



Lakeland Industry & Community Association

DECEMBER 2023

Monthly Ambient Air Quality Monitoring Integrated Sampling Report

LICA-202312-INTEGRATED

January 19, 2024

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January 19, 2024

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RE: LICA –December 2023 Monthly Ambient Air Quality Monitoring Integrated Sampling Report

Enclosed is the December 2023 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 (VOCs), polycyclic aromatic hydrocarbons (PAHs), polycyclic aromatic compounds (PAHs), particulate matter (PM_{2.5} and PM_{2.5-10}), ozone (O₃), hydrogen sulphide (H₂S), sulphur dioxide (SO₂), nitrogen dioxide (NO₂), ammonia (NH₃) and nitric acid (HNO₃).

The representative of the Person Responsible for this monitoring program is

LICA Airshed

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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 December 2023

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 December 2, 8, 14, 20 and 26.
- **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 December 2, 8, 14, 20 and 26.
- **Partisols**
 - Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) where applicable.
 - 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 December 2, 8, 14, 20 and 26.

- **Passives**

- There were no exceedances of the AAQOs for all monitored parameters at any of the passive stations during this month.
- The passive sample filters were installed at the stations between November 30 and December 2, and were removed between December 30, 2023 and January 3, 2024.
- A total of 13 duplicate samples were collected: 2 for H₂S, 3 for SO₂, 2 for NO₂, 2 for O₃, 2 for NMH₃ and 2 for HNO₃.
- A total of 6 blank samples were collected: 3 for NMH₃ and 3 for HNO₃.
- Station 8: Both the NO₂ and O₃ samples were damaged as the sample diffusion barriers were torn.
- Station 11 and Station 12: The SO₂ sample filter was missing in both stations.
- NMH₃ analytical results: Due to lab errors, sixteen NMH₃ samples were prepared incorrectly. The analytical results are unreportable. The affected stations included station 7, 8, 11, 14, 15, 16, 17 (duplicate sample), 18 (sample and duplicate sample), 22, 23, 24, 27, 29, Blank -1 and Blank -2.

Lac La Biche Station

- **Non-methane Hydrocarbons (NMHC) Canisters**

- 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.
- Two canister events were recorded this month; the canister system was triggered on December 7 at 12:10 when the NMHC concentration reached to 0.68 ppm at 12:05, and on December 14 at 08:45 when the NMHC concentration reached to 0.92 ppm at 08:40.
- To address issues of missing canister events, which occurred earlier this year, a pressure sensor was installed on the canister system on December 15. The pressure sensor is now connected to the datalogger so the pressure changes can be monitored daily. Alerts/ notifications are also setup to enhance the canister system's reliability.

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 the November/December monitoring period were installed between October 29 and November 3. The media were removed between December 30, 2023 and January 3, 2024.
- The media for the January/February 2024 monitoring period were installed between December 30, 2023 and January 3, 2024. The media are scheduled to be removed by the end February.

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).



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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.



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INTEGRATED SAMPLING RESULTS SUMMARY

COLD LAKE SOUTH STATION

- VOCs analytical results

Sample Date	2023-12-02	2023-12-08	2023-12-14	2023-12-20
Canister ID	28950	32243	A47746	A47740
Maximum Reading (ppbv)	1.4	1.56	1.3	0.7
Parameter	n-Butane	n-Butane	Acetone	Acetone
Sample Date	2023-12-26			
Canister ID	29029			
Maximum Reading (ppbv)	2.2			
Parameter	Ethanol			

- PAHs analytical results

Sample Date	2023-12-02		2023-12-08		2023-12-14		2023-12-20	
PUF S/N	TE-03		TE-06		TE-11		9802	
Volume (Vstd m³)	330.42		330.42		330.41		330.39	
Maximum Reading	ug	ng/m3	ug	ng/m3	ug	ng/m3	ug	ng/m3
	0.52	1.57	0.65	1.97	0.47	1.42	0.53	1.60
Parameter	Phenanthrene		2-Methylnaphthalene		2-Methylnaphthalene		Phenanthrene	
Sample Date	2023-12-26							
PUF S/N	P13-01							
Volume (Vstd m3)	330.40							
Maximum Reading	ug	ng/m3						
	0.74	2.24						
Parameter	Phenanthrene							

- Partisol analytical results

- PM_{2.5}

Sample Date	2023-12-02		2023-12-08		2023-12-14		2023-12-20	
Filter #	AT79026		AT85569		AT83968		AT85571	
Volume (Vstd m ³)	22.4		22.8		22.2		22.4	
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)
Particulate Matter	0.182	0.008	0.090	0.004	0.049	0.002	0.069	0.003
Sample Date	2023-12-26							
Filter #	AT83608							
Volume (Vstd m ³)	22.7							
Result	Result (mg)	Result (mg/m ³)						
Particulate Matter	0.040	0.002						

- PM_{2.5-10}

Sample Date	2023-12-02		2023-12-08		2023-12-14		2023-12-20	
Filter #	AT79040		AT85570		AT83967		AT85572	
Volume (Vstd m ³)	2.5		2.54		2.47		2.49	
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)
PM _{2.5-10} Mass	0.014	0.006	0.014	0.006	0.100	0.040	0.007	0.003
Sample Date	2023-12-26							
Filter #	AT83609							
Volume (Vstd m ³)	2.53							
Result	Result (mg)	Result (mg/m ³)						
PM _{2.5-10} Mass	0.035	0.014						

- **Passive analytical results**

	H₂S		NO₂		O₃		SO₂		NM_H3		HNO₃	
	Unit (ppb)		Unit (ppb)		Unit (ppb)		Unit (ppb)		Unit (ppb)		Unit (ug/m3)	
Minimum	0.14	#10	0.9	#23	11.9	#23	0.2	#16	0.1	#26	0.54	#8
Maximum	0.36	#27	8.4	#28	26.7	#32	2.2	#27	2.7	#3	2.34	#10
Average	0.21	-	3.85	-	18.80	-	0.51	-	1.21	-	1.04	-

LAC LA BICHE STATION

- **NMHC canister sample analytical results**

Sample Date / Time	2023-12-07 @12:10	2023-12-14 @08:45
Canister Triggered Conc. (ppm)	0.68	0.92
Canister ID	28955	32215
Maximum Reading (ppbv)	1.9	2.1
Parameter	Acetone	n-Butane

ANALYTICAL SAMPLING RESULTS

COLD LAKE SOUTH STATION

VOCS



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - December 2023

Volatile Organic Compounds (VOCs) Results

Sample Date		2023-12-02	2023-12-08	2023-12-14	2023-12-20	2023-12-26	
Canister ID		28950	32243	A47746	A47740	29029	
Method		AC-058	AC-058	AC-058	AC-058	AC-058	
Maximum Reading (ppbv)		1.4	1.56	1.3	0.7	2.2	
Parameter		n-Butane	n-Butane	Acetone	Acetone	Ethanol	
Parameter	AAQOs (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	0.02
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	0.3
1,2,4-Trimethylbenzene		< 0.03	< 0.03	0.08	0.05	0.08	0.03
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	0.03
1,2-Dichloropropane		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
1,3,5-Trimethylbenzene		< 0.03	< 0.03	0.07	0.04	0.05	0.03
1,3-Butadiene		< 0.03	< 0.03	0.03	< 0.03	0.04	0.03
1,3-Dichlorobenzene		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	0.4
1,4-Dichlorobenzene		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	0.4
1,4-Dioxane		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5
1-Butene		< 0.06	0.1	< 0.06	< 0.06	< 0.06	0.06
1-Hexene		< 0.07	< 0.07	< 0.07	< 0.07	< 0.07	0.07
1-Pentene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
2,2,4-Trimethylpentane		< 0.02	< 0.02	0.03	0.03	0.09	0.02
2,2-Dimethylbutane		< 0.02	< 0.02	0.05	0.03	0.04	0.02
2,3,4-Trimethylpentane		< 0.02	< 0.02	0.06	0.05	0.06	0.02
2,3-Dimethylbutane		< 0.09	< 0.09	0.1	< 0.09	0.11	0.09
2,3-Dimethylpentane		< 0.02	0.06	0.07	0.04	0.11	0.02
2,4-Dimethylpentane		< 0.03	< 0.03	0.05	0.04	0.06	0.03
2-Methylheptane		< 0.02	< 0.02	< 0.02	0.07	0.09	0.02
2-Methylhexane		< 0.03	0.12	0.05	< 0.03	0.07	0.03
2-Methylpentane		0.12	0.14	0.24	0.15	0.30	0.02
3-Methylheptane		< 0.03	< 0.03	0.07	0.06	0.07	0.03
3-Methylhexane		0.02	0.15	0.08	0.05	0.10	0.02
3-Methylpentane		0.05	0.05	0.1	0.06	0.15	0.02
Acetone	2400	0.5	0.8	1.3	0.7	0.7	0.4
Acrolein	1.9	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
Benzene	9.0	0.08	0.11	0.07	< 0.03	0.10	0.03
Benzyl chloride		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
Bromodichloromethane		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
Bromoform		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Bromomethane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Carbon disulfide	10	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Carbon tetrachloride		0.06	0.05	0.08	0.07	0.07	0.02
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		0.6	0.64	0.57	0.47	0.41	0.04
cis-1,2-Dichloroethene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
cis-1,3-Dichloropropene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
cis-2-Butene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
cis-2-Pentene		< 0.02	< 0.02	0.03	0.03	0.03	0.02
Cyclohexane		< 0.04	0.08	0.2	0.08	0.13	0.04
Cyclopentane		< 0.02	0.03	0.06	< 0.02	0.04	0.02
Dibromochloromethane		< 0.02	< 0.02	0.05	0.05	0.05	0.02
Ethanol		< 0.5	1.3	0.9	< 0.5	2.2	0.5
Ethyl acetate		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
Ethylbenzene	460	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
Freon-11		0.23	0.23	0.17	0.17	0.18	0.02
Freon-113		0.05	0.05	0.06	0.06	0.06	0.02
Freon-114		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - December 2023

Volatile Organic Compounds (VOCs) Results

Sample Date		2023-12-02	2023-12-08	2023-12-14	2023-12-20	2023-12-26	
Canister ID		28950	32243	A47746	A47740	29029	
Method		AC-058	AC-058	AC-058	AC-058	AC-058	
Maximum Reading (ppbv)		1.4	1.56	1.3	0.7	2.2	
Parameter		n-Butane	n-Butane	Acetone	Acetone	Ethanol	
Parameter	AAQOs (ppbv)	Result (ppbv)	Result (ppbv)	Result (ppbv)	Result (ppbv)	Result (ppbv)	RDL (ppbv)
Freon-12		0.58	0.59	0.52	0.49	0.51	0.03
Hexachloro-1,3-butadiene		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
Isobutane		0.8	0.85	0.47	0.29	0.90	0.03
Isopentane		0.49	0.7	0.51	0.25	0.71	0.04
Isoprene		< 0.02	< 0.02	0.03	0.02	0.03	0.02
Isopropyl alcohol		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
Isopropylbenzene		< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.04
m,p-Xylene		< 0.04	< 0.04	0.07	< 0.04	0.11	0.04
m-Diethylbenzene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
m-Ethyltoluene		< 0.03	< 0.03	0.03	< 0.03	0.04	0.03
Methyl butyl ketone		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	0.4
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	0.3
Methyl methacrylate		< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	0.08
Methyl tert butyl ether		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
Methylcyclohexane		0.06	0.19	0.18	0.03	0.13	0.02
Methylcyclopentane		0.06	0.09	0.18	0.06	0.1	0.05
Methylene chloride		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
n-Butane		1.4	1.56	0.9	0.6	1.57	0.02
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	0.3
n-Heptane		< 0.04	0.13	0.17	0.13	0.18	0.04
n-Hexane	5960	0.09	0.09	0.21	0.13	0.24	0.03
n-Nonane		< 0.04	< 0.04	0.05	< 0.04	< 0.04	0.04
n-Octane		< 0.02	< 0.02	0.08	0.06	0.08	0.02
n-Pentane		0.34	0.46	0.35	0.17	0.45	0.04
n-Propylbenzene		< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	0.06
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	0.3
o-Ethyltoluene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
o-Xylene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
p-Diethylbenzene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
p-Ethyltoluene		< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.04
Styrene	52.0	< 0.04	< 0.04	0.11	0.09	0.09	0.04
Tetrachloroethylene		< 0.02	< 0.02	0.05	0.05	0.05	0.02
Tetrahydrofuran		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
Toluene	499	0.03	0.07	0.09	0.04	0.17	0.03
trans-1,2-Dichloroethylene		< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	0.06
trans-1,3-Dichloropropylene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
trans-2-Butene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
trans-2-Pentene		< 0.02	< 0.02	0.03	0.03	0.03	0.02
Trichloroethylene		< 0.02	< 0.02	0.03	0.03	0.03	0.02
Vinyl acetate		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
Vinyl chloride	51	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02

PAHS



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - December 2023

Polycyclic Aromatic Hydrocarbons (PAHs) Results

Sample Date	2023-12-02		2023-12-08		2023-12-14		2023-12-20		2023-12-26	
PUF S/N	TE-03		TE-06		TE-11		9802		P13-01	
Volume (Vstd m ³)	330.42		330.42		330.41		330.39		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
	0.52	1.57	0.65	1.97	0.47	1.42	0.53	1.60	0.74	2.24
Parameter	Phenanthrene		2-Methylnaphthalene		2-Methylnaphthalene		Phenanthrene		Naphthalene	

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	0.13	0.39	0.42	1.27	0.28	0.85	0.21	0.64	0.37	1.12	0.01
2-Methylnaphthalene	0.21	0.64	0.65	1.97	0.47	1.42	0.36	1.09	0.68	2.06	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	0.03	0.09	0.08	0.24	0.05	0.15	0.07	0.21	0.16	0.48	0.01
Acenaphthylene	0.09	0.27	0.11	0.33	0.05	0.15	0.13	0.39	0.30	0.91	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	0.02	0.06	0.03	0.09	0.05	0.15	0.04	0.12	0.01
Benzo(a)anthracene	< 0.01	0.00	0.02	0.06	0.01	0.03	0.01	0.03	0.02	0.06	0.01
Benzo(a)pyrene	< 0.01	0.00	0.01	0.03	< 0.01	0.00	< 0.01	0.00	0.01	0.03	0.01
Benzo(b,j,k)fluoranthene	0.05	0.15	0.09	0.27	0.05	0.15	0.06	0.18	0.08	0.24	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	0.03	< 0.01	0.00	< 0.01	0.00	0.02	0.06	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	0.03	0.08	0.24	0.04	0.12	0.03	0.09	0.06	0.18	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	0.05	0.15	< 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	0.09	0.27	0.07	0.21	0.10	0.30	0.13	0.39	0.14	0.42	0.01
Fluorene	0.23	0.70	0.24	0.73	0.36	1.09	0.27	0.82	0.36	1.09	0.01
Indeno(1,2,3-cd)pyrene	< 0.01	0.00	0.02	0.06	0.01	0.03	< 0.01	0.00	0.03	0.09	0.01
Naphthalene	0.23	0.70	0.57	1.73	0.36	1.09	0.28	0.85	0.74	2.24	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	0.52	1.57	0.36	1.09	0.47	1.42	0.53	1.60	0.52	1.57	0.01
Pyrene	0.06	0.18	0.06	0.18	0.07	0.21	0.09	0.27	0.16	0.48	0.01
Retene	0.10	0.30	0.07	0.21	0.11	0.33	0.13	0.39	0.15	0.45	0.01

PARTISOLS



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - December 2023

Partisol Results - PM_{2.5}

Sample Date	2023-12-02		2023-12-08		2023-12-14		2023-12-20		2023-12-26			
Filter #	AT79026		AT85569		AT83968		AT85571		AT83608			
Volume (Vstd m ³)	22.4		22.8		22.2		22.4		22.7			
Method	AC-029		AC-029		AC-029		AC-029		AC-029			
Parameter	AAAQO (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)	Result (mg)	Result (mg/m ³)	RDL (mg)
Particulate Matter	0.029	0.182	0.008	0.090	0.004	0.049	0.002	0.069	0.003	0.040	0.002	0.004
PM2.5 Mass in ug/m3		8.125		3.947		2.207		3.080		1.762		
RDL in ug/m3		0.179		0.175		0.180		0.179		0.176		



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - December 2023

Partisol Results -PM_{2.5}-PM₁₀

Sample Date	2023-12-02		2023-12-08		2023-12-14		2023-12-20		2023-12-26		
Filter #	AT79040		AT85570		AT83967		AT85572		AT83609		
Volume (Vstd m ³)	2.5		2.54		2.47		2.49		2.53		
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	0.014	0.006	0.014	0.006	0.100	0.040	0.007	0.003	0.035	0.014	0.004
PM2.5-10 Mass in ug/m3	5.600		5.512		40.486		2.811		13.834		
RDL in ug/m3	1.600		1.575		1.619		1.606		1.581		

PASSIVE SAMPLES

Unit	H ₂ S		NO ₂		O ₃		SO ₂		NMH ₃		HNO ₃		
	ppb		ppb		ppb		ppb		ppb		ug/m ³		
Minimum (ppb)	0.14	#10	0.9	#23	11.9	#23	0.2	#16	0.1	#26	0.54	#8	
Maximum (ppb)	0.36	#27	8.4	#28	26.7	#32	2.2	#27	2.7	#3	2.34	#10	
Average (ppb)	0.21	-	3.85	-	18.80	-	0.51	-	1.21	-	1.04	-	
No.	Station	Sample	Duplicate	Sample	Duplicate	Sample	Duplicate	Sample	Duplicate	Sample	Duplicate	Sample	Duplicate
3	Therien	0.19		3.2		20.0		0.4	0.4	2.7		0.56	
4	Flat Lake	-		3.2		23.0		0.5		1.5		0.62	
5	Lake Eliza	0.19		2.6	2.7	22.9	20.8	0.3		1.4		0.95	
6	Telegraph Creek	-		6.2	7.1	13.6	18.4	0.3		NA		1.20	
8	Muriel-Kehewin	-		Missing 2		Missing 2		0.6		NA		0.54	
9	Dupre	-		4.3		19.4		0.4		0.9		0.84	
10	La Corey	0.14		7.6		12.1		0.2		0.7		2.34	
11	Wolf Lake	0.18		2.0		15.6		Missing 3		NA		0.87	
12	Foster Creek	0.17		1.9		19.9		Missing 3		0.1		0.70	
13	Primrose	0.22		2.2		20.4		0.5		0.3		0.93	
14	Tamarack	0.35		4.9		18.5		1.7		NA		1.42	
15	Ardmore	-		3.5		17.3		0.6		NA		0.89	
16	Frog Lake	0.20		4.0		20.6		0.2		NA		0.90	
17	Clear Range	0.22		2.7		26.5		0.3		1.6	NA	1.40	0.83
18	Fishing Lake	0.16		2.1		19.3		0.3		NA	NA	1.21	0.74
19	Beaverdam	-		2.4		24.8		0.5		1.1		0.87	
22	Cold Lake South (1)	0.17		4.9		14.6		0.2		NA		1.08	
23	Medley-Martineau	-		0.9		11.9		0.2		NA		0.83	
24	Fort George	0.23		4.4		14.9		0.2		NA		1.17	
25	Burnt Lake	Missing 1		-		-		Missing 1		-		-	
26	Mahihkan	0.29		-		-		0.6		0.1		0.96	
27	Mahkeses	0.36		-		-		2.2		NA		0.83	
28	Town of Bonnyville	0.22		8.4		15.8		0.4		2.2		1.29	
29	Cold Lake South (2)	0.16		5.7		15.4		0.3		NA		1.27	
32	St. Lina	0.16	0.23	2.9		26.7		0.4	0.4	1.5		1.36	
42	Lac La Biche	0.20	0.19	4.8		20.4		0.4	0.5	1.6		0.88	
	BLANK -1	-		-		-		-		NA		0.22	
	BLANK -2	-		-		-		-		NA		0.39	
	BLANK -3	-		-		-		-		0.4		0.17	
	Reportable Detection Limit (RDL)	0.02		0.1		0.1		0.1		0.1		0.04	

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 Missing 2: Sample filter was damaged.
- 5 Missing 3: Sample filters are missing
- 6 NA: Sampler were prepared incorrectly. The analytical results are unreportable.

LAC LA BICHE STATION

NMHC CANISTER SAMPLES



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Lac La Biche Station - January 2023

Volatile Organic Compounds (VOCs) Results - Canister System

Sample Date/Time		2023-12-07 @12:10		2023-12-14 @08:45	
Canister Triggered Conc.		0.68 ppm		0.92 ppm	
Canister ID		28955		32215	
Method		AC-058		AC-058	
Maximum Reading (ppbv)		1.9		2.1	
Parameter		Acetone		n-Butane	
Parameter	AAAOs (ppbv)	Result (ppbv)	RDL (ppbv)	Result (ppbv)	RDL (ppbv)
1,1,1-Trichloroethane		< 0.03	0.03	< 0.03	0.03
1,1,1,2-Tetrachloroethane		< 0.03	0.03	< 0.03	0.03
1,1,2-Trichloroethane		< 0.03	0.03	< 0.03	0.03
1,1-Dichloroethane		< 0.03	0.03	< 0.03	0.03
1,1-Dichloroethylene		< 0.03	0.03	< 0.03	0.03
1,2,3-Trimethylbenzene		< 0.08	0.08	< 0.07	0.07
1,2,4-Trichlorobenzene		< 0.5	0.48	< 0.4	0.45
1,2,4-Trimethylbenzene		< 0.05	0.05	0.1	0.04
1,2-Dibromoethane		< 0.03	0.03	< 0.03	0.03
1,2-Dichlorobenzene		< 0.05	0.05	< 0.04	0.04
1,2-Dichloroethane		0.07	0.05	< 0.04	0.04
1,2-Dichloropropane		< 0.05	0.05	< 0.04	0.04
1,3,5-Trimethylbenzene		< 0.05	0.05	0.08	0.04
1,3-Butadiene		< 0.05	0.05	< 0.04	0.04
1,3-Dichlorobenzene		< 0.6	0.64	< 0.6	0.60
1,4-Dichlorobenzene		< 0.6	0.64	< 0.6	0.60
1,4-Dioxane		< 0.8	0.80	< 0.7	0.75
1-Butene		< 0.10	0.10	0.1	0.09
1-Hexene		< 0.11	0.11	0.3	0.10
1-Pentene		< 0.05	0.05	< 0.04	0.04
2,2,4-Trimethylpentane		< 0.03	0.03	0.07	0.03
2,2-Dimethylbutane		< 0.03	0.03	0.05	0.03
2,3,4-Trimethylpentane		< 0.03	0.03	0.08	0.03
2,3-Dimethylbutane		< 0.14	0.14	0.16	0.13
2,3-Dimethylpentane		< 0.03	0.03	0.09	0.03
2,4-Dimethylpentane		< 0.05	0.05	0.07	0.04
2-Methylheptane		< 0.03	0.03	< 0.03	0.03
2-Methylhexane		0.05	0.05	0.1	0.04
2-Methylpentane		0.13	0.03	0.64	0.03
3-Methylheptane		< 0.05	0.05	0.11	0.04
3-Methylhexane		0.06	0.03	0.15	0.03
3-Methylpentane		0.1	0.03	0.45	0.03
Acetone	2400	1.9	0.64	1.6	0.60
Acrolein	1.9	< 0.5	0.48	< 0.4	0.45
Benzene	9.0	0.08	0.05	< 0.04	0.04
Benzyl chloride		< 0.5	0.48	< 0.4	0.45
Bromodichloromethane		< 0.05	0.05	< 0.04	0.04
Bromoform		< 0.03	0.03	< 0.03	0.03
Bromomethane		< 0.03	0.03	< 0.03	0.03
Carbon disulfide	10	< 0.03	0.03	< 0.03	0.03
Carbon tetrachloride		0.05	0.03	0.08	0.03
Chlorobenzene		< 0.03	0.03	< 0.03	0.03
Chloroethane		< 0.03	0.03	< 0.03	0.03
Chloroform		< 0.03	0.03	< 0.03	0.03
Chloromethane		0.75	0.06	0.55	0.06
cis-1,2-Dichloroethene		< 0.03	0.03	< 0.03	0.03
cis-1,3-Dichloropropene		< 0.05	0.05	< 0.04	0.04
cis-2-Butene		< 0.05	0.05	< 0.04	0.04
cis-2-Pentene		< 0.03	0.03	< 0.03	0.03
Cyclohexane		< 0.06	0.06	0.12	0.06
Cyclopentane		< 0.03	0.03	0.04	0.03
Dibromochloromethane		< 0.03	0.03	0.08	0.03
Ethanol		1.6	0.80	1.7	0.75
Ethyl acetate		< 0.5	0.48	< 0.4	0.45
Ethylbenzene	460	< 0.05	0.05	< 0.04	0.04
Freon-11		0.23	0.03	0.16	0.03
Freon-113		0.06	0.03	0.06	0.03



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Lac La Biche Station - January 2023

Volatile Organic Compounds (VOCs) Results - Canister System

Sample Date/Time		2023-12-07 @12:10		2023-12-14 @08:45	
Canister Triggered Conc.		0.68 ppm		0.92 ppm	
Canister ID		28955		32215	
Method		AC-058		AC-058	
Maximum Reading (ppbv)		1.9		2.1	
Parameter		Acetone		n-Butane	
Parameter	AAQOs (ppbv)	Result (ppbv)	RDL (ppbv)	Result (ppbv)	RDL (ppbv)
Freon-114		< 0.05	0.05	< 0.04	0.04
Freon-12		0.61	0.05	0.51	0.04
Hexachloro-1,3-butadiene		< 0.5	0.48	< 0.4	0.45
Isobutane		0.52	0.05	1.57	0.04
Isopentane		0.24	0.06	1.04	0.06
Isoprene		< 0.03	0.03	0.04	0.03
Isopropyl alcohol		< 0.5	0.48	< 0.4	0.45
Isopropylbenzene		< 0.06	0.06	< 0.06	0.06
m,p-Xylene		< 0.06	0.06	0.09	0.06
m-Diethylbenzene		< 0.03	0.03	< 0.03	0.03
m-Ethyltoluene		< 0.05	0.05	< 0.04	0.04
Methyl butyl ketone		< 0.6	0.64	< 0.6	0.60
Methyl ethyl ketone		< 0.5	0.48	< 0.4	0.45
Methyl isobutyl ketone		< 0.5	0.48	< 0.4	0.45
Methyl methacrylate		< 0.13	0.13	< 0.12	0.12
Methyl tert butyl ether		< 0.05	0.05	< 0.04	0.04
Methylcyclohexane		< 0.03	0.03	0.04	0.03
Methylcyclopentane		0.17	0.08	1.34	0.07
Methylene chloride		< 0.5	0.48	< 0.4	0.45
n-Butane		0.97	0.03	2.1	0.03
n-Decane		< 0.10	0.10	< 0.09	0.09
n-Dodecane		< 0.5	0.48	< 0.4	0.45
n-Heptane		< 0.06	0.06	0.27	0.06
n-Hexane	5960	0.41	0.05	1.45	0.04
n-Nonane		< 0.06	0.06	0.06	0.06
n-Octane		< 0.03	0.03	0.1	0.03
n-Pentane		0.18	0.06	0.61	0.06
n-Propylbenzene		< 0.10	0.10	< 0.09	0.09
n-Undecane		< 0.8	0.80	< 0.7	0.75
Naphthalene		< 0.5	0.48	< 0.4	0.45
o-Ethyltoluene		< 0.03	0.03	< 0.03	0.03
o-Xylene		< 0.05	0.05	< 0.04	0.04
p-Diethylbenzene		< 0.03	0.03	< 0.03	0.03
p-Ethyltoluene		< 0.06	0.06	< 0.06	0.06
Styrene	52.0	< 0.06	0.06	0.14	0.06
Tetrachloroethylene		< 0.03	0.03	0.07	0.03
Tetrahydrofuran		< 0.5	0.48	< 0.4	0.45
Toluene	499	0.16	0.05	0.19	0.04
trans-1,2-Dichloroethylene		< 0.10	0.10	< 0.09	0.09
trans-1,3-Dichloropropylene		< 0.03	0.03	< 0.03	0.03
trans-2-Butene		< 0.05	0.05	< 0.04	0.04
trans-2-Pentene		< 0.03	0.03	0.05	0.03
Trichloroethylene		< 0.03	0.03	0.04	0.03
Vinyl acetate		< 0.5	0.48	< 0.4	0.45
Vinyl chloride	51	< 0.03	0.03	< 0.03	0.03



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Lac La Biche Station - January 2023

Volatile Organic Compounds (VOCs) Results - Canister System

Sample Date/Time		2023-12-07 @12:10		2023-12-14 @08:45	
Canister Triggered Conc.		0.68 ppm		0.92 ppm	
Canister ID		28955		32215	
Method		AC-058		AC-058	
Maximum Reading (ppbv)		1.9		2.1	
Parameter		Acetone		n-Butane	
Parameter	AAQOs (ppbv)	Result (ppbv)	RDL (ppbv)	Result (ppbv)	RDL (ppbv)

End of Report



Lakeland Industry & Community Association

DECEMBER 2023

Ambient Air Monitoring

Certified Laboratory Analysis Report

LAB-LICA-202312

Operation and Maintenance:

Bureau Veritas Canada

Data Validation and Analytical Report:

Bureau Veritas Canada and InnoTech Alberta

January 6, 2024

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Cold Lake South Station

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



Customer ID: LICA
 Cust Samp ID: LICA/VOC/CLS/Nov 26, 2023



Bureau Veritas

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

Client: LICA Sampler S/N: 6167
 Location: Cold Lake South Canister ID: 32213
 Station ID: LICA 01 Installation Date/Time (mst): Nov 25, 2023 @ 19:11
 Sample ID: LICA/VOC/CLS/Nov 26, 2023 Removal Date/Time (mst): Nov 29, 2023 @ 17:13

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
November 26, 2023	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Pressure (psi)
-27.1	19.7

Flow Settings		
Flow Reading (sccm)	Pot Set Point	Pump Set (psi)
10.00	4.89	27.5

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
 Timer reset to zero prior to sampling? YES (yes/no)

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

Comments: n/a

Deployment Technician Signature: Alex Yakupov

Collection Technician Signature: Alex Yakupov

Sample ID: 23120058-002 Priority: Normal



Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/Nov 26, 2023



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:	Nov 25, 2023 @ 19:12
Field Sample ID:	LICA/PUF/CLS/Nov 26, 2023	Removal Date/Time:	Nov 29, 2023 @ 17:15

Sample Data Collection Information

Sample Date:	26-Nov-23	Average Pressure (mmHg)	715
Start Time (mst):	0:00	Average Flow (Q _{std})	229
End Time (mst):	23:59	Average Temperature (°C)	-3.1
Elapsed Time (Hours):	24	Volume (V _{std} m ³)	330.41

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: Alex Yakupov



Customer ID: LICA
 Cust Samp ID: LICA/VOC/CLS/Dec 02, 2023

Bureau Veritas

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

Client: LICA Sampler S/N: 6167
 Location: Cold Lake South Canister ID: 28950
 Station ID: LICA 01 Installation Date/Time (mst): Nov 29, 2023 @ 17:23
 Sample ID: LICA/VOC/CLS/Dec 02, 2023 Removal Date/Time (mst): Dec 07, 2023 @ 09:55

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
December 2, 2023	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Pressure (psi)
-27.1	18.5

Flow Settings		
Flow Reading (sccm)	Pot Set Point	Pump Set (psi)
10.00	4.89	27.5

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
 Timer reset to zero prior to sampling? YES (yes/no)

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

Comments: n/a

Deployment Technician Signature: Alex Yakupov

Collection Technician Signature: Chris Wesson



Customer ID: LICA
 Cust Samp ID: LICA/PUF/CLS/Dec 02, 2023

TISCH PUF PLUS Sample Collection Data Sheet

Client:	LICA	Puf+ S/N:	TE-03
Location:	Cold Lake South	Motor S/N:	1138/100-1020
Station ID:	LICA 01	Installation Date/Time:	Nov 29, 2023 @ 17:25
Field Sample ID:	LICA/PUF/CLS/Dec 2, 2023	Removal Date/Time:	Dec 07, 2023 @ 10:11

Sample Data Collection Information

Sample Date:	02-Dec-23	Average Pressure (mmHg)	700
Start Time (mst):	0:00	Average Flow (Q _{std})	229
End Time (mst):	23:59	Average Temp (C)	-7.7
Elapsed Time (Hours):	24	Volume (V _{std} m ³)	330.42

Sample Recovery Checklist

(circle one)

Flow Rate 230 slpm +/- 0.2 slpm ?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
Average temperature appears correct?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
Average pressure appears correct?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
Any error messages? (if yes list below)	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
Sample duration 24 hours?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
Other observations?		n/a

Deployed By: Alex Yakupov
 Collected By: Chris Wesson



Canister ID: 32213

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ on: AUG 30 2023

Evacuated: OCT 10 2023 Recertified: _____

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

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/VOC/CLS/Nov 26, 2023

Sampled By: Alex Yakupov

Starting Vacuum: -27.1 "Hg

End Vacuum: 19.7 "Hg/psig



Canister ID: PUF - TE - 08

This cleaned canister meets or exceeds TO-15 Method Specifications

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/Nov 26, 2023

Sampled By: Alex Yakupov

Starting Vacuum: _____ "Hg

End Vacuum: _____ "Hg/psig



Canister ID: 28950

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ on: OCT 24 2023

Evacuated: NOV 06 2023 Recertified: _____

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

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/VOC/CLS/DEC 02, 2023

Sampled By: _____

Starting Vacuum: -27.1 "Hg

End Vacuum: 18.5 "Hg/psig



Canister ID: TE 03

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/THF/CLS/DEC 2, 2023

Sampled By: _____

Starting Vacuum: _____ "Hg

End Vacuum: _____ "Hg/psig

Sample ID: 23120058-001 Priority: Normal



Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/Nov 26, 2023

<p>RESULTS: Lica Communal Mail Lakeland Industry and Community Assn</p>	<p>CLIENT SAMPLE ID LICA/PUF/CLS/Dec 02, 2023</p> <p>MATRIX: Air Filter</p> <p>CANISTER ID: TE-03</p> <p>PRIORITY: Normal</p> <p>DESCRIPTION: Cold Lake South</p> <p>DATE SAMPLED: 02-Dec-23 0:00</p> <p>REPORT CREATED: 19-Dec-23</p>	<p>DATE RECEIVED: 08-Dec-23</p> <p>REPORT NUMBER: 23120058</p> <p>VERSION: Version 01</p>
<p>INVOICE: Maria Cueva PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>		

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120058-004	1-Methylnaphthalene		0.13	ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	2-Methylnaphthalene		0.21	ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	Acenaphthene		0.03	ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	Acenaphthylene		0.09	ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	Anthracene		0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	Benzo(b,j,k)fluoranthene		0.05	ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	Chrysene		0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	Dibenzo(a,i)pyrene		0.05	ug/Filter	0.01	AC-066	13-Dec-23

CLIENT SAMPLE ID LICA/PUF/CLS/Dec 02, 2023	CANISTER ID TE-03	Matrix Air Filter	DATE SAMPLED 02-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 23120058	REPORT CREATED: 19-Dec-23		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120058-004	Dibenzo(a,l)pyrene	K, T, U	< 0.01 ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	Dibenzo(ah)anthracene	K, T, U	< 0.01 ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	Fluoranthene		0.09 ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	Fluorene		0.23 ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01 ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	Naphthalene		0.23 ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	Perylene	K, T, U	< 0.01 ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	Phenanthrene		0.52 ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	Pyrene		0.06 ug/Filter	0.01	AC-066	13-Dec-23
23120058-004	Retene		0.10 ug/Filter	0.01	AC-066	13-Dec-23

CLIENT SAMPLE ID LICA/PUF/CLS/Nov 26, 2023	CANISTER ID TE-08	Matrix Air Filter	DATE SAMPLED 26-Nov-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 23120058	REPORT CREATED: 19-Dec-23		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120058-002	1-Methylnaphthalene		0.07	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	2-Methylnaphthalene		0.12	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	Acenaphthene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	Acenaphthylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	Anthracene		0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	Benzo(b,j,k)fluoranthene		0.06	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	Chrysene		0.02	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	Dibenzo(a,i)pyrene		0.05	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	Fluoranthene		0.11	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	Fluorene		0.19	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	Naphthalene		0.13	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	Phenanthrene		0.57	ug/Filter	0.01	AC-066	13-Dec-23

Report certified by: Andrea Conner, Admin Assistant

Date: December 19, 2023

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

On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

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PO Bag 4000
 Vegreville, Alberta
 Canada T9C 1T4
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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID LICA/PUF/CLS/Nov 26, 2023	CANISTER ID TE-08	Matrix Air Filter	DATE SAMPLED 26-Nov-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 23120058	REPORT CREATED: 19-Dec-23		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120058-002	Pyrene		0.08 ug/Filter	0.01	AC-066	13-Dec-23
23120058-002	Retene		0.06 ug/Filter	0.01	AC-066	13-Dec-23

Report certified by: Andrea Conner, Admin Assistant

On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: December 19, 2023

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

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

LAB-LICA-202312

CLIENT SAMPLE ID LICA/VOC/CLS/Dec 02, 2023	CANISTER ID 28950	Matrix Ambient Air	DATE SAMPLED 02-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 23120058	REPORT CREATED: 19-Dec-23		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120058-003	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-003	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-003	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-003	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-003	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-003	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	13-Dec-23
23120058-003	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Dec-23
23120058-003	1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-003	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-003	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-003	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-003	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-003	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-003	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-003	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	13-Dec-23
23120058-003	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	13-Dec-23
23120058-003	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	13-Dec-23
23120058-003	1-Butene/Isobutylene	K, T, U	< 0.06	ppbv	0.06	AC-058	13-Dec-23
23120058-003	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	13-Dec-23
23120058-003	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-003	2,2,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-003	2,2-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-003	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-003	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	13-Dec-23
23120058-003	2,3-Dimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23

Report certified by: Andrea Conner, Admin Assistant

Date: December 19, 2023

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

On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

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CLIENT SAMPLE ID LICA/VOC/CLS/Dec 02, 2023	CANISTER ID 28950	Matrix Ambient Air	DATE SAMPLED 02-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 23120058	REPORT CREATED: 19-Dec-23		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120058-003	2,4-Dimethylpentane	K, T, U	< 0.03 ppbv	0.03	AC-058	13-Dec-23
23120058-003	2-Methylheptane	K, T, U	< 0.02 ppbv	0.02	AC-058	13-Dec-23
23120058-003	2-Methylhexane	K, T, U	< 0.03 ppbv	0.03	AC-058	13-Dec-23
23120058-003	2-Methylpentane		0.12 ppbv	0.02	AC-058	13-Dec-23
23120058-003	3-Methylheptane	K, T, U	< 0.03 ppbv	0.03	AC-058	13-Dec-23
23120058-003	3-Methylhexane	I	0.02 ppbv	0.02	AC-058	13-Dec-23
23120058-003	3-Methylpentane	I	0.05 ppbv	0.02	AC-058	13-Dec-23
23120058-003	Acetone		0.5 ppbv	0.4	AC-058	13-Dec-23
23120058-003	Acrolein	K, T, U	< 0.3 ppbv	0.3	AC-058	13-Dec-23
23120058-003	Benzene	I	0.08 ppbv	0.03	AC-058	13-Dec-23
23120058-003	Benzyl chloride	K, T, U	< 0.3 ppbv	0.3	AC-058	13-Dec-23
23120058-003	Bromodichloromethane	K, T, U	< 0.03 ppbv	0.03	AC-058	13-Dec-23
23120058-003	Bromoform	K, T, U	< 0.02 ppbv	0.02	AC-058	13-Dec-23
23120058-003	Bromomethane	K, T, U	< 0.02 ppbv	0.02	AC-058	13-Dec-23
23120058-003	Carbon disulfide	K, T, U	< 0.02 ppbv	0.02	AC-058	13-Dec-23
23120058-003	Carbon tetrachloride	I	0.06 ppbv	0.02	AC-058	13-Dec-23
23120058-003	Chlorobenzene	K, T, U	< 0.02 ppbv	0.02	AC-058	13-Dec-23
23120058-003	Chloroethane	K, T, U	< 0.02 ppbv	0.02	AC-058	13-Dec-23
23120058-003	Chloroform	K, T, U	< 0.02 ppbv	0.02	AC-058	13-Dec-23
23120058-003	Chloromethane		0.60 ppbv	0.04	AC-058	13-Dec-23
23120058-003	cis-1,2-Dichloroethene	K, T, U	< 0.02 ppbv	0.02	AC-058	13-Dec-23
23120058-003	cis-1,3-Dichloropropene	K, T, U	< 0.03 ppbv	0.03	AC-058	13-Dec-23
23120058-003	cis-2-Butene	K, T, U	< 0.03 ppbv	0.03	AC-058	13-Dec-23
23120058-003	cis-2-Pentene	K, T, U	< 0.02 ppbv	0.02	AC-058	13-Dec-23
23120058-003	Cyclohexane	K, T, U	< 0.04 ppbv	0.04	AC-058	13-Dec-23

Report certified by: Andrea Conner, Admin Assistant

Date: December 19, 2023

On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

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

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CLIENT SAMPLE ID LICA/VOC/CLS/Dec 02, 2023	CANISTER ID 28950	Matrix Ambient Air	DATE SAMPLED 02-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 23120058	REPORT CREATED: 19-Dec-23		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120058-003	Cyclopentane	K, T, U	< 0.02 ppbv	0.02	AC-058	13-Dec-23
23120058-003	Dibromochloromethane	K, T, U	< 0.02 ppbv	0.02	AC-058	13-Dec-23
23120058-003	Ethanol	K, T, U	< 0.5 ppbv	0.5	AC-058	13-Dec-23
23120058-003	Ethyl acetate	K, T, U	< 0.3 ppbv	0.3	AC-058	13-Dec-23
23120058-003	Ethylbenzene	K, T, U	< 0.03 ppbv	0.03	AC-058	13-Dec-23
23120058-003	Freon-11		0.23 ppbv	0.02	AC-058	13-Dec-23
23120058-003	Freon-113	I	0.05 ppbv	0.02	AC-058	13-Dec-23
23120058-003	Freon-114	K, T, U	< 0.03 ppbv	0.03	AC-058	13-Dec-23
23120058-003	Freon-12		0.58 ppbv	0.03	AC-058	13-Dec-23
23120058-003	Hexachloro-1,3-butadiene	K, T, U	< 0.3 ppbv	0.3	AC-058	13-Dec-23
23120058-003	Isobutane		0.80 ppbv	0.03	AC-058	13-Dec-23
23120058-003	Isopentane		0.49 ppbv	0.04	AC-058	13-Dec-23
23120058-003	Isoprene	K, T, U	< 0.02 ppbv	0.02	AC-058	13-Dec-23
23120058-003	Isopropyl alcohol	K, T, U	< 0.3 ppbv	0.3	AC-058	13-Dec-23
23120058-003	Isopropylbenzene	K, T, U	< 0.04 ppbv	0.04	AC-058	13-Dec-23
23120058-003	m,p-Xylene	K, T, U	< 0.04 ppbv	0.04	AC-058	13-Dec-23
23120058-003	m-Diethylbenzene	K, T, U	< 0.02 ppbv	0.02	AC-058	13-Dec-23
23120058-003	m-Ethyltoluene	K, T, U	< 0.03 ppbv	0.03	AC-058	13-Dec-23
23120058-003	Methyl butyl ketone	K, T, U	< 0.4 ppbv	0.4	AC-058	13-Dec-23
23120058-003	Methyl ethyl ketone	K, T, U	< 0.3 ppbv	0.3	AC-058	13-Dec-23
23120058-003	Methyl isobutyl ketone	K, T, U	< 0.3 ppbv	0.3	AC-058	13-Dec-23
23120058-003	Methyl methacrylate	K, T, U	< 0.08 ppbv	0.08	AC-058	13-Dec-23
23120058-003	Methyl tert butyl ether	K, T, U	< 0.03 ppbv	0.03	AC-058	13-Dec-23
23120058-003	Methylcyclohexane	I	0.06 ppbv	0.02	AC-058	13-Dec-23
23120058-003	Methylcyclopentane	I	0.06 ppbv	0.05	AC-058	13-Dec-23

Report certified by: Andrea Conner, Admin Assistant

Date: December 19, 2023

On behalf of: Adam Malcolm, Manager, Chemical Testing

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

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CLIENT SAMPLE ID LICA/VOC/CLS/Dec 02, 2023	CANISTER ID 28950	Matrix Ambient Air	DATE SAMPLED 02-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 23120058	REPORT CREATED: 19-Dec-23		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120058-003	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Dec-23
23120058-003	n-Butane		1.40	ppbv	0.02	AC-058	13-Dec-23
23120058-003	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	13-Dec-23
23120058-003	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Dec-23
23120058-003	n-Heptane	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Dec-23
23120058-003	n-Hexane	I	0.09	ppbv	0.03	AC-058	13-Dec-23
23120058-003	n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-003	n-Pentane		0.34	ppbv	0.04	AC-058	13-Dec-23
23120058-003	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	13-Dec-23
23120058-003	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	13-Dec-23
23120058-003	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Dec-23
23120058-003	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Dec-23
23120058-003	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-003	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-003	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-003	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Dec-23
23120058-003	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Dec-23
23120058-003	Tetrachloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-003	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Dec-23
23120058-003	Toluene	I	0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-003	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	13-Dec-23
23120058-003	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-003	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-003	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-003	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23

Report certified by: Andrea Conner, Admin Assistant

Date: December 19, 2023

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID LICA/VOC/CLS/Dec 02, 2023	CANISTER ID 28950	Matrix Ambient Air	DATE SAMPLED 02-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 23120058	REPORT CREATED: 19-Dec-23		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120058-003	Vinyl acetate	K, T, U	< 0.3 ppbv	0.3	AC-058	13-Dec-23
23120058-003	Vinyl chloride	K, T, U	< 0.02 ppbv	0.02	AC-058	13-Dec-23

Report certified by: Andrea Conner, Admin Assistant

On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: December 19, 2023

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LAB-LICA-202312

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Nov 26, 2023	32213	Ambient Air	26-Nov-23 0:00
DESCRIPTION:	Cold Lake South		
REPORT NUMBER:	23120058	REPORT CREATED:	19-Dec-23
			VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120058-001	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	13-Dec-23
23120058-001	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Dec-23
23120058-001	1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-001	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-001	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-001	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-001	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-001	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-001	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	13-Dec-23
23120058-001	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	13-Dec-23
23120058-001	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	13-Dec-23
23120058-001	1-Butene/Isobutylene	K, T, U	< 0.06	ppbv	0.06	AC-058	13-Dec-23
23120058-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	13-Dec-23
23120058-001	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-001	2,2,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	2,2-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	13-Dec-23
23120058-001	2,3-Dimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23

Report certified by: Andrea Conner, Admin Assistant

Date: December 19, 2023

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CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Nov 26, 2023	32213	Ambient Air	26-Nov-23 0:00
DESCRIPTION:	Cold Lake South		
REPORT NUMBER:	23120058	REPORT CREATED:	19-Dec-23
			VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120058-001	2,4-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-001	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	2-Methylhexane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-001	2-Methylpentane	I	0.06	ppbv	0.02	AC-058	13-Dec-23
23120058-001	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-001	3-Methylhexane	I	0.03	ppbv	0.02	AC-058	13-Dec-23
23120058-001	3-Methylpentane	I	0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	Acetone		0.8	ppbv	0.4	AC-058	13-Dec-23
23120058-001	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Dec-23
23120058-001	Benzene	I	0.07	ppbv	0.03	AC-058	13-Dec-23
23120058-001	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Dec-23
23120058-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-001	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	Carbon tetrachloride	I	0.05	ppbv	0.02	AC-058	13-Dec-23
23120058-001	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	Chloromethane		0.60	ppbv	0.04	AC-058	13-Dec-23
23120058-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-001	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-001	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	Cyclohexane	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Dec-23

Report certified by: Andrea Conner, Admin Assistant

Date: December 19, 2023

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

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CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Nov 26, 2023	32213	Ambient Air	26-Nov-23 0:00
DESCRIPTION:	Cold Lake South		
REPORT NUMBER:	23120058	REPORT CREATED:	19-Dec-23
			VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120058-001	Cyclopentane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	Ethanol	I	0.8	ppbv	0.5	AC-058	13-Dec-23
23120058-001	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Dec-23
23120058-001	Ethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-001	Freon-11		0.22	ppbv	0.02	AC-058	13-Dec-23
23120058-001	Freon-113	I	0.05	ppbv	0.02	AC-058	13-Dec-23
23120058-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-001	Freon-12		0.55	ppbv	0.03	AC-058	13-Dec-23
23120058-001	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Dec-23
23120058-001	Isobutane		0.28	ppbv	0.03	AC-058	13-Dec-23
23120058-001	Isopentane		0.25	ppbv	0.04	AC-058	13-Dec-23
23120058-001	Isoprene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Dec-23
23120058-001	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Dec-23
23120058-001	m,p-Xylene	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Dec-23
23120058-001	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	m-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-001	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	13-Dec-23
23120058-001	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Dec-23
23120058-001	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Dec-23
23120058-001	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	13-Dec-23
23120058-001	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-001	Methylcyclohexane	I	0.06	ppbv	0.02	AC-058	13-Dec-23
23120058-001	Methylcyclopentane	K, T, U	< 0.05	ppbv	0.05	AC-058	13-Dec-23

Report certified by: Andrea Conner, Admin Assistant

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CLIENT SAMPLE ID LICA/VOC/CLS/Nov 26, 2023	CANISTER ID 32213	Matrix Ambient Air	DATE SAMPLED 26-Nov-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 23120058	REPORT CREATED: 19-Dec-23		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120058-001	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Dec-23
23120058-001	n-Butane		0.49	ppbv	0.02	AC-058	13-Dec-23
23120058-001	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	13-Dec-23
23120058-001	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Dec-23
23120058-001	n-Heptane	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Dec-23
23120058-001	n-Hexane	I	0.04	ppbv	0.03	AC-058	13-Dec-23
23120058-001	n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	n-Pentane		0.16	ppbv	0.04	AC-058	13-Dec-23
23120058-001	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	13-Dec-23
23120058-001	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	13-Dec-23
23120058-001	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Dec-23
23120058-001	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Dec-23
23120058-001	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-001	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Dec-23
23120058-001	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Dec-23
23120058-001	Tetrachloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Dec-23
23120058-001	Toluene	I	0.04	ppbv	0.03	AC-058	13-Dec-23
23120058-001	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	13-Dec-23
23120058-001	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Dec-23
23120058-001	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23
23120058-001	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Dec-23

Report certified by: Andrea Conner, Admin Assistant

Date: December 19, 2023

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CLIENT SAMPLE ID LICA/VOC/CLS/Nov 26, 2023	CANISTER ID 32213	Matrix Ambient Air	DATE SAMPLED 26-Nov-23 0:00
DESCRIPTION: Cold Lake South	REPORT CREATED: 19-Dec-23	VERSION: Version 01	
REPORT NUMBER: 23120058			

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120058-001	Vinyl acetate	K, T, U	< 0.3 ppbv	0.3	AC-058	13-Dec-23
23120058-001	Vinyl chloride	K, T, U	< 0.02 ppbv	0.02	AC-058	13-Dec-23



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Revision History

Order ID	Ver	Date	Reason
23120058	01	19-Dec-23	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

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

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

Qualifiers

Data Qualifier Translation

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



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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Order Comments



PO Bag 4000
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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Sample Comments



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Result Comments

Note:

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

Sample ID: 23120117-001 Priority: Normal



Customer ID: LICA
 Cust Samp ID: LICA/VOC/CLS/Dec 08, 2023



Bureau Veritas

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

Client: LICA Sampler S/N: 6167
 Location: Cold Lake South Canister ID: 32243
 Station ID: LICA 01 Installation Date/Time (mst): Dec 07, 2023 @10:03
 Sample ID: LICA/VOC/CLS/Dec 08, 2023 Removal Date/Time (mst): Dec 11, 2023 @ 18:49

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
December 8, 2023	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Pressure (psi)
-27.1	

Flow Settings		
Flow Reading (scm)	Pot Set Point	Pump Set (psi)
10.00	4.89	27.5

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
 Timer reset to zero prior to sampling? YES (yes/no)

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

Comments: n/a

Deployment Technician Signature: Chris Wesson


Collection Technician Signature: Chris Wesson


Sample ID: 23120117-002 Priority: Normal



Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/Dec 08, 2023

RECEIVED
DEC 14 2023

 Canister ID: <u>TE-06</u> This cleaned canister meets or exceeds TO-15 Method Specifications	Sample ID: <u>LICA/PUF/CLS/DEC 08, 2023</u>	
	Sampled By: <u>[Signature]</u>	
Proofed by: <u>PUF</u> on: _____	Starting Vacuum: _____ "Hg	End Vacuum: _____ "Hg/psig
Evacuated: _____ Recertified: _____ <small>(Use within: 3 months from evacuation or recertification date)</small> Laboratory Contact Number: 780-632-8403		

 Canister ID: <u>32243</u> This cleaned canister meets or exceeds TO-15 Method Specifications	Sample ID: <u>LICA/VOC/CLS/DEC 08, 2023</u>	
	Sampled By: <u>[Signature]</u>	
Proofed by: <u>ISQ</u> on: <u>SEP 28 2023</u>	Starting Vacuum: <u>-27.2</u> "Hg	End Vacuum: <u>mm</u> "Hg/psig
Evacuated: <u>NOV 16 2023</u> Recertified: _____ <small>(Use within: 3 months from evacuation or recertification date)</small> Laboratory Contact Number: 780-632-8403		



Customer ID: LICA
 Cust Samp ID: LICA/VOC/CLS/Dec 08, 2023

AIR FCD-01321/2

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:	Dec 07, 2023 @ 10:16
Field Sample ID:	LICA/PUF/CLS/Dec 08, 2023	Removal Date/Time:	Dec 11, 2013 @19:14

Sample Data Collection Information

Sample Date:	26-Nov-23	Average Pressure (mmHg)	712
Start Time (mst):	0:00	Average Flow (Q _{std})	229
End Time (mst):	23:59	Average Temperature (°C)	-6.7
Elapsed Time (Hours):	24	Volume (V _{std} m ³)	330.42

Sample Recovery Checklist

(circle one)

Flow Rate 230 slpm +/- 0.2 slpm ?	<input checked="" type="radio"/> YES	<input type="radio"/> NO
Average temperature appears correct?	<input checked="" type="radio"/> YES	<input type="radio"/> NO
Average pressure appears correct?	<input checked="" type="radio"/> YES	<input type="radio"/> NO
Any error messages? (if yes list below)	<input checked="" type="radio"/> YES	<input type="radio"/> NO
Sample duration 24 hours?	<input checked="" type="radio"/> YES	<input type="radio"/> NO
Other observations?		n/a



<p>RESULTS: Lica Communal Mail Lakeland Industry and Community Assn</p>	<p>CLIENT SAMPLE ID LICA/PUF/CLS/Dec 08, 2023</p> <p>MATRIX: Air Filter</p> <p>CANISTER ID: TE-06</p> <p>PRIORITY: Normal</p> <p>DESCRIPTION: Cold Lake South</p> <p>DATE SAMPLED: 08-Dec-23 0:00</p> <p>REPORT CREATED: 17-Jan-24</p>	<p>DATE RECEIVED: 14-Dec-23</p> <p>REPORT NUMBER: 23120117</p> <p>VERSION: Version 01</p>
<p>INVOICE: Maria Cueva PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>		

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120117-002	1-Methylnaphthalene		0.42	ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	2-Methylnaphthalene		0.65	ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	Acenaphthene		0.08	ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	Acenaphthylene		0.11	ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	Anthracene		0.02	ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	Benzo(a)anthracene		0.02	ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	Benzo(a)pyrene		0.01	ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	Benzo(b,j,k)fluoranthene		0.09	ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	Benzo(e)pyrene		0.01	ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	Chrysene		0.08	ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24

CLIENT SAMPLE ID LICA/PUF/CLS/Dec 08, 2023	CANISTER ID TE-06	Matrix Air Filter	DATE SAMPLED 08-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 23120117	REPORT CREATED: 17-Jan-24		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120117-002	Dibenzo(a,l)pyrene	K, T, U	< 0.01 ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	Dibenzo(ah)anthracene	K, T, U	< 0.01 ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	Fluoranthene		0.07 ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	Fluorene		0.24 ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	Indeno(1,2,3-cd)pyrene		0.02 ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	Naphthalene		0.57 ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	Perylene	K, T, U	< 0.01 ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	Phenanthrene		0.36 ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	Pyrene		0.06 ug/Filter	0.01	AC-066	04-Jan-24
23120117-002	Retene		0.07 ug/Filter	0.01	AC-066	04-Jan-24

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Dec 08, 2023	32243	Ambient Air	08-Dec-23 0:00
DESCRIPTION:	Cold Lake South		
REPORT NUMBER:	23120117	REPORT CREATED:	17-Jan-24
			VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120117-001	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	15-Dec-23
23120117-001	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	15-Dec-23
23120117-001	1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Dec-23
23120117-001	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Dec-23
23120117-001	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Dec-23
23120117-001	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Dec-23
23120117-001	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Dec-23
23120117-001	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Dec-23
23120117-001	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	15-Dec-23
23120117-001	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	15-Dec-23
23120117-001	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	15-Dec-23
23120117-001	1-Butene/Isobutylene	I	0.10	ppbv	0.06	AC-058	15-Dec-23
23120117-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	15-Dec-23
23120117-001	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Dec-23
23120117-001	2,2,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	2,2-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	15-Dec-23
23120117-001	2,3-Dimethylpentane	I	0.06	ppbv	0.02	AC-058	15-Dec-23

Report certified by: Andrea Conner, Admin Assistant

Date: January 17, 2024

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

On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

LAB-LICA-202312

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CLIENT SAMPLE ID LICA/VOC/CLS/Dec 08, 2023	CANISTER ID 32243	Matrix Ambient Air	DATE SAMPLED 08-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 23120117	REPORT CREATED: 17-Jan-24		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120117-001	2,4-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Dec-23
23120117-001	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	2-Methylhexane		0.12	ppbv	0.03	AC-058	15-Dec-23
23120117-001	2-Methylpentane		0.14	ppbv	0.02	AC-058	15-Dec-23
23120117-001	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Dec-23
23120117-001	3-Methylhexane		0.15	ppbv	0.02	AC-058	15-Dec-23
23120117-001	3-Methylpentane	I	0.05	ppbv	0.02	AC-058	15-Dec-23
23120117-001	Acetone		0.8	ppbv	0.4	AC-058	15-Dec-23
23120117-001	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	15-Dec-23
23120117-001	Benzene	I	0.11	ppbv	0.03	AC-058	15-Dec-23
23120117-001	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	15-Dec-23
23120117-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Dec-23
23120117-001	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	Carbon tetrachloride	I	0.05	ppbv	0.02	AC-058	15-Dec-23
23120117-001	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	Chloromethane		0.64	ppbv	0.04	AC-058	15-Dec-23
23120117-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Dec-23
23120117-001	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Dec-23
23120117-001	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	Cyclohexane	I	0.08	ppbv	0.04	AC-058	15-Dec-23

Report certified by: Andrea Conner, Admin Assistant

Date: January 17, 2024

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On behalf of: Adam Malcolm, Manager, Chemical Testing

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CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Dec 08, 2023	32243	Ambient Air	08-Dec-23 0:00
DESCRIPTION:	Cold Lake South		
REPORT NUMBER:	23120117	REPORT CREATED:	17-Jan-24
			VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120117-001	Cyclopentane	I	0.03	ppbv	0.02	AC-058	15-Dec-23
23120117-001	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	Ethanol		1.3	ppbv	0.5	AC-058	15-Dec-23
23120117-001	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	15-Dec-23
23120117-001	Ethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Dec-23
23120117-001	Freon-11		0.23	ppbv	0.02	AC-058	15-Dec-23
23120117-001	Freon-113	I	0.05	ppbv	0.02	AC-058	15-Dec-23
23120117-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Dec-23
23120117-001	Freon-12		0.59	ppbv	0.03	AC-058	15-Dec-23
23120117-001	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	15-Dec-23
23120117-001	Isobutane		0.85	ppbv	0.03	AC-058	15-Dec-23
23120117-001	Isopentane		0.70	ppbv	0.04	AC-058	15-Dec-23
23120117-001	Isoprene	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	15-Dec-23
23120117-001	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	15-Dec-23
23120117-001	m,p-Xylene	K, T, U	< 0.04	ppbv	0.04	AC-058	15-Dec-23
23120117-001	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	m-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Dec-23
23120117-001	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	15-Dec-23
23120117-001	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	15-Dec-23
23120117-001	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	15-Dec-23
23120117-001	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	15-Dec-23
23120117-001	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Dec-23
23120117-001	Methylcyclohexane		0.19	ppbv	0.02	AC-058	15-Dec-23
23120117-001	Methylcyclopentane	I	0.09	ppbv	0.05	AC-058	15-Dec-23

Report certified by: Andrea Conner, Admin Assistant

Date: January 17, 2024

On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

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LAB-LICA-202312

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CLIENT SAMPLE ID LICA/VOC/CLS/Dec 08, 2023	CANISTER ID 32243	Matrix Ambient Air	DATE SAMPLED 08-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 23120117	REPORT CREATED: 17-Jan-24		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120117-001	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	15-Dec-23
23120117-001	n-Butane		1.56	ppbv	0.02	AC-058	15-Dec-23
23120117-001	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	15-Dec-23
23120117-001	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	15-Dec-23
23120117-001	n-Heptane	I	0.13	ppbv	0.04	AC-058	15-Dec-23
23120117-001	n-Hexane	I	0.09	ppbv	0.03	AC-058	15-Dec-23
23120117-001	n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	n-Pentane		0.46	ppbv	0.04	AC-058	15-Dec-23
23120117-001	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	15-Dec-23
23120117-001	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	15-Dec-23
23120117-001	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	15-Dec-23
23120117-001	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	15-Dec-23
23120117-001	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Dec-23
23120117-001	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	15-Dec-23
23120117-001	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	15-Dec-23
23120117-001	Tetrachloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	15-Dec-23
23120117-001	Toluene	I	0.07	ppbv	0.03	AC-058	15-Dec-23
23120117-001	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	15-Dec-23
23120117-001	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Dec-23
23120117-001	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23
23120117-001	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	15-Dec-23

Report certified by: Andrea Conner, Admin Assistant

Date: January 17, 2024

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On behalf of: Adam Malcolm, Manager, Chemical Testing

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 Canada T9C 1T4
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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID LICA/VOC/CLS/Dec 08, 2023	CANISTER ID 32243	Matrix Ambient Air	DATE SAMPLED 08-Dec-23 0:00
DESCRIPTION: Cold Lake South	REPORT CREATED: 17-Jan-24	VERSION: Version 01	
REPORT NUMBER: 23120117			

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120117-001	Vinyl acetate	K, T, U	< 0.3 ppbv	0.3	AC-058	15-Dec-23
23120117-001	Vinyl chloride	K, T, U	< 0.02 ppbv	0.02	AC-058	15-Dec-23

Report certified by: Andrea Conner, Admin Assistant

Date: January 17, 2024

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

On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

LAB-LICA-202312



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ENVIRONMENTAL ANALYTICAL SERVICES

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Revision History

Order ID	Ver	Date	Reason
23120117	01	17-Jan-24	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

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

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

Qualifiers

Data Qualifier Translation

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



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Order Comments



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TEST REPORT

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Sample Comments



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Result Comments

Note:

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

Sample ID: 23120158-001 Priority: Normal



Customer ID: LICA
 Cust Samp ID: LICA/VOC/CLS/Dec 14, 2023

RECEIVED
DEC 20 2023

TISCH PUF PLUS Sample Collection Data Sheet

Client:	LICA	Puf+ S/N:	TE-11
Location:	Cold Lake South	Motor S/N:	1138/100-1020
Station ID:	LICA 01	Installation Date/Time:	Dec 11, 2023 @ 19:14
Field Sample ID:	LICA/PUF/CLS/Dec 14, 2023	Removal Date/Time:	Dec 19, 2023 @ 13:10

Sample Data Collection Information

Sample Date:	14-Dec-23	Average Pressure (mmHg)	715
Start Time (mst):	0:00	Average Flow (Q _{std})	229
End Time (mst):	23:59	Average Temperature (°C)	1.7
Elapsed Time (Hours):	24	Volume (V _{std} m ³)	330.41

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:	Chris Wesson
Collected By:	Alex Yakupov


Sample ID: 23120158-001 Priority: Normal



Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/Dec 14, 2023



 <p>Canister ID: <u>A47746</u> This cleaned canister meets or exceeds TO-15 Method Specifications</p> <p>Proofed by: <u>ISR</u> on: <u>SEP 11 2023</u> Evacuated: <u>NOV 06 2023</u> Recertified: _____ <small>(Use within: 3 months from evacuation or recertification date)</small> Laboratory Contact Number: 780-632-8403</p>	Sample ID: <u>LICA/VOC/CLS/Dec 14, 2023</u>	
	Sampled By: <u>Alex Yakupov</u>	
	Starting Vacuum: <u>-27.1</u> "Hg	End Vacuum: <u>WWW</u> <u>+19.1</u> "Hg/psig

 <p>Canister ID: <u>TE-11</u> This cleaned canister meets or exceeds TO-15 Method Specifications</p> <p>Proofed by: <u>PUF</u> on: _____ Evacuated: <u>PUF</u> Recertified: _____ <small>(Use within: 3 months from evacuation or recertification date)</small> Laboratory Contact Number: 780-632-8403</p>	Sample ID: <u>LICA/PUF/CLS/Dec 14, 2023</u>	
	Sampled By: <u>Alex Yakupov</u>	
	Starting Vacuum: _____ "Hg	End Vacuum: _____ "Hg/psig

<p>RESULTS: Lica Communal Mail Lakeland Industry and Community Assn</p>	<p>CLIENT SAMPLE ID LICA/PUF/CLS/Dec 14, 2023</p> <p>MATRIX: Air Filter</p> <p>CANISTER ID: TE-11</p> <p>PRIORITY: Normal</p> <p>DESCRIPTION: Cold Lake South</p> <p>DATE SAMPLED: 14-Dec-23 0:00</p> <p>REPORT CREATED: 17-Jan-24</p>	<p>DATE RECEIVED: 20-Dec-23</p> <p>REPORT NUMBER: 23120158</p> <p>VERSION: Version 01</p>
<p>INVOICE: Maria Cueva PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>		

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120158-002	1-Methylnaphthalene		0.28	ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	2-Methylnaphthalene		0.47	ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	Acenaphthene		0.05	ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	Acenaphthylene		0.05	ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	Anthracene		0.03	ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	Benzo(a)anthracene		0.01	ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	Benzo(b,j,k)fluoranthene		0.05	ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	Chrysene		0.04	ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24

CLIENT SAMPLE ID LICA/PUF/CLS/Dec 14, 2023	CANISTER ID TE-11	Matrix Air Filter	DATE SAMPLED 14-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 23120158	REPORT CREATED: 17-Jan-24		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120158-002	Dibenzo(a,l)pyrene	K, T, U	< 0.01 ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	Dibenzo(ah)anthracene	K, T, U	< 0.01 ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	Fluoranthene		0.10 ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	Fluorene		0.36 ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	Indeno(1,2,3-cd)pyrene		0.01 ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	Naphthalene		0.36 ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	Perylene	K, T, U	< 0.01 ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	Phenanthrene		0.47 ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	Pyrene		0.07 ug/Filter	0.01	AC-066	04-Jan-24
23120158-002	Retene		0.11 ug/Filter	0.01	AC-066	04-Jan-24

CLIENT SAMPLE ID LICA/VOC/CLS/Dec 14. 2023	CANISTER ID A47746	Matrix Ambient Air	DATE SAMPLED 14-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 23120158	REPORT CREATED: 17-Jan-24		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120158-001	1,1,1-Trichloroethane	K, T, U	< 0.02 ppbv	0.02	AC-058	05-Jan-24
23120158-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02 ppbv	0.02	AC-058	05-Jan-24
23120158-001	1,1,2-Trichloroethane	K, T, U	< 0.02 ppbv	0.02	AC-058	05-Jan-24
23120158-001	1,1-Dichloroethane	K, T, U	< 0.02 ppbv	0.02	AC-058	05-Jan-24
23120158-001	1,1-Dichloroethylene	K, T, U	< 0.02 ppbv	0.02	AC-058	05-Jan-24
23120158-001	1,2,3-Trimethylbenzene	K, T, U	< 0.05 ppbv	0.05	AC-058	05-Jan-24
23120158-001	1,2,4-Trichlorobenzene	K, T, U	< 0.3 ppbv	0.3	AC-058	05-Jan-24
23120158-001	1,2,4-Trimethylbenzene	I	0.08 ppbv	0.03	AC-058	05-Jan-24
23120158-001	1,2-Dibromoethane	I	0.02 ppbv	0.02	AC-058	05-Jan-24
23120158-001	1,2-Dichlorobenzene	K, T, U	< 0.03 ppbv	0.03	AC-058	05-Jan-24
23120158-001	1,2-Dichloroethane	K, T, U	< 0.03 ppbv	0.03	AC-058	05-Jan-24
23120158-001	1,2-Dichloropropane	K, T, U	< 0.03 ppbv	0.03	AC-058	05-Jan-24
23120158-001	1,3,5-Trimethylbenzene	I	0.07 ppbv	0.03	AC-058	05-Jan-24
23120158-001	1,3-Butadiene	I	0.03 ppbv	0.03	AC-058	05-Jan-24
23120158-001	1,3-Dichlorobenzene	K, T, U	< 0.4 ppbv	0.4	AC-058	05-Jan-24
23120158-001	1,4-Dichlorobenzene	K, T, U	< 0.4 ppbv	0.4	AC-058	05-Jan-24
23120158-001	1,4-Dioxane	K, T, U	< 0.5 ppbv	0.5	AC-058	05-Jan-24
23120158-001	1-Butene/Isobutylene	K, T, U	< 0.06 ppbv	0.06	AC-058	05-Jan-24
23120158-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07 ppbv	0.07	AC-058	05-Jan-24
23120158-001	1-Pentene	K, T, U	< 0.03 ppbv	0.03	AC-058	05-Jan-24
23120158-001	2,2,4-Trimethylpentane	I	0.03 ppbv	0.02	AC-058	05-Jan-24
23120158-001	2,2-Dimethylbutane	I	0.05 ppbv	0.02	AC-058	05-Jan-24
23120158-001	2,3,4-Trimethylpentane	I	0.06 ppbv	0.02	AC-058	05-Jan-24
23120158-001	2,3-Dimethylbutane	I	0.10 ppbv	0.09	AC-058	05-Jan-24
23120158-001	2,3-Dimethylpentane	I	0.07 ppbv	0.02	AC-058	05-Jan-24

Report certified by: Andrea Conner, Admin Assistant

Date: January 17, 2024

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

On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

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CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Dec 14, 2023	A47746	Ambient Air	14-Dec-23 0:00
DESCRIPTION:	Cold Lake South		
REPORT NUMBER:	23120158	REPORT CREATED:	17-Jan-24
			VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120158-001	2,4-Dimethylpentane	I	0.05	ppbv	0.03	AC-058	05-Jan-24
23120158-001	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	05-Jan-24
23120158-001	2-Methylhexane	I	0.05	ppbv	0.03	AC-058	05-Jan-24
23120158-001	2-Methylpentane		0.24	ppbv	0.02	AC-058	05-Jan-24
23120158-001	3-Methylheptane	I	0.07	ppbv	0.03	AC-058	05-Jan-24
23120158-001	3-Methylhexane	I	0.08	ppbv	0.02	AC-058	05-Jan-24
23120158-001	3-Methylpentane	I	0.10	ppbv	0.02	AC-058	05-Jan-24
23120158-001	Acetone		1.3	ppbv	0.4	AC-058	05-Jan-24
23120158-001	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	05-Jan-24
23120158-001	Benzene	I	0.07	ppbv	0.03	AC-058	05-Jan-24
23120158-001	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	05-Jan-24
23120158-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Jan-24
23120158-001	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	05-Jan-24
23120158-001	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	05-Jan-24
23120158-001	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	05-Jan-24
23120158-001	Carbon tetrachloride	I	0.08	ppbv	0.02	AC-058	05-Jan-24
23120158-001	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	05-Jan-24
23120158-001	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	05-Jan-24
23120158-001	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	05-Jan-24
23120158-001	Chloromethane		0.57	ppbv	0.04	AC-058	05-Jan-24
23120158-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	05-Jan-24
23120158-001	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Jan-24
23120158-001	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Jan-24
23120158-001	cis-2-Pentene	I	0.03	ppbv	0.02	AC-058	05-Jan-24
23120158-001	Cyclohexane	I	0.20	ppbv	0.04	AC-058	05-Jan-24

Report certified by: Andrea Conner, Admin Assistant

On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: January 17, 2024

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

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

LAB-LICA-202312

CLIENT SAMPLE ID LICA/VOC/CLS/Dec 14, 2023	CANISTER ID A47746	Matrix Ambient Air	DATE SAMPLED 14-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 23120158	REPORT CREATED: 17-Jan-24		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120158-001	Cyclopentane	I	0.06	ppbv	0.02	AC-058	05-Jan-24
23120158-001	Dibromochloromethane	I	0.05	ppbv	0.02	AC-058	05-Jan-24
23120158-001	Ethanol	I	0.9	ppbv	0.5	AC-058	05-Jan-24
23120158-001	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	05-Jan-24
23120158-001	Ethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Jan-24
23120158-001	Freon-11		0.17	ppbv	0.02	AC-058	05-Jan-24
23120158-001	Freon-113	I	0.06	ppbv	0.02	AC-058	05-Jan-24
23120158-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Jan-24
23120158-001	Freon-12		0.52	ppbv	0.03	AC-058	05-Jan-24
23120158-001	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	05-Jan-24
23120158-001	Isobutane		0.47	ppbv	0.03	AC-058	05-Jan-24
23120158-001	Isopentane		0.51	ppbv	0.04	AC-058	05-Jan-24
23120158-001	Isoprene	I	0.03	ppbv	0.02	AC-058	05-Jan-24
23120158-001	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	05-Jan-24
23120158-001	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jan-24
23120158-001	m,p-Xylene	I	0.07	ppbv	0.04	AC-058	05-Jan-24
23120158-001	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	05-Jan-24
23120158-001	m-Ethyltoluene	I	0.03	ppbv	0.03	AC-058	05-Jan-24
23120158-001	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	05-Jan-24
23120158-001	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	05-Jan-24
23120158-001	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	05-Jan-24
23120158-001	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	05-Jan-24
23120158-001	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Jan-24
23120158-001	Methylcyclohexane		0.18	ppbv	0.02	AC-058	05-Jan-24
23120158-001	Methylcyclopentane		0.18	ppbv	0.05	AC-058	05-Jan-24

Report certified by: Andrea Conner, Admin Assistant

On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: January 17, 2024

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

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LAB-LICA-202312

CLIENT SAMPLE ID LICA/VOC/CLS/Dec 14. 2023	CANISTER ID A47746	Matrix Ambient Air	DATE SAMPLED 14-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 23120158	REPORT CREATED: 17-Jan-24		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120158-001	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	05-Jan-24
23120158-001	n-Butane		0.90	ppbv	0.02	AC-058	05-Jan-24
23120158-001	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	05-Jan-24
23120158-001	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	05-Jan-24
23120158-001	n-Heptane	I	0.17	ppbv	0.04	AC-058	05-Jan-24
23120158-001	n-Hexane		0.21	ppbv	0.03	AC-058	05-Jan-24
23120158-001	n-Octane	I	0.08	ppbv	0.02	AC-058	05-Jan-24
23120158-001	n-Pentane		0.35	ppbv	0.04	AC-058	05-Jan-24
23120158-001	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	05-Jan-24
23120158-001	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	05-Jan-24
23120158-001	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	05-Jan-24
23120158-001	n-Nonane	I	0.05	ppbv	0.04	AC-058	05-Jan-24
23120158-001	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	05-Jan-24
23120158-001	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Jan-24
23120158-001	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	05-Jan-24
23120158-001	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jan-24
23120158-001	Styrene	I	0.11	ppbv	0.04	AC-058	05-Jan-24
23120158-001	Tetrachloroethylene	I	0.05	ppbv	0.02	AC-058	05-Jan-24
23120158-001	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	05-Jan-24
23120158-001	Toluene	I	0.09	ppbv	0.03	AC-058	05-Jan-24
23120158-001	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	05-Jan-24
23120158-001	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	05-Jan-24
23120158-001	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Jan-24
23120158-001	trans-2-Pentene	I	0.03	ppbv	0.02	AC-058	05-Jan-24
23120158-001	Trichloroethylene	I	0.03	ppbv	0.02	AC-058	05-Jan-24

Report certified by: Andrea Conner, Admin Assistant

Date: January 17, 2024

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

On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

LAB-LICA-202312

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID LICA/VOC/CLS/Dec 14. 2023	CANISTER ID A47746	Matrix Ambient Air	DATE SAMPLED 14-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 23120158	REPORT CREATED: 17-Jan-24		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120158-001	Vinyl acetate	K, T, U	< 0.3 ppbv	0.3	AC-058	05-Jan-24
23120158-001	Vinyl chloride	K, T, U	< 0.02 ppbv	0.02	AC-058	05-Jan-24

Report certified by: Andrea Conner, Admin Assistant

On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: January 17, 2024

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

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

LAB-LICA-202312



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Revision History

Order ID	Ver	Date	Reason
23120158	01	17-Jan-24	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

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

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

Qualifiers

Data Qualifier Translation

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



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Order Comments



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Sample Comments



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Result Comments

Note:

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



Customer ID: LICA
 Cust Samp ID: LICA/VOC/CLS/Dec 26, 2023

Bureau Veritas

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

Client: LICA Sampler S/N: 6167
 Location: Cold Lake South Canister ID: 29029
 Station ID: LICA 01 Installation Date/Time (mst): Dec 24, 2023 @ 18:32
 Sample ID: LICA/VOC/CLS/Dec 26, 2023 Removal Date/Time (mst): Dec 28, 2023 @ 15:38

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
December 26, 2023	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Pressure (psi)
-27.9	18.1

Flow Settings		
Flow Reading (scm)	Pot Set Point	Pump Set (psi)
10.00	4.89	27.5

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
 Timer reset to zero prior to sampling? YES (yes/no)

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

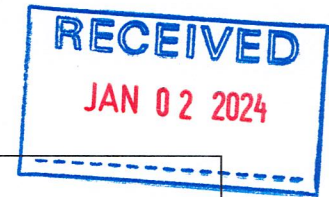
Comments: n/a

Deployment Technician Signature: Alex Yakupov

Collection Technician Signature: Alex Yakupov



Customer ID: LICA
 Cust Samp ID: LICA/PUF/CLS/Dec 26, 2023



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:	Dec 24, 2023 @ 18:33
Field Sample ID:	LICA/PUF/CLS/Dec 26, 2023	Removal Date/Time:	Dec 28, 2023 @ 15:41

Sample Data Collection Information

Sample Date:	26-Dec-23	Average Pressure (mmHg)	710
Start Time (mst):	0:00	Average Flow (Q _{std})	229
End Time (mst):	23:59	Average Temperature (°C)	-6.6
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:	Alex Yakupov



Customer ID: LICA
 Cust Samp ID: LICA/VOC/CLS/Dec 20, 2023

Bureau Veritas



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

Client: LICA	Sampler S/N: 6167
Location: Cold Lake South	Canister ID: A47740
Station ID: LICA 01	Installation Date/Time (mst): Dec 19, 2023 @ 13:19
Sample ID: LICA/VOC/CLS/Dec 20, 2023	Removal Date/Time (mst): Dec 24, 2023 @ 18:22

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
December 20, 2023	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Pressure (psi)
-27.1	18.4

Flow Settings		
Flow Reading (sccm)	Pot Set Point	Pump Set (psi)
10.00	4.89	27.5

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
 Timer reset to zero prior to sampling? YES (yes/no)

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

Comments: n/a

Deployment Technician Signature: Alex Yakupov

Collection Technician Signature: Alex Yakupov

Sample ID: 24010006-004 Priority: Normal



Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/Dec 20, 2023



TISCH PUF PLUS Sample Collection Data Sheet

Client:	LICA	Puf+ S/N:	9802
Location:	Cold Lake South	Motor S/N:	1138/100-1020
Station ID:	LICA 01	Installation Date/Time:	Dec 19, 2023 @ 13:21
Field Sample ID:	LICA/PUF/CLS/Dec 20, 2023	Removal Date/Time:	Dec 24, 2023 @ 18:25

Sample Data Collection Information

Sample Date:	20-Dec-23	Average Pressure (mmHg)	708
Start Time (mst):	0:00	Average Flow (Q _{std})	229
End Time (mst):	23:59	Average Temperature (°C)	-3.9
Elapsed Time (Hours):	24	Volume (V _{std} 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
Other observations?		n/a

Deployed By:	Alex Yakupov
Collected By:	Alex Yakupov



Canister ID: 29029
 This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ on: OCT 24 2023

Evacuated: NOV 03 2023 Recertified: _____
 (Use within: 3 months from evacuation or recertification date)
 Laboratory Contact Number: 780-632-8403

Sample ID: LICA/VOC/CLS/Dec 20, 2023

Sampled By: Alex Yakupov

Starting Vacuum: -27.5 "Hg

End Vacuum: +18.1 "Hg/psig



Canister ID: P13-01
 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/Dec 26, 2023

Sampled By: Alex Yakupov

Starting Vacuum: _____ "Hg

End Vacuum: _____ "Hg/psig



Canister ID: A47740
 This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ on: SEP 11 2023

Evacuated: NOV 16 2023 Recertified: _____
 (Use within: 3 months from evacuation or recertification date)
 Laboratory Contact Number: 780-632-8403

Sample ID: LICA/VOC/CLS/Dec 20, 2023

Sampled By: Alex Yakupov

Starting Vacuum: -27.4 "Hg

End Vacuum: +18.4 "Hg/psig



Canister ID: 9802
 This cleaned canister meets or exceeds TO-15 Method Specifications

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/Dec 20, 2023

Sampled By: Alex Yakupov

Starting Vacuum: _____ "Hg

End Vacuum: _____ "Hg/psig

Sample ID: 24010006-001 Priority: Normal



Customer ID: LICA
 Cust Samp ID: LICA/VOC/CLS/Dec 26, 2023

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

1. Any proposal contained herein is prepared for the consideration of the Client only. Its contents may not be used or disclosed to any other party without prior written consent of the INNOTECH ALBERTA INC. (hereinafter referred to as "InnoTech Alberta").
2. InnoTech Alberta will perform the Services in accordance with normal professional standards.
3. The delivery time for performance of the Services (as set out on the front page of this Quotation) is approximate and may be changed by InnoTech Alberta giving written notice to the Client.
4. InnoTech Alberta will exercise due care and proficiency in testing items submitted by a Client. InnoTech Alberta shall not, however, be liable to the Client for any damage or loss caused to the item being tested or for any damage, loss or expense caused by any delay in carrying out the test, including any damage, loss or expense resulting from InnoTech Alberta's negligence. InnoTech Alberta shall not be responsible for any damage, which is a natural or necessary result of any testing procedure.
5. For the purposes of this Quotation, Intellectual Property means all information, data, artistic and literary works, concepts, designs, processes, software, algorithms and inventions, including, without limitation, those that could be the subject of patent, copyright, industrial design, trade secret or other forms of protection. Intellectual Property which was owned by either InnoTech Alberta or the Client prior to the signing of this Agreement remains the property of that party. Nothing in this Agreement shall operate as a license, permission or grant of any other rights to either InnoTech Alberta's or the Client's Intellectual Property.
6. All data, reports and other information relating to the Services shall be treated by InnoTech Alberta as the confidential property of the Client, and InnoTech Alberta will use reasonable efforts to ensure that its employees, contractors and agents will not disclose the same to any other person, firm or corporation during the term of this Agreement and for a period of five (5) years after the date of termination of the Agreement. The obligation of confidentiality set out herein shall not apply to any information that was in InnoTech Alberta's possession prior to receipt from the Client or which is or becomes part of the public domain through no act or failure on the part of InnoTech Alberta. The obligation of confidentiality set out in this Section shall not prevent the disclosure of information to any level of government having jurisdiction to make lawful demand therefor, or required to be disclosed by any applicable law. Any records required to be maintained by InnoTech Alberta pursuant to this Agreement are subject to the protection and access provisions of the Freedom of Information and Protection of Privacy Act (Alberta).
7. The reported results of any InnoTech Alberta tests or evaluations performed on samples or items provided by the Client shall be interpreted as being specific to the sample or item tested. InnoTech Alberta makes no representation that any similar or related untested samples or items would produce the same results.
8. The Client shall not use InnoTech Alberta's name in any advertising material, sale offer, news releases, public statements or announcements, whether written or oral relating to the Services or the results thereof, without the prior written consent of InnoTech Alberta.
9. Records, test data, reports and samples, except where shipped to the Client after completion of the work shall be retained by InnoTech Alberta according to InnoTech Alberta's approved Records Retention and Disposition Schedule.
10. Prices quoted are in Canadian Dollars unless otherwise stated in writing and are exclusive of any provincial, municipal, sales, use or goods and services tax.
11. Prices quoted do not include shipping, insurance or cost of consumables. The Client shall be responsible for all costs incurred by InnoTech Alberta in collecting any item for testing and returning the item to the Client after testing and shall be responsible for all necessary incidental costs incurred by InnoTech Alberta in providing the Services. InnoTech Alberta will not be responsible for any damage or loss to items during shipping and it is the responsibility of the Client to arrange and pay for any insurance it deems necessary.
12. Any test samples or other materials supplied by the Client to InnoTech Alberta may, at InnoTech Alberta's option, be returned by InnoTech Alberta to the Client. The Client shall:
 - (a) be responsible for all costs associated with the handling, transportation and disposal of such materials;
 - (b) reimburse InnoTech Alberta for any costs incurred by InnoTech Alberta associated with the handling,

transportation and disposal of such materials; and

- (c) indemnify and hold InnoTech Alberta harmless from any and all claims, damages or actions associated with the handling, transportation and disposal of such materials.
13. The Client shall pay all invoices rendered by InnoTech Alberta to the Client within thirty (30) days from the date of invoice, without deduction or set-off.
14. If the Client fails to pay any amount under this Agreement, such unpaid amount shall bear interest at a rate per month equal to one (1%) percent (or 12.6825% per annum) with interest on overdue interest at the same rate.
15. InnoTech Alberta makes no representation, warranties or conditions, either expressed or implied, statutory or otherwise and does not warrant the quality, state, merchantability or fitness for any purpose of any goods or products to be delivered pursuant to this Agreement. The Client accepts the results of these Services or items tested as is, and acknowledges that any use or interpretation of the information contained is at the Client's own risk.
16. In no event shall InnoTech Alberta be liable for any indirect or consequential damage or loss suffered by the Client, including loss of anticipated profits.
17. The Client shall indemnify and hold harmless InnoTech Alberta from any and all claims, demands, actions and costs (including legal costs on a solicitor-client basis) that may arise out of:
 - (a) any dangerous defect or content in the item being tested, whether apparent or not, which dangerous defect or content was not disclosed in writing to InnoTech Alberta by the Client at the time the item was submitted for testing;
 - (b) differences between those items actually tested and items previously or subsequently produced which are purported to be identical to the item tested; or
 - (c) any use of the tested item or any item incorporating the tested item, whether by the Client or a third party following its return to the Client.The hold harmless shall survive this Agreement.
18. The Client shall, at its own expense and without limiting its liabilities herein, be responsible for insuring its operation in an amount not less than \$2,000,000 inclusive per occurrence, insuring against bodily injury, and property damage including loss of use thereof. Further, the Client is responsible for insuring all owned property directly or indirectly related to this Agreement and InnoTech Alberta shall have no liability for any loss or damage to such property.
19. InnoTech Alberta shall maintain the following insurance: (i) commercial general liability insurance (including cross liability, severability of interests, non-owned automobile liability) in the amount of two million dollars (\$2,000,000.00) per occurrence, and; (ii) professional liability and errors and omissions insurance in the amount of one million dollars (\$1,000,000.00) per claim, and two million dollars (\$2,000,000.00) in the aggregate. In addition, InnoTech Alberta shall maintain all workers' compensation coverage required by applicable laws. Notwithstanding the foregoing, InnoTech Alberta reserves the right to supplement or add insurance coverage from time to time as may be required in its sole discretion. InnoTech Alberta may provide certificates of insurance for coverages outlined in (i) and (ii) above.
20. The Client agrees to comply with all InnoTech Alberta Safety & Security regulations in effect while on InnoTech Alberta premises.
21. This Agreement represents the entire agreement between the parties and shall supersede all prior agreements relative to this transaction.
22. If a party's performance of any of its obligations under this Agreement (excepting only an obligation to pay) is delayed, rendered impossible or impractical, or prevented in whole or in part due to circumstances beyond its reasonable control, including but not limited to acts of God, war, terrorism, labour disputes, pandemics or epidemics, global health emergencies, or governmental action, that party will not be in breach of this Agreement due to the delay or failure in performance occasioned by such event.
23. InnoTech Alberta may assign this Quotation to an "affiliated" (as that term is defined at Section 2 of the Business Corporations Act (Alberta)) or successor entity on written notice to the Client.
24. This Quotation and rights and parties thereto shall be governed by and construed according to the laws of the Province of Alberta. The parties hereby submit to the jurisdiction of the Courts of Alberta.

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/Dec 20, 2023 CANISTER ID: 9802 PRIORITY: Normal DESCRIPTION: Cold Lake South DATE SAMPLED: 20-Dec-23 0:00 REPORT CREATED: 17-Jan-24	Matrix Air Filter DATE RECEIVED: 02-Jan-24 REPORT NUMBER: 24010006 VERSION: Version 01
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Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010006-004	1-Methylnaphthalene		0.21	ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	2-Methylnaphthalene		0.36	ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	Acenaphthene		0.07	ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	Acenaphthylene		0.13	ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	Anthracene		0.05	ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	Benzo(a)anthracene		0.01	ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	Benzo(b,j,k)fluoranthene		0.06	ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	Chrysene		0.03	ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24

CLIENT SAMPLE ID LICA/PUF/CLS/Dec 20, 2023	CANISTER ID 9802	Matrix Air Filter	DATE SAMPLED 20-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 24010006	REPORT CREATED: 17-Jan-24		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
24010006-004	Dibenzo(a,l)pyrene	K, T, U	< 0.01 ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	Dibenzo(ah)anthracene	K, T, U	< 0.01 ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	Fluoranthene		0.13 ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	Fluorene		0.27 ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01 ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	Naphthalene		0.28 ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	Perylene	K, T, U	< 0.01 ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	Phenanthrene		0.53 ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	Pyrene		0.09 ug/Filter	0.01	AC-066	04-Jan-24
24010006-004	Retene		0.13 ug/Filter	0.01	AC-066	04-Jan-24

CLIENT SAMPLE ID LICA/PUF/CLS/Dec 26, 2023	CANISTER ID P13-01	Matrix Air Filter	DATE SAMPLED 26-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 24010006	REPORT CREATED: 17-Jan-24		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010006-002	1-Methylnaphthalene		0.37	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	2-Methylnaphthalene		0.68	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	Acenaphthene		0.16	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	Acenaphthylene		0.30	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	Anthracene		0.04	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	Benzo(a)anthracene		0.02	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	Benzo(a)pyrene		0.01	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	Benzo(b,j,k)fluoranthene		0.08	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	Benzo(e)pyrene		0.02	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	Chrysene		0.06	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	Fluoranthene		0.14	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	Fluorene		0.36	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	Indeno(1,2,3-cd)pyrene		0.03	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	Naphthalene		0.74	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	Phenanthrene		0.52	ug/Filter	0.01	AC-066	04-Jan-24

Report certified by: Andrea Conner, Admin Assistant

Date: January 17, 2024

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

On behalf of: Adam Malcolm, Manager, Chemical Testing

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID LICA/PUF/CLS/Dec 26, 2023	CANISTER ID P13-01	Matrix Air Filter	DATE SAMPLED 26-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 24010006	REPORT CREATED: 17-Jan-24		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
24010006-002	Pyrene		0.16 ug/Filter	0.01	AC-066	04-Jan-24
24010006-002	Retene		0.15 ug/Filter	0.01	AC-066	04-Jan-24

Report certified by: Andrea Conner, Admin Assistant

On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: January 17, 2024

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LAB-LICA-202312

CLIENT SAMPLE ID LICA/VOC/CLS/Dec 20. 2023	CANISTER ID A47740	Matrix Ambient Air	DATE SAMPLED 20-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 24010006	REPORT CREATED: 17-Jan-24		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010006-003	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-003	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-003	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-003	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-003	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-003	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	06-Jan-24
24010006-003	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Jan-24
24010006-003	1,2,4-Trimethylbenzene	I	0.05	ppbv	0.03	AC-058	06-Jan-24
24010006-003	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-003	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Jan-24
24010006-003	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Jan-24
24010006-003	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Jan-24
24010006-003	1,3,5-Trimethylbenzene	I	0.04	ppbv	0.03	AC-058	06-Jan-24
24010006-003	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Jan-24
24010006-003	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	06-Jan-24
24010006-003	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	06-Jan-24
24010006-003	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	06-Jan-24
24010006-003	1-Butene/Isobutylene	K, T, U	< 0.06	ppbv	0.06	AC-058	06-Jan-24
24010006-003	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	06-Jan-24
24010006-003	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Jan-24
24010006-003	2,2,4-Trimethylpentane	I	0.03	ppbv	0.02	AC-058	06-Jan-24
24010006-003	2,2-Dimethylbutane	I	0.03	ppbv	0.02	AC-058	06-Jan-24
24010006-003	2,3,4-Trimethylpentane	I	0.05	ppbv	0.02	AC-058	06-Jan-24
24010006-003	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	06-Jan-24
24010006-003	2,3-Dimethylpentane	I	0.04	ppbv	0.02	AC-058	06-Jan-24

Report certified by: Andrea Conner, Admin Assistant

Date: January 17, 2024

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

On behalf of: Adam Malcolm, Manager, Chemical Testing

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LAB-LICA-202312

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CLIENT SAMPLE ID LICA/VOC/CLS/Dec 20. 2023	CANISTER ID A47740	Matrix Ambient Air	DATE SAMPLED 20-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 24010006	REPORT CREATED: 17-Jan-24		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
24010006-003	2,4-Dimethylpentane	I	0.04 ppbv	0.03	AC-058	06-Jan-24
24010006-003	2-Methylheptane	I	0.07 ppbv	0.02	AC-058	06-Jan-24
24010006-003	2-Methylhexane	K, T, U	< 0.03 ppbv	0.03	AC-058	06-Jan-24
24010006-003	2-Methylpentane		0.15 ppbv	0.02	AC-058	06-Jan-24
24010006-003	3-Methylheptane	I	0.06 ppbv	0.03	AC-058	06-Jan-24
24010006-003	3-Methylhexane	I	0.05 ppbv	0.02	AC-058	06-Jan-24
24010006-003	3-Methylpentane	I	0.06 ppbv	0.02	AC-058	06-Jan-24
24010006-003	Acetone		0.7 ppbv	0.4	AC-058	06-Jan-24
24010006-003	Acrolein	K, T, U	< 0.3 ppbv	0.3	AC-058	06-Jan-24
24010006-003	Benzene	K, T, U	< 0.03 ppbv	0.03	AC-058	06-Jan-24
24010006-003	Benzyl chloride	K, T, U	< 0.3 ppbv	0.3	AC-058	06-Jan-24
24010006-003	Bromodichloromethane	K, T, U	< 0.03 ppbv	0.03	AC-058	06-Jan-24
24010006-003	Bromoform	K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-24
24010006-003	Bromomethane	K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-24
24010006-003	Carbon disulfide	K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-24
24010006-003	Carbon tetrachloride	I	0.07 ppbv	0.02	AC-058	06-Jan-24
24010006-003	Chlorobenzene	K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-24
24010006-003	Chloroethane	K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-24
24010006-003	Chloroform	K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-24
24010006-003	Chloromethane		0.47 ppbv	0.04	AC-058	06-Jan-24
24010006-003	cis-1,2-Dichloroethene	K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-24
24010006-003	cis-1,3-Dichloropropene	K, T, U	< 0.03 ppbv	0.03	AC-058	06-Jan-24
24010006-003	cis-2-Butene	K, T, U	< 0.03 ppbv	0.03	AC-058	06-Jan-24
24010006-003	cis-2-Pentene	I	0.03 ppbv	0.02	AC-058	06-Jan-24
24010006-003	Cyclohexane	I	0.08 ppbv	0.04	AC-058	06-Jan-24

Report certified by: Andrea Conner, Admin Assistant

Date: January 17, 2024

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On behalf of: Adam Malcolm, Manager, Chemical Testing

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LAB-LICA-202312

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CLIENT SAMPLE ID LICA/VOC/CLS/Dec 20. 2023	CANISTER ID A47740	Matrix Ambient Air	DATE SAMPLED 20-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 24010006	REPORT CREATED: 17-Jan-24		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
24010006-003	Cyclopentane	K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-24
24010006-003	Dibromochloromethane	I	0.05 ppbv	0.02	AC-058	06-Jan-24
24010006-003	Ethanol	K, T, U	< 0.5 ppbv	0.5	AC-058	06-Jan-24
24010006-003	Ethyl acetate	K, T, U	< 0.3 ppbv	0.3	AC-058	06-Jan-24
24010006-003	Ethylbenzene	K, T, U	< 0.03 ppbv	0.03	AC-058	06-Jan-24
24010006-003	Freon-11		0.17 ppbv	0.02	AC-058	06-Jan-24
24010006-003	Freon-113	I	0.06 ppbv	0.02	AC-058	06-Jan-24
24010006-003	Freon-114	K, T, U	< 0.03 ppbv	0.03	AC-058	06-Jan-24
24010006-003	Freon-12		0.49 ppbv	0.03	AC-058	06-Jan-24
24010006-003	Hexachloro-1,3-butadiene	K, T, U	< 0.3 ppbv	0.3	AC-058	06-Jan-24
24010006-003	Isobutane		0.29 ppbv	0.03	AC-058	06-Jan-24
24010006-003	Isopentane		0.25 ppbv	0.04	AC-058	06-Jan-24
24010006-003	Isoprene	I	0.02 ppbv	0.02	AC-058	06-Jan-24
24010006-003	Isopropyl alcohol	K, T, U	< 0.3 ppbv	0.3	AC-058	06-Jan-24
24010006-003	Isopropylbenzene	K, T, U	< 0.04 ppbv	0.04	AC-058	06-Jan-24
24010006-003	m,p-Xylene	K, T, U	< 0.04 ppbv	0.04	AC-058	06-Jan-24
24010006-003	m-Diethylbenzene	K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-24
24010006-003	m-Ethyltoluene	K, T, U	< 0.03 ppbv	0.03	AC-058	06-Jan-24
24010006-003	Methyl butyl ketone	K, T, U	< 0.4 ppbv	0.4	AC-058	06-Jan-24
24010006-003	Methyl ethyl ketone	K, T, U	< 0.3 ppbv	0.3	AC-058	06-Jan-24
24010006-003	Methyl isobutyl ketone	K, T, U	< 0.3 ppbv	0.3	AC-058	06-Jan-24
24010006-003	Methyl methacrylate	K, T, U	< 0.08 ppbv	0.08	AC-058	06-Jan-24
24010006-003	Methyl tert butyl ether	K, T, U	< 0.03 ppbv	0.03	AC-058	06-Jan-24
24010006-003	Methylcyclohexane	I	0.03 ppbv	0.02	AC-058	06-Jan-24
24010006-003	Methylcyclopentane	I	0.06 ppbv	0.05	AC-058	06-Jan-24

Report certified by: Andrea Conner, Admin Assistant

Date: January 17, 2024

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LAB-LICA-202312

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CLIENT SAMPLE ID LICA/VOC/CLS/Dec 20. 2023	CANISTER ID A47740	Matrix Ambient Air	DATE SAMPLED 20-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 24010006	REPORT CREATED: 17-Jan-24		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010006-003	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Jan-24
24010006-003	n-Butane		0.60	ppbv	0.02	AC-058	06-Jan-24
24010006-003	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	06-Jan-24
24010006-003	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Jan-24
24010006-003	n-Heptane	I	0.13	ppbv	0.04	AC-058	06-Jan-24
24010006-003	n-Hexane	I	0.13	ppbv	0.03	AC-058	06-Jan-24
24010006-003	n-Octane	I	0.06	ppbv	0.02	AC-058	06-Jan-24
24010006-003	n-Pentane		0.17	ppbv	0.04	AC-058	06-Jan-24
24010006-003	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	06-Jan-24
24010006-003	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	06-Jan-24
24010006-003	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Jan-24
24010006-003	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	06-Jan-24
24010006-003	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-003	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Jan-24
24010006-003	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-003	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	06-Jan-24
24010006-003	Styrene	I	0.09	ppbv	0.04	AC-058	06-Jan-24
24010006-003	Tetrachloroethylene	I	0.05	ppbv	0.02	AC-058	06-Jan-24
24010006-003	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Jan-24
24010006-003	Toluene	I	0.04	ppbv	0.03	AC-058	06-Jan-24
24010006-003	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	06-Jan-24
24010006-003	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-003	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Jan-24
24010006-003	trans-2-Pentene	I	0.03	ppbv	0.02	AC-058	06-Jan-24
24010006-003	Trichloroethylene	I	0.03	ppbv	0.02	AC-058	06-Jan-24

Report certified by: Andrea Conner, Admin Assistant

Date: January 17, 2024

On behalf of: Adam Malcolm, Manager, Chemical Testing

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LAB-LICA-202312

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID LICA/VOC/CLS/Dec 20. 2023	CANISTER ID A47740	Matrix Ambient Air	DATE SAMPLED 20-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 24010006	REPORT CREATED: 17-Jan-24		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
24010006-003	Vinyl acetate	K, T, U	< 0.3 ppbv	0.3	AC-058	06-Jan-24
24010006-003	Vinyl chloride	K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-24

Report certified by: Andrea Conner, Admin Assistant

Date: January 17, 2024

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

On behalf of: Adam Malcolm, Manager, Chemical Testing

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LAB-LICA-202312

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Dec 26. 2023	29029	Ambient Air	26-Dec-23 0:00
DESCRIPTION:	Cold Lake South		
REPORT NUMBER:	24010006	REPORT CREATED:	17-Jan-24
			VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010006-001	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-001	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-001	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-001	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-001	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	06-Jan-24
24010006-001	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Jan-24
24010006-001	1,2,4-Trimethylbenzene	I	0.08	ppbv	0.03	AC-058	06-Jan-24
24010006-001	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-001	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Jan-24
24010006-001	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Jan-24
24010006-001	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Jan-24
24010006-001	1,3,5-Trimethylbenzene	I	0.05	ppbv	0.03	AC-058	06-Jan-24
24010006-001	1,3-Butadiene	I	0.04	ppbv	0.03	AC-058	06-Jan-24
24010006-001	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	06-Jan-24
24010006-001	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	06-Jan-24
24010006-001	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	06-Jan-24
24010006-001	1-Butene/Isobutylene	K, T, U	< 0.06	ppbv	0.06	AC-058	06-Jan-24
24010006-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	06-Jan-24
24010006-001	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Jan-24
24010006-001	2,2,4-Trimethylpentane	I	0.09	ppbv	0.02	AC-058	06-Jan-24
24010006-001	2,2-Dimethylbutane	I	0.04	ppbv	0.02	AC-058	06-Jan-24
24010006-001	2,3,4-Trimethylpentane	I	0.06	ppbv	0.02	AC-058	06-Jan-24
24010006-001	2,3-Dimethylbutane		0.11	ppbv	0.09	AC-058	06-Jan-24
24010006-001	2,3-Dimethylpentane		0.11	ppbv	0.02	AC-058	06-Jan-24

Report certified by: Andrea Conner, Admin Assistant

Date: January 17, 2024

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CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Dec 26. 2023	29029	Ambient Air	26-Dec-23 0:00
DESCRIPTION:	Cold Lake South		
REPORT NUMBER:	24010006	REPORT CREATED:	17-Jan-24
			VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010006-001	2,4-Dimethylpentane	I	0.06	ppbv	0.03	AC-058	06-Jan-24
24010006-001	2-Methylheptane	I	0.09	ppbv	0.02	AC-058	06-Jan-24
24010006-001	2-Methylhexane	I	0.07	ppbv	0.03	AC-058	06-Jan-24
24010006-001	2-Methylpentane		0.30	ppbv	0.02	AC-058	06-Jan-24
24010006-001	3-Methylheptane	I	0.07	ppbv	0.03	AC-058	06-Jan-24
24010006-001	3-Methylhexane	I	0.10	ppbv	0.02	AC-058	06-Jan-24
24010006-001	3-Methylpentane		0.15	ppbv	0.02	AC-058	06-Jan-24
24010006-001	Acetone		0.7	ppbv	0.4	AC-058	06-Jan-24
24010006-001	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Jan-24
24010006-001	Benzene	I	0.10	ppbv	0.03	AC-058	06-Jan-24
24010006-001	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Jan-24
24010006-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Jan-24
24010006-001	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-001	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-001	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-001	Carbon tetrachloride	I	0.07	ppbv	0.02	AC-058	06-Jan-24
24010006-001	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-001	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-001	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-001	Chloromethane		0.41	ppbv	0.04	AC-058	06-Jan-24
24010006-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-001	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Jan-24
24010006-001	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Jan-24
24010006-001	cis-2-Pentene	I	0.03	ppbv	0.02	AC-058	06-Jan-24
24010006-001	Cyclohexane	I	0.13	ppbv	0.04	AC-058	06-Jan-24

Report certified by: Andrea Conner, Admin Assistant

Date: January 17, 2024

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

On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

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CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Dec 26. 2023	29029	Ambient Air	26-Dec-23 0:00
DESCRIPTION:	Cold Lake South		
REPORT NUMBER:	24010006	REPORT CREATED:	17-Jan-24
			VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010006-001	Cyclopentane	I	0.04	ppbv	0.02	AC-058	06-Jan-24
24010006-001	Dibromochloromethane	I	0.05	ppbv	0.02	AC-058	06-Jan-24
24010006-001	Ethanol		2.2	ppbv	0.5	AC-058	06-Jan-24
24010006-001	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Jan-24
24010006-001	Ethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Jan-24
24010006-001	Freon-11		0.18	ppbv	0.02	AC-058	06-Jan-24
24010006-001	Freon-113	I	0.06	ppbv	0.02	AC-058	06-Jan-24
24010006-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Jan-24
24010006-001	Freon-12		0.51	ppbv	0.03	AC-058	06-Jan-24
24010006-001	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Jan-24
24010006-001	Isobutane		0.90	ppbv	0.03	AC-058	06-Jan-24
24010006-001	Isopentane		0.71	ppbv	0.04	AC-058	06-Jan-24
24010006-001	Isoprene	I	0.03	ppbv	0.02	AC-058	06-Jan-24
24010006-001	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Jan-24
24010006-001	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	06-Jan-24
24010006-001	m,p-Xylene	I	0.11	ppbv	0.04	AC-058	06-Jan-24
24010006-001	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-001	m-Ethyltoluene	I	0.04	ppbv	0.03	AC-058	06-Jan-24
24010006-001	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	06-Jan-24
24010006-001	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Jan-24
24010006-001	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Jan-24
24010006-001	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	06-Jan-24
24010006-001	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Jan-24
24010006-001	Methylcyclohexane		0.13	ppbv	0.02	AC-058	06-Jan-24
24010006-001	Methylcyclopentane		0.14	ppbv	0.05	AC-058	06-Jan-24

Report certified by: Andrea Conner, Admin Assistant

Date: January 17, 2024

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On behalf of: Adam Malcolm, Manager, Chemical Testing

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CLIENT SAMPLE ID LICA/VOC/CLS/Dec 26. 2023	CANISTER ID 29029	Matrix Ambient Air	DATE SAMPLED 26-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 24010006	REPORT CREATED: 17-Jan-24		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010006-001	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Jan-24
24010006-001	n-Butane		1.57	ppbv	0.02	AC-058	06-Jan-24
24010006-001	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	06-Jan-24
24010006-001	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Jan-24
24010006-001	n-Heptane	I	0.18	ppbv	0.04	AC-058	06-Jan-24
24010006-001	n-Hexane		0.24	ppbv	0.03	AC-058	06-Jan-24
24010006-001	n-Octane	I	0.08	ppbv	0.02	AC-058	06-Jan-24
24010006-001	n-Pentane		0.45	ppbv	0.04	AC-058	06-Jan-24
24010006-001	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	06-Jan-24
24010006-001	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	06-Jan-24
24010006-001	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Jan-24
24010006-001	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	06-Jan-24
24010006-001	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-001	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Jan-24
24010006-001	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-001	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	06-Jan-24
24010006-001	Styrene	I	0.09	ppbv	0.04	AC-058	06-Jan-24
24010006-001	Tetrachloroethylene	I	0.05	ppbv	0.02	AC-058	06-Jan-24
24010006-001	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Jan-24
24010006-001	Toluene	I	0.17	ppbv	0.03	AC-058	06-Jan-24
24010006-001	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	06-Jan-24
24010006-001	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Jan-24
24010006-001	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Jan-24
24010006-001	trans-2-Pentene	I	0.03	ppbv	0.02	AC-058	06-Jan-24
24010006-001	Trichloroethylene	I	0.03	ppbv	0.02	AC-058	06-Jan-24

Report certified by: Andrea Conner, Admin Assistant

Date: January 17, 2024

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID LICA/VOC/CLS/Dec 26. 2023	CANISTER ID 29029	Matrix Ambient Air	DATE SAMPLED 26-Dec-23 0:00
DESCRIPTION: Cold Lake South			
REPORT NUMBER: 24010006	REPORT CREATED: 17-Jan-24		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
24010006-001	Vinyl acetate	K, T, U	< 0.3 ppbv	0.3	AC-058	06-Jan-24
24010006-001	Vinyl chloride	K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-24

Report certified by: Andrea Conner, Admin Assistant

On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: January 17, 2024

Inquiries: (780) 632 8403

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Revision History

Order ID	Ver	Date	Reason
24010006	01	17-Jan-24	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

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

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

Qualifiers

Data Qualifier Translation

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



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ENVIRONMENTAL ANALYTICAL SERVICES

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Order Comments



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Sample Comments



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ENVIRONMENTAL ANALYTICAL SERVICES

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Result Comments

Note:

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- 2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.*

Partisol Samples



Customer ID: LICA
 Cust Samp ID: AT85573

ol 2000i-D Sample Data Sheet



Date Sampled: 26-Nov-23
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) ¹	COURSE (2) ²
Filter Type:	47mm	47mm
Filter #:	AT85573	AT85574
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	-3.9	
Pressure	715	
Std Volume (Instrument)	22.6	2.51

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Alex Yakupov Date: 25-Nov-23

Removed by (Sign/Date) Alex Yakupov Date: 29-Nov-23

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: 23120057-003 Priority: Normal



Customer ID: LICA
Cust Samp ID: AT79026

Partisol 2000i-D Sample Data

Date Sampled: 02-Dec-23
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

Table with 3 columns: Parameter, FINE (1) 3, COURSE (2) 4. Rows include Filter Type, Filter #, Average Flow Rate, Sample Volume, Temperature, Pressure, and Std Volume (Instrument).

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Alex Yakupov Date: 25-Nov-23

Removed by (Sign/Date) Chris Wesson Date: 07-Dec-23

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



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

<p>RESULTS: Lica Communal Mail Lakeland Industry and Community Assn</p>	<p>CLIENT SAMPLE ID AT79026</p> <p>MATRIX: Air Filter</p> <p>CANISTER ID:</p> <p>PRIORITY: Normal</p> <p>DESCRIPTION: Cold Lake South - Fine - PM 2.5</p> <p>DATE SAMPLED: 02-Dec-23 0:00 DATE RECEIVED: 08-Dec-23</p> <p>REPORT CREATED: 19-Dec-23 REPORT NUMBER: 23120057</p> <p style="text-align: right;">VERSION: Version 01</p>
<p>INVOICE: Maria Cueva PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120057-003	Particulate Weight		0.182 mg	0.004	AC-029	12-Dec-23



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID AT79040	CANISTER ID	Matrix Air Filter	DATE SAMPLED 02-Dec-23 0:00
DESCRIPTION: Cold Lake South - Coarse - PM 10			
REPORT NUMBER: 23120057	REPORT CREATED: 19-Dec-23		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120057-004	Particulate Weight		0.014 mg	0.004	AC-029	12-Dec-23

Report certified by: Andrea Conner, Admin Assistant

On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: December 19, 2023

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

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

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
AT85573		Air Filter	26-Nov-23 0:00
DESCRIPTION:	Cold Lake South - Fine - PM 2.5		
REPORT NUMBER:	23120057	REPORT CREATED:	19-Dec-23
			VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120057-001	Particulate Weight		0.018 mg	0.004	AC-029	12-Dec-23

Report certified by: Andrea Conner, Admin Assistant

On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: December 19, 2023

Inquiries: (780) 632 8403

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID AT85574	CANISTER ID	Matrix Air Filter	DATE SAMPLED 26-Nov-23 0:00
DESCRIPTION: Cold Lake South - Coarse - PM 10			
REPORT NUMBER: 23120057	REPORT CREATED: 19-Dec-23		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120057-002	Particulate Weight		0.009 mg	0.004	AC-029	12-Dec-23

Report certified by: Andrea Conner, Admin Assistant

On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: December 19, 2023

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Revision History

Order ID	Ver	Date	Reason
23120057	01	19-Dec-23	Report created

Methods

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

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

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

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



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Order Comments



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Sample Comments



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Result Comments

Note:

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Customer ID: LICA
Cust Samp ID: AT85569

Partisol 2000i-D Sample Data Sheet

Date Sampled: 08-Dec-23
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 #:	AT85569	AT85570
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	-8.9	
Pressure	710.3	
Std Volume (Instrument)	22.8	2.54

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Chris Wesson Date: 07-Dec-23

Removed by (Sign/Date): Chris Wesson Date: 11-Dec-23

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



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

<p>RESULTS: Lica Communal Mail Lakeland Industry and Community Assn</p>	<p>CLIENT SAMPLE ID AT85569</p> <p>MATRIX: Air Filter</p> <p>CANISTER ID:</p> <p>PRIORITY: Normal</p> <p>DESCRIPTION: PM 2.5 / Cold Lake South</p> <p>DATE SAMPLED: 08-Dec-23 0:00 DATE RECEIVED: 14-Dec-23</p> <p>REPORT CREATED: 12-Jan-24 REPORT NUMBER: 23120114</p> <p style="text-align: right;">VERSION Version 01</p>
<p>INVOICE: Maria Cueva PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120114-001	Particulate Weight		0.090 mg	0.004	AC-029	18-Dec-23



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID AT85570	CANISTER ID	Matrix Air Filter	DATE SAMPLED 08-Dec-23 0:00
DESCRIPTION: PM 10 / Cold Lake South			
REPORT NUMBER: 23120114	REPORT CREATED: 12-Jan-24		VERSION Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120114-002	Particulate Weight		0.014 mg	0.004	AC-029	18-Dec-23

Report certified by: Andrea Conner, Admin Assistant

On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: January 12, 2024

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

Revision History

Order ID	Ver	Date	Reason
23120114	01	12-Jan-24	Report created

Methods

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

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

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

Qualifiers

Data Qualifier Translation

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



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Result Comments

Note:

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Customer ID: LICA
 Cust Samp ID: AT83968

2000i-D Sample Data Sheet



Date Sampled: 14-Dec-23
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 #:	AT83968	AT83967
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	0.7	
Pressure	714	
Std Volume (Instrument)	22.2	2.47

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Chris Wesson Date: 11-Dec-23

Removed by (Sign/Date): Alex Yakupov Date: 19-Dec-23

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



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TEST REPORT

CLIENT SAMPLE ID AT83968	CANISTER ID	Matrix Air Filter	DATE SAMPLED 14-Dec-23 0:00
DESCRIPTION: PM 2.5	REPORT CREATED: 12-Jan-24	VERSION Version 01	
REPORT NUMBER: 23120159			

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120159-001	Particulate Weight		0.049 mg	0.004	AC-029	21-Dec-23

Report certified by: Andrea Conner, Admin Assistant

On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: January 12, 2024

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

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

LAB-LICA-202312



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Revision History

Order ID	Ver	Date	Reason
23120159	01	12-Jan-24	Report created

Methods

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

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

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
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AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
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AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
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Sample Comments



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Result Comments

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Customer ID: LICA
 Cust Samp ID: AT83608

ol 2000i-D Sample Data Sheet



Date Sampled: 26-Dec-23
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 #:	AT83608	AT83609
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	-7.1	
Pressure	711	
Std Volume (Instrument)	22.7	2.53

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Alex yakupov Date: 24-Dec-23

Removed by (Sign/Date) Alex Yakupov Date: 28-Dec-23

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**



Customer ID: LICA
Cust Samp ID: AT85671

2000i-D Sample Data Sheet



Date Sampled: 20-Dec-23
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 #:	AT85571	AT85572
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	-4.2	
Pressure	708	
Std Volume (Instrument)	22.4	2.49

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Alex yakupov Date: 19-Dec-23

Removed by (Sign/Date) Alex Yakupov Date: 24-Dec-23

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

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

1. Any proposal contained herein is prepared for the consideration of the Client only. Its contents may not be used or disclosed to any other party without prior written consent of the INNOTECH ALBERTA INC. (hereinafter referred to as "InnoTech Alberta").
2. InnoTech Alberta will perform the Services in accordance with normal professional standards.
3. The delivery time for performance of the Services (as set out on the front page of this Quotation) is approximate and may be changed by InnoTech Alberta giving written notice to the Client.
4. InnoTech Alberta will exercise due care and proficiency in testing items submitted by a Client. InnoTech Alberta shall not, however, be liable to the Client for any damage or loss caused to the item being tested or for any damage, loss or expense caused by any delay in carrying out the test, including any damage, loss or expense resulting from InnoTech Alberta's negligence. InnoTech Alberta shall not be responsible for any damage, which is a natural or necessary result of any testing procedure.
5. For the purposes of this Quotation, Intellectual Property means all information, data, artistic and literary works, concepts, designs, processes, software, algorithms and inventions, including, without limitation, those that could be the subject of patent, copyright, industrial design, trade secret or other forms of protection. Intellectual Property which was owned by either InnoTech Alberta or the Client prior to the signing of this Agreement remains the property of that party. Nothing in this Agreement shall operate as a license, permission or grant of any other rights to either InnoTech Alberta's or the Client's Intellectual Property.
6. All data, reports and other information relating to the Services shall be treated by InnoTech Alberta as the confidential property of the Client, and InnoTech Alberta will use reasonable efforts to ensure that its employees, contractors and agents will not disclose the same to any other person, firm or corporation during the term of this Agreement and for a period of five (5) years after the date of termination of the Agreement. The obligation of confidentiality set out herein shall not apply to any information that was in InnoTech Alberta's possession prior to receipt from the Client or which is or becomes part of the public domain through no act or failure on the part of InnoTech Alberta. The obligation of confidentiality set out in this Section shall not prevent the disclosure of information to any level of government having jurisdiction to make lawful demand therefor, or required to be disclosed by any applicable law. Any records required to be maintained by InnoTech Alberta pursuant to this Agreement are subject to the protection and access provisions of the Freedom of Information and Protection of Privacy Act (Alberta).
7. The reported results of any InnoTech Alberta tests or evaluations performed on samples or items provided by the Client shall be interpreted as being specific to the sample or item tested. InnoTech Alberta makes no representation that any similar or related untested samples or items would produce the same results.
8. The Client shall not use InnoTech Alberta's name in any advertising material, sale offer, news releases, public statements or announcements, whether written or oral relating to the Services or the results thereof, without the prior written consent of InnoTech Alberta.
9. Records, test data, reports and samples, except where shipped to the Client after completion of the work shall be retained by InnoTech Alberta according to InnoTech Alberta's approved Records Retention and Disposition Schedule.
10. Prices quoted are in Canadian Dollars unless otherwise stated in writing and are exclusive of any provincial, municipal, sales, use or goods and services tax.
11. Prices quoted do not include shipping, insurance or cost of consumables. The Client shall be responsible for all costs incurred by InnoTech Alberta in collecting any item for testing and returning the item to the Client after testing and shall be responsible for all necessary incidental costs incurred by InnoTech Alberta in providing the Services. InnoTech Alberta will not be responsible for any damage or loss to items during shipping and it is the responsibility of the Client to arrange and pay for any insurance it deems necessary.
12. Any test samples or other materials supplied by the Client to InnoTech Alberta may, at InnoTech Alberta's option, be returned by InnoTech Alberta to the Client. The Client shall:
 - (a) be responsible for all costs associated with the handling, transportation and disposal of such materials;
 - (b) reimburse InnoTech Alberta for any costs incurred by InnoTech Alberta associated with the handling,

transportation and disposal of such materials; and

- (c) indemnify and hold InnoTech Alberta harmless from any and all claims, damages or actions associated with the handling, transportation and disposal of such materials.
13. The Client shall pay all invoices rendered by InnoTech Alberta to the Client within thirty (30) days from the date of invoice, without deduction or set-off.
14. If the Client fails to pay any amount under this Agreement, such unpaid amount shall bear interest at a rate per month equal to one (1%) percent (or 12.6825% per annum) with interest on overdue interest at the same rate.
15. InnoTech Alberta makes no representation, warranties or conditions, either expressed or implied, statutory or otherwise and does not warrant the quality, state, merchantability or fitness for any purpose of any goods or products to be delivered pursuant to this Agreement. The Client accepts the results of these Services or items tested as is, and acknowledges that any use or interpretation of the information contained is at the Client's own risk.
16. In no event shall InnoTech Alberta be liable for any indirect or consequential damage or loss suffered by the Client, including loss of anticipated profits.
17. The Client shall indemnify and hold harmless InnoTech Alberta from any and all claims, demands, actions and costs (including legal costs on a solicitor-client basis) that may arise out of:
 - (a) any dangerous defect or content in the item being tested, whether apparent or not, which dangerous defect or content was not disclosed in writing to InnoTech Alberta by the Client at the time the item was submitted for testing;
 - (b) differences between those items actually tested and items previously or subsequently produced which are purported to be identical to the item tested; or
 - (c) any use of the tested item or any item incorporating the tested item, whether by the Client or a third party following its return to the Client.The hold harmless shall survive this Agreement.
18. The Client shall, at its own expense and without limiting its liabilities herein, be responsible for insuring its operation in an amount not less than \$2,000,000 inclusive per occurrence, insuring against bodily injury, and property damage including loss of use thereof. Further, the Client is responsible for insuring all owned property directly or indirectly related to this Agreement and InnoTech Alberta shall have no liability for any loss or damage to such property.
19. InnoTech Alberta shall maintain the following insurance: (i) commercial general liability insurance (including cross liability, severability of interests, non-owned automobile liability) in the amount of two million dollars (\$2,000,000.00) per occurrence, and; (ii) professional liability and errors and omissions insurance in the amount of one million dollars (\$1,000,000.00) per claim, and two million dollars (\$2,000,000.00) in the aggregate. In addition, InnoTech Alberta shall maintain all workers' compensation coverage required by applicable laws. Notwithstanding the foregoing, InnoTech Alberta reserves the right to supplement or add insurance coverage from time to time as may be required in its sole discretion. InnoTech Alberta may provide certificates of insurance for coverages outlined in (i) and (ii) above.
20. The Client agrees to comply with all InnoTech Alberta Safety & Security regulations in effect while on InnoTech Alberta premises.
21. This Agreement represents the entire agreement between the parties and shall supersede all prior agreements relative to this transaction.
22. If a party's performance of any of its obligations under this Agreement (excepting only an obligation to pay) is delayed, rendered impossible or impractical, or prevented in whole or in part due to circumstances beyond its reasonable control, including but not limited to acts of God, war, terrorism, labour disputes, pandemics or epidemics, global health emergencies, or governmental action, that party will not be in breach of this Agreement due to the delay or failure in performance occasioned by such event.
23. InnoTech Alberta may assign this Quotation to an "affiliated" (as that term is defined at Section 2 of the Business Corporations Act (Alberta)) or successor entity on written notice to the Client.
24. This Quotation and rights and parties thereto shall be governed by and construed according to the laws of the Province of Alberta. The parties hereby submit to the jurisdiction of the Courts of Alberta.



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

<p>RESULTS: Lica Communal Mail Lakeland Industry and Community Assn</p>	<p>CLIENT SAMPLE ID AT83608</p> <p>MATRIX: Air Filter</p> <p>CANISTER ID:</p> <p>PRIORITY: Normal</p> <p>DESCRIPTION: PM 2.5</p> <p>DATE SAMPLED: 26-Dec-23 0:00</p> <p>REPORT CREATED: 17-Jan-24</p>	<p>DATE RECEIVED: 02-Jan-24</p> <p>REPORT NUMBER: 24010007</p> <p>VERSION: Version 01</p>
<p>INVOICE: Maria Cueva PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>		

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
24010007-001	Particulate Weight		0.040 mg	0.004	AC-029	05-Jan-24



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID AT83609	CANISTER ID	Matrix Air Filter	DATE SAMPLED 26-Dec-23 0:00
DESCRIPTION: PM 10	REPORT CREATED: 17-Jan-24	VERSION: Version 01	
REPORT NUMBER: 24010007			

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
24010007-002	Particulate Weight		0.035 mg	0.004	AC-029	05-Jan-24

Report certified by: Andrea Conner, Admin Assistant

On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: January 17, 2024

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID AT85571	CANISTER ID	Matrix Air Filter	DATE SAMPLED 20-Dec-23 0:00
DESCRIPTION: PM 2.5	REPORT CREATED: 17-Jan-24	VERSION: Version 01	
REPORT NUMBER: 24010007			

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
24010007-003	Particulate Weight		0.069 mg	0.004	AC-029	05-Jan-24

Report certified by: Andrea Conner, Admin Assistant

On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: January 17, 2024

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID AT85572	CANISTER ID	Matrix Air Filter	DATE SAMPLED 20-Dec-23 0:00
DESCRIPTION: PM 10	REPORT CREATED: 17-Jan-24	VERSION: Version 01	
REPORT NUMBER: 24010007			

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
24010007-004	Particulate Weight		0.007 mg	0.004	AC-029	05-Jan-24

Report certified by: Andrea Conner, Admin Assistant

On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: January 17, 2024

Inquiries: (780) 632 8403

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ENVIRONMENTAL ANALYTICAL SERVICES

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Revision History

Order ID	Ver	Date	Reason
24010007	01	17-Jan-24	Report created

Methods

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

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

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
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ENVIRONMENTAL ANALYTICAL SERVICES

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Order Comments



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Sample Comments



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Result Comments

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Passive Samples

Passive Sampler Field Sheet for LICA, Dec 2023 sample period

C401355

ID	SAMPLER						START		END		NOTES
	NO 28	NO 28	NO 27	NO 27	NO 27	NO 27	DATE	TIME	DATE	TIME	
3	H ₂ S	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Nov 30	18:10	Dec 30	18:05	
4	---	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Dec 1	17:24	Jan 2	12:04	
5	H ₂ S	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Dec 1	18:34	Jan 2	12:46	
6	---	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Dec 2	14:40	Jan 2	14:36	
8	---	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Dec 1	19:48	Jan 2	10:47	
9	---	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Nov 30	12:51	Dec 30	17:07	
10	H ₂ S	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Dec 1	13:59	Jan 3	16:55	
11	H ₂ S	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Dec 1	13:20	Jan 3	16:24	
12	H ₂ S	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Dec 1	12:10	Jan 3	14:56	
13	H ₂ S	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Nov 30	16:30	Dec 30	14:22	
14	H ₂ S	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Nov 30	15:37	Dec 30	13:26	No water sample available due to extremely dry conditions (Dec 1, 2023)
15	---	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Nov 30	13:04	Dec 30	15:31	
16	H ₂ S	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Dec 2	11:09	Jan 2	18:07	
17	H ₂ S	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Dec 2	13:40	Jan 2	15:37	
18	H ₂ S	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Dec 2	12:03	Jan 2	17:05	
19	---	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Dec 2	10:19	Jan 2	18:56	
22	H ₂ S	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Dec 2	17:47	Jan 3	18:34	
23	---	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Nov 30	13:55	Dec 30	11:35	
24	H ₂ S	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Dec 2	15:16	Jan 2	13:42	
25	H ₂ S	SO ₂	---	---	---	---	---	---	---	---	
26	H ₂ S	SO ₂	---	---	HNO ₃	NH ₃	Nov 30	15:55	Dec 30	13:47	
27	H ₂ S	SO ₂	---	---	HNO ₃	NH ₃	Nov 30	15:10	Dec 30	12:54	
28	H ₂ S	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Nov 30	12:02	Dec 30	16:40	
29	H ₂ S	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Dec 2	18:01	Jan 3	18:54	
32	H ₂ S	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Nov 30	19:24	Dec 30	19:02	
42	H ₂ S	SO ₂	NO ₂	O ₃	HNO ₃	NH ₃	Dec 1	15:32	Jan 3	11:57	
DUPLICATES											
32	H ₂ S	---	---	---	---	---	Nov 30	19:24	Dec 30	19:02	
42	H ₂ S	---	---	---	---	---	Dec 1	15:32	Jan 3	11:57	
32	---	SO ₂	---	---	---	---	Nov 30	19:24	Dec 30	19:02	
42	---	SO ₂	---	---	---	---	Dec 1	15:32	Jan 3	11:57	
3	---	SO ₂	---	---	---	---	Nov 30	18:10	Dec 30	18:05	
5	---	---	NO ₂	O ₃	---	---	Dec 1	18:34	Jan 2	12:46	
6	---	---	NO ₂	O ₃	---	---	Dec 2	14:40	Jan 2	14:36	
17	---	---	---	---	HNO ₃	NH ₃	Dec 2	13:40	Jan 2	15:37	
18	---	---	---	---	HNO ₃	NH ₃	Dec 2	12:03	Jan 2	17:05	

AS 24-01-05
C10100
31 SO₂
31 HNO₃
28 O₃
28 NO₂
31 NH₃
23 H₂S



Your Project #: DECEMBER 2023 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: 2024/01/19
Report #: R3453391
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C401355

Received: 2024/01/05, 10:00

Sample Matrix: Air
Samples Received: 60

Analyses	Quantity	Date		Laboratory Method	Analytical Method
		Extracted	Analyzed		
H2S Passive Analysis	20	2024/01/11	2024/01/17	PTC SOP-00150	Passive H2S in ATM
HNO3 by Passive Sampler	30	2024/01/09	2024/01/16	PTC SOP-00288	Passive HNO3 in ATM
NH3 by Passive Sampler	30	2024/01/08	2024/01/16	PTC SOP-00157	ASTM D6919
NO2 Passive Analysis	25	2024/01/11	2024/01/17	PTC SOP-00148	Passive NO2 in ATM
O3 Passive Analysis	25	2024/01/11	2024/01/17	PTC SOP-00197	EPA 300 R2.1
SO2 Passive Analysis	28	2024/01/11	2024/01/17	PTC SOP-00149	Passive SO2 in ATM

This report shall not be reproduced except in full, without the written approval of the laboratory.
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

Rowena Geron
Customer Service Associate
19 Jan 2024 11:14:27

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

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BUREAU VERITAS

Bureau Veritas Job #: C401355
Report Date: 2024/01/19

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: DECEMBER 2023 PASSIVES
Site Location: BONNYVILLE, AB
Sampler Initials: AY

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CHJ716			CHJ788			CHJ717		
Sampling Date		2023/11/30 18:10			2023/11/30 18:10			2023/12/01 17:24		
	UNITS	3	RDL	QC Batch	3-DUP	RDL	QC Batch	4	RDL	QC Batch

Passive Monitoring										
Calculated H2S	ppb	0.19	0.02	B252941						
Calculated NO2	ppb	3.2	0.1	B257025				3.2	0.1	B257025
Calculated O3	ppb	20.0	0.1	B256419				23.0	0.1	B256419
Calculated SO2	ppb	0.4	0.1	B252981	0.4	0.1	B253023	0.5	0.1	B252981
RDL = Reportable Detection Limit										

Bureau Veritas ID		CHJ718			CHJ790			CHJ719		
Sampling Date		2023/12/01 18:34			2023/12/01 18:34			2023/12/02 14:40		
	UNITS	5	RDL	QC Batch	5-DUP	RDL	QC Batch	6	RDL	QC Batch

Passive Monitoring										
Calculated H2S	ppb	0.19	0.02	B252941						
Calculated NO2	ppb	2.6	0.1	B257025	2.7	0.1	B257026	6.2	0.1	B257025
Calculated O3	ppb	22.9	0.1	B256419	20.8	0.1	B256391	13.6	0.1	B256419
Calculated SO2	ppb	0.3	0.1	B252981				0.3	0.1	B252981
RDL = Reportable Detection Limit										

Bureau Veritas ID		CHJ791			CHJ722	CHJ723			CHJ724		
Sampling Date		2023/12/02 14:40			2023/12/01 19:48	2023/11/30 12:51			2023/12/01 13:59		
	UNITS	6-DUP	RDL	QC Batch	8	9	RDL	QC Batch	10	RDL	QC Batch

Passive Monitoring											
Calculated H2S	ppb								0.14	0.02	B252941
Calculated NO2	ppb	7.1	0.1	B257026	DAMAGED	4.3	0.1	B257025	7.6	0.1	B257025
Calculated O3	ppb	18.4	0.1	B256391	DAMAGED	19.4	0.1	B256419	12.1	0.1	B256419
Calculated SO2	ppb				0.6	0.4	0.1	B252981	0.2	0.1	B252981
RDL = Reportable Detection Limit											



RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CHJ725	CHJ726	CHJ727	CHJ728			CHJ729		
Sampling Date		2023/12/01 13:20	2023/12/01 12:10	2023/11/30 16:30	2023/11/30 15:37			2023/11/30 13:04		
	UNITS	11	12	13	14	RDL	QC Batch	15	RDL	QC Batch

Passive Monitoring										
Calculated H2S	ppb	0.18	0.17	0.22	0.35	0.02	B252941			
Calculated NO2	ppb	2.0	1.9	2.2	4.9	0.1	B257025	3.5	0.1	B257025
Calculated O3	ppb	15.6	19.9	20.4	18.5	0.1	B256419	17.3	0.1	B256419
Calculated SO2	ppb	MISSING	MISSING	0.5	1.7	0.1	B252981	0.6	0.1	B252981
RDL = Reportable Detection Limit										

Bureau Veritas ID		CHJ730	CHJ731	CHJ732			CHJ733		
Sampling Date		2023/12/02 11:09	2023/12/02 13:40	2023/12/02 12:03			2023/12/02 10:19		
	UNITS	16	17	18	RDL	QC Batch	19	RDL	QC Batch

Passive Monitoring										
Calculated H2S	ppb	0.20	0.22	0.16	0.02	B252941				
Calculated NO2	ppb	4.0	2.7	2.1	0.1	B257025	2.4	0.1	B257025	
Calculated O3	ppb	20.6	26.5	19.3	0.1	B256419	24.8	0.1	B256419	
Calculated SO2	ppb	0.2	0.3	0.3	0.1	B252981	0.5	0.1	B252981	
RDL = Reportable Detection Limit										

Bureau Veritas ID		CHJ734			CHJ735			CHJ736		
Sampling Date		2023/12/02 17:47			2023/11/30 13:55			2023/12/02 15:16		
	UNITS	22	RDL	QC Batch	23	RDL	QC Batch	24	RDL	QC Batch

Passive Monitoring										
Calculated H2S	ppb	0.17	0.02	B252941				0.23	0.02	B252941
Calculated NO2	ppb	4.9	0.1	B257025	0.9	0.1	B257025	4.4	0.1	B257025
Calculated O3	ppb	14.6	0.1	B256419	11.9	0.1	B256419	14.9	0.1	B256419
Calculated SO2	ppb	0.2	0.1	B252981	0.2	0.1	B252981	0.2	0.1	B252981
RDL = Reportable Detection Limit										



RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CHJ737		CHJ738			CHJ739	CHJ740	CHJ741		
Sampling Date		2023/11/30 15:55		2023/11/30 15:10			2023/11/30 12:02	2023/12/02 18:01	2023/11/30 19:24		
	UNITS	26	QC Batch	27	RDL	QC Batch	28	29	32	RDL	QC Batch

Passive Monitoring											
Calculated H2S	ppb	0.29	B252941	0.36	0.02	B252941	0.22	0.16	0.16	0.02	B252941
Calculated NO2	ppb						8.4	5.7	2.9	0.1	B257026
Calculated O3	ppb						15.8	15.4	26.7	0.1	B256391
Calculated SO2	ppb	0.6	B252981	2.2	0.1	B253023	0.4	0.3	0.4	0.1	B253023
RDL = Reportable Detection Limit											

Bureau Veritas ID		CHJ783				CHJ742			CHJ787		
Sampling Date		2023/11/30 19:24				2023/12/01 15:32			2023/12/01 15:32		
	UNITS	32-DUP	RDL	QC Batch	42	RDL	QC Batch	42-DUP	RDL	QC Batch	

Passive Monitoring											
Calculated H2S	ppb	0.23	0.02	B252941	0.20	0.02	B252941	0.19	0.02	B252941	
Calculated NO2	ppb				4.8	0.1	B257026				
Calculated O3	ppb				20.4	0.1	B256391				
Calculated SO2	ppb	0.4	0.1	B253023	0.4	0.1	B253023	0.5	0.1	B253023	
RDL = Reportable Detection Limit											

Bureau Veritas ID		CHJ746	CHJ747	CHJ748	CHJ749	CHJ750	CHJ751		
Sampling Date		2023/11/30 18:10	2023/12/01 17:24	2023/12/01 18:34	2023/12/02 14:40	2023/12/01 19:48	2023/11/30 12:51		
	UNITS	3-NH3 HNO3	4-NH3 HNO3	5-NH3 HNO3	6-NH3 HNO3	8-NH3 HNO3	9-NH3 HNO3	RDL	QC Batch

Passive Monitoring										
Ammonia by Passive Sampler	ppb	2.7	1.5	1.4	NA	NA	0.9	0.1	B250527	
HNO3 by Passive Sampler	ug/m3	0.56	0.62	0.95	1.20	0.54	0.84	0.04	B251585	
RDL = Reportable Detection Limit										

Bureau Veritas ID		CHJ752	CHJ753	CHJ754	CHJ755	CHJ756	CHJ757		
Sampling Date		2023/12/01 13:59	2023/12/01 13:20	2023/12/01 12:10	2023/11/30 16:30	2023/11/30 15:37	2023/11/30 13:04		
	UNITS	10-NH3 HNO3	11-NH3 HNO3	12-NH3 HNO3	13-NH3 HNO3	14-NH3 HNO3	15-NH3 HNO3	RDL	QC Batch

Passive Monitoring										
Ammonia by Passive Sampler	ppb	0.7	NA	0.1	0.3	NA	NA	0.1	B250527	
HNO3 by Passive Sampler	ug/m3	2.34	0.87	0.70	0.93	1.42	0.89	0.04	B251585	
RDL = Reportable Detection Limit										



RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CHJ758	CHJ759		CHJ823		CHJ760		
Sampling Date		2023/12/02 11:09	2023/12/02 13:40		2023/12/02 13:40		2023/12/02 12:03		
	UNITS	16-NH3 HNO3	17-NH3 HNO3	QC Batch	17-NH3 HNO3-DUP	QC Batch	18-NH3 HNO3	RDL	QC Batch

Passive Monitoring									
Ammonia by Passive Sampler	ppb	NA	1.6	B250527	NA	B250529	NA	0.1	B250527
HNO3 by Passive Sampler	ug/m3	0.90	1.40	B251585	0.83	B251586	1.21	0.04	B251585
RDL = Reportable Detection Limit									

Bureau Veritas ID		CHJ861		CHJ761		CHJ762	CHJ763		
Sampling Date		2023/12/02 12:03		2023/12/02 10:19		2023/12/02 17:47	2023/11/30 13:55		
	UNITS	18-NH3 HNO3-DUP	QC Batch	19-NH3 HNO3	QC Batch	22-NH3 HNO3	23-NH3 HNO3	RDL	QC Batch

Passive Monitoring									
Ammonia by Passive Sampler	ppb	NA	B250529	1.1	B250527	NA	NA	0.1	B250527
HNO3 by Passive Sampler	ug/m3	0.74	B251586	0.87	B251585	1.08	0.83	0.04	B251586
RDL = Reportable Detection Limit									

Bureau Veritas ID		CHJ764	CHJ765		CHJ766	CHJ767	CHJ768		
Sampling Date		2023/12/02 15:16	2023/11/30 15:55		2023/11/30 15:10	2023/11/30 12:02	2023/12/02 18:01		
	UNITS	24-NH3 HNO3	26-NH3 HNO3	QC Batch	27-NH3 HNO3	28-NH3 HNO3	29-NH3 HNO3	RDL	QC Batch

Passive Monitoring									
Ammonia by Passive Sampler	ppb	NA	0.1	B250527	NA	2.2	NA	0.1	B250529
HNO3 by Passive Sampler	ug/m3	1.17	0.96	B251586	0.83	1.29	1.27	0.04	B251586
RDL = Reportable Detection Limit									

Bureau Veritas ID		CHJ769	CHJ770	CHJ771	CHJ772	CHJ773			
Sampling Date		2023/11/30 19:24	2023/12/01 15:32						
	UNITS	32-NH3 HNO3	42-NH3 HNO3	BLANK 1-NH3 HNO3	BLANK 2-NH3 HNO3	BLANK 3-NH3 HNO3	RDL	QC Batch	

Passive Monitoring									
Ammonia by Passive Sampler	ppb	1.5	1.6	NA	NA	0.4	0.1	B250529	
HNO3 by Passive Sampler	ug/m3	1.36	0.88	0.22	0.39	0.17	0.04	B251586	
RDL = Reportable Detection Limit									



GENERAL COMMENTS

CHJ725 "11", CHJ726 "12" SO2 Samplers not received, marked as "Missing". 2024/01/19 SDK

Sample CHJ722 [8] : O3 sample CHJ722-01 was recieved with a damaged paper barrier. S1T (16/01/2024)

NO2 sample CHJ722-01 was recieved with a damaged paper barrier. S1T (17/01/2024)

Sample CHJ749 [6-NH3 HNO3] : NH3 Sampler prepared incorrectly - missing second filter - result unreportable. No charge. 2024/01/16 SDK

Sample CHJ750 [8-NH3 HNO3] : NH3 Sampler prepared incorrectly - missing second filter - result unreportable. No charge. 2024/01/16 SDK

Sample CHJ753 [11-NH3 HNO3] : NH3 Sampler prepared incorrectly - missing second filter - result unreportable. No charge. 2024/01/16 SDK

Sample CHJ756 [14-NH3 HNO3] : NH3 Sampler prepared incorrectly - missing second filter - result unreportable. No charge. 2024/01/16 SDK

Sample CHJ757 [15-NH3 HNO3] : NH3 Sampler prepared incorrectly - missing second filter - result unreportable. No charge. 2024/01/16 SDK

Sample CHJ758 [16-NH3 HNO3] : NH3 Sampler prepared incorrectly - missing second filter - result unreportable. No charge. 2024/01/16 SDKK

Sample CHJ760 [18-NH3 HNO3] : NH3 Sampler prepared incorrectly - missing second filter - result unreportable. No charge. 2024/01/16 SDK

Sample CHJ762 [22-NH3 HNO3] : NH3 Sampler prepared incorrectly - missing second filter - result unreportable. No charge. 2024/01/16 SDK

Sample CHJ763 [23-NH3 HNO3] : NH3 Sampler prepared incorrectly - missing second filter - result unreportable. No charge. 2024/01/16 SDK

Sample CHJ764 [24-NH3 HNO3] : NH3 Sampler prepared incorrectly - missing second filter - result unreportable. No charge. 2024/01/16 SDK

Sample CHJ766 [27-NH3 HNO3] : NH3 Sampler prepared incorrectly - missing second filter - result unreportable. No charge. 2024/01/16 SDK

Sample CHJ768 [29-NH3 HNO3] : NH3 Sampler prepared incorrectly - missing second filter - result unreportable. No charge. 2024/01/16 SDK

Sample CHJ771 [BLANK 1-NH3 HNO3] : NH3 Sampler prepared incorrectly - missing second filter - result unreportable. No charge. 2024/01/16 SDK

Sample CHJ772 [BLANK 2-NH3 HNO3] : NH3 Sampler prepared incorrectly - missing second filter - result unreportable. No charge. 2024/01/16 SDK

Sample CHJ823 [17-NH3 HNO3-DUP] : NH3 Sampler prepared incorrectly - missing second filter - result unreportable. No charge. 2024/01/16 SDK

Sample CHJ861 [18-NH3 HNO3-DUP] : NH3 Sampler prepared incorrectly - missing second filter - result unreportable. No charge. 2024/01/16 SDK

Results relate only to the items tested.



QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B250527	SDK	Spiked Blank	Ammonia by Passive Sampler			102	%	90 - 110
B250527	SDK	Method Blank	Ammonia by Passive Sampler		<0.1		ppb	
B250527	SDK	RPD [CHJ746-01]	Ammonia by Passive Sampler	2024/01/16	NC		%	N/A
B250529	SDK	Spiked Blank	Ammonia by Passive Sampler			97	%	90 - 110
B250529	SDK	Method Blank	Ammonia by Passive Sampler		<0.1		ppb	
B250529	SDK	RPD [CHJ766-01]	Ammonia by Passive Sampler	2024/01/16	NC		%	N/A
B251585	OZ	Method Blank	HNO3 by Passive Sampler		<0.04		ug/m3	
B251585	OZ	RPD [CHJ746-01]	HNO3 by Passive Sampler	2024/01/16	NC		%	N/A
B251586	OZ	Method Blank	HNO3 by Passive Sampler		<0.04		ug/m3	
B251586	OZ	RPD [CHJ762-01]	HNO3 by Passive Sampler	2024/01/16	NC		%	N/A
B252941	YYA	Spiked Blank	Calculated H2S			101	%	90 - 110
B252981	OZ	Spiked Blank	Calculated SO2			101	%	90 - 110
B252981	OZ	Method Blank	Calculated SO2		<0.1		ppb	
B253023	OZ	Spiked Blank	Calculated SO2			101	%	90 - 110
B253023	OZ	Method Blank	Calculated SO2		<0.1		ppb	
B256391	S1T	Spiked Blank	Calculated O3			100	%	90 - 110
B256391	S1T	Method Blank	Calculated O3		<0.1		ppb	
B256419	S1T	Spiked Blank	Calculated O3			101	%	90 - 110
B256419	S1T	Method Blank	Calculated O3		<0.1		ppb	
B257025	S1T	Spiked Blank	Calculated NO2			100	%	90 - 110
B257025	S1T	Method Blank	Calculated NO2		<0.1		ppb	
B257026	S1T	Spiked Blank	Calculated NO2			99	%	90 - 110
B257026	S1T	Method Blank	Calculated NO2		<0.1		ppb	

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

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.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).



BUREAU
VERITAS

Bureau Veritas Job #: C401355
Report Date: 2024/01/19

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: DECEMBER 2023 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:

Steven Gloux, Senior Analyst

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Branko Banjac, General Manager responsible for Alberta Petroleum laboratory operations.

Lac La Biche Station

Non- Methane Hydrocarbons (NMHCs) Canister Samples

Sample ID: 23120086-001 Priority: Normal



Customer ID: LICA
Cust Samp ID: LICA:NMHC/LLB/Dec 07, 2023

Bureau Veritas
n Data Sheet Alberta Air FCD AIR FCD-01320 / 2



Client: _____	LICA	Sampler S/N: _____	n/a
Location: _____	Lac La Biche	Canister ID: _____	28955
Station ID: _____	LICA 41	Installation Date/Time (mst): _____	Oct 04, 2023 @ 17:08
Sample ID: _____	LICA/NMHC/LLB/Dec 07, 2023	Removal Date/Time (mst): _____	Dec 08, 2023 @ 13:25

Date and Time Information			
Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
__/__/2023	12:10:00 AM JWP	n/a	n/a

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Vacuum (in. Hg)
-27.1	-4.0

Flow Settings		
Flow Reading (sccm)	Pot Set Point	Pump Set (psi)
n/a	n/a	n/a

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

Timer reset to zero prior to sampling? _____ YES (yes/no)

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

Comments: _____

Exp. Date: Dec 08, 2023

Deployment Technician Signature: _____ Alex Yakupov

Collection Technician Signature: _____ Chris Wesson



Customer ID: LICA
Cust Samp ID: LICA/NMHC/LLB/Dec 07, 2023

Jessica Payne

From: Christopher Wesson <christopher.wesson@bureauveritas.com>
Sent: 12-Dec-23 10:26 AM
To: Environmental Analytical Services Reception; Alexander YAKUPOV
Subject: Re: Sample received, missing time

You don't often get email from christopher.wesson@bureauveritas.com. [Learn why this is important](#)

***** EXTERNAL E-mail. Please be cautious and evaluate the sender and content before you click on any links or open attachments. *****

Hi Jessica,

Canister triggered at 12:10pm on Dec 07.

Thanks,
Chris



**BUREAU
VERITAS**

Shaping a World of Trust

Chris Wesson

Ambient Specialist, Emission Services, Energy & Renewables

780-446-2724

BUREAU VERITAS
6744-50th Street NW Edmonton, AB T6B 3M9

www.bvna.com



From: Environmental Analytical Services Reception <EAS.Reception@innotechalberta.ca>
Sent: December 12, 2023 09:55
To: Alexander YAKUPOV <alexander.yakupov@bureauveritas.com>
Cc: Christopher Wesson <christopher.wesson@bureauveritas.com>
Subject: Sample received, missing time

Be careful with this message: it is coming from an external sender

Do not open attachments nor click on links, unless you are sure that the content is safe

Good morning Alex and Chris,

We have just received an NMHC canister that was sampled on Dec 7, however, there is no sample time listed. Could you please provide one?

Regards,
Jessica



Canister ID: 28955

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ on: AUG 16 2023

Evacuated: SEP 08 2023 Recertified: _____

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

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/NMHC/LLB/Dec 07, 2023

Sampled By: [Signature]
6psi JWP

Starting Vacuum:

-27.1 "Hg

End Vacuum:

4 "Hg/psig

Sample ID: 23120086-001 Priority: Normal



Customer ID: LICA

Cust Samp ID: LICA/NMHC/LLB/Dec 07, 2023

<p>RESULTS: Lica Communal Mail Lakeland Industry and Community Assn</p>	<p>CLIENT SAMPLE ID LICA/NMHC/LLB/Dec 07, 2023</p>	<p>Matrix Ambient Air</p>
	<p>CANISTER ID: 28955</p>	
	<p>PRIORITY: Normal</p>	
	<p>DESCRIPTION: Lac La Biche</p>	
<p>INVOICE: Maria Cueva PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p>	<p>DATE SAMPLED: 07-Dec-23 12:10</p>	<p>DATE RECEIVED: 12-Dec-23</p>
	<p>REPORT CREATED: 17-Jan-24</p>	<p>REPORT NUMBER: 23120086</p>
		<p>VERSION: Version 01</p>

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120086-001	1,1,1-Trichloroethane	K, T, U	< 0.03 ppbv	0.03	AC-058	14-Dec-23
23120086-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.03 ppbv	0.03	AC-058	14-Dec-23
23120086-001	1,1,2-Trichloroethane	K, T, U	< 0.03 ppbv	0.03	AC-058	14-Dec-23
23120086-001	1,1-Dichloroethane	K, T, U	< 0.03 ppbv	0.03	AC-058	14-Dec-23
23120086-001	1,1-Dichloroethylene	K, T, U	< 0.03 ppbv	0.03	AC-058	14-Dec-23
23120086-001	1,2,3-Trimethylbenzene	K, T, U	< 0.08 ppbv	0.08	AC-058	14-Dec-23
23120086-001	1,2,4-Trichlorobenzene	K, T, U	< 0.5 ppbv	0.5	AC-058	14-Dec-23
23120086-001	1,2,4-Trimethylbenzene	K, T, U	< 0.05 ppbv	0.05	AC-058	14-Dec-23
23120086-001	1,2-Dibromoethane	K, T, U	< 0.03 ppbv	0.03	AC-058	14-Dec-23
23120086-001	1,2-Dichlorobenzene	K, T, U	< 0.05 ppbv	0.05	AC-058	14-Dec-23
23120086-001	1,2-Dichloroethane	I	0.07 ppbv	0.05	AC-058	14-Dec-23
23120086-001	1,2-Dichloropropane	K, T, U	< 0.05 ppbv	0.05	AC-058	14-Dec-23
23120086-001	1,3,5-Trimethylbenzene	K, T, U	< 0.05 ppbv	0.05	AC-058	14-Dec-23
23120086-001	1,3-Butadiene	K, T, U	< 0.05 ppbv	0.05	AC-058	14-Dec-23
23120086-001	1,3-Dichlorobenzene	K, T, U	< 0.6 ppbv	0.6	AC-058	14-Dec-23
23120086-001	1,4-Dichlorobenzene	K, T, U	< 0.6 ppbv	0.6	AC-058	14-Dec-23
23120086-001	1,4-Dioxane	K, T, U	< 0.8 ppbv	0.8	AC-058	14-Dec-23

Report certified by: Andrea Conner, Admin Assistant

Date: January 17, 2024

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

On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

LAB-LICA-202312

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CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/NMHC/LLB/Dec 07, 2023	28955	Ambient Air	07-Dec-23 12:10
DESCRIPTION:	Lac La Biche		
REPORT NUMBER:	23120086	REPORT CREATED:	17-Jan-24
			VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120086-001	1-Butene/Isobutylene	K, T, U	< 0.10	ppbv	0.10	AC-058	14-Dec-23
23120086-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.11	ppbv	0.11	AC-058	14-Dec-23
23120086-001	1-Pentene	K, T, U	< 0.05	ppbv	0.05	AC-058	14-Dec-23
23120086-001	2,2,4-Trimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	14-Dec-23
23120086-001	2,2-Dimethylbutane	K, T, U	< 0.03	ppbv	0.03	AC-058	14-Dec-23
23120086-001	2,3,4-Trimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	14-Dec-23
23120086-001	2,3-Dimethylbutane	K, T, U	< 0.14	ppbv	0.14	AC-058	14-Dec-23
23120086-001	2,3-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	14-Dec-23
23120086-001	2,4-Dimethylpentane	K, T, U	< 0.05	ppbv	0.05	AC-058	14-Dec-23
23120086-001	2-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	14-Dec-23
23120086-001	2-Methylhexane	I	0.05	ppbv	0.05	AC-058	14-Dec-23
23120086-001	2-Methylpentane	I	0.13	ppbv	0.03	AC-058	14-Dec-23
23120086-001	3-Methylheptane	K, T, U	< 0.05	ppbv	0.05	AC-058	14-Dec-23
23120086-001	3-Methylhexane	I	0.06	ppbv	0.03	AC-058	14-Dec-23
23120086-001	3-Methylpentane	I	0.10	ppbv	0.03	AC-058	14-Dec-23
23120086-001	Acetone		1.9	ppbv	0.6	AC-058	14-Dec-23
23120086-001	Acrolein	K, T, U	< 0.5	ppbv	0.5	AC-058	14-Dec-23
23120086-001	Benzene	I	0.08	ppbv	0.05	AC-058	14-Dec-23
23120086-001	Benzyl chloride	K, T, U	< 0.5	ppbv	0.5	AC-058	14-Dec-23
23120086-001	Bromodichloromethane	K, T, U	< 0.05	ppbv	0.05	AC-058	14-Dec-23
23120086-001	Bromoform	K, T, U	< 0.03	ppbv	0.03	AC-058	14-Dec-23
23120086-001	Bromomethane	K, T, U	< 0.03	ppbv	0.03	AC-058	14-Dec-23
23120086-001	Carbon disulfide	K, T, U	< 0.03	ppbv	0.03	AC-058	14-Dec-23
23120086-001	Carbon tetrachloride	I	0.05	ppbv	0.03	AC-058	14-Dec-23
23120086-001	Chlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	14-Dec-23

Report certified by: Andrea Conner, Admin Assistant

Date: January 17, 2024

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

On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

LAB-LICA-202312

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CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/NMHC/LLB/Dec 07, 2023	28955	Ambient Air	07-Dec-23 12:10
DESCRIPTION:	Lac La Biche		
REPORT NUMBER:	23120086	REPORT CREATED:	17-Jan-24
			VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120086-001	Chloroethane	K, T, U	< 0.03 ppbv	0.03	AC-058	14-Dec-23
23120086-001	Chloroform	K, T, U	< 0.03 ppbv	0.03	AC-058	14-Dec-23
23120086-001	Chloromethane		0.75 ppbv	0.06	AC-058	14-Dec-23
23120086-001	cis-1,2-Dichloroethene	K, T, U	< 0.03 ppbv	0.03	AC-058	14-Dec-23
23120086-001	cis-1,3-Dichloropropene	K, T, U	< 0.05 ppbv	0.05	AC-058	14-Dec-23
23120086-001	cis-2-Butene	K, T, U	< 0.05 ppbv	0.05	AC-058	14-Dec-23
23120086-001	cis-2-Pentene	K, T, U	< 0.03 ppbv	0.03	AC-058	14-Dec-23
23120086-001	Cyclohexane	K, T, U	< 0.06 ppbv	0.06	AC-058	14-Dec-23
23120086-001	Cyclopentane	K, T, U	< 0.03 ppbv	0.03	AC-058	14-Dec-23
23120086-001	Dibromochloromethane	K, T, U	< 0.03 ppbv	0.03	AC-058	14-Dec-23
23120086-001	Ethanol		1.6 ppbv	0.8	AC-058	14-Dec-23
23120086-001	Ethyl acetate	K, T, U	< 0.5 ppbv	0.5	AC-058	14-Dec-23
23120086-001	Ethylbenzene	K, T, U	< 0.05 ppbv	0.05	AC-058	14-Dec-23
23120086-001	Freon-11		0.23 ppbv	0.03	AC-058	14-Dec-23
23120086-001	Freon-113	I	0.06 ppbv	0.03	AC-058	14-Dec-23
23120086-001	Freon-114	K, T, U	< 0.05 ppbv	0.05	AC-058	14-Dec-23
23120086-001	Freon-12		0.61 ppbv	0.05	AC-058	14-Dec-23
23120086-001	Hexachloro-1,3-butadiene	K, T, U	< 0.5 ppbv	0.5	AC-058	14-Dec-23
23120086-001	Isobutane		0.52 ppbv	0.05	AC-058	14-Dec-23
23120086-001	Isopentane		0.24 ppbv	0.06	AC-058	14-Dec-23
23120086-001	Isoprene	K, T, U	< 0.03 ppbv	0.03	AC-058	14-Dec-23
23120086-001	Isopropyl alcohol	K, T, U	< 0.5 ppbv	0.5	AC-058	14-Dec-23
23120086-001	Isopropylbenzene	K, T, U	< 0.06 ppbv	0.06	AC-058	14-Dec-23
23120086-001	m,p-Xylene	K, T, U	< 0.06 ppbv	0.06	AC-058	14-Dec-23
23120086-001	m-Diethylbenzene	K, T, U	< 0.03 ppbv	0.03	AC-058	14-Dec-23

Report certified by: Andrea Conner, Admin Assistant

Date: January 17, 2024

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

On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

LAB-LICA-202312

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CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/NMHC/LLB/Dec 07, 2023	28955	Ambient Air	07-Dec-23 12:10
DESCRIPTION:	Lac La Biche		
REPORT NUMBER:	23120086	REPORT CREATED:	17-Jan-24
			VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120086-001	m-Ethyltoluene	K, T, U	< 0.05	ppbv	0.05	AC-058	14-Dec-23
23120086-001	Methyl butyl ketone	K, T, U	< 0.6	ppbv	0.6	AC-058	14-Dec-23
23120086-001	Methyl ethyl ketone	K, T, U	< 0.5	ppbv	0.5	AC-058	14-Dec-23
23120086-001	Methyl isobutyl ketone	K, T, U	< 0.5	ppbv	0.5	AC-058	14-Dec-23
23120086-001	Methyl methacrylate	K, T, U	< 0.13	ppbv	0.13	AC-058	14-Dec-23
23120086-001	Methyl tert butyl ether	K, T, U	< 0.05	ppbv	0.05	AC-058	14-Dec-23
23120086-001	Methylcyclohexane	K, T, U	< 0.03	ppbv	0.03	AC-058	14-Dec-23
23120086-001	Methylcyclopentane		0.17	ppbv	0.08	AC-058	14-Dec-23
23120086-001	Methylene chloride	K, T, U	< 0.5	ppbv	0.5	AC-058	14-Dec-23
23120086-001	n-Butane		0.97	ppbv	0.03	AC-058	14-Dec-23
23120086-001	n-Decane	K, T, U	< 0.10	ppbv	0.10	AC-058	14-Dec-23
23120086-001	n-Dodecane	K, T, U	< 0.5	ppbv	0.5	AC-058	14-Dec-23
23120086-001	n-Heptane	K, T, U	< 0.06	ppbv	0.06	AC-058	14-Dec-23
23120086-001	n-Hexane		0.41	ppbv	0.05	AC-058	14-Dec-23
23120086-001	n-Octane	K, T, U	< 0.03	ppbv	0.03	AC-058	14-Dec-23
23120086-001	n-Pentane		0.18	ppbv	0.06	AC-058	14-Dec-23
23120086-001	n-Propylbenzene	K, T, U	< 0.10	ppbv	0.10	AC-058	14-Dec-23
23120086-001	n-Undecane	K, T, U	< 0.8	ppbv	0.8	AC-058	14-Dec-23
23120086-001	Naphthalene	K, T, U	< 0.5	ppbv	0.5	AC-058	14-Dec-23
23120086-001	n-Nonane	K, T, U	< 0.06	ppbv	0.06	AC-058	14-Dec-23
23120086-001	o-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	14-Dec-23
23120086-001	o-Xylene	K, T, U	< 0.05	ppbv	0.05	AC-058	14-Dec-23
23120086-001	p-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	14-Dec-23
23120086-001	p-Ethyltoluene	K, T, U	< 0.06	ppbv	0.06	AC-058	14-Dec-23
23120086-001	Styrene	K, T, U	< 0.06	ppbv	0.06	AC-058	14-Dec-23

Report certified by: Andrea Conner, Admin Assistant

Date: January 17, 2024

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

On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

LAB-LICA-202312

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CLIENT SAMPLE ID LICA/NMHC/LLB/Dec 07, 2023	CANISTER ID 28955	Matrix Ambient Air	DATE SAMPLED 07-Dec-23 12:10
DESCRIPTION: Lac La Biche			
REPORT NUMBER: 23120086	REPORT CREATED: 17-Jan-24		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120086-001	Tetrachloroethylene	K, T, U	< 0.03 ppbv	0.03	AC-058	14-Dec-23
23120086-001	Tetrahydrofuran	K, T, U	< 0.5 ppbv	0.5	AC-058	14-Dec-23
23120086-001	Toluene	I	0.16 ppbv	0.05	AC-058	14-Dec-23
23120086-001	trans-1,2-Dichloroethylene	K, T, U	< 0.10 ppbv	0.10	AC-058	14-Dec-23
23120086-001	trans-1,3-Dichloropropylene	K, T, U	< 0.03 ppbv	0.03	AC-058	14-Dec-23
23120086-001	trans-2-Butene	K, T, U	< 0.05 ppbv	0.05	AC-058	14-Dec-23
23120086-001	trans-2-Pentene	K, T, U	< 0.03 ppbv	0.03	AC-058	14-Dec-23
23120086-001	Trichloroethylene	K, T, U	< 0.03 ppbv	0.03	AC-058	14-Dec-23
23120086-001	Vinyl acetate	K, T, U	< 0.5 ppbv	0.5	AC-058	14-Dec-23
23120086-001	Vinyl chloride	K, T, U	< 0.03 ppbv	0.03	AC-058	14-Dec-23



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Revision History

Order ID	Ver	Date	Reason
23120086	01	17-Jan-24	Report created

Methods

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

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

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

Qualifiers

Data Qualifier Translation

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



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Order Comments

23120086

NMHC Canister.



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Canada T9C 1T4
(780) 632-8211

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Sample Comments



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Canada T9C 1T4
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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

Page 11 of 11

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.*

RECEIVED
DEC 20 2023



Customer ID: LICA
Cust Samp ID: LICA/NMHC/LLB/Dec 14, 2023

Bureau Veritas

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

Client: LICA	Sampler S/N: n/a
Location: Lac La Biche	Canister ID: 32215
Station ID: LICA 41	Installation Date/Time (mst): Dec 08, 2023 @ 13:25
Sample ID: LICA/NMHC/LLB/Dec 14, 2023	Removal Date/Time (mst): Dec 14, 2023 @ 10:50

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
December 14, 2023	8:45	n/a	n/a

Canister Pressure/Vacuum

Initial Vacuum (in. Hg)	Final Vacuum (in. Hg)
-27.1	-2.0

Flow Settings

Flow Reading (sccm)	Pot Set Point	Pump Set (psi)
n/a	n/a	n/a

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
 Timer reset to zero prior to sampling? Yes (yes/no)

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

Comments: 5min NMHC 0.92 ppm @ 08:40

Deployment Technician Signature: Chris Wesson


Collection Technician Signature: Chris Wesson

Sample ID: 23120161-001 Priority: Normal



Customer ID: LICA
Cust Samp ID: LICA/NMHC/LLB/Dec 14, 2023



 <p>Canister ID: <u>32215</u></p> <p>This cleaned canister meets or exceeds TO-15 Method Specifications</p> <p>Proofed by: <u>ISQ</u> on: <u>AUG 25 2023</u></p> <p>Evacuated: <u>OCT 05 2023</u> Recertified: _____</p> <p>(Use within: 3 months from evacuation or recertification date)</p> <p>Laboratory Contact Number: 780-632-8403</p>	Sample ID: <u>LICA / NMHC / LLB / DEC 14, 2023</u>	
	Sampled By: <u>[Signature]</u>	Starting Vacuum: <u>-27.8</u> "Hg

CLIENT SAMPLE ID LICA/NMHC/LLB/Dec 14, 2023	CANISTER ID 32215	Matrix Ambient Air	DATE SAMPLED 14-Dec-23 8:45
DESCRIPTION:			
REPORT NUMBER: 23120161	REPORT CREATED: 17-Jan-24		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120161-001	1-Butene/Isobutylene	I	0.10	ppbv	0.09	AC-058	05-Jan-24
23120161-001	1-Hexene/2-Methyl-1-pentene	I	0.30	ppbv	0.10	AC-058	05-Jan-24
23120161-001	1-Pentene	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jan-24
23120161-001	2,2,4-Trimethylpentane	I	0.07	ppbv	0.03	AC-058	05-Jan-24
23120161-001	2,2-Dimethylbutane	I	0.05	ppbv	0.03	AC-058	05-Jan-24
23120161-001	2,3,4-Trimethylpentane	I	0.08	ppbv	0.03	AC-058	05-Jan-24
23120161-001	2,3-Dimethylbutane		0.16	ppbv	0.13	AC-058	05-Jan-24
23120161-001	2,3-Dimethylpentane	I	0.09	ppbv	0.03	AC-058	05-Jan-24
23120161-001	2,4-Dimethylpentane	I	0.07	ppbv	0.04	AC-058	05-Jan-24
23120161-001	2-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Jan-24
23120161-001	2-Methylhexane	I	0.10	ppbv	0.04	AC-058	05-Jan-24
23120161-001	2-Methylpentane		0.64	ppbv	0.03	AC-058	05-Jan-24
23120161-001	3-Methylheptane	I	0.11	ppbv	0.04	AC-058	05-Jan-24
23120161-001	3-Methylhexane	I	0.15	ppbv	0.03	AC-058	05-Jan-24
23120161-001	3-Methylpentane		0.45	ppbv	0.03	AC-058	05-Jan-24
23120161-001	Acetone		1.6	ppbv	0.6	AC-058	05-Jan-24
23120161-001	Acrolein	K, T, U	< 0.4	ppbv	0.4	AC-058	05-Jan-24
23120161-001	Benzene	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jan-24
23120161-001	Benzyl chloride	K, T, U	< 0.4	ppbv	0.4	AC-058	05-Jan-24
23120161-001	Bromodichloromethane	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jan-24
23120161-001	Bromoform	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Jan-24
23120161-001	Bromomethane	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Jan-24
23120161-001	Carbon disulfide	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Jan-24
23120161-001	Carbon tetrachloride	I	0.08	ppbv	0.03	AC-058	05-Jan-24
23120161-001	Chlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Jan-24

Report certified by: Andrea Conner, Admin Assistant

Date: January 17, 2024

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On behalf of: Adam Malcolm, Manager, Chemical Testing

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CLIENT SAMPLE ID LICA/NMHC/LLB/Dec 14, 2023	CANISTER ID 32215	Matrix Ambient Air	DATE SAMPLED 14-Dec-23 8:45
DESCRIPTION:			
REPORT NUMBER: 23120161	REPORT CREATED: 17-Jan-24		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120161-001	Chloroethane	K, T, U	< 0.03 ppbv	0.03	AC-058	05-Jan-24
23120161-001	Chloroform	K, T, U	< 0.03 ppbv	0.03	AC-058	05-Jan-24
23120161-001	Chloromethane		0.55 ppbv	0.06	AC-058	05-Jan-24
23120161-001	cis-1,2-Dichloroethene	K, T, U	< 0.03 ppbv	0.03	AC-058	05-Jan-24
23120161-001	cis-1,3-Dichloropropene	K, T, U	< 0.04 ppbv	0.04	AC-058	05-Jan-24
23120161-001	cis-2-Butene	K, T, U	< 0.04 ppbv	0.04	AC-058	05-Jan-24
23120161-001	cis-2-Pentene	K, T, U	< 0.03 ppbv	0.03	AC-058	05-Jan-24
23120161-001	Cyclohexane	I	0.12 ppbv	0.06	AC-058	05-Jan-24
23120161-001	Cyclopentane	I	0.04 ppbv	0.03	AC-058	05-Jan-24
23120161-001	Dibromochloromethane	I	0.08 ppbv	0.03	AC-058	05-Jan-24
23120161-001	Ethanol		1.7 ppbv	0.7	AC-058	05-Jan-24
23120161-001	Ethyl acetate	K, T, U	< 0.4 ppbv	0.4	AC-058	05-Jan-24
23120161-001	Ethylbenzene	K, T, U	< 0.04 ppbv	0.04	AC-058	05-Jan-24
23120161-001	Freon-11		0.16 ppbv	0.03	AC-058	05-Jan-24
23120161-001	Freon-113	I	0.06 ppbv	0.03	AC-058	05-Jan-24
23120161-001	Freon-114	K, T, U	< 0.04 ppbv	0.04	AC-058	05-Jan-24
23120161-001	Freon-12		0.51 ppbv	0.04	AC-058	05-Jan-24
23120161-001	Hexachloro-1,3-butadiene	K, T, U	< 0.4 ppbv	0.4	AC-058	05-Jan-24
23120161-001	Isobutane		1.57 ppbv	0.04	AC-058	05-Jan-24
23120161-001	Isopentane		1.04 ppbv	0.06	AC-058	05-Jan-24
23120161-001	Isoprene	I	0.04 ppbv	0.03	AC-058	05-Jan-24
23120161-001	Isopropyl alcohol	K, T, U	< 0.4 ppbv	0.4	AC-058	05-Jan-24
23120161-001	Isopropylbenzene	K, T, U	< 0.06 ppbv	0.06	AC-058	05-Jan-24
23120161-001	m,p-Xylene	I	0.09 ppbv	0.06	AC-058	05-Jan-24
23120161-001	m-Diethylbenzene	K, T, U	< 0.03 ppbv	0.03	AC-058	05-Jan-24

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CLIENT SAMPLE ID LICA/NMHC/LLB/Dec 14, 2023	CANISTER ID 32215	Matrix Ambient Air	DATE SAMPLED 14-Dec-23 8:45
DESCRIPTION:			
REPORT NUMBER: 23120161	REPORT CREATED: 17-Jan-24		VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23120161-001	m-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jan-24
23120161-001	Methyl butyl ketone	K, T, U	< 0.6	ppbv	0.6	AC-058	05-Jan-24
23120161-001	Methyl ethyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	05-Jan-24
23120161-001	Methyl isobutyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	05-Jan-24
23120161-001	Methyl methacrylate	K, T, U	< 0.12	ppbv	0.12	AC-058	05-Jan-24
23120161-001	Methyl tert butyl ether	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jan-24
23120161-001	Methylcyclohexane	I	0.04	ppbv	0.03	AC-058	05-Jan-24
23120161-001	Methylcyclopentane		1.34	ppbv	0.07	AC-058	05-Jan-24
23120161-001	Methylene chloride	K, T, U	< 0.4	ppbv	0.4	AC-058	05-Jan-24
23120161-001	n-Butane		2.10	ppbv	0.03	AC-058	05-Jan-24
23120161-001	n-Decane	K, T, U	< 0.09	ppbv	0.09	AC-058	05-Jan-24
23120161-001	n-Dodecane	K, T, U	< 0.4	ppbv	0.4	AC-058	05-Jan-24
23120161-001	n-Heptane	I	0.27	ppbv	0.06	AC-058	05-Jan-24
23120161-001	n-Hexane		1.45	ppbv	0.04	AC-058	05-Jan-24
23120161-001	n-Octane	I	0.10	ppbv	0.03	AC-058	05-Jan-24
23120161-001	n-Pentane		0.61	ppbv	0.06	AC-058	05-Jan-24
23120161-001	n-Propylbenzene	K, T, U	< 0.09	ppbv	0.09	AC-058	05-Jan-24
23120161-001	n-Undecane	K, T, U	< 0.7	ppbv	0.7	AC-058	05-Jan-24
23120161-001	Naphthalene	K, T, U	< 0.4	ppbv	0.4	AC-058	05-Jan-24
23120161-001	n-Nonane	I	0.06	ppbv	0.06	AC-058	05-Jan-24
23120161-001	o-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Jan-24
23120161-001	o-Xylene	K, T, U	< 0.04	ppbv	0.04	AC-058	05-Jan-24
23120161-001	p-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	05-Jan-24
23120161-001	p-Ethyltoluene	K, T, U	< 0.06	ppbv	0.06	AC-058	05-Jan-24
23120161-001	Styrene	I	0.14	ppbv	0.06	AC-058	05-Jan-24

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Date: January 17, 2024

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CLIENT SAMPLE ID LICA/NMHC/LLB/Dec 14, 2023	CANISTER ID 32215	Matrix Ambient Air	DATE SAMPLED 14-Dec-23 8:45
DESCRIPTION:			
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Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23120161-001	Tetrachloroethylene	I	0.07 ppbv	0.03	AC-058	05-Jan-24
23120161-001	Tetrahydrofuran	K, T, U	< 0.4 ppbv	0.4	AC-058	05-Jan-24
23120161-001	Toluene	I	0.19 ppbv	0.04	AC-058	05-Jan-24
23120161-001	trans-1,2-Dichloroethylene	K, T, U	< 0.09 ppbv	0.09	AC-058	05-Jan-24
23120161-001	trans-1,3-Dichloropropylene	K, T, U	< 0.03 ppbv	0.03	AC-058	05-Jan-24
23120161-001	trans-2-Butene	K, T, U	< 0.04 ppbv	0.04	AC-058	05-Jan-24
23120161-001	trans-2-Pentene	I	0.05 ppbv	0.03	AC-058	05-Jan-24
23120161-001	Trichloroethylene	I	0.04 ppbv	0.03	AC-058	05-Jan-24
23120161-001	Vinyl acetate	K, T, U	< 0.4 ppbv	0.4	AC-058	05-Jan-24
23120161-001	Vinyl chloride	K, T, U	< 0.03 ppbv	0.03	AC-058	05-Jan-24

Report certified by: Andrea Conner, Admin Assistant

On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: January 17, 2024

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LAB-LICA-202312



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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Revision History

Order ID	Ver	Date	Reason
23120161	01	17-Jan-24	Report created

Methods

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

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

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

Qualifiers

Data Qualifier Translation

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



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ENVIRONMENTAL ANALYTICAL SERVICES

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Order Comments



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Sample Comments



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TEST REPORT

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Result Comments

Note:

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

End of Report