



## Analytical Results Evaluation

				Client sample ID						
Matrix: Water				STEINBACH 1 RAW PUMP STATION #2 WELL #1	STEINBACH 1 RAW PUMP STATION #3 WELL#4	STEINBACH 2 TREATED PUMP RAW STATION #2	STEINBACH 2 TREATED PUMP STATION #3	STEINBACH 3 DIST MID POINT @ OUTDOOR RINK	STEINBACH 3 DIST MID POINT @OPERATORS BLD	----
Sampling date/time				22-Aug-2023 00:00	22-Aug-2023 08:30	22-Aug-2023 10:40	22-Aug-2023 08:40	22-Aug-2023 11:15	22-Aug-2023 09:40	----
Sub-Matrix				Water	Water	Water	Water	Water	Water	----
Analyte	CAS Number	Method/Lab	Unit	WP2320427-001	WP2320427-002	WP2320427-003	WP2320427-004	WP2320427-005	WP2320427-006	-----
<b>Physical Tests</b>										
Absorbance, UV (@ 254nm)	----	E404/WP		0.0620	0.0410	0.0400	0.0290	----	----	----
Alkalinity, bicarbonate (as CaCO3)	----	E290/WP	mg/L	329	279	281	269	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/WP		13.8	11.8	<1.0	8.0	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/WP	mg/L	<1.0	<1.0	<1.0	<1.0	----	----	----
Alkalinity, total (as CaCO3)	----	E290/WP		343	291	279	277	----	----	----
Colour, true	----	E329/WP	CU	<5.0	<5.0	<5.0	<5.0	----	----	----
Conductivity	----	E100/WP		550	530	558	538	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/WP	mg/L	278	243	248	236	----	----	----
Langelier index (@ 4°C)	----	EC105A/WP		1.09	0.958	0.870	0.900	----	----	----
Langelier index (@ 60°C)	----	EC105A/WP	-	1.84	1.71	1.62	1.65	----	----	----
pH	----	E108/WP		8.49	8.48	8.40	8.44	----	----	----
Solids, total dissolved [TDS]	----	E162-L/WP	mg/L	317	305	325	303	----	----	----
Turbidity	----	E121/WP		12.9	13.8	0.38	<0.10	----	----	----
pH, saturation (@ 4°C)	----	EC105A/WP	pH units	7.40	7.52	7.53	7.54	----	----	----
Transmittance, UV (@ 254nm)	----	E404/WP		86.7	91.0	91.2	93.5	----	----	----
pH, saturation (@ 60°C)	----	EC105A/WP	pH units	6.65	6.77	6.78	6.78	----	----	----
<b>Anions and Nutrients</b>										
Ammonia, total (as N)	7664-41-7	E303/WP		0.943	0.706	<0.010	<0.010	----	----	----
Bromide	24959-67-9	E235.Br-L/WP	mg/L	<0.050	<0.050	<0.050	<0.050	----	----	----
Chloride	16887-00-6	E235.Cl-L/WP		7.40	18.3	26.8	25.6	----	----	----
Fluoride	16984-48-8	E235.F/WP	mg/L	0.308	0.385	0.684	0.672	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/WP		<0.0050	<0.0050	0.0096	0.0162	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/WP	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/WP		<0.30	1.30	1.77	1.26	----	----	----
<b>Organic / Inorganic Carbon</b>										



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<b>Organic / Inorganic Carbon</b>											
Carbon, dissolved organic [DOC]	----	E358-L/WP	mg/L	4.16	3.32	3.48	3.26	----	----	----	
Carbon, total organic [TOC]	----	E355-L/WP		3.54	2.68	2.95	2.59	----	----	----	
<b>Ion Balance</b>											
Anion sum	----	EC101A/WP	meq/L	7.08	6.38	6.40	6.32	----	----	----	
Cation sum (total)	----	EC101A/WP		6.88	6.50	6.52	6.23	----	----	----	
Ion balance (cations/anions)	----	EC101A/WP	%	97.2	102	102	98.6	----	----	----	
Ion balance (APHA)	----	EC101A/WP		-1.43	0.932	0.929	-0.717	----	----	----	
<b>Total Metals</b>											
Aluminum, total	7429-90-5	E420/WP	µg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	----	
Antimony, total	7440-36-0	E420/WP		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	----	
Arsenic, total	7440-38-2	E420/WP	µg/L	0.15	0.21	0.19	0.16	0.18	0.16	----	
Barium, total	7440-39-3	E420/WP		471	224	424	197	436	194	----	
Beryllium, total	7440-41-7	E420/WP	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	----	
Bismuth, total	7440-69-9	E420/WP		<0.050	<0.050	<0.050	<0.050	0.058	<0.050	----	
Boron, total	7440-42-8	E420/WP	µg/L	134	168	151	176	160	174	----	
Cadmium, total	7440-43-9	E420/WP		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	----	
Calcium, total	7440-70-2	E420/WP	µg/L	55800	49500	51200	49800	53100	49100	----	
Cesium, total	7440-46-2	E420/WP		0.012	0.011	0.015	<0.010	0.013	<0.010	----	
Chromium, total	7440-47-3	E420/WP	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	----	
Cobalt, total	7440-48-4	E420/WP		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	----	
Copper, total	7440-50-8	E420/WP	µg/L	16.8	1.75	17.9	6.35	31.7	34.6	----	
Iron, total	7439-89-6	E420/WP		1250	1100	197	108	138	59	----	
Lead, total	7439-92-1	E420/WP	µg/L	0.080	<0.050	0.808	0.084	0.347	0.150	----	
Lithium, total	7439-93-2	E420/WP		18.2	19.9	19.2	18.7	20.5	19.0	----	
Magnesium, total	7439-95-4	E420/WP	µg/L	33800	29100	29200	27200	28500	28000	----	



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<b>Total Metals</b>											
Manganese, total	7439-96-5	E420/WP		9.09	5.91	1.37	0.63	1.08	0.43	----	
Molybdenum, total	7439-98-7	E420/WP	µg/L	0.668	1.10	1.12	1.16	1.19	1.16	----	
Nickel, total	7440-02-0	E420/WP		<0.50	<0.50	<0.50	1.12	0.74	<0.50	----	
Phosphorus, total	7723-14-0	E420/WP	µg/L	<50	<50	550	421	521	402	----	
Potassium, total	7440-09-7	E420/WP		4580	5270	5020	5180	5030	5270	----	
Rubidium, total	7440-17-7	E420/WP	µg/L	2.75	3.32	3.27	3.28	3.18	3.13	----	
Selenium, total	7782-49-2	E420/WP		0.109	0.164	0.068	0.086	0.054	0.072	----	
Silicon, total	7440-21-3	E420/WP	µg/L	7580	6430	7310	6450	6650	6450	----	
Silver, total	7440-22-4	E420/WP		<0.010	0.010	<0.010	<0.010	<0.010	<0.010	----	
Sodium, total	7440-23-5	E420/WP	µg/L	24900	32500	32700	31600	32100	32400	----	
Strontium, total	7440-24-6	E420/WP		356	355	347	367	361	375	----	
Sulfur, total	7704-34-9	E420/WP	µg/L	<500	860	1070	620	650	740	----	
Tellurium, total	13494-80-9	E420/WP		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	----	
Thallium, total	7440-28-0	E420/WP	µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	----	
Thorium, total	7440-29-1	E420/WP		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	----	
Tin, total	7440-31-5	E420/WP	µg/L	0.19	<0.10	0.14	0.16	0.12	0.16	----	
Titanium, total	7440-32-6	E420/WP		<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	----	
Tungsten, total	7440-33-7	E420/WP	µg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	----	
Uranium, total	7440-61-1	E420/WP		<0.010	0.015	<0.010	0.021	<0.010	0.019	----	
Vanadium, total	7440-62-2	E420/WP	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	----	
Zinc, total	7440-66-6	E420/WP		<3.0	3.6	12.1	<3.0	<3.0	3.5	----	
Zirconium, total	7440-67-7	E420/WP	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	----	
<b>Volatile Organic Compounds</b>											
Benzene	71-43-2	E611D/WP		<0.00050	<0.00050	----	----	----	----	----	
Bromodichloromethane	75-27-4	E611D/WP	mg/L	<0.00050	<0.00050	----	----	----	----	----	
Bromoform	75-25-2	E611D/WP		<0.00050	<0.00050	----	----	----	----	----	



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Analyte	CAS Number	Method/Lab	Unit	WP2320427-001	WP2320427-002	WP2320427-003	WP2320427-004	WP2320427-005	WP2320427-006	-----	
<b>Volatile Organic Compounds</b>											
Chloroform	67-66-3	E611D/WP	mg/L	<0.00050	<0.00050	----	----	----	----	----	
Dibromochloromethane	124-48-1	E611D/WP		<0.00050	<0.00050	----	----	----	----	----	
Dichloromethane	75-09-2	E611D/WP	mg/L	<0.0010	<0.0010	----	----	----	----	----	
Ethylbenzene	100-41-4	E611D/WP		<0.00050	<0.00050	----	----	----	----	----	
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D/WP	mg/L	<0.00050	<0.00050	----	----	----	----	----	
Tetrachloroethylene	127-18-4	E611D/WP		<0.00050	<0.00050	----	----	----	----	----	
Toluene	108-88-3	E611D/WP	mg/L	<0.00050	<0.00050	----	----	----	----	----	
Trichloroethane, 1,1,1-	71-55-6	E611D/WP		<0.00050	<0.00050	----	----	----	----	----	
Trichloroethane, 1,1,2-	79-00-5	E611D/WP	mg/L	<0.00050	<0.00050	----	----	----	----	----	
Trichloroethylene	79-01-6	E611D/WP		<0.00050	<0.00050	----	----	----	----	----	
Xylene, m+p-	179601-23-1	E611D/WP	mg/L	<0.00040	<0.00040	----	----	----	----	----	
Xylene, o-	95-47-6	E611D/WP		<0.00030	<0.00030	----	----	----	----	----	
Xylenes, total	1330-20-7	E611D/WP	mg/L	<0.00050	<0.00050	----	----	----	----	----	
BTEX, total	----	E611D/WP		<0.0010	<0.0010	----	----	----	----	----	
<b>Volatile Organic Compounds Surrogates</b>											
Bromofluorobenzene, 4-	460-00-4	E611D/WP	%	89.4	89.6	----	----	----	----	----	
Diffuorobenzene, 1,4-	540-36-3	E611D/WP		102	102	----	----	----	----	----	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Key:



## QUALITY CONTROL INTERPRETIVE REPORT

<p><b>Work Order</b> : <b>WP2320427</b></p> <p><b>Client</b> : <b>Manitoba Conservation &amp; Climate</b></p> <p><b>Contact</b> : Sarah Belisle</p> <p><b>Address</b> : Unit B - 284 Reimer Avenue Steinbach MB Canada R5G 0R5</p> <p><b>Telephone</b> : ----</p> <p><b>Project</b> : STEINBACH - PWS 219.00</p> <p><b>PO</b> : ----</p> <p><b>C-O-C number</b> : ----</p> <p><b>Sampler</b> : ----</p> <p><b>Site</b> : Steinbach - PWS 219.00 Op ID: 6607</p> <p><b>Quote number</b> : WTP Chemistry</p> <p><b>No. of samples received</b> : 6</p> <p><b>No. of samples analysed</b> : 6</p>	<p><b>Page</b> : 1 of 16</p> <p><b>Laboratory</b> : ALS Environmental - Winnipeg</p> <p><b>Account Manager</b> : Sheriza Rajack-Ahamed</p> <p><b>Address</b> : 1329 Niakwa Road East, Unit 12 Winnipeg, Manitoba Canada R2J 3T4</p> <p><b>Telephone</b> : +1 204 255 9720</p> <p><b>Date Samples Received</b> : 22-Aug-2023 12:05</p> <p><b>Issue Date</b> : 30-Aug-2023 08:02</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

**Key**

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

### ***Workorder Comments***

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

### ***Summary of Outliers***

#### ***Outliers : Quality Control Samples***

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

#### ***Outliers: Reference Material (RM) Samples***

- No Reference Material (RM) Sample outliers occur.

***Outliers : Analysis Holding Time Compliance (Breaches)***

- Analysis Holding Time Outliers exist - please see following pages for full details.

***Outliers : Frequency of Quality Control Samples***

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.