



Conservation and Water Stewardship

Office of Drinking Water
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PWS 49.50

September 5, 2014

Reeve and Council
Rural Municipality of Victoria
Box 40
Holland, MB R0G 0X0

RE: Inspection of the Cypress River Public Water System

This letter is in follow-up to the August 12, 2014 inspection of the Cypress River public water system. The primary focus of the inspection was to confirm compliance with the terms and conditions of Cypress River Public Water System Operating Licence PWS-08-241-01.

Mr. Neil Young, water plant operator, was in attendance.

Compliance:

- A copy of the operating licence was posted at the water treatment plant
- Water samples for bacteriological analysis are being submitted on a bi-weekly basis.
- Monthly monitoring report forms are being submitted to this office at the end of each month.

Required for Compliance:

- It was noted during the inspection that the operator was using the wrong reagent for his chlorine meter. Mr. Young ordered the correct supplies right away and is now using the correct reagent.

Recommended Actions:

- A well assessment was performed on the date of the inspection. The Office of Drinking Water recommends that well casings extend at least .45 meters (18 inches) above the ground. Currently the east well casing only extends 11 inches off the ground.

During the inspection, water samples were taken for general chemical analysis. The results (attached) indicate that the treated water met all health and aesthetic parameters.

If you have any questions about the inspection or any other drinking water related issues, please call me at (204) 570-1405.

Sincerely,



Christine Gerardy
Drinking Water Officer

e-copy: Ivan Bruneau, CAO
copy: Neil Young, Operator





Office of Drinking Water
ATTN: CHRISTINE GERARDY
1129 Queens Avenue
Brandon MB R7A 1L9

Date Received: 13-AUG-14
Report Date: 27-AUG-14 14:04 (MT)
Version: FINAL

Client Phone: 204-570-1405

Certificate of Analysis

Lab Work Order #: L1501198
Project P.O. #: 28101
Job Reference: CYPRESS RIVER - PWS 49.50
C of C Numbers:
Legal Site Desc:

Judy Dalmaijer
Account Manager

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ANALYTICAL REPORT

L1501198 CONTD....
PAGE 2 of 8
27-AUG-14 14:04 (MT)

Physical Tests (WATER)

		ALS ID		L1501198-1	L1501198-2
		Sampled Date		12-AUG-14	12-AUG-14
		Sampled Time		09:30	09:30
		Sample ID		CYPRESS	CYPRESS
				RIVER 1 - RAW	RIVER 2 - TREATED
Analyte	Unit	Guide Limit #1	Guide Limit #2		
Colour, True	CU	15	-	<5.0	<5.0
Conductivity	umhos/cm	-	-	582	589
Hardness (as CaCO3)	mg/L	-	-	291	290
Langelier Index (4 C)	No Unit	-	-	0.56	0.57
Langelier Index (60 C)	No Unit	-	-	1.3	1.3
pH	pH units	6.5-8.5	-	7.93	7.95
Total Dissolved Solids	mg/L	500	-	367	371
Transmittance, UV (254 nm)	% T	-	-	90.8	91.6
Turbidity	NTU	-	-	0.19	0.13

Federal Guidelines for Canadian Drinking Water Quality (AUG, 2012)

#1: GCDWQ - Aesthetic Objective

#2: GCDWQ - Maximum Acceptable Concentrations (MACs)

Anions and Nutrients (WATER)

		ALS ID		L1501198-1	L1501198-2
		Sampled Date		12-AUG-14	12-AUG-14
		Sampled Time		09:30	09:30
		Sample ID		CYPRESS	CYPRESS
				RIVER 1 - RAW	RIVER 2 - TREATED
Analyte	Unit	Guide Limit #1	Guide Limit #2		
Alkalinity, Total (as CaCO3)	mg/L	-	-	311	311
Ammonia, Total (as N)	mg/L	-	-	0.111	<0.010
Bicarbonate (HCO3)	mg/L	-	-	380	380
Bromide (Br)	mg/L	-	-	<0.10	<0.10
Carbonate (CO3)	mg/L	-	-	<12	<12
Chloride	mg/L	250	-	2.29	4.76
Fluoride	mg/L	-	1.5	0.299	0.295
Hydroxide (OH)	mg/L	-	-	<6.8	<6.8
Iodide (I)	mg/L	-	-	<2.0	<2.0
Nitrate and Nitrite as N	mg/L	-	10	0.502	0.474
Nitrate-N	mg/L	-	10	0.501	0.474
Nitrite-N	mg/L	-	1	0.0011	<0.0010
Total Kjeldahl Nitrogen	mg/L	-	-	0.30	<0.20
Total Nitrogen	mg/L	-	-	0.80	0.47
Sulfate	mg/L	500	-	19.8	19.4
Anion Sum	me/L	-	-	6.76	6.82
Cation Sum	me/L	-	-	6.26	6.31
Cation - Anion Balance	%	-	-	-3.8	-3.8

Federal Guidelines for Canadian Drinking Water Quality (AUG, 2012)

#1: GCDWQ - Aesthetic Objective

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ANALYTICAL REPORT

Organic / Inorganic Carbon (WATER)

		ALS ID		L1501198-1	L1501198-2
		Sampled Date		12-AUG-14	12-AUG-14
		Sampled Time		09:30	09:30
		Sample ID		CYPRESS	CYPRESS
				RIVER 1 - RAW	RIVER 2 - TREATED
Analyte	Unit	Guide Limit #1	Guide Limit #2		
Dissolved Organic Carbon	mg/L	-	-	4.7	2.9
Total Inorganic Carbon	mg/L	-	-	74.6	75.5
Total Organic Carbon	mg/L	-	-	4.5	3.1

Federal Guidelines for Canadian Drinking Water Quality (AUG, 2012)

#1: GCDWQ - Aesthetic Objective

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ANALYTICAL REPORT

Total Metals (WATER)

		ALS ID		L1501198-1	L1501198-2
		Sampled Date		12-AUG-14	12-AUG-14
		Sampled Time		09:30	09:30
		Sample ID		CYPRESS	CYPRESS
				RIVER 1 - RAW	RIVER 2 - TREATED
Analyte	Unit	Guide Limit #1	Guide Limit #2		
Aluminum (Al)-Total	mg/L	0.1	-	<0.0050	<0.0050
Antimony (Sb)-Total	mg/L	-	0.006	<0.00020	<0.00020
Arsenic (As)-Total	mg/L	-	0.01	0.00688	0.00539
Barium (Ba)-Total	mg/L	-	1	0.233	0.222
Beryllium (Be)-Total	mg/L	-	-	<0.00020	<0.00020
Bismuth (Bi)-Total	mg/L	-	-	<0.00020	<0.00020
Boron (B)-Total	mg/L	-	5	0.074	0.074
Cadmium (Cd)-Total	mg/L	-	0.005	<0.000010	<0.000010
Calcium (Ca)-Total	mg/L	-	-	67.6	65.9
Cesium (Cs)-Total	mg/L	-	-	<0.00010	<0.00010
Chromium (Cr)-Total	mg/L	-	0.05	<0.0010	<0.0010
Cobalt (Co)-Total	mg/L	-	-	0.00045	<0.00020
Copper (Cu)-Total	mg/L	1	-	0.00025	0.241
Iron (Fe)-Total	mg/L	0.3	-	0.020	<0.010
Lead (Pb)-Total	mg/L	-	0.01	<0.000090	0.000852
Lithium (Li)-Total	mg/L	-	-	0.0336	0.0333
Magnesium (Mg)-Total	mg/L	-	-	29.7	30.4
Manganese (Mn)-Total	mg/L	0.05	-	0.404	0.00319
Molybdenum (Mo)-Total	mg/L	-	-	0.00524	0.00374
Nickel (Ni)-Total	mg/L	-	-	<0.0020	<0.0020
Phosphorus (P)-Total	mg/L	-	-	<0.10	<0.10
Potassium (K)-Total	mg/L	-	-	3.15	3.35
Rubidium (Rb)-Total	mg/L	-	-	0.00162	0.00171
Selenium (Se)-Total	mg/L	-	0.01	<0.0010	<0.0010
Silicon (Si)-Total	mg/L	-	-	12.1	12.3
Silver (Ag)-Total	mg/L	-	-	<0.00010	<0.00010
Sodium (Na)-Total	mg/L	200	-	8.02	10.0
Strontium (Sr)-Total	mg/L	-	-	0.473	0.475
Tellurium (Te)-Total	mg/L	-	-	<0.00020	<0.00020
Thallium (Tl)-Total	mg/L	-	-	<0.00010	<0.00010
Thorium (Th)-Total	mg/L	-	-	<0.00010	<0.00010
Tin (Sn)-Total	mg/L	-	-	<0.00020	<0.00020
Titanium (Ti)-Total	mg/L	-	-	<0.00050	<0.00050

Federal Guidelines for Canadian Drinking Water Quality (AUG, 2012)

#1: GCDWQ - Aesthetic Objective

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Total Metals (WATER)

		ALS ID		L1501198-1	L1501198-2
		Sampled Date		12-AUG-14	12-AUG-14
		Sampled Time		09:30	09:30
		Sample ID		CYPRESS	CYPRESS
				RIVER 1 - RAW	RIVER 2 - TREATED
Analyte	Unit	Guide Limit #1	Guide Limit #2		
Tungsten (W)-Total	mg/L	-	-	<0.00010	<0.00010
Uranium (U)-Total	mg/L	-	0.02	0.00743	0.00745
Vanadium (V)-Total	mg/L	-	-	<0.00020	<0.00020
Zinc (Zn)-Total	mg/L	5	-	<0.0020	0.0050
Zirconium (Zr)-Total	mg/L	-	-	<0.00040	<0.00040

Federal Guidelines for Canadian Drinking Water Quality (AUG, 2012)

#1: GCDWQ - Aesthetic Objective

#2: GCDWQ - Maximum Acceptable Concentrations (MACs)

Dissolved Metals (WATER)

		ALS ID		L1501198-1	L1501198-2
		Sampled Date		12-AUG-14	12-AUG-14
		Sampled Time		09:30	09:30
		Sample ID		CYPRESS	CYPRESS
				RIVER 1 - RAW	RIVER 2 - TREATED
Analyte	Unit	Guide Limit #1	Guide Limit #2		
Aluminum (Al)-Dissolved	mg/L	0.1	-	<0.0020	<0.0020

Federal Guidelines for Canadian Drinking Water Quality (AUG, 2012)

#1: GCDWQ - Aesthetic Objective

#2: GCDWQ - Maximum Acceptable Concentrations (MACs)

Volatile Organic Compounds (WATER)

		ALS ID		L1501198-1
		Sampled Date		12-AUG-14
		Sampled Time		09:30
		Sample ID		CYPRESS
				RIVER 1 - RAW
Analyte	Unit	Guide Limit #1	Guide Limit #2	
Benzene	mg/L	-	0.005	<0.00050
1,1-dichloroethene	mg/L	-	0.014	<0.00050
Dichloromethane	mg/L	-	0.05	<0.00050
Ethylbenzene	mg/L	0.0016	0.14	<0.00050
MTBE	mg/L	0.015	-	<0.00050
1,1,1,2-Tetrachloroethane	mg/L	-	-	<0.00050
1,1,2,2-Tetrachloroethane	mg/L	-	-	<0.00050
Tetrachloroethene	mg/L	-	0.01	<0.00050
Toluene	mg/L	0.024	0.06	<0.00050
1,1,1-Trichloroethane	mg/L	-	-	<0.00050
1,1,2-Trichloroethane	mg/L	-	-	<0.00050
Trichloroethene	mg/L	-	0.005	<0.00050
o-Xylene	mg/L	-	-	<0.00050
m+p-Xylenes	mg/L	-	-	<0.00050
Xylenes (Total)	mg/L	0.02	0.09	<0.0015

Federal Guidelines for Canadian Drinking Water Quality (AUG, 2012)

#1: GCDWQ - Aesthetic Objective

GCDWQ - Maximum Acceptable Concentrations (MACs)

- ☐ Detection Limit for result exceeds Guide Limit. Assessment against Guide Limit cannot be made.
- ☐ Analytical result for this parameter exceeds Guide Limit listed on this report.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
AL-D-L-MS-WP	Water	Dissolved Aluminum by ICP-MS	APHA 3030B/EPA 6020A -DL
This analysis involves filtration (APHA 3030B) and analysis by inductively coupled plasma - mass spectrometry (EPA Method 6020A).			
ALK-TOT-WP	Water	Alkalinity	APHA 2320B
Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. It is determined by titration with a standard solution of strong mineral acid to the successive HCO ₃ ⁻ and H ₂ CO ₃ endpoints indicated electrometrically.			
BR-IC-WP	Water	Bromide by Ion Chromatography	EPA 300.1 (Modified)
Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.			
C-TC,TIC,TOC-WP	Water	Carbons	APHA 5310 B-INSTRUMENTAL-WP
This method is applicable to the analysis of ground water, wastewater, and surface water samples. The form detected depends upon sample pretreatment: Unfiltered sample = TC, 0.45um filtered = TDC. Samples are injected into a combustion tube containing an oxidation catalyst. The carrier gas containing the combustion product from the combustion tube flows through an inorganic carbon reactor vessel and is then sent through a halogen scrubber into a sample cell set in a non-dispersive infrared gas analyzer (NDIR) where carbon dioxide is detected. For total inorganic carbon and dissolved inorganic carbon, the sample is injected into an IC reactor vessel where only the IC component is decomposed to become carbon dioxide.			
The peak area generated by the NDIR indicates the TC/TDC or TIC/DIC as applicable. The total organic carbon content of the sample is calculated by subtracting the TIC from the TC. TOC = TC-TIC, DOC = TDC-DIC, Particulate = Total - Dissolved.			
C-TDC,DIC,DOC-WP	Water	Carbons Dissolved	APHA 5310 B-INSTRUMENTAL-WP
This method is applicable to the analysis of ground water, wastewater, and surface water samples. The form detected depends upon sample pretreatment: Unfiltered sample = TC, 0.45um filtered = TDC. Samples are injected into a combustion tube containing an oxidation catalyst. The carrier gas containing the combustion product from the combustion tube flows through an inorganic carbon reactor vessel and is then sent through a halogen scrubber into a sample cell set in a non-dispersive infrared gas analyzer (NDIR) where carbon dioxide is detected. For total inorganic carbon and dissolved inorganic carbon, the sample is injected into an IC reactor vessel where only the IC component is decomposed to become carbon dioxide.			
The peak area generated by the NDIR indicates the TC/TDC or TIC/DIC as applicable. The total organic carbon content of the sample is calculated by subtracting the TIC from the TC. TOC = TC-TIC, DOC = TDC-DIC, Particulate = Total - Dissolved.			
CL-L-IC-WP	Water	Chloride by Ion Chromatography	EPA 300.1 (Modified)
Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.			
COLOUR-TRUE-WP	Water	Colour, True	APHA 2120C
True colour in water is analyzed by discrete analyzer using the platinum-cobalt colourimetric method. Colour is pH dependant; unless otherwise indicated, reported colour results pertain to the pH of the sample as received to within +/- 1 pH unit.			
EC-WP	Water	Conductivity	APHA 2510B
Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.			
ETL-HARDNESS-TOT-WP	Water	Hardness Calculated	HARDNESS CALCULATED
ETL-LANGELIER-4-WP	Water	Langelier Index 4C	Calculated
ETL-LANGELIER-60-WP	Water	Langelier Index 60C	Calculated
ETL-N-TOT-ANY-WP	Water	Total Nitrogen Calculated	Calculated
F-L-IC-WP	Water	Fluoride by Ion Chromatography	EPA 300.1 (Modified)
Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.			
FE-T-U-MS-WP	Water	Total Iron by ICP-MS	APHA 3030E/EPA 6020A-TU

Reference Information

Methods Listed (if applicable):

S Test Code	Matrix	Test Description	Method Reference**
This analysis involves preliminary sample treatment by hotblock acid digestion (APHA 3030E). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).			
I-IC-AD	Water	Iodide in Water - Datachem Ohio	SEE SUBLET LAB RESULTS
IONBALANCE-CALC-WP	Water	Ion Balance Calculation	APHA 1030E
MET-T-L-MS-WP	Water	Total Metals by ICP-MS	APHA 3030E/EPA 6020A-TL
This analysis involves preliminary sample treatment by hotblock acid digestion (APHA 3030E). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).			
N-TOTKJ-WP	Water	Total Kjeldahl Nitrogen	Quickchem method 10-107-06-2-E Lachat
Samples are digested with a sulphuric acid solution, cooled, diluted with water, and analyzed for ammonia. Total Kjeldahl nitrogen is the sum of free-ammonia and organic nitrogen compounds which are converted to ammonium sulphate through this digestion process. Analysis is performed by Flow Injection Analysis (FIA). The pH of the digested sample is raised to a known, basic pH by neutralization with a concentrated buffer solution. This neutralization converts the ammonium cation to ammonia. The ammonia produced is heated with salicylate and hypochlorite to produce blue colour which is proportional to the ammonia concentration.			
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.			
NO2+NO3-CALC-L-WP	Water	Nitrate+Nitrite	CALCULATION
NO2-L-IC-WP	Water	Nitrite as N by Ion Chromatography	EPA 300.1 (Modified)
Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.			
NO3-L-IC-WP	Water	Nitrate as N by Ion Chromatography	EPA 300.1 (Modified)
Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.			
PH-WP	Water	pH	APHA 4500H
The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.			
SO4-IC-WP	Water	Sulfate by Ion Chromatography	EPA 300.1 (Modified)
Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.			
SOLIDS-TDS-WP	Water	Total Dissolved Solids	APHA 2540 C (modified)
Total dissolved solids in aqueous matrices is determined gravimetrically after evaporation of the filtrate at 180 C.			
TRANSM-UV-WT	Water	Transmittance, UV (254 nm)	APHA 5910 B-Spectrophotometer
TURBIDITY-WP	Water	Turbidity	APHA 2130B (modified)
Turbidity in aqueous matrices is determined by the nephelometric method.			
VOC+F1-HSMS-WP	Water	VOC plus F1 by GCMS	EPA 8260C / EPA 5021A
In this method samples are analyzed using a headspace autosampler interfaced to a dual column gas chromatograph with MS and Flame Ionization detectors.			
XYLENES-SUM-CALC-WP	Water	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
Total xylenes represents the sum of o-xylene and m&p-xylene.			

S test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Reference Information

AD	ALS DATACHEM LABORATORIES
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.