Lakeland Industry & Community Association

AUGUST 2022

Monthly Ambient Air Quality Monitoring Integrated Sampling Report

LICA-202208-INTEGRATED

September 23, 2022

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September 23, 2022

Alberta Environment and Parks (AEP)
11th Floor, Oxbridge Place
9820 106 Street
Edmonton, AB, T5K 2J6

RE: LICA –August 2022 Monthly Ambient Air Quality Monitoring Integrated Sampling Report

Enclosed is the August 2022 Monthly Ambient Air Quality Monitoring Integrated Sampling Report for the Lakeland Industry and Community Association's (LICA) regional air quality monitoring network. This report summarizes monitoring data for samples collected using integrated methods including volatile organic compounds, polycyclic aromatic hydrocarbons, polycyclic aromatic compounds, particulate matter, ozone, hydrogen sulphide, sulphur dioxide, and nitrogen dioxide.

The representative of the Person Responsible for this monitoring program is

LICA Airshed
Michael Bisaga, Monitoring Programs Manager
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This report has been prepared, reviewed and submitted by Michael Bisaga & Lily Lin of the LICA Airshed.

NETWORK STATION SUMMARY

Listing of Air Monitoring Stations and Integrated Sampling Stations

Station Name	Cold Lake South
Station ID	1174
Coordinates	54.41402, -110.23316
VOCs	√
PAHs	√
Partisol	√
Passive	√

Listing of Passive Sampling Stations

Site ID	Name	Latitude	Longitude
2	Sand River	54.53658	-111.20898
3	Therien	54.31085	-111.22607
4	Flat Lake	54.07262	-111.20510
5	Lake Eliza	53.82417	-111.16605
6	Telegraph Creek	53.74068	-110.57655
8	Muriel-Kehewin	54.09340	-110.74437
9	Dupre	54.33462	-110.77965
10	La Corey	54.49967	-110.81792
11	Wolf lake	54.698845	-110.769700
12	Foster Creek	55.03343	-110.50453
13	Primrose	54.75848	-110.45217
14	Tamarack (formerly Maskwa)	54.60518	-110.45263
15	Ardmore	54.40670	-110.46202
16	Frog Lake	53.89065	-110.38418
17	Clear Range	53.55648	-110.15423
18	Fishing Lake	53.90295	-110.07623
19	Beaverdam	54.16925	-110.23285
22	Cold Lake South (1)	54.41370	-110.23285
23	Medley-Martineau	54.72430	-110.06618
24	Fort George	53.87830	-110.74807
25	Burnt Lake	54.79104	-110.33424
26	Mahihkan	54.63738	-110.57538
27	Mahkeses	54.59014	-110.38028
28	Town of Bonnyville	54.27530	-110.74065
29	Cold Lake South (2)	54.41385	-110.23283
32	St. Lina	54.21639	-111.50295
42	Lac La Biche	54.76516	-111.971449

Listing of Passive Aromatic Compounds Stations

Site ID	Name	Latitude	Longitude
9	Dupre	54.33462	-110.77965
10	La Corey	54.49967	-110.81792
15	Ardmore	54.40670	-110.46202
18	Fishing Lake	53.90295	-110.07623
24	Fort George	53.87830	-110.74807
32	St. Lina	54.21639	-111.50295

List of Contractors who performed the air monitoring activities

Sampling Program	Monitoring Activities Conducted By	Sample Analysis Conducted By	Data/Report Prepared By	Electronic Submission Conducted By
Intermittent (VOCs/PAHs)	Bureau Veritas	InnoTech Alberta Inc	LICA	LICA
Intermittent (PACs)	Bureau Veritas	ECCC	AEP	AEP
Partisols	Bureau Veritas	InnoTech Alberta Inc	LICA	LICA
Passives	Bureau Veritas	Bureau Veritas	LICA	LICA
NMHC Canisters	Bureau Veritas	InnoTech Alberta Inc	LICA	Not Applicable

Monitoring Notes during the Month of August 2022

Cold Lake South Station

- **Volatile Organic Compounds (VOCs)**
  - Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) where applicable.
  - The VOC sampler is programed to collect a 24-hour sample of air every sixth day as per the North American Pollution Surveillance schedule (NAPS).
  - Five samples were collected this month: on August 3, 9, 15, 21 and 27.
- **Polycyclic Aromatic Hydrocarbons (PAHs)**
  - The PUF sampler is programed to collect a 24-hour sample of air every sixth day as per the North American Pollution Surveillance schedule (NAPS).
  - Five samples were collected this month: on August 3, 9, 15, 21 and 27.
- **Partisols**
  - Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) where applicable, except August 21 PM2.5 sample, concentration of 0.040 mg/m3. **AEP reference #: 404740.**
  - The Partisol sampler is programed to collect a 24-hour sample of air every sixth day as per the North American Pollution Surveillance schedule (NAPS).

    - Five samples were collected this month: on August 3, 9, 15, 21 and 27.
- **Passives**
    - There were no exceedances of the AAAQOs for all monitored parameters at any of the passive stations during this month.
    - The passive sample filters were installed at the stations June 28 and June 30, and were removed between August 29 and August 3.
    - A total of 9 duplicate samples were collected: 2 for H2S, 3 for SO2, 2 for NO2 and 2 for O3.
    - No samples were collected at station 25. The field technician has not completed the necessary safety orientation for the CNRL Primrose/Burnt Lake site and access is not permitted at this time.
    - The O3 sample media for station 18 was found damaged during sample collection on August 31. No analytical result could be reported.

Lac La Biche Station

- **Non-methane Hydrocarbons (NMHC) Canisters**
    - The NMHC canister system was installed on July 7.
    - The canister sampling program collects a 1-hour sample of air when the continuously measured non-methane hydrocarbon (NMHC) concentration reaches a specified trigger point. The current trigger point is 0.3 ppm, and is based on real-time monitoring data that are averaged over a 5-minute period.
    - One triggered canister was collected this month: on August 18 at 05:45, at concentration of 0.50ppm.

Passive polycyclic aromatic compounds (PACs) Stations

- The PAC sampling program began in December 2019, and is designed to collect a 2-month integrated sample.
- The media for July/August were installed between June 28 and June 30, and they are scheduled to be collected between August 30 and September 1. The media for September / October were installed at the same time.

Revisions to Alberta's Ambient Air Quality Data Warehouse

No revisions to historical data previously submitted to the Alberta's Ambient Air Quality Data Warehouse were made this month.

Deviations from Authorized Monitoring Methods

There were no deviations from authorized monitoring methods.

Certification

The report was prepared and submitted by Lily Lin in accordance with Chapter 9 of the Air Monitoring Directive (AMD 2016).

Lily Lin
Data & Reporting Specialist
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monitoring@lica.ca

The report was reviewed by Mike Bisaga in accordance with Chapter 9 of the Air Monitoring Directive (AMD 2016).

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. I also certify that at the time of this report's submission, all air data have been electronically uploaded to Alberta ETS as required by the AMD.

Michael Bisaga
Monitoring Programs Manager
Lakeland Industry & Community Association
780-266-7068
monitoring@lica.ca

INTEGRATED SAMPLING RESULTS SUMMARY

COLD LAKE SOUTH STATION

- **VOCs analytical results**

Sample Date	2022-08-03	2022-08-09	2022-08-15	2022-08-21	2022-08-27
Canister ID	32241	32228	32207	28917	28941
Maximum Reading (ppbv)	22.2	24.9	3.9	3.4	3.9
Parameter	Acetone	Ethanol	Acetone	Acetone	Acetone

- **PAHs analytical results**

Sample Date	2022-08-03		2022-08-09		2022-08-15		2022-08-21		2022-08-27	
PUF S/N	TE-06		TE-09		TE-08		9801		P13-01	
Volume (Vstd m^3)	330.39		330.40		330.42		330.40		330.40	
Maximum Reading	ug	ng/m3	ug	ng/m3	ug	ng/m3	ug	ng/m3	ug	ng/m3
	0.15	0.45	0.13	0.39	0.18	0.54	0.47	1.42	0.22	0.67
Parameter	Phenanthrene		Phenanthrene		Phenanthrene		Phenanthrene		Phenanthrene	

- **Partisol analytical results**
  - **$PM_{2.5}$**

Sample Date	2022-08-03		2022-08-09		2022-08-15		2022-08-21		2022-08-27	
Filter #	C9298029		C9696417		C9696412		C9698023		C9698026	
Volume (Vstd m^3)	20.8		20.9		20.6		20.8		20.2	
Result	Result (mg)	Result (mg/m^3)	Result (mg)	Result (mg/m^3)	Result (mg)	Result (mg/m^3)	Result (mg)	Result (mg/m^3)	Result (mg)	Result (mg/m^3)
Particulate Matter	0.088	0.004	0.040	0.002	0.051	0.002	0.842	0.040*	0.184	0.009

* The 24-hour sample collected by the Partisol instrument on August 21 exceeded the 24-hour AAAQO of 0.029 mg/m3.

  - **$PM_{2.5-10}$**

Sample Date	2022-08-03		2022-08-09		2022-08-15		2022-08-21		2022-08-27	
Filter #	C9698030		C9696418		C9702884		C9698024		C9698025	
Volume (Vstd m^3)	2.32		2.33		2.29		2.31		2.25	
Parameter	Result (mg)	Result (mg/m^3)	Result (mg)	Result (mg/m^3)	Result (mg)	Result (mg/m^3)	Result (mg)	Result (mg/m^3)	Result (mg)	Result (mg/m^3)
PM2.5-10 Mass	0.077	0.033	0.070	0.030	0.103	0.045	0.174	0.075	0.186	0.083

- **Passive analytical results**

	H_2S		NO_2		O_3		SO_2	
Minimum (ppb)	0.13	#12	<0.1	#23	16.4	#13	0.1	#23
Maximum (ppb)	2.70	#27	2.7	#10	32.2	#42	1.7	#27
Average (ppb)	0.53	-	0.71	-	23.89	-	0.52	-

LAC LA BICHE STATION

- **NMHC canister sample analytical results**

Sample Date/Time	2022-08-18
Canister Triggered Conc.	0.50 ppm
Canister ID	29024
Maximum Reading	5.6
Parameter	Ethanol

ANALYTICAL SAMPLING RESULTS

COLD LAKE SOUTH STATION

VOCS

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - August 2022

Volatile Organic Compounds (VOCs) Results

Sample Date		2022-08-03	2022-08-09	2022-08-15	2022-08-21	2022-08-27
Canister ID		32241	32228	32207	28917	28941
Method		AC-058	AC-058	AC-058	AC-058	AC-058
Maximum Reading (ppbv)		22.2	24.9	3.9	3.4	3.9
Parameter		Acetone	Ethanol	Acetone	Acetone	Acetone

Parameter	AAAQOs (ppbv)	Result (ppbv)	Result (ppbv)	Result (ppbv)	Result (ppbv)	Result (ppbv)	RDL (ppbv)
1,1,1-Trichloroethane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
1,1,2,2-Tetrachloroethane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
1,1,2-Trichloroethane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
1,1-Dichloroethane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
1,1-Dichloroethylene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.04
1,2,3-Trimethylbenzene		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05
1,2,4-Trichlorobenzene		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.8
1,2,4-Trimethylbenzene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.05
1,2-Dibromoethane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
1,2-Dichlorobenzene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
1,2-Dichloroethane		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.01
1,2-Dichloropropane		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.01
1,3,5-Trimethylbenzene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.02
1,3-Butadiene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.02
1,3-Dichlorobenzene		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	0.3
1,4-Dichlorobenzene		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	0.4
1,4-Dioxane		< 0.5	< 0.5	2.1	< 0.5	< 0.5	0.4
1-Butene		0.33	0.22	< 0.06	< 0.06	< 0.06	0.02
1-Hexene		< 0.07	< 0.07	< 0.07	< 0.07	< 0.07	0.02
1-Pentene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.01
2,2,4-Trimethylpentane		< 0.02	< 0.02	< 0.02	< 0.02	0.02	0.01
2,2-Dimethylbutane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.01
2,3,4-Trimethylpentane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.01
2,3-Dimethylbutane		< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	0.02
2,3-Dimethylpentane		< 0.02	< 0.02	0.02	< 0.02	0.03	0.02
2,4-Dimethylpentane		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.01
2-Methylheptane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.01
2-Methylhexane		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.01
2-Methylpentane		< 0.02	< 0.02	0.07	0.03	0.06	0.01
3-Methylheptane		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.02
3-Methylhexane		< 0.02	< 0.02	< 0.02	< 0.02	0.04	0.02
3-Methylpentane		< 0.02	< 0.02	0.05	0.03	0.04	0.01
Acetone	2400	22.2	7.0	3.9	3.4	3.9	0.4
Acrolein	1.9	0.7	0.7	< 0.3	< 0.3	< 0.3	0.3
Benzene	9.0	0.13	0.13	0.06	0.36	0.10	0.01
Benzyl chloride		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.4
Bromodichloromethane		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.02
Bromoform		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Bromomethane		0.03	< 0.02	< 0.02	< 0.02	< 0.02	0.01
Carbon disulfide	10	0.05	0.03	0.03	< 0.02	< 0.02	0.01
Carbon tetrachloride		0.09	0.1	0.08	0.07	0.07	0.01
Chlorobenzene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Chloroethane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Chloroform		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Chloromethane		0.74	0.72	0.55	0.54	0.45	0.02
cis-1,2-Dichloroethene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.01
cis-1,3-Dichloropropene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.04
cis-2-Butene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.02
cis-2-Pentene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Cyclohexane		< 0.04	< 0.04	0.07	< 0.04	< 0.04	0.02
Cyclopentane		< 0.02	< 0.02	0.04	0.02	0.03	0.01
Dibromochloromethane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.01
Ethanol		10.3	24.9	0.9	0.9	1.0	0.3
Ethyl acetate		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.4
Ethylbenzene	460	0.74	< 0.03	< 0.03	< 0.03	< 0.03	0.01
Freon-11		0.45	0.36	0.24	0.22	0.22	0.02
Freon-113		0.09	0.08	0.07	0.06	0.06	0.01
Freon-114		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.02

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - August 2022

Volatile Organic Compounds (VOCs) Results

Sample Date		2022-08-03	2022-08-09	2022-08-15	2022-08-21	2022-08-27
Canister ID		32241	32228	32207	28917	28941
Method		AC-058	AC-058	AC-058	AC-058	AC-058
Maximum Reading (ppbv)		22.2	24.9	3.9	3.4	3.9
Parameter		Acetone	Ethanol	Acetone	Acetone	Acetone

Parameter	AAAQOs (ppbv)	Result (ppbv)	Result (ppbv)	Result (ppbv)	Result (ppbv)	Result (ppbv)	RDL (ppbv)
Freon-12		0.63	0.63	0.54	0.52	0.54	0.02
Hexachloro-1,3-butadiene		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.5
Isobutane		0.42	0.25	0.19	0.11	0.23	0.02
Isopentane		2.08	0.32	0.23	0.15	0.38	0.03
Isoprene		0.71	0.75	2.46	1.32	1.87	0.01
Isopropyl alcohol		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.4
Isopropylbenzene		< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.01
m,p-Xylene		< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.03
m-Diethylbenzene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.04
m-Ethyltoluene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.08
Methyl butyl ketone		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	0.5
Methyl ethyl ketone		< 0.3	< 0.3	< 0.3	< 0.3	0.3	0.3
Methyl isobutyl ketone		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.4
Methyl methacrylate		< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	0.07
Methyl tert butyl ether		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
Methylcyclohexane		0.12	< 0.02	0.09	< 0.02	0.03	0.01
Methylcyclopentane		0.12	0.1	0.09	< 0.05	< 0.05	0.02
Methylene chloride		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
n-Butane		2.47	1.04	0.44	0.29	0.51	0.03
n-Decane		< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	0.06
n-Dodecane		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.4
n-Heptane		< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.01
n-Hexane	5960	0.6	0.59	0.09	0.03	0.06	0.01
n-Nonane		< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.01
n-Octane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
n-Pentane		0.21	0.12	0.16	0.12	0.25	0.1
n-Propylbenzene		< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	0.05
n-Undecane		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5
Naphthalene		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.5
o-Ethyltoluene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.01
o-Xylene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.01
p-Diethylbenzene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.04
p-Ethyltoluene		< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.07
Styrene	52.0	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.04
Tetrachloroethylene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.04
Tetrahydrofuran		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.4
Toluene	499	0.61	0.61	0.07	0.18	0.11	0.01
trans-1,2-Dichloroethylene		< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	0.01
trans-1,3-Dichloropropylene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.04
trans-2-Butene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.01
trans-2-Pentene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Trichloroethylene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.04
Vinyl acetate		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.4
Vinyl chloride	51	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02

PAHS

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - August 2022

Polycyclic Aromatic Hydrocarbons (PAHs) Results

Sample Date	2022-08-03		2022-08-09		2022-08-15		2022-08-21		2022-08-27	
PUF S/N	TE-06		TE-09		TE-08		9801		P13-01	
Volume (Vstd m^3)	330.39		330.40		330.42		330.40		330.40	
Method	AC-066		AC-066		AC-066		AC-066		AC-066	
Maximum Reading	ug	ng/m3	ug	ng/m3	ug	ng/m3	ug	ng/m3	ug	ng/m3
	0.15	0.45	0.13	0.39	0.18	0.54	0.47	1.42	0.22	0.67
Parameter	Phenanthrene		Phenanthrene		Phenanthrene		Phenanthrene		Phenanthrene	

Parameter	Result (ug)	Result (ng/m^3)	Result (ug)	Result (ng/m^3)	Result (ug)	Result (ng/m^3)	Result (ug)	Result (ng/m^3)	Result (ug)	Result (ng/m^3)	RDL (ug)
1-Methylnaphthalene	0.03	0.09	0.05	0.15	0.09	0.27	0.07	0.21	0.04	0.12	0.01
2-Methylnaphthalene	0.03	0.09	0.06	0.18	0.08	0.24	0.07	0.21	0.02	0.06	0.01
3-Methylcholanthrene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
7,12-Dimethylbenz(a)anthracene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Acenaphthene	0.02	0.06	0.04	0.12	0.02	0.06	0.03	0.09	0.02	0.06	0.01
Acenaphthylene	0.04	0.12	0.06	0.18	0.04	0.12	0.11	0.33	0.06	0.18	0.01
Acridine	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Anthracene	0.01	0.03	0.01	0.03	< 0.01	0.00	0.02	0.06	0.01	0.03	0.01
Benzo(a)anthracene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Benzo(a)pyrene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Benzo(b,j,k)fluoranthene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Benzo(c)phenanthrene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Benzo(e)pyrene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Benzo(ghi)perylene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Chrysene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Dibenzo(a,h)pyrene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Dibenzo(a,i)pyrene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Dibenzo(a,l)pyrene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Dibenzo(ah)anthracene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Fluoranthene	0.04	0.12	0.03	0.09	0.04	0.12	0.06	0.18	0.04	0.12	0.01
Fluorene	0.03	0.09	0.04	0.12	0.03	0.09	0.15	0.45	0.03	0.09	0.01
Indeno(1,2,3-cd)pyrene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Naphthalene	0.01	0.03	0.03	0.09	0.03	0.09	0.08	0.24	0.01	0.03	0.01
Perylene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Phenanthrene	0.15	0.45	0.13	0.39	0.18	0.54	0.47	1.42	0.22	0.67	0.01
Pyrene	0.04	0.12	0.03	0.09	0.04	0.12	0.04	0.12	0.04	0.12	0.01
Retene	0.04	0.12	0.04	0.12	0.09	0.27	0.38	1.15	0.07	0.21	0.01

PARTISOLS

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - August 2022

Partisol Results - $PM_{2.5}$

Sample Date		2022-08-03		2022-08-09		2022-08-15		2022-08-21		2022-08-27		
Filter #		C9298029		C9696417		C9696412		C9698023		C9698026		
Volume (Vstd m^3)		20.8		20.9		20.6		20.8		20.2		
Method		AC-029		AC-029		AC-029		AC-029		AC-029		
Parameter	**AAAQO (mg/m3)**	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**RDL (mg)**
Particulate Matter	0.029	**0.088**	**0.004**	**0.040**	**0.002**	**0.051**	**0.002**	**0.842**	**0.040**	**0.184**	**0.009**	0.004
PM2.5 Mass in ug/m3			**4.231**		**1.914**		**2.476**		**40.481**		**9.109**	
RDL in ug/m3			**0.192**		**0.191**		**0.194**		**0.192**		**0.198**	

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - August 2022

Partisol Results -$PM_{2.5}$-PM_{10}

Sample Date	2022-08-03		2022-08-09		2022-08-15		2022-08-21		2022-08-27		
Filter #	C9698030		C9696418		C9702884		C9698024		C9698025		
Volume (Vstd m^3)	2.32		2.33		2.29		2.31		2.25		
Method	AC-029		AC-029		AC-029		AC-029		AC-029		
Parameter	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**RDL (mg)**
PM2.5-10 Mass	**0.077**	**0.033**	**0.070**	**0.030**	**0.103**	**0.045**	**0.174**	**0.075**	**0.186**	**0.083**	0.004

PM2.5-10 Mass in ug/m3	**33.190**	**30.043**	**44.978**	**75.325**	**82.667**
RDL in ug/m3	**1.724**	**1.717**	**1.747**	**1.732**	**1.778**

PASSIVE SAMPLES

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

August 2022

Passive Results

	H_2S		NO_2		O_3		SO_2	
Minimum (ppb)	0.13	#12	<0.1	#23	16.4	#13	0.1	#23
Maximum (ppb)	2.70	#27	2.7	#10	32.2	#42	1.7	#27
Average (ppb)	0.53	-	0.71	-	23.89	-	0.52	-

No.	Station	Sample	Duplicate	Sample	Duplicate	Sample	Duplicate	Sample	Duplicate
3	Therien	0.28		0.6		28.2		0.3	0.3
4	Flat Lake	-		0.4		31.9		0.5	0.5
5	Lake Eliza	1.21		0.4		24.5		0.7	0.7
6	Telegraph Creek	-		1.9		20.8		0.6	
8	Muriel-Kehewin	-		0.3		32.0		0.7	
9	Dupre	-		0.7		20.3		0.4	
10	La Corey	0.46	0.44	2.7		21.5		0.5	
11	Wolf Lake	0.15	0.15	0.9		18.7		0.3	
12	Foster Creek	0.13		0.1		20.5		0.3	
13	Primrose	0.14		0.2		16.4		0.3	
14	Tamarack	0.41		0.8		27.8		1.3	
15	Ardmore	-		0.7		17.1		0.4	
16	Frog Lake	0.34		0.6		20.0		0.3	
17	Clear Range	0.68		0.6		25.0		0.5	
18	Fishing Lake	0.24		0.3		DAMAGE		0.2	
19	Beaverdam	-		0.4	0.3	26.2	25.7	0.4	
22	Cold Lake South (1)	0.34		0.5	0.5	18.6	22.9	0.3	
23	Medley-Martineau	-		<0.1		19.2		0.1	
24	Fort George	0.43		1.2		24.2		0.5	
25	Burnt Lake	Missing 1		-		-		Missing 1	
26	Mahihkan	0.28		-		-		0.7	
27	Mahkeses	2.70		-		-		1.7	
28	Town of Bonnyville	-		1.2		23.8		0.7	
29	Cold Lake South (2)	0.37		0.4		26.2		0.4	
32	St. Lina	0.53		0.2		30.5		0.4	
42	Lac La Biche	0.39		0.5		32.2		0.4	
Reportable Detection Limit (RDL)		**0.02**		**0.1**		**0.1**		**0.1**	

Note:

1 - : Sample collection was not required at the station.

2 Missing 1: Access to the station was not possible due to lack of permit to access the stations.

3 Blank (Duplicate): no duplicate sample was taken.

4 Ozone sample at station 18 was found damaged. No data could be reported.

LAC LA BICHE STATION

NMHC CANISTER SAMPLES

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Lac La Biche Site - August 2022

Volatile Organic Compounds (VOCs) Results

Sample Date/Time		**2022-08-18**
Canister Triggered Conc.		**0.50 ppm**
Canister ID		**29024**
Method		**AC-058**
Maximum Reading		**5.6**
Parameter		**Ethanol**

Parameter	AAAQOs	Result (ppbv)	RDL (ppbv)
1,1,1-Trichloroethane		< 0.03	0.02
1,1,2,2-Tetrachloroethane		< 0.03	0.02
1,1,2-Trichloroethane		< 0.03	0.02
1,1-Dichloroethane		< 0.03	0.02
1,1-Dichloroethylene		< 0.03	0.04
1,2,3-Trimethylbenzene		0.25	0.05
1,2,4-Trichlorobenzene		< 0.4	0.8
1,2,4-Trimethylbenzene		1.16	0.05
1,2-Dibromoethane		< 0.03	0.02
1,2-Dichlorobenzene		< 0.04	0.03
1,2-Dichloroethane		< 0.04	0.01
1,2-Dichloropropane		< 0.04	0.01
1,3,5-Trimethylbenzene		0.35	0.02
1,3-Butadiene		< 0.04	0.02
1,3-Dichlorobenzene		< 0.6	0.3
1,4-Dichlorobenzene		< 0.6	0.4
1,4-Dioxane		< 0.7	0.4
1-Butene		< 0.09	0.02
1-Hexene		< 0.10	0.02
1-Pentene		< 0.04	0.01
2,2,4-Trimethylpentane		0.62	0.01
2,2-Dimethylbutane		< 0.03	0.01
2,3,4-Trimethylpentane		0.29	0.01
2,3-Dimethylbutane		< 0.13	0.02
2,3-Dimethylpentane		0.4	0.02
2,4-Dimethylpentane		0.14	0.01
2-Methylheptane		0.29	0.01
2-Methylhexane		0.34	0.01
2-Methylpentane		0.2	0.01
3-Methylheptane		0.22	0.02
3-Methylhexane		0.35	0.02
3-Methylpentane		0.21	0.01
Acetone	2400	3.1	0.4
Acrolein	1.9	< 0.4	0.3
Benzene	9.0	0.21	0.01
Benzyl chloride		< 0.4	0.4
Bromodichloromethane		< 0.04	0.02
Bromoform		< 0.03	0.02
Bromomethane		< 0.03	0.01
Carbon disulfide	10	< 0.03	0.01
Carbon tetrachloride		0.06	0.01
Chlorobenzene		< 0.03	0.02
Chloroethane		< 0.03	0.02
Chloroform		0.03	0.02
Chloromethane		0.48	0.02
cis-1,2-Dichloroethene		< 0.03	0.01
cis-1,3-Dichloropropene		< 0.04	0.04
cis-2-Butene		< 0.04	0.02
cis-2-Pentene		< 0.03	0.02
Cyclohexane		0.11	0.02
Cyclopentane		0.05	0.01
Dibromochloromethane		< 0.03	0.01
Ethanol		5.6	0.3
Ethyl acetate		< 0.4	0.4
Ethylbenzene	460	0.63	0.01
Freon-11		0.21	0.02
Freon-113		0.05	0.01

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Lac La Biche Site - August 2022

Volatile Organic Compounds (VOCs) Results

Sample Date/Time		**2022-08-18**
Canister Triggered Conc.		**0.50 ppm**
Canister ID		**29024**
Method		**AC-058**
Maximum Reading		**5.6**
Parameter		**Ethanol**

Parameter	AAAQOs	Result (ppbv)	RDL (ppbv)
Freon-114		< 0.04	0.02
Freon-12		0.51	0.02
Hexachloro-1,3-butadiene		< 0.4	0.5
Isobutane		0.16	0.02
Isopentane		0.4	0.03
Isoprene		4.45	0.01
Isopropyl alcohol		< 0.4	0.4
Isopropylbenzene		< 0.06	0.01
m,p-Xylene		2.6	0.03
m-Diethylbenzene		0.04	0.04
m-Ethyltoluene		0.6	0.08
Methyl butyl ketone		< 0.6	0.5
Methyl ethyl ketone		< 0.4	0.3
Methyl isobutyl ketone		< 0.4	0.4
Methyl methacrylate		< 0.12	0.07
Methyl tert butyl ether		< 0.04	0.03
Methylcyclohexane		0.38	0.01
Methylcyclopentane		0.31	0.02
Methylene chloride		< 0.4	0.3
n-Butane		0.37	0.03
n-Decane		< 0.09	0.06
n-Dodecane		< 0.4	0.4
n-Heptane		0.39	0.01
n-Hexane	5960	0.33	0.01
n-Nonane		0.17	0.01
n-Octane		0.3	0.02
n-Pentane		0.28	0.1
n-Propylbenzene		0.14	0.05
n-Undecane		< 0.7	0.5
Naphthalene		< 0.4	0.5
o-Ethyltoluene		0.23	0.01
o-Xylene		1.03	0.01
p-Diethylbenzene		0.11	0.04
p-Ethyltoluene		0.26	0.07
Styrene	52.0	< 0.06	0.04
Tetrachloroethylene		< 0.03	0.04
Tetrahydrofuran		< 0.4	0.4
Toluene	499	1.86	0.01
trans-1,2-Dichloroethylene		< 0.09	0.01
trans-1,3-Dichloropropylene		< 0.03	0.04
trans-2-Butene		< 0.04	0.01
trans-2-Pentene		0.06	0.02
Trichloroethylene		< 0.03	0.04
Vinyl acetate		< 0.4	0.4
Vinyl chloride	51	< 0.03	0.02

End of Report

Lakeland Industry & Community Association

AUGUST 2022

Ambient Air Monitoring

Certified Laboratory Analysis Report

LAB-LICA-202208

Operation and Maintenance:
Bureau Veritas Canada

Data Validation and Analytical Report:
Bureau Veritas Canada and InnoTech Alberta

September 23, 2022

Table of Contents

Cold Lake South Station

Volatile Organic Compounds (VOCs) & Polycyclic Aromatic Hydrocarbons (PAHs) Samples

Sample ID: 22080146-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/Aug 3, 2022

RECEIVED
AUG 12 2022

Maxxam Analytics

VOC Sample Collection Data Sheet Alberta Air FCD AIR FCD-01320 / 2

Client:	LICA	**Sampler S/N:**	6200
Location:	Cold Lake South	**Canister ID:**	32241
Station ID:	LICA 01	**Installation Date/Time (mst):**	Aug 2, 2022 @ 21:05
Sample ID:	LICA/VOC/CLS/Aug 3, 2022	**Removal Date/Time (mst):**	Aug 8, 2022@ 18:36

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
August 3, 2022	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	**Final Pressure (psi)**
-27.4	19.5

Flow Settings		
Flow Reading (sccm)	**Pot Set Point**	**Pump Set (psi)**
10.00	4.98	24.0

Deployment/Collection and Maintenance Checklist

Initial leak check deployment vacuum (in. Hg) =	n/a	@	n/a	mst	****Leak rate must be 0.0 psi over a minimum of 5 minutes or repair is required****
Final leak check deployment vacuum (in. Hg) =	n/a	@	n/a	mst	
Total leak rate =	n/a	psi over	n/a	minutes	
Timer reset to zero prior to sampling?	YES	(yes/no)			
Date of last audit:	March 25, 2022				
Last date of sample line purging / replacement:	March 25, 2022				

Comments: n/a

Deployment Technician Signature: Alex Yakupov

Collection Technician Signature: Alex Yakupov

Sample ID: 22080146-002 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/Aug 3, 2022

RECEIVED
AUG 12 2022

TISCH PUF PLUS Sample Collection Data Sheet

Client:	LICA	**Puf+ S/N:**	TE-06
Location:	Cold Lake South	**Motor S/N:**	1138/100-1020
Station ID:	LICA 01	**Installation Date/Time:**	Aug 02, 2022 @ 21:06
Field Sample ID:	LICA/PUF/CLS/Aug 03, 2022	**Removal Date/Time:**	Aug 8, 2022 @ 18:41

Sample Data Collection Information

Sample Date:	3-Aug-22	**Average Pressure (mmHg)**	708
Start Time (mst):	0:00	**Average Flow (Q_{std})**	229
End Time (mst):	23:59	**Average Tempurature (°C)**	17.8
Elapsed Time (Hours):	24	**Volume (Vstd m^3)**	330.39

Sample Recovery Checklist

	(circle one)	
Flow Rate 230 slpm +/- 0.2 slpm ?	**YES**	NO
Average temperature appears correct?	**YES**	NO
Average pressure appears correct?	**YES**	NO
Any error messages? (if yes list below)	YES	**NO**
Sample duration 24 hours?	**YES**	NO
Date of last calibration/audit:	**25-Mar-22**	
Other observations?		n/a

Deployed By:	Alex Yakupov
Collected By:	Alex Yakupov

InnoTech ALBERTA

Canister ID: 32241

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ3 on: JUN 0 2 2022

Evacuated: JUN 2 0 2022 Recertified: JUL 0 8 2022

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

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/VOC/CLS/Aug 3, 2022

Sampled By: Alex Yanupav

Starting Vacuum: -27.4 "Hg

End Vacuum: +1.9 "Hg/ psig 20 KG

InnoTech ALBERTA

Canister ID: TE-06

This cleaned canister meets or exceeds TO-15 Method Specifications

PUF

Proofed by: on:

Evacuated: Recertified:

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

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/PUF/CLS/Aug 3, 2022

Sampled By: Alex Yanupav

Starting Vacuum: "Hg

End Vacuum: "Hg/psig

Sample ID: 22080146-001 **Priority:** Normal

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/Aug 3, 2022

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID: LICA/PUF/CLS/Aug 3, 2022
Matrix: Air Filter
CANISTER ID: TE-06
PRIORITY: Normal
DESCRIPTION: Cold Lake South
DATE SAMPLED: 03-Aug-22 0:00
DATE RECEIVED: 12-Aug-22
REPORT CREATED: 19-Sep-22
REPORT NUMBER: 22080146
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080146-002	1-Methylnaphthalene		0.03	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	2-Methylnaphthalene		0.03	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	Acenaphthene		0.02	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	Acenaphthylene		0.04	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	Anthracene		0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	Benzo(b,j,k)fluoranthene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	Chrysene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.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
LICA/PUF/CLS/Aug 3, 2022	TE-06	Air Filter	03-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080146 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080146-002	Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	Fluoranthene		0.04	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	Fluorene		0.03	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	Naphthalene		0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	Phenanthrene		0.15	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	Pyrene		0.04	ug/Filter	0.01	AC-066	01-Sep-22
22080146-002	Retene		0.04	ug/Filter	0.01	AC-066	01-Sep-22

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 3, 2022	32241	Ambient Air	03-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080146 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080146-001	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	17-Aug-22
22080146-001	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	17-Aug-22
22080146-001	1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Aug-22
22080146-001	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Aug-22
22080146-001	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Aug-22
22080146-001	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Aug-22
22080146-001	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Aug-22
22080146-001	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Aug-22
22080146-001	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	17-Aug-22
22080146-001	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	17-Aug-22
22080146-001	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	17-Aug-22
22080146-001	1-Butene/Isobutylene		0.33	ppbv	0.06	AC-058	17-Aug-22
22080146-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	17-Aug-22
22080146-001	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Aug-22
22080146-001	2,2,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	2,2-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	17-Aug-22
22080146-001	2,3-Dimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022 Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 3, 2022	32241	Ambient Air	03-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080146 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080146-001	2,4-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Aug-22
22080146-001	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	2-Methylhexane	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Aug-22
22080146-001	2-Methylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Aug-22
22080146-001	3-Methylhexane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	3-Methylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	Acetone		22.2	ppbv	0.4	AC-058	17-Aug-22
22080146-001	Acrolein		0.7	ppbv	0.3	AC-058	17-Aug-22
22080146-001	Benzene	I	0.13	ppbv	0.03	AC-058	17-Aug-22
22080146-001	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	17-Aug-22
22080146-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Aug-22
22080146-001	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	Bromomethane	I	0.03	ppbv	0.02	AC-058	17-Aug-22
22080146-001	Carbon disulfide	I	0.05	ppbv	0.02	AC-058	17-Aug-22
22080146-001	Carbon tetrachloride	I	0.09	ppbv	0.02	AC-058	17-Aug-22
22080146-001	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	Chloromethane		0.74	ppbv	0.04	AC-058	17-Aug-22
22080146-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Aug-22
22080146-001	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Aug-22
22080146-001	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	Cyclohexane	K, T, U	< 0.04	ppbv	0.04	AC-058	17-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 3, 2022	32241	Ambient Air	03-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080146 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080146-001	Cyclopentane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	Ethanol		10.3	ppbv	0.5	AC-058	17-Aug-22
22080146-001	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	17-Aug-22
22080146-001	Ethylbenzene		0.74	ppbv	0.03	AC-058	17-Aug-22
22080146-001	Freon-11		0.45	ppbv	0.02	AC-058	17-Aug-22
22080146-001	Freon-113	I	0.09	ppbv	0.02	AC-058	17-Aug-22
22080146-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Aug-22
22080146-001	Freon-12		0.63	ppbv	0.03	AC-058	17-Aug-22
22080146-001	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	17-Aug-22
22080146-001	Isobutane		0.42	ppbv	0.03	AC-058	17-Aug-22
22080146-001	Isopentane		2.08	ppbv	0.04	AC-058	17-Aug-22
22080146-001	Isoprene		0.71	ppbv	0.02	AC-058	17-Aug-22
22080146-001	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	17-Aug-22
22080146-001	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	17-Aug-22
22080146-001	m,p-Xylene	K, T, U	< 0.04	ppbv	0.04	AC-058	17-Aug-22
22080146-001	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	m-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Aug-22
22080146-001	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	17-Aug-22
22080146-001	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	17-Aug-22
22080146-001	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	17-Aug-22
22080146-001	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	17-Aug-22
22080146-001	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Aug-22
22080146-001	Methylcyclohexane		0.12	ppbv	0.02	AC-058	17-Aug-22
22080146-001	Methylcyclopentane		0.12	ppbv	0.05	AC-058	17-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022 Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 3, 2022	32241	Ambient Air	03-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080146 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080146-001	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	17-Aug-22
22080146-001	n-Butane		2.47	ppbv	0.02	AC-058	17-Aug-22
22080146-001	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	17-Aug-22
22080146-001	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	17-Aug-22
22080146-001	n-Heptane	K, T, U	< 0.04	ppbv	0.04	AC-058	17-Aug-22
22080146-001	n-Hexane		0.60	ppbv	0.03	AC-058	17-Aug-22
22080146-001	n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	n-Pentane		0.21	ppbv	0.04	AC-058	17-Aug-22
22080146-001	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	17-Aug-22
22080146-001	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	17-Aug-22
22080146-001	Naphthalene	I, K, T, U	< 0.3	ppbv	0.3	AC-058	17-Aug-22
22080146-001	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	17-Aug-22
22080146-001	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Aug-22
22080146-001	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	17-Aug-22
22080146-001	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	17-Aug-22
22080146-001	Tetrachloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	17-Aug-22
22080146-001	Toluene		0.61	ppbv	0.03	AC-058	17-Aug-22
22080146-001	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	17-Aug-22
22080146-001	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	17-Aug-22
22080146-001	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22
22080146-001	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 3, 2022	32241	Ambient Air	03-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080146 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080146-001	Vinyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	17-Aug-22
22080146-001	Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	17-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
22080146	01	19-Sep-22	Report created

Methods

Method	Description
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-066	Polycyclic Aromatic Hydrocarbons from 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

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: 22080195-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/Aug 12, 2022

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AUG 16 2022

Maxxam Analytics

VOC Sample Collection Data Sheet Alberta Air FCD AIR FCD-01320 / 2

Client:	LICA	**Sampler S/N:**	6200
Location:	Cold Lake South	**Canister ID:**	32228
Station ID:	LICA 01	**Installation Date/Time (mst):**	Aug 8, 2022 @ 18:43
Sample ID:	LICA/VOC/CLS/Aug 9, 2022	**Removal Date/Time (mst):**	Aug 12, 2022@ 19:20

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
August 9, 2022	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Pressure (psi)
-27.2	19.8

Flow Settings		
Flow Reading (sccm)	Pot Set Point	Pump Set (psi)
10.00	4.98	24.0

Deployment/Collection and Maintenance Checklist

Initial leak check deployment vacuum (in. Hg) =	n/a	@	n/a	mst	**Leak rate must be 0.0 psi over a minimum of 5 minutes or repair is required**
Final leak check deployment vacuum (in. Hg) =	n/a	@	n/a	mst	
Total leak rate =	n/a	psi over	n/a	minutes	
Timer reset to zero prior to sampling?	YES	(yes/no)			
Date of last audit:	March 25, 2022				
Last date of sample line purging / replacement:	March 25, 2022				

Comments: n/a

Deployment Technician Signature: Alex Yakupov

Collection Technician Signature: Alex Yakupov

Sample ID: 22080195-002 **Priority:** Normal

Customer ID: LICA

Cust Samp ID: LICA/PUF/CLS/Aug 12, 2022

RECEIVED
AUG 16 2022

TISCH PUF PLUS Sample Collection Data Sheet

Client:	LICA	**Puf+ S/N:**	TE-09
Location:	Cold Lake South	**Motor S/N:**	1138/100-1020
Station ID:	LICA 01	**Installation Date/Time:**	Aug 8, 2022 @ 21:06
Field Sample ID:	LICA/PUF/CLS/Aug 9, 2022	**Removal Date/Time:**	Aug 12, 2022 @ 19:22

Sample Data Collection Information

Sample Date:	9-Aug-22	**Average Pressure (mmHg)**	715
Start Time (mst):	0:00	**Average Flow (Q_{std})**	229
End Time (mst):	23:59	**Average Tempurature (°C)**	19.1
Elapsed Time (Hours):	24	**Volume (Vstd m^3)**	330.4

Sample Recovery Checklist

	(circle one)	
Flow Rate 230 slpm +/- 0.2 slpm ?	**YES**	NO
Average temperature appears correct?	**YES**	NO
Average pressure appears correct?	**YES**	NO
Any error messages? (if yes list below)	YES	**NO**
Sample duration 24 hours?	**YES**	NO
Date of last calibration/audit:	**25-Mar-22**	
Other observations?		n/a

Deployed By:	Alex Yakupov
Collected By:	Alex Yakupov

InnoTech ALBERTA

Canister ID: 32228

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: DQ3 on: MAY 10 2022

Evacuated: JUN 17 2022 Recertified: JUL 08 2022

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

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/VOC/CLS/Aug 9, 2022

Sampled By: Alex Yakupov

Starting Vacuum:	End Vacuum:
-27.2 "Hg	+19.8 "Hg/ psig (21)

KG

InnoTech ALBERTA

Canister ID: TE-09

This cleaned canister meets or exceeds TO-15 Method Specifications

PUF

Proofed by: on:

Evacuated: Recertified:

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

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/PUF/CLS/ Aug 9, 2022

Sampled By: Alex Yakupov

Starting Vacuum:	End Vacuum:
"Hg	"Hg/psig

Sample ID: 22080195-001 **Priority:** Normal

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/Aug 12, 2022

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID: LICA/PUF/CLS/Aug 9, 2022
Matrix: Air Filter
CANISTER ID: TE-09
PRIORITY: Normal
DESCRIPTION: Cold Lake South
DATE SAMPLED: 09-Aug-22 0:00
DATE RECEIVED: 16-Aug-22
REPORT CREATED: 19-Sep-22
REPORT NUMBER: 22080195
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080195-002	1-Methylnaphthalene		0.05	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	2-Methylnaphthalene		0.06	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	Acenaphthene		0.04	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	Acenaphthylene		0.06	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	Anthracene		0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	Benzo(b,j,k)fluoranthene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	Chrysene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/PUF/CLS/Aug 9, 2022	TE-09	Air Filter	09-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080195 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080195-002	Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	Fluoranthene		0.03	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	Fluorene		0.04	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	Naphthalene		0.03	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	Phenanthrene		0.13	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	Pyrene		0.03	ug/Filter	0.01	AC-066	01-Sep-22
22080195-002	Retene		0.04	ug/Filter	0.01	AC-066	01-Sep-22

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 9, 2022	32228	Ambient Air	09-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080195 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080195-001	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	18-Aug-22
22080195-001	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	18-Aug-22
22080195-001	1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Aug-22
22080195-001	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Aug-22
22080195-001	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Aug-22
22080195-001	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Aug-22
22080195-001	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Aug-22
22080195-001	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Aug-22
22080195-001	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	18-Aug-22
22080195-001	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	18-Aug-22
22080195-001	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	18-Aug-22
22080195-001	1-Butene/Isobutylene		0.22	ppbv	0.06	AC-058	18-Aug-22
22080195-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	18-Aug-22
22080195-001	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Aug-22
22080195-001	2,2,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	2,2-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	18-Aug-22
22080195-001	2,3-Dimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022 Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 9, 2022	32228	Ambient Air	09-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080195 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080195-001	2,4-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Aug-22
22080195-001	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	2-Methylhexane	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Aug-22
22080195-001	2-Methylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Aug-22
22080195-001	3-Methylhexane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	3-Methylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	Acetone		7.0	ppbv	0.4	AC-058	18-Aug-22
22080195-001	Acrolein		0.7	ppbv	0.3	AC-058	18-Aug-22
22080195-001	Benzene	I	0.13	ppbv	0.03	AC-058	18-Aug-22
22080195-001	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	18-Aug-22
22080195-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Aug-22
22080195-001	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	Carbon disulfide	I	0.03	ppbv	0.02	AC-058	18-Aug-22
22080195-001	Carbon tetrachloride	I	0.10	ppbv	0.02	AC-058	18-Aug-22
22080195-001	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	Chloromethane		0.72	ppbv	0.04	AC-058	18-Aug-22
22080195-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Aug-22
22080195-001	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Aug-22
22080195-001	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	Cyclohexane	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022 Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 9, 2022	32228	Ambient Air	09-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080195 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080195-001	Cyclopentane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	Ethanol		24.9	ppbv	0.5	AC-058	18-Aug-22
22080195-001	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	18-Aug-22
22080195-001	Ethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Aug-22
22080195-001	Freon-11		0.36	ppbv	0.02	AC-058	18-Aug-22
22080195-001	Freon-113	I	0.08	ppbv	0.02	AC-058	18-Aug-22
22080195-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Aug-22
22080195-001	Freon-12		0.63	ppbv	0.03	AC-058	18-Aug-22
22080195-001	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	18-Aug-22
22080195-001	Isobutane		0.25	ppbv	0.03	AC-058	18-Aug-22
22080195-001	Isopentane		0.32	ppbv	0.04	AC-058	18-Aug-22
22080195-001	Isoprene		0.75	ppbv	0.02	AC-058	18-Aug-22
22080195-001	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	18-Aug-22
22080195-001	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Aug-22
22080195-001	m,p-Xylene	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Aug-22
22080195-001	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	m-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Aug-22
22080195-001	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	18-Aug-22
22080195-001	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	18-Aug-22
22080195-001	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	18-Aug-22
22080195-001	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	18-Aug-22
22080195-001	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Aug-22
22080195-001	Methylcyclohexane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	Methylcyclopentane		0.10	ppbv	0.05	AC-058	18-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 9, 2022	32228	Ambient Air	09-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080195 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080195-001	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	18-Aug-22
22080195-001	n-Butane		1.04	ppbv	0.02	AC-058	18-Aug-22
22080195-001	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	18-Aug-22
22080195-001	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	18-Aug-22
22080195-001	n-Heptane	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Aug-22
22080195-001	n-Hexane		0.59	ppbv	0.03	AC-058	18-Aug-22
22080195-001	n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	n-Pentane		0.12	ppbv	0.04	AC-058	18-Aug-22
22080195-001	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	18-Aug-22
22080195-001	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	18-Aug-22
22080195-001	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	18-Aug-22
22080195-001	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Aug-22
22080195-001	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Aug-22
22080195-001	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Aug-22
22080195-001	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	18-Aug-22
22080195-001	Tetrachloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	18-Aug-22
22080195-001	Toluene		0.61	ppbv	0.03	AC-058	18-Aug-22
22080195-001	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	18-Aug-22
22080195-001	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	18-Aug-22
22080195-001	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22
22080195-001	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 9, 2022	32228	Ambient Air	09-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080195 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080195-001	Vinyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	18-Aug-22
22080195-001	Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	18-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022 Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
22080195	01	19-Sep-22	Report created

Methods

Method	Description
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-066	Polycyclic Aromatic Hydrocarbons from 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

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: 22080239-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/Aug 15, 2022

RECEIVED
AUG 19 2022

Bureau Veritas

ection Data Sheet Alberta Air FCD AIR FCD-01320 / 2

Client:	LICA	**Sampler S/N:**	6200
Location:	Cold Lake South	**Canister ID:**	32207
Station ID:	LICA 01	**Installation Date/Time (mst):**	Aug 12, 2022 @ 19:34
Sample ID:	LICA/VOC/CLS/Aug 15, 2022	**Removal Date/Time (mst):**	Aug 17, 2022@ 18:31

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
August 15, 2022	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Pressure (psi)
-27.0	19.5

Flow Settings		
Flow Reading (sccm)	Pot Set Point	Pump Set (psi)
10.00	4.98	24.0

Deployment/Collection and Maintenance Checklist

Initial leak check deployment vacuum (in. Hg) = n/a @ n/a mst
Final leak check deployment vacuum (in. Hg) = n/a @ n/a mst
Total leak rate = n/a psi over n/a minutes

****Leak rate must be 0.0 psi over a minimum of 5 minutes or repair is required****

Timer reset to zero prior to sampling? YES (yes/no)
Date of last audit: March 25, 2022
Last date of sample line purging / replacement: March 25, 2022

Comments: n/a

Deployment Technician Signature: Alex Yakupov

Collection Technician Signature: Alex Yakupov

AIR FCD-01321/2

Sample ID: 22080239-002 **Priority:** Normal

Customer ID: LICA

Cust Samp ID: LICA/PUF/CLS/Aug 15, 2022

RECEIVED
AUG 19 2022

TISCH PUF PLUS Sample Collection Data Sheet

Client:	LICA	**Puf+ S/N:**	TE-08
Location:	Cold Lake South	**Motor S/N:**	1138/100-1020
Station ID:	LICA 01	**Installation Date/Time:**	Aug 12, 2022 @ 19:37
Field Sample ID:	LICA/PUF/CLS/Aug 15, 2022	**Removal Date/Time:**	Aug 17, 2022 @ 18:37

Sample Data Collection Information

Sample Date:	15-Aug-22	**Average Pressure (mmHg)**	712
Start Time (mst):	0:00	**Average Flow (Q_{std})**	229
End Time (mst):	23:59	**Average Tempurature (°C)**	22.5
Elapsed Time (Hours):	24	**Volume (Vstd m^3)**	330.42

Sample Recovery Checklist

	(circle one)	
Flow Rate 230 slpm +/- 0.2 slpm ?	**YES**	NO
Average temperature appears correct?	**YES**	NO
Average pressure appears correct?	**YES**	NO
Any error messages? (if yes list below)	YES	**NO**
Sample duration 24 hours?	**YES**	NO
Date of last calibration/audit:	**25-Mar-22**	
Other observations?		n/a

Deployed By:	Alex Yakupov
Collected By:	Alex Yakupov

InnoTech ALBERTA

Canister ID: TE-08

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: PUF on: _____

Evacuated: _____ Recertified: _____

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

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/PUF/CLS/Aug 15, 2022

Sampled By: Alex Yakupov

Starting Vacuum:	End Vacuum:
_____ "Hg	_____ "Hg/psig

Sample ID: 22080239-001 **Priority:** Normal

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/Aug 15, 2022

InnoTech ALBERTA

Canister ID: 32207

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: _____ on: MAY 09 2022

Evacuated: MAY 19 2022 Recertified: JUL 04 2022 JUL 04 2022

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

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/VOC/CLS/Aug 15, 2022

Sampled By: Alex Yakupov

Starting Vacuum:	End Vacuum:
~~-24~~ "Hg	19.5 "Hg/psig 2 psi

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID: LICA/PUF/CLS/Aug 15, 2022
Matrix: Air Filter
CANISTER ID: TE-08
PRIORITY: Normal
DESCRIPTION: Cold Lake South
DATE SAMPLED: 15-Aug-22 0:00
DATE RECEIVED: 19-Aug-22
REPORT CREATED: 19-Sep-22
REPORT NUMBER: 22080239
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080239-002	1-Methylnaphthalene		0.09	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	2-Methylnaphthalene		0.08	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	Acenaphthene		0.02	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	Acenaphthylene		0.04	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	Anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	Benzo(b,j,k)fluoranthene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	Chrysene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/PUF/CLS/Aug 15, 2022	TE-08	Air Filter	15-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080239 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080239-002	Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	Fluoranthene		0.04	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	Fluorene		0.03	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	Naphthalene		0.03	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	Phenanthrene		0.18	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	Pyrene		0.04	ug/Filter	0.01	AC-066	01-Sep-22
22080239-002	Retene		0.09	ug/Filter	0.01	AC-066	01-Sep-22

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 15, 2022	32207	Ambient Air	15-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080239 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080239-001	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	28-Aug-22
22080239-001	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080239-001	1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080239-001	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080239-001	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080239-001	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080239-001	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080239-001	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080239-001	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Aug-22
22080239-001	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Aug-22
22080239-001	1,4-Dioxane		2.1	ppbv	0.5	AC-058	28-Aug-22
22080239-001	1-Butene/Isobutylene	K, T, U	< 0.06	ppbv	0.06	AC-058	28-Aug-22
22080239-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	28-Aug-22
22080239-001	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080239-001	2,2,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	2,2-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	28-Aug-22
22080239-001	2,3-Dimethylpentane	I	0.02	ppbv	0.02	AC-058	28-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022 Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 15, 2022	32207	Ambient Air	15-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080239 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080239-001	2,4-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080239-001	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	2-Methylhexane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080239-001	2-Methylpentane	I	0.07	ppbv	0.02	AC-058	28-Aug-22
22080239-001	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080239-001	3-Methylhexane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	3-Methylpentane	I	0.05	ppbv	0.02	AC-058	28-Aug-22
22080239-001	Acetone		3.9	ppbv	0.4	AC-058	28-Aug-22
22080239-001	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080239-001	Benzene	I	0.06	ppbv	0.03	AC-058	28-Aug-22
22080239-001	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080239-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080239-001	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	Carbon disulfide	I	0.03	ppbv	0.02	AC-058	28-Aug-22
22080239-001	Carbon tetrachloride	I	0.08	ppbv	0.02	AC-058	28-Aug-22
22080239-001	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	Chloromethane		0.55	ppbv	0.04	AC-058	28-Aug-22
22080239-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080239-001	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080239-001	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	Cyclohexane	I	0.07	ppbv	0.04	AC-058	28-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022 Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 15, 2022	32207	Ambient Air	15-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080239 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080239-001	Cyclopentane	I	0.04	ppbv	0.02	AC-058	28-Aug-22
22080239-001	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	Ethanol	I	0.9	ppbv	0.5	AC-058	28-Aug-22
22080239-001	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080239-001	Ethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080239-001	Freon-11		0.24	ppbv	0.02	AC-058	28-Aug-22
22080239-001	Freon-113	I	0.07	ppbv	0.02	AC-058	28-Aug-22
22080239-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080239-001	Freon-12		0.54	ppbv	0.03	AC-058	28-Aug-22
22080239-001	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080239-001	Isobutane		0.19	ppbv	0.03	AC-058	28-Aug-22
22080239-001	Isopentane		0.23	ppbv	0.04	AC-058	28-Aug-22
22080239-001	Isoprene		2.46	ppbv	0.02	AC-058	28-Aug-22
22080239-001	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080239-001	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080239-001	m,p-Xylene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080239-001	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	m-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080239-001	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Aug-22
22080239-001	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080239-001	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080239-001	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	28-Aug-22
22080239-001	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080239-001	Methylcyclohexane	I	0.09	ppbv	0.02	AC-058	28-Aug-22
22080239-001	Methylcyclopentane	I	0.09	ppbv	0.05	AC-058	28-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 15, 2022	32207	Ambient Air	15-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080239 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080239-001	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080239-001	n-Butane		0.44	ppbv	0.02	AC-058	28-Aug-22
22080239-001	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	28-Aug-22
22080239-001	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080239-001	n-Heptane	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080239-001	n-Hexane	I	0.09	ppbv	0.03	AC-058	28-Aug-22
22080239-001	n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	n-Pentane		0.16	ppbv	0.04	AC-058	28-Aug-22
22080239-001	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	28-Aug-22
22080239-001	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	28-Aug-22
22080239-001	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080239-001	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080239-001	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080239-001	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080239-001	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080239-001	Tetrachloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080239-001	Toluene	I	0.07	ppbv	0.03	AC-058	28-Aug-22
22080239-001	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	28-Aug-22
22080239-001	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080239-001	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080239-001	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 15, 2022	32207	Ambient Air	15-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080239 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080239-001	Vinyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080239-001	Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
22080239	01	19-Sep-22	Report created

Methods

Method	Description
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-066	Polycyclic Aromatic Hydrocarbons from 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

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: 22080336-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/Aug 21, 2022

RECEIVED
AUG 26 2022

Bureau Veritas

VOC Sample Collection Data Sheet Alberta Air FCD AIR FCD-01320 / 2

Client:	LICA	**Sampler S/N:**	6200
Location:	Cold Lake South	**Canister ID:**	28917
Station ID:	LICA 01	**Installation Date/Time (mst):**	Aug 17, 2022 @ 18:52
Sample ID:	LICA/VOC/CLS/Aug 21, 2022	**Removal Date/Time (mst):**	Aug 24, 2022@ 13:26

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
August 21, 2022	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Pressure (psi)
-27.2	19

Flow Settings		
Flow Reading (sccm)	Pot Set Point	Pump Set (psi)
10.00	4.98	24.0

Deployment/Collection and Maintenance Checklist

Initial leak check deployment vacuum (in. Hg) =	n/a	@	n/a	mst	**Leak rate must be 0.0 psi over a minimum of 5 minutes or repair is required**
Final leak check deployment vacuum (in. Hg) =	n/a	@	n/a	mst	
Total leak rate =	n/a	psi over	n/a	minutes	
Timer reset to zero prior to sampling?	YES	(yes/no)			

Comments: n/a

Deployment Technician Signature: Alex Yakupov

Collection Technician Signature: FERDINAND ROY

Sample ID: 22080336-002 Priority: Normal

ustomer ID: LICA

ust Samp ID: LICA/PUF/CLS/Aug 21, 2022

RECEIVED
AUG 2 6 2022

TISCH PUF PLUS Sample Collection Data Sheet

Client:	LICA	**Puf+ S/N:**	9801
Location:	Cold Lake South	**Motor S/N:**	1138/100-1020
Station ID:	LICA 01	**Installation Date/Time:**	Aug 17, 2022 @ 18:53
Field Sample ID:	LICA/PUF/CLS/Aug 21, 2022	**Removal Date/Time:**	Aug 24, 2022 @ 14:49

Sample Data Collection Information

Sample Date:	21-Aug-22	**Average Pressure (mmHg)**	713
Start Time (mst):	0:00	**Average Flow (Q_{std})**	229
End Time (mst):	23:59	**Average Tempurature (°C)**	20.2
Elapsed Time (Hours):	24	**Volume (Vstd m^3)**	330.4

Sample Recovery Checklist

	(circle one)	
Flow Rate 230 slpm +/- 0.2 slpm ?	(YES)	NO
Average temperature appears correct?	(YES)	NO
Average pressure appears correct?	(YES)	NO
Any error messages? (if yes list below)	YES	(NO)
Sample duration 24 hours?	(YES)	NO
Other observations?		n/a

Deployed By:	Alex Yakupov
Collected By:	Ferdinand Ploy

InnoTech ALBERTA

Canister ID: 28917

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ4 on: JUN 2 2 2022

Evacuated: JUL 1 1 2022 Recertified: _____

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

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/VOC/CLS/Aug 21, 2022

Sampled By: FERDINAND ROY

Starting Vacuum: -27.2 "Hg

End Vacuum: 19 "Hg/psig

InnoTech ALBERTA

Canister ID: 9801

This cleaned canister meets or exceeds TO-15 Method Specifications

PUF

Proofed by: _____ on: _____

Evacuated: _____ Recertified: _____

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

Laboratory Contact Number: 780-632-8403

Sample ID: ~~LICA/VOC/CLS/Aug 21, 2022~~ LICA/PUF/CLS/Aug 21, 2022

Sampled By: FERDINAND ROY

Starting Vacuum: ~~-27.2~~ "Hg

End Vacuum: _____ "Hg/psig

Sample ID: 22080336-001 **Priority:** Normal

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/Aug 21, 2022

PO Bag 4000
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Canada T9C 1T4
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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID: LICA/PUF/CLS/Aug 21, 2022
Matrix: Air Filter
CANISTER ID: 9801
PRIORITY: Normal
DESCRIPTION: Cold Lake South
DATE SAMPLED: 21-Aug-22 0:00
DATE RECEIVED: 26-Aug-22
REPORT CREATED: 19-Sep-22
REPORT NUMBER: 22080336
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080336-002	1-Methylnaphthalene		0.07	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	2-Methylnaphthalene		0.07	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	Acenaphthene		0.03	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	Acenaphthylene		0.11	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	Anthracene		0.02	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	Benzo(b,j,k)fluoranthene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	Chrysene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/PUF/CLS/Aug 21, 2022	9801	Air Filter	21-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080336 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080336-002	Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	Fluoranthene		0.06	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	Fluorene		0.15	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	Naphthalene		0.08	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	Phenanthrene		0.47	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	Pyrene		0.04	ug/Filter	0.01	AC-066	01-Sep-22
22080336-002	Retene		0.38	ug/Filter	0.01	AC-066	01-Sep-22

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 21, 2022	28917	Ambient Air	21-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080336 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080336-001	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	28-Aug-22
22080336-001	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080336-001	1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080336-001	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080336-001	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080336-001	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080336-001	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080336-001	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080336-001	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Aug-22
22080336-001	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Aug-22
22080336-001	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	28-Aug-22
22080336-001	1-Butene/Isobutylene	K, T, U	< 0.06	ppbv	0.06	AC-058	28-Aug-22
22080336-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	28-Aug-22
22080336-001	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080336-001	2,2,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	2,2-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	28-Aug-22
22080336-001	2,3-Dimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022 Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 21, 2022	28917	Ambient Air	21-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080336 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080336-001	2,4-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080336-001	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	2-Methylhexane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080336-001	2-Methylpentane	I	0.03	ppbv	0.02	AC-058	28-Aug-22
22080336-001	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080336-001	3-Methylhexane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	3-Methylpentane	I	0.03	ppbv	0.02	AC-058	28-Aug-22
22080336-001	Acetone		3.4	ppbv	0.4	AC-058	28-Aug-22
22080336-001	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080336-001	Benzene		0.36	ppbv	0.03	AC-058	28-Aug-22
22080336-001	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080336-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080336-001	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	Carbon tetrachloride	I	0.07	ppbv	0.02	AC-058	28-Aug-22
22080336-001	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	Chloromethane		0.54	ppbv	0.04	AC-058	28-Aug-22
22080336-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080336-001	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080336-001	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	Cyclohexane	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022 Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 21, 2022	28917	Ambient Air	21-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080336 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080336-001	Cyclopentane	I	0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	Ethanol	I	0.9	ppbv	0.5	AC-058	28-Aug-22
22080336-001	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080336-001	Ethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080336-001	Freon-11		0.22	ppbv	0.02	AC-058	28-Aug-22
22080336-001	Freon-113	I	0.06	ppbv	0.02	AC-058	28-Aug-22
22080336-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080336-001	Freon-12		0.52	ppbv	0.03	AC-058	28-Aug-22
22080336-001	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080336-001	Isobutane		0.11	ppbv	0.03	AC-058	28-Aug-22
22080336-001	Isopentane		0.15	ppbv	0.04	AC-058	28-Aug-22
22080336-001	Isoprene		1.32	ppbv	0.02	AC-058	28-Aug-22
22080336-001	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080336-001	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080336-001	m,p-Xylene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080336-001	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	m-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080336-001	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Aug-22
22080336-001	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080336-001	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080336-001	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	28-Aug-22
22080336-001	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080336-001	Methylcyclohexane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	Methylcyclopentane	K, T, U	< 0.05	ppbv	0.05	AC-058	28-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 21, 2022	28917	Ambient Air	21-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080336 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080336-001	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080336-001	n-Butane		0.29	ppbv	0.02	AC-058	28-Aug-22
22080336-001	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	28-Aug-22
22080336-001	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080336-001	n-Heptane	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080336-001	n-Hexane	I	0.03	ppbv	0.03	AC-058	28-Aug-22
22080336-001	n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	n-Pentane		0.12	ppbv	0.04	AC-058	28-Aug-22
22080336-001	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	28-Aug-22
22080336-001	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	28-Aug-22
22080336-001	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080336-001	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080336-001	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080336-001	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080336-001	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080336-001	Tetrachloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080336-001	Toluene	I	0.18	ppbv	0.03	AC-058	28-Aug-22
22080336-001	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	28-Aug-22
22080336-001	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080336-001	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22
22080336-001	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 21, 2022	28917	Ambient Air	21-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080336 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080336-001	Vinyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Aug-22
22080336-001	Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 19, 2022

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
22080336	01	19-Sep-22	Report created

Methods

Method	Description
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-066	Polycyclic Aromatic Hydrocarbons from 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

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: 22080342-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/Aug 27, 2022

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AUG 30 2022

Bureau Veritas

VOC Sample Collection Data Sheet Alberta Air FCD AIR FCD-01320 / 2

Client:	LICA	**Sampler S/N:**	6200
Location:	Cold Lake South	**Canister ID:**	28941
Station ID:	LICA 01	**Installation Date/Time (mst):**	Aug 22, 2022 @ 18:52
Sample ID:	LICA/VOC/CLS/Aug 27, 2022	**Removal Date/Time (mst):**	Aug 29, 2022@ 10:34

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
August 27, 2022	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Pressure (psi)
-27.3	19.4

Flow Settings		
Flow Reading (sccm)	Pot Set Point	Pump Set (psi)
10.00	4.98	24.0

Deployment/Collection and Maintenance Checklist

Initial leak check deployment vacuum (in. Hg) =	n/a	@	n/a	mst	**Leak rate must be 0.0 psi over a minimum of 5 minutes or repair is required**
Final leak check deployment vacuum (in. Hg) =	n/a	@	n/a	mst	
Total leak rate =	n/a	psi over	n/a	minutes	
Timer reset to zero prior to sampling?	YES	(yes/no)			

Comments: n/a

Deployment Technician Signature: Ferdinand Roy

Collection Technician Signature: Alex Yakupov

Sample ID: 22080342-002 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/Aug 27, 2022

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AUG 30 2022

TISCH PUF PLUS Sample Collection Data Sheet

Client:	LICA	**Puf+ S/N:**	P13-01
Location:	Cold Lake South	**Motor S/N:**	1138/100-1020
Station ID:	LICA 01	**Installation Date/Time:**	Aug 22, 2022 @ 18:53
Field Sample ID:	LICA/PUF/CLS/Aug 27, 2022	**Removal Date/Time:**	Aug 29, 2022 @ 11:02

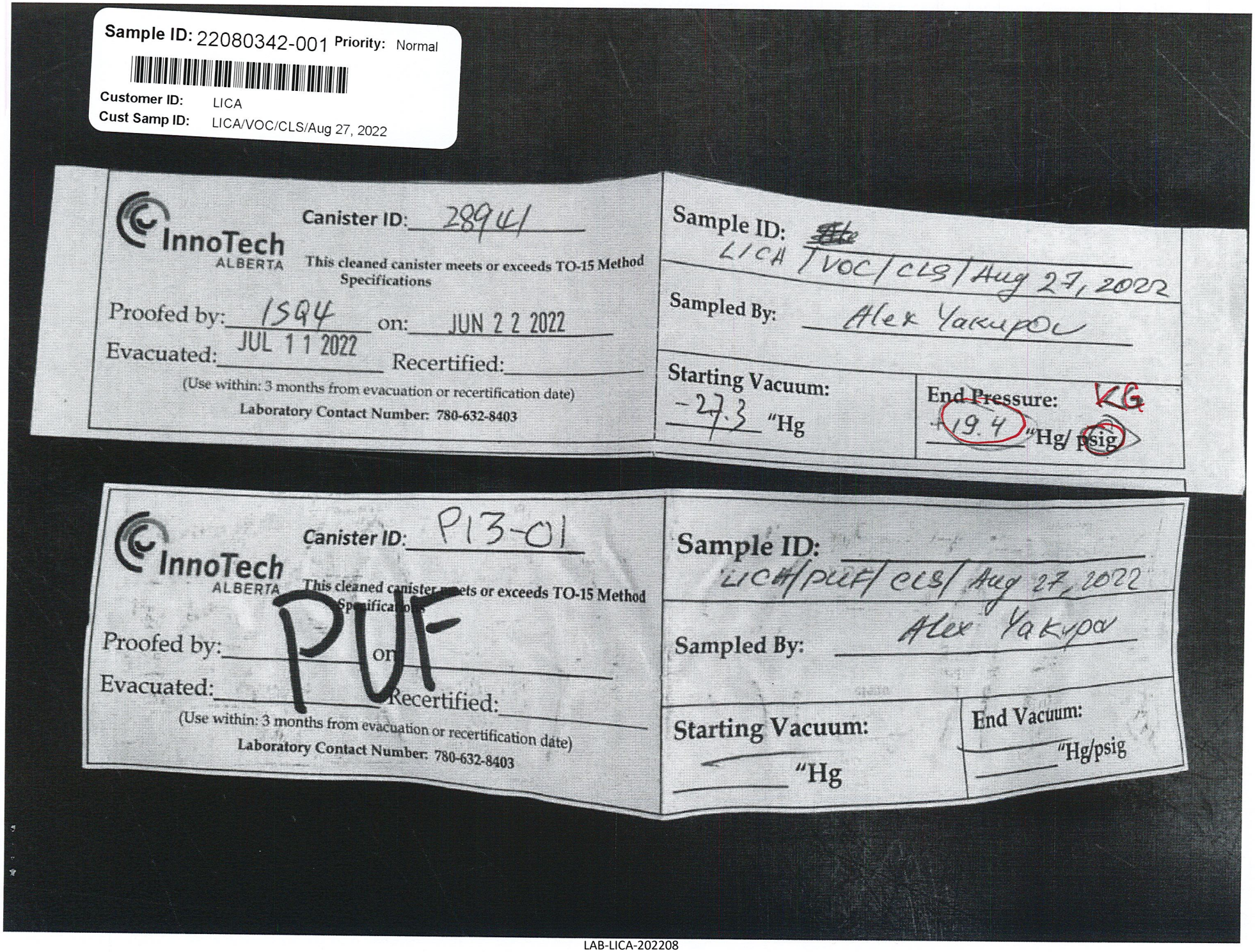
Sample Data Collection Information

Sample Date:	27-Aug-22	**Average Pressure (mmHg)**	697
Start Time (mst):	0:00	**Average Flow (Q_{std})**	229
End Time (mst):	23:59	**Average Tempurature (°C)**	22.5
Elapsed Time (Hours):	24	**Volume (Vstd m^3)**	330.4

Sample Recovery Checklist

	(circle one)	
Flow Rate 230 slpm +/- 0.2 slpm ?	**YES**	NO
Average temperature appears correct?	**YES**	NO
Average pressure appears correct?	**YES**	NO
Any error messages? (if yes list below)	YES	**NO**
Sample duration 24 hours?	**YES**	NO
Other observations?		n/a

Deployed By:	Ferdinand Roy
Collected By:	Alex Yakupov


Sample ID: 22080342-001 Priority: Normal
Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/Aug 27, 2022
InnoTech ALBERTA
Canister ID: 28941
This cleaned canister meets or exceeds TO-15 Method Specifications
Proofed by: ISQ4 on: JUN 22 2022
Evacuated: JUL 11 2022 Recertified:
(Use within: 3 months from evacuation or recertification date)
Laboratory Contact Number: 780-632-8403
Sample ID: LICA/VOC/CLS/Aug 27, 2022
Sampled By: Alex Yakupov
Starting Vacuum: -27.3 "Hg
End Pressure: KG -19.4 "Hg/psig
InnoTech ALBERTA
Canister ID: P13-01
PUF
Proofed by: on:
Evacuated: Recertified:
(Use within: 3 months from evacuation or recertification date)
Laboratory Contact Number: 780-632-8403
Sample ID: LICA/PUF/CLS/Aug 27, 2022
Sampled By: Alex Yakupov
Starting Vacuum: "Hg
End Vacuum: "Hg/psig

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID: LICA/PUF/CLS/Aug 27, 2022
Matrix: Air Filter
CANISTER ID: P13-01
PRIORITY: Normal
DESCRIPTION: Cold Lake South
DATE SAMPLED: 27-Aug-22 0:00
DATE RECEIVED: 30-Aug-22
REPORT CREATED: 19-Sep-22
REPORT NUMBER: 22080342
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080342-002	1-Methylnaphthalene		0.04	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	2-Methylnaphthalene		0.02	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	Acenaphthene		0.02	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	Acenaphthylene		0.06	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	Anthracene		0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	Benzo(b,j,k)fluoranthene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	Chrysene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: Monday, September 19, 2022 Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/PUF/CLS/Aug 27, 2022	P13-01	Air Filter	27-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080342 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080342-002	Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	Fluoranthene		0.04	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	Fluorene		0.03	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	Naphthalene		0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	Phenanthrene		0.22	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	Pyrene		0.04	ug/Filter	0.01	AC-066	01-Sep-22
22080342-002	Retene		0.07	ug/Filter	0.01	AC-066	01-Sep-22

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: A. Prefontaine, Manager, Chemical Testing

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 27, 2022	28941	Ambient Air	27-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080342 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080342-001	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	03-Sep-22
22080342-001	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	03-Sep-22
22080342-001	1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Sep-22
22080342-001	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Sep-22
22080342-001	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Sep-22
22080342-001	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Sep-22
22080342-001	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Sep-22
22080342-001	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Sep-22
22080342-001	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	03-Sep-22
22080342-001	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	03-Sep-22
22080342-001	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	03-Sep-22
22080342-001	1-Butene/Isobutylene	K, T, U	< 0.06	ppbv	0.06	AC-058	03-Sep-22
22080342-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	03-Sep-22
22080342-001	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Sep-22
22080342-001	2,2,4-Trimethylpentane	I	0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	2,2-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	03-Sep-22
22080342-001	2,3-Dimethylpentane	I	0.03	ppbv	0.02	AC-058	03-Sep-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 27, 2022	28941	Ambient Air	27-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080342 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080342-001	2,4-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Sep-22
22080342-001	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	2-Methylhexane	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Sep-22
22080342-001	2-Methylpentane	I	0.06	ppbv	0.02	AC-058	03-Sep-22
22080342-001	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Sep-22
22080342-001	3-Methylhexane	I	0.04	ppbv	0.02	AC-058	03-Sep-22
22080342-001	3-Methylpentane	I	0.04	ppbv	0.02	AC-058	03-Sep-22
22080342-001	Acetone		3.9	ppbv	0.4	AC-058	03-Sep-22
22080342-001	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	03-Sep-22
22080342-001	Benzene	I	0.10	ppbv	0.03	AC-058	03-Sep-22
22080342-001	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	03-Sep-22
22080342-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Sep-22
22080342-001	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	Carbon tetrachloride	I	0.07	ppbv	0.02	AC-058	03-Sep-22
22080342-001	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	Chloromethane		0.45	ppbv	0.04	AC-058	03-Sep-22
22080342-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Sep-22
22080342-001	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Sep-22
22080342-001	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	Cyclohexane	K, T, U	< 0.04	ppbv	0.04	AC-058	03-Sep-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 27, 2022	28941	Ambient Air	27-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080342 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080342-001	Cyclopentane	I	0.03	ppbv	0.02	AC-058	03-Sep-22
22080342-001	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	Ethanol	I	1.0	ppbv	0.5	AC-058	03-Sep-22
22080342-001	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	03-Sep-22
22080342-001	Ethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Sep-22
22080342-001	Freon-11		0.22	ppbv	0.02	AC-058	03-Sep-22
22080342-001	Freon-113	I	0.06	ppbv	0.02	AC-058	03-Sep-22
22080342-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Sep-22
22080342-001	Freon-12		0.54	ppbv	0.03	AC-058	03-Sep-22
22080342-001	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	03-Sep-22
22080342-001	Isobutane		0.23	ppbv	0.03	AC-058	03-Sep-22
22080342-001	Isopentane		0.38	ppbv	0.04	AC-058	03-Sep-22
22080342-001	Isoprene		1.87	ppbv	0.02	AC-058	03-Sep-22
22080342-001	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	03-Sep-22
22080342-001	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	03-Sep-22
22080342-001	m,p-Xylene	K, T, U	< 0.04	ppbv	0.04	AC-058	03-Sep-22
22080342-001	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	m-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Sep-22
22080342-001	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	03-Sep-22
22080342-001	Methyl ethyl ketone	I	0.3	ppbv	0.3	AC-058	03-Sep-22
22080342-001	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	03-Sep-22
22080342-001	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	03-Sep-22
22080342-001	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Sep-22
22080342-001	Methylcyclohexane	I	0.03	ppbv	0.02	AC-058	03-Sep-22
22080342-001	Methylcyclopentane	K, T, U	< 0.05	ppbv	0.05	AC-058	03-Sep-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 27, 2022	28941	Ambient Air	27-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080342 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080342-001	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	03-Sep-22
22080342-001	n-Butane		0.51	ppbv	0.02	AC-058	03-Sep-22
22080342-001	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	03-Sep-22
22080342-001	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	03-Sep-22
22080342-001	n-Heptane	K, T, U	< 0.04	ppbv	0.04	AC-058	03-Sep-22
22080342-001	n-Hexane	I	0.06	ppbv	0.03	AC-058	03-Sep-22
22080342-001	n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	n-Pentane		0.25	ppbv	0.04	AC-058	03-Sep-22
22080342-001	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	03-Sep-22
22080342-001	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	03-Sep-22
22080342-001	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	03-Sep-22
22080342-001	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	03-Sep-22
22080342-001	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Sep-22
22080342-001	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	03-Sep-22
22080342-001	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	03-Sep-22
22080342-001	Tetrachloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	03-Sep-22
22080342-001	Toluene	I	0.11	ppbv	0.03	AC-058	03-Sep-22
22080342-001	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	03-Sep-22
22080342-001	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	03-Sep-22
22080342-001	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22
22080342-001	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Aug 27, 2022	28941	Ambient Air	27-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080342 **REPORT CREATED:** 19-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080342-001	Vinyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	03-Sep-22
22080342-001	Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	03-Sep-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: Monday, September 19, 2022 Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
22080342	01	19-Sep-22	Report created

Methods

Method	Description
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-066	Polycyclic Aromatic Hydrocarbons from 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

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.

Partisol Samples

Sample ID: 22080145-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: C9698029

l 2000i-D Sample Data Sheet

AUG 12 2022

Date Sampled:	3-Aug-22
Location:	Cold Lake South
Parameter:	PM 2.5 / PM 10
Start Time	0:00
End Time	23:59
Valid Time	24 hours
Total Time	24 hours
Status	Done

	FINE (1)	COURSE (2)
Filter Type:	47mm	47mm
Filter #:	C9698029	C9698030
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	16.6	
Pressure	707	
Std Volume (Instrument)	20.8	2.32

Comments: Weather Conditions, etc.

n/a

Last Audit Date: 25-Mar-22

Install by (Sign/Date): Alex Yakupov Date: 2-Aug-22

Removed by (Sign/Date) Alex Yakupov Date: 8-Aug-22

Programming
1) Make sure system is in "Stop Mode"
2) Sample Setup >Apply EPA times (start at 00:00 for 24hrs)
3) Navigate to SAMPLE 1 and check/correct START and STOP date/time
4) Make sure to SAVE changes
5). Make sure system is left in WAIT mode

Sample ID: 22080145-002 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: C9698030

Filter Shipping Record

RECEIVED
AUG 12 2022

Sent To: R&B Moving Systems
3410-50 Street
Cold Lake, AB T9M 1S6
(Purolator Depot)
HFPO: Alex Yakupov, BV Labs
780-545-9363

Date: July 8- 2022

Project: LICA/Bureau Veritas Labs

Prepared by: S Zelenka

For information contact:
EAS.Reception@albertainnovates.ca

Filter Size	# of Filters (in cassettes)	Filter IDs
47 mm	2	C9698029 → C9698030

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID	Matrix
C9698029	Air Filter

CANISTER ID:
PRIORITY: Normal
DESCRIPTION: Cold Lake South - PM 2.5 - Fine

DATE SAMPLED: 03-Aug-22 0:00
DATE RECEIVED: 12-Aug-22
REPORT CREATED: 22-Aug-22
REPORT NUMBER: 22080145
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080145-001	Particulate Weight		0.088	mg	0.004	AC-029	15-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: August 22, 2022

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
C9698030		Air Filter	03-Aug-22 0:00

DESCRIPTION: Cold Lake South - PM 10 - Coarse

REPORT NUMBER: 22080145 **REPORT CREATED:** 22-Aug-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080145-002	Particulate Weight		0.077	mg	0.004	AC-029	15-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: August 22, 2022

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
22080145	01	22-Aug-22	Report created

Methods

Method	Description
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance

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

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

Order Comments

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: 22080194-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: C9696417

RECEIVED
AUG 16 2022

ol 2000i-D Sample Data Sheet

Date Sampled:	9-Aug-22
Location:	Cold Lake South
Parameter:	PM 2.5 / PM 10
Start Time	0:00
End Time	23:59
Valid Time	24 hours
Total Time	24 hours
Status	Done

	FINE (1)	COURSE (2)
Filter Type:	47mm	47mm
Filter #:	C9696417	C9696418
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	17.7	
Pressure	715	
Std Volume (Instrument)	20.9	2.33

Comments: Weather Conditions, etc.

n/a

Last Audit Date: 25-Mar-22

Install by (Sign/Date): Alex Yakupov Date: 8-Aug-22

Removed by (Sign/Date) Alex Yakupov Date: 12-Aug-22

Programming
1) Make sure system is in "Stop Mode"
2) Sample Setup >Apply EPA times (start at 00:00 for 24hrs)
3) Navigate to SAMPLE 1 and check/correct START and STOP date/time
4) Make sure to SAVE changes
5). Make sure system is left in WAIT mode

Sample ID: 22080194-002 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: C9696418

RECEIVED
AUG 16 2022

Filter Shipping Record

Sent To: R&B Moving Systems
3410-50 Street
Cold Lake, AB T9M 1S6
(Purolator Depot)
HFPO: Alex Yakupov, BV Labs
780-545-9363

Date: May 11 2022

Project: LICA/Bureau Veritas Labs

Prepared by: S Melenka

For information contact:
EAS.Reception@albertainnovates.ca

Filter Size	# of Filters (in cassettes)	Filter IDs
47 mm	2	C9696417 → C9696418

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID	Matrix
C9696417	Air Filter

CANISTER ID:
PRIORITY: Normal
DESCRIPTION: Cold Lake South - PM 2.5 - Fine

DATE SAMPLED: 09-Aug-22 0:00
DATE RECEIVED: 16-Aug-22
REPORT CREATED: 24-Aug-22
REPORT NUMBER: 22080194
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080194-001	Particulate Weight		0.040	mg	0.004	AC-029	19-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: August 24, 2022

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
C9696418		Air Filter	09-Aug-22 0:00

DESCRIPTION: Cold Lake South - PM 10 - Coarse

REPORT NUMBER: 22080194 **REPORT CREATED:** 24-Aug-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080194-002	Particulate Weight		0.070	mg	0.004	AC-029	19-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: August 24, 2022

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
22080194	01	24-Aug-22	Report created

Methods

Method	Description
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance

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

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

Order Comments

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.

Partisol 2000i-D Sample Data Sheet

Date Sampled:	15-Aug-22
Location:	Cold Lake South
Parameter:	PM 2.5 / PM 10
Start Time	0:00
End Time	23:59
Valid Time	24 hours
Total Time	24 hours
Status	Done

Sample ID: 22080240-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: C9696412

	FINE (1) (1)	COURSE (2) (2)
Filter Type:	47mm	47mm
Filter #:	C9696412	C9702884
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	21.8	
Pressure	712	
Std Volume (Instrument)	20.6	2.29

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Alex Yakupov Date: 12-Aug-22

Removed by (Sign/Date) Alex Yakupov Date: 17-Aug-22

Programming
1) Make sure system is in "Stop Mode"
2) Sample Setup >Apply EPA times (start at 00:00 for 24hrs)
3) Navigate to SAMPLE 1 and check/correct START and STOP date/time
4) Make sure to SAVE changes
5) **Make sure system is left in WAIT mode**

Sample ID: 22080240-002 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: C8702884

RECEIVED
AUG 19 2022

Filter Shipping Record

Sent To: R&B Moving Systems
3410-50 Street
Cold Lake, AB T9M 1S6
(Purolator Depot)
HFPO: Alex Yakupov, BV Labs
780-545-9363

Date: May 11 2022

Project: LICA/Bureau Veritas Labs

Prepared by:

For information contact:
EAS.Reception@albertainnovates.ca

Filter Size	# of Filters (in cassettes)	Filter IDs
47 mm	1	C9702884
	1	C9696412

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID
C9696412

Matrix
Air Filter

CANISTER ID:

PRIORITY: Normal

DESCRIPTION: Cold Lake South

DATE SAMPLED: 15-Aug-22 0:00

DATE RECEIVED: 19-Aug-22

REPORT CREATED: 26-Aug-22

REPORT NUMBER: 22080240

VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080240-001	Particulate Weight		0.051	mg	0.004	AC-029	26-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: August 26, 2022

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
C9702884		Air Filter	15-Aug-22 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 22080240 **REPORT CREATED:** 26-Aug-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080240-002	Particulate Weight		0.103	mg	0.004	AC-029	26-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: August 26, 2022

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
22080240	01	26-Aug-22	Report created

Methods

Method	Description
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance

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

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

Order Comments

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: 22080335-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: C9698023

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...l 2000i-D Sample Data Sheet

Date Sampled:	21-Aug-22
Location:	Cold Lake South
Parameter:	PM 2.5 / PM 10
Start Time	0:00
End Time	23:59
Valid Time	24 hours
Total Time	24 hours
Status	Done

	FINE (1)	COURSE (2)
Filter Type:	47mm	47mm
Filter #:	C9698023	C9698024
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	~~19.3~~ 18.1	
Pressure	713.5 mm Hg	
Std Volume (Instrument)	20.8 m^3	2.31 m^3

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Alex Yakupov Date: 17-Aug-22

Removed by (Sign/Date) Ferdinand Roy Date: 24/Aug/2022

Programming
1) Make sure system is in "Stop Mode"
2) Sample Setup >Apply EPA times (start at 00:00 for 24hrs)
3) Navigate to SAMPLE 1 and check/correct START and STOP date/time
4) Make sure to SAVE changes
5). Make sure system is left in WAIT mode

Sample ID: 22080335-002 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: C9698024

Filter Shipping Record

Sent To: R&B Moving Systems
3410-50 Street
Cold Lake, AB T9M 1S6
(Purolator Depot)
HFPO: Alex Yakupov, BV Labs
780-545-9363

Date: July 8-2022

Project: LICA/Bureau Veritas Labs

Prepared by: S Jelenka

For information contact:
EAS.Reception@albertainnovates.ca

Filter Size	# of Filters (in cassettes)	Filter IDs
47 mm	2	C9698023 → C9698024

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID	Matrix
C9698023	Air Filter

CANISTER ID:
PRIORITY: Normal
DESCRIPTION: Cold Lake South - PM 2.5 - Fine

DATE SAMPLED: 21-Aug-22 0:00
DATE RECEIVED: 26-Aug-22
REPORT CREATED: 14-Sep-22
REPORT NUMBER: 22080335
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080335-001	Particulate Weight		0.842	mg	0.004	AC-029	31-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 14, 2022

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.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
C9698024		Air Filter	21-Aug-22 0:00

DESCRIPTION: Cold Lake South - PM 10 - Coarse

REPORT NUMBER: 22080335 **REPORT CREATED:** 14-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080335-002	Particulate Weight		0.174	mg	0.004	AC-029	31-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 14, 2022

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
22080335	01	14-Sep-22	Report created

Methods

Method	Description
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance

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

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

Order Comments

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: 22080341-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: C9698026

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ol 2000i-D Sample Data Sheet

Date Sampled:	27-Aug-22
Location:	Cold Lake South
Parameter:	PM 2.5 / PM 10
Start Time	0:00
End Time	23:59
Valid Time	24 hours
Total Time	24 hours
Status	Done

	FINE (1)	COURSE (2)
Filter Type:	47mm	47mm
Filter #:	C9698026	C9698025
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	21.4	
Pressure	698	
Std Volume (Instrument)	20.2	2.25

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Ferdinand Roy Date: 22-Aug-22

Removed by (Sign/Date) Alex Yakupov Date: 27-Aug-22

Programming
1) Make sure system is in "Stop Mode"
2) Sample Setup >Apply EPA times (start at 00:00 for 24hrs)
3) Navigate to SAMPLE 1 and check/correct START and STOP date/time
4) Make sure to SAVE changes
5). Make sure system is left in WAIT mode

Sample ID: 22080341-002 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: C9698025

RECEIVED
AUG 30 2022

Filter Shipping Record

Sent To: R&B Moving Systems
3410-50 Street
Cold Lake, AB T9M 1S6
(Purolator Depot)
HFPO: Alex Yakupov, BV Labs
780-545-9363

Date: July 8-2022

Project: LICA/Bureau Veritas Labs

Prepared by: S Mielnik

For information contact:
EAS.Reception@albertainnovates.ca

Filter Size	# of Filters (in cassettes)	Filter IDs
47 mm	2	C9698025 → C9698026

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID	Matrix
C9698025	Air Filter

CANISTER ID:
PRIORITY: Normal
DESCRIPTION: Cold Lake South - PM 10 - Coarse

DATE SAMPLED: 27-Aug-22 0:00
DATE RECEIVED: 30-Aug-22
REPORT CREATED: 14-Sep-22
REPORT NUMBER: 22080341
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080341-002	Particulate Weight		0.186	mg	0.004	AC-029	31-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 14, 2022

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
C9698026		Air Filter	27-Aug-22 0:00

DESCRIPTION: Cold Lake South - PM 2.5 - Fine

REPORT NUMBER: 22080341 **REPORT CREATED:** 14-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080341-001	Particulate Weight		0.184	mg	0.004	AC-029	31-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 14, 2022

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
22080341	01	14-Sep-22	Report created

Methods

Method	Description
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance

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

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

Order Comments

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.

Passive Samples

Passive Sampler Field Sheet for LICA, Aug 2022 sample period

ID	SAMPLER				START		END		NOTES
					DATE	TIME	DATE	TIME	
3	H_2S	SO_2	NO_2	O_3	Jul 29	15:45	Aug 30	17:25	
4	---	SO_2	NO_2	O_3	Aug 2	12:45	Aug 31	12:17	
5	H_2S	SO_2	NO_2	O_3	Aug 2	14:40	Aug 31	13:05	
6	---	SO_2	NO_2	O_3	Aug 2	16:01	Aug 31	14:45	
8	---	SO_2	NO_2	O_3	Aug 2	11:45	Aug 31	11:12	
9	---	SO_2	NO_2	O_3	Jul 29	17:35	Aug 30	16:17	
10	H_2S	SO_2	NO_2	O_3	Aug 3	16:45	Sep 1	17:06	
11	H_2S	SO_2	NO_2	O_3	Aug 3	16:15	Sep 1	16:51	
12	H2S	SO2	NO2	O3	Aug 3	15:10	Sep 1	15:29	
13	H_2S	SO_2	NO_2	O_3	Jul 29	14:50	Aug 30	15:00	
14	H_2S	SO_2	NO_2	O_3	Jul 29	13:05	Aug 30	13:50	water isotope sample taken
15	---	SO_2	NO_2	O_3	Jul 29	18:25	Aug 30	19:05	
16	H_2S	SO_2	NO_2	O_3	Aug 2	18:46	Aug 31	15:48	
17	H_2S	SO_2	NO_2	O_3	Aug 2	16:50	Aug 31	16:52	
18	H_2S	SO_2	NO_2	O_3	Aug 2	18:02	Aug 31	17:15	H_2S/O_3 passives found damaged
19	---	SO_2	NO_2	O_3	Aug 2	19:35	Aug 31	18:45	
22	H_2S	SO_2	NO_2	O_3	Aug 3	18:40	Aug 30	09:25	
23	---	SO_2	NO_2	O_3	Jul 29	10:58	Aug 30	12:25	
24	H_2S	SO_2	NO_2	O_3	Aug 2	15:20	Aug 31	13:46	
25	H2S	SO2	---	---					
26	H_2S	SO_2	---	---	Jul 29	13:35	Aug 30	14:20	
27	H_2S	SO_2	---	---	Jul 29	12:52	Aug 30	13:30	
28	---	SO_2	NO_2	O_3	Jul 29	17:50	Aug 30	19:32	
29	H_2S	SO_2	NO_2	O_3	Aug 3	18:44	Aug 30	09:34	
32	H_2S	SO_2	NO_2	O_3	Jul 29	16:40	Aug 30	18:20	
42	H_2S	SO_2	NO_2	O_3	Aug 3	12:25	Sep 1	12:41	
DUPLICATES									
19	---	---	NO_2	O_3	Aug 2	19:35	Aug 31	18:45	
22	---	---	NO_2	O_3	~~Jul 29~~	~~16:40~~ A.T.	Aug 30	09:25	inst. Aug 03/18:40
3	---	SO2	---	---	Jul 29	15:45	Aug 30	17:25	
4	---	SO2	---	---	Aug 2	12:45	Aug 31	12:17	
5	---	SO2	---	---	Aug 2	14:40	Aug 31	13:05	
10	H2S	---	---	---	Aug 3	16:45	Sep 1	17:06	
11	H_2S	---	---	---	Aug 3	16:15	Sep 1	16:51	

RECEIVED
SEP 08 2022
@ 08:00

28 NO2
22 H2S
27 O3
33 SO2

Your Project #: AUGUST PASSIVES
Site Location: BONNYVILLE, AB

Attention: Monitoring

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
PO BOX 8237
5107W- 50TH STREET
BONNYVILLE, AB
CANADA T9N 2J5

Report Date: 2022/09/20
Report #: R3234932
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C268841
Received: 2022/09/08, 08:00

Sample Matrix: Air
Samples Received: 32

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
H2S Passive Analysis	19	2022/09/15	2022/09/19	PTC SOP-00150	Passive H2S in ATM
NO2 Passive Analysis	25	2022/09/12	2022/09/19	PTC SOP-00148	Passive NO2 in ATM
O3 Passive Analysis	25	2022/09/14	2022/09/19	PTC SOP-00197	EPA 300 R2.1
SO2 Passive Analysis	28	2022/09/09	2022/09/19	PTC SOP-00149	Passive SO2 in ATM

Results relate only to the items tested.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Belma Elefante
Customer Service Associate
20 Sep 2022 09:13:57

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Customer Service Passives,
Email: PassiveAir@bureauveritas.com
Phone# (780) 378-8500

==========

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For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C268841
Report Date: 2022/09/20

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: AUGUST PASSIVES
Site Location: BONNYVILLE, AB
Sampler Initials: AY

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		BBM541			BBM542			BBM549		
Sampling Date		2022/07/29 15:45			2022/08/02 12:45			2022/08/02 14:40		
	UNITS	3	RDL	QC Batch	4	RDL	QC Batch	5	RDL	QC Batch
Passive Monitoring										
Calculated H2S	ppb	0.28	0.02	A717683				1.21	0.02	A717683
Calculated NO2	ppb	0.6	0.1	A709925	0.4	0.1	A709925	0.4	0.1	A709925
Calculated O3	ppb	28.2	0.1	A714864	31.9	0.1	A714864	24.5	0.1	A714864
Calculated SO2	ppb	0.3	0.1	A710250	0.5	0.1	A710250	0.7	0.1	A710250
RDL = Reportable Detection Limit										

Bureau Veritas ID		BBM550	BBM551	BBM552			BBM553	BBM554	BBM555		
Sampling Date		2022/08/02 16:01	2022/08/02 11:45	2022/07/29 17:35			2022/08/03 16:45	2022/08/03 16:15	2022/08/03 15:20		
	UNITS	6	8	9	RDL	QC Batch	10	11	12	RDL	QC Batch
Passive Monitoring											
Calculated H2S	ppb						0.46	0.15	0.13	0.02	A717683
Calculated NO2	ppb	1.9	0.3	0.7	0.1	A709925	2.7	0.9	0.1	0.1	A709925
Calculated O3	ppb	20.8	32.0	20.3	0.1	A714864	21.5	18.7	20.5	0.1	A714864
Calculated SO2	ppb	0.6	0.7	0.4	0.1	A710250	0.5	0.3	0.3	0.1	A710250
RDL = Reportable Detection Limit											

Bureau Veritas ID		BBM556	BBM557			BBM558			BBM559	BBM560		
Sampling Date		2022/07/29 14:50	2022/07/29 13:15			2022/07/29 18:25			2022/08/02 18:46	2022/08/02 16:50		
	UNITS	13	14	RDL	QC Batch	15	RDL	QC Batch	16	17	RDL	QC Batch
Passive Monitoring												
Calculated H2S	ppb	0.14	0.41	0.02	A717683				0.34	0.68	0.02	A717683
Calculated NO2	ppb	0.2	0.8	0.1	A711688	0.7	0.1	A711688	0.6	0.6	0.1	A711688
Calculated O3	ppb	16.4	27.8	0.1	A714864	17.1	0.1	A714864	20.0	25.0	0.1	A714864
Calculated SO2	ppb	0.3	1.3	0.1	A710250	0.4	0.1	A710250	0.3	0.5	0.1	A710250
RDL = Reportable Detection Limit												

Bureau Veritas ID		BBM563			BBM564			BBM565		
Sampling Date		2022/08/02 18:02			2022/08/02 19:35			2022/08/03 18:40		
	UNITS	18	RDL	QC Batch	19	RDL	QC Batch	22	RDL	QC Batch
Passive Monitoring										
Calculated H2S	ppb	0.24	0.02	A717683				0.34	0.02	A717683
Calculated NO2	ppb	0.3	0.1	A711688	0.4	0.1	A711688	0.5	0.1	A711688
Calculated O3	ppb	DAMAGED	0.1	A714864	26.2	0.1	A714864	18.6	0.1	A714864
Calculated SO2	ppb	0.2	0.1	A710250	0.4	0.1	A710250	0.3	0.1	A710250
RDL = Reportable Detection Limit										

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C268841
Report Date: 2022/09/20

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: AUGUST PASSIVES
Site Location: BONNYVILLE, AB
Sampler Initials: AY

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		BBM566			BBM567			BBM568		BBM569		
Sampling Date		2022/07/29 10:53			2022/08/02 15:20			2022/07/29 13:35		2022/07/29 12:52		
	UNITS	23	RDL	QC Batch	24	RDL	QC Batch	26	QC Batch	27	RDL	QC Batch
Passive Monitoring												
Calculated H2S	ppb				0.43	0.02	A717683	0.28	A717683	2.70	0.02	A717683
Calculated NO2	ppb	<0.1	0.1	A711688	1.2	0.1	A711688					
Calculated O3	ppb	19.2	0.1	A714864	24.2	0.1	A714864					
Calculated SO2	ppb	0.1	0.1	A710250	0.5	0.1	A710250	0.7	A710250	1.7	0.1	A710253
RDL = Reportable Detection Limit												

Bureau Veritas ID		BBM570			BBM571	BBM572	BBM577			BBM580		
Sampling Date		2022/07/29 17:50			2022/08/03 18:44	2022/07/29 16:40	2022/08/03 12:25			2022/08/02 19:35		
	UNITS	28	RDL	QC Batch	29	32	42	RDL	QC Batch	19 DUP	RDL	QC Batch
Passive Monitoring												
Calculated H2S	ppb				0.37	0.53	0.39	0.02	A717683			
Calculated NO2	ppb	1.2	0.1	A711688	0.4	0.2	0.5	0.1	A711688	0.3	0.1	A711688
Calculated O3	ppb	23.8	0.1	A714864	26.2	30.5	32.2	0.1	A714867	25.7	0.1	A714867
Calculated SO2	ppb	0.7	0.1	A710253	0.4	0.4	0.4	0.1	A710253			
RDL = Reportable Detection Limit												

Bureau Veritas ID		BBM581			BBM582	BBM576	BBM585			BBM578		
Sampling Date		2022/08/03 18:40			2022/07/29 15:45	2022/08/02 12:45	2022/08/02 16:40			2022/08/03 04:45		
	UNITS	22 DUP	RDL	QC Batch	3 DUP	4 DUP	5 DUP	RDL	QC Batch	10 DUP	RDL	QC Batch
Passive Monitoring												
Calculated H2S	ppb									0.44	0.02	A717689
Calculated NO2	ppb	0.5	0.1	A711688								
Calculated O3	ppb	22.9	0.1	A714867								
Calculated SO2	ppb				0.3	0.5	0.7	0.1	A710253			
RDL = Reportable Detection Limit												

Bureau Veritas ID		BBM579		
Sampling Date		2022/08/03 16:15		
	UNITS	11 DUP	RDL	QC Batch
Passive Monitoring				
Calculated H2S	ppb	0.15	0.02	A717689
RDL = Reportable Detection Limit				

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GENERAL COMMENTS

Field blank BBM575-1(SO2-3) has high result. It is removed from blank subtraction calculation. --YL6 20220919

Sample BBM563 [18] : 20220915 XZ: H2S was received with broken barrier.

Results relate only to the items tested.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C268841
Report Date: 2022/09/20

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: AUGUST PASSIVES
Site Location: BONNYVILLE, AB
Sampler Initials: AY

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A709925	XSZ	Spiked Blank	Calculated NO2			101	%	90 - 110
A709925	XSZ	Method Blank	Calculated NO2		<0.1		ppb	
A710250	OZ	Spiked Blank	Calculated SO2			102	%	90 - 110
A710250	OZ	Method Blank	Calculated SO2		<0.1		ppb	
A710253	OZ	Spiked Blank	Calculated SO2			99	%	90 - 110
A710253	OZ	Method Blank	Calculated SO2		<0.1		ppb	
A711688	XSZ	Spiked Blank	Calculated NO2			99	%	90 - 110
A711688	XSZ	Method Blank	Calculated NO2		<0.1		ppb	
A714864	XSZ	Spiked Blank	Calculated O3			99	%	90 - 110
A714864	XSZ	Method Blank	Calculated O3		<0.1		ppb	
A714867	XSZ	Spiked Blank	Calculated O3			99	%	90 - 110
A714867	XSZ	Method Blank	Calculated O3		<0.1		ppb	
A717683	XSZ	Spiked Blank	Calculated H2S			100	%	90 - 110
A717689	XSZ	Spiked Blank	Calculated H2S			100	%	90 - 110

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C268841
Report Date: 2022/09/20

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: AUGUST PASSIVES
Site Location: BONNYVILLE, AB
Sampler Initials: AY

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Yang Liu

Yang Liu, Analyst II

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Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Lac La Biche Station

Non- Methane Hydrocarbons (NMHCs) Canister Samples

Sample ID: 22080273-001 Priority: Normal

Customer ID: LICA
Cust Samp ID: LICA/LLB/NMHC/Aug 18, 2022

AIR FCD-01320/2

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Maxxam

VOC Sample Collection Data Sheet

Client: LICA
Location: LLB
Station ID: LICA
Field Sample ID: LICA/LLB/NMHC/Aug 18, 2022

Sampler S/N: n/a
Canister ID: 29024
Canister Installation Date/Time: Jul 15, 2022 / 12:24
Canister Removal Date/Time: Aug 19, 2022 / 11:45

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
Aug 18, 2022	00:45	n/a	n/a

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
n/a	n/a	n/a

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Vacuum (inHg)
-27.2	-2.0

Canister valve open prior to sampling?: (YES) / NO

Canister valve closed prior to disconnection?: (YES) / NO

Comments: (NMHC canister)

Technician Signiture: Alex Yakupov Date: Aug 19, 2022 / 11:45

InnoTech ALBERTA

Canister ID: 29024

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ3 on: JUN 0 8 2022

Evacuated: JUN 17 2022 Recertified: JUL 04 2022

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

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/LLB/NMHC/Aug 18, 2022

Sampled By: Alex Katsupov

Starting Vacuum:	End Vacuum:
-27.2 "Hg	-2.0 "Hg/psig -3 KG

Sample ID: 22080273-001 **Priority:** Normal

Customer ID: LICA

Cust Samp ID: LICA/LLB/NMHC/Aug 18, 2022

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID: LICA/LLB/NMHC/Aug 18, 2022

Matrix: Ambient Air

CANISTER ID: 29024
PRIORITY: Normal
DESCRIPTION: LLB

DATE SAMPLED: 18-Aug-22 0:00
DATE RECEIVED: 23-Aug-22
REPORT CREATED: 06-Sep-22
REPORT NUMBER: 22080273
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080273-001	1,1,1-Trichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080273-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080273-001	1,1,2-Trichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080273-001	1,1-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080273-001	1,1-Dichloroethylene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080273-001	1,2,3-Trimethylbenzene		0.25	ppbv	0.07	AC-058	28-Aug-22
22080273-001	1,2,4-Trichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Aug-22
22080273-001	1,2,4-Trimethylbenzene		1.16	ppbv	0.04	AC-058	28-Aug-22
22080273-001	1,2-Dibromoethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080273-001	1,2-Dichlorobenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080273-001	1,2-Dichloroethane	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080273-001	1,2-Dichloropropane	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080273-001	1,3,5-Trimethylbenzene		0.35	ppbv	0.04	AC-058	28-Aug-22
22080273-001	1,3-Butadiene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080273-001	1,3-Dichlorobenzene	K, T, U	< 0.6	ppbv	0.6	AC-058	28-Aug-22
22080273-001	1,4-Dichlorobenzene	K, T, U	< 0.6	ppbv	0.6	AC-058	28-Aug-22
22080273-001	1,4-Dioxane	K, T, U	< 0.7	ppbv	0.7	AC-058	28-Aug-22
22080273-001	1-Butene/Isobutylene	K, T, U	< 0.09	ppbv	0.09	AC-058	28-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 6, 2022

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.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
LICA/LLB/NMHC/Aug 18, 2022	29024	Ambient Air	18-Aug-22 0:00

DESCRIPTION: LLB

REPORT NUMBER: 22080273 **REPORT CREATED:** 06-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080273-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.10	ppbv	0.10	AC-058	28-Aug-22
22080273-001	1-Pentene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080273-001	2,2,4-Trimethylpentane		0.62	ppbv	0.03	AC-058	28-Aug-22
22080273-001	2,2-Dimethylbutane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080273-001	2,3,4-Trimethylpentane		0.29	ppbv	0.03	AC-058	28-Aug-22
22080273-001	2,3-Dimethylbutane	K, T, U	< 0.13	ppbv	0.13	AC-058	28-Aug-22
22080273-001	2,3-Dimethylpentane		0.40	ppbv	0.03	AC-058	28-Aug-22
22080273-001	2,4-Dimethylpentane	I	0.14	ppbv	0.04	AC-058	28-Aug-22
22080273-001	2-Methylheptane		0.29	ppbv	0.03	AC-058	28-Aug-22
22080273-001	2-Methylhexane		0.34	ppbv	0.04	AC-058	28-Aug-22
22080273-001	2-Methylpentane		0.20	ppbv	0.03	AC-058	28-Aug-22
22080273-001	3-Methylheptane		0.22	ppbv	0.04	AC-058	28-Aug-22
22080273-001	3-Methylhexane		0.35	ppbv	0.03	AC-058	28-Aug-22
22080273-001	3-Methylpentane		0.21	ppbv	0.03	AC-058	28-Aug-22
22080273-001	Acetone		3.1	ppbv	0.6	AC-058	28-Aug-22
22080273-001	Acrolein	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Aug-22
22080273-001	Benzene	I	0.21	ppbv	0.04	AC-058	28-Aug-22
22080273-001	Benzyl chloride	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Aug-22
22080273-001	Bromodichloromethane	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080273-001	Bromoform	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080273-001	Bromomethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080273-001	Carbon disulfide	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080273-001	Carbon tetrachloride	I	0.06	ppbv	0.03	AC-058	28-Aug-22
22080273-001	Chlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080273-001	Chloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 6, 2022

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.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
LICA/LLB/NMHC/Aug 18, 2022	29024	Ambient Air	18-Aug-22 0:00

DESCRIPTION: LLB

REPORT NUMBER: 22080273 **REPORT CREATED:** 06-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080273-001	Chloroform	I	0.03	ppbv	0.03	AC-058	28-Aug-22
22080273-001	Chloromethane		0.48	ppbv	0.06	AC-058	28-Aug-22
22080273-001	cis-1,2-Dichloroethene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080273-001	cis-1,3-Dichloropropene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080273-001	cis-2-Butene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080273-001	cis-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080273-001	Cyclohexane	I	0.11	ppbv	0.06	AC-058	28-Aug-22
22080273-001	Cyclopentane	I	0.05	ppbv	0.03	AC-058	28-Aug-22
22080273-001	Dibromochloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080273-001	Ethanol		5.6	ppbv	0.7	AC-058	28-Aug-22
22080273-001	Ethyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Aug-22
22080273-001	Ethylbenzene		0.63	ppbv	0.04	AC-058	28-Aug-22
22080273-001	Freon-11		0.21	ppbv	0.03	AC-058	28-Aug-22
22080273-001	Freon-113	I	0.05	ppbv	0.03	AC-058	28-Aug-22
22080273-001	Freon-114	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080273-001	Freon-12		0.51	ppbv	0.04	AC-058	28-Aug-22
22080273-001	Hexachloro-1,3-butadiene	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Aug-22
22080273-001	Isobutane		0.16	ppbv	0.04	AC-058	28-Aug-22
22080273-001	Isopentane		0.40	ppbv	0.06	AC-058	28-Aug-22
22080273-001	Isoprene		4.45	ppbv	0.03	AC-058	28-Aug-22
22080273-001	Isopropyl alcohol	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Aug-22
22080273-001	Isopropylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	28-Aug-22
22080273-001	m,p-Xylene		2.60	ppbv	0.06	AC-058	28-Aug-22
22080273-001	m-Diethylbenzene	I	0.04	ppbv	0.03	AC-058	28-Aug-22
22080273-001	m-Ethyltoluene		0.60	ppbv	0.04	AC-058	28-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 6, 2022

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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LICA/LLB/NMHC/Aug 18, 2022	29024	Ambient Air	18-Aug-22 0:00

DESCRIPTION: LLB

REPORT NUMBER: 22080273 **REPORT CREATED:** 06-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080273-001	Methyl butyl ketone	K, T, U	< 0.6	ppbv	0.6	AC-058	28-Aug-22
22080273-001	Methyl ethyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Aug-22
22080273-001	Methyl isobutyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Aug-22
22080273-001	Methyl methacrylate	K, T, U	< 0.12	ppbv	0.12	AC-058	28-Aug-22
22080273-001	Methyl tert butyl ether	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080273-001	Methylcyclohexane		0.38	ppbv	0.03	AC-058	28-Aug-22
22080273-001	Methylcyclopentane		0.31	ppbv	0.07	AC-058	28-Aug-22
22080273-001	Methylene chloride	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Aug-22
22080273-001	n-Butane		0.37	ppbv	0.03	AC-058	28-Aug-22
22080273-001	n-Decane	K, T, U	< 0.09	ppbv	0.09	AC-058	28-Aug-22
22080273-001	n-Dodecane	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Aug-22
22080273-001	n-Heptane		0.39	ppbv	0.06	AC-058	28-Aug-22
22080273-001	n-Hexane		0.33	ppbv	0.04	AC-058	28-Aug-22
22080273-001	n-Octane		0.30	ppbv	0.03	AC-058	28-Aug-22
22080273-001	n-Pentane		0.28	ppbv	0.06	AC-058	28-Aug-22
22080273-001	n-Propylbenzene	I	0.14	ppbv	0.09	AC-058	28-Aug-22
22080273-001	n-Undecane	K, T, U	< 0.7	ppbv	0.7	AC-058	28-Aug-22
22080273-001	Naphthalene	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Aug-22
22080273-001	n-Nonane		0.17	ppbv	0.06	AC-058	28-Aug-22
22080273-001	o-Ethyltoluene		0.23	ppbv	0.03	AC-058	28-Aug-22
22080273-001	o-Xylene		1.03	ppbv	0.04	AC-058	28-Aug-22
22080273-001	p-Diethylbenzene	I	0.11	ppbv	0.03	AC-058	28-Aug-22
22080273-001	p-Ethyltoluene	I	0.26	ppbv	0.06	AC-058	28-Aug-22
22080273-001	Styrene	K, T, U	< 0.06	ppbv	0.06	AC-058	28-Aug-22
22080273-001	Tetrachloroethylene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 6, 2022 Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

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DESCRIPTION: LLB

REPORT NUMBER: 22080273 **REPORT CREATED:** 06-Sep-22 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
22080273-001	Tetrahydrofuran	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Aug-22
22080273-001	Toluene		1.86	ppbv	0.04	AC-058	28-Aug-22
22080273-001	trans-1,2-Dichloroethylene	K, T, U	< 0.09	ppbv	0.09	AC-058	28-Aug-22
22080273-001	trans-1,3-Dichloropropylene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080273-001	trans-2-Butene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Aug-22
22080273-001	trans-2-Pentene	I	0.06	ppbv	0.03	AC-058	28-Aug-22
22080273-001	Trichloroethylene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22
22080273-001	Vinyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Aug-22
22080273-001	Vinyl chloride	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Aug-22

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: A. Prefontaine, Manager, Chemical Testing

Date: September 6, 2022

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
22080273	01	06-Sep-22	Report created

Methods

Method	Description
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry

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

22080273

NMHC Canister

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.

End of Report