Test #: 872, Flt # HVF-23-06-05
Matrix: Air Filter

CANISTER ID:
PRIORITY: Normal
DESCRIPTION: HiVol Filter

DATE SAMPLED: 14-Nov-23 0:00
DATE RECEIVED: 17-Nov-23
REPORT CREATED: 17-Jan-24
REPORT NUMBER: 23110157
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110157-003	Antimony		153	ng/Filter	0.30	AC-021	15-Dec-23
23110157-003	Arsenic		959	ng/Filter	0.30	AC-021	15-Dec-23
23110157-003	Barium		2180000	ng/Filter	300	AC-021	15-Dec-23
23110157-003	Beryllium		66.6	ng/Filter	0.60	AC-021	15-Dec-23
23110157-003	Boron		12500000	ng/Filter	600	AC-021	15-Dec-23
23110157-003	Cadmium		135	ng/Filter	0.80	AC-021	15-Dec-23
23110157-003	Chromium		4250	ng/Filter	20	AC-021	15-Dec-23
23110157-003	Cobalt		941	ng/Filter	0.50	AC-021	15-Dec-23
23110157-003	Copper		350000	ng/Filter	20	AC-021	15-Dec-23
23110157-003	Iron		2650000	ng/Filter	80	AC-021	15-Dec-23
23110157-003	Lead		3790	ng/Filter	0.70	AC-021	15-Dec-23
23110157-003	Manganese		86800	ng/Filter	1.0	AC-021	15-Dec-23
23110157-003	Mercury	K, T, U	< 0.70	ng/Filter	0.70	AC-021	15-Dec-23
23110157-003	Nickel		3490	ng/Filter	5.0	AC-021	15-Dec-23
23110157-003	Selenium		479	ng/Filter	4.0	AC-021	15-Dec-23
23110157-003	Silver		214	ng/Filter	0.50	AC-021	15-Dec-23
23110157-003	Thallium		18.1	ng/Filter	0.20	AC-021	15-Dec-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: January 17, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca//

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Vegreville, Alberta
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(780) 632-8211

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
HiVol Test #: 872, Flt # HVF-23-06-05		Air Filter	14-Nov-23 0:00

DESCRIPTION: HiVol Filter

REPORT NUMBER: 23110157 **REPORT CREATED:** 17-Jan-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110157-003	Tin		146	ng/Filter	0.20	AC-021	15-Dec-23
23110157-003	Uranium		149	ng/Filter	0.200	AC-021	15-Dec-23
23110157-003	Vanadium		4480	ng/Filter	0.40	AC-021	15-Dec-23
23110157-003	Zinc		1440000	ng/Filter	1000	AC-021	15-Dec-23
23110157-003	Particulate Weight		95.0	mg	0.1	Research	20-Nov-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: January 17, 2024

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PM10 Test #: 872, Flt # AT85234		Air Filter	14-Nov-23 0:00

DESCRIPTION: PM10 Filter

REPORT NUMBER: 23110157 **REPORT CREATED:** 17-Jan-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110157-002	Antimony		4.42	ng/Filter	0.03	AC-021	14-Dec-23
23110157-002	Arsenic		10.2	ng/Filter	0.03	AC-021	14-Dec-23
23110157-002	Barium		358	ng/Filter	0.3	AC-021	14-Dec-23
23110157-002	Beryllium		0.62	ng/Filter	0.06	AC-021	14-Dec-23
23110157-002	Boron		52.0	ng/Filter	0.6	AC-021	14-Dec-23
23110157-002	Cadmium		1.43	ng/Filter	0.08	AC-021	14-Dec-23
23110157-002	Chromium	I	12	ng/Filter	2	AC-021	14-Dec-23
23110157-002	Cobalt		6.25	ng/Filter	0.05	AC-021	14-Dec-23
23110157-002	Copper		485	ng/Filter	2	AC-021	14-Dec-23
23110157-002	Iron		21500	ng/Filter	8	AC-021	14-Dec-23
23110157-002	Lead		29.9	ng/Filter	0.07	AC-021	14-Dec-23
23110157-002	Manganese		651	ng/Filter	0.1	AC-021	14-Dec-23
23110157-002	Mercury	K, T, U	< 0.07	ng/Filter	0.07	AC-021	14-Dec-23
23110157-002	Nickel		21.7	ng/Filter	0.5	AC-021	14-Dec-23
23110157-002	Selenium		4.8	ng/Filter	0.4	AC-021	14-Dec-23
23110157-002	Silver		0.45	ng/Filter	0.05	AC-021	14-Dec-23
23110157-002	Thallium		0.34	ng/Filter	0.02	AC-021	14-Dec-23
23110157-002	Tin		3.37	ng/Filter	0.02	AC-021	14-Dec-23
23110157-002	Uranium		1.55	ng/Filter	0.020	AC-021	14-Dec-23
23110157-002	Vanadium		47.6	ng/Filter	0.04	AC-021	14-Dec-23
23110157-002	Zinc		455	ng/Filter	1	AC-021	14-Dec-23
23110157-002	Particulate Weight		0.600	mg	0.004	AC-029	20-Nov-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: January 17, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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Vegreville, Alberta
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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test # 872	32224	Ambient Air	14-Nov-23 0:00

DESCRIPTION: Air Canister

REPORT NUMBER: 23110157 **REPORT CREATED:** 17-Jan-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110157-001	Total Non-Methane Organic Carbon	K, T, U	< 0.09	ppmv	0.09	NA-028	17-Nov-23
23110157-001	1,2,3-Trimethylbenzene	K, T, U	< 0.09	ppbv	0.09	AC-058	21-Nov-23
23110157-001	1,2,4-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	21-Nov-23
23110157-001	1,3,5-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	21-Nov-23
23110157-001	1-Butene/Isobutylene	K, T, U	< 0.10	ppbv	0.10	AC-058	21-Nov-23
23110157-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.12	ppbv	0.12	AC-058	21-Nov-23
23110157-001	1-Pentene	K, T, U	< 0.05	ppbv	0.05	AC-058	21-Nov-23
23110157-001	2,2,4-Trimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Nov-23
23110157-001	2,2-Dimethylbutane	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Nov-23
23110157-001	2,3,4-Trimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Nov-23
23110157-001	2,3-Dimethylbutane	K, T, U	< 0.15	ppbv	0.15	AC-058	21-Nov-23
23110157-001	2,3-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Nov-23
23110157-001	2,4-Dimethylpentane	K, T, U	< 0.05	ppbv	0.05	AC-058	21-Nov-23
23110157-001	2-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Nov-23
23110157-001	2-Methylhexane	K, T, U	< 0.05	ppbv	0.05	AC-058	21-Nov-23
23110157-001	2-Methylpentane	I	0.06	ppbv	0.03	AC-058	21-Nov-23
23110157-001	3-Methylheptane	K, T, U	< 0.05	ppbv	0.05	AC-058	21-Nov-23
23110157-001	3-Methylhexane	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Nov-23
23110157-001	3-Methylpentane	I	0.04	ppbv	0.03	AC-058	21-Nov-23
23110157-001	Benzene	I	0.10	ppbv	0.05	AC-058	21-Nov-23
23110157-001	cis-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	21-Nov-23
23110157-001	cis-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Nov-23
23110157-001	Cyclohexane	K, T, U	< 0.07	ppbv	0.07	AC-058	21-Nov-23
23110157-001	Cyclopentane	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Nov-23
23110157-001	Ethylbenzene	I	0.09	ppbv	0.05	AC-058	21-Nov-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: January 17, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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PO Bag 4000
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Canada T9C 1T4
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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test # 872	32224	Ambient Air	14-Nov-23 0:00

DESCRIPTION: Air Canister

REPORT NUMBER: 23110157 **REPORT CREATED:** 17-Jan-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110157-001	Isobutane		0.49	ppbv	0.05	AC-058	21-Nov-23
23110157-001	Isopentane		0.33	ppbv	0.07	AC-058	21-Nov-23
23110157-001	Isoprene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Nov-23
23110157-001	Isopropylbenzene	K, T, U	< 0.07	ppbv	0.07	AC-058	21-Nov-23
23110157-001	m,p-Xylene	I	0.21	ppbv	0.07	AC-058	21-Nov-23
23110157-001	m-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Nov-23
23110157-001	m-Ethyltoluene	K, T, U	< 0.05	ppbv	0.05	AC-058	21-Nov-23
23110157-001	Methylcyclohexane	I	0.04	ppbv	0.03	AC-058	21-Nov-23
23110157-001	Methylcyclopentane	K, T, U	< 0.09	ppbv	0.09	AC-058	21-Nov-23
23110157-001	n-Butane		0.92	ppbv	0.03	AC-058	21-Nov-23
23110157-001	n-Decane	K, T, U	< 0.10	ppbv	0.10	AC-058	21-Nov-23
23110157-001	n-Dodecane	K, T, U	< 0.5	ppbv	0.5	AC-058	21-Nov-23
23110157-001	n-Heptane	K, T, U	< 0.07	ppbv	0.07	AC-058	21-Nov-23
23110157-001	n-Hexane	I	0.10	ppbv	0.05	AC-058	21-Nov-23
23110157-001	n-Octane	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Nov-23
23110157-001	n-Pentane		0.25	ppbv	0.07	AC-058	21-Nov-23
23110157-001	n-Propylbenzene	K, T, U	< 0.10	ppbv	0.10	AC-058	21-Nov-23
23110157-001	n-Undecane	K, T, U	< 0.9	ppbv	0.9	AC-058	21-Nov-23
23110157-001	n-Nonane	K, T, U	< 0.07	ppbv	0.07	AC-058	21-Nov-23
23110157-001	o-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Nov-23
23110157-001	o-Xylene	K, T, U	< 0.05	ppbv	0.05	AC-058	21-Nov-23
23110157-001	p-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Nov-23
23110157-001	p-Ethyltoluene	K, T, U	< 0.07	ppbv	0.07	AC-058	21-Nov-23
23110157-001	Styrene	K, T, U	< 0.07	ppbv	0.07	AC-058	21-Nov-23
23110157-001	Toluene		0.63	ppbv	0.05	AC-058	21-Nov-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: January 17, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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Canada T9C 1T4
(780) 632-8211

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test # 872	32224	Ambient Air	14-Nov-23 0:00

DESCRIPTION: Air Canister

REPORT NUMBER: 23110157 **REPORT CREATED:** 17-Jan-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110157-001	trans-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	21-Nov-23
23110157-001	trans-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Nov-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: January 17, 2024

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
23110157	01	17-Jan-24	Report created

Methods

Method	Description
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
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
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List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
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AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
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AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

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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
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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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(780) 632-8211

Order Comments

23110157

Project ID: Test # 872. Report also to Stan Yuha.

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

Sample Comments

Result Comments

Note:

1. Results relate only to items tested and apply to the sample as received.

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Todd Webb
Clean Harbors Environmental
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

INVOICE: Stephanie Dennis
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

CLIENT SAMPLE ID: HI-VOL Test Number: 873 - HVF-23-10-01
Matrix: Air Filter
CANISTER ID:
PRIORITY: Normal
DESCRIPTION:
DATE SAMPLED: 20-Nov-23 0:00
DATE RECEIVED: 30-Nov-23
REPORT CREATED: 18-Dec-23
REPORT NUMBER: 23110231
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110231-003	Antimony		1380	ng/Filter	0.30	AC-021	15-Dec-23
23110231-003	Arsenic		5780	ng/Filter	0.30	AC-021	15-Dec-23
23110231-003	Barium	K, T, U	< 300	ng/Filter	300	AC-021	15-Dec-23
23110231-003	Beryllium		358	ng/Filter	0.60	AC-021	15-Dec-23
23110231-003	Boron	K, T, U	< 600	ng/Filter	600	AC-021	15-Dec-23
23110231-003	Cadmium		2230	ng/Filter	0.80	AC-021	15-Dec-23
23110231-003	Chromium		66000	ng/Filter	20	AC-021	15-Dec-23
23110231-003	Cobalt		8370	ng/Filter	0.50	AC-021	15-Dec-23
23110231-003	Copper		452000	ng/Filter	20	AC-021	15-Dec-23
23110231-003	Iron		15300000	ng/Filter	80	AC-021	15-Dec-23
23110231-003	Lead		115000	ng/Filter	7.00	AC-021	15-Dec-23
23110231-003	Manganese		840000	ng/Filter	1.0	AC-021	15-Dec-23
23110231-003	Mercury		26.1	ng/Filter	0.70	AC-021	15-Dec-23
23110231-003	Nickel		57200	ng/Filter	5.0	AC-021	15-Dec-23
23110231-003	Selenium		3680	ng/Filter	4.0	AC-021	15-Dec-23
23110231-003	Silver		1000	ng/Filter	0.50	AC-021	15-Dec-23
23110231-003	Thallium		93.3	ng/Filter	0.20	AC-021	15-Dec-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: December 18, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
HI-VOL Test Number: 873 - HVF-23-10-01		Air Filter	20-Nov-23 0:00

DESCRIPTION:

REPORT NUMBER: 23110231 **REPORT CREATED:** 18-Dec-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110231-003	Tin		806	ng/Filter	0.20	AC-021	15-Dec-23
23110231-003	Uranium		2090	ng/Filter	0.200	AC-021	15-Dec-23
23110231-003	Vanadium		36000	ng/Filter	0.40	AC-021	15-Dec-23
23110231-003	Zinc	K, T, U	< 1000	ng/Filter	1000	AC-021	15-Dec-23
23110231-003	Particulate Weight		410	mg	0.1	Research	04-Dec-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: December 18, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PM10 Test Number: 873 - AT85236		Air Filter	20-Nov-23 0:00

DESCRIPTION:

REPORT NUMBER: 23110231 **REPORT CREATED:** 18-Dec-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110231-002	Antimony		20.6	ng/Filter	0.03	AC-021	15-Dec-23
23110231-002	Arsenic		41.5	ng/Filter	0.03	AC-021	15-Dec-23
23110231-002	Barium		1440	ng/Filter	0.3	AC-021	15-Dec-23
23110231-002	Beryllium		3.16	ng/Filter	0.06	AC-021	15-Dec-23
23110231-002	Boron		194	ng/Filter	0.6	AC-021	15-Dec-23
23110231-002	Cadmium		17.1	ng/Filter	0.08	AC-021	15-Dec-23
23110231-002	Chromium		529	ng/Filter	20	AC-021	14-Dec-23
23110231-002	Cobalt		44.6	ng/Filter	0.05	AC-021	15-Dec-23
23110231-002	Copper		489	ng/Filter	2	AC-021	15-Dec-23
23110231-002	Iron		103000	ng/Filter	80	AC-021	14-Dec-23
23110231-002	Lead		1030	ng/Filter	0.70	AC-021	14-Dec-23
23110231-002	Manganese		6030	ng/Filter	1.0	AC-021	14-Dec-23
23110231-002	Mercury	I	0.10	ng/Filter	0.07	AC-021	15-Dec-23
23110231-002	Nickel		329	ng/Filter	0.5	AC-021	15-Dec-23
23110231-002	Selenium		17.7	ng/Filter	0.4	AC-021	15-Dec-23
23110231-002	Silver		6.71	ng/Filter	0.05	AC-021	15-Dec-23
23110231-002	Thallium		1.12	ng/Filter	0.02	AC-021	15-Dec-23
23110231-002	Tin		32.3	ng/Filter	0.02	AC-021	15-Dec-23
23110231-002	Uranium		17.5	ng/Filter	0.020	AC-021	15-Dec-23
23110231-002	Vanadium		270	ng/Filter	0.04	AC-021	15-Dec-23
23110231-002	Zinc		18600	ng/Filter	10	AC-021	14-Dec-23
23110231-002	Particulate Weight		2.21	mg	0.004	AC-029	01-Dec-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: December 18, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test Number: 873	28961	Ambient Air	20-Nov-23 0:00

DESCRIPTION:

REPORT NUMBER: 23110231 **REPORT CREATED:** 18-Dec-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110231-001	Total Non-Methane Organic Carbon	K, T, U	< 0.08	ppmv	0.08	NA-028	30-Nov-23
23110231-001	1,2,3-Trimethylbenzene	K, T, U	< 0.08	ppbv	0.08	AC-058	05-Dec-23
23110231-001	1,2,4-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Dec-23
23110231-001	1,3,5-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Dec-23
23110231-001	1-Butene/Isobutylene	K, T, U	< 0.09	ppbv	0.09	AC-058	05-Dec-23
23110231-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.11	ppbv	0.11	AC-058	05-Dec-23
23110231-001	1-Pentene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Dec-23
23110231-001	2,2,4-Trimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110231-001	2,2-Dimethylbutane	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110231-001	2,3,4-Trimethylpentane	I	0.08	ppbv	0.03	AC-058	05-Dec-23
23110231-001	2,3-Dimethylbutane	K, T, U	< 0.14	ppbv	0.14	AC-058	05-Dec-23
23110231-001	2,3-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110231-001	2,4-Dimethylpentane	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Dec-23
23110231-001	2-Methylheptane	I	0.06	ppbv	0.03	AC-058	05-Dec-23
23110231-001	2-Methylhexane	I	0.14	ppbv	0.05	AC-058	05-Dec-23
23110231-001	2-Methylpentane		0.49	ppbv	0.03	AC-058	05-Dec-23
23110231-001	3-Methylheptane	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Dec-23
23110231-001	3-Methylhexane	I	0.15	ppbv	0.03	AC-058	05-Dec-23
23110231-001	3-Methylpentane	I	0.09	ppbv	0.03	AC-058	05-Dec-23
23110231-001	Benzene	I	0.23	ppbv	0.05	AC-058	05-Dec-23
23110231-001	cis-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Dec-23
23110231-001	cis-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110231-001	Cyclohexane	I	0.17	ppbv	0.06	AC-058	05-Dec-23
23110231-001	Cyclopentane	I	0.06	ppbv	0.03	AC-058	05-Dec-23
23110231-001	Ethylbenzene	I	0.27	ppbv	0.05	AC-058	05-Dec-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: December 18, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test Number: 873	28961	Ambient Air	20-Nov-23 0:00

DESCRIPTION:

REPORT NUMBER: 23110231 **REPORT CREATED:** 18-Dec-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110231-001	Isobutane		0.86	ppbv	0.05	AC-058	05-Dec-23
23110231-001	Isopentane		1.08	ppbv	0.06	AC-058	05-Dec-23
23110231-001	Isoprene	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110231-001	Isopropylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	05-Dec-23
23110231-001	m,p-Xylene		1.07	ppbv	0.06	AC-058	05-Dec-23
23110231-001	m-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110231-001	m-Ethyltoluene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Dec-23
23110231-001	Methylcyclohexane		0.26	ppbv	0.03	AC-058	05-Dec-23
23110231-001	Methylcyclopentane		0.20	ppbv	0.08	AC-058	05-Dec-23
23110231-001	n-Butane		1.98	ppbv	0.03	AC-058	05-Dec-23
23110231-001	n-Decane	K, T, U	< 0.09	ppbv	0.09	AC-058	05-Dec-23
23110231-001	n-Dodecane	K, T, U	< 0.5	ppbv	0.5	AC-058	05-Dec-23
23110231-001	n-Heptane	I	0.15	ppbv	0.06	AC-058	05-Dec-23
23110231-001	n-Hexane		0.41	ppbv	0.05	AC-058	05-Dec-23
23110231-001	n-Octane	I	0.12	ppbv	0.03	AC-058	05-Dec-23
23110231-001	n-Pentane		1.48	ppbv	0.06	AC-058	05-Dec-23
23110231-001	n-Propylbenzene	K, T, U	< 0.09	ppbv	0.09	AC-058	05-Dec-23
23110231-001	n-Undecane	K, T, U	< 0.8	ppbv	0.8	AC-058	05-Dec-23
23110231-001	n-Nonane	I	0.09	ppbv	0.06	AC-058	05-Dec-23
23110231-001	o-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110231-001	o-Xylene	I	0.27	ppbv	0.05	AC-058	05-Dec-23
23110231-001	p-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110231-001	p-Ethyltoluene	I	0.09	ppbv	0.06	AC-058	05-Dec-23
23110231-001	Styrene	K, T, U	< 0.06	ppbv	0.06	AC-058	05-Dec-23
23110231-001	Toluene		1.02	ppbv	0.05	AC-058	05-Dec-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: December 18, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test Number: 873	28961	Ambient Air	20-Nov-23 0:00

DESCRIPTION:

REPORT NUMBER: 23110231 **REPORT CREATED:** 18-Dec-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110231-001	trans-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Dec-23
23110231-001	trans-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: December 18, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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Revision History

Order ID	Ver	Date	Reason
23110231	01	18-Dec-23	Report created

Methods

Method	Description
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
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
Research	Research method

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
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
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

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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

Order Comments

23110231

Project ID: Test 873. Report also to yuha.stan@cleanharbors.com

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Sample Comments

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

RESULTS: Todd Webb
Clean Harbors Environmental
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

INVOICE: Stephanie Dennis
PO Box 390
2 km N of Hwy 14 on Sec Road 854 50114 RR 173
Ryley
AB T0B 4A0

CLIENT SAMPLE ID
HI-VOL Test Number: 874 - HVF-23-10-05

Matrix
Air Filter

CANISTER ID: HVF-23-10-05
PRIORITY: Normal
DESCRIPTION:

DATE SAMPLED: 26-Nov-23 0:00
DATE RECEIVED: 30-Nov-23
REPORT CREATED: 15-Dec-23
REPORT NUMBER: 23110233
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110233-003	Particulate Weight		85.3	mg	0.1	Research	04-Dec-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: December 15, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PM10 Test Number: 874 - AT83972	AT83972	Air Filter	26-Nov-23 0:00

DESCRIPTION:

REPORT NUMBER: 23110233 **REPORT CREATED:** 15-Dec-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110233-002	Particulate Weight		0.324	mg	0.004	AC-029	01-Dec-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: December 15, 2023

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test Number: 874	32259	Ambient Air	26-Nov-23 0:00

DESCRIPTION:

REPORT NUMBER: 23110233 **REPORT CREATED:** 15-Dec-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110233-001	Total Non-Methane Organic Carbon	K, T, U	< 0.08	ppmv	0.08	NA-028	30-Nov-23
23110233-001	1,2,3-Trimethylbenzene	K, T, U	< 0.08	ppbv	0.08	AC-058	05-Dec-23
23110233-001	1,2,4-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Dec-23
23110233-001	1,3,5-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Dec-23
23110233-001	1-Butene/Isobutylene	K, T, U	< 0.10	ppbv	0.10	AC-058	05-Dec-23
23110233-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.11	ppbv	0.11	AC-058	05-Dec-23
23110233-001	1-Pentene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Dec-23
23110233-001	2,2,4-Trimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110233-001	2,2-Dimethylbutane	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110233-001	2,3,4-Trimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110233-001	2,3-Dimethylbutane	K, T, U	< 0.14	ppbv	0.14	AC-058	05-Dec-23
23110233-001	2,3-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110233-001	2,4-Dimethylpentane	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Dec-23
23110233-001	2-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110233-001	2-Methylhexane	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Dec-23
23110233-001	2-Methylpentane	I	0.05	ppbv	0.03	AC-058	05-Dec-23
23110233-001	3-Methylheptane	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Dec-23
23110233-001	3-Methylhexane	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110233-001	3-Methylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110233-001	Benzene	I	0.05	ppbv	0.05	AC-058	05-Dec-23
23110233-001	cis-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Dec-23
23110233-001	cis-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110233-001	Cyclohexane	K, T, U	< 0.06	ppbv	0.06	AC-058	05-Dec-23
23110233-001	Cyclopentane	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110233-001	Ethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Dec-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: December 15, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test Number: 874	32259	Ambient Air	26-Nov-23 0:00

DESCRIPTION:

REPORT NUMBER: 23110233 **REPORT CREATED:** 15-Dec-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110233-001	Isobutane		0.44	ppbv	0.05	AC-058	05-Dec-23
23110233-001	Isopentane		0.19	ppbv	0.06	AC-058	05-Dec-23
23110233-001	Isoprene	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110233-001	Isopropylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	05-Dec-23
23110233-001	m,p-Xylene	K, T, U	< 0.06	ppbv	0.06	AC-058	05-Dec-23
23110233-001	m-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110233-001	m-Ethyltoluene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Dec-23
23110233-001	Methylcyclohexane	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110233-001	Methylcyclopentane	K, T, U	< 0.08	ppbv	0.08	AC-058	05-Dec-23
23110233-001	n-Butane		0.60	ppbv	0.03	AC-058	05-Dec-23
23110233-001	n-Decane	K, T, U	< 0.10	ppbv	0.10	AC-058	05-Dec-23
23110233-001	n-Dodecane	K, T, U	< 0.5	ppbv	0.5	AC-058	05-Dec-23
23110233-001	n-Heptane	K, T, U	< 0.06	ppbv	0.06	AC-058	05-Dec-23
23110233-001	n-Hexane	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Dec-23
23110233-001	n-Octane	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110233-001	n-Pentane	I	0.12	ppbv	0.06	AC-058	05-Dec-23
23110233-001	n-Propylbenzene	K, T, U	< 0.10	ppbv	0.10	AC-058	05-Dec-23
23110233-001	n-Undecane	K, T, U	< 0.8	ppbv	0.8	AC-058	05-Dec-23
23110233-001	n-Nonane	K, T, U	< 0.06	ppbv	0.06	AC-058	05-Dec-23
23110233-001	o-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110233-001	o-Xylene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Dec-23
23110233-001	p-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23
23110233-001	p-Ethyltoluene	I	0.07	ppbv	0.06	AC-058	05-Dec-23
23110233-001	Styrene	K, T, U	< 0.06	ppbv	0.06	AC-058	05-Dec-23
23110233-001	Toluene	I	0.26	ppbv	0.05	AC-058	05-Dec-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: December 15, 2023 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca//

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
VOCs and TNMOC Test Number: 874	32259	Ambient Air	26-Nov-23 0:00

DESCRIPTION:

REPORT NUMBER: 23110233 **REPORT CREATED:** 15-Dec-23 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23110233-001	trans-2-Butene	K, T, U	< 0.05	ppbv	0.05	AC-058	05-Dec-23
23110233-001	trans-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Dec-23

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: December 15, 2023

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
23110233	01	15-Dec-23	Report created

Methods

Method	Description
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
Research	Research method

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
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
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

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

Order Comments

23110233

Project ID: Test 874 Report also to yuha.stan@cleanharbors.com

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

Sample Comments

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: 23120023-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: Ryley Facility Test # 108 HVF-23-02-15

Sample Reception: Environmental Analytical Services
PO Bag 4000
Vegreville, AB T9C 1T4
Phone: (780) 632-8284 Fax: (780) 632-8620
Shipping: Highway 16 A & 75 St

ANALYSIS REQUEST FORM

Project Code: _____
Client Code: _____
Invoice Code: _____
Date Rec'd (D/M/Y): _____
Rec'd By: _____

FOR AITF USE ONLY

Client details:
Contact: __
Company: __
Project ID: __
Address: __
__
__
__
Telephone: __
Email: __

CleanHarbors

Jorge A. Mendoza
Laboratory Manager

Clean Harbors
Environmental Services
Box 390 , 2 Km North of Hwy 14
on Sec. Road 854
Ryley, AB T0B 4A0
www.cleanharbors.com

780.663.3828 Ext. 235
Home Office 780.663.2342
Mobile 780.934.2342
Fax 780.663.3539
Direct Line 780.663.2513
mendoza.jorge@cleanharbors.com

"People & Technology Creating a Safer, Cleaner Environment"

Special Instructions/Comments: **RUSH (Surcharge):** ☐

PO # 238023
Quote ID: QT140005

RECEIVED
DEC 06 2023

AITF Contact: _____ **Email:** _____
Tel: _____

Sample ID	Sample Source Description	Date/Time Sampled From/To		Analysis Requested
		Date (dd/mm/yy)	Time (24 Hr)	
Ryley Facility Test # 108	Filter Number # HV-23-02-15	1/11/23 1/12/23	 11.98 hrs	Particulate weight ICP-MS analysis
Ryley School Test # 108	Filter Number # HV-23-02-16	1/11/23 1/12/23	 11.29 hrs	Particulate weight ICP-MS analysis

Sample ID: 23110061-001 **Priority:** Normal

Customer ID: Clean Harbours

Cust Samp ID: VOCs and TNMOC Test #: 870

CHAIN 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

Client Reporting Information

Company: Clean Harbors 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@cleanharbors.com, Yuha.Stan@cleanharbors.com

Client Billing Information

Contact: Stephanie Dennis
Phone: 780-663-3828
Email: Dennis.Stephanie@cleanharbors.com
Project ID: Test 870
PO #: 0000237199

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:

***If either PM10 or HI-VOL filter exceeds its trigger weight, then both filters are analyzed for metals**

If neither filter exceeds its trigger weight, neither filter is analyzed for metals

If metals analysis is required, please report on the same report as filter weights and VOCs/TNMOC

Trigger Weight for Analysis (PM10): 1.20 mg

Trigger Weight for Analysis (HI-VOL): 92.6 mg

Date Received – Lab Use Only

RECEIVED
NOV 03 2023

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: 870	Canister	32217	02/11/23	00:00	VOC PAMS & TNMOC
				03/11/23	00:00	
	PM10 Test Number: 870	PM10 filter	AT85233	02/11/23	00:00	FLT Particulate Weight (& metals if over trigger weight)*
				03/11/23	00:00	
	HI-VOL Test Number: 870	HI-VOL Filter	HVF-23-06-06	02/11/23	00:00	Particulate Weight (& metals if over trigger weight)*
				03/11/23	00:00	
					Total: 24.18 hrs	

Client Authorization: _____ Laboratory Personnel: _____

(Signature) *(Signature)*

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

Sample ID: 23110061-002 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: PM10 Test #: 870 - Filter # AT85233

Filter Shipping Record

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

Date: OCT 4/23

Project: Clean Harbors

Prepared by:

Filter Size	# of Filters in Cassettes	Filter IDs
47 mm	1	AT85233 Test 870

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

InnoTech ALBERTA

Canister ID: 22217

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ on: SEP 18 2023

Evacuated: OCT 05 2023 Recertified:

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

Laboratory Contact Number: 780-632-8403

Sample ID: test 870

Sampled By: T. Webb

Starting Vacuum:	End Vacuum:
-27.8 "Hg	-7 "Hg/ psig

Sample ID: 23110061-003 **Priority:** Normal

Customer ID: Clean Harbours

Cust Samp ID: HiVol Test #: 870 - Filter # HVF-23-06-0(

{00004084:2}

TERMS AND CONDITIONS

The attached document entitled "**Chain of Custody Form**" is subject to the following Terms and Conditions, unless otherwise specified on the Quotation. InnoTech Alberta's commencement of the Services shall be deemed acceptance of the terms and conditions by the Client.

1.Any proposal contained herein is prepared for the consideration of the Client only. Its contents may not be used or disclosed to any other party without prior written consent of the INNOTECH ALBERTA INC. (hereinafter referred to as "InnoTech Alberta").

2.InnoTech Alberta will perform the Services in accordance with normal professional standards.

3.The delivery time for performance of the Services (as set out on the front page of this Quotation) is approximate and may be changed by InnoTech Alberta giving written notice to the Client.

4.InnoTech Alberta will exercise due care and proficiency in testing items submitted by a Client. InnoTech Alberta shall not, however, be liable to the Client for any damage or loss caused to the item being tested or for any damage, loss or expense caused by any delay in carrying out the test, including any damage, loss or expense resulting from InnoTech Alberta's negligence. InnoTech Alberta shall not be responsible for any damage, which is a natural or necessary result of any testing procedure.

5.For the purposes of this Quotation, Intellectual Property means all information, data, artistic and literary works, concepts, designs, processes, software, algorithms and inventions, including, without limitation, those that could be the subject of patent, copyright, industrial design, trade secret or other forms of protection. Intellectual Property which was owned by either InnoTech Alberta or the Client prior to the signing of this Agreement remains the property of that party. Nothing in this Agreement shall operate as a license, permission or grant of any other rights to either InnoTech Alberta's or the Client's Intellectual Property.

6.All data, reports and other information relating to the Services shall be treated by InnoTech Alberta as the confidential property of the Client, and InnoTech Alberta will use reasonable efforts to ensure that its employees, contractors and agents will not disclose the same to any other person, firm or corporation during the term of this Agreement and for a period of five (5) years after the date of termination of the Agreement. The obligation of confidentiality set out herein shall not apply to any information that was in InnoTech Alberta's possession prior to receipt from the Client or which is or becomes part of the public domain through no act or failure on the part of InnoTech Alberta. The obligation of confidentiality set out in this Section shall not prevent the disclosure of information to any level of government having jurisdiction to make lawful demand therefor, or required to be disclosed by any applicable law. Any records required to be maintained by InnoTech Alberta pursuant to this Agreement are subject to the protection and access provisions of the Freedom of Information and Protection of Privacy Act (Alberta).

7.The reported results of any InnoTech Alberta tests or evaluations performed on samples or items provided by the Client shall be interpreted as being specific to the sample or item tested. InnoTech Alberta makes no representation that any similar or related untested samples or items would produce the same results.

8.The Client shall not use InnoTech Alberta's name in any advertising material, sale offer, news releases, public statements or announcements, whether written or oral relating to the Services or the results thereof, without the prior written consent of InnoTech Alberta.

9.Records, test data, reports and samples, except where shipped to the Client after completion of the work shall be retained by InnoTech Alberta according to InnoTech Alberta's approved Records Retention and Disposition Schedule.

10.Prices quoted are in Canadian Dollars unless otherwise stated in writing and are exclusive of any provincial, municipal, sales, use or goods and services tax.

11.Prices quoted do not include shipping, insurance or cost of consumables. The Client shall be responsible for all costs incurred by InnoTech Alberta in collecting any item for testing and returning the item to the Client after testing and shall be responsible for all necessary incidental costs incurred by InnoTech Alberta in providing the Services. InnoTech Alberta will not be responsible for any damage or loss to items during shipping and it is the responsibility of the Client to arrange and pay for any insurance it deems necessary.

Sample ID: 23110061-001 **Priority:** Normal

Customer ID: Clean Harbours

Cust Samp ID: VOCs and TNMOC Test #: 870

12.Any test samples or other materials supplied by the Client to InnoTech Alberta may, at InnoTech Alberta's option, be returned by InnoTech Alberta to the Client. The Client shall:

(a)be responsible for all costs associated with the handling, transportation and disposal of such materials;

(b)reimburse InnoTech Alberta for any costs incurred by InnoTech Alberta associated with the handling, transportation and disposal of such materials; and

(c)indemnify and hold InnoTech Alberta harmless from any and all claims, damages or actions associated with the handling, transportation and disposal of such materials.

13.The Client shall pay all invoices rendered by InnoTech Alberta to the Client within thirty (30) days from the date of invoice, without deduction or set-off.

14.If the Client fails to pay any amount under this Agreement, such unpaid amount shall bear interest at a rate per month equal to one (1%) percent (or 12.6825% per annum) with interest on overdue interest at the same rate.

15.InnoTech Alberta makes no representation, warranties or conditions, either expressed or implied, statutory or otherwise and does not warrant the quality, state, merchantability or fitness for any purpose of any goods or products to be delivered pursuant to this Agreement. The Client accepts the results of these Services or items tested as is, and acknowledges that any use or interpretation of the information contained is at the Client's own risk.

16.In no event shall InnoTech Alberta be liable for any indirect or consequential damage or loss suffered by the Client, including loss of anticipated profits.

17.The Client shall indemnify and hold harmless InnoTech Alberta from any and all claims, demands, actions and costs (including legal costs on a solicitor-client basis) that may arise out of:
(a)any dangerous defect or content in the item being tested, whether apparent or not, which dangerous defect or content was not disclosed in writing to InnoTech Alberta by the Client at the time the item was submitted for testing;
(b)differences between those items actually tested and items previously or subsequently produced which are purported to be identical to the item tested; or
(c)any use of the tested item or any item incorporating the tested item, whether by the Client or a third party following its return to the Client.
The hold harmless shall survive this Agreement.

18.The Client shall, at its own expense and without limiting its liabilities herein, be responsible for insuring its operation in an amount not less than $2,000,000 inclusive per occurrence, insuring against bodily injury, and property damage including loss of use thereof. Further, the Client is responsible for insuring all owned property directly or indirectly related to this Agreement and InnoTech Alberta shall have no liability for any loss or damage to such property. 19.InnoTech Alberta shall maintain the following insurance: (i) commercial general liability insurance (including cross liability, severability of interests, non-owned automobile liability) in the amount of two million dollars ($2,000,000.00) per occurrence, and; (ii) professional liability and errors and omissions insurance in the amount of one million dollars ($1,000,000.00) per claim, and two million dollars ($2,000,000.00) in the aggregate. In addition, InnoTech Alberta shall maintain all workers' compensation coverage required by applicable laws. Notwithstanding the foregoing, InnoTech Alberta reserves the right to supplement or add insurance coverage from time to time as may be required in its sole discretion. InnoTech Alberta may provide certificates of insurance for coverages outlined in (i) and (ii) above.

20.The Client agrees to comply with all InnoTech Alberta Safety & Security regulations in effect while on InnoTech Alberta premises.

21.This Agreement represents the entire agreement between the parties and shall supersede all prior agreements relative to this transaction.

22.InnoTech Alberta shall not be liable to the Client for any failure or delay in performance of its obligations caused by circumstances beyond its control, including but not limited to acts of God, strikes, laws imposed after the fact, governmental restrictions, riots, wars, civil disorder, rebellion, sabotage, fire, flood, explosion, earthquake or other disasters.

23.InnoTech Alberta may assign this Quotation to an "affiliated" (as that term is defined at Section 2 of the Business Corporations Act (Alberta)) or successor entity on written notice to the Client.

24.This Quotation and rights and parties thereto shall be governed by and construed according to the laws of the Province of Alberta. The parties hereby submit to the jurisdiction of the Courts of Alberta.

RECEIVED
NOV 03 2023

InnoTech ALBERTA
A SUBSIDIARY OF ALBERTA IN

Sample ID: 23110156-001 **Priority:** Normal

Customer ID: Clean Harbours

Cust Samp ID: VOCs and TNMOC Test # 871

RM

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

Phone: 780-632-8403
Email: EAS.Reception@innotechalberta.ca
www.innotechalberta.ca

Client Reporting Information

Company:	Clean Harbors 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@cleanharbors.com, Yuha.Stan@cleanharbors.com

g Information

Contact:	Stephanie Dennis
Phone:	780-663-3828
Email:	Dennis.Stephanie@cleanharbors.com
Project ID:	Test 871
PO #:	0000237199

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:

***If either PM10 or HI-VOL filter exceeds its trigger weight, then both filters are analyzed for metals**

If neither filter exceeds its trigger weight, neither filter is analyzed for metals

If metals analysis is required, please report on the same report as filter weights and VOCs/TNMOC

Trigger Weight for Analysis (PM10): 1.21 mg

Trigger Weight for Analysis (HI-VOL): 92.6 mg

Date Received – Lab Use Only

RECEIVED
NOV 17 2023

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: 871	Canister	28932	08/11/23	00:00	VOC PAMS & TNMOC
				09/11/23	00:00	
2	PM10 Test Number: 871	PM10 filter	AT85235	08/11/23	00:00	FLT Particulate Weight (& metals if over trigger weight)*
				09/11/23	00:00	
3	HI-VOL Test Number: 871	HI-VOL Filter	HVF-23-06-04	08/11/23	00:00	Particulate Weight (& metals if over trigger weight)*
				09/11/23	00:00	
					Total: 24.18 hrs	

Client Authorization: _____ *(Signature)*

Laboratory Personnel: _____ *(Signature)*

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

InnoTech ALBERTA

Canister ID: 28932

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ on: JUN 0 8 2023

Evacuated: JUL 1 2 2023 Recertified: OCT 1 2 2023

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

Laboratory Contact Number: 780-632-8403

Sample ID: Test 871

Sampled By: T. Webb

JMP.

Starting Vacuum: -27.1 "Hg

End Vacuum: -4 "Hg/psig

Sample ID: 23110156-001 **Priority:** Normal

Customer ID: Clean Harbours

Cust Samp ID: VOCs and TNMOC Test # 871

Sample ID: 23110156-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TNMOC Test # 871

Filter Shipping Record

RECEIVED
NOV 17 2023

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

Date: October 4/23

Project: Clean Harbors

Prepared by: Stefanie

Filter Size	# of Filters in Cassettes	Filter IDs
47 mm	1	AT85235 test 871

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

{00004084;2}

TERMS AND CONDITIONS

The attached document entitled "**Chain of Custody Form**" is subject to the following Terms and Conditions, unless otherwise specified on the Quotation. InnoTech Alberta's commencement of the Services shall be deemed acceptance of the terms and conditions by the Client.

1. Any proposal contained herein is prepared for the consideration of the Client only. Its contents may not be used or disclosed to any other party without prior written consent of the INNOTECH ALBERTA INC. (hereinafter referred to as "InnoTech Alberta").

2. InnoTech Alberta will perform the Services in accordance with normal professional standards.

3. The delivery time for performance of the Services (as set out on the front page of this Quotation) is approximate and may be changed by InnoTech Alberta giving written notice to the Client.

4. InnoTech Alberta will exercise due care and proficiency in testing items submitted by a Client. InnoTech Alberta shall not, however, be liable to the Client for any damage or loss caused to the item being tested or for any damage, loss or expense caused by any delay in carrying out the test, including any damage, loss or expense resulting from InnoTech Alberta's negligence. InnoTech Alberta shall not be responsible for any damage, which is a natural or necessary result of any testing procedure.

5. For the purposes of this Quotation, Intellectual Property means all information, data, artistic and literary works, concepts, designs, processes, software, algorithms and inventions, including, without limitation, those that could be the subject of patent, copyright, industrial design, trade secret or other forms of protection. Intellectual Property which was owned by either InnoTech Alberta or the Client prior to the signing of this Agreement remains the property of that party. Nothing in this Agreement shall operate as a license, permission or grant of any other rights to either InnoTech Alberta's or the Client's Intellectual Property.

6. All data, reports and other information relating to the Services shall be treated by InnoTech Alberta as the confidential property of the Client, and InnoTech Alberta will use reasonable efforts to ensure that its employees, contractors and agents will not disclose the same to any other person, firm or corporation during the term of this Agreement and for a period of five (5) years after the date of termination of the Agreement. The obligation of confidentiality set out herein shall not apply to any information that was in InnoTech Alberta's possession prior to receipt from the Client or which is or becomes part of the public domain through no act or failure on the part of InnoTech Alberta. The obligation of confidentiality set out in this Section shall not prevent the disclosure of information to any level of government having jurisdiction to make lawful demand therefor, or required to be disclosed by any applicable law. Any records required to be maintained by InnoTech Alberta pursuant to this Agreement are subject to the protection and access provisions of the Freedom of Information and Protection of Privacy Act (Alberta).

7. The reported results of any InnoTech Alberta tests or evaluations performed on samples or items provided by the Client shall be interpreted as being specific to the sample or item tested. InnoTech Alberta makes no representation that any similar or related untested samples or items would produce the same results.

8. The Client shall not use InnoTech Alberta's name in any advertising material, sale offer, news releases, public statements or announcements, whether written or oral relating to the Services or the results thereof, without the prior written consent of InnoTech Alberta.

9. Records, test data, reports and samples, except where shipped to the Client after completion of the work shall be retained by InnoTech Alberta according to InnoTech Alberta's approved Records Retention and Disposition Schedule.

10. Prices quoted are in Canadian Dollars unless otherwise stated in writing and are exclusive of any provincial, municipal, sales, use or goods and services tax.

11. Prices quoted do not include shipping, insurance or cost of consumables. The Client shall be responsible for all costs incurred by InnoTech Alberta in collecting any item for testing and returning the item to the Client after testing and shall be responsible for all necessary incidental costs incurred by InnoTech Alberta in providing the Services. InnoTech Alberta shall not be responsible for any damage or loss to items during shipping and it is the responsibility of the Client to obtain any insurance it deems necessary.

Sample ID: 23110156-001 Priority: Normal

Customer ID: Clean Harbours

Cust Samp ID: VOCs and TNMOC Test # 871

12. Any test samples or other materials supplied by the Client to InnoTech Alberta may, at InnoTech Alberta's option, be returned by InnoTech Alberta to the Client. The Client shall:

(a) be responsible for all costs associated with the handling, transportation and disposal of such materials;

(b) reimburse InnoTech Alberta for any costs incurred by InnoTech Alberta associated with the handling, transportation and disposal of such materials; and

(c) indemnify and hold InnoTech Alberta harmless from any and all claims, damages or actions associated with the handling, transportation and disposal of such materials.

13. The Client shall pay all invoices rendered by InnoTech Alberta to the Client within thirty (30) days from the date of invoice, without deduction or set-off.

14. If the Client fails to pay any amount under this Agreement, such unpaid amount shall bear interest at a rate per month equal to one (1%) percent (or 12.6825% per annum) with interest on overdue interest at the same rate.

15. InnoTech Alberta makes no representation, warranties or conditions, either expressed or implied, statutory or otherwise and does not warrant the quality, state, merchantability or fitness for any purpose of any goods or products to be delivered pursuant to this Agreement. The Client accepts the results of these Services or items tested as is, and acknowledges that any use or interpretation of the information contained is at the Client's own risk.

16. In no event shall InnoTech Alberta be liable for any indirect or consequential damage or loss suffered by the Client, including loss of anticipated profits.

17. The Client shall indemnify and hold harmless InnoTech Alberta from any and all claims, demands, actions and costs (including legal costs on a solicitor-client basis) that may arise out of:
(a) any dangerous defect or content in the item being tested, whether apparent or not, which dangerous defect or content was not disclosed in writing to InnoTech Alberta by the Client at the time the item was submitted for testing;
(b) differences between those items actually tested and items previously or subsequently produced which are purported to be identical to the item tested; or
(c) any use of the tested item or any item incorporating the tested item, whether by the Client or a third party following its return to the Client.
The hold harmless shall survive this Agreement.

18. The Client shall, at its own expense and without limiting its liabilities herein, be responsible for insuring its operation in an amount not less than $2,000,000 inclusive per occurrence, insuring against bodily injury, and property damage including loss of use thereof. Further, the Client is responsible for insuring all owned property directly or indirectly related to this Agreement and InnoTech Alberta shall have no liability for any loss or damage to such property. 19. InnoTech Alberta shall maintain the following insurance: (i) commercial general liability insurance (including cross liability, severability of interests, non-owned automobile liability) in the amount of two million dollars ($2,000,000.00) per occurrence, and; (ii) professional liability and errors and omissions insurance in the amount of one million dollars ($1,000,000.00) per claim, and two million dollars ($2,000,000.00) in the aggregate. In addition, InnoTech Alberta shall maintain all workers' compensation coverage required by applicable laws. Notwithstanding the foregoing, InnoTech Alberta reserves the right to supplement or add insurance coverage from time to time as may be required in its sole discretion. InnoTech Alberta may provide certificates of insurance for coverages outlined in (i) and (ii) above.

20. The Client agrees to comply with all InnoTech Alberta Safety & Security regulations in effect while on InnoTech Alberta premises.

21. This Agreement represents the entire agreement between the parties and shall supersede all prior agreements relative to this transaction.

22. InnoTech Alberta shall not be liable to the Client for any failure or delay in performance of its obligations caused by circumstances beyond its control, including but not limited to acts of God, strikes, laws imposed after the fact, governmental restrictions, riots, wars, civil disorder, rebellion, sabotage, fire, flood, explosion, earthquake or other disasters.

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24. This Quotation and rights and parties thereto shall be governed by and construed according to the laws of the Province of Alberta. The parties hereby submit to the jurisdiction of the Courts of Alberta.

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NOV 17 2023

InnoTech ALBERTA
A SUBSIDIARY OF ALBERTA INNOVATES

Sample ID: 23110157-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TNMOC Test # 872

)RM

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

Phone: 780-632-8403
Email: EAS.Reception@innotechalberta.ca
www.innotechalberta.ca

Client Reporting Information

Company: Clean Harbors 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@cleanharbors.com, Yuha.Stan@cleanharbors.com

ng Information

Contact: Stephanie Dennis
Phone: 780-663-3828
Email: Dennis.Stephanie@cleanharbors.com
Project ID: Test 872
PO #: 0000237199

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:

***If either PM10 or HI-VOL filter exceeds its trigger weight, then both filters are analyzed for metals**
If neither filter exceeds its trigger weight, neither filter is analyzed for metals
If metals analysis is required, please report on the same report as filter weights and VOCs/TNMOC
Trigger Weight for Analysis (PM10): 1.20 mg
Trigger Weight for Analysis (HI-VOL): 90.3 mg

Date Received – Lab Use Only

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NOV 17 2023

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: 872	Canister	32224	14/11/23	00:00	VOC PAMS & TNMOC
				15/11/23	00:00	
2	PM10 Test Number: 872	PM10 filter	AT85234	14/11/23	00:00	FLT Particulate Weight (& metals if over trigger weight)*
				15/11/23	00:00	
3	HI-VOL Test Number: 872	HI-VOL Filter	HVF-23-06-05	14/11/23	00:00	Particulate Weight (& metals if over trigger weight)*
				15/11/23	00:00	
					Total: 23.57 hrs	

Client Authorization: _____ Laboratory Personnel: _____

(Signature) *(Signature)*

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

InnoTech ALBERTA

Canister ID: 32224

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ on: JUL 27 2023

OCT 05 2023

Evacuated: _____ Recertified: _____

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

Laboratory Contact Number: 780-632-8403

Sample ID: Test 872

Sampled By: T. Webb

-8" Hg JMP

Starting Vacuum:	End Vacuum:
-27.8 "Hg	-6 "Hg/psig

Sample ID: 23110157-001 **Priority:** Normal

Customer ID: Clean Harbours

Cust Samp ID: VOCs and TNMOC Test # 872

Sample ID: 23110157-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TNMOC Test # 872

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NOV 17 2023

Filter Shipping Record

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

Date: October 4/23

Project: Clean Harbors

Prepared by:

Filter Size	# of Filters in Cassettes	Filter IDs
47 mm	1	AT85234 Test 872

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

{00004084;2}

TERMS AND CONDITIONS

The attached document entitled "**Chain of Custody Form**" is subject to the following Terms and Conditions, unless otherwise specified on the Quotation. InnoTech Alberta's commencement of the Services shall be deemed acceptance of the terms and conditions by the Client.

1. Any proposal contained herein is prepared for the consideration of the Client only. Its contents may not be used or disclosed to any other party without prior written consent of the INNOTECH ALBERTA INC. (hereinafter referred to as "InnoTech Alberta").

2. InnoTech Alberta will perform the Services in accordance with normal professional standards.

3. The delivery time for performance of the Services (as set out on the front page of this Quotation) is approximate and may be changed by InnoTech Alberta giving written notice to the Client.

4. InnoTech Alberta will exercise due care and proficiency in testing items submitted by a Client. InnoTech Alberta shall not, however, be liable to the Client for any damage or loss caused to the item being tested or for any damage, loss or expense caused by any delay in carrying out the test, including any damage, loss or expense resulting from InnoTech Alberta's negligence. InnoTech Alberta shall not be responsible for any damage, which is a natural or necessary result of any testing procedure.

5. For the purposes of this Quotation, Intellectual Property means all information, data, artistic and literary works, concepts, designs, processes, software, algorithms and inventions, including, without limitation, those that could be the subject of patent, copyright, industrial design, trade secret or other forms of protection. Intellectual Property which was owned by either InnoTech Alberta or the Client prior to the signing of this Agreement remains the property of that party. Nothing in this Agreement shall operate as a license, permission or grant of any other rights to either InnoTech Alberta's or the Client's Intellectual Property.

6. All data, reports and other information relating to the Services shall be treated by InnoTech Alberta as the confidential property of the Client, and InnoTech Alberta will use reasonable efforts to ensure that its employees, contractors and agents will not disclose the same to any other person, firm or corporation during the term of this Agreement and for a period of five (5) years after the date of termination of the Agreement. The obligation of confidentiality set out herein shall not apply to any information that was in InnoTech Alberta's possession prior to receipt from the Client or which is or becomes part of the public domain through no act or failure on the part of InnoTech Alberta. The obligation of confidentiality set out in this Section shall not prevent the disclosure of information to any level of government having jurisdiction to make lawful demand therefor, or required to be disclosed by any applicable law. Any records required to be maintained by InnoTech Alberta pursuant to this Agreement are subject to the protection and access provisions of the Freedom of Information and Protection of Privacy Act (Alberta).

7. The reported results of any InnoTech Alberta tests or evaluations performed on samples or items provided by the Client shall be interpreted as being specific to the sample or item tested. InnoTech Alberta makes no representation that any similar or related untested samples or items would produce the same results.

8. The Client shall not use InnoTech Alberta's name in any advertising material, sale offer, news releases, public statements or announcements, whether written or oral relating to the Services or the results thereof, without the prior written consent of InnoTech Alberta.

9. Records, test data, reports and samples, except where shipped to the Client after completion of the work shall be retained by InnoTech Alberta according to InnoTech Alberta's approved Records Retention and Disposition Schedule.

10. Prices quoted are in Canadian Dollars unless otherwise stated in writing and are exclusive of any provincial, municipal, sales, use or goods and services tax.

11. Prices quoted do not include shipping, insurance or cost of consumables. The Client shall be responsible for all costs incurred by InnoTech Alberta in collecting any item for testing, shipping the item to the Client after testing and shall be responsible for [illegible] incurred by InnoTech Alberta in providing the [illegible] or loss to items during shipping [illegible] any insurance it deems necessary.

Priority: Normal

Sample ID: 23110157-001

Customer ID: Clean Harbours

Cust Samp ID: VOCs and TNMOC Test # 872

12. Any test samples or other materials supplied by the Client to InnoTech Alberta may, at InnoTech Alberta's option, be returned by InnoTech Alberta to the Client. The Client shall:

(a) be responsible for all costs associated with the handling, transportation and disposal of such materials;

(b) reimburse InnoTech Alberta for any costs incurred by InnoTech Alberta associated with the handling, transportation and disposal of such materials; and

(c) indemnify and hold InnoTech Alberta harmless from any and all claims, damages or actions associated with the handling, transportation and disposal of such materials.

13. The Client shall pay all invoices rendered by InnoTech Alberta to the Client within thirty (30) days from the date of invoice, without deduction or set-off.

14. If the Client fails to pay any amount under this Agreement, such unpaid amount shall bear interest at a rate per month equal to one (1%) percent (or 12.6825% per annum) with interest on overdue interest at the same rate.

15. InnoTech Alberta makes no representation, warranties or conditions, either expressed or implied, statutory or otherwise and does not warrant the quality, state, merchantability or fitness for any purpose of any goods or products to be delivered pursuant to this Agreement. The Client accepts the results of these Services or items tested as is, and acknowledges that any use or interpretation of the information contained is at the Client's own risk.

16. In no event shall InnoTech Alberta be liable for any indirect or consequential damage or loss suffered by the Client, including loss of anticipated profits.

17. The Client shall indemnify and hold harmless InnoTech Alberta from any and all claims, demands, actions and costs (including legal costs on a solicitor-client basis) that may arise out of:
(a) any dangerous defect or content in the item being tested, whether apparent or not, which dangerous defect or content was not disclosed in writing to InnoTech Alberta by the Client at the time the item was submitted for testing;
(b) differences between those items actually tested and items previously or subsequently produced which are purported to be identical to the item tested; or
(c) any use of the tested item or any item incorporating the tested item, whether by the Client or a third party following its return to the Client.
The hold harmless shall survive this Agreement.

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NOV 17 2023

18. The Client shall, at its own expense and without limiting its liabilities herein, be responsible for insuring its operation in an amount not less than $2,000,000 inclusive per occurrence, insuring against bodily injury, and property damage including loss of use thereof. Further, the Client is responsible for insuring all owned property directly or indirectly related to this Agreement and InnoTech Alberta shall have no liability for any loss or damage to such property. 19. InnoTech Alberta shall maintain the following insurance: (i) commercial general liability insurance (including cross liability, severability of interests, non-owned automobile liability) in the amount of two million dollars ($2,000,000.00) per occurrence, and; (ii) professional liability and errors and omissions insurance in the amount of one million dollars ($1,000,000.00) per claim, and two million dollars ($2,000,000.00) in the aggregate. In addition, InnoTech Alberta shall maintain all workers' compensation coverage required by applicable laws. Notwithstanding the foregoing, InnoTech Alberta reserves the right to supplement or add insurance coverage from time to time as may be required in its sole discretion. InnoTech Alberta may provide certificates of insurance for coverages outlined in (i) and (ii) above.

20. The Client agrees to comply with all InnoTech Alberta Safety & Security regulations in effect while on InnoTech Alberta premises.

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InnoTech ALBERTA
A SUBSIDIARY OF ALBERTA INNOVATES

Sample ID: 23110231-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TNMOC Test Number: 873

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

Phone: 780-632-8403
Email: EAS.Reception@innotechalberta.ca
www.innotechalberta.ca

Client Reporting Information

Company:	Clean Harbors 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@cleanharbors.com, Yuha.Stan@cleanharbors.com

Client Billing Information

Contact:	Stephanie Dennis
Phone:	780-663-3828
Email:	Dennis.Stephanie@cleanharbors.com
Project ID:	Test 873
PO #:	0000237199

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:

***If either PM10 or HI-VOL filter exceeds its trigger weight, then both filters are analyzed for metals**

If neither filter exceeds its trigger weight, neither filter is analyzed for metals

If metals analysis is required, please report on the same report as filter weights and VOCs/TNMOC

Trigger Weight for Analysis (PM10): 1.22 mg

Trigger Weight for Analysis (HI-VOL): 91.8 mg

Date Received – Lab Use Only

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NOV 30 2023

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: 873	Canister	28961	20/11/23	00:00	VOC PAMS & TNMOC
				21/11/23	00:00	
	PM10 Test Number: 873	PM10 filter	AT85236	20/11/23	00:00	FLT Particulate Weight (& metals if over trigger weight)*
				21/11/23	00:00	
	HI-VOL Test Number: 873	HI-VOL Filter	HVF-23-10-01	20/11/23	00:00	Particulate Weight (& metals if over trigger weight)*
				21/11/23	00:00	
					Total: 23.95 hrs	

Client Authorization: _____ Laboratory Personnel: _____

(Signature) *(Signature)*

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

Sample ID: 23110231-002 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: PM10 Test Number: 873

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NOV 30 2023

InnoTech ALBERTA

Canister ID: 28961

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ on: JUN 08 2023

Evacuated: JUL 12 2023 Recertified: OCT 12 2023

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

Laboratory Contact Number: 780-632-8403

Sample ID: Test 873

Sampled By: T. Webb

Starting Vacuum: -27.1 "Hg

End Vacuum: -3 "Hg/psig MW

{00004084:2}

TERMS AND CONDITIONS

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5. For the purposes of this Quotation, Intellectual Property means all information, data, artistic and literary works, concepts, designs, processes, software, algorithms and inventions, including, without limitation, those that could be the subject of patent, copyright, industrial design, trade secret or other forms of protection. Intellectual Property which was owned by either InnoTech Alberta or the Client prior to the signing of this Agreement remains the property of that party. Nothing in this Agreement shall operate as a license, permission or grant of any other rights to either InnoTech Alberta's or the Client's Intellectual Property.

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(b) reimburse InnoTech Alberta for any costs incurred by InnoTech Alberta associated with the handling, transportation and disposal of such materials; and

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16. In no event shall InnoTech Alberta be liable for any indirect or consequential damage or loss suffered by the Client, including loss of anticipated profits.

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(b) differences between those items actually tested and items previously or subsequently produced which are purported to be identical to the item tested; or
(c) any use of the tested item or any item incorporating the tested item, whether by the Client or a third party following its return to the Client.
The hold harmless shall survive this Agreement.

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Sample ID: 23110231-003 **Priority:** Normal

Customer ID: Clean Harbours

Cust Samp ID: HI-VOL Test Number: 873

RECEIVED
NOV 30 2023

InnoTe
ALBI
A SUBSIDIARY OF ALBERTA INN

Sample ID: 23110233-001 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: VOCs and TNMOC Test Number: 874

RM

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

Phone: 780-632-8403
Email: EAS.Reception@innotechalberta.ca
www.innotechalberta.ca

Client Reporting Information

Company:	Clean Harbors 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@cleanharbors.com, Yuha.Stan@cleanharbors.com

Client Billing Information

Contact:	Stephanie Dennis
Phone:	780-663-3828
Email:	Dennis.Stephanie@cleanharbors.com
Project ID:	Test 874
PO #:	0000237199

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:

***If either PM10 or HI-VOL filter exceeds its trigger weight, then both filters are analyzed for metals**

If neither filter exceeds its trigger weight, neither filter is analyzed for metals

If metals analysis is required, please report on the same report as filter weights and VOCs/TNMOC

Trigger Weight for Analysis (PM10): 1.22 mg

Trigger Weight for Analysis (HI-VOL): 91.8 mg

Date Received – Lab Use Only

RECE
NOV 30

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: 874	Canister	32259	26/11/23	00:00	VOC PAMS & TNMOC
				27/11/23	00:00	
	PM10 Test Number: 874	PM10 filter	AT83972	26/11/23	00:00	FLT Particulate Weight (& metals if over trigger weight)*
				27/11/23	00:00	
	HI-VOL Test Number: 874	HI-VOL Filter	HVF-23-10-05	26/11/23	00:00	Particulate Weight (& metals if over trigger weight)*
				27/11/23	00:00	
					Total: 23.96 hrs	

Client Authorization: _____ Laboratory Personnel: _____

(Signature) *(Signature)*

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

Sample ID: 23110233-002 **Priority:** Normal

Customer ID: Clean Harbours
Cust Samp ID: PM10 Test Number: 874

RECEIVED
NOV 30 2023

InnoTech ALBERTA

Canister ID: 32259

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISA on: JUL 27 2023

Evacuated: OCT 10 2023 Recertified:

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

Laboratory Contact Number: 780-632-8403

Sample ID: Test 874

Sampled By: T. Webb

Starting Vacuum: -27.1 "Hg

End Vacuum: -4 (MW) "Hg/psig

{00004084;2}

TERMS AND CONDITIONS

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5.For the purposes of this Quotation, Intellectual Property means all information, data, artistic and literary works, concepts, designs, processes, software, algorithms and inventions, including, without limitation, those that could be the subject of patent, copyright, industrial design, trade secret or other forms of protection. Intellectual Property which was owned by either InnoTech Alberta or the Client prior to the signing of this Agreement remains the property of that party. Nothing in this Agreement shall operate as a license, permission or grant of any other rights to either InnoTech Alberta's or the Client's Intellectual Property.

6.All data, reports and other information relating to the Services shall be treated by InnoTech Alberta as the confidential property of the Client, and InnoTech Alberta will use reasonable efforts to ensure that its employees, contractors and agents will not disclose the same to any other person, firm or corporation during the term of this Agreement and for a period of five (5) years after the date of termination of the Agreement. The obligation of confidentiality set out herein shall not apply to any information that was in InnoTech Alberta's possession prior to receipt from the Client or which is or becomes part of the public domain through no act or failure on the part of InnoTech Alberta. The obligation of confidentiality set out in this Section shall not prevent the disclosure of information to any level of government having jurisdiction to make lawful demand therefor, or required to be disclosed by any applicable law. Any records required to be maintained by InnoTech Alberta pursuant to this Agreement are subject to the protection and access provisions of the Freedom of Information and Protection of Privacy Act (Alberta).

7.The reported results of any InnoTech Alberta tests or evaluations performed on samples or items provided by the Client shall be interpreted as being specific to the sample or item tested. InnoTech Alberta makes no representation that any similar or related untested samples or items would produce the same results.

8.The Client shall not use InnoTech Alberta's name in any advertising material, sale offer, news releases, public statements or announcements, whether written or oral relating to the Services or the results thereof, without the prior written consent of InnoTech Alberta.

9.Records, test data, reports and samples, except where shipped to the Client after completion of the work shall be retained by InnoTech Alberta according to InnoTech Alberta's approved Records Retention and Disposition Schedule.

10.Prices quoted are in Canadian Dollars unless otherwise stated in writing and are exclusive of any provincial, municipal, sales, use or goods and services tax.

11.Prices quoted do not include shipping, insurance or cost of consumables. The Client shall be responsible for all costs incurred by InnoTech Alberta in collecting any item for testing and returning the item to the Client after testing and shall be responsible for all necessary incidental costs incurred by InnoTech Alberta in providing the Services. InnoTech Alberta will not be responsible for any damage or loss to items during shipping and it is the responsibility of the Client to ensure adequate insurance it deems necessary.

12.Any test samples or other materials supplied by the Client to InnoTech Alberta may, at InnoTech Alberta's option, be returned by InnoTech Alberta to the Client. The Client shall:

(a)be responsible for all costs associated with the handling, transportation and disposal of such materials;

(b)reimburse InnoTech Alberta for any costs incurred by InnoTech Alberta associated with the handling, transportation and disposal of such materials; and

(c)indemnify and hold InnoTech Alberta harmless from any and all claims, damages or actions associated with the handling, transportation and disposal of such materials.

13.The Client shall pay all invoices rendered by InnoTech Alberta to the Client within thirty (30) days from the date of invoice, without deduction or set-off.

14.If the Client fails to pay any amount under this Agreement, such unpaid amount shall bear interest at a rate per month equal to one (1%) percent (or 12.6825% per annum) with interest on overdue interest at the same rate.

15.InnoTech Alberta makes no representation, warranties or conditions, either expressed or implied, statutory or otherwise and does not warrant the quality, state, merchantability or fitness for any purpose of any goods or products to be delivered pursuant to this Agreement. The Client accepts the results of these Services or items tested as is, and acknowledges that any use or interpretation of the information contained is at the Client's own risk.

16.In no event shall InnoTech Alberta be liable for any indirect or consequential damage or loss suffered by the Client, including loss of anticipated profits.

17.The Client shall indemnify and hold harmless InnoTech Alberta from any and all claims, demands, actions and costs (including legal costs on a solicitor-client basis) that may arise out of:
(a)any dangerous defect or content in the item being tested, whether apparent or not, which dangerous defect or content was not disclosed in writing to InnoTech Alberta by the Client at the time the item was submitted for testing;
(b)differences between those items actually tested and items previously or subsequently produced which are purported to be identical to the item tested; or
(c)any use of the tested item or any item incorporating the tested item, whether by the Client or a third party following its return to the Client.
The hold harmless shall survive this Agreement.

18.The Client shall, at its own expense and without limiting its liabilities herein, be responsible for insuring its operation in an amount not less than $2,000,000 inclusive per occurrence, insuring against bodily injury, and property damage including loss of use thereof. Further, the Client is responsible for insuring all owned property directly or indirectly related to this Agreement and InnoTech Alberta shall have no liability for any loss or damage to such property. 19.InnoTech Alberta shall maintain the following insurance: (i) commercial general liability insurance (including cross liability, severability of interests, non-owned automobile liability) in the amount of two million dollars ($2,000,000.00) per occurrence, and; (ii) professional liability and errors and omissions insurance in the amount of one million dollars ($1,000,000.00) per claim, and two million dollars ($2,000,000.00) in the aggregate. In addition, InnoTech Alberta shall maintain all workers' compensation coverage required by applicable laws. Notwithstanding the foregoing, InnoTech Alberta reserves the right to supplement or add insurance coverage from time to time as may be required in its sole discretion. InnoTech Alberta may provide certificates of insurance for coverages outlined in (i) and (ii) above.

20.The Client agrees to comply with all InnoTech Alberta Safety & Security regulations in effect while on InnoTech Alberta premises.

21.This Agreement represents the entire agreement between the parties and shall supersede all prior agreements relative to this transaction.

22.InnoTech Alberta shall not be liable to the Client for any failure or delay in performance of its obligations caused by circumstances beyond its control, including but not limited to acts of God, strikes, laws imposed after the fact, governmental restrictions, riots, wars, civil disorder, rebellion, sabotage, fire, flood, explosion, earthquake or other disasters.

23.InnoTech Alberta may assign this Quotation to an "affiliated" (as that term is defined at Section 2 of the Business Corporations Act (Alberta)) or successor entity on written notice to the Client.

24.This Quotation and rights and parties thereto shall be governed by and construed according to the laws of the Province of Alberta. The parties hereby submit to the jurisdiction of the Courts of .

Sample ID: 23110233-003 **Priority:** Normal

Customer ID: Clean Harbours

Cust Samp ID: HI-VOL Test Number: 874

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