Lakeland Industry & Community Association

MARCH 2024

Monthly Ambient Air Quality Monitoring Integrated Sampling Report

LICA-202403-INTEGRATED

April 23, 2024

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Lakeland Industry & Community Association
5107 50 St
Bonnyville, AB, T9N 2J7
Phone #: 780-226-7068
E-mail: monitoring@lica.ca
www.lica.ca

April 23, 2024

Alberta Environment and Protected Areas (EPA)
11th Floor, Oxbridge Place
9820 106 Street
Edmonton, AB, T5K 2J6

RE: LICA –March 2024 Monthly Ambient Air Quality Monitoring Integrated Sampling Report

Enclosed is the March 2024 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 (O_3), hydrogen sulphide (H_2S), sulphur dioxide (SO_2), nitrogen dioxide (NO_2), ammonia (NH_3) and nitric acid (HNO_3).

The representative of the Person Responsible for this monitoring program is

LICA Airshed
Michael Bisaga, Monitoring Programs Manager
5107 50 Street
Bonnyville, AB, T9N 2J7
Phone #: 780-226-7068
E-mail: monitoring@lica.ca

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 March 2024

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).
  - Six samples were collected this month: on March 1, 7, 13, 19, 25 and 31.
- **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).
  - Six samples were collected this month: on March 1, 7, 13, 19, 25 and 31.

- **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).
    - Six samples were collected this month: on March 1, 7, 13, 19, 25 and 31.
- **Passives**
    - There were no exceedances of the AAAQOs for all monitored parameters at any of the passive stations during this month.
    - The passive sample filters were installed at the stations between January 30 and March 2, and were removed between March 1 and March 3.
    - 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.

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.
    - One canister event was recorded this month; the canister system was triggered on March 6 at 07:35 when the NMHC concentration was 0.41ppm at 07:30.

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 March/April monitoring period were installed between March 1 and March 3. The media are scheduled to be removed by the end April.

Revisions to Alberta's Ambient Air Quality Data Warehouse

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

Deviations from Authorized Monitoring Methods

There were no deviations from authorized monitoring methods.

Certification

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

Lily Lin
Data & Reporting Specialist
587-225-2248
monitoring@lica.ca

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

I certify that I have reviewed and verified this report and that the information is complete, accurate and representative of the monitoring results, reporting timeframe and the specified analysis, summarization and reporting requirements. I also certify that at the time of this report's submission, all air data have been electronically uploaded to Alberta ETS as required by the AMD.

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

INTEGRATED SAMPLING RESULTS SUMMARY

COLD LAKE SOUTH STATION

- **VOCs analytical results**

Sample Date	2024-03-01	2024-03-07	2024-03-13	2024-03-19
Canister ID	28887	32256	32275	32213
Maximum Reading (ppbv)	1.08	2.76	1.4	0.7
Parameter	n-Butane	n-Butane	Acetone	Acetone
Sample Date	2024-03-25	2024-03-31		
Canister ID	32235	32255		
Maximum Reading (ppbv)	2.6	2.2		
Parameter	Ethanol	Ethanol		

- **PAHs analytical results**

Sample Date	2024-03-01		2024-03-07		2024-03-13		2024-03-19	
PUF S/N	A13-02		9801		P13-01		TE-01	
Volume (Vstd m^3)	330.42		330.41		330.39		330.41	
Maximum Reading	ug	ng/m3	ug	ng/m3	ug	ng/m3	ug	ng/m3
	0.73	2.21	0.25	0.76	0.13	0.39	0.20	0.61
Parameter	Naphthalene		Acenaphthene		Phenanthrene		Phenanthrene	
Sample Date	2024-03-25		2024-03-31					
PUF S/N	TE-11		TE-12					
Volume (Vstd m^3)	330.41		330.40					
Maximum Reading	ug	ng/m3	ug	ng/m3				
	0.06	0.18	0.08	0.24				
Parameter	1-Methylnaphthalene		1-Methylnaphthalene					

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

Sample Date	2024-03-01		2024-03-07		2024-03-13		2024-03-19	
Filter #	AT79703		AT85637		AT79649		AIA28008	
Volume (Vstd m^3)	23.2		23.6		22.3		22.9	
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)
PM2.5 Mass	0.020	0.001	0.070	0.003	0.051	0.002	0.041	0.002

Sample Date	2024-03-25		2024-03-31	
Filter #	AT79705		AT79701	
Volume (Vstd m^3)	22.5		21.9	
Result	Result (mg)	Result (mg/m^3)	Result (mg)	Result (mg/m^3)
PM2.5 Mass	0.065	0.003	0.075	0.003

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

Sample Date	2024-03-01		2024-03-07		2024-03-13		2024-03-19	
Filter #	AT79704		AT85638		AT79650		IA28009	
Volume (Vstd m^3)	2.59		2.63		2.48		2.55	
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)
PM2.5-10 Mass	0.021	0.008	0.050	0.019	0.035	0.014	0.042	0.016

Sample Date	2024-03-25		2024-03-31	
Filter #	AT79706		AT79702	
Volume (Vstd m^3)	2.51		2.44	
Result	Result (mg)	Result (mg/m^3)	Result (mg)	Result (mg/m^3)
PM2.5-10 Mass	0.026	0.010	0.011	0.005

- **Passive analytical results**

	H_2S		NO_2		O_3		SO_2		NMH3		HNO3	
	Unit (ppb)		Unit (ppb)		Unit (ppb)		Unit (ppb)		Unit (ppb)		Unit (ug/m3)	
Minimum	0.08	#12	<0.1	#23	10.4	#9	0.2	#23	<0.1	#27	0.31	#16
Maximum	0.36	#14	3.1	#14	64.5	#14	2.3	#14	3.6	#3	2.03	#19
Average	0.15	-	1.27	-	40.52	-	0.58	-	0.68	-	0.88	-

LAC LA BICHE STATION

- **NMHC canister sample analytical results**

Sample Date / Time	2024-03-06 @07:35
Canister Triggered Conc. (ppm)	0.41
Canister ID	A47984
Maximum Reading (ppbv)	5.3
Parameter	Ethanol

ANALYTICAL SAMPLING RESULTS

COLD LAKE SOUTH STATION

VOCS

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2024

Volatile Organic Compounds (VOCs) Results

Sample Date		2024-03-01	2024-03-07	2024-03-13	2024-03-19	2024-03-25	2024-03-31	
Canister ID		28887	32256	32275	32213	32235	32255	
Method		AC-058	AC-058	AC-058	AC-058	AC-058	AC-058	
Maximum Reading (ppbv)		1.08	2.76	1.4	0.7	2.6	2.2	
Parameter		n-Butane	n-Butane	Acetone	Acetone	Ethanol	Ethanol	
Parameter	**AAAQOs (ppbv)**	**Result (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	0.02
1,1,2,2-Tetrachloroethane		< 0.02	< 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	0.02
1,1-Dichloroethane		< 0.02	< 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	0.02
1,2,3-Trimethylbenzene		< 0.05	< 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	0.3
1,2,4-Trimethylbenzene		< 0.03	< 0.03	< 0.03	< 0.03	0.06	< 0.03	0.03
1,2-Dibromoethane		< 0.02	< 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	0.03
1,2-Dichloroethane		< 0.03	< 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	0.03
1,3,5-Trimethylbenzene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
1,3-Butadiene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
1,3-Dichlorobenzene		< 0.4	< 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	0.4
1,4-Dioxane		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5
1-Butene		< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	0.06
1-Hexene		< 0.07	< 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	0.03
2,2,4-Trimethylpentane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
2,2-Dimethylbutane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
2,3,4-Trimethylpentane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.09	0.02
2,3-Dimethylbutane		< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	0.09
2,3-Dimethylpentane		< 0.02	0.03	< 0.02	< 0.02	< 0.02	0.04	0.02
2,4-Dimethylpentane		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
2-Methylheptane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
2-Methylhexane		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.08	0.03
2-Methylpentane		0.06	0.1	< 0.02	< 0.02	0.04	0.09	0.02
3-Methylheptane		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
3-Methylhexane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.07	0.02
3-Methylpentane		0.02	0.04	< 0.02	< 0.02	< 0.02	0.04	0.02
Acetone	2400	0.7	1.1	1.4	0.7	1.6	1.80	0.4
Acrolein	1.9	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
Benzene	9.0	0.1	0.07	< 0.03	0.06	0.05	0.07	0.03
Benzyl chloride		< 0.3	< 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	0.03
Bromoform		< 0.02	< 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	0.02
Carbon disulfide	10	< 0.02	< 0.02	< 0.02	< 0.02	0.04	< 0.02	0.02
Carbon tetrachloride		0.06	0.05	0.06	0.07	0.07	0.08	0.02
Chlorobenzene		< 0.02	< 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	0.02
Chloroform		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Chloromethane		0.68	0.64	0.68	0.69	0.70	0.60	0.04
cis-1,2-Dichloroethene		< 0.02	< 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	0.03
cis-2-Butene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
cis-2-Pentene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Cyclohexane		< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.04
Cyclopentane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Dibromochloromethane		0.06	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Ethanol		< 0.5	1	1.1	< 0.5	2.6	2.20	0.5
Ethyl acetate		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
Ethylbenzene	460	< 0.03	< 0.03	< 0.03	0.06	0.06	< 0.03	0.03
Freon-11		0.26	0.22	0.22	0.27	0.27	0.26	0.02
Freon-113		0.07	0.05	0.05	0.07	0.07	0.07	0.02
Freon-114		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2024

Volatile Organic Compounds (VOCs) Results

Sample Date		2024-03-01	2024-03-07	2024-03-13	2024-03-19	2024-03-25	2024-03-31	
Canister ID		28887	32256	32275	32213	32235	32255	
Method		AC-058	AC-058	AC-058	AC-058	AC-058	AC-058	
Maximum Reading (ppbv)		1.08	2.76	1.4	0.7	2.6	2.2	
Parameter		n-Butane	n-Butane	Acetone	Acetone	Ethanol	Ethanol	
Parameter	**AAAQOs (ppbv)**	**Result (ppbv)**	**Result (ppbv)**	**Result (ppbv)**	**Result (ppbv)**	**Result (ppbv)**	**Result (ppbv)**	**RDL (ppbv)**
Freon-12		0.6	0.56	0.57	0.7	0.68	0.59	0.03
Hexachloro-1,3-butadiene		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
Isobutane		0.58	1.39	0.32	0.16	0.17	0.45	0.03
Isopentane		0.25	0.56	0.13	0.1	0.15	0.40	0.04
Isoprene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Isopropyl alcohol		< 0.3	< 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	0.04
m,p-Xylene		< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.05	0.04
m-Diethylbenzene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
m-Ethyltoluene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03	0.03
Methyl butyl ketone		< 0.4	< 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	0.3
Methyl isobutyl ketone		< 0.3	< 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	0.08
Methyl tert butyl ether		0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
Methylcyclohexane		< 0.02	0.02	< 0.02	< 0.02	< 0.02	0.03	0.02
Methylcyclopentane		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Methylene chloride		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
n-Butane		1.08	2.76	0.6	0.33	0.27	1.03	0.02
n-Decane		< 0.06	< 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	0.3
n-Heptane		< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.04
n-Hexane	5960	0.04	0.08	< 0.03	< 0.03	< 0.03	0.06	0.03
n-Nonane		< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.04
n-Octane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
n-Pentane		0.17	0.32	0.06	0.06	0.04	0.21	0.04
n-Propylbenzene		< 0.06	< 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	0.5
Naphthalene		< 0.3	< 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	0.02
o-Xylene		< 0.03	< 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	0.02
p-Ethyltoluene		< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.04
Styrene	52.0	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.04
Tetrachloroethylene		< 0.02	< 0.02	0.03	0.03	0.02	0.05	0.02
Tetrahydrofuran		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
Toluene	499	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.10	0.03
trans-1,2-Dichloroethylene		< 0.06	< 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	0.02
trans-2-Butene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
trans-2-Pentene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Trichloroethylene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Vinyl acetate		< 0.3	< 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	0.02

PAHS

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2024

Polycyclic Aromatic Hydrocarbons (PAHs) Results

Sample Date	2024-03-01		2024-03-07		2024-03-13		2024-03-19		2024-03-25		2024-03-31	
PUF S/N	A13-02		9801		P13-01		TE-01		TE-11		TE-12	
Volume (Vstd m^3)	330.42		330.41		330.39		330.41		330.41		330.40	
Method	AC-066		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	ug	ng/m3
	0.73	2.21	0.25	0.76	0.13	0.39	0.20	0.61	0.06	0.18	0.08	0.24
Parameter	Naphthalene		Acenaphthene		Phenanthrene		Phenanthrene		1-Methylnaphthalene		1-Methylnaphthalene	

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)	Result (ug)	Result (ng/m^3)	RDL (ug)
1-Methylnaphthalene	0.33	1.00	0.11	0.33	0.07	0.21	0.08	0.24	0.06	0.18	0.08	0.24	0.01
2-Methylnaphthalene	0.47	1.42	0.15	0.45	0.09	0.27	0.09	0.27	0.06	0.18	0.05	0.15	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	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	0.00	0.01
Acenaphthene	0.02	0.06	0.25	0.76	0.01	0.03	0.02	0.06	0.01	0.03	< 0.01	0.00	0.01
Acenaphthylene	0.01	0.03	0.02	0.06	< 0.01	0.00	0.07	0.21	< 0.01	0.00	< 0.01	0.00	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	0.00	0.01
Anthracene	< 0.01	0.00	0.01	0.03	0.02	0.06	0.03	0.09	< 0.01	0.00	0.01	0.03	0.01
Benzo(a)anthracene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Benzo(a)pyrene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Benzo(b,j,k)fluoranthene	0.02	0.06	0.02	0.06	0.01	0.03	0.03	0.09	0.01	0.03	0.02	0.06	0.01
Benzo(c)phenanthrene	< 0.01	0.00	< 0.01	0.00	0.04	0.12	0.01	0.03	< 0.01	0.00	0.01	0.03	0.01
Benzo(e)pyrene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01	0.03	< 0.01	0.00	< 0.01	0.00	0.01
Benzo(ghi)perylene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01	0.03	0.01
Chrysene	0.02	0.06	0.02	0.06	0.01	0.03	0.02	0.06	0.02	0.06	0.03	0.09	0.01
Dibenzo(a,h)pyrene	0.02	0.06	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Dibenzo(a,i)pyrene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	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	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	0.00	0.01
Fluoranthene	0.03	0.09	0.07	0.21	0.04	0.12	0.07	0.21	0.03	0.09	0.03	0.09	0.01
Fluorene	0.08	0.24	0.09	0.27	0.08	0.24	0.08	0.24	0.04	0.12	0.05	0.15	0.01
Indeno(1,2,3-cd)pyrene	< 0.01	0.00	0.01	0.03	< 0.01	0.00	0.01	0.03	0.01	0.03	< 0.01	0.00	0.01
Naphthalene	0.73	2.21	0.13	0.39	0.07	0.21	0.09	0.27	0.05	0.15	0.04	0.12	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	0.00	0.01
Phenanthrene	0.14	0.42	0.16	0.48	0.13	0.39	0.20	0.61	0.06	0.18	0.08	0.24	0.01
Pyrene	0.02	0.06	0.04	0.12	0.04	0.12	0.05	0.15	0.02	0.06	0.03	0.09	0.01
Retene	0.05	0.15	0.02	0.06	0.02	0.06	0.04	0.12	< 0.01	0.00	0.01	0.03	0.01

PARTISOLS

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - March 2024

Partisol Results - $PM_{2.5}$

Sample Date		2024-03-01		2024-03-07		2024-03-13		2024-03-19		2024-03-25		2024-03-31		
Filter #		AT79703		AT85637		AT79649		AIA28008		AT79705		AT79701		
Volume (Vstd m^3)		23.2		23.6		22.3		22.9		22.5		21.9		
Method		AC-029		AC-029		AC-029		AC-029		AC-029		AC-029		
Parameter	**AAAQO (mg/m3)**	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**RDL (mg)**
Particulate Matter	0.029	**0.020**	**0.001**	**0.070**	**0.003**	**0.051**	**0.002**	**0.041**	**0.002**	**0.065**	**0.003**	**0.075**	**0.003**	0.004
PM2.5 Mass in ug/m3			**0.862**		**2.966**		**2.287**		**1.790**		**2.889**		**3.425**	
RDL in ug/m3			**0.172**		**0.169**		**0.179**		**0.175**		**0.178**		**0.183**	

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

Sample Date	2024-03-01		2024-03-07		2024-03-13		2024-03-19		2024-03-25		2024-03-31		
Filter #	AT79704		AT85638		AT79650		IA28009		AT79706		AT79702		
Volume (Vstd m^3)	2.59		2.63		2.48		2.55		2.51		2.44		
Method	AC-029		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)	Result (mg)	Result (mg/m^3)	RDL (mg)
PM2.5-10 Mass	0.021	0.008	0.050	0.019	0.035	0.014	0.042	0.016	0.026	0.010	0.011	0.005	0.004

PM2.5-10 Mass in ug/m3		8.108		19.011		14.113		16.471		10.359		4.508	
RDL in ug/m3		1.544		1.521		1.613		1.569		1.594		1.639	

PASSIVE SAMPLES

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

March 2024

Passive Results

		H_2S		NO_2		O_3		SO_2		NMH3		HNO3	
	Unit	**ppb**		**ppb**		**ppb**		**ppb**		**ppb**		**ug/m3**	
	Minimum (ppb)	0.08	#12	<0.1	#23	10.4	#9	0.2	#23	<0.1	#27	0.31	#16
	Maximum (ppb)	0.36	#14	3.1	#14	64.5	#14	2.3	#14	3.6	#3	2.03	#19
	Average (ppb)	0.15	-	1.27	-	40.52	-	0.58	-	0.68	-	0.88	-
No.	**Station**	**Sample**	**Duplicate**	**Sample**	**Duplicate**	**Sample**	**Duplicate**	**Sample**	**Duplicate**	**Sample**	**Duplicate**	**Sample**	**Duplicate**
3	Therien	0.13		1.3		45.9		0.5		3.6		0.98	
4	Flat Lake	-		0.7		47.7		0.7		0.8		1.02	
5	Lake Eliza	0.17		2.0		44.0		0.4		0.3		0.87	
6	Telegraph Creek	-		2.3		34.2		0.5		0.7		0.31	
8	Muriel-Kehewin	-		0.8		43.5		0.5		1.9		0.49	
9	Dupre	-		0.9		10.4		0.5		0.5		0.82	
10	La Corey	0.11		2.3		37.3		0.6		0.9		0.83	
11	Wolf Lake	0.15		0.9		34.7		0.6	0.6	0.2		0.49	
12	Foster Creek	0.09	0.08	0.6	0.5	41.3	43.9	0.5	0.5	<0.1		0.89	
13	Primrose	0.11	0.12	0.5	0.6	35.2	38.7	0.6	0.6	0.3		0.83	
14	Tamarack	0.36		3.1		64.5		2.3		<0.1		0.90	
15	Ardmore	-		0.6		37.6		0.4		<0.1		0.59	
16	Frog Lake	0.12		1.1		37.3		0.5		0.3		<0.04	
17	Clear Range	0.17		0.7		47.0		0.6		0.2		0.73	
18	Fishing Lake	0.10		0.5		36.6		0.6		<0.1		0.60	
19	Beaverdam	-		0.5		44.9		0.4		0.3		2.03	
22	Cold Lake South (1)	0.09		1.4		60.5		0.3		0.3		0.33	
23	Medley-Martineau	-		<0.1		38.7		0.2		<0.1		0.57	
24	Fort George	0.14		1.1		40.0		0.4		0.3		0.75	
25	Burnt Lake	Missing 1		-		-		Missing 1		-		-	
26	Mahihkan	0.17		-		-		0.7		<0.1	0.2	1.43	1.16
27	Mahkeses	0.20		-		-		1.0		0.4	0.3	1.41	1.14
28	Town of Bonnyville	0.19		2.6		35.7		0.5		0.6		1.17	
29	Cold Lake South (2)	0.10		1.8		35.5		0.4		0.5		0.73	
32	St. Lina	0.14		0.7		42.7		0.4		0.4		1.61	
42	Lac La Biche	0.09		1.6		36.8		0.4		0.4		0.76	
BLANK -1		-		-		-		-		0.3		<0.04	
BLANK -2		-		-		-		-		0.2		<0.04	
BLANK -3		-		-		-		-		0.3		0.05	
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.

LAC LA BICHE STATION

NMHC CANISTER SAMPLES

Sample Date/Time		**2024-03-06 @07:35**
Canister Triggered Conc.		**0.41**
Canister ID		**A47984**
Method		**AC-058**
Maximum Reading (ppbv)		**5.3**
Parameter		**Ethanol**

Parameter	AAAQOs (ppbv)	Result (ppbv)	RDL (ppbv)
1,1,1-Trichloroethane		< 0.03	0.03
1,1,2,2-Tetrachloroethane		< 0.03	0.03
1,1,2-Trichloroethane		< 0.03	0.03
1,1-Dichloroethane		< 0.03	0.03
1,1-Dichloroethylene		< 0.03	0.03
1,2,3-Trimethylbenzene		< 0.07	0.07
1,2,4-Trichlorobenzene		< 0.4	0.43
1,2,4-Trimethylbenzene		< 0.04	0.04
1,2-Dibromoethane		< 0.03	0.03
1,2-Dichlorobenzene		< 0.04	0.04
1,2-Dichloroethane		< 0.04	0.04
1,2-Dichloropropane		< 0.04	0.04
1,3,5-Trimethylbenzene		< 0.04	0.04
1,3-Butadiene		< 0.04	0.04
1,3-Dichlorobenzene		< 0.6	0.57
1,4-Dichlorobenzene		< 0.6	0.57
1,4-Dioxane		< 0.7	0.72
1-Butene		0.76	0.09
1-Hexene		< 0.10	0.10
1-Pentene		< 0.04	0.04
2,2,4-Trimethylpentane		0.14	0.03
2,2-Dimethylbutane		< 0.03	0.03
2,3,4-Trimethylpentane		0.06	0.03
2,3-Dimethylbutane		< 0.13	0.13
2,3-Dimethylpentane		0.14	0.03
2,4-Dimethylpentane		0.04	0.04
2-Methylheptane		0.08	0.03
2-Methylhexane		0.17	0.04
2-Methylpentane		0.49	0.03
3-Methylheptane		0.06	0.04
3-Methylhexane		0.18	0.03
3-Methylpentane		0.2	0.03
Acetone	2400	2.1	0.57
Acrolein	1.9	< 0.4	0.43
Benzene	9.0	0.47	0.04
Benzyl chloride		< 0.4	0.43
Bromodichloromethane		< 0.04	0.04
Bromoform		< 0.03	0.03
Bromomethane		< 0.03	0.03
Carbon disulfide	10	< 0.03	0.03
Carbon tetrachloride		0.04	0.03
Chlorobenzene		< 0.03	0.03
Chloroethane		< 0.03	0.03
Chloroform		< 0.03	0.03
Chloromethane		0.58	0.06
cis-1,2-Dichloroethene		< 0.03	0.03
cis-1,3-Dichloropropene		< 0.04	0.04
cis-2-Butene		< 0.04	0.04
cis-2-Pentene		< 0.03	0.03
Cyclohexane		< 0.06	0.06
Cyclopentane		< 0.03	0.03
Dibromochloromethane		< 0.03	0.03
Ethanol		5.3	0.72
Ethyl acetate		< 0.4	0.43
Ethylbenzene	460	0.1	0.04
Freon-11		0.16	0.03
Freon-113		< 0.03	0.03

Sample Date/Time		**2024-03-06 @07:35**
Canister Triggered Conc.		**0.41**
Canister ID		**A47984**
Method		**AC-058**
Maximum Reading (ppbv)		**5.3**
Parameter		**Ethanol**

Parameter	AAAQOs (ppbv)	Result (ppbv)	RDL (ppbv)
Freon-114		< 0.04	0.04
Freon-12		0.45	0.04
Hexachloro-1,3-butadiene		< 0.4	0.43
Isobutane		1.28	0.04
Isopentane		1.3	0.06
Isoprene		< 0.03	0.03
Isopropyl alcohol		< 0.4	0.43
Isopropylbenzene		< 0.06	0.06
m,p-Xylene		0.45	0.06
m-Diethylbenzene		< 0.03	0.03
m-Ethyltoluene		0.07	0.04
Methyl butyl ketone		< 0.6	0.57
Methyl ethyl ketone		< 0.4	0.43
Methyl isobutyl ketone		< 0.4	0.43
Methyl methacrylate		< 0.11	0.11
Methyl tert butyl ether		< 0.04	0.04
Methylcyclohexane		0.17	0.03
Methylcyclopentane		0.27	0.07
Methylene chloride		< 0.4	0.43
n-Butane		3.33	0.03
n-Decane		< 0.09	0.09
n-Dodecane		< 0.4	0.43
n-Heptane		0.1	0.06
n-Hexane	5960	0.19	0.04
n-Nonane		< 0.06	0.06
n-Octane		0.06	0.03
n-Pentane		0.48	0.06
n-Propylbenzene		< 0.09	0.09
n-Undecane		< 0.7	0.72
Naphthalene		< 0.4	0.43
o-Ethyltoluene		< 0.03	0.03
o-Xylene		0.13	0.04
p-Diethylbenzene		< 0.03	0.03
p-Ethyltoluene		0.09	0.06
Styrene	52.0	< 0.06	0.06
Tetrachloroethylene		< 0.03	0.03
Tetrahydrofuran		< 0.4	0.43
Toluene	499	0.88	0.04
trans-1,2-Dichloroethylene		< 0.09	0.09
trans-1,3-Dichloropropylene		< 0.03	0.03
trans-2-Butene		< 0.04	0.04
trans-2-Pentene		0.04	0.03
Trichloroethylene		< 0.03	0.03
Vinyl acetate		< 0.4	0.43
Vinyl chloride	51	< 0.03	0.03

End of Report

Lakeland Industry & Community Association

MARCH 2024

Ambient Air Monitoring

Certified Laboratory Analysis Report

LAB-LICA-202403

Operation and Maintenance:
Bureau Veritas Canada

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

April 9, 2024

Table of Contents

Cold Lake South Station

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

Sample ID: 24030024-001 Priority: Normal

Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/Mar 01, 2024

RECEIVED
MAR 05 2024

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:**	28887
Station ID:	LICA 01	**Installation Date/Time (mst):**	Feb 28, 2024 @ 08:51
Sample ID:	LICA/VOC/CLS/Mar 01, 2024	**Removal Date/Time (mst):**	Mar 04, 2024 @ 13:55

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
March 1, 2024	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	**Final Pressure (psi)**
-30.0	17.6

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

Comments: n/a

Deployment Technician Signature: Chris Wesson

Collection Technician Signature: Alex Yakupov

Sample ID: 24030024-002 Priority: Normal

Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/Mar 01, 2024

RECEIVED
MAR 05 2024

TISCH PUF PLUS Sample Collection Data Sheet

Client:	LICA	**Puf+ S/N:**	A13-02
Location:	Cold Lake South	**Motor S/N:**	1138/100-1020
Station ID:	LICA 01	**Installation Date/Time:**	Feb 28, 2024 @ 08:58
Field Sample ID:	LICA/PUF/CLS/Mar 01, 2024	**Removal Date/Time:**	Mar 04, 2024 @ 13:58

Sample Data Collection Information

Sample Date:	1-Mar-24	**Average Pressure (mmHg)**	705
Start Time (mst):	0:00	**Average Flow (Q_{std})**	229
End Time (mst):	23:59	**Average Tempurature (°C)**	-13.1
Elapsed Time (Hours):	24	**Volume (Vstd m^3)**	330.42

Sample Recovery Checklist

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

Deployed By:	Chris Wesson
Collected By:	Alex Yakupov

InnoTech ALBERTA

Canister ID: 28887

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ3 on: JAN 15 2024

Evacuated: FEB 14 2024 Recertified: _____

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

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/VOC/CLS/Mar 01, 2024

Sampled By: Alex Yakupov

Starting Vacuum:	End Vacuum:
-27.6 "Hg	+17.6 "Hg/ psig

InnoTech ALBERTA

Canister ID: A13-02

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: PVK on: _____

Evacuated: _____ Recertified: _____

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

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/PUF/CLS/Mar 1, 2024

Sampled By: Alex Yakupov

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

Sample ID: 24030024-001 **Priority:** Normal

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/Mar 01, 2024

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

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

CLIENT SAMPLE ID: LICA/PUF/CLS/Mar 01, 2024
Matrix: Air Filter
CANISTER ID: A13-02
PRIORITY: Normal
DESCRIPTION: Cold Lake South
DATE SAMPLED: 01-Mar-24 0:00
DATE RECEIVED: 05-Mar-24
REPORT CREATED: 20-Mar-24
REPORT NUMBER: 24030024
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030024-002	1-Methylnaphthalene		0.33	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	2-Methylnaphthalene		0.47	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	Acenaphthene		0.02	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	Acenaphthylene		0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	Anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	Benzo(b,j,k)fluoranthene		0.02	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	Chrysene		0.02	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	Dibenzo(a,h)pyrene		0.02	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: March 20, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/PUF/CLS/Mar 01, 2024	A13-02	Air Filter	01-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030024 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030024-002	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	Fluoranthene		0.03	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	Fluorene		0.08	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	Naphthalene		0.73	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	Phenanthrene		0.14	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	Pyrene		0.02	ug/Filter	0.01	AC-066	19-Mar-24
24030024-002	Retene		0.05	ug/Filter	0.01	AC-066	19-Mar-24

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

Date: March 20, 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-202403

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 01, 2024	28887	Ambient Air	01-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030024 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030024-001	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	07-Mar-24
24030024-001	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030024-001	1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030024-001	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030024-001	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030024-001	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030024-001	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030024-001	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030024-001	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	07-Mar-24
24030024-001	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	07-Mar-24
24030024-001	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	07-Mar-24
24030024-001	1-Butene/Isobutylene	K, T, U	< 0.06	ppbv	0.06	AC-058	07-Mar-24
24030024-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	07-Mar-24
24030024-001	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030024-001	2,2,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	2,2-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	07-Mar-24
24030024-001	2,3-Dimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24

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

Date: March 20, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 01, 2024	28887	Ambient Air	01-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030024 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030024-001	2,4-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030024-001	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	2-Methylhexane	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030024-001	2-Methylpentane	I	0.06	ppbv	0.02	AC-058	07-Mar-24
24030024-001	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030024-001	3-Methylhexane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	3-Methylpentane	I	0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	Acetone		0.7	ppbv	0.4	AC-058	07-Mar-24
24030024-001	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030024-001	Benzene	I	0.10	ppbv	0.03	AC-058	07-Mar-24
24030024-001	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030024-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030024-001	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	Carbon tetrachloride	I	0.06	ppbv	0.02	AC-058	07-Mar-24
24030024-001	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	Chloromethane		0.68	ppbv	0.04	AC-058	07-Mar-24
24030024-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030024-001	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030024-001	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	Cyclohexane	K, T, U	< 0.04	ppbv	0.04	AC-058	07-Mar-24

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 01, 2024	28887	Ambient Air	01-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030024 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030024-001	Cyclopentane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	Dibromochloromethane	I	0.06	ppbv	0.02	AC-058	07-Mar-24
24030024-001	Ethanol	K, T, U	< 0.5	ppbv	0.5	AC-058	07-Mar-24
24030024-001	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030024-001	Ethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030024-001	Freon-11		0.26	ppbv	0.02	AC-058	07-Mar-24
24030024-001	Freon-113	I	0.07	ppbv	0.02	AC-058	07-Mar-24
24030024-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030024-001	Freon-12		0.60	ppbv	0.03	AC-058	07-Mar-24
24030024-001	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030024-001	Isobutane		0.58	ppbv	0.03	AC-058	07-Mar-24
24030024-001	Isopentane		0.25	ppbv	0.04	AC-058	07-Mar-24
24030024-001	Isoprene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030024-001	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	07-Mar-24
24030024-001	m,p-Xylene	K, T, U	< 0.04	ppbv	0.04	AC-058	07-Mar-24
24030024-001	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	m-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030024-001	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	07-Mar-24
24030024-001	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030024-001	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030024-001	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	07-Mar-24
24030024-001	Methyl tert butyl ether	I	0.03	ppbv	0.03	AC-058	07-Mar-24
24030024-001	Methylcyclohexane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	Methylcyclopentane	K, T, U	< 0.05	ppbv	0.05	AC-058	07-Mar-24

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

Date: March 20, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 01, 2024	28887	Ambient Air	01-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030024 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030024-001	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030024-001	n-Butane		1.08	ppbv	0.02	AC-058	07-Mar-24
24030024-001	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	07-Mar-24
24030024-001	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030024-001	n-Heptane	K, T, U	< 0.04	ppbv	0.04	AC-058	07-Mar-24
24030024-001	n-Hexane	I	0.04	ppbv	0.03	AC-058	07-Mar-24
24030024-001	n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	n-Pentane		0.17	ppbv	0.04	AC-058	07-Mar-24
24030024-001	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	07-Mar-24
24030024-001	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	07-Mar-24
24030024-001	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030024-001	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	07-Mar-24
24030024-001	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030024-001	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	07-Mar-24
24030024-001	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	07-Mar-24
24030024-001	Tetrachloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030024-001	Toluene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030024-001	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	07-Mar-24
24030024-001	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030024-001	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030024-001	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24

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

Date: March 20, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 01, 2024	28887	Ambient Air	01-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030024 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030024-001	Vinyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030024-001	Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24

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

Date: March 20, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
24030024	01	20-Mar-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

Order Comments

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

Sample Comments

Result Comments

Note:

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

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

Sample ID: 24030181-001 Priority: Normal

Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/Mar 07, 2024

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Bureau Veritas

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

Client:	LICA	Sampler S/N:	6167
Location:	Cold Lake South	Canister ID:	32256
Station ID:	LICA 01	Installation Date/Time (mst):	Mar 04, 2024 @ 14:07
Sample ID:	LICA/VOC/CLS/Mar 07, 2024	Removal Date/Time (mst):	Mar 12, 2024 @ 20:36

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
March 7, 2024	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Pressure (psi)
-27.6	19.0

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

Comments: n/a

Deployment Technician Signature: Alex Yakupov

Collection Technician Signature: Alex Yakupov

Sample ID: 24030181-002 Priority: Normal

Customer ID: LICA

Cust Samp ID: LICA/PUF/CLS/Mar 07, 2024

RECEIVED
MAR 20 2024

TISCH PUF PLUS Sample Collection Data Sheet

Client:	LICA	**Puf+ S/N:**	9801
Location:	Cold Lake South	**Motor S/N:**	1138/100-1020
Station ID:	LICA 01	**Installation Date/Time:**	Mar 04, 2024 @ 14:08
Field Sample ID:	LICA/PUF/CLS/Mar 07, 2024	**Removal Date/Time:**	Mar 12, 2024 @ 20:45

Sample Data Collection Information

Sample Date:	7-Mar-24	**Average Pressure (mmHg)**	716
Start Time (mst):	0:00	**Average Flow (Q_{std})**	229
End Time (mst):	23:59	**Average Tempurature (°C)**	-15.5
Elapsed Time (Hours):	24	**Volume (Vstd 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

Sample ID: 24030181-003 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/Mar 13, 2024

RECEIVED
MAR 20 2024

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:**	32275
Station ID:	LICA 01	**Installation Date/Time (mst):**	Mar 12, 2024 @ 20:36
Sample ID:	LICA/VOC/CLS/Mar 13, 2024	**Removal Date/Time (mst):**	Mar 18, 2024 @ 20:34

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
March 13, 2024	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	**Leak rate must be 0.0 psi over a minimum of 5 minutes or repair is required**
Final leak check deployment vacuum (in. Hg) =	n/a	@	n/a	mst	
Total leak rate =	n/a	psi over	n/a	minutes	
Timer reset to zero prior to sampling?	YES	(yes/no)			

Comments: n/a

Deployment Technician Signature: Alex Yakupov

Collection Technician Signature: Alex Yakupov

Sample ID: 24030181-004 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/Mar 13, 2024

RECEIVED
MAR 20 2024

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:**	Mar 12, 2024 @ 20:45
Field Sample ID:	LICA/PUF/CLS/Mar 13, 2024	**Removal Date/Time:**	Mar 18, 2024 @ 20:36

Sample Data Collection Information

Sample Date:	13-Mar-24	**Average Pressure (mmHg)**	715
Start Time (mst):	0:00	**Average Flow (Q_{std})**	229
End Time (mst):	23:59	**Average Tempurature (°C)**	1.1
Elapsed Time (Hours):	24	**Volume (Vstd m^3)**	330.39

Sample Recovery Checklist

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

Deployed By:	Alex Yakupov
Collected By:	Alex Yakupov

InnoTech ALBERTA

Canister ID: 32256

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ on: NOV 2 3 2023

Evacuated: FEB 1 4 2024 Recertified: _____

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

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/VOC/CLS/Mar 7, 2024

Sampled By: Alex Yakupov

Starting Vacuum: -27.6 "Hg

End Pressure: +19.0 "Hg/psig

InnoTech ALBERTA

Canister ID: 9801

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/Mar 7, 2024

Sampled By: Alex Yakupov

Starting Vacuum: _____ "Hg

End Vacuum: _____ "Hg/psig

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Canister ID: 32275

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ3 on: JAN 0 8 2024

Evacuated: FEB 2 7 2024 Recertified: _____

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

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/VOC/CLS/Mar 13, 2024

Sampled By: Alex Yakupov

Starting Vacuum: -27.1 "Hg

End Vacuum: KG 18 "Hg/psig

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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/Mar 13, 2024

Sampled By: Alex Yakupov

Starting Vacuum: _____ "Hg

End Vacuum: _____ "Hg/psig

Sample ID: 24030181-001 **Priority:** Normal

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/Mar 07, 2024

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

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

CLIENT SAMPLE ID: LICA/PUF/CLS/Mar 07, 2024
Matrix: Air Filter
CANISTER ID: 9801
PRIORITY: Normal
DESCRIPTION: Cold Lake South
DATE SAMPLED: 07-Mar-24 0:00
DATE RECEIVED: 20-Mar-24
REPORT CREATED: 19-Apr-24
REPORT NUMBER: 24030181
REPORT REVISED: 23-Apr-24
VERSION: Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030181-002	1-Methylnaphthalene		0.11	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	2-Methylnaphthalene		0.15	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	Acenaphthene		0.25	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	Acenaphthylene		0.02	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	Anthracene		0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	Benzo(b,j,k)fluoranthene		0.02	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	Chrysene		0.02	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: April 23, 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-202403

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/PUF/CLS/Mar 07, 2024	9801	Air Filter	07-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030181 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030181-002	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	Fluoranthene		0.07	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	Fluorene		0.09	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	Indeno(1,2,3-cd)pyrene		0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	Naphthalene		0.13	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	Phenanthrene		0.16	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	Pyrene		0.04	ug/Filter	0.01	AC-066	11-Apr-24
24030181-002	Retene		0.02	ug/Filter	0.01	AC-066	11-Apr-24

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

Date: April 23, 2024

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/PUF/CLS/Mar 13, 2024	P13-01	Air Filter	13-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030181 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030181-004	1-Methylnaphthalene		0.07	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	2-Methylnaphthalene		0.09	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	Acenaphthene		0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	Acenaphthylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	Anthracene		0.02	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	Benzo(b,j,k)fluoranthene		0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	Benzo(c)phenanthrene		0.04	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	Chrysene		0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	Fluoranthene		0.04	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	Fluorene		0.08	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	Naphthalene		0.07	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	Phenanthrene		0.13	ug/Filter	0.01	AC-066	11-Apr-24

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

Date: April 23, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/PUF/CLS/Mar 13, 2024	P13-01	Air Filter	13-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030181 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030181-004	Pyrene		0.04	ug/Filter	0.01	AC-066	11-Apr-24
24030181-004	Retene		0.02	ug/Filter	0.01	AC-066	11-Apr-24

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

Date: April 23, 2024

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 07, 2024	32256	Ambient Air	07-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030181 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030181-001	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	21-Mar-24
24030181-001	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-001	1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-001	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-001	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-001	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-001	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-001	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-001	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	21-Mar-24
24030181-001	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	21-Mar-24
24030181-001	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	21-Mar-24
24030181-001	1-Butene/Isobutylene	K, T, U	< 0.06	ppbv	0.06	AC-058	21-Mar-24
24030181-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	21-Mar-24
24030181-001	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-001	2,2,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	2,2-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	21-Mar-24
24030181-001	2,3-Dimethylpentane	I	0.03	ppbv	0.02	AC-058	21-Mar-24

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

Date: April 23, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 07, 2024	32256	Ambient Air	07-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030181 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030181-001	2,4-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-001	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	2-Methylhexane	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-001	2-Methylpentane	I	0.10	ppbv	0.02	AC-058	21-Mar-24
24030181-001	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-001	3-Methylhexane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	3-Methylpentane	I	0.04	ppbv	0.02	AC-058	21-Mar-24
24030181-001	Acetone		1.1	ppbv	0.4	AC-058	21-Mar-24
24030181-001	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-001	Benzene	I	0.07	ppbv	0.03	AC-058	21-Mar-24
24030181-001	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-001	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	Carbon tetrachloride	I	0.05	ppbv	0.02	AC-058	21-Mar-24
24030181-001	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	Chloromethane		0.64	ppbv	0.04	AC-058	21-Mar-24
24030181-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-001	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-001	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	Cyclohexane	K, T, U	< 0.04	ppbv	0.04	AC-058	21-Mar-24

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

Date: April 23, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 07, 2024	32256	Ambient Air	07-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030181 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030181-001	Cyclopentane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	Ethanol	I	1.0	ppbv	0.5	AC-058	21-Mar-24
24030181-001	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-001	Ethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-001	Freon-11		0.22	ppbv	0.02	AC-058	21-Mar-24
24030181-001	Freon-113	I	0.05	ppbv	0.02	AC-058	21-Mar-24
24030181-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-001	Freon-12		0.56	ppbv	0.03	AC-058	21-Mar-24
24030181-001	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-001	Isobutane		1.39	ppbv	0.03	AC-058	21-Mar-24
24030181-001	Isopentane		0.56	ppbv	0.04	AC-058	21-Mar-24
24030181-001	Isoprene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-001	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	21-Mar-24
24030181-001	m,p-Xylene	K, T, U	< 0.04	ppbv	0.04	AC-058	21-Mar-24
24030181-001	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	m-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-001	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	21-Mar-24
24030181-001	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-001	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-001	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	21-Mar-24
24030181-001	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-001	Methylcyclohexane	I	0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	Methylcyclopentane	K, T, U	< 0.05	ppbv	0.05	AC-058	21-Mar-24

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

Date: April 23, 2024

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 07, 2024	32256	Ambient Air	07-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030181 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030181-001	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-001	n-Butane		2.76	ppbv	0.02	AC-058	21-Mar-24
24030181-001	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	21-Mar-24
24030181-001	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-001	n-Heptane	K, T, U	< 0.04	ppbv	0.04	AC-058	21-Mar-24
24030181-001	n-Hexane	I	0.08	ppbv	0.03	AC-058	21-Mar-24
24030181-001	n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	n-Pentane		0.32	ppbv	0.04	AC-058	21-Mar-24
24030181-001	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	21-Mar-24
24030181-001	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	21-Mar-24
24030181-001	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-001	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	21-Mar-24
24030181-001	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-001	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	21-Mar-24
24030181-001	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	21-Mar-24
24030181-001	Tetrachloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-001	Toluene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-001	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	21-Mar-24
24030181-001	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-001	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-001	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24

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

Date: April 23, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 07, 2024	32256	Ambient Air	07-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030181 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030181-001	Vinyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-001	Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24

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

Date: April 23, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 13, 2024	32275	Ambient Air	13-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030181 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030181-003	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	21-Mar-24
24030181-003	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-003	1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-003	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-003	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-003	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-003	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-003	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-003	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	21-Mar-24
24030181-003	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	21-Mar-24
24030181-003	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	21-Mar-24
24030181-003	1-Butene/Isobutylene	K, T, U	< 0.06	ppbv	0.06	AC-058	21-Mar-24
24030181-003	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	21-Mar-24
24030181-003	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-003	2,2,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	2,2-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	21-Mar-24
24030181-003	2,3-Dimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24

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

Date: April 23, 2024

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 13, 2024	32275	Ambient Air	13-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030181 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030181-003	2,4-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-003	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	2-Methylhexane	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-003	2-Methylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-003	3-Methylhexane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	3-Methylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	Acetone		1.4	ppbv	0.4	AC-058	21-Mar-24
24030181-003	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-003	Benzene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-003	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-003	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-003	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	Carbon tetrachloride	I	0.06	ppbv	0.02	AC-058	21-Mar-24
24030181-003	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	Chloromethane		0.68	ppbv	0.04	AC-058	21-Mar-24
24030181-003	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-003	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-003	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	Cyclohexane	K, T, U	< 0.04	ppbv	0.04	AC-058	21-Mar-24

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

Date: April 23, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 13, 2024	32275	Ambient Air	13-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030181 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030181-003	Cyclopentane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	Ethanol		1.1	ppbv	0.5	AC-058	21-Mar-24
24030181-003	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-003	Ethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-003	Freon-11		0.22	ppbv	0.02	AC-058	21-Mar-24
24030181-003	Freon-113	I	0.05	ppbv	0.02	AC-058	21-Mar-24
24030181-003	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-003	Freon-12		0.57	ppbv	0.03	AC-058	21-Mar-24
24030181-003	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-003	Isobutane		0.32	ppbv	0.03	AC-058	21-Mar-24
24030181-003	Isopentane		0.13	ppbv	0.04	AC-058	21-Mar-24
24030181-003	Isoprene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-003	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	21-Mar-24
24030181-003	m,p-Xylene	K, T, U	< 0.04	ppbv	0.04	AC-058	21-Mar-24
24030181-003	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	m-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-003	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	21-Mar-24
24030181-003	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-003	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-003	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	21-Mar-24
24030181-003	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-003	Methylcyclohexane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	Methylcyclopentane	K, T, U	< 0.05	ppbv	0.05	AC-058	21-Mar-24

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 13, 2024	32275	Ambient Air	13-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030181 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030181-003	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-003	n-Butane		0.60	ppbv	0.02	AC-058	21-Mar-24
24030181-003	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	21-Mar-24
24030181-003	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-003	n-Heptane	K, T, U	< 0.04	ppbv	0.04	AC-058	21-Mar-24
24030181-003	n-Hexane	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-003	n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	n-Pentane	I	0.06	ppbv	0.04	AC-058	21-Mar-24
24030181-003	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	21-Mar-24
24030181-003	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	21-Mar-24
24030181-003	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-003	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	21-Mar-24
24030181-003	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-003	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	21-Mar-24
24030181-003	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	21-Mar-24
24030181-003	Tetrachloroethylene	I	0.03	ppbv	0.02	AC-058	21-Mar-24
24030181-003	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-003	Toluene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-003	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	21-Mar-24
24030181-003	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	21-Mar-24
24030181-003	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24
24030181-003	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24

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

Date: April 23, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 13, 2024	32275	Ambient Air	13-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030181 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030181-003	Vinyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	21-Mar-24
24030181-003	Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	21-Mar-24

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

Date: April 23, 2024

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

Revision History

Order ID	Ver	Date	Reason
24030181	01	19-Apr-24	Report created
24030181	02	23-Apr-24	Data was loaded with the units as ug/L, incorrectly. Units have been corrected to ug/Filter.

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

Order Comments

Sample Comments

Result Comments

Note:

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

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

Sample ID: 24040008-001 Priority: Normal

Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/Mar 19, 2024

RECEIVED
APR 02 2024

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):**	Mar 18, 2024 @ 20:34
Sample ID:	LICA/VOC/CLS/Mar 19, 2024	**Removal Date/Time (mst):**	Mar 23, 2024 @ 16:26

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
March 19, 2024	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	**Final Pressure (psi)**
-27.5	19.4

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

Comments: n/a

Deployment Technician Signature: Alex Yakupov

Collection Technician Signature: Alex Yakupov

Sample ID: 24040008-002 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/Mar 19, 2024

RECEIVED
APR 02 2024

TISCH PUF PLUS Sample Collection Data Sheet

Client:	LICA	**Puf+ S/N:**	TE-01
Location:	Cold Lake South	**Motor S/N:**	1138/100-1020
Station ID:	LICA 01	**Installation Date/Time:**	Mar 18, 2024 @ 20:37
Field Sample ID:	LICA/PUF/CLS/Mar 19, 2024	**Removal Date/Time:**	Mar 23, 2024 @ 16:31

Sample Data Collection Information

Sample Date:	19-Mar-24	**Average Pressure (mmHg)**	719
Start Time (mst):	0:00	**Average Flow (Q_{std})**	229
End Time (mst):	23:59	**Average Tempurature (°C)**	-4.8
Elapsed Time (Hours):	24	**Volume (Vstd 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

Sample ID: 24040008-003 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/Mar 25, 2024

RECEIVED
APR 02 2024

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:**	32235
Station ID:	LICA 01	**Installation Date/Time (mst):**	Mar 23, 2024 @ 20:34
Sample ID:	LICA/VOC/CLS/Mar 25, 2024	**Removal Date/Time (mst):**	Mar 28, 2024 @ 10:41

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
March 25, 2024	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Pressure (psi)
-27.6	18.1

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

Comments: n/a

Deployment Technician Signature: Alex Yakupov

Collection Technician Signature: Alex Yakupov

Sample ID: 24040008-004 Priority: Normal

Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/Mar 25, 2024

RECEIVED
APR 02 2024

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:**	Mar 23, 2024 @ 16:41
Field Sample ID:	LICA/PUF/CLS/Mar 25, 2024	**Removal Date/Time:**	Mar 28, 2024 @ 10:43

Sample Data Collection Information

Sample Date:	25-Mar-24	**Average Pressure (mmHg)**	715
Start Time (mst):	0:00	**Average Flow (Q_{std})**	229
End Time (mst):	23:59	**Average Tempurature (°C)**	-4.2
Elapsed Time (Hours):	24	**Volume (Vstd 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

InnoTech ALBERTA

Canister ID: 32213

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: 1523 on: JAN 0 8 2024

Evacuated: JAN 2 2 2024 Recertified: FEB 1 3 2024

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

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/VOC/CLS/Mar 19, 2024

Sampled By: Alex Yakupov

Starting Vacuum:	End Vacuum:
-27.5 "Hg	+19.4 "Hg/psig

InnoTech ALBERTA

Canister ID: TE-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/Mar 19, 2024

Sampled By: Alex Yakupov

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

InnoTech ALBERTA

Canister ID: 32235

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: 1SQ on: NOV 0 6 2023

Evacuated: FEB 1 4 2024 Recertified:

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

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/VOC/CLS/Mar 25, 2024

Sampled By: Alex Yakupov

Starting Vacuum:	End Vacuum:
-27.6 "Hg	18.1 "Hg/psig

InnoTech ALBERTA

Canister ID: TE-11

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/Mar 25, 2024

Sampled By: Alex Yakupov

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

Sample ID: 24040008-001 **Priority:** Normal

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/Mar 19, 2024

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

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

CLIENT SAMPLE ID	Matrix
LICA/PUF/CLS/Mar 19, 2024	Air Filter

CANISTER ID: TE-01
PRIORITY: Normal
DESCRIPTION: Cold Lake South

DATE SAMPLED: 19-Mar-24 0:00
DATE RECEIVED: 02-Apr-24
REPORT CREATED: 19-Apr-24
REPORT NUMBER: 24040008
REPORT REVISED: 23-Apr-24
VERSION: Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040008-002	1-Methylnaphthalene		0.08	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	2-Methylnaphthalene		0.09	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	Acenaphthene		0.02	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	Acenaphthylene		0.07	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	Anthracene		0.03	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	Benzo(b,j,k)fluoranthene		0.03	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	Benzo(c)phenanthrene		0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	Benzo(e)pyrene		0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	Chrysene		0.02	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: April 23, 2024

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/PUF/CLS/Mar 19, 2024	TE-01	Air Filter	19-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24040008 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040008-002	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	Fluoranthene		0.07	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	Fluorene		0.08	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	Indeno(1,2,3-cd)pyrene		0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	Naphthalene		0.09	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	Phenanthrene		0.20	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	Pyrene		0.05	ug/Filter	0.01	AC-066	11-Apr-24
24040008-002	Retene		0.04	ug/Filter	0.01	AC-066	11-Apr-24

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

Date: April 23, 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-202403

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/PUF/CLS/Mar 25, 2024	TE-11	Air Filter	25-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24040008 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040008-004	1-Methylnaphthalene		0.06	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	2-Methylnaphthalene		0.06	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	Acenaphthene		0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	Acenaphthylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	Anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	Benzo(b,j,k)fluoranthene		0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	Chrysene		0.02	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	Fluoranthene		0.03	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	Fluorene		0.04	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	Indeno(1,2,3-cd)pyrene		0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	Naphthalene		0.05	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	Phenanthrene		0.06	ug/Filter	0.01	AC-066	11-Apr-24

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

Date: April 23, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/PUF/CLS/Mar 25, 2024	TE-11	Air Filter	25-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24040008 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040008-004	Pyrene		0.02	ug/Filter	0.01	AC-066	11-Apr-24
24040008-004	Retene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	11-Apr-24

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

Date: April 23, 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-202403

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 19, 2024	32213	Ambient Air	19-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24040008 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040008-001	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	04-Apr-24
24040008-001	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-001	1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-001	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-001	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-001	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-001	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-001	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-001	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	04-Apr-24
24040008-001	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	04-Apr-24
24040008-001	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	04-Apr-24
24040008-001	1-Butene/Isobutylene	K, T, U	< 0.06	ppbv	0.06	AC-058	04-Apr-24
24040008-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	04-Apr-24
24040008-001	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-001	2,2,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	2,2-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	04-Apr-24
24040008-001	2,3-Dimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: April 23, 2024

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 19, 2024	32213	Ambient Air	19-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24040008 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040008-001	2,4-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-001	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	2-Methylhexane	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-001	2-Methylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-001	3-Methylhexane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	3-Methylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	Acetone		0.7	ppbv	0.4	AC-058	04-Apr-24
24040008-001	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-001	Benzene	I	0.06	ppbv	0.03	AC-058	04-Apr-24
24040008-001	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-001	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	Carbon tetrachloride	I	0.07	ppbv	0.02	AC-058	04-Apr-24
24040008-001	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	Chloromethane		0.69	ppbv	0.04	AC-058	04-Apr-24
24040008-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-001	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-001	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	Cyclohexane	K, T, U	< 0.04	ppbv	0.04	AC-058	04-Apr-24

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: April 23, 2024

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 19, 2024	32213	Ambient Air	19-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24040008 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040008-001	Cyclopentane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	Ethanol	K, T, U	< 0.5	ppbv	0.5	AC-058	04-Apr-24
24040008-001	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-001	Ethylbenzene	I	0.06	ppbv	0.03	AC-058	04-Apr-24
24040008-001	Freon-11		0.27	ppbv	0.02	AC-058	04-Apr-24
24040008-001	Freon-113	I	0.07	ppbv	0.02	AC-058	04-Apr-24
24040008-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-001	Freon-12		0.70	ppbv	0.03	AC-058	04-Apr-24
24040008-001	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-001	Isobutane		0.16	ppbv	0.03	AC-058	04-Apr-24
24040008-001	Isopentane		0.10	ppbv	0.04	AC-058	04-Apr-24
24040008-001	Isoprene	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-001	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	04-Apr-24
24040008-001	m,p-Xylene	K, T, U	< 0.04	ppbv	0.04	AC-058	04-Apr-24
24040008-001	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	m-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-001	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	04-Apr-24
24040008-001	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-001	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-001	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	04-Apr-24
24040008-001	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-001	Methylcyclohexane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	Methylcyclopentane	K, T, U	< 0.05	ppbv	0.05	AC-058	04-Apr-24

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Date: April 23, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 19, 2024	32213	Ambient Air	19-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24040008 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040008-001	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-001	n-Butane		0.33	ppbv	0.02	AC-058	04-Apr-24
24040008-001	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	04-Apr-24
24040008-001	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-001	n-Heptane	K, T, U	< 0.04	ppbv	0.04	AC-058	04-Apr-24
24040008-001	n-Hexane	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-001	n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	n-Pentane	I	0.06	ppbv	0.04	AC-058	04-Apr-24
24040008-001	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	04-Apr-24
24040008-001	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	04-Apr-24
24040008-001	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-001	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	04-Apr-24
24040008-001	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-001	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	04-Apr-24
24040008-001	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	04-Apr-24
24040008-001	Tetrachloroethylene	I	0.03	ppbv	0.02	AC-058	04-Apr-24
24040008-001	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-001	Toluene	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-001	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	04-Apr-24
24040008-001	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-001	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-001	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: April 23, 2024

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 19, 2024	32213	Ambient Air	19-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24040008 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040008-001	Vinyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-001	Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: April 23, 2024

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 25, 2024	32235	Ambient Air	25-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24040008 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040008-003	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	04-Apr-24
24040008-003	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-003	1,2,4-Trimethylbenzene	I	0.06	ppbv	0.03	AC-058	04-Apr-24
24040008-003	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-003	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-003	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-003	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-003	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-003	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	04-Apr-24
24040008-003	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	04-Apr-24
24040008-003	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	04-Apr-24
24040008-003	1-Butene/Isobutylene	K, T, U	< 0.06	ppbv	0.06	AC-058	04-Apr-24
24040008-003	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	04-Apr-24
24040008-003	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-003	2,2,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	2,2-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	04-Apr-24
24040008-003	2,3-Dimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: April 23, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 25, 2024	32235	Ambient Air	25-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24040008 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040008-003	2,4-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-003	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	2-Methylhexane	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-003	2-Methylpentane	I	0.04	ppbv	0.02	AC-058	04-Apr-24
24040008-003	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-003	3-Methylhexane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	3-Methylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	Acetone		1.6	ppbv	0.4	AC-058	04-Apr-24
24040008-003	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-003	Benzene	I	0.05	ppbv	0.03	AC-058	04-Apr-24
24040008-003	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-003	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-003	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	Carbon disulfide	I	0.04	ppbv	0.02	AC-058	04-Apr-24
24040008-003	Carbon tetrachloride	I	0.07	ppbv	0.02	AC-058	04-Apr-24
24040008-003	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	Chloromethane		0.70	ppbv	0.04	AC-058	04-Apr-24
24040008-003	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-003	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-003	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	Cyclohexane	K, T, U	< 0.04	ppbv	0.04	AC-058	04-Apr-24

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: Adam Malcolm, Manager, Chemical Testing

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 25, 2024	32235	Ambient Air	25-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24040008 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040008-003	Cyclopentane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	Ethanol		2.6	ppbv	0.5	AC-058	04-Apr-24
24040008-003	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-003	Ethylbenzene	I	0.06	ppbv	0.03	AC-058	04-Apr-24
24040008-003	Freon-11		0.27	ppbv	0.02	AC-058	04-Apr-24
24040008-003	Freon-113	I	0.07	ppbv	0.02	AC-058	04-Apr-24
24040008-003	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-003	Freon-12		0.68	ppbv	0.03	AC-058	04-Apr-24
24040008-003	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-003	Isobutane		0.17	ppbv	0.03	AC-058	04-Apr-24
24040008-003	Isopentane		0.15	ppbv	0.04	AC-058	04-Apr-24
24040008-003	Isoprene	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-003	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	04-Apr-24
24040008-003	m,p-Xylene	K, T, U	< 0.04	ppbv	0.04	AC-058	04-Apr-24
24040008-003	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	m-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-003	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	04-Apr-24
24040008-003	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-003	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-003	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	04-Apr-24
24040008-003	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-003	Methylcyclohexane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	Methylcyclopentane	K, T, U	< 0.05	ppbv	0.05	AC-058	04-Apr-24

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: April 23, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 25, 2024	32235	Ambient Air	25-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24040008 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040008-003	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-003	n-Butane		0.27	ppbv	0.02	AC-058	04-Apr-24
24040008-003	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	04-Apr-24
24040008-003	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-003	n-Heptane	K, T, U	< 0.04	ppbv	0.04	AC-058	04-Apr-24
24040008-003	n-Hexane	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-003	n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	n-Pentane	I	0.04	ppbv	0.04	AC-058	04-Apr-24
24040008-003	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	04-Apr-24
24040008-003	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	04-Apr-24
24040008-003	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-003	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	04-Apr-24
24040008-003	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-003	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	04-Apr-24
24040008-003	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	04-Apr-24
24040008-003	Tetrachloroethylene	I	0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-003	Toluene	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-003	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	04-Apr-24
24040008-003	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	04-Apr-24
24040008-003	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24
24040008-003	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: Adam Malcolm, Manager, Chemical Testing

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 25, 2024	32235	Ambient Air	25-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24040008 **REPORT CREATED:** 19-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040008-003	Vinyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	04-Apr-24
24040008-003	Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	04-Apr-24

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: April 23, 2024

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

Revision History

Order ID	Ver	Date	Reason
24040008	01	19-Apr-24	Report created
24040008	02	23-Apr-24	Data was loaded with the units as ug/L, incorrectly. Units have been corrected to ug/Filter.

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

Order Comments

Sample Comments

Result Comments

Note:

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

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

Sample ID: 24040087-001 Priority: Normal

Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/Mar 31, 2024

RECEIVED
APR 10 2024

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:	32255
Station ID:	LICA 01	Installation Date/Time (mst):	Mar 28, 2024 @ 10:41
Sample ID:	LICA/VOC/CLS/Mar 31, 2024	Removal Date/Time (mst):	Apr 04, 2024 @ 21:03

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
March 31, 2024	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Pressure (psi)
-27.2	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	**Leak rate must be 0.0 psi over a minimum of 5 minutes or repair is required**
Final leak check deployment vacuum (in. Hg) =	n/a	@	n/a	mst	
Total leak rate =	n/a	psi over	n/a	minutes	
Timer reset to zero prior to sampling?	YES	(yes/no)			

Comments: n/a

Deployment Technician Signature: Alex Yakupov

Collection Technician Signature: Alex Yakupov

Sample ID: 24040087-002 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/Mar 31, 2024

RECEIVED
APR 10 2024

TISCH PUF PLUS Sample Collection Data Sheet

Client:	LICA	**Puf+ S/N:**	TE-12
Location:	Cold Lake South	**Motor S/N:**	1138/100-1020
Station ID:	LICA 01	**Installation Date/Time:**	Mar 28, 2024 @ 10:43
Field Sample ID:	LICA/PUF/CLS/Mar 31, 2024	**Removal Date/Time:**	Apr 04, 2024 @ 21:06

Sample Data Collection Information

Sample Date:	31-Mar-24	**Average Pressure (mmHg)**	707
Start Time (mst):	0:00	**Average Flow (Q_{std})**	229
End Time (mst):	23:59	**Average Tempurature (°C)**	1.8
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

InnoTech ALBERTA

Canister ID: 32255

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ on: NOV 0 6 2023

Evacuated: FEB 2 7 2024 Recertified: _____

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

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/VOC/CLS/Mar 31, 2024

Sampled By: Alex Yakupov

Starting Vacuum: -27.2 "Hg

End Vacuum: +8.4 "Hg/psig

InnoTech ALBERTA

Canister ID: TE-12

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/Mar 31, 2024

Sampled By: Alex Yakupov

Starting Vacuum: — "Hg

End Vacuum: _____ "Hg/psig

Sample ID: 24040087-001 **Priority:** Normal

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/Mar 31, 2024

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

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

CLIENT SAMPLE ID: LICA/PUF/CLS/Mar 31, 2024
Matrix: Air Filter
CANISTER ID: TE-12
PRIORITY: Normal
DESCRIPTION: Cold Lake South
DATE SAMPLED: 31-Mar-24 0:00
DATE RECEIVED: 10-Apr-24
REPORT CREATED: 22-Apr-24
REPORT NUMBER: 24040087
REPORT REVISED: 23-Apr-24
VERSION: Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040087-002	1-Methylnaphthalene		0.08	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	2-Methylnaphthalene		0.05	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	Acenaphthene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	Acenaphthylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	Anthracene		0.01	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	Benzo(b,j,k)fluoranthene		0.02	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	Benzo(c)phenanthrene		0.01	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	Benzo(ghi)perylene		0.01	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	Chrysene		0.03	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Apr-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: April 23, 2024

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/PUF/CLS/Mar 31, 2024	TE-12	Air Filter	31-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24040087 **REPORT CREATED:** 22-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040087-002	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	Fluoranthene		0.03	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	Fluorene		0.05	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	Naphthalene		0.04	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	Phenanthrene		0.08	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	Pyrene		0.03	ug/Filter	0.01	AC-066	19-Apr-24
24040087-002	Retene		0.01	ug/Filter	0.01	AC-066	19-Apr-24

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

Date: April 23, 2024

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 31, 2024	32255	Ambient Air	31-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24040087 **REPORT CREATED:** 22-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040087-001	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	10-Apr-24
24040087-001	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	10-Apr-24
24040087-001	1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	10-Apr-24
24040087-001	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	10-Apr-24
24040087-001	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	10-Apr-24
24040087-001	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	10-Apr-24
24040087-001	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	10-Apr-24
24040087-001	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	10-Apr-24
24040087-001	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	10-Apr-24
24040087-001	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	10-Apr-24
24040087-001	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	10-Apr-24
24040087-001	1-Butene/Isobutylene	K, T, U	< 0.06	ppbv	0.06	AC-058	10-Apr-24
24040087-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	10-Apr-24
24040087-001	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	10-Apr-24
24040087-001	2,2,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	2,2-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	2,3,4-Trimethylpentane	I	0.09	ppbv	0.02	AC-058	10-Apr-24
24040087-001	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	10-Apr-24
24040087-001	2,3-Dimethylpentane	I	0.04	ppbv	0.02	AC-058	10-Apr-24

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

Date: April 23, 2024

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 31, 2024	32255	Ambient Air	31-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24040087 **REPORT CREATED:** 22-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040087-001	2,4-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	10-Apr-24
24040087-001	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	2-Methylhexane	I	0.08	ppbv	0.03	AC-058	10-Apr-24
24040087-001	2-Methylpentane	I	0.09	ppbv	0.02	AC-058	10-Apr-24
24040087-001	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	10-Apr-24
24040087-001	3-Methylhexane	I	0.07	ppbv	0.02	AC-058	10-Apr-24
24040087-001	3-Methylpentane	I	0.04	ppbv	0.02	AC-058	10-Apr-24
24040087-001	Acetone		1.8	ppbv	0.4	AC-058	10-Apr-24
24040087-001	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	10-Apr-24
24040087-001	Benzene	I	0.07	ppbv	0.03	AC-058	10-Apr-24
24040087-001	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	10-Apr-24
24040087-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	10-Apr-24
24040087-001	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	Carbon tetrachloride	I	0.08	ppbv	0.02	AC-058	10-Apr-24
24040087-001	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	Chloromethane		0.60	ppbv	0.04	AC-058	10-Apr-24
24040087-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	10-Apr-24
24040087-001	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	10-Apr-24
24040087-001	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	Cyclohexane	K, T, U	< 0.04	ppbv	0.04	AC-058	10-Apr-24

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

Date: April 23, 2024

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 31, 2024	32255	Ambient Air	31-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24040087 **REPORT CREATED:** 22-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040087-001	Cyclopentane	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	Ethanol		2.2	ppbv	0.5	AC-058	10-Apr-24
24040087-001	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	10-Apr-24
24040087-001	Ethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	10-Apr-24
24040087-001	Freon-11		0.26	ppbv	0.02	AC-058	10-Apr-24
24040087-001	Freon-113	I	0.07	ppbv	0.02	AC-058	10-Apr-24
24040087-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	10-Apr-24
24040087-001	Freon-12		0.59	ppbv	0.03	AC-058	10-Apr-24
24040087-001	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	10-Apr-24
24040087-001	Isobutane		0.45	ppbv	0.03	AC-058	10-Apr-24
24040087-001	Isopentane		0.40	ppbv	0.04	AC-058	10-Apr-24
24040087-001	Isoprene	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	10-Apr-24
24040087-001	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	10-Apr-24
24040087-001	m,p-Xylene	I	0.05	ppbv	0.04	AC-058	10-Apr-24
24040087-001	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	m-Ethyltoluene	I	0.03	ppbv	0.03	AC-058	10-Apr-24
24040087-001	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	10-Apr-24
24040087-001	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	10-Apr-24
24040087-001	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	10-Apr-24
24040087-001	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	10-Apr-24
24040087-001	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	10-Apr-24
24040087-001	Methylcyclohexane	I	0.03	ppbv	0.02	AC-058	10-Apr-24
24040087-001	Methylcyclopentane	K, T, U	< 0.05	ppbv	0.05	AC-058	10-Apr-24

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 31, 2024	32255	Ambient Air	31-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24040087 **REPORT CREATED:** 22-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040087-001	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	10-Apr-24
24040087-001	n-Butane		1.03	ppbv	0.02	AC-058	10-Apr-24
24040087-001	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	10-Apr-24
24040087-001	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	10-Apr-24
24040087-001	n-Heptane	K, T, U	< 0.04	ppbv	0.04	AC-058	10-Apr-24
24040087-001	n-Hexane	I	0.06	ppbv	0.03	AC-058	10-Apr-24
24040087-001	n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	n-Pentane		0.21	ppbv	0.04	AC-058	10-Apr-24
24040087-001	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	10-Apr-24
24040087-001	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	10-Apr-24
24040087-001	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	10-Apr-24
24040087-001	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	10-Apr-24
24040087-001	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	10-Apr-24
24040087-001	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	10-Apr-24
24040087-001	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	10-Apr-24
24040087-001	Tetrachloroethylene	I	0.05	ppbv	0.02	AC-058	10-Apr-24
24040087-001	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	10-Apr-24
24040087-001	Toluene	I	0.10	ppbv	0.03	AC-058	10-Apr-24
24040087-001	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	10-Apr-24
24040087-001	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	10-Apr-24
24040087-001	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24
24040087-001	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Mar 31, 2024	32255	Ambient Air	31-Mar-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24040087 **REPORT CREATED:** 22-Apr-24 **REPORT REVISED:** 23-Apr-24 **VERSION:** Version 02

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040087-001	Vinyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	10-Apr-24
24040087-001	Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	10-Apr-24

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Date: April 23, 2024

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Revision History

Order ID	Ver	Date	Reason
24040087	01	22-Apr-24	Report created
24040087	02	23-Apr-24	Data was loaded with the units as ug/L, incorrectly. Units have been corrected to ug/Filter.

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

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

Qualifiers

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

Order Comments

Sample Comments

Result Comments

Note:

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

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

Partisol Samples

Sample ID: 24030023-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT79703

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MAR 05 2024

2000i-D Sample Data Sheet

Date Sampled:	1-Mar-24
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 #:	AT79703	AT79704
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	-14	
Pressure	705	
Std Volume (Instrument)	23.2	2.59

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Chris Wesson Date: 28-Feb-24

Removed by (Sign/Date) Alex Yakupov Date: 4-Mar-24

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: 24030023-002 Priority: Normal

Customer ID: LICA
Cust Samp ID: AT79704

RECEIVED
MAR 05 2024

Filter Shipping Record

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

Date: January 8/24

Project: LICA/Bureau Veritas Labs

Prepared by: S Melenka

For information contact:
EAS.Reception@albertainnovates.ca

Filter Size	# of Filters (in cassettes)	Filter IDs
47 mm	2	AT79703 → AT79704

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

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

CLIENT SAMPLE ID: AT79703

Matrix: Air Filter

CANISTER ID:

PRIORITY: Normal

DESCRIPTION: Cold Lake South - PM 2.5 - Fine

DATE SAMPLED: 01-Mar-24 0:00

DATE RECEIVED: 05-Mar-24

REPORT CREATED: 11-Mar-24

REPORT NUMBER: 24030023

VERSION Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030023-001	Particulate Weight		0.020	mg	0.004	AC-029	07-Mar-24

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

Date: March 11, 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-202403

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

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
AT79704		Air Filter	01-Mar-24 0:00

DESCRIPTION: Cold Lake South - PM 10 - Coarse

REPORT NUMBER: 24030023 **REPORT CREATED:** 11-Mar-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030023-002	Particulate Weight		0.021	mg	0.004	AC-029	07-Mar-24

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

Date: March 11, 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-202403

Revision History

Order ID	Ver	Date	Reason
24030023	01	11-Mar-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
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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

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

Order Comments

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

Sample Comments

Result Comments

Note:

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

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

Sample ID: 24030180-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT85637

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MAR 20 2024

l 2000i-D Sample Data Sheet

Date Sampled:	7-Mar-24
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 #:	AT85637	AT85638
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	-15	
Pressure	716	
Std Volume (Instrument)	23.6	2.63

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date):	Alex yakupov	Date:	4-Mar-24
Removed by (Sign/Date)	Alex Yakupov	Date:	12-Mar-24

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: 24030180-003 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT79649

RECEIVED
MAR 20 2024

I 2000i-D Sample Data Sheet

Date Sampled:	13-Mar-24
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 #:	AT79649	AT79650
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	0.1	
Pressure	714	
Std Volume (Instrument)	22.3	2.48

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Alex yakupov Date: 12-Mar-24

Removed by (Sign/Date) Alex Yakupov Date: 18-Mar-24

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: 24030180-002 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT85638

RECEIVED
MAR 20 2024

Filter Shipping Record

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

Date: December 1/23

Project: LICA/Bureau Veritas Labs

Prepared by:

For information contact:
EAS.Reception@albertainnovates.ca

Filter Size	# of Filters (in cassettes)	Filter IDs
47 mm	2	AT85637 → AT85638

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

Sample ID: 24030180-004 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT79650

Filter Shipping Record

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

Date: January 8/24

Project: LICA/Bureau Veritas Labs

Prepared by: S Mueleska

For information contact:
EAS.Reception@albertainnovates.ca

Filter Size	# of Filters (in cassettes)	Filter IDs
47 mm	2	AT79649 → AT79650

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

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

CLIENT SAMPLE ID	Matrix
AT79649	Air Filter

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

DATE SAMPLED: 13-Mar-24 0:00
DATE RECEIVED: 20-Mar-24
REPORT CREATED: 26-Mar-24
REPORT NUMBER: 24030180
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030180-003	Particulate Weight		0.051	mg	0.004	AC-029	25-Mar-24

Report certified by: Andrea Conner, Admin Assistant
On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: March 26, 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-202403

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PO Bag 4000
Vegreville, Alberta
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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
AT79650		Air Filter	13-Mar-24 0:00

DESCRIPTION: Cold Lake South - PM 10 - Coarse

REPORT NUMBER: 24030180 **REPORT CREATED:** 26-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030180-004	Particulate Weight		0.035	mg	0.004	AC-029	25-Mar-24

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

Date: March 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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(780) 632-8211

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
AT85637		Air Filter	07-Mar-24 0:00

DESCRIPTION: Cold Lake South - PM 2.5 - Fine

REPORT NUMBER: 24030180 **REPORT CREATED:** 26-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030180-001	Particulate Weight		0.070	mg	0.004	AC-029	25-Mar-24

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

Date: March 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
AT85638		Air Filter	07-Mar-24 0:00

DESCRIPTION: Cold Lake South - PM 10 - Coarse

REPORT NUMBER: 24030180 **REPORT CREATED:** 26-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030180-002	Particulate Weight		0.050	mg	0.004	AC-029	25-Mar-24

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

Date: March 26, 2024

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

Revision History

Order ID	Ver	Date	Reason
24030180	01	26-Mar-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

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

Order Comments

Sample Comments

Result Comments

Note:

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

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

Sample ID: 24040007-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: IA28008

RECEIVED
APR 02 2024

I 2000i-D Sample Data Sheet

Date Sampled:	19-Mar-24
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 #:	IA28008	IA28009
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	-5.3	
Pressure	718	
Std Volume (Instrument)	22.9	2.55

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Alex yakupov Date: 18-Mar-24

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

P. ogramming
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: 24040007-003 Priority: Normal

Customer ID: LICA
Cust Samp ID: AT79705

2000i-D Sample Data Sheet

Date Sampled:	25-Mar-24
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 #:	AT79705	AT79706
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	-3.5	
Pressure	714	
Std Volume (Instrument)	22.5	2.51

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date):	Alex yakupov	Date:	23-Mar-24
Removed by (Sign/Date)	Alex Yakupov	Date:	28-Mar-24

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: 24040007-002 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: IA28009

Filter Shipping Record

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

Date: FEBRUARY 13/24

Project: LICA/Bureau Veritas Labs

Prepared by: S. Wielenka

For information contact:
EAS.Reception@albertainnovates.ca

Filter Size	# of Filters (in cassettes)	Filter IDs
47 mm	2	IA28008 → IA28009

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

Sample ID: 24040007-004 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT79706

Filter Shipping Record

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

Date: January 8/24

Project: LICA/Bureau Veritas Labs

Prepared by:

For information contact:
EAS.Reception@albertainnovates.ca

Filter Size	# of Filters (in cassettes)	Filter IDs
47 mm	2	AT79705 → AT79706

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

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

CLIENT SAMPLE ID	Matrix
1A28008	Air Filter

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

DATE SAMPLED: 19-Mar-24 0:00
DATE RECEIVED: 02-Apr-24
REPORT CREATED: 05-Apr-24
REPORT NUMBER: 24040007
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040007-001	Particulate Weight		0.041	mg	0.004	AC-029	04-Apr-24

Report certified by: Andrea Conner, Admin Assistant
On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: April 5, 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-202403

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
1A28009		Air Filter	19-Mar-24 0:00

DESCRIPTION: Cold Lake South - PM 10 - Coarse

REPORT NUMBER: 24040007 **REPORT CREATED:** 05-Apr-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040007-002	Particulate Weight		0.042	mg	0.004	AC-029	04-Apr-24

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

Date: April 5, 2024

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
AT79705		Air Filter	25-Mar-24 0:00

DESCRIPTION: Cold Lake South - PM 2.5 - Fine

REPORT NUMBER: 24040007 **REPORT CREATED:** 05-Apr-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040007-003	Particulate Weight		0.065	mg	0.004	AC-029	04-Apr-24

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

Date: April 5, 2024

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
AT79706		Air Filter	25-Mar-24 0:00

DESCRIPTION: Cold Lake South - PM 10 - Coarse

REPORT NUMBER: 24040007 **REPORT CREATED:** 05-Apr-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040007-004	Particulate Weight		0.026	mg	0.004	AC-029	04-Apr-24

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

Date: April 5, 2024

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

Revision History

Order ID	Ver	Date	Reason
24040007	01	05-Apr-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

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

Order Comments

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

Sample Comments

Result Comments

Note:

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

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

Sample ID: 24040085-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT79701

I 2000i-D Sample Data Sheet

RECEIVED
APR 10 2024

Date Sampled:	31-Mar-24
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 #:	AT79701	AT79702
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	1.4	
Pressure	706	
Std Volume (Instrument)	21.9	2.44

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Alex yakupov Date: 28-Mar-24

Removed by (Sign/Date) Alex Yakupov Date: 4-Apr-24

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: 24040085-002 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT79702

RECEIVED
APR 10 2024

Filter Shipping Record

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

Date: January 8/24

Project: LICA/Bureau Veritas Labs

Prepared by:

For information contact:
EAS.Reception@albertainnovates.ca

Filter Size	# of Filters (in cassettes)	Filter IDs
47 mm	2	AT79701 → AT79702

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

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

CLIENT SAMPLE ID	Matrix
AT79701	Air Filter

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

DATE SAMPLED: 31-Mar-24 0:00
DATE RECEIVED: 10-Apr-24
REPORT CREATED: 17-Apr-24
REPORT NUMBER: 24040085
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040085-001	Particulate Weight		0.075	mg	0.004	AC-029	16-Apr-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: April 17, 2024

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

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
AT79702		Air Filter	31-Mar-24 0:00

DESCRIPTION: Cold Lake South - PM 10 - Coarse

REPORT NUMBER: 24040085 **REPORT CREATED:** 17-Apr-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24040085-002	Particulate Weight		0.011	mg	0.004	AC-029	16-Apr-24

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

Date: April 17, 2024

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

Revision History

Order ID	Ver	Date	Reason
24040085	01	17-Apr-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

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AC-080	Alkylated PAH in Water (SPE Extraction)
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PO Bag 4000
Vegreville, Alberta
Canada T9C 1T4
(780) 632-8211

Order Comments

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

Sample Comments

Result Comments

Note:

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

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

Passive Samples

Passive Sampler Field Sheet for LICA, Mar 2024 sample period

ID	SAMPLER						START		END		NOTES
							DATE	TIME	DATE	TIME	
3	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Mar 3	10:45	Mar 31	20:03	
4	---	SO_2	NO_2	O_3	HNO3	NH3	Mar 2	11:35	Apr 1	18:53	
5	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Mar 2	12:19	Apr 1	13:37	
6	---	SO_2	NO_2	O_3	HNO3	NH3	Mar 2	14:03	Apr 1	14:46	
8	---	SO_2	NO_2	O_3	HNO3	NH3	Mar 2	10:15	Apr 1	11:50	
9	---	SO_2	NO_2	O_3	HNO3	NH3	Mar 1	19:40	Mar 31	16:45	
10	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Mar 3	17:54	Apr 2	16:41	
11	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Mar 3	17:08	Apr 2	16:10	
12	H2S	SO2	NO2	O3	HNO3	NH3	Mar 3	16:58	Apr 2	13:55	
13	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Mar 1	14:10	Mar 31	14:28	
14	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Mar 1	12:54	Mar 31	13:15	water sample taken
15	---	SO_2	NO_2	O_3	HNO3	NH3	Mar 1	18:20	Mar 31	15:45	
16	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Mar 2	17:16	Apr 1	18:02	
17	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Mar 2	15:01	Apr 1	18:43	
18	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Mar 2	16:24	Apr 1	17:07	
19	---	SO_2	NO_2	O_3	HNO3	NH3	Mar 2	18:00	Apr 1	18:45	
22	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Mar 3	19:18	Apr 2	17:46	
23	---	SO_2	NO_2	O_3	HNO3	NH3	Mar 1	11:07	Apr 1	11:35	
24	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Mar 2	13:07	Apr 1	14:13	
25	H2S	SO2	---	---	HNO3	NH3	NA	NA	NA	NA	Old SO_2/H_2S from 2015 retrieved
26	H_2S	SO_2	---	---	HNO3	NH3	Mar 1	13:25	Mar 31	13:46	
27	H_2S	SO_2	---	---	HNO3	NH3	Mar 1	12:20	Mar 31	12:49	
28	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Mar 1	19:07	Mar 31	16:25	
29	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Mar 3	18:24	Apr 2	17:56	
32	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Mar 3	11:32	Mar 31	17:56	
42	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Mar 3	12:45	Apr 2	11:01	
							DUPLICATES				
12	H2S	---	---	---	---	---	Mar 3	16:55	Apr 2	13:55	
13	H2S	---	---	---	---	---	Mar 1	14:10	Mar 31	14:28	
11	---	SO2	---	---	---	---	Mar 3	17:08	Apr 2	16:10	
12		SO2	---	---	---	---	Mar 3	16:58	Apr 2	13:55	
13	---	SO2	---	---	---	---	Mar 1	14:10	Mar 31	14:28	
12	---	---	NO_2	O_3	---	---	Mar 3	16:58	Apr 2	13:55	
13	---	---	NO_2	O_3	---	---	Mar 1	14:10	Mar 31	14:28	
27	---	---	---	---	HNO3	NH3	Mar 1	12:20	Mar 31	12:49	
26	---	---	---	---	HNO3	NH3	Mar 1	13:25	Mar 31	13:46	

33 SO_2 27 NO_2 31 HNO_3
23 H_2S 31 NH_3 DB 240404
28 O3 0800

Your Project #: MARCH 2024 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: 2024/04/15
Report #: R3487640
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C423537
Received: 2024/04/04, 08:00

Sample Matrix: Air
Samples Received: 58

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
H2S Passive Analysis	20	2024/04/05	2024/04/15	PTC SOP-00150	Passive H2S in ATM
HNO3 by Passive Sampler	30	2024/04/10	2024/04/13	PTC SOP-00288	Passive HNO3 in ATM
NH3 by Passive Sampler	30	2024/04/05	2024/04/15	PTC SOP-00157	ASTM D6919
NO2 Passive Analysis	25	2024/04/08	2024/04/15	PTC SOP-00148	Passive NO2 in ATM
O3 Passive Analysis	25	2024/04/11	2024/04/15	PTC SOP-00197	EPA 300 R2.1
SO2 Passive Analysis	28	2024/04/10	2024/04/15	PTC SOP-00149	Passive SO2 in ATM

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

Encryption Key

Rowena Geron
Customer Service Associate
15 Apr 2024 09:51:48

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 Edmonton: 6744 - 50th Street T6A 3N7 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C423537
Report Date: 2024/04/15

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: MARCH 2024 PASSIVES
Site Location: BONNYVILLE, AB
Sampler Initials: AY

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CLR784			CLR785			CLR786		
Sampling Date		2024/03/03 10:15			2024/03/02 11:45			2024/03/02 12:19		
	UNITS	3	RDL	QC Batch	4	RDL	QC Batch	5	RDL	QC Batch
Passive Monitoring										
Calculated H2S	ppb	0.13	0.02	B331428				0.17	0.02	B331428
Calculated NO2	ppb	1.3	0.1	B333405	0.7	0.1	B333405	2.0	0.1	B333405
Calculated O3	ppb	45.9	0.1	B336437	47.7	0.1	B336437	44.0	0.1	B336437
Calculated SO2	ppb	0.5	0.1	B335356	0.7	0.1	B335356	0.4	0.1	B335356
RDL = Reportable Detection Limit										

Bureau Veritas ID		CLR787	CLR788	CLR789			CLR790	CLR791		
Sampling Date		2024/03/02 14:03	2024/03/02 10:15	2024/03/01 19:40			2024/03/03 17:54	2024/03/03 17:08		
	UNITS	6	8	9	RDL	QC Batch	10	11	RDL	QC Batch
Passive Monitoring										
Calculated H2S	ppb						0.11	0.15	0.02	B331428
Calculated NO2	ppb	2.3	0.8	0.9	0.1	B333405	2.3	0.9	0.1	B333405
Calculated O3	ppb	34.2	43.5	40.1	0.1	B336437	37.3	34.7	0.1	B336437
Calculated SO2	ppb	0.5	0.5	0.5	0.1	B335356	0.6	0.6	0.1	B335356
RDL = Reportable Detection Limit										

Bureau Veritas ID		CLR843			CLR792		CLS002		CLR793		
Sampling Date		2024/03/03 17:08			2024/03/03 15:55		2024/03/03 15:55		2024/03/01 14:10		
	UNITS	11-DUP	RDL	QC Batch	12	QC Batch	12-DUP	QC Batch	13	RDL	QC Batch
Passive Monitoring											
Calculated H2S	ppb				0.09	B331428	0.08	B331428	0.11	0.02	B331428
Calculated NO2	ppb				0.6	B333413	0.5	B333413	0.5	0.1	B333413
Calculated O3	ppb				41.3	B336437	43.9	B336442	35.2	0.1	B336437
Calculated SO2	ppb	0.6	0.1	B334681	0.5	B335356	0.5	B334681	0.6	0.1	B335356
RDL = Reportable Detection Limit											

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

Bureau Veritas Job #: C423537
Report Date: 2024/04/15

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: MARCH 2024 PASSIVES
Site Location: BONNYVILLE, AB
Sampler Initials: AY

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CLS003		CLR794			CLR795			CLR796		
Sampling Date		2024/03/01 14:10		2024/03/01 12:54			2024/03/01 18:20			2024/03/02 17:16		
	UNITS	13-DUP	QC Batch	14	RDL	QC Batch	15	RDL	QC Batch	16	RDL	QC Batch
Passive Monitoring												
Calculated H2S	ppb	0.12	B331428	0.36	0.02	B331428				0.12	0.02	B331428
Calculated NO2	ppb	0.6	B333413	3.1	0.1	B333413	0.6	0.1	B333413	1.1	0.1	B333413
Calculated O3	ppb	38.7	B336442	64.5	0.1	B336437	37.6	0.1	B336437	37.3	0.1	B336437
Calculated SO2	ppb	0.6	B334681	2.3	0.1	B335356	0.4	0.1	B335356	0.5	0.1	B335356
RDL = Reportable Detection Limit												

Bureau Veritas ID		CLR797	CLR798			CLR799			CLR800		
Sampling Date		2024/03/02 15:01	2024/03/02 16:24			2024/03/02 18:00			2024/03/03 19:18		
	UNITS	17	18	RDL	QC Batch	19	RDL	QC Batch	22	RDL	QC Batch
Passive Monitoring											
Calculated H2S	ppb	0.17	0.10	0.02	B331428				0.09	0.02	B331428
Calculated NO2	ppb	0.7	0.5	0.1	B333413	0.5	0.1	B333413	1.4	0.1	B333413
Calculated O3	ppb	47.0	36.6	0.1	B336437	44.9	0.1	B336437	60.5	0.1	B336442
Calculated SO2	ppb	0.6	0.6	0.1	B335356	0.4	0.1	B335356	0.3	0.1	B335356
RDL = Reportable Detection Limit											

Bureau Veritas ID		CLR801			CLR802			CLR803	CLR804		
Sampling Date		2024/03/01 11:07			2024/03/02 13:07			2024/03/01 13:25	2024/03/01 12:20		
	UNITS	23	RDL	QC Batch	24	RDL	QC Batch	26	27	RDL	QC Batch
Passive Monitoring											
Calculated H2S	ppb				0.14	0.02	B331428	0.17	0.20	0.02	B331428
Calculated NO2	ppb	<0.1	0.1	B333413	1.1	0.1	B333413				
Calculated O3	ppb	38.7	0.1	B336442	40.0	0.1	B336442				
Calculated SO2	ppb	0.2	0.1	B335356	0.4	0.1	B334681	0.7	1.0	0.1	B334681
RDL = Reportable Detection Limit											

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

Bureau Veritas Job #: C423537
Report Date: 2024/04/15

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: MARCH 2024 PASSIVES
Site Location: BONNYVILLE, AB
Sampler Initials: AY

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CLR805	CLR806	CLR807	CLR808			CLR812		
Sampling Date		2024/03/01 19:07	2024/03/03 19:24	2024/03/03 11:32	2024/03/03 12:45			2024/03/03 10:15		
	UNITS	28	29	32	42	RDL	QC Batch	3-NH3 HNO3	RDL	QC Batch
Passive Monitoring										
Ammonia by Passive Sampler	ppb							3.6	0.1	B331498
Calculated H2S	ppb	0.19	0.10	0.14	0.09	0.02	B331428			
HNO3 by Passive Sampler	ug/m3							0.98	0.04	B336075
Calculated NO2	ppb	2.6	1.8	0.7	1.6	0.1	B333413			
Calculated O3	ppb	35.7	35.5	42.7	36.8	0.1	B336442			
Calculated SO2	ppb	0.5	0.4	0.4	0.4	0.1	B334681			
RDL = Reportable Detection Limit										

Bureau Veritas ID		CLR813	CLR814	CLR815	CLR816	CLR819	CLR820		
Sampling Date		2024/03/02 11:35	2024/03/02 12:19	2024/03/02 14:03	2024/03/02 10:15	2024/03/01 19:40	2024/03/03 17:54		
	UNITS	4-NH3 HNO3	5-NH3 HNO3	6-NH3 HNO3	8-NH3 HNO3	9-NH3 HNO3	10-NH3 HNO3	RDL	QC Batch
Passive Monitoring									
Ammonia by Passive Sampler	ppb	0.8	0.3	0.7	1.9	0.5	0.9	0.1	B331498
HNO3 by Passive Sampler	ug/m3	1.02	0.87	0.31	0.49	0.82	0.83	0.04	B336075
RDL = Reportable Detection Limit									

Bureau Veritas ID		CLR821	CLR822	CLR823	CLR824	CLR825	CLR826		
Sampling Date		2024/03/03 17:08	2024/03/03 15:55	2024/03/01 14:10	2024/03/01 12:54	2024/03/01 18:20	2024/03/02 17:16		
	UNITS	11-NH3 HNO3	12-NH3 HNO3	13-NH3 HNO3	14-NH3 HNO3	15-NH3 HNO3	16-NH3 HNO3	RDL	QC Batch
Passive Monitoring									
Ammonia by Passive Sampler	ppb	0.2	<0.1	0.3	<0.1	<0.1	0.3	0.1	B331498
HNO3 by Passive Sampler	ug/m3	0.49	0.89	0.83	0.90	0.59	<0.04	0.04	B336075
RDL = Reportable Detection Limit									

Bureau Veritas ID		CLR827	CLR828	CLR829		CLR830	CLR831		
Sampling Date		2024/03/02 15:01	2024/03/02 16:24	2024/03/02 18:00		2024/03/03 19:18	2024/03/01 11:07		
	UNITS	17-NH3 HNO3	18-NH3 HNO3	19-NH3 HNO3	QC Batch	22-NH3 HNO3	23-NH3 HNO3	RDL	QC Batch
Passive Monitoring									
Ammonia by Passive Sampler	ppb	0.2	<0.1	0.3	B331498	0.3	<0.1	0.1	B331498
HNO3 by Passive Sampler	ug/m3	0.73	0.60	2.03	B336075	0.33	0.57	0.04	B336077
RDL = Reportable Detection Limit									

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Bureau Veritas Job #: C423537
Report Date: 2024/04/15

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: MARCH 2024 PASSIVES
Site Location: BONNYVILLE, AB
Sampler Initials: AY

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CLR832	CLR833		CLS004	CLR834		
Sampling Date		2024/03/02 13:07	2024/03/01 13:25		2024/03/01 13:25	2024/03/01 12:20		
	UNITS	24-NH3 HNO3	26-NH3 HNO3	QC Batch	26-NH3 HNO3-DUP	27-NH3 HNO3	RDL	QC Batch
Passive Monitoring								
Ammonia by Passive Sampler	ppb	0.3	<0.1	B331498	0.2	0.4	0.1	B331499
HNO3 by Passive Sampler	ug/m3	0.75	1.43	B336077	1.16	1.41	0.04	B336077
RDL = Reportable Detection Limit								

Bureau Veritas ID		CLS005	CLR835	CLR836	CLR837	CLR838		
Sampling Date		2024/03/01 12:20	2024/03/01 19:07	2024/03/03 19:24	2024/03/03 11:32	2024/03/03 12:45		
	UNITS	27-NH3 HNO3-DUP	28-NH3 HNO3	29-NH3 HNO3	32-NH3 HNO3	42-NH3 HNO3	RDL	QC Batch
Passive Monitoring								
Ammonia by Passive Sampler	ppb	0.3	0.6	0.5	0.4	0.4	0.1	B331499
HNO3 by Passive Sampler	ug/m3	1.14	1.17	0.73	1.61	0.76	0.04	B336077
RDL = Reportable Detection Limit								

Bureau Veritas ID		CLR839	CLR840	CLR841		
Sampling Date						
	UNITS	BLANK 1-NH3 HNO3	BLANK 2-NH3 HNO3	BLANK 3-NH3 HNO3	RDL	QC Batch
Passive Monitoring						
Ammonia by Passive Sampler	ppb	0.3	0.2	0.3	0.1	B331499
HNO3 by Passive Sampler	ug/m3	<0.04	<0.04	0.05	0.04	B336077
RDL = Reportable Detection Limit						

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

GENERAL COMMENTS

Results relate only to the items tested.

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

Bureau Veritas Job #: C423537
Report Date: 2024/04/15

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: MARCH 2024 PASSIVES
Site Location: BONNYVILLE, AB
Sampler Initials: AY

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B331428	YYA	Spiked Blank	Calculated H2S			101	%	90 - 110
B331498	SDK	Spiked Blank	Ammonia by Passive Sampler			103	%	90 - 110
B331498	SDK	Method Blank	Ammonia by Passive Sampler		<0.1		ppb	
B331498	SDK	RPD [CLR812-01]	Ammonia by Passive Sampler	2024/04/15	NC		%	N/A
B331499	SDK	Spiked Blank	Ammonia by Passive Sampler			109	%	90 - 110
B331499	SDK	Method Blank	Ammonia by Passive Sampler		<0.1		ppb	
B331499	SDK	RPD [CLR834-01]	Ammonia by Passive Sampler	2024/04/15	NC		%	N/A
B333405	S1T	Spiked Blank	Calculated NO2			98	%	90 - 110
B333405	S1T	Method Blank	Calculated NO2		<0.1		ppb	
B333413	S1T	Spiked Blank	Calculated NO2			101	%	90 - 110
B333413	S1T	Method Blank	Calculated NO2		<0.1		ppb	
B334681	OZ	Spiked Blank	Calculated SO2			100	%	90 - 110
B334681	OZ	Method Blank	Calculated SO2		<0.1		ppb	
B335356	OZ	Spiked Blank	Calculated SO2			100	%	90 - 110
B335356	OZ	Method Blank	Calculated SO2		<0.1		ppb	
B336075	OZ	Method Blank	HNO3 by Passive Sampler		<0.04		ug/m3	
B336075	OZ	RPD [CLR812-01]	HNO3 by Passive Sampler	2024/04/13	NC		%	N/A
B336077	OZ	Method Blank	HNO3 by Passive Sampler		<0.04		ug/m3	
B336077	OZ	RPD [CLR830-01]	HNO3 by Passive Sampler	2024/04/13	NC		%	N/A
B336437	S1T	Spiked Blank	Calculated O3			100	%	90 - 110
B336437	S1T	Method Blank	Calculated O3		<0.1		ppb	
B336442	S1T	Spiked Blank	Calculated O3			103	%	90 - 110
B336442	S1T	Method Blank	Calculated O3		<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.

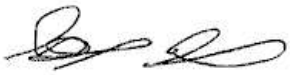
NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

Bureau Veritas Job #: C423537
Report Date: 2024/04/15

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: MARCH 2024 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

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

Lac La Biche Station

Non- Methane Hydrocarbons (NMHCs) Canister Samples

Sample ID: 24030066-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: LICA/NMHC/LLB/Mar 06, 2024

RECEIVED
MAR 12 2024

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:**	A47984
Station ID:	LICA 41	**Installation Date/Time (mst):**	Feb 20, 2024 @ 14:22
Sample ID:	LICA/NMHC/LLB/Mar 06, 2024	**Removal Date/Time (mst):**	Mar 06, 2024 @ 12:32

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
March 6, 2024	7:35	n/a	n/a

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Vacuum (in. Hg)
-27.3	-3.0

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

Comments:

Exp. Date: Apr 22, 2024

Deployment Technician Signature: Chris Wesson

Collection Technician Signature: Alex Yakupov

Sample ID: 24030066-001 Priority: Normal

Customer ID: LICA

Cust Samp ID: LICA/NMHC/LLB/Mar 06, 2024

InnoTech ALBERTA

Canister ID: A47984

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: 1603 on: JAN 15 2024

Evacuated: JAN 22 2024 Recertified: _____

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

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/NMHC/LCB/Mar 6, 2024

Sampled By: Alex Yakupov

Starting Vacuum:	End Vacuum:
-27.3 "Hg	-3.0 "Hg psig

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

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

CLIENT SAMPLE ID: LICA/NMHC/LLB/Mar 06, 2024

Matrix: Ambient Air

CANISTER ID: A47984

PRIORITY: Normal

DESCRIPTION: Lac La Biche

DATE SAMPLED: 06-Mar-24 7:35

DATE RECEIVED: 12-Mar-24

REPORT CREATED: 22-Mar-24

REPORT NUMBER: 24030066

VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030066-001	1,1,1-Trichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	1,1,2-Trichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	1,1-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	1,1-Dichloroethylene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	1,2,3-Trimethylbenzene	K, T, U	< 0.07	ppbv	0.07	AC-058	15-Mar-24
24030066-001	1,2,4-Trichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	15-Mar-24
24030066-001	1,2,4-Trimethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	15-Mar-24
24030066-001	1,2-Dibromoethane	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	1,2-Dichlorobenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	15-Mar-24
24030066-001	1,2-Dichloroethane	K, T, U	< 0.04	ppbv	0.04	AC-058	15-Mar-24
24030066-001	1,2-Dichloropropane	K, T, U	< 0.04	ppbv	0.04	AC-058	15-Mar-24
24030066-001	1,3,5-Trimethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	15-Mar-24
24030066-001	1,3-Butadiene	K, T, U	< 0.04	ppbv	0.04	AC-058	15-Mar-24
24030066-001	1,3-Dichlorobenzene	K, T, U	< 0.6	ppbv	0.6	AC-058	15-Mar-24
24030066-001	1,4-Dichlorobenzene	K, T, U	< 0.6	ppbv	0.6	AC-058	15-Mar-24
24030066-001	1,4-Dioxane	K, T, U	< 0.7	ppbv	0.7	AC-058	15-Mar-24

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: March 22, 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-202403

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/NMHC/LLB/Mar 06, 2024	A47984	Ambient Air	06-Mar-24 7:35

DESCRIPTION: Lac La Biche

REPORT NUMBER: 24030066 **REPORT CREATED:** 22-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030066-001	1-Butene/Isobutylene		0.76	ppbv	0.09	AC-058	15-Mar-24
24030066-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.10	ppbv	0.10	AC-058	15-Mar-24
24030066-001	1-Pentene	K, T, U	< 0.04	ppbv	0.04	AC-058	15-Mar-24
24030066-001	2,2,4-Trimethylpentane	I	0.14	ppbv	0.03	AC-058	15-Mar-24
24030066-001	2,2-Dimethylbutane	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	2,3,4-Trimethylpentane	I	0.06	ppbv	0.03	AC-058	15-Mar-24
24030066-001	2,3-Dimethylbutane	K, T, U	< 0.13	ppbv	0.13	AC-058	15-Mar-24
24030066-001	2,3-Dimethylpentane	I	0.14	ppbv	0.03	AC-058	15-Mar-24
24030066-001	2,4-Dimethylpentane	I	0.04	ppbv	0.04	AC-058	15-Mar-24
24030066-001	2-Methylheptane	I	0.08	ppbv	0.03	AC-058	15-Mar-24
24030066-001	2-Methylhexane		0.17	ppbv	0.04	AC-058	15-Mar-24
24030066-001	2-Methylpentane		0.49	ppbv	0.03	AC-058	15-Mar-24
24030066-001	3-Methylheptane	I	0.06	ppbv	0.04	AC-058	15-Mar-24
24030066-001	3-Methylhexane		0.18	ppbv	0.03	AC-058	15-Mar-24
24030066-001	3-Methylpentane		0.20	ppbv	0.03	AC-058	15-Mar-24
24030066-001	Acetone		2.1	ppbv	0.6	AC-058	15-Mar-24
24030066-001	Acrolein	K, T, U	< 0.4	ppbv	0.4	AC-058	15-Mar-24
24030066-001	Benzene		0.47	ppbv	0.04	AC-058	15-Mar-24
24030066-001	Benzyl chloride	K, T, U	< 0.4	ppbv	0.4	AC-058	15-Mar-24
24030066-001	Bromodichloromethane	K, T, U	< 0.04	ppbv	0.04	AC-058	15-Mar-24
24030066-001	Bromoform	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	Bromomethane	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	Carbon disulfide	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	Carbon tetrachloride	I	0.04	ppbv	0.03	AC-058	15-Mar-24
24030066-001	Chlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: March 22, 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-202403

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/NMHC/LLB/Mar 06, 2024	A47984	Ambient Air	06-Mar-24 7:35

DESCRIPTION: Lac La Biche

REPORT NUMBER: 24030066 **REPORT CREATED:** 22-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030066-001	Chloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	Chloroform	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	Chloromethane		0.58	ppbv	0.06	AC-058	15-Mar-24
24030066-001	cis-1,2-Dichloroethene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	cis-1,3-Dichloropropene	K, T, U	< 0.04	ppbv	0.04	AC-058	15-Mar-24
24030066-001	cis-2-Butene	K, T, U	< 0.04	ppbv	0.04	AC-058	15-Mar-24
24030066-001	cis-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	Cyclohexane	K, T, U	< 0.06	ppbv	0.06	AC-058	15-Mar-24
24030066-001	Cyclopentane	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	Dibromochloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	Ethanol		5.3	ppbv	0.7	AC-058	15-Mar-24
24030066-001	Ethyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	15-Mar-24
24030066-001	Ethylbenzene	I	0.10	ppbv	0.04	AC-058	15-Mar-24
24030066-001	Freon-11		0.16	ppbv	0.03	AC-058	15-Mar-24
24030066-001	Freon-113	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	Freon-114	K, T, U	< 0.04	ppbv	0.04	AC-058	15-Mar-24
24030066-001	Freon-12		0.45	ppbv	0.04	AC-058	15-Mar-24
24030066-001	Hexachloro-1,3-butadiene	K, T, U	< 0.4	ppbv	0.4	AC-058	15-Mar-24
24030066-001	Isobutane		1.28	ppbv	0.04	AC-058	15-Mar-24
24030066-001	Isopentane		1.30	ppbv	0.06	AC-058	15-Mar-24
24030066-001	Isoprene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	Isopropyl alcohol	K, T, U	< 0.4	ppbv	0.4	AC-058	15-Mar-24
24030066-001	Isopropylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	15-Mar-24
24030066-001	m,p-Xylene		0.45	ppbv	0.06	AC-058	15-Mar-24
24030066-001	m-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: March 22, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/NMHC/LLB/Mar 06, 2024	A47984	Ambient Air	06-Mar-24 7:35

DESCRIPTION: Lac La Biche

REPORT NUMBER: 24030066 **REPORT CREATED:** 22-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030066-001	m-Ethyltoluene	I	0.07	ppbv	0.04	AC-058	15-Mar-24
24030066-001	Methyl butyl ketone	K, T, U	< 0.6	ppbv	0.6	AC-058	15-Mar-24
24030066-001	Methyl ethyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	15-Mar-24
24030066-001	Methyl isobutyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	15-Mar-24
24030066-001	Methyl methacrylate	K, T, U	< 0.11	ppbv	0.11	AC-058	15-Mar-24
24030066-001	Methyl tert butyl ether	K, T, U	< 0.04	ppbv	0.04	AC-058	15-Mar-24
24030066-001	Methylcyclohexane		0.17	ppbv	0.03	AC-058	15-Mar-24
24030066-001	Methylcyclopentane		0.27	ppbv	0.07	AC-058	15-Mar-24
24030066-001	Methylene chloride	K, T, U	< 0.4	ppbv	0.4	AC-058	15-Mar-24
24030066-001	n-Butane		3.33	ppbv	0.03	AC-058	15-Mar-24
24030066-001	n-Decane	K, T, U	< 0.09	ppbv	0.09	AC-058	15-Mar-24
24030066-001	n-Dodecane	K, T, U	< 0.4	ppbv	0.4	AC-058	15-Mar-24
24030066-001	n-Heptane	I	0.10	ppbv	0.06	AC-058	15-Mar-24
24030066-001	n-Hexane	I	0.19	ppbv	0.04	AC-058	15-Mar-24
24030066-001	n-Octane	I	0.06	ppbv	0.03	AC-058	15-Mar-24
24030066-001	n-Pentane		0.48	ppbv	0.06	AC-058	15-Mar-24
24030066-001	n-Propylbenzene	K, T, U	< 0.09	ppbv	0.09	AC-058	15-Mar-24
24030066-001	n-Undecane	K, T, U	< 0.7	ppbv	0.7	AC-058	15-Mar-24
24030066-001	Naphthalene	K, T, U	< 0.4	ppbv	0.4	AC-058	15-Mar-24
24030066-001	n-Nonane	K, T, U	< 0.06	ppbv	0.06	AC-058	15-Mar-24
24030066-001	o-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	o-Xylene	I	0.13	ppbv	0.04	AC-058	15-Mar-24
24030066-001	p-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	p-Ethyltoluene	I	0.09	ppbv	0.06	AC-058	15-Mar-24
24030066-001	Styrene	K, T, U	< 0.06	ppbv	0.06	AC-058	15-Mar-24

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/NMHC/LLB/Mar 06, 2024	A47984	Ambient Air	06-Mar-24 7:35

DESCRIPTION: Lac La Biche

REPORT NUMBER: 24030066 **REPORT CREATED:** 22-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030066-001	Tetrachloroethylene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	Tetrahydrofuran	K, T, U	< 0.4	ppbv	0.4	AC-058	15-Mar-24
24030066-001	Toluene		0.88	ppbv	0.04	AC-058	15-Mar-24
24030066-001	trans-1,2-Dichloroethylene	K, T, U	< 0.09	ppbv	0.09	AC-058	15-Mar-24
24030066-001	trans-1,3-Dichloropropylene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	trans-2-Butene	K, T, U	< 0.04	ppbv	0.04	AC-058	15-Mar-24
24030066-001	trans-2-Pentene	I	0.04	ppbv	0.03	AC-058	15-Mar-24
24030066-001	Trichloroethylene	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24
24030066-001	Vinyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	15-Mar-24
24030066-001	Vinyl chloride	K, T, U	< 0.03	ppbv	0.03	AC-058	15-Mar-24

Report certified by: Rebecca Dasilva, Account Coordinator On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: March 22, 2024

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

Revision History

Order ID	Ver	Date	Reason
24030066	01	22-Mar-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

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

Order Comments

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

Sample Comments

Result Comments

Note:

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

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

End of Report