Your Project #: ABS271
Your C.O.C. #: C317055

Attention: WES GREENWOOD

ALBERTA ENVIRONMENT AND PARKS
10th Floor
9888 Jasper Avenue NW
EDMONTON, AB
CANADA T6J 5C6

Report Date: 2023/03/17
Report #: R3311770
Version: 3 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C317055
Received: 2023/03/13, 09:17

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH (1)	3	N/A	2023/03/14	AB SOP-00005	SM 23 2320 B m
Chloride/Sulphate by Auto Colourimetry (1)	3	N/A	2023/03/13	AB SOP-00020	SM23-4500-Cl/SO4-E m
Cyanide (total) (1)	3	N/A	2023/03/14	CAL SOP-00270	SM 23 4500-CN m
True Colour (1)	3	N/A	2023/03/14	CAL SOP-00049	SM 24 2120 C m
Total Cresols Calculation (1)	3	N/A	2023/03/14		Auto Calc
Conductivity @25C (1)	3	N/A	2023/03/14	AB SOP-00005	SM 23 2510 B m
Hardness (1)	3	N/A	2023/03/14		Auto Calc
Elements by ICP-Dissolved-Lab Filtered (1, 4)	3	N/A	2023/03/14	AB SOP-00042	EPA 6010d R5 m
Ion Balance (1)	3	N/A	2023/03/14		Auto Calc
Sum of cations, anions (1)	3	N/A	2023/03/14		Auto Calc
Ammonia-N (Dissolved) - Lab Filtered (1, 5)	3	N/A	2023/03/14	AB SOP-00007	SM 23 4500 NH3 A G m
Ammonia-N (Total) (1)	3	N/A	2023/03/13	AB SOP-00007	SM 23 4500 NH3 A G m
Nitrate + Nitrite-N (calculated) Low Lev (1)	3	N/A	2023/03/14		Auto Calc
Nitrogen (Nitrite - Nitrate) Low Level (1)	3	N/A	2023/03/14	AB SOP-00023	SM 23 4110 B m
Benzo[a]pyrene Equivalency (1, 6)	3	N/A	2023/03/14		Auto Calc
PAH in Water by GC/MS (1)	3	2023/03/14	2023/03/14	AB SOP-00037 / AB SOP-00003	EPA 3510C/8270E m
pH @25°C (1, 7)	3	N/A	2023/03/14	AB SOP-00005	SM 23 4500-H+B m
Orthophosphate by Konelab (1, 8)	3	N/A	2023/03/13	AB SOP-00025	SM 23 4500-P A,F m
Phenols (semivolatile) (1)	3	2023/03/14	2023/03/14	CAL SOP-00164	EPA 8270e m
Total Dissolved Solids (Filt. Residue) (1)	3	2023/03/13	2023/03/13	AB SOP-00065	SM 23 2540 C m
Total Dissolved Solids (Calculated) (1)	3	N/A	2023/03/14		Auto Calc
Total Trihalomethanes Calculation (1)	3	N/A	2023/03/14		Auto Calc
Total Kjedahl Nitrogen-Dis-Lab Filtered (1, 9)	3	2023/03/14	2023/03/14	AB SOP-00008	EPA 351.1 R1978 m
Total Kjeldahl Nitrogen (1)	3	2023/03/14	2023/03/14	AB SOP-00008	EPA 351.1 R1978 m
Total Phosphorus-Dissolved-Lab Filtered (1, 10)	3	2023/03/14	2023/03/14	AB SOP-00024	SM 23 4500-P A,B,F m
Total Phosphorus (1)	3	2023/03/14	2023/03/14	AB SOP-00024	SM 23 4500-P A,B,F m
Total Suspended Solids (NFR) (1)	3	2023/03/14	2023/03/14	AB SOP-00061	SM 23 2540 D m
Turbidity (1)	3	N/A	2023/03/13	CAL SOP-00081	SM 23 2130 B m
Extra VOCs in Water by HS GC/MS (2)	3	N/A	2023/03/14	BBY8SOP-00040	BCMOE BCLM Jul 2017m
VOCs in Water by HS GC/MS (Std List) (1)	3	N/A	2023/03/14	AB SOP-00056	EPA 5021a/8260d m

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CERTIFICATE OF ANALYSIS

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Received: 2023/03/13, 09:17

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Dissolved Inorganic Carbon (DIC) (3)	3	N/A	2023/03/14	CAM SOP-00433	SM 23 5310 m
Diss. Organic Carbon (DOC) -Lab Filtered (3, 11)	3	N/A	2023/03/14	CAM SOP-00446	SM 22 5310B m
Formaldehyde (HPLC) (3)	3	2023/03/14	2023/03/14	CAM SOP-00310	EPA 8315A m
Nitrilotriacetic Acid (NTA) (3, 12)	3	2023/03/14	2023/03/14	CAM SOP-00411	EPA 430.1 m
Low level PFOS and PFOA by SPE/LCMS (3, 13)	3	2023/03/15	2023/03/17	CAM SOP-00894	EPA 537 m
Total Organic Carbon in Water (3, 11)	3	N/A	2023/03/14	CAM SOP-00446	SM 22 5310B m

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.

(1) This test was performed by Bureau Veritas Calgary, 4000 - 19 St. , Calgary, AB, T2E 6P8
(2) This test was performed by Bureau Veritas Vancouver, 4606 Canada Way , Burnaby, BC, V5G 1K5
(3) This test was performed by Bureau Veritas Campobello, 6740 Campobello Road , Mississauga, ON, L5N 2L8
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(5) Dissolved Ammonia > Total Ammonia Imbalance: When applicable, Dissolved Ammonia and Total Ammonia results were reviewed and data quality meets acceptable levels unless otherwise noted.
(6) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(7) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas endeavours to analyze samples as soon as possible after receipt.
(8) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(9) Dissolved Total Kjeldahl Nitrogen > Total Kjeldahl Nitrogen Imbalance: When applicable, Dissolved Total Kjeldahl Nitrogen and Total Kjeldahl Nitrogen results were reviewed and data quality meets acceptable levels unless otherwise noted.
(10) Dissolved Phosphorus > Total Phosphorus Imbalance: When applicable, Dissolved Phosphorus and Total Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(11) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.
(12) Bureau Veritas attempts to commence NTA analysis as soon as possible in accordance with the reference method. However, rapid analysis may not be practically achievable, particularly for samples from remote locations. Extended delay in analysis times may increase the uncertainty of the test results, but does not necessarily imply that the results are compromised.
(13) Per- and polyfluoroalkyl substances (PFAS) identified as surrogates on the certificate of analysis represent the extracted internal standard.

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CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C317055
Received: 2023/03/13, 09:17

Encryption Key

Janelle Kochan
Key Account Specialist
17 Mar 2023 15:48:52

Please direct all questions regarding this Certificate of Analysis to:
Janelle Kochan, B.Sc., Key Account Specialist
Email: Janelle.KOCHAN@bureauveritas.com
Phone# (204)223-7173

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

ALBERTA ENVIRONMENT AND PARKS
Attention: WES GREENWOOD
Client Project #: ABS271
P.O. #:
Site Location:

Sample Description : 23SWE12101
Sample Date & Time : 2023/03/11 13:15
Sampled By :
Sample Type :
Sample Received Date : 2023/03/13
Sample Station Code :

Bureau Veritas Sample Number : BNI492
Bureau Veritas Job Number : EC317055
Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Calculated Parameters							
Anion Sum	0.68	meq/L	CALC	125	A906729	N/A	N/A
Calculated Total Dissolved Solids	37	mg/L	CALC	000201	A906723	10	10
Cation Sum	0.79	meq/L	CALC	120	A906729	N/A	N/A
Hardness (CaCO3)	32	mg/L	CALC	010602	A906726	0.50	0.50
Ion Balance (% Difference)	NC	%	CALC	60209	A906728	N/A	N/A
Nitrate plus Nitrite (N)	0.071	mg/L	CALC	102649	A907229	0.0042	0.0020
Misc. Inorganics							
Conductivity	76	uS/cm	COND	002041	A908079	2.0	2.0
Dissolved Inorganic Carbon (C)	6.1	mg/l	TOCV/NDIR	104311	A908704	1.0	1.0
Dissolved Organic Carbon (C)	3.7	mg/l	TOCV/NDIR	104784	A908706	0.40	0.50
pH	6.76	pH	AT/ALK	010301	A908078	N/A	N/A
Strong Acid Dissoc. Cyanide (CN)	<0.00050	mg/L	TECH/COL	1717	A907875	0.00050	0.00050
Total Total Organic Carbon (C)	3.8	mg/l	TOCV/NDIR	104315	A908705	0.40	0.50
Total Dissolved Solids	52	mg/L	BAL	2004	A907665	10	10
Total Suspended Solids	1.7	mg/L	BAL	2005	A907940	1.0	1.0
Anions							
Alkalinity (PP as CaCO3)	<1.0	mg/L	AT/ALK	1593	A908077	1.0	1.0
Alkalinity (Total as CaCO3)	27	mg/L	AT/ALK	1592	A908077	1.0	1.0
Bicarbonate (HCO3)	33	mg/L	AT/ALK	1594	A908077	1.0	1.0
Carbonate (CO3)	<1.0	mg/L	AT/ALK	1595	A908077	1.0	1.0
Hydroxide (OH)	<1.0	mg/L	AT/ALK	1596	A908077	1.0	1.0
Dissolved Chloride (Cl)	2.3	mg/L	KONE	2003	A907605	1.0	1.0
Dissolved Sulphate (SO4)	3.6	mg/L	KONE	1599	A907605	1.0	1.0
MISCELLANEOUS							
Formaldehyde	29	ug/L	LC/UV		A910204	10	10
Nitrilotriacetic acid	<0.050	mg/L	SPEC		A908703	0.050	0.050
Nutrients							
Orthophosphate (P)	<0.0030	mg/L	KONE	2014	A907290	0.0030	0.0030
Total Ammonia (N)	0.021	mg/L	KONE	2007	A907510	0.015	0.015
Total Phosphorus (P)	0.0032	mg/L	KONE	2013	A907904	0.0030	0.0030
Total Total Kjeldahl Nitrogen	0.21	mg/L	KONE	2009	A907776	0.050	0.050
Dissolved Nitrite (N)	<0.0030	mg/L	IC/UV	102648	A907905	0.0030	0.0030
Dissolved Nitrate (N)	0.071	mg/L	IC/UV	102647	A907905	0.0030	0.0030
Lab Filtered Nutrients							
Dissolved Ammonia (N)	<0.015	mg/L	KONE	2006	A908183	0.015	0.015
Dissolved Phosphorus (P)	<0.0030	mg/L	KONE	2010	A907882	0.0030	0.0030

N/A = Not Applicable
DL = The lowest concentration that will be reported for a specific test
RDL = Reportable Detection Limit – Calculated on the basis of the detection limit, the dilution used, and the weight of the sample
Good Condition

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ALBERTA ENVIRONMENT AND PARKS
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Sample Description : 23SWE12101
Sample Date & Time : 2023/03/11 13:15
Sampled By :
Sample Type :
Sample Received Date : 2023/03/13
Sample Station Code :

Bureau Veritas Sample Number : BNI492
Bureau Veritas Job Number : EC317055
Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Lab Filtered Nutrients							
Dissolved Total Kjeldahl Nitrogen	0.16	mg/L	KONE	2008	A907775	0.050	0.050
Physical Properties							
True Colour	5.2	PtCo units	SPEC/COL	22213	A908552	2.0	2.0
Physical Properties							
Turbidity	3.8	NTU	TURB	2002	A907595	0.10	0.10

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Semivolatile Organics by GC-MS

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Polycyclic Aromatics							
B[a]P TPE Total Potency Equivalents	<0.010	ug/L	GC/MSD	109463	A906754	0.010	0.010
Benzo(k)fluoranthene	<0.0085	ug/L	GC/MS	109019	A906254	0.0085	0.0085
Benzo(g,h,i)perylene	<0.0085	ug/L	GC/MS	103153	A906254	0.0085	0.0085
Benzo(c)phenanthrene	<0.050	ug/L	GC/MS	103151	A906254	0.050	0.050
Benzo(a)pyrene	<0.0075	ug/L	GC/MS	103149	A906254	0.0075	0.0075
Benzo(e)pyrene	<0.050	ug/L	GC/MS	103152	A906254	0.050	0.050
Chrysene	<0.0085	ug/L	GC/MS	103154	A906254	0.0085	0.0085
Dibenz(a,h)anthracene	<0.0075	ug/L	GC/MS	103158	A906254	0.0075	0.0075
Acenaphthene	<0.10	ug/L	GC/MS	103144	A906254	0.10	0.10
Fluoranthene	<0.010	ug/L	GC/MS	103159	A906254	0.010	0.010
Fluorene	<0.050	ug/L	GC/MS	103160	A906254	0.050	0.050
Indeno(1,2,3-cd)pyrene	<0.0085	ug/L	GC/MS	103161	A906254	0.0085	0.0085
1-Methylnaphthalene	<0.10	ug/L	GC/MS		A906254	0.10	0.10
2-Methylnaphthalene	<0.10	ug/L	GC/MS	107978	A906254	0.10	0.10
Acenaphthylene	<0.10	ug/L	GC/MS	103145	A906254	0.10	0.10
Naphthalene	<0.10	ug/L	GC/MS	103162	A906254	0.10	0.10
Phenanthrene	<0.050	ug/L	GC/MS	103163	A906254	0.050	0.050
Perylene	<0.050	ug/L	GC/MS	107132	A906254	0.050	0.050
Pyrene	<0.020	ug/L	GC/MS	103164	A906254	0.020	0.020
Quinoline	<0.20	ug/L	GC/MS	111201	A906254	0.20	0.20
Acridine	<0.040	ug/L	GC/MS	103146	A906254	0.040	0.040
Anthracene	<0.010	ug/L	GC/MS	103147	A906254	0.010	0.010
Benzo(a)anthracene	<0.0085	ug/L	GC/MS	103148	A906254	0.0085	0.0085
Benzo(b&j)fluoranthene	<0.0085	ug/L	GC/MS	109017	A906254	0.0085	0.0085
Phenols							
2,3,4-trichlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
Cresols	<0.00014	mg/L	GC/MSD	107379	A907225	0.00014	0.00010
Phenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
3 & 4-chlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,3,5,6-tetrachlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,3,4,6-tetrachlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,4,5-trichlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,4,6-trichlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,3,5-trichlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,4-dichlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,4-dimethylphenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,4-dinitrophenol	<0.0010	mg/L	GC/MSD		A907891	0.0010	0.0010
2,6-dichlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2-chlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010

DL = The lowest concentration that will be reported for a specific test
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Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
Good Condition

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Semivolatile Organics by GC-MS - MaxxLIMS.LIMS.Core.RptJob.ChemexReport.ChemexSampleResult

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Phenols							
2-methylphenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2-nitrophenol	<0.0010	mg/L	GC/MSD		A907891	0.0010	0.0010
3 & 4-methylphenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
4,6-dinitro-2-methylphenol	<0.0010	mg/L	GC/MSD		A907891	0.0010	0.0010
4-chloro-3-methylphenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
4-nitrophenol	<0.0010	mg/L	GC/MSD		A907891	0.0010	0.0010
Pentachlorophenol	<0.00010	mg/L	GC/MSD	95152	A907891	0.00010	0.00010
Surrogate Recoveries (%):							
D8-NAPHTHALENE (sur.):	86	Control Limits: 50 - 130					
D8-ACENAPHTHYLENE (sur.):	110	Control Limits: 50 - 130					
D10-ANTHRACENE (sur.):	112	Control Limits: 50 - 130					
TERPHENYL-D14 (sur.):	116	Control Limits: 50 - 130					
2,4-DIBROMOPHENOL (sur.):	99	Control Limits: 50 - 140					
2,4,6-TRIBROMOPHENOL (sur.):	102	Control Limits: 50 - 140					

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RDL = Reportable Detection Limit – Calculated on the basis of the detection limit, the dilution used, and the weight of the sample
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
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Bureau Veritas Sample Number : BNI492
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Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

Volatile Organics by GC-MS

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Volatiles							
Total Trihalomethanes	<1.3	ug/L	PT/MS	109009	A907230	1.3	2.0
Benzene	<0.40	ug/L	HSGC/MS	108963	A907023	0.40	0.40
Chloromethane	<2.0	ug/L	HSGC/MS	108982	A907023	2.0	2.0
1,2-dibromoethane	<0.20	ug/L	HSGC/MS	108983	A907023	0.20	0.20
1,2-dichlorobenzene	<0.50	ug/L	HSGC/MS	108960	A907023	0.50	0.50
1,3-dichlorobenzene	<0.50	ug/L	HSGC/MS	108984	A907023	0.50	0.50
1,4-dichlorobenzene	<0.50	ug/L	HSGC/MS	108962	A907023	0.50	0.50
1,1-dichloroethane	<0.50	ug/L	HSGC/MS	108986	A907023	0.50	0.50
1,2-dichloroethane	<0.50	ug/L	HSGC/MS	108961	A907023	0.50	0.50
1,1-dichloroethene	<0.50	ug/L	HSGC/MS	108959	A907023	0.50	0.50
cis-1,2-dichloroethene	<0.50	ug/L	HSGC/MS	108988	A907023	0.50	0.50
trans-1,2-dichloroethene	<0.50	ug/L	HSGC/MS	108989	A907023	0.50	0.50
Bromodichloromethane	<0.50	ug/L	HSGC/MS	108975	A907023	0.50	0.50
Dichloromethane	<2.0	ug/L	HSGC/MS	108966	A907023	2.0	2.0
1,2-dichloropropane	<0.50	ug/L	HSGC/MS	108990	A907023	0.50	0.50
cis-1,3-dichloropropene	<0.50	ug/L	HSGC/MS	109286	A907023	0.50	0.50
trans-1,3-dichloropropene	<0.50	ug/L	HSGC/MS	109287	A907023	0.50	0.50
Ethylbenzene	<0.40	ug/L	HSGC/MS	108967	A907023	0.40	0.40
Methyl methacrylate	<0.50	ug/L	HSGC/MS	108993	A907023	0.50	0.50
Methyl-tert-butylether (MTBE)	<0.50	ug/L	HSGC/MS	108994	A907023	0.50	0.50
Styrene	<0.50	ug/L	HSGC/MS	108995	A907023	0.50	0.50
1,1,1,2-tetrachloroethane	<1.0	ug/L	HSGC/MS	108958	A907023	1.0	1.0
1,1,2,2-tetrachloroethane	<2.0	ug/L	HSGC/MS	108957	A907023	2.0	2.0
Bromoform	<0.50	ug/L	HSGC/MS	108976	A907023	0.50	0.50
Tetrachloroethene	<0.50	ug/L	HSGC/MS	108971	A907023	0.50	0.50
Toluene	<0.40	ug/L	HSGC/MS	108972	A907023	0.40	0.40
1,2,3-trichlorobenzene	<1.0	ug/L	HSGC/MS	108996	A907023	1.0	1.0
1,2,4-trichlorobenzene	<1.0	ug/L	HSGC/MS	108997	A907023	1.0	1.0
1,3,5-trichlorobenzene	<0.50	ug/L	HSGC/MS	108998	A907023	0.50	0.50
1,1,1-trichloroethane	<0.50	ug/L	HSGC/MS	108999	A907023	0.50	0.50
1,1,2-trichloroethane	<0.50	ug/L	HSGC/MS	109000	A907023	0.50	0.50
Trichloroethene	<0.20	ug/L	HSGC/MS	108973	A907023	0.20	0.20
Trichlorofluoromethane	<0.50	ug/L	HSGC/MS	109288	A907023	0.50	0.50
1,2,4-trimethylbenzene	<0.50	ug/L	HSGC/MS	109002	A907023	0.50	0.50
Bromomethane	<2.0	ug/L	HSGC/MS	108977	A907023	2.0	2.0
1,3,5-trimethylbenzene	<0.50	ug/L	HSGC/MS	109003	A907023	0.50	0.50
Vinyl chloride	<0.50	ug/L	HSGC/MS	108974	A907023	0.50	0.50
Xylenes (Total)	<0.80	ug/L	HSGC/MS	109289	A907023	0.80	0.80
m & p-Xylene	<0.80	ug/L	HSGC/MS	109290	A907023	0.80	0.80
o-Xylene	<0.40	ug/L	HSGC/MS	108969	A907023	0.40	0.40

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Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
Good Condition

Bureau Veritas Edmonton: 9331 - 48th Street T6B 2R4 Telephone (780)577-7100 Fax (780)450-4187

ALBERTA ENVIRONMENT AND PARKS
Attention: WES GREENWOOD
Client Project #: ABS271
P.O. #:
Site Location:

Sample Description : 23SWE12101
Sample Date & Time : 2023/03/11 13:15
Sampled By :
Sample Type :
Sample Received Date : 2023/03/13
Sample Station Code :

Bureau Veritas Sample Number : BNI492
Bureau Veritas Job Number : EC317055
Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

Volatile Organics by GC-MS - MaxxLIMS.LIMS.Core.RptJob.ChemexReport.ChemexSampleResult

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Volatiles							
Carbon tetrachloride	<0.50	ug/L	HSGC/MS	108964	A907023	0.50	0.50
Chlorobenzene	<0.50	ug/L	HSGC/MS	108965	A907023	0.50	0.50
Dibromochloromethane	<1.0	ug/L	HSGC/MS	108979	A907023	1.0	1.0
Chloroethane	<1.0	ug/L	HSGC/MS	108980	A907023	1.0	1.0
Chloroform	<0.50	ug/L	HSGC/MS	108981	A907023	0.50	0.50
Surrogate Recoveries (%):							
1,4-Difluorobenzene (sur.):	95	Control Limits: 50 - 140					
4-Bromofluorobenzene (sur.):	93	Control Limits: 50 - 140					
D4-1,2-Dichloroethane (sur.):	107	Control Limits: 50 - 140					

DL = The lowest concentration that will be reported for a specific test
RDL = Reportable Detection Limit – Calculated on the basis of the detection limit, the dilution used, and the weight of the sample
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
Good Condition

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ALBERTA ENVIRONMENT AND PARKS
Attention: WES GREENWOOD
Client Project #: ABS271
P.O. #:
Site Location:

Sample Description : 23SWE12101
Sample Date & Time : 2023/03/11 13:15
Sampled By :
Sample Type :
Sample Received Date : 2023/03/13
Sample Station Code :

Bureau Veritas Sample Number : BNI492
Bureau Veritas Job Number : EC317055
Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

Subcontracted Analysis

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Perfluorinated Compounds							
Perfluorobutanoic acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorotridecanoic Acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorotetradecanoic Acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorobutanesulfonic acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluoropentanesulfonic acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorohexanesulfonic acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluoroheptanesulfonic acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorooctanesulfonic acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorononane sulfonic acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorodecanesulfonic acid (PFDS)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorooctane Sulfonamide (PFOSA)	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
Perfluoropentanoic Acid (PFPeA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
EtFOSAA	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
MeFOSAA	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
4:2 Fluorotelomer sulfonic acid	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
6:2 Fluorotelomer sulfonic acid	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
8:2 Fluorotelomer sulfonic acid	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
Hexafluoropropyleneoxide Dimer Acid	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
4,8-Dioxa-3H-Perfluorononanoic Acid	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
9Cl-PF3ONS (F-53B Major)	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
11Cl-PF3OUdS (F-53B Minor)	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
Perfluorohexanoic Acid (PFHxA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluoroheptanoic Acid (PFHpA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorooctanoic Acid (PFOA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorononanoic Acid (PFNA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorodecanoic Acid (PFDA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluoroundecanoic Acid (PFUnA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorododecanoic Acid (PFDoA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0

Surrogate Recoveries (%):

13C4-Perfluorobutanoic acid:	81	Control Limits: 50 - 150
13C2-perfluorotetradecanoic acid:	81	Control Limits: 50 - 150
13C3-Perfluorobutanesulfonic acid:	96	Control Limits: 50 - 150
18O2-Perfluorohexanesulfonic acid:	103	Control Limits: 50 - 150
13C4-Perfluorooctanesulfonic acid:	99	Control Limits: 50 - 150
13C8-Perfluorooctane Sulfonamide:	54	Control Limits: 20 - 100
D5-EtFOSAA:	83	Control Limits: 50 - 150
D3-MeFOSAA:	85	Control Limits: 50 - 150

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Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
Good Condition

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ALBERTA ENVIRONMENT AND PARKS
Attention: WES GREENWOOD
Client Project #: ABS271
P.O. #:
Site Location:

Sample Description : 23SWE12101
Sample Date & Time : 2023/03/11 13:15
Sampled By :
Sample Type :
Sample Received Date : 2023/03/13
Sample Station Code :

Bureau Veritas Sample Number : BNI492
Bureau Veritas Job Number : EC317055
Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

Subcontracted Analysis - MaxxLIMS.LIMS.Core.RptJob.ChemexReport.ChemexSampleResult

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Surrogate Recoveries (%):							
13C2-4:2-Fluorotelomersulfonic Acid:	105	Control Limits: 50 - 150					
13C2-6:2-Fluorotelomersulfonic Acid:	118	Control Limits: 50 - 150					
13C2-8:2-Fluorotelomersulfonic Acid:	103	Control Limits: 50 - 150					
13C5-Perfluoropentanoic acid:	76	Control Limits: 50 - 150					
13C3-HFPO-DA:	86	Control Limits: 50 - 150					
13C2-Perfluorohexanoic acid:	90	Control Limits: 50 - 150					
13C4-Perfluoroheptanoic acid:	97	Control Limits: 50 - 150					
13C4-Perfluorooctanoic acid:	103	Control Limits: 50 - 150					
13C5-Perfluorononanoic acid:	100	Control Limits: 50 - 150					
13C2-Perfluorodecanoic acid:	100	Control Limits: 50 - 150					
13C2-Perfluoroundecanoic acid:	96	Control Limits: 50 - 150					
13C2-Perfluorododecanoic acid:	90	Control Limits: 50 - 150					

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Good Condition

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ALBERTA ENVIRONMENT AND PARKS
Attention: WES GREENWOOD
Client Project #: ABS271
P.O. #:
Site Location:

Sample Description : 23SWE12101
Sample Date & Time : 2023/03/11 13:15
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Bureau Veritas Sample Number : BNI492
Bureau Veritas Job Number : EC317055
Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

Volatile Organics by GC-MS

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Volatiles							
1,4-Dioxane	<1.0	ug/L	HSGC/MSD		A908375	1.0	1.0
Surrogate Recoveries (%):							
D4-1,2-Dichloroethane (sur.):	58	Control Limits: 50 - 140					
4-Bromofluorobenzene (sur.):	92	Control Limits: 50 - 140					
1,4-Difluorobenzene (sur.):	60	Control Limits: 50 - 140					

DL = The lowest concentration that will be reported for a specific test
RDL = Reportable Detection Limit – Calculated on the basis of the detection limit, the dilution used, and the weight of the sample
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
Good Condition

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ALBERTA ENVIRONMENT AND PARKS
Attention: WES GREENWOOD
Client Project #: ABS271
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Sample Description : 23SWE12101
Sample Date & Time : 2023/03/11 13:15
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Bureau Veritas Sample Number : BNI492
Bureau Veritas Job Number : EC317055
Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

Elements by Atomic Spectroscopy

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Lab Filtered Elements							
Dissolved Calcium (Ca)	8.5	mg/L	ICPA	020111	A907876	0.30	0.30
Dissolved Iron (Fe)	<0.060	mg/L	ICPA	102090	A907876	0.060	0.060
Dissolved Magnesium (Mg)	2.6	mg/L	ICPA	012111	A907876	0.20	0.20
Dissolved Manganese (Mn)	<0.0040(1)	mg/L	ICPA	102089	A907876	0.0040	0.0040
Dissolved Potassium (K)	0.92	mg/L	ICPA	019111	A907876	0.30	0.30
Dissolved Sodium (Na)	3.1	mg/L	ICPA	011111	A907876	0.50	0.50

DL = The lowest concentration that will be reported for a specific test
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Good Condition
(1) Matrix spike exceeds acceptance limits due to matrix interference.

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ALBERTA ENVIRONMENT AND PARKS
Attention: WES GREENWOOD
Client Project #: ABS271
P.O. #:
Site Location:

Sample Description : 23SWE12102
Sample Date & Time : 2023/03/11 13:30
Sampled By :
Sample Type :
Sample Received Date : 2023/03/13
Sample Station Code :

Bureau Veritas Sample Number : BNI493
Bureau Veritas Job Number : EC317055
Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Calculated Parameters							
Anion Sum	0.71	meq/L	CALC	125	A906729	N/A	N/A
Calculated Total Dissolved Solids	37	mg/L	CALC	000201	A906723	10	10
Cation Sum	0.75	meq/L	CALC	120	A906729	N/A	N/A
Hardness (CaCO3)	30	mg/L	CALC	010602	A906726	0.50	0.50
Ion Balance (% Difference)	NC	%	CALC	60209	A906728	N/A	N/A
Nitrate plus Nitrite (N)	0.090	mg/L	CALC	102649	A907229	0.0042	0.0020
Misc. Inorganics							
Conductivity	73	uS/cm	COND	002041	A908079	2.0	2.0
Dissolved Inorganic Carbon (C)	6.1	mg/l	TOCV/NDIR	104311	A908704	1.0	1.0
Dissolved Organic Carbon (C)	3.6	mg/l	TOCV/NDIR	104784	A908706	0.40	0.50
pH	6.70	pH	AT/ALK	010301	A908078	N/A	N/A
Strong Acid Dissoc. Cyanide (CN)	<0.00050	mg/L	TECH/COL	1717	A907875	0.00050	0.00050
Total Total Organic Carbon (C)	3.8	mg/l	TOCV/NDIR	104315	A908705	0.40	0.50
Total Dissolved Solids	56	mg/L	BAL	2004	A907665	10	10
Total Suspended Solids	<1.0	mg/L	BAL	2005	A907940	1.0	1.0
Anions							
Alkalinity (PP as CaCO3)	<1.0	mg/L	AT/ALK	1593	A908077	1.0	1.0
Alkalinity (Total as CaCO3)	28	mg/L	AT/ALK	1592	A908077	1.0	1.0
Bicarbonate (HCO3)	34	mg/L	AT/ALK	1594	A908077	1.0	1.0
Carbonate (CO3)	<1.0	mg/L	AT/ALK	1595	A908077	1.0	1.0
Hydroxide (OH)	<1.0	mg/L	AT/ALK	1596	A908077	1.0	1.0
Dissolved Chloride (Cl)	2.4	mg/L	KONE	2003	A907605	1.0	1.0
Dissolved Sulphate (SO4)	3.5	mg/L	KONE	1599	A907605	1.0	1.0
MISCELLANEOUS							
Formaldehyde	47	ug/L	LC/UV		A910204	10	10
Nitrilotriacetic acid	<0.050	mg/L	SPEC		A908703	0.050	0.050
Nutrients							
Orthophosphate (P)	<0.0030	mg/L	KONE	2014	A907290	0.0030	0.0030
Total Ammonia (N)	<0.015	mg/L	KONE	2007	A907510	0.015	0.015
Total Phosphorus (P)	<0.0030	mg/L	KONE	2013	A907904	0.0030	0.0030
Total Total Kjeldahl Nitrogen	0.19	mg/L	KONE	2009	A907776	0.050	0.050
Dissolved Nitrite (N)	<0.0030	mg/L	IC/UV	102648	A907905	0.0030	0.0030
Dissolved Nitrate (N)	0.090	mg/L	IC/UV	102647	A907905	0.0030	0.0030
Lab Filtered Nutrients							
Dissolved Ammonia (N)	<0.015	mg/L	KONE	2006	A908183	0.015	0.015
Dissolved Phosphorus (P)	<0.0030	mg/L	KONE	2010	A907882	0.0030	0.0030
Dissolved Total Kjeldahl Nitrogen	0.16	mg/L	KONE	2008	A907775	0.050	0.050

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ALBERTA ENVIRONMENT AND PARKS
Attention: WES GREENWOOD
Client Project #: ABS271
P.O. #:
Site Location:

Sample Description : 23SWE12102
Sample Date & Time : 2023/03/11 13:30
Sampled By :
Sample Type :
Sample Received Date : 2023/03/13
Sample Station Code :

Bureau Veritas Sample Number : BNI493
Bureau Veritas Job Number : EC317055
Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Physical Properties							
True Colour	5.4	PtCo units	SPEC/COL	22213	A908552	2.0	2.0
Physical Properties							
Turbidity	3.4	NTU	TURB	2002	A907595	0.10	0.10

N/A = Not Applicable
DL = The lowest concentration that will be reported for a specific test
RDL = Reportable Detection Limit – Calculated on the basis of the detection limit, the dilution used, and the weight of the sample

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ALBERTA ENVIRONMENT AND PARKS
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Client Project #: ABS271
P.O. #:
Site Location:

Sample Description : 23SWE12102
Sample Date & Time : 2023/03/11 13:30
Sampled By :
Sample Type :
Sample Received Date : 2023/03/13
Sample Station Code :

Bureau Veritas Sample Number : BNI493
Bureau Veritas Job Number : EC317055
Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

Semivolatile Organics by GC-MS

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Polycyclic Aromatics							
B[a]P TPE Total Potency Equivalents	<0.010	ug/L	GC/MSD	109463	A906754	0.010	0.010
Benzo(k)fluoranthene	<0.0085	ug/L	GC/MS	109019	A906254	0.0085	0.0085
Benzo(g,h,i)perylene	<0.0085	ug/L	GC/MS	103153	A906254	0.0085	0.0085
Benzo(c)phenanthrene	<0.050	ug/L	GC/MS	103151	A906254	0.050	0.050
Benzo(a)pyrene	<0.0075	ug/L	GC/MS	103149	A906254	0.0075	0.0075
Benzo(e)pyrene	<0.050	ug/L	GC/MS	103152	A906254	0.050	0.050
Chrysene	<0.0085	ug/L	GC/MS	103154	A906254	0.0085	0.0085
Dibenz(a,h)anthracene	<0.0075	ug/L	GC/MS	103158	A906254	0.0075	0.0075
Acenaphthene	<0.10	ug/L	GC/MS	103144	A906254	0.10	0.10
Fluoranthene	<0.010	ug/L	GC/MS	103159	A906254	0.010	0.010
Fluorene	<0.050	ug/L	GC/MS	103160	A906254	0.050	0.050
Indeno(1,2,3-cd)pyrene	<0.0085	ug/L	GC/MS	103161	A906254	0.0085	0.0085
1-Methylnaphthalene	<0.10	ug/L	GC/MS		A906254	0.10	0.10
2-Methylnaphthalene	<0.10	ug/L	GC/MS	107978	A906254	0.10	0.10
Acenaphthylene	<0.10	ug/L	GC/MS	103145	A906254	0.10	0.10
Naphthalene	<0.10	ug/L	GC/MS	103162	A906254	0.10	0.10
Phenanthrene	<0.050	ug/L	GC/MS	103163	A906254	0.050	0.050
Perylene	<0.050	ug/L	GC/MS	107132	A906254	0.050	0.050
Pyrene	<0.020	ug/L	GC/MS	103164	A906254	0.020	0.020
Quinoline	<0.20	ug/L	GC/MS	111201	A906254	0.20	0.20
Acridine	<0.040	ug/L	GC/MS	103146	A906254	0.040	0.040
Anthracene	<0.010	ug/L	GC/MS	103147	A906254	0.010	0.010
Benzo(a)anthracene	<0.0085	ug/L	GC/MS	103148	A906254	0.0085	0.0085
Benzo(b&j)fluoranthene	<0.0085	ug/L	GC/MS	109017	A906254	0.0085	0.0085
Phenols							
2,3,4-trichlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
Cresols	<0.00014	mg/L	GC/MSD	107379	A907225	0.00014	0.00010
Phenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
3 & 4-chlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,3,5,6-tetrachlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,3,4,6-tetrachlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,4,5-trichlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,4,6-trichlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,3,5-trichlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,4-dichlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,4-dimethylphenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,4-dinitrophenol	<0.0010	mg/L	GC/MSD		A907891	0.0010	0.0010
2,6-dichlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2-chlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2-methylphenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010

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ALBERTA ENVIRONMENT AND PARKS
Attention: WES GREENWOOD
Client Project #: ABS271
P.O. #:
Site Location:

Sample Description : 23SWE12102
Sample Date & Time : 2023/03/11 13:30
Sampled By :
Sample Type :
Sample Received Date : 2023/03/13
Sample Station Code :

Bureau Veritas Sample Number : BNI493
Bureau Veritas Job Number : EC317055
Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

Semivolatile Organics by GC-MS - MaxxLIMS.LIMS.Core.RptJob.ChemexReport.ChemexSampleResult

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Phenols							
2-nitrophenol	<0.0010	mg/L	GC/MSD		A907891	0.0010	0.0010
3 & 4-methylphenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
4,6-dinitro-2-methylphenol	<0.0010	mg/L	GC/MSD		A907891	0.0010	0.0010
4-chloro-3-methylphenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
4-nitrophenol	<0.0010	mg/L	GC/MSD		A907891	0.0010	0.0010
Pentachlorophenol	<0.00010	mg/L	GC/MSD	95152	A907891	0.00010	0.00010
Surrogate Recoveries (%):							
D8-NAPHTHALENE (sur.):	80	Control Limits: 50 - 130					
D8-ACENAPHTHYLENE (sur.):	105	Control Limits: 50 - 130					
D10-ANTHRACENE (sur.):	109	Control Limits: 50 - 130					
TERPHENYL-D14 (sur.):	111	Control Limits: 50 - 130					
2,4-DIBROMOPHENOL (sur.):	104	Control Limits: 50 - 140					
2,4,6-TRIBROMOPHENOL (sur.):	105	Control Limits: 50 - 140					

DL = The lowest concentration that will be reported for a specific test
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ALBERTA ENVIRONMENT AND PARKS
Attention: WES GREENWOOD
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Site Location:

Sample Description : 23SWE12102
Sample Date & Time : 2023/03/11 13:30
Sampled By :
Sample Type :
Sample Received Date : 2023/03/13
Sample Station Code :

Bureau Veritas Sample Number : BNI493
Bureau Veritas Job Number : EC317055
Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

Volatile Organics by GC-MS

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Volatiles							
Total Trihalomethanes	<1.3	ug/L	PT/MS	109009	A907230	1.3	2.0
Benzene	<0.40	ug/L	HSGC/MS	108963	A907023	0.40	0.40
Chloromethane	<2.0	ug/L	HSGC/MS	108982	A907023	2.0	2.0
1,2-dibromoethane	<0.20	ug/L	HSGC/MS	108983	A907023	0.20	0.20
1,2-dichlorobenzene	<0.50	ug/L	HSGC/MS	108960	A907023	0.50	0.50
1,3-dichlorobenzene	<0.50	ug/L	HSGC/MS	108984	A907023	0.50	0.50
1,4-dichlorobenzene	<0.50	ug/L	HSGC/MS	108962	A907023	0.50	0.50
1,1-dichloroethane	<0.50	ug/L	HSGC/MS	108986	A907023	0.50	0.50
1,2-dichloroethane	<0.50	ug/L	HSGC/MS	108961	A907023	0.50	0.50
1,1-dichloroethene	<0.50	ug/L	HSGC/MS	108959	A907023	0.50	0.50
cis-1,2-dichloroethene	<0.50	ug/L	HSGC/MS	108988	A907023	0.50	0.50
trans-1,2-dichloroethene	<0.50	ug/L	HSGC/MS	108989	A907023	0.50	0.50
Bromodichloromethane	<0.50	ug/L	HSGC/MS	108975	A907023	0.50	0.50
Dichloromethane	<2.0	ug/L	HSGC/MS	108966	A907023	2.0	2.0
1,2-dichloropropane	<0.50	ug/L	HSGC/MS	108990	A907023	0.50	0.50
cis-1,3-dichloropropene	<0.50	ug/L	HSGC/MS	109286	A907023	0.50	0.50
trans-1,3-dichloropropene	<0.50	ug/L	HSGC/MS	109287	A907023	0.50	0.50
Ethylbenzene	<0.40	ug/L	HSGC/MS	108967	A907023	0.40	0.40
Methyl methacrylate	<0.50	ug/L	HSGC/MS	108993	A907023	0.50	0.50
Methyl-tert-butylether (MTBE)	<0.50	ug/L	HSGC/MS	108994	A907023	0.50	0.50
Styrene	<0.50	ug/L	HSGC/MS	108995	A907023	0.50	0.50
1,1,1,2-tetrachloroethane	<1.0	ug/L	HSGC/MS	108958	A907023	1.0	1.0
1,1,2,2-tetrachloroethane	<2.0	ug/L	HSGC/MS	108957	A907023	2.0	2.0
Bromoform	<0.50	ug/L	HSGC/MS	108976	A907023	0.50	0.50
Tetrachloroethene	<0.50	ug/L	HSGC/MS	108971	A907023	0.50	0.50
Toluene	<0.40	ug/L	HSGC/MS	108972	A907023	0.40	0.40
1,2,3-trichlorobenzene	<1.0	ug/L	HSGC/MS	108996	A907023	1.0	1.0
1,2,4-trichlorobenzene	<1.0	ug/L	HSGC/MS	108997	A907023	1.0	1.0
1,3,5-trichlorobenzene	<0.50	ug/L	HSGC/MS	108998	A907023	0.50	0.50
1,1,1-trichloroethane	<0.50	ug/L	HSGC/MS	108999	A907023	0.50	0.50
1,1,2-trichloroethane	<0.50	ug/L	HSGC/MS	109000	A907023	0.50	0.50
Trichloroethene	<0.20	ug/L	HSGC/MS	108973	A907023	0.20	0.20
Trichlorofluoromethane	<0.50	ug/L	HSGC/MS	109288	A907023	0.50	0.50
1,2,4-trimethylbenzene	<0.50	ug/L	HSGC/MS	109002	A907023	0.50	0.50
Bromomethane	<2.0	ug/L	HSGC/MS	108977	A907023	2.0	2.0
1,3,5-trimethylbenzene	<0.50	ug/L	HSGC/MS	109003	A907023	0.50	0.50
Vinyl chloride	<0.50	ug/L	HSGC/MS	108974	A907023	0.50	0.50
Xylenes (Total)	<0.80	ug/L	HSGC/MS	109289	A907023	0.80	0.80
m & p-Xylene	<0.80	ug/L	HSGC/MS	109290	A907023	0.80	0.80
o-Xylene	<0.40	ug/L	HSGC/MS	108969	A907023	0.40	0.40
Carbon tetrachloride	<0.50	ug/L	HSGC/MS	108964	A907023	0.50	0.50

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ALBERTA ENVIRONMENT AND PARKS
Attention: WES GREENWOOD
Client Project #: ABS271
P.O. #:
Site Location:

Sample Description : 23SWE12102
Sample Date & Time : 2023/03/11 13:30
Sampled By :
Sample Type :
Sample Received Date : 2023/03/13
Sample Station Code :

Bureau Veritas Sample Number : BNI493
Bureau Veritas Job Number : EC317055
Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

Volatile Organics by GC-MS - MaxxLIMS.LIMS.Core.RptJob.ChemexReport.ChemexSampleResult

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Volatiles							
Chlorobenzene	<0.50	ug/L	HSGC/MS	108965	A907023	0.50	0.50
Dibromochloromethane	<1.0	ug/L	HSGC/MS	108979	A907023	1.0	1.0
Chloroethane	<1.0	ug/L	HSGC/MS	108980	A907023	1.0	1.0
Chloroform	<0.50	ug/L	HSGC/MS	108981	A907023	0.50	0.50
Surrogate Recoveries (%):							
1,4-Difluorobenzene (sur.):	96	Control Limits: 50 - 140					
4-Bromofluorobenzene (sur.):	93	Control Limits: 50 - 140					
D4-1,2-Dichloroethane (sur.):	105	Control Limits: 50 - 140					

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Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

Subcontracted Analysis

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Perfluorinated Compounds							
Perfluorobutanoic acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorotridecanoic Acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorotetradecanoic Acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorobutanesulfonic acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluoropentanesulfonic acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorohexanesulfonic acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluoroheptanesulfonic acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorooctanesulfonic acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorononane sulfonic acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorodecanesulfonic acid (PFDS)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorooctane Sulfonamide (PFOSA)	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
Perfluoropentanoic Acid (PFPeA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
EtFOSAA	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
MeFOSAA	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
4:2 Fluorotelomer sulfonic acid	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
6:2 Fluorotelomer sulfonic acid	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
8:2 Fluorotelomer sulfonic acid	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
Hexafluoropropyleneoxide Dimer Acid	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
4,8-Dioxa-3H-Perfluorononanoic Acid	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
9Cl-PF3ONS (F-53B Major)	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
11Cl-PF3OUdS (F-53B Minor)	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
Perfluorohexanoic Acid (PFHxA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluoroheptanoic Acid (PFHpA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorooctanoic Acid (PFOA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorononanoic Acid (PFNA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorodecanoic Acid (PFDA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluoroundecanoic Acid (PFUnA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorododecanoic Acid (PFDoA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0

Surrogate Recoveries (%):

13C4-Perfluorobutanoic acid:	91	Control Limits: 50 - 150
13C2-perfluorotetradecanoic acid:	95	Control Limits: 50 - 150
13C3-Perfluorobutanesulfonic acid:	107	Control Limits: 50 - 150
18O2-Perfluorohexanesulfonic acid:	115	Control Limits: 50 - 150
13C4-Perfluorooctanesulfonic acid:	109	Control Limits: 50 - 150
13C8-Perfluorooctane Sulfonamide:	24	Control Limits: 20 - 100
D5-EtFOSAA:	96	Control Limits: 50 - 150
D3-MeFOSAA:	96	Control Limits: 50 - 150
13C2-4:2-Fluorotelomersulfonic Acid:	110	Control Limits: 50 - 150

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ALBERTA ENVIRONMENT AND PARKS
Attention: WES GREENWOOD
Client Project #: ABS271
P.O. #:
Site Location:

Sample Description : 23SWE12102
Sample Date & Time : 2023/03/11 13:30
Sampled By :
Sample Type :
Sample Received Date : 2023/03/13
Sample Station Code :

Bureau Veritas Sample Number : BNI493
Bureau Veritas Job Number : EC317055
Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

Subcontracted Analysis - MaxxLIMS.LIMS.Core.RptJob.ChemexReport.ChemexSampleResult

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Surrogate Recoveries (%):							
13C2-6:2-Fluorotelomersulfonic Acid:	130	Control Limits: 50 - 150					
13C2-8:2-Fluorotelomersulfonic Acid:	111	Control Limits: 50 - 150					
13C5-Perfluoropentanoic acid:	84	Control Limits: 50 - 150					
13C3-HFPO-DA:	98	Control Limits: 50 - 150					
13C2-Perfluorohexanoic acid:	101	Control Limits: 50 - 150					
13C4-Perfluoroheptanoic acid:	108	Control Limits: 50 - 150					
13C4-Perfluorooctanoic acid:	115	Control Limits: 50 - 150					
13C5-Perfluorononanoic acid:	112	Control Limits: 50 - 150					
13C2-Perfluorodecanoic acid:	113	Control Limits: 50 - 150					
13C2-Perfluoroundecanoic acid:	110	Control Limits: 50 - 150					
13C2-Perfluorododecanoic acid:	105	Control Limits: 50 - 150					

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Bureau Veritas Job Number : EC317055
Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

Volatile Organics by GC-MS

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Volatiles							
1,4-Dioxane	<1.0	ug/L	HSGC/MSD		A908375	1.0	1.0
Surrogate Recoveries (%):							
D4-1,2-Dichloroethane (sur.):	58	Control Limits: 50 - 140					
4-Bromofluorobenzene (sur.):	93	Control Limits: 50 - 140					
1,4-Difluorobenzene (sur.):	61	Control Limits: 50 - 140					

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Sample Description : 23SWE12102
Sample Date & Time : 2023/03/11 13:30
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Bureau Veritas Job Number : EC317055
Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

Elements by Atomic Spectroscopy

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Lab Filtered Elements							
Dissolved Calcium (Ca)	8.1	mg/L	ICPA	020111	A907876	0.30	0.30
Dissolved Iron (Fe)	<0.060	mg/L	ICPA	102090	A907876	0.060	0.060
Dissolved Magnesium (Mg)	2.4	mg/L	ICPA	012111	A907876	0.20	0.20
Dissolved Manganese (Mn)	<0.0040	mg/L	ICPA	102089	A907876	0.0040	0.0040
Dissolved Potassium (K)	0.88	mg/L	ICPA	019111	A907876	0.30	0.30
Dissolved Sodium (Na)	2.9	mg/L	ICPA	011111	A907876	0.50	0.50

DL = The lowest concentration that will be reported for a specific test
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ALBERTA ENVIRONMENT AND PARKS
Attention: WES GREENWOOD
Client Project #: ABS271
P.O. #:
Site Location:

Sample Description : 23SWE12103
Sample Date & Time : 2023/03/11 14:55
Sampled By :
Sample Type :
Sample Received Date : 2023/03/13
Sample Station Code :

Bureau Veritas Sample Number : BNI494
Bureau Veritas Job Number : EC317055
Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Calculated Parameters							
Anion Sum	0.0000	meq/L	CALC	125	A906729	N/A	N/A
Calculated Total Dissolved Solids	<10	mg/L	CALC	000201	A906723	10	10
Cation Sum	0.011	meq/L	CALC	120	A906729	N/A	N/A
Hardness (CaCO3)	<0.50	mg/L	CALC	010602	A906726	0.50	0.50
Ion Balance (% Difference)	NC	%	CALC	60209	A906728	N/A	N/A
Nitrate plus Nitrite (N)	<0.0042	mg/L	CALC	102649	A907229	0.0042	0.0020
Misc. Inorganics							
Conductivity	<2.0	uS/cm	COND	002041	A908079	2.0	2.0
Dissolved Inorganic Carbon (C)	<1.0	mg/l	TOCV/NDIR	104311	A908704	1.0	1.0
Dissolved Organic Carbon (C)	<0.40	mg/l	TOCV/NDIR	104784	A908706	0.40	0.50
pH	4.95	pH	AT/ALK	010301	A908078	N/A	N/A
Strong Acid Dissoc. Cyanide (CN)	<0.00050	mg/L	TECH/COL	1717	A907875	0.00050	0.00050
Total Total Organic Carbon (C)	<0.40	mg/l	TOCV/NDIR	104315	A908705	0.40	0.50
Total Dissolved Solids	<10	mg/L	BAL	2004	A907665	10	10
Total Suspended Solids	<1.0	mg/L	BAL	2005	A907940	1.0	1.0
Anions							
Alkalinity (PP as CaCO3)	<1.0	mg/L	AT/ALK	1593	A908077	1.0	1.0
Alkalinity (Total as CaCO3)	<1.0	mg/L	AT/ALK	1592	A908077	1.0	1.0
Bicarbonate (HCO3)	<1.0	mg/L	AT/ALK	1594	A908077	1.0	1.0
Carbonate (CO3)	<1.0	mg/L	AT/ALK	1595	A908077	1.0	1.0
Hydroxide (OH)	<1.0	mg/L	AT/ALK	1596	A908077	1.0	1.0
Dissolved Chloride (Cl)	<1.0	mg/L	KONE	2003	A907605	1.0	1.0
Dissolved Sulphate (SO4)	<1.0	mg/L	KONE	1599	A907605	1.0	1.0
MISCELLANEOUS							
Formaldehyde	12	ug/L	LC/UV		A910204	10	10
Nitrilotriacetic acid	<0.050	mg/L	SPEC		A908703	0.050	0.050
Nutrients							
Orthophosphate (P)	<0.0030	mg/L	KONE	2014	A907290	0.0030	0.0030
Total Ammonia (N)	0.017	mg/L	KONE	2007	A907510	0.015	0.015
Total Phosphorus (P)	<0.0030	mg/L	KONE	2013	A907904	0.0030	0.0030
Total Total Kjeldahl Nitrogen	<0.050	mg/L	KONE	2009	A907776	0.050	0.050
Dissolved Nitrite (N)	<0.0030	mg/L	IC/UV	102648	A907905	0.0030	0.0030
Dissolved Nitrate (N)	<0.0030	mg/L	IC/UV	102647	A907905	0.0030	0.0030
Lab Filtered Nutrients							
Dissolved Ammonia (N)	<0.015	mg/L	KONE	2006	A908183	0.015	0.015
Dissolved Phosphorus (P)	<0.0030	mg/L	KONE	2010	A907882	0.0030	0.0030
Dissolved Total Kjeldahl Nitrogen	<0.050	mg/L	KONE	2008	A907775	0.050	0.050

N/A = Not Applicable
DL = The lowest concentration that will be reported for a specific test
RDL = Reportable Detection Limit – Calculated on the basis of the detection limit, the dilution used, and the weight of the sample

Bureau Veritas Edmonton: 9331 - 48th Street T6B 2R4 Telephone (780)577-7100 Fax (780)450-4187

ALBERTA ENVIRONMENT AND PARKS
Attention: WES GREENWOOD
Client Project #: ABS271
P.O. #:
Site Location:

Sample Description : 23SWE12103
Sample Date & Time : 2023/03/11 14:55
Sampled By :
Sample Type :
Sample Received Date : 2023/03/13
Sample Station Code :

Bureau Veritas Sample Number : BNI494
Bureau Veritas Job Number : EC317055
Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Physical Properties							
True Colour	<2.0	PtCo units	SPEC/COL	22213	A908552	2.0	2.0
Physical Properties							
Turbidity	<0.10	NTU	TURB	2002	A907595	0.10	0.10

N/A = Not Applicable
DL = The lowest concentration that will be reported for a specific test
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Semivolatile Organics by GC-MS

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Polycyclic Aromatics							
B[a]P TPE Total Potency Equivalents	<0.010	ug/L	GC/MSD	109463	A906754	0.010	0.010
Benzo(k)fluoranthene	<0.0085	ug/L	GC/MS	109019	A906254	0.0085	0.0085
Benzo(g,h,i)perylene	<0.0085	ug/L	GC/MS	103153	A906254	0.0085	0.0085
Benzo(c)phenanthrene	<0.050	ug/L	GC/MS	103151	A906254	0.050	0.050
Benzo(a)pyrene	<0.0075	ug/L	GC/MS	103149	A906254	0.0075	0.0075
Benzo(e)pyrene	<0.050	ug/L	GC/MS	103152	A906254	0.050	0.050
Chrysene	<0.0085	ug/L	GC/MS	103154	A906254	0.0085	0.0085
Dibenz(a,h)anthracene	<0.0075	ug/L	GC/MS	103158	A906254	0.0075	0.0075
Acenaphthene	<0.10	ug/L	GC/MS	103144	A906254	0.10	0.10
Fluoranthene	<0.010	ug/L	GC/MS	103159	A906254	0.010	0.010
Fluorene	<0.050	ug/L	GC/MS	103160	A906254	0.050	0.050
Indeno(1,2,3-cd)pyrene	<0.0085	ug/L	GC/MS	103161	A906254	0.0085	0.0085
1-Methylnaphthalene	<0.10	ug/L	GC/MS		A906254	0.10	0.10
2-Methylnaphthalene	<0.10	ug/L	GC/MS	107978	A906254	0.10	0.10
Acenaphthylene	<0.10	ug/L	GC/MS	103145	A906254	0.10	0.10
Naphthalene	<0.10	ug/L	GC/MS	103162	A906254	0.10	0.10
Phenanthrene	<0.050	ug/L	GC/MS	103163	A906254	0.050	0.050
Perylene	<0.050	ug/L	GC/MS	107132	A906254	0.050	0.050
Pyrene	<0.020	ug/L	GC/MS	103164	A906254	0.020	0.020
Quinoline	<0.20	ug/L	GC/MS	111201	A906254	0.20	0.20
Acridine	<0.040	ug/L	GC/MS	103146	A906254	0.040	0.040
Anthracene	<0.010	ug/L	GC/MS	103147	A906254	0.010	0.010
Benzo(a)anthracene	<0.0085	ug/L	GC/MS	103148	A906254	0.0085	0.0085
Benzo(b&j)fluoranthene	<0.0085	ug/L	GC/MS	109017	A906254	0.0085	0.0085
Phenols							
2,3,4-trichlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
Cresols	<0.00014	mg/L	GC/MSD	107379	A907225	0.00014	0.00010
Phenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
3 & 4-chlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,3,5,6-tetrachlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,3,4,6-tetrachlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,4,5-trichlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,4,6-trichlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,3,5-trichlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,4-dichlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,4-dimethylphenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2,4-dinitrophenol	<0.0010	mg/L	GC/MSD		A907891	0.0010	0.0010
2,6-dichlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2-chlorophenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
2-methylphenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010

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ALBERTA ENVIRONMENT AND PARKS
Attention: WES GREENWOOD
Client Project #: ABS271
P.O. #:
Site Location:

Sample Description : 23SWE12103
Sample Date & Time : 2023/03/11 14:55
Sampled By :
Sample Type :
Sample Received Date : 2023/03/13
Sample Station Code :

Bureau Veritas Sample Number : BNI494
Bureau Veritas Job Number : EC317055
Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

Semivolatile Organics by GC-MS - MaxxLIMS.LIMS.Core.RptJob.ChemexReport.ChemexSampleResult

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Phenols							
2-nitrophenol	<0.0010	mg/L	GC/MSD		A907891	0.0010	0.0010
3 & 4-methylphenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
4,6-dinitro-2-methylphenol	<0.0010	mg/L	GC/MSD		A907891	0.0010	0.0010
4-chloro-3-methylphenol	<0.00010	mg/L	GC/MSD		A907891	0.00010	0.00010
4-nitrophenol	<0.0010	mg/L	GC/MSD		A907891	0.0010	0.0010
Pentachlorophenol	<0.00010	mg/L	GC/MSD	95152	A907891	0.00010	0.00010
Surrogate Recoveries (%):							
D8-NAPHTHALENE (sur.):	78	Control Limits: 50 - 130					
D8-ACENAPHTHYLENE (sur.):	95	Control Limits: 50 - 130					
D10-ANTHRACENE (sur.):	98	Control Limits: 50 - 130					
TERPHENYL-D14 (sur.):	101	Control Limits: 50 - 130					
2,4-DIBROMOPHENOL (sur.):	104	Control Limits: 50 - 140					
2,4,6-TRIBROMOPHENOL (sur.):	105	Control Limits: 50 - 140					

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Volatile Organics by GC-MS

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Volatiles							
Total Trihalomethanes	<1.3	ug/L	PT/MS	109009	A907230	1.3	2.0
Benzene	<0.40	ug/L	HSGC/MS	108963	A907023	0.40	0.40
Chloromethane	<2.0	ug/L	HSGC/MS	108982	A907023	2.0	2.0
1,2-dibromoethane	<0.20	ug/L	HSGC/MS	108983	A907023	0.20	0.20
1,2-dichlorobenzene	<0.50	ug/L	HSGC/MS	108960	A907023	0.50	0.50
1,3-dichlorobenzene	<0.50	ug/L	HSGC/MS	108984	A907023	0.50	0.50
1,4-dichlorobenzene	<0.50	ug/L	HSGC/MS	108962	A907023	0.50	0.50
1,1-dichloroethane	<0.50	ug/L	HSGC/MS	108986	A907023	0.50	0.50
1,2-dichloroethane	<0.50	ug/L	HSGC/MS	108961	A907023	0.50	0.50
1,1-dichloroethene	<0.50	ug/L	HSGC/MS	108959	A907023	0.50	0.50
cis-1,2-dichloroethene	<0.50	ug/L	HSGC/MS	108988	A907023	0.50	0.50
trans-1,2-dichloroethene	<0.50	ug/L	HSGC/MS	108989	A907023	0.50	0.50
Bromodichloromethane	<0.50	ug/L	HSGC/MS	108975	A907023	0.50	0.50
Dichloromethane	<2.0	ug/L	HSGC/MS	108966	A907023	2.0	2.0
1,2-dichloropropane	<0.50	ug/L	HSGC/MS	108990	A907023	0.50	0.50
cis-1,3-dichloropropene	<0.50	ug/L	HSGC/MS	109286	A907023	0.50	0.50
trans-1,3-dichloropropene	<0.50	ug/L	HSGC/MS	109287	A907023	0.50	0.50
Ethylbenzene	<0.40	ug/L	HSGC/MS	108967	A907023	0.40	0.40
Methyl methacrylate	<0.50	ug/L	HSGC/MS	108993	A907023	0.50	0.50
Methyl-tert-butylether (MTBE)	<0.50	ug/L	HSGC/MS	108994	A907023	0.50	0.50
Styrene	<0.50	ug/L	HSGC/MS	108995	A907023	0.50	0.50
1,1,1,2-tetrachloroethane	<1.0	ug/L	HSGC/MS	108958	A907023	1.0	1.0
1,1,2,2-tetrachloroethane	<2.0	ug/L	HSGC/MS	108957	A907023	2.0	2.0
Bromoform	<0.50	ug/L	HSGC/MS	108976	A907023	0.50	0.50
Tetrachloroethene	<0.50	ug/L	HSGC/MS	108971	A907023	0.50	0.50
Toluene	<0.40	ug/L	HSGC/MS	108972	A907023	0.40	0.40
1,2,3-trichlorobenzene	<1.0	ug/L	HSGC/MS	108996	A907023	1.0	1.0
1,2,4-trichlorobenzene	<1.0	ug/L	HSGC/MS	108997	A907023	1.0	1.0
1,3,5-trichlorobenzene	<0.50	ug/L	HSGC/MS	108998	A907023	0.50	0.50
1,1,1-trichloroethane	<0.50	ug/L	HSGC/MS	108999	A907023	0.50	0.50
1,1,2-trichloroethane	<0.50	ug/L	HSGC/MS	109000	A907023	0.50	0.50
Trichloroethene	<0.20	ug/L	HSGC/MS	108973	A907023	0.20	0.20
Trichlorofluoromethane	<0.50	ug/L	HSGC/MS	109288	A907023	0.50	0.50
1,2,4-trimethylbenzene	<0.50	ug/L	HSGC/MS	109002	A907023	0.50	0.50
Bromomethane	<2.0	ug/L	HSGC/MS	108977	A907023	2.0	2.0
1,3,5-trimethylbenzene	<0.50	ug/L	HSGC/MS	109003	A907023	0.50	0.50
Vinyl chloride	<0.50	ug/L	HSGC/MS	108974	A907023	0.50	0.50
Xylenes (Total)	<0.80	ug/L	HSGC/MS	109289	A907023	0.80	0.80
m & p-Xylene	<0.80	ug/L	HSGC/MS	109290	A907023	0.80	0.80
o-Xylene	<0.40	ug/L	HSGC/MS	108969	A907023	0.40	0.40
Carbon tetrachloride	<0.50	ug/L	HSGC/MS	108964	A907023	0.50	0.50

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ALBERTA ENVIRONMENT AND PARKS
Attention: WES GREENWOOD
Client Project #: ABS271
P.O. #:
Site Location:

Sample Description : 23SWE12103
Sample Date & Time : 2023/03/11 14:55
Sampled By :
Sample Type :
Sample Received Date : 2023/03/13
Sample Station Code :

Bureau Veritas Sample Number : BNI494
Bureau Veritas Job Number : EC317055
Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

Volatile Organics by GC-MS - MaxxLIMS.LIMS.Core.RptJob.ChemexReport.ChemexSampleResult

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Volatiles							
Chlorobenzene	<0.50	ug/L	HSGC/MS	108965	A907023	0.50	0.50
Dibromochloromethane	<1.0	ug/L	HSGC/MS	108979	A907023	1.0	1.0
Chloroethane	<1.0	ug/L	HSGC/MS	108980	A907023	1.0	1.0
Chloroform	<0.50	ug/L	HSGC/MS	108981	A907023	0.50	0.50
Surrogate Recoveries (%):							
1,4-Difluorobenzene (sur.):	96	Control Limits: 50 - 140					
4-Bromofluorobenzene (sur.):	94	Control Limits: 50 - 140					
D4-1,2-Dichloroethane (sur.):	105	Control Limits: 50 - 140					

DL = The lowest concentration that will be reported for a specific test
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Sample Access :
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Report Date : 2023/03/17

Subcontracted Analysis

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Perfluorinated Compounds							
Perfluorobutanoic acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorotridecanoic Acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorotetradecanoic Acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorobutanesulfonic acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluoropentanesulfonic acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorohexanesulfonic acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluoroheptanesulfonic acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorooctanesulfonic acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorononane sulfonic acid	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorodecanesulfonic acid (PFDS)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorooctane Sulfonamide (PFOSA)	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
Perfluoropentanoic Acid (PFPeA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
EtFOSAA	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
MeFOSAA	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
4:2 Fluorotelomer sulfonic acid	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
6:2 Fluorotelomer sulfonic acid	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
8:2 Fluorotelomer sulfonic acid	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
Hexafluoropropyleneoxide Dimer Acid	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
4,8-Dioxa-3H-Perfluorononanoic Acid	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
9Cl-PF3ONS (F-53B Major)	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
11Cl-PF3OUdS (F-53B Minor)	<4.0	ng/L	LCMS/MS		A912578	4.0	4.0
Perfluorohexanoic Acid (PFHxA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluoroheptanoic Acid (PFHpA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorooctanoic Acid (PFOA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorononanoic Acid (PFNA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorodecanoic Acid (PFDA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluoroundecanoic Acid (PFUnA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0
Perfluorododecanoic Acid (PFDoA)	<2.0	ng/L	LCMS/MS		A912578	2.0	2.0

Surrogate Recoveries (%):

13C4-Perfluorobutanoic acid:	81	Control Limits: 50 - 150
13C2-perfluorotetradecanoic acid:	!!41	Control Limits: 50 - 150
13C3-Perfluorobutanesulfonic acid:	91	Control Limits: 50 - 150
18O2-Perfluorohexanesulfonic acid:	90	Control Limits: 50 - 150
13C4-Perfluorooctanesulfonic acid:	89	Control Limits: 50 - 150
13C8-Perfluorooctane Sulfonamide:	60	Control Limits: 20 - 100
D5-EtFOSAA:	69	Control Limits: 50 - 150
D3-MeFOSAA:	70	Control Limits: 50 - 150
13C2-4:2-Fluorotelomersulfonic Acid:	87	Control Limits: 50 - 150

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ALBERTA ENVIRONMENT AND PARKS
Attention: WES GREENWOOD
Client Project #: ABS271
P.O. #:
Site Location:

Sample Description : 23SWE12103
Sample Date & Time : 2023/03/11 14:55
Sampled By :
Sample Type :
Sample Received Date : 2023/03/13
Sample Station Code :

Bureau Veritas Sample Number : BNI494
Bureau Veritas Job Number : EC317055
Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

Subcontracted Analysis - MaxxLIMS.LIMS.Core.RptJob.ChemexReport.ChemexSampleResult

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Surrogate Recoveries (%):							
13C2-6:2-Fluorotelomersulfonic Acid:	90	Control Limits: 50 - 150					
13C2-8:2-Fluorotelomersulfonic Acid:	78	Control Limits: 50 - 150					
13C5-Perfluoropentanoic acid:	85	Control Limits: 50 - 150					
13C3-HFPO-DA:	84	Control Limits: 50 - 150					
13C2-Perfluorohexanoic acid:	84	Control Limits: 50 - 150					
13C4-Perfluoroheptanoic acid:	86	Control Limits: 50 - 150					
13C4-Perfluorooctanoic acid:	91	Control Limits: 50 - 150					
13C5-Perfluorononanoic acid:	91	Control Limits: 50 - 150					
13C2-Perfluorodecanoic acid:	83	Control Limits: 50 - 150					
13C2-Perfluoroundecanoic acid:	81	Control Limits: 50 - 150					
13C2-Perfluorododecanoic acid:	75	Control Limits: 50 - 150					

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Volatile Organics by GC-MS

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Volatiles							
1,4-Dioxane	<1.0	ug/L	HSGC/MSD		A908375	1.0	1.0
Surrogate Recoveries (%):							
D4-1,2-Dichloroethane (sur.):	89	Control Limits: 50 - 140					
4-Bromofluorobenzene (sur.):	127	Control Limits: 50 - 140					
1,4-Difluorobenzene (sur.):	122	Control Limits: 50 - 140					

DL = The lowest concentration that will be reported for a specific test
RDL = Reportable Detection Limit – Calculated on the basis of the detection limit, the dilution used, and the weight of the sample
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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ALBERTA ENVIRONMENT AND PARKS
Attention: WES GREENWOOD
Client Project #: ABS271
P.O. #:
Site Location:

Sample Description : 23SWE12103
Sample Date & Time : 2023/03/11 14:55
Sampled By :
Sample Type :
Sample Received Date : 2023/03/13
Sample Station Code :

Bureau Veritas Sample Number : BNI494
Bureau Veritas Job Number : EC317055
Sample Access :
Sample Matrix : Water
Report Date : 2023/03/17

Elements by Atomic Spectroscopy

PARAMETER DESCRIPTION	Results	UNITS	INST.	VMV Code	QA/QC BATCH	RDL	DL
Lab Filtered Elements							
Dissolved Calcium (Ca)	<0.30	mg/L	ICPA	020111	A907876	0.30	0.30
Dissolved Iron (Fe)	<0.060	mg/L	ICPA	102090	A907876	0.060	0.060
Dissolved Magnesium (Mg)	<0.20	mg/L	ICPA	012111	A907876	0.20	0.20
Dissolved Manganese (Mn)	<0.0040	mg/L	ICPA	102089	A907876	0.0040	0.0040
Dissolved Potassium (K)	<0.30	mg/L	ICPA	019111	A907876	0.30	0.30
Dissolved Sodium (Na)	<0.50	mg/L	ICPA	011111	A907876	0.50	0.50

DL = The lowest concentration that will be reported for a specific test
RDL = Reportable Detection Limit – Calculated on the basis of the detection limit, the dilution used, and the weight of the sample

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	7.3°C
Package 2	5.0°C
Package 3	6.0°C

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A906254	NK3	Matrix Spike [BNI492-10]	D10-ANTHRACENE (sur.)	2023/03/14		112	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2023/03/14		106	%	50 - 130
			D8-NAPHTHALENE (sur.)	2023/03/14		81	%	50 - 130
			TERPHENYL-D14 (sur.)	2023/03/14		117	%	50 - 130
			Acenaphthene	2023/03/14		74	%	50 - 130
			Acenaphthylene	2023/03/14		79	%	50 - 130
			Acridine	2023/03/14		87	%	50 - 130
			Anthracene	2023/03/14		91	%	50 - 130
			Benzo(a)anthracene	2023/03/14		90	%	50 - 130
			Benzo(b&j)fluoranthene	2023/03/14		88	%	50 - 130
			Benzo(k)fluoranthene	2023/03/14		90	%	50 - 130
			Benzo(g,h,i)perylene	2023/03/14		86	%	50 - 130
			Benzo(c)phenanthrene	2023/03/14		98	%	50 - 130
			Benzo(a)pyrene	2023/03/14		90	%	50 - 130
			Benzo(e)pyrene	2023/03/14		83	%	50 - 130
			Chrysene	2023/03/14		90	%	50 - 130
			Dibenz(a,h)anthracene	2023/03/14		87	%	50 - 130
			Fluoranthene	2023/03/14		98	%	50 - 130
			Fluorene	2023/03/14		84	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2023/03/14		87	%	50 - 130
			1-Methylnaphthalene	2023/03/14		55	%	50 - 130
			2-Methylnaphthalene	2023/03/14		67	%	50 - 130
			Naphthalene	2023/03/14		72	%	50 - 130
			Phenanthrene	2023/03/14		88	%	50 - 130
			Perylene	2023/03/14		80	%	50 - 130
			Pyrene	2023/03/14		94	%	50 - 130
			Quinoline	2023/03/14		77	%	50 - 130
A906254	NK3	Spiked Blank	D10-ANTHRACENE (sur.)	2023/03/14		113	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2023/03/14		103	%	50 - 130
			D8-NAPHTHALENE (sur.)	2023/03/14		67	%	50 - 130
			TERPHENYL-D14 (sur.)	2023/03/14		114	%	50 - 130
			Acenaphthene	2023/03/14		83	%	50 - 130
			Acenaphthylene	2023/03/14		83	%	50 - 130
			Acridine	2023/03/14		83	%	50 - 130
			Anthracene	2023/03/14		87	%	50 - 130
			Benzo(a)anthracene	2023/03/14		91	%	50 - 130
			Benzo(b&j)fluoranthene	2023/03/14		87	%	50 - 130
			Benzo(k)fluoranthene	2023/03/14		86	%	50 - 130
			Benzo(g,h,i)perylene	2023/03/14		89	%	50 - 130
			Benzo(c)phenanthrene	2023/03/14		94	%	50 - 130
			Benzo(a)pyrene	2023/03/14		94	%	50 - 130
			Benzo(e)pyrene	2023/03/14		85	%	50 - 130
			Chrysene	2023/03/14		89	%	50 - 130
			Dibenz(a,h)anthracene	2023/03/14		86	%	50 - 130
			Fluoranthene	2023/03/14		95	%	50 - 130
			Fluorene	2023/03/14		84	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2023/03/14		87	%	50 - 130
			1-Methylnaphthalene	2023/03/14		58	%	50 - 130
			2-Methylnaphthalene	2023/03/14		70	%	50 - 130
			Naphthalene	2023/03/14		73	%	50 - 130
			Phenanthrene	2023/03/14		85	%	50 - 130
			Perylene	2023/03/14		82	%	50 - 130
			Pyrene	2023/03/14		96	%	50 - 130
			Quinoline	2023/03/14		69	%	50 - 130
A906254	NK3	Method Blank	D10-ANTHRACENE (sur.)	2023/03/14		106	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			D8-ACENAPHTHYLENE (sur.)	2023/03/14		102	%	50 - 130
			D8-NAPHTHALENE (sur.)	2023/03/14		77	%	50 - 130
			TERPHENYL-D14 (sur.)	2023/03/14		109	%	50 - 130
			Acenaphthene	2023/03/14	<0.10		ug/L	
			Acenaphthylene	2023/03/14	<0.10		ug/L	
			Acridine	2023/03/14	<0.040		ug/L	
			Anthracene	2023/03/14	<0.010		ug/L	
			Benzo(a)anthracene	2023/03/14	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2023/03/14	<0.0085		ug/L	
			Benzo(k)fluoranthene	2023/03/14	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2023/03/14	<0.0085		ug/L	
			Benzo(c)phenanthrene	2023/03/14	<0.050		ug/L	
			Benzo(a)pyrene	2023/03/14	<0.0075		ug/L	
			Benzo(e)pyrene	2023/03/14	<0.050		ug/L	
			Chrysene	2023/03/14	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2023/03/14	<0.0075		ug/L	
			Fluoranthene	2023/03/14	<0.010		ug/L	
			Fluorene	2023/03/14	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2023/03/14	<0.0085		ug/L	
			1-Methylnaphthalene	2023/03/14	<0.10		ug/L	
			2-Methylnaphthalene	2023/03/14	<0.10		ug/L	
			Naphthalene	2023/03/14	<0.10		ug/L	
			Phenanthrene	2023/03/14	<0.050		ug/L	
			Perylene	2023/03/14	<0.050		ug/L	
			Pyrene	2023/03/14	<0.020		ug/L	
			Quinoline	2023/03/14	<0.20		ug/L	
A906254	NK3	RPD [BNI494-10]	Acenaphthene	2023/03/14	NC		%	30
			Acenaphthylene	2023/03/14	NC		%	30
			Acridine	2023/03/14	NC		%	30
			Anthracene	2023/03/14	NC		%	30
			Benzo(a)anthracene	2023/03/14	NC		%	30
			Benzo(b&j)fluoranthene	2023/03/14	NC		%	30
			Benzo(k)fluoranthene	2023/03/14	NC		%	30
			Benzo(g,h,i)perylene	2023/03/14	NC		%	30
			Benzo(c)phenanthrene	2023/03/14	NC		%	30
			Benzo(a)pyrene	2023/03/14	NC		%	30
			Benzo(e)pyrene	2023/03/14	NC		%	30
			Chrysene	2023/03/14	NC		%	30
			Dibenz(a,h)anthracene	2023/03/14	NC		%	30
			Fluoranthene	2023/03/14	NC		%	30
			Fluorene	2023/03/14	NC		%	30
			Indeno(1,2,3-cd)pyrene	2023/03/14	NC		%	30
			1-Methylnaphthalene	2023/03/14	NC		%	30
			2-Methylnaphthalene	2023/03/14	NC		%	30
			Naphthalene	2023/03/14	NC		%	30
			Phenanthrene	2023/03/14	NC		%	30
			Perylene	2023/03/14	NC		%	30
			Pyrene	2023/03/14	NC		%	30
			Quinoline	2023/03/14	NC		%	30
A907023	QW1	Matrix Spike	1,4-Difluorobenzene (sur.)	2023/03/13		107	%	50 - 140
			4-Bromofluorobenzene (sur.)	2023/03/13		99	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2023/03/13		98	%	50 - 140
			Benzene	2023/03/13		84	%	50 - 140
			Bromodichloromethane	2023/03/13		100	%	50 - 140
			Bromoform	2023/03/13		100	%	50 - 140

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Bromomethane	2023/03/13		92	%	50 - 140
			Carbon tetrachloride	2023/03/13		95	%	50 - 140
			Chlorobenzene	2023/03/13		97	%	50 - 140
			Dibromochloromethane	2023/03/13		102	%	50 - 140
			Chloroethane	2023/03/13		81	%	50 - 140
			Chloroform	2023/03/13		85	%	50 - 140
			Chloromethane	2023/03/13		85	%	50 - 140
			1,2-dibromoethane	2023/03/13		92	%	50 - 140
			1,2-dichlorobenzene	2023/03/13		98	%	50 - 140
			1,3-dichlorobenzene	2023/03/13		93	%	50 - 140
			1,4-dichlorobenzene	2023/03/13		94	%	50 - 140
			1,1-dichloroethane	2023/03/13		85	%	50 - 140
			1,2-dichloroethane	2023/03/13		96	%	50 - 140
			1,1-dichloroethene	2023/03/13		86	%	50 - 140
			cis-1,2-dichloroethene	2023/03/13		89	%	50 - 140
			trans-1,2-dichloroethene	2023/03/13		81	%	50 - 140
			Dichloromethane	2023/03/13		86	%	50 - 140
			1,2-dichloropropane	2023/03/13		93	%	50 - 140
			cis-1,3-dichloropropene	2023/03/13		119	%	50 - 140
			trans-1,3-dichloropropene	2023/03/13		128	%	50 - 140
			Ethylbenzene	2023/03/13		89	%	50 - 140
			Methyl methacrylate	2023/03/13		87	%	50 - 140
			Methyl-tert-butylether (MTBE)	2023/03/13		91	%	50 - 140
			Styrene	2023/03/13		86	%	50 - 140
			1,1,1,2-tetrachloroethane	2023/03/13		95	%	50 - 140
			1,1,2,2-tetrachloroethane	2023/03/13		97	%	50 - 140
			Tetrachloroethene	2023/03/13		88	%	50 - 140
			Toluene	2023/03/13		88	%	50 - 140
			1,2,3-trichlorobenzene	2023/03/13		87	%	50 - 140
			1,2,4-trichlorobenzene	2023/03/13		88	%	50 - 140
			1,3,5-trichlorobenzene	2023/03/13		89	%	50 - 140
			1,1,1-trichloroethane	2023/03/13		95	%	50 - 140
			1,1,2-trichloroethane	2023/03/13		98	%	50 - 140
			Trichloroethene	2023/03/13		101	%	50 - 140
			Trichlorofluoromethane	2023/03/13		85	%	50 - 140
			1,2,4-trimethylbenzene	2023/03/13		92	%	50 - 140
			1,3,5-trimethylbenzene	2023/03/13		96	%	50 - 140
			Vinyl chloride	2023/03/13		85	%	50 - 140
			m & p-Xylene	2023/03/13		88	%	50 - 140
			o-Xylene	2023/03/13		85	%	50 - 140
A907023	QW1	Spiked Blank	1,4-Difluorobenzene (sur.)	2023/03/13		106	%	50 - 140
			4-Bromofluorobenzene (sur.)	2023/03/13		100	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2023/03/13		92	%	50 - 140
			Benzene	2023/03/13		82	%	60 - 130
			Bromodichloromethane	2023/03/13		98	%	60 - 130
			Bromoform	2023/03/13		96	%	60 - 130
			Bromomethane	2023/03/13		86	%	60 - 130
			Carbon tetrachloride	2023/03/13		94	%	60 - 130
			Chlorobenzene	2023/03/13		94	%	60 - 130
			Dibromochloromethane	2023/03/13		99	%	60 - 130
			Chloroethane	2023/03/13		77	%	60 - 130
			Chloroform	2023/03/13		82	%	60 - 130
			Chloromethane	2023/03/13		82	%	60 - 130
			1,2-dibromoethane	2023/03/13		86	%	60 - 130
			1,2-dichlorobenzene	2023/03/13		96	%	60 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1,3-dichlorobenzene	2023/03/13		93	%	60 - 130
			1,4-dichlorobenzene	2023/03/13		93	%	60 - 130
			1,1-dichloroethane	2023/03/13		85	%	60 - 130
			1,2-dichloroethane	2023/03/13		91	%	60 - 130
			1,1-dichloroethene	2023/03/13		86	%	60 - 130
			cis-1,2-dichloroethene	2023/03/13		87	%	60 - 130
			trans-1,2-dichloroethene	2023/03/13		78	%	60 - 130
			Dichloromethane	2023/03/13		83	%	60 - 130
			1,2-dichloropropane	2023/03/13		88	%	60 - 130
			cis-1,3-dichloropropene	2023/03/13		107	%	60 - 130
			trans-1,3-dichloropropene	2023/03/13		115	%	60 - 130
			Ethylbenzene	2023/03/13		88	%	60 - 130
			Methyl methacrylate	2023/03/13		91	%	60 - 130
			Methyl-tert-butylether (MTBE)	2023/03/13		87	%	60 - 130
			Styrene	2023/03/13		94	%	60 - 130
			1,1,1,2-tetrachloroethane	2023/03/13		91	%	60 - 130
			1,1,2,2-tetrachloroethane	2023/03/13		90	%	60 - 130
			Tetrachloroethene	2023/03/13		86	%	60 - 130
			Toluene	2023/03/13		86	%	60 - 130
			1,2,3-trichlorobenzene	2023/03/13		83	%	60 - 130
			1,2,4-trichlorobenzene	2023/03/13		85	%	60 - 130
			1,3,5-trichlorobenzene	2023/03/13		86	%	60 - 130
			1,1,1-trichloroethane	2023/03/13		95	%	60 - 130
			1,1,2-trichloroethane	2023/03/13		92	%	60 - 130
			Trichloroethene	2023/03/13		100	%	60 - 130
			Trichlorofluoromethane	2023/03/13		83	%	60 - 130
			1,2,4-trimethylbenzene	2023/03/13		93	%	60 - 130
			1,3,5-trimethylbenzene	2023/03/13		96	%	60 - 130
			Vinyl chloride	2023/03/13		80	%	60 - 130
			m & p-Xylene	2023/03/13		86	%	60 - 130
			o-Xylene	2023/03/13		81	%	60 - 130
A907023	QW1	Method Blank	1,4-Difluorobenzene (sur.)	2023/03/13		96	%	50 - 140
			4-Bromofluorobenzene (sur.)	2023/03/13		93	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2023/03/13		101	%	50 - 140
			Benzene	2023/03/13	<0.40		ug/L	
			Bromodichloromethane	2023/03/13	<0.50		ug/L	
			Bromoform	2023/03/13	<0.50		ug/L	
			Bromomethane	2023/03/13	<2.0		ug/L	
			Carbon tetrachloride	2023/03/13	<0.50		ug/L	
			Chlorobenzene	2023/03/13	<0.50		ug/L	
			Dibromochloromethane	2023/03/13	<1.0		ug/L	
			Chloroethane	2023/03/13	<1.0		ug/L	
			Chloroform	2023/03/13	<0.50		ug/L	
			Chloromethane	2023/03/13	<2.0		ug/L	
			1,2-dibromoethane	2023/03/13	<0.20		ug/L	
			1,2-dichlorobenzene	2023/03/13	<0.50		ug/L	
			1,3-dichlorobenzene	2023/03/13	<0.50		ug/L	
			1,4-dichlorobenzene	2023/03/13	<0.50		ug/L	
			1,1-dichloroethane	2023/03/13	<0.50		ug/L	
			1,2-dichloroethane	2023/03/13	<0.50		ug/L	
			1,1-dichloroethene	2023/03/13	<0.50		ug/L	
			cis-1,2-dichloroethene	2023/03/13	<0.50		ug/L	
			trans-1,2-dichloroethene	2023/03/13	<0.50		ug/L	
			Dichloromethane	2023/03/13	<2.0		ug/L	
			1,2-dichloropropane	2023/03/13	<0.50		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			cis-1,3-dichloropropene	2023/03/13	<0.50		ug/L	
			trans-1,3-dichloropropene	2023/03/13	<0.50		ug/L	
			Ethylbenzene	2023/03/13	<0.40		ug/L	
			Methyl methacrylate	2023/03/13	<0.50		ug/L	
			Methyl-tert-butylether (MTBE)	2023/03/13	<0.50		ug/L	
			Styrene	2023/03/13	<0.50		ug/L	
			1,1,1,2-tetrachloroethane	2023/03/13	<1.0		ug/L	
			1,1,2,2-tetrachloroethane	2023/03/13	<2.0		ug/L	
			Tetrachloroethene	2023/03/13	<0.50		ug/L	
			Toluene	2023/03/13	<0.40		ug/L	
			1,2,3-trichlorobenzene	2023/03/13	<1.0		ug/L	
			1,2,4-trichlorobenzene	2023/03/13	<1.0		ug/L	
			1,3,5-trichlorobenzene	2023/03/13	<0.50		ug/L	
			1,1,1-trichloroethane	2023/03/13	<0.50		ug/L	
			1,1,2-trichloroethane	2023/03/13	<0.50		ug/L	
			Trichloroethene	2023/03/13	<0.20		ug/L	
			Trichlorofluoromethane	2023/03/13	<0.50		ug/L	
			1,2,4-trimethylbenzene	2023/03/13	<0.50		ug/L	
			1,3,5-trimethylbenzene	2023/03/13	<0.50		ug/L	
			Vinyl chloride	2023/03/13	<0.50		ug/L	
			Xylenes (Total)	2023/03/13	<0.80		ug/L	
			m & p-Xylene	2023/03/13	<0.80		ug/L	
			o-Xylene	2023/03/13	<0.40		ug/L	
A907023	QW1	RPD	Benzene	2023/03/13	15		%	30
			Bromodichloromethane	2023/03/13	12		%	30
			Bromoform	2023/03/13	NC		%	30
			Bromomethane	2023/03/13	NC		%	30
			Carbon tetrachloride	2023/03/13	NC		%	30
			Chlorobenzene	2023/03/13	NC		%	30
			Dibromochloromethane	2023/03/13	NC		%	30
			Chloroethane	2023/03/13	NC		%	30
			Chloroform	2023/03/13	9.1		%	30
			Chloromethane	2023/03/13	NC		%	30
			1,2-dibromoethane	2023/03/13	NC		%	30
			1,2-dichlorobenzene	2023/03/13	NC		%	30
			1,3-dichlorobenzene	2023/03/13	NC		%	30
			1,4-dichlorobenzene	2023/03/13	NC		%	30
			1,1-dichloroethane	2023/03/13	NC		%	30
			1,2-dichloroethane	2023/03/13	NC		%	30
			1,1-dichloroethene	2023/03/13	NC		%	30
			cis-1,2-dichloroethene	2023/03/13	NC		%	30
			trans-1,2-dichloroethene	2023/03/13	NC		%	30
			Dichloromethane	2023/03/13	NC		%	30
			1,2-dichloropropane	2023/03/13	NC		%	30
			cis-1,3-dichloropropene	2023/03/13	NC		%	30
			trans-1,3-dichloropropene	2023/03/13	NC		%	30
			Ethylbenzene	2023/03/13	NC		%	30
			Methyl methacrylate	2023/03/13	NC		%	30
			Methyl-tert-butylether (MTBE)	2023/03/13	NC		%	30
			Styrene	2023/03/13	NC		%	30
			1,1,1,2-tetrachloroethane	2023/03/13	NC		%	30
			1,1,2,2-tetrachloroethane	2023/03/13	NC		%	30
			Tetrachloroethene	2023/03/13	NC		%	30
			Toluene	2023/03/13	11		%	30
			1,2,3-trichlorobenzene	2023/03/13	NC		%	30

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			1,2,4-trichlorobenzene	2023/03/13	NC		%	30
			1,3,5-trichlorobenzene	2023/03/13	NC		%	30
			1,1,1-trichloroethane	2023/03/13	NC		%	30
			1,1,2-trichloroethane	2023/03/13	NC		%	30
			Trichloroethene	2023/03/13	NC		%	30
			Trichlorofluoromethane	2023/03/13	NC		%	30
			1,2,4-trimethylbenzene	2023/03/13	NC		%	30
			1,3,5-trimethylbenzene	2023/03/13	NC		%	30
			Vinyl chloride	2023/03/13	NC		%	30
			Xylenes (Total)	2023/03/13	NC		%	30
			m & p-Xylene	2023/03/13	NC		%	30
			o-Xylene	2023/03/13	NC		%	30
A907290	MAP	Matrix Spike	Orthophosphate (P)	2023/03/13		100	%	80 - 120
A907290	MAP	Spiked Blank	Orthophosphate (P)	2023/03/13		101	%	80 - 120
A907290	MAP	Method Blank	Orthophosphate (P)	2023/03/13	<0.0030		mg/L	
A907290	MAP	RPD	Orthophosphate (P)	2023/03/13	0.51		%	20
A907510	AFI	Matrix Spike	Total Ammonia (N)	2023/03/13		91	%	80 - 120
A907510	AFI	Spiked Blank	Total Ammonia (N)	2023/03/13		100	%	80 - 120
A907510	AFI	Method Blank	Total Ammonia (N)	2023/03/13	<0.015		mg/L	
A907510	AFI	RPD	Total Ammonia (N)	2023/03/13	1.6		%	20
A907595	HE1	Spiked Blank	Turbidity	2023/03/13		101	%	80 - 120
A907595	HE1	Method Blank	Turbidity	2023/03/13	<0.10		NTU	
A907605	AFI	Matrix Spike	Chloride (Cl)	2023/03/13		106	%	80 - 120
			Sulphate (SO4)	2023/03/13		102	%	80 - 120
A907605	AFI	Spiked Blank	Chloride (Cl)	2023/03/13		101	%	80 - 120
			Sulphate (SO4)	2023/03/13		101	%	80 - 120
A907605	AFI	Method Blank	Chloride (Cl)	2023/03/13	<1.0		mg/L	
			Sulphate (SO4)	2023/03/13	<1.0		mg/L	
A907605	AFI	RPD	Chloride (Cl)	2023/03/13	4.3		%	20
			Sulphate (SO4)	2023/03/13	1.8		%	20
A907665	HE1	Matrix Spike [BNI492-01]	Total Dissolved Solids	2023/03/13		98	%	80 - 120
A907665	HE1	Spiked Blank	Total Dissolved Solids	2023/03/13		99	%	80 - 120
A907665	HE1	Method Blank	Total Dissolved Solids	2023/03/13	<10		mg/L	
A907665	HE1	RPD [BNI492-01]	Total Dissolved Solids	2023/03/13	8.0		%	20
A907775	CTU	QC Standard	Dissolved Total Kjeldahl Nitrogen	2023/03/14		104	%	80 - 120
A907775	CTU	Spiked Blank	Dissolved Total Kjeldahl Nitrogen	2023/03/14		104	%	80 - 120
A907775	CTU	Method Blank	Dissolved Total Kjeldahl Nitrogen	2023/03/14	<0.050		mg/L	
A907776	CTU	Matrix Spike	Total Total Kjeldahl Nitrogen	2023/03/14		107	%	80 - 120
A907776	CTU	QC Standard	Total Total Kjeldahl Nitrogen	2023/03/14		102	%	80 - 120
A907776	CTU	Spiked Blank	Total Total Kjeldahl Nitrogen	2023/03/14		102	%	80 - 120
A907776	CTU	Method Blank	Total Total Kjeldahl Nitrogen	2023/03/14	<0.050		mg/L	
A907776	CTU	RPD	Total Total Kjeldahl Nitrogen	2023/03/14	8.3		%	20
A907875	TMU	Matrix Spike	Strong Acid Dissoc. Cyanide (CN)	2023/03/14		96	%	80 - 120
A907875	TMU	Spiked Blank	Strong Acid Dissoc. Cyanide (CN)	2023/03/14		112	%	80 - 120
A907875	TMU	Method Blank	Strong Acid Dissoc. Cyanide (CN)	2023/03/14	<0.00050		mg/L	
A907875	TMU	RPD	Strong Acid Dissoc. Cyanide (CN)	2023/03/14	NC		%	20
A907876	PC5	Matrix Spike [BNI492-03]	Dissolved Calcium (Ca)	2023/03/14		113	%	80 - 120
			Dissolved Iron (Fe)	2023/03/14		119	%	80 - 120
			Dissolved Magnesium (Mg)	2023/03/14		113	%	80 - 120
			Dissolved Manganese (Mn)	2023/03/14		124 (1)	%	80 - 120
			Dissolved Potassium (K)	2023/03/14		111	%	80 - 120
			Dissolved Sodium (Na)	2023/03/14		111	%	80 - 120
A907876	PC5	Spiked Blank	Dissolved Calcium (Ca)	2023/03/14		103	%	80 - 120
			Dissolved Iron (Fe)	2023/03/14		101	%	80 - 120
			Dissolved Magnesium (Mg)	2023/03/14		103	%	80 - 120

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			Dissolved Manganese (Mn)	2023/03/14		105	%	80 - 120
			Dissolved Potassium (K)	2023/03/14		102	%	80 - 120
			Dissolved Sodium (Na)	2023/03/14		103	%	80 - 120
A907876	PC5	Method Blank	Dissolved Calcium (Ca)	2023/03/14	<0.30		mg/L	
			Dissolved Iron (Fe)	2023/03/14	<0.060		mg/L	
			Dissolved Magnesium (Mg)	2023/03/14	<0.20		mg/L	
			Dissolved Manganese (Mn)	2023/03/14	<0.0040		mg/L	
			Dissolved Potassium (K)	2023/03/14	<0.30		mg/L	
			Dissolved Sodium (Na)	2023/03/14	<0.50		mg/L	
A907876	PC5	RPD [BNI492-03]	Dissolved Calcium (Ca)	2023/03/14	2.0		%	20
			Dissolved Iron (Fe)	2023/03/14	NC		%	20
			Dissolved Magnesium (Mg)	2023/03/14	3.7		%	20
			Dissolved Manganese (Mn)	2023/03/14	NC		%	20
			Dissolved Potassium (K)	2023/03/14	1.9		%	20
			Dissolved Sodium (Na)	2023/03/14	2.4		%	20
A907882	MAP	Matrix Spike	Dissolved Phosphorus (P)	2023/03/14		109	%	80 - 120
A907882	MAP	QC Standard	Dissolved Phosphorus (P)	2023/03/14		91	%	80 - 120
A907882	MAP	Spiked Blank	Dissolved Phosphorus (P)	2023/03/14		99	%	80 - 120
A907882	MAP	Method Blank	Dissolved Phosphorus (P)	2023/03/14	<0.0030		mg/L	
A907882	MAP	RPD	Dissolved Phosphorus (P)	2023/03/14	2.5		%	20
A907891	SJ1	Spiked Blank	2,3,4-trichlorophenol	2023/03/14		114	%	50 - 140
			2,4,6-TRIBROMOPHENOL (sur.)	2023/03/14		106	%	50 - 140
			2,4-DIBROMOPHENOL (sur.)	2023/03/14		104	%	50 - 140
			Phenol	2023/03/14		54	%	30 - 130
			3 & 4-chlorophenol	2023/03/14		103	%	50 - 140
			2,3,5,6-tetrachlorophenol	2023/03/14		98	%	50 - 140
			2,3,4,6-tetrachlorophenol	2023/03/14		110	%	50 - 140
			2,4,5-trichlorophenol	2023/03/14		112	%	50 - 140
			2,4,6-trichlorophenol	2023/03/14		112	%	50 - 140
			2,3,5-trichlorophenol	2023/03/14		104	%	50 - 140
			2,4-dichlorophenol	2023/03/14		108	%	50 - 140
			2,4-dimethylphenol	2023/03/14		130	%	50 - 140
			2,4-dinitrophenol	2023/03/14		124	%	30 - 130
			2,6-dichlorophenol	2023/03/14		110	%	50 - 140
			2-chlorophenol	2023/03/14		90	%	50 - 140
			2-methylphenol	2023/03/14		84	%	50 - 140
			2-nitrophenol	2023/03/14		108	%	50 - 140
			3 & 4-methylphenol	2023/03/14		86	%	50 - 140
			4,6-dinitro-2-methylphenol	2023/03/14		124	%	30 - 130
			4-chloro-3-methylphenol	2023/03/14		108	%	50 - 140
			4-nitrophenol	2023/03/14		62	%	50 - 140
			Pentachlorophenol	2023/03/14		82	%	50 - 140
A907891	SJ1	Method Blank	2,3,4-trichlorophenol	2023/03/14	<0.00010		mg/L	
			2,4,6-TRIBROMOPHENOL (sur.)	2023/03/14		95	%	50 - 140
			2,4-DIBROMOPHENOL (sur.)	2023/03/14		96	%	50 - 140
			Phenol	2023/03/14	<0.00010		mg/L	
			3 & 4-chlorophenol	2023/03/14	<0.00010		mg/L	
			2,3,5,6-tetrachlorophenol	2023/03/14	<0.00010		mg/L	
			2,3,4,6-tetrachlorophenol	2023/03/14	<0.00010		mg/L	
			2,4,5-trichlorophenol	2023/03/14	<0.00010		mg/L	
			2,4,6-trichlorophenol	2023/03/14	<0.00010		mg/L	
			2,3,5-trichlorophenol	2023/03/14	<0.00010		mg/L	
			2,4-dichlorophenol	2023/03/14	<0.00010		mg/L	
			2,4-dimethylphenol	2023/03/14	<0.00010		mg/L	
			2,4-dinitrophenol	2023/03/14	<0.0010		mg/L	

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			2,6-dichlorophenol	2023/03/14	<0.00010		mg/L	
			2-chlorophenol	2023/03/14	<0.00010		mg/L	
			2-methylphenol	2023/03/14	<0.00010		mg/L	
			2-nitrophenol	2023/03/14	<0.0010		mg/L	
			3 & 4-methylphenol	2023/03/14	<0.00010		mg/L	
			4,6-dinitro-2-methylphenol	2023/03/14	<0.0010		mg/L	
			4-chloro-3-methylphenol	2023/03/14	<0.00010		mg/L	
			4-nitrophenol	2023/03/14	<0.0010		mg/L	
			Pentachlorophenol	2023/03/14	<0.00010		mg/L	
A907904	MAP	Matrix Spike [BNI494-07]	Total Phosphorus (P)	2023/03/14		97	%	80 - 120
A907904	MAP	QC Standard	Total Phosphorus (P)	2023/03/14		95	%	80 - 120
A907904	MAP	Spiked Blank	Total Phosphorus (P)	2023/03/14		102	%	80 - 120
A907904	MAP	Method Blank	Total Phosphorus (P)	2023/03/14	<0.0030		mg/L	
A907904	MAP	RPD [BNI494-07]	Total Phosphorus (P)	2023/03/14	NC		%	20
A907905	JLD	Matrix Spike [BNI493-03]	Nitrite (N)	2023/03/14		102	%	80 - 120
			Nitrate (N)	2023/03/14		102	%	80 - 120
A907905	JLD	Spiked Blank	Nitrite (N)	2023/03/14		100	%	80 - 120
			Nitrate (N)	2023/03/14		100	%	80 - 120
A907905	JLD	Method Blank	Nitrite (N)	2023/03/14	<0.0030		mg/L	
			Nitrate (N)	2023/03/14	<0.0030		mg/L	
A907905	JLD	RPD [BNI493-03]	Nitrite (N)	2023/03/14	NC		%	20
			Nitrate (N)	2023/03/14	15		%	20
A907940	HE1	Matrix Spike [BNI492-01]	Total Suspended Solids	2023/03/14		98	%	80 - 120
A907940	HE1	Spiked Blank	Total Suspended Solids	2023/03/14		103	%	80 - 120
A907940	HE1	Method Blank	Total Suspended Solids	2023/03/14	<1.0		mg/L	
A907940	HE1	RPD [BNI492-01]	Total Suspended Solids	2023/03/14	NC		%	20
A907940	HE1	RPD	Total Suspended Solids	2023/03/14	5.3		%	20
A908077	TMU	Spiked Blank	Alkalinity (Total as CaCO3)	2023/03/14		100	%	80 - 120
A908077	TMU	Method Blank	Alkalinity (PP as CaCO3)	2023/03/14	<1.0		mg/L	
			Alkalinity (Total as CaCO3)	2023/03/14	<1.0		mg/L	
			Bicarbonate (HCO3)	2023/03/14	<1.0		mg/L	
			Carbonate (CO3)	2023/03/14	<1.0		mg/L	
			Hydroxide (OH)	2023/03/14	<1.0		mg/L	
A908077	TMU	RPD	Alkalinity (PP as CaCO3)	2023/03/14	NC		%	20
			Alkalinity (Total as CaCO3)	2023/03/14	2.3		%	20
			Bicarbonate (HCO3)	2023/03/14	2.3		%	20
			Carbonate (CO3)	2023/03/14	NC		%	20
			Hydroxide (OH)	2023/03/14	NC		%	20
A908078	TMU	Spiked Blank	pH	2023/03/14		100	%	97 - 103
A908078	TMU	RPD	pH	2023/03/14	0.32		%	N/A
A908079	TMU	Spiked Blank	Conductivity	2023/03/14		100	%	90 - 110
A908079	TMU	Method Blank	Conductivity	2023/03/14	<2.0		uS/cm	
A908079	TMU	RPD	Conductivity	2023/03/14	0.14		%	10
A908183	AFI	Matrix Spike [BNI492-03]	Dissolved Ammonia (N)	2023/03/14		100	%	80 - 120
A908183	AFI	Spiked Blank	Dissolved Ammonia (N)	2023/03/14		99	%	80 - 120
A908183	AFI	Method Blank	Dissolved Ammonia (N)	2023/03/14	<0.015		mg/L	
A908183	AFI	RPD [BNI492-03]	Dissolved Ammonia (N)	2023/03/14	NC		%	20
A908375	YXI	Matrix Spike	1,4-Difluorobenzene (sur.)	2023/03/14		168 (1)	%	50 - 140
			4-Bromofluorobenzene (sur.)	2023/03/14		144 (1)	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2023/03/14		153 (1)	%	50 - 140
			1,4-Dioxane	2023/03/14		144 (1)	%	70 - 130
A908375	YXI	Spiked Blank	1,4-Difluorobenzene (sur.)	2023/03/14		98	%	50 - 140
			4-Bromofluorobenzene (sur.)	2023/03/14		99	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2023/03/14		90	%	50 - 140
			1,4-Dioxane	2023/03/14		80	%	70 - 130

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A908375	YXI	Method Blank	1,4-Difluorobenzene (sur.)	2023/03/14		97	%	50 - 140
			4-Bromofluorobenzene (sur.)	2023/03/14		100	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2023/03/14		91	%	50 - 140
			1,4-Dioxane	2023/03/14	<1.0		ug/L	
A908375	YXI	RPD	1,4-Dioxane	2023/03/14	NC		%	30
A908552	SKM	Matrix Spike [BNI492-03]	True Colour	2023/03/14		95	%	80 - 120
A908552	SKM	Spiked Blank	True Colour	2023/03/14		100	%	80 - 120
A908552	SKM	Method Blank	True Colour	2023/03/14	<2.0		PtCo units	
A908552	SKM	RPD [BNI492-03]	True Colour	2023/03/14	1.9		%	20
A908703	éEY	Matrix Spike	Nitrilotriacetic acid	2023/03/14		107	%	80 - 120
A908703	éEY	Spiked Blank	Nitrilotriacetic acid	2023/03/14		98	%	80 - 120
A908703	éEY	Method Blank	Nitrilotriacetic acid	2023/03/14	<0.050		mg/L	
A908704	GID	Matrix Spike [BNI494-04]	Dissolved Inorganic Carbon (C)	2023/03/14		97	%	80 - 120
A908704	GID	Spiked Blank	Dissolved Inorganic Carbon (C)	2023/03/14		99	%	80 - 120
A908704	GID	Method Blank	Dissolved Inorganic Carbon (C)	2023/03/14	<1.0		mg/l	
A908705	GID	Matrix Spike [BNI492-05]	Total Total Organic Carbon (C)	2023/03/14		96	%	80 - 120
A908705	GID	Spiked Blank	Total Total Organic Carbon (C)	2023/03/14		100	%	80 - 120
A908705	GID	Method Blank	Total Total Organic Carbon (C)	2023/03/14	<0.40		mg/l	
A908706	GID	Matrix Spike	Dissolved Organic Carbon (C)	2023/03/14		96	%	80 - 120
A908706	GID	Spiked Blank	Dissolved Organic Carbon (C)	2023/03/14		99	%	80 - 120
A908706	GID	Method Blank	Dissolved Organic Carbon (C)	2023/03/14	<0.40		mg/l	
A910204	FKU	Matrix Spike [BNI492-12]	Formaldehyde	2023/03/14		91	%	40 - 130
A910204	FKU	Spiked Blank	Formaldehyde	2023/03/14		88	%	40 - 130
A910204	FKU	Method Blank	Formaldehyde	2023/03/14	<10		ug/L	
A910204	FKU	RPD [BNI492-12]	Formaldehyde	2023/03/14	3.8		%	40
A912578	ESL	Spiked Blank	13C2-4:2-Fluorotelomersulfonic Acid	2023/03/17		103	%	50 - 150
			13C2-6:2-Fluorotelomersulfonic Acid	2023/03/17		109	%	50 - 150
			13C2-8:2-Fluorotelomersulfonic Acid	2023/03/17		110	%	50 - 150
			13C2-Perfluorodecanoic acid	2023/03/17		108	%	50 - 150
			13C2-Perfluorododecanoic acid	2023/03/17		87	%	50 - 150
			13C2-Perfluorohexanoic acid	2023/03/17		106	%	50 - 150
			13C2-perfluorotetradecanoic acid	2023/03/17		47 (2)	%	50 - 150
			13C2-Perfluoroundecanoic acid	2023/03/17		97	%	50 - 150
			13C3-HFPO-DA	2023/03/17		102	%	50 - 150
			13C3-Perfluorobutanesulfonic acid	2023/03/17		108	%	50 - 150
			13C4-Perfluorobutanoic acid	2023/03/17		106	%	50 - 150
			13C4-Perfluoroheptanoic acid	2023/03/17		107	%	50 - 150
			13C4-Perfluorooctanesulfonic acid	2023/03/17		109	%	50 - 150
			13C4-Perfluorooctanoic acid	2023/03/17		109	%	50 - 150
			13C5-Perfluorononanoic acid	2023/03/17		108	%	50 - 150
			13C5-Perfluoropentanoic acid	2023/03/17		104	%	50 - 150
			13C8-Perfluorooctane Sulfonamide	2023/03/17		85	%	20 - 100
			18O2-Perfluorohexanesulfonic acid	2023/03/17		110	%	50 - 150
			D3-MeFOSAA	2023/03/17		94	%	50 - 150
			D5-EtFOSAA	2023/03/17		89	%	50 - 150
			Perfluorobutanoic acid	2023/03/17		95	%	70 - 130
			Perfluoropentanoic Acid (PFPeA)	2023/03/17		95	%	70 - 130
			Perfluorohexanoic Acid (PFHxA)	2023/03/17		95	%	70 - 130
			Perfluoroheptanoic Acid (PFHpA)	2023/03/17		95	%	70 - 130
			Perfluorooctanoic Acid (PFOA)	2023/03/17		97	%	70 - 130
			Perfluorononanoic Acid (PFNA)	2023/03/17		96	%	70 - 130
			Perfluorodecanoic Acid (PFDA)	2023/03/17		94	%	70 - 130
			Perfluoroundecanoic Acid (PFUnA)	2023/03/17		96	%	70 - 130
			Perfluorododecanoic Acid (PFDoA)	2023/03/17		95	%	70 - 130
			Perfluorotridecanoic Acid	2023/03/17		124	%	70 - 130

Bureau Veritas Edmonton: 9331 - 48th Street T6B 2R4 Telephone (780)577-7100 Fax (780)450-4187

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Perfluorotetradecanoic Acid	2023/03/17		95	%	70 - 130
			Perfluorobutanesulfonic acid	2023/03/17		96	%	70 - 130
			Perfluoropentanesulfonic acid	2023/03/17		100	%	70 - 130
			Perfluorohexanesulfonic acid	2023/03/17		96	%	70 - 130
			Perfluoroheptanesulfonic acid	2023/03/17		95	%	70 - 130
			Perfluorooctanesulfonic acid	2023/03/17		92	%	70 - 130
			Perfluorononane sulfonic acid	2023/03/17		88	%	70 - 130
			Perfluorodecanesulfonic acid (PFDS)	2023/03/17		79	%	70 - 130
			Perfluorooctane Sulfonamide (PFOSA)	2023/03/17		95	%	70 - 130
			EtFOSAA	2023/03/17		95	%	70 - 130
			MeFOSAA	2023/03/17		95	%	70 - 130
			4:2 Fluorotelomer sulfonic acid	2023/03/17		96	%	70 - 130
			6:2 Fluorotelomer sulfonic acid	2023/03/17		98	%	70 - 130
			8:2 Fluorotelomer sulfonic acid	2023/03/17		91	%	70 - 130
			Hexafluoropropyleneoxide Dimer Acid	2023/03/17		93	%	70 - 130
			4,8-Dioxa-3H-Perfluorononanoic Acid	2023/03/17		93	%	70 - 130
			9Cl-PF3ONS (F-53B Major)	2023/03/17		95	%	70 - 130
			11Cl-PF3OUdS (F-53B Minor)	2023/03/17		78	%	70 - 130
A912578	ESL	RPD	Perfluorobutanoic acid	2023/03/17	1.1		%	30
			Perfluoropentanoic Acid (PFPeA)	2023/03/17	1.4		%	30
			Perfluorohexanoic Acid (PFHxA)	2023/03/17	2.4		%	30
			Perfluoroheptanoic Acid (PFHpA)	2023/03/17	2.2		%	30
			Perfluorooctanoic Acid (PFOA)	2023/03/17	2.4		%	30
			Perfluorononanoic Acid (PFNA)	2023/03/17	4.0		%	30
			Perfluorodecanoic Acid (PFDA)	2023/03/17	2.3		%	30
			Perfluoroundecanoic Acid (PFUnA)	2023/03/17	2.0		%	30
			Perfluorododecanoic Acid (PFDoA)	2023/03/17	1.3		%	30
			Perfluorotridecanoic Acid	2023/03/17	8.6		%	30
			Perfluorotetradecanoic Acid	2023/03/17	4.5		%	30
			Perfluorobutanesulfonic acid	2023/03/17	1.9		%	30
			Perfluoropentanesulfonic acid	2023/03/17	0.62		%	30
			Perfluorohexanesulfonic acid	2023/03/17	2.3		%	30
			Perfluoroheptanesulfonic acid	2023/03/17	2.6		%	30
			Perfluorooctanesulfonic acid	2023/03/17	5.0		%	30
			Perfluorononane sulfonic acid	2023/03/17	1.4		%	30
			Perfluorodecanesulfonic acid (PFDS)	2023/03/17	5.3		%	30
			Perfluorooctane Sulfonamide (PFOSA)	2023/03/17	0.83		%	30
			EtFOSAA	2023/03/17	1.1		%	30
			MeFOSAA	2023/03/17	1.4		%	30
			4:2 Fluorotelomer sulfonic acid	2023/03/17	0.034		%	30
			6:2 Fluorotelomer sulfonic acid	2023/03/17	5.1		%	30
			8:2 Fluorotelomer sulfonic acid	2023/03/17	3.4		%	30
			Hexafluoropropyleneoxide Dimer Acid	2023/03/17	3.5		%	30
			4,8-Dioxa-3H-Perfluorononanoic Acid	2023/03/17	1.9		%	30
			9Cl-PF3ONS (F-53B Major)	2023/03/17	1.7		%	30
			11Cl-PF3OUdS (F-53B Minor)	2023/03/17	2.3		%	30
A912578	ESL	Method Blank	13C2-4:2-Fluorotelomersulfonic Acid	2023/03/17		93	%	50 - 150
			13C2-6:2-Fluorotelomersulfonic Acid	2023/03/17		101	%	50 - 150
			13C2-8:2-Fluorotelomersulfonic Acid	2023/03/17		91	%	50 - 150
			13C2-Perfluorodecanoic acid	2023/03/17		89	%	50 - 150
			13C2-Perfluorododecanoic acid	2023/03/17		77	%	50 - 150
			13C2-Perfluorohexanoic acid	2023/03/17		90	%	50 - 150
			13C2-perfluorotetradecanoic acid	2023/03/17		43 (2)	%	50 - 150
			13C2-Perfluoroundecanoic acid	2023/03/17		86	%	50 - 150
			13C3-HFPO-DA	2023/03/17		91	%	50 - 150

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			13C3-Perfluorobutanesulfonic acid	2023/03/17		91	%	50 - 150
			13C4-Perfluorobutanoic acid	2023/03/17		90	%	50 - 150
			13C4-Perfluoroheptanoic acid	2023/03/17		91	%	50 - 150
			13C4-Perfluorooctanesulfonic acid	2023/03/17		89	%	50 - 150
			13C4-Perfluorooctanoic acid	2023/03/17		91	%	50 - 150
			13C5-Perfluorononanoic acid	2023/03/17		94	%	50 - 150
			13C5-Perfluoropentanoic acid	2023/03/17		89	%	50 - 150
			13C8-Perfluorooctane Sulfonamide	2023/03/17		72	%	20 - 100
			18O2-Perfluorohexanesulfonic acid	2023/03/17		94	%	50 - 150
			D3-MeFOSAA	2023/03/17		81	%	50 - 150
			D5-EtFOSAA	2023/03/17		81	%	50 - 150
			Perfluorobutanoic acid	2023/03/17	<2.0		ng/L	
			Perfluoropentanoic Acid (PFPeA)	2023/03/17	<2.0		ng/L	
			Perfluorohexanoic Acid (PFHxA)	2023/03/17	<2.0		ng/L	
			Perfluoroheptanoic Acid (PFHpA)	2023/03/17	<2.0		ng/L	
			Perfluorooctanoic Acid (PFOA)	2023/03/17	<2.0		ng/L	
			Perfluorononanoic Acid (PFNA)	2023/03/17	<2.0		ng/L	
			Perfluorodecanoic Acid (PFDA)	2023/03/17	<2.0		ng/L	
			Perfluoroundecanoic Acid (PFUnA)	2023/03/17	<2.0		ng/L	
			Perfluorododecanoic Acid (PFDoA)	2023/03/17	<2.0		ng/L	
			Perfluorotridecanoic Acid	2023/03/17	<2.0		ng/L	
			Perfluorotetradecanoic Acid	2023/03/17	<2.0		ng/L	
			Perfluorobutanesulfonic acid	2023/03/17	<2.0		ng/L	
			Perfluoropentanesulfonic acid	2023/03/17	<2.0		ng/L	
			Perfluorohexanesulfonic acid	2023/03/17	<2.0		ng/L	
			Perfluoroheptanesulfonic acid	2023/03/17	<2.0		ng/L	
			Perfluorooctanesulfonic acid	2023/03/17	<2.0		ng/L	
			Perfluorononane sulfonic acid	2023/03/17	<2.0		ng/L	
			Perfluorodecanesulfonic acid (PFDS)	2023/03/17	<2.0		ng/L	
			Perfluorooctane Sulfonamide (PFOSA)	2023/03/17	<4.0		ng/L	
			EtFOSAA	2023/03/17	<4.0		ng/L	
			MeFOSAA	2023/03/17	<4.0		ng/L	
			4:2 Fluorotelomer sulfonic acid	2023/03/17	<4.0		ng/L	
			6:2 Fluorotelomer sulfonic acid	2023/03/17	<4.0		ng/L	
			8:2 Fluorotelomer sulfonic acid	2023/03/17	<4.0		ng/L	
			Hexafluoropropyleneoxide Dimer Acid	2023/03/17	<4.0		ng/L	
			4,8-Dioxa-3H-Perfluorononanoic Acid	2023/03/17	<4.0		ng/L	
			9Cl-PF3ONS (F-53B Major)	2023/03/17	<4.0		ng/L	
			11Cl-PF3OUdS (F-53B Minor)	2023/03/17	<4.0		ng/L	

N/A = Not Applicable

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

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

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.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(2) Extracted internal standard analyte recovery was below the defined lower control limit (LCL) which may result in increased variability of the associated native analyte result (PFTrDA & PFTeDA).

Bureau Veritas Edmonton: 9331 - 48th Street T6B 2R4 Telephone (780)577-7100 Fax (780)450-4187

VALIDATION SIGNATURE PAGE

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

Cristina Carriere, Senior Scientific Specialist

David Huang, M.Sc., P.Chem., QP, Scientific Services Manager

Pinkal Patel, Senior Analyst

Qiliang (Alex) Wu, Senior Analyst

Sandy Yuan, M.Sc., QP, Scientific Specialist

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics

Bureau Veritas Proprietary Software
Logiciel Propriétaire de Bureau Veritas

Automated Statchk

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VALIDATION SIGNATURE PAGE(CONT'D)

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

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.

Bureau Veritas Edmonton: 9331 - 48th Street T6B 2R4 Telephone (780)577-7100 Fax (780)450-4187

243

Bureau Veritas Chain of Custody

Lab Address: Bureau Veritas Laboratories
9331-48 Street, Edmonton T6B 2R4
Lab Telephone: 780-577-7144
Lab Email: amanda.l'hirondelle@bvlabs.com

Invoice to: AEP.AWS-FinanceAP1@gov.ab.ca
Data to: wes.greenwood@gov.ab.ca

Client: AEP
Client Contact: Wes Greenwood
Client Address: 4816 89th Street
Edmonton, Alberta
Client Telephone: 780-919-5237
Client Email: wes.greenwood@gov.ab.ca

Alberta Government

Bureau Veritas Quote Number:
Project:

Master Project Number:
Project Number: ABS271
Sample date: Day 11 Month MAR Year 2023

Site name	Sample number	Station/Transect number	Time (MST)	Analysis Request: NTA	Formaldehyde			# Bottles
Site 1	23SWE121101		1315	X	X			2
Site 2	23SWE121102		1330	X	X			2
Site 3	23SWE121103		1455	X	X			2

SERVICE REQUESTED:
√ RUSH (Contact lab to reserve)
Date Required:
X REGULAR (5 to 7 Days)

Relinquished by:
Name: Wes Greenwood
Date: 13 March, 2023
Time (MST): 8:00

Received by:
Name:
Date:
Time (MST):

LAB USE ONLY

Received By:	Date:	Time:	Bureau Veritas Job #:		
	23/03/13	0917	Custody Seal	Temperature	Ice
Lab Comments:			N	8/8/6	Y

Comments: DO NOT UPLOAD TO KISTERS DATABASE

C317055

Classification: Protected A

Bureau Veritas Chain of Custody

Lab Address: Bureau Veritas Laboratories
9331-48 Street, Edmonton T6B 2R4
Lab Telephone: 780-577-7144
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Edmonton, Alberta
Client Telephone: 780-919-5237
Client Email: wes.greenwood@gov.ab.ca

Alberta Government

Bureau Veritas Quote Number:
Project:

Master Project Number:
Project Number: ABS271
Sample date: Day 11 / Month MAR / Year 2023

Site name	Sample number	Station/Transect number	Time (MST)	Analysis Request: PFOA/PFAS	Analysis Request	Analysis Request	Analysis Request	# Bottles
Site 1	23SWE121011		1315	X				2
Site 2	23SWE121022		1330	X				2
Site 3	23SWE121033		1455	X				2

SERVICE REQUESTED:
√ RUSH (Contact lab to reserve)
Date Required: .....
X REGULAR (5 to 7 Days)

Relinquised by:
Name: Wes Greenwood
Date: 13 March, 2023
Time (MST): 8:00

Received by:
Name:
Date:
Time (MST):

LAB USE ONLY

Received By:	Date:	Time:	Bureau Veritas Job #:		
	23/03/13	0917	Custody Seal	Temperature	Ice
Lab Comments:			M	8/8/6	Y

Comments: DO NOT UPLOAD TO KISTERS DATABASE

C317055

Classification: Protected A

244

Bureau Veritas Chain of Custody

Lab Address: Bureau Veritas Laboratories
9331-48 Street, Edmonton T6B 2R4
Lab Telephone: 780-577-7144
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Client Email: wes.greenwood@gov.ab.ca

Alberta Government

Bureau Veritas Quote Number:
Project:

Master Project Number:
Project Number: ABS271
Sample date: Day 11 Month MAR Year 2023

Site name	Sample number	Station/Transect number	Time (MST)	Analysis Request: AEH	Group 02	Group 03	BOD	# Bottles
Site 1	23SWE121101		1315	X				5
Site 2	23SWE121102		1330	X				5
Site 3	23SWE121103		1455	X				5
				X				5
				X				5
				X				5
				X				5
				X				5
				X				5

SERVICE REQUESTED:
√ RUSH (Contact lab to reserve)
Date Required:
X REGULAR (5 to 7 Days)

Relinquised by:
Name: Wes Greenwood
Date: 13 March, 2023
Time (MST): 8:00

Received by:
Name:
Date:
Time (MST):

LAB USE ONLY

Received By:	Date:	Time:	Bureau Veritas Job #:		
	23/03/13	0917	Custody Seal	Temperature	Ice
Lab Comments:			N	4/4/7	Y

Comments:
TOC and DOC parameters require ZTOC-COMB and ZDOC-COMB analysis method (BV Ontario)
DO NOT UPLOAD TO KISTERS DATABASE

Samples are to be preserved and filtered in the laboratory where applicable
*No dissolved samples were filtered or preserved in the field
Alternate disposal required.
No Fluoride Analysis

C317055

Classification: Protected A

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Bureau Veritas Chain of Custody

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Client Telephone: 780-919-5237
Client Email: wes.greenwood@gov.ab.ca

Alberta Government

Bureau Veritas Quote Number:
Project:

Master Project Number | Project Number: ABS271 | Sample date: Day 11 | Month MAR | Year 2023

Site name	Sample number	Station/Transect number	Time (MST)	Analysis Request: PAHs	Analysis Request:	Analysis Request:	Analysis Request:	# Bottles
Site 1	23SWE121101		1315	X				2
Site 2	23SWE121102		1330	X				2
Site 3	23SWE121103		1455	X				2

SERVICE REQUESTED: √ RUSH (Contact lab to reserve) Date Required: ..... X REGULAR (5 to 7 Days)

Relinquished by:
Name: Wes Greenwood
Date: 13 March, 2023
Time (MST): 8:00

Received by:
Name:
Date:
Time (MST):

LAB USE ONLY

Received By:	Date:	Time:	Bureau Veritas Job #:			
	23/03/13	0917	Custody Seal	Temperature		Ice
Lab Comments:			N	5/8/5		Y

Comments: DO NOT UPLOAD TO KISTERS DATABASE

C317055

Classification: Protected A

Bureau Veritas Chain of Custody

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Client Email: wes.greenwood@gov.ab.ca

Alberta Government

Bureau Veritas Quote Number:
Project:

Master Project Number	Project Number	Sample date: Day	Month	Year
	ABS271	11	MAR	2023

Site name	Sample number	Station/Transect number	Time (MST)	Analysis Request: Cyanide	VOCs	Phenols	# Bottles
Site 1	23SWE121101		1315	X	X	X	4
Site 2	23SWE121102		1330	X	X	X	4
Site 3	23SWE121103		1455	X	X	X	4

SERVICE REQUESTED:
V RUSH (Contact lab to reserve)
Date Required:
X REGULAR (5 to 7 Days)

Relinquished by:
Name: Wes Greenwood
Date: 13 March, 2023
Time (MST): 8:00

Received by:
Name:
Date:
Time (MST):

LAB USE ONLY

Received By:	Date:	Time:	Bureau Veritas Job #:	Custody Seal	Temperature	Ice
	23/03/13	0917		N	5/8/15	Y

Lab Comments:

Comments: DO NOT UPLOAD TO KISTERS DATABASE

C317055

Classification: Protected A