CERTIFICATE OF ANALYSIS

REPORTED TO	Trail, City of - DW 1394 Pine Ave. Trail, BC V1R 4E6	**TEL** **FAX**	1-250-364-0842 1-250-364-0831
ATTENTION	Chris McIsaac	**WORK ORDER**	3070251
PO NUMBER	2013070	**RECEIVED / TEMP**	Jul-04-13 08:00 / 13.0 °C
PROJECT	WTP - Treated	**REPORTED**	Jul-10-13
PROJECT INFO		**COC NUMBER**	COC No#

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

Issued By: **Jennifer Shanko, AScT**
Administration Coordinator, Kelowna

Please contact CARO if more information is needed or to provide feedback on our services.

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ANALYSIS INFORMATION

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PROJECT WTP - Treated

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Analysis Description	Method Reference (* = modified from) Preparation	Analysis	Location
Alkalinity, speciated	N/A	APHA 2320 B	Kelowna
Alkalinity, total	N/A	APHA 2320 B	Kelowna
Ammonia-N, total colorimetric	N/A	APHA 4500-NH3 G	Kelowna
Chloride in Water by IC	N/A	APHA 4110 B	Kelowna
Conductivity in Water	N/A	APHA 2510 B	Kelowna
Dissolved Metals	APHA 3030 B	APHA 3125 B	Richmond
Fluoride in Water by IC	N/A	APHA 4110 B	Kelowna
Hardness as CaCO3 (CALC)	N/A	APHA 2340 B	Richmond
Nitrate-N in Water by IC	N/A	APHA 4110 B	Kelowna
Nitrite-N in Water by IC	N/A	APHA 4110 B	Kelowna
pH in Water	N/A	APHA 4500-H+ B	Kelowna
Sulfate in Water by IC	N/A	APHA 4110 B	Kelowna
Total Kjeldahl Nitrogen	N/A	EPA 351.2 (1993) *	Kelowna
Total Recoverable Metals	APHA 3030E *	APHA 3125 B	Richmond

Note: The numbers in brackets represent the year that the method was published/approved

Method Reference Descriptions:

APHA	Standard Methods for the Examination of Water and Wastewater, American Public Health Association
EPA	United States Environmental Protection Agency Test Methods

Glossary of Terms:

MRL	Method Reporting Limit
<	Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such as dilutions, limited sample volume, high moisture, or interferences
AO	Aesthetic objective
MAC	Maximum acceptable concentration (health-related guideline)
mg/L	Milligrams per litre
pH units	pH < 7 = acidic, ph > 7 = basic
uS/cm	Microsiemens per centimeter

SAMPLE ANALYTICAL DATA

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Analyte	Result / *Recovery*	Canadian DW Guideline	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Anions							
Sample ID: WTP Treated (3070251-01) [Water] Sampled: Jul-03-13 10:40							
Alkalinity, Total as CaCO3	**49**		1	mg/L	N/A	Jul-04-13	
Alkalinity, Phenolphthalein as CaCO3	< 1		1	mg/L	N/A	Jul-04-13	
Alkalinity, Carbonate as CaCO3	< 1		1	mg/L	N/A	Jul-04-13	
Alkalinity, Bicarbonate as CaCO3	**49**		1	mg/L	N/A	Jul-04-13	
Alkalinity, Hydroxide as CaCO3	< 1		1	mg/L	N/A	Jul-04-13	
Chloride	**3.26**	AO ≤ 250	0.10	mg/L	N/A	Jul-04-13	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	N/A	Jul-04-13	
Nitrogen, Nitrate as N	**0.068**	MAC = 10	0.010	mg/L	N/A	Jul-04-13	
Nitrogen, Nitrite as N	< 0.010	MAC = 1	0.010	mg/L	N/A	Jul-04-13	
Sulfate	**9.0**	AO ≤ 500	1.0	mg/L	N/A	Jul-04-13	
General Parameters							
Sample ID: WTP Treated (3070251-01) [Water] Sampled: Jul-03-13 10:40							
Conductivity (EC)	**126**		2	uS/cm	N/A	Jul-04-13	
Nitrogen, Ammonia as N, Total	< 0.020		0.020	mg/L	N/A	Jul-05-13	
Nitrogen, Total Kjeldahl	**0.17**		0.05	mg/L	Jul-04-13	Jul-08-13	
pH	**7.72**	AO = 6.5 - 8.5	0.01	pH units	N/A	Jul-04-13	
Calculated Parameters							
Sample ID: WTP Treated (3070251-01) [Water] Sampled: Jul-03-13 10:40							
Hardness, Total (Total as CaCO3)	**61.3**		5.0	mg/L	N/A	N/A	
Hardness, Total (Diss. as CaCO3)	**59.0**		5.0	mg/L	N/A	N/A	
Nitrogen, Nitrate+Nitrite as N	**0.068**		0.020	mg/L	N/A	N/A	
Dissolved Metals							
Sample ID: WTP Treated (3070251-01) [Water] Sampled: Jul-03-13 10:40							
Aluminum, dissolved	**0.08**		0.05	mg/L	N/A	Jul-08-13	
Antimony, dissolved	< 0.001		0.001	mg/L	N/A	Jul-08-13	
Arsenic, dissolved	< 0.005		0.005	mg/L	N/A	Jul-08-13	
Barium, dissolved	< 0.05		0.05	mg/L	N/A	Jul-08-13	
Beryllium, dissolved	< 0.001		0.001	mg/L	N/A	Jul-08-13	
Bismuth, dissolved	< 0.001		0.001	mg/L	N/A	Jul-08-13	
Boron, dissolved	< 0.04		0.04	mg/L	N/A	Jul-08-13	
Cadmium, dissolved	< 0.0001		0.0001	mg/L	N/A	Jul-08-13	
Calcium, dissolved	**17**		2	mg/L	N/A	Jul-08-13	
Chromium, dissolved	< 0.005		0.005	mg/L	N/A	Jul-08-13	
Cobalt, dissolved	< 0.0005		0.0005	mg/L	N/A	Jul-08-13	
Copper, dissolved	< 0.002		0.002	mg/L	N/A	Jul-08-13	
Iron, dissolved	< 0.1		0.1	mg/L	N/A	Jul-08-13	
Lead, dissolved	< 0.001		0.001	mg/L	N/A	Jul-08-13	
Lithium, dissolved	< 0.001		0.001	mg/L	N/A	Jul-08-13	
Magnesium, dissolved	**3.8**		0.1	mg/L	N/A	Jul-08-13	

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Dissolved Metals, Continued							
Sample ID: WTP Treated (3070251-01) [Water] Sampled: Jul-03-13 10:40, Continued							
Manganese, dissolved	< 0.002		0.002	mg/L	N/A	Jul-08-13	
Mercury, dissolved	< 0.0002		0.0002	mg/L	N/A	Jul-08-13	
Molybdenum, dissolved	< 0.001		0.001	mg/L	N/A	Jul-08-13	
Nickel, dissolved	< 0.002		0.002	mg/L	N/A	Jul-08-13	
Phosphorus, dissolved	< 0.2		0.2	mg/L	N/A	Jul-08-13	
Potassium, dissolved	**0.4**		0.2	mg/L	N/A	Jul-08-13	
Selenium, dissolved	< 0.005		0.005	mg/L	N/A	Jul-08-13	
Silicon, dissolved	< 5		5	mg/L	N/A	Jul-08-13	
Silver, dissolved	< 0.0005		0.0005	mg/L	N/A	Jul-08-13	
Sodium, dissolved	**1.7**		0.2	mg/L	N/A	Jul-08-13	
Strontium, dissolved	**0.10**		0.01	mg/L	N/A	Jul-08-13	
Sulfur, dissolved	< 10		10	mg/L	N/A	Jul-08-13	
Tellurium, dissolved	< 0.002		0.002	mg/L	N/A	Jul-08-13	
Thallium, dissolved	< 0.0002		0.0002	mg/L	N/A	Jul-08-13	
Thorium, dissolved	< 0.001		0.001	mg/L	N/A	Jul-08-13	
Tin, dissolved	< 0.002		0.002	mg/L	N/A	Jul-08-13	
Titanium, dissolved	< 0.05		0.05	mg/L	N/A	Jul-08-13	
Uranium, dissolved	**0.0002**		0.0002	mg/L	N/A	Jul-08-13	
Vanadium, dissolved	< 0.01		0.01	mg/L	N/A	Jul-08-13	
Zinc, dissolved	< 0.04		0.04	mg/L	N/A	Jul-08-13	
Zirconium, dissolved	< 0.001		0.001	mg/L	N/A	Jul-08-13	
Total Recoverable Metals							
Sample ID: WTP Treated (3070251-01) [Water] Sampled: Jul-03-13 10:40							
Aluminum, total	**0.09**	AO ≤ 0.1	0.05	mg/L	Jul-08-13	Jul-08-13	
Antimony, total	< 0.001	MAC = 0.006	0.001	mg/L	Jul-08-13	Jul-08-13	
Arsenic, total	< 0.005	MAC = 0.01	0.005	mg/L	Jul-08-13	Jul-08-13	
Barium, total	< 0.05	MAC = 1	0.05	mg/L	Jul-08-13	Jul-08-13	
Beryllium, total	< 0.001		0.001	mg/L	Jul-08-13	Jul-08-13	
Bismuth, total	< 0.001		0.001	mg/L	Jul-08-13	Jul-08-13	
Boron, total	< 0.04	MAC = 5	0.04	mg/L	Jul-08-13	Jul-08-13	
Cadmium, total	< 0.0001	MAC = 0.005	0.0001	mg/L	Jul-08-13	Jul-08-13	
Calcium, total	**18**		2	mg/L	Jul-08-13	Jul-08-13	
Chromium, total	< 0.005	MAC = 0.05	0.005	mg/L	Jul-08-13	Jul-08-13	
Cobalt, total	< 0.0005		0.0005	mg/L	Jul-08-13	Jul-08-13	
Copper, total	< 0.002	AO ≤ 1	0.002	mg/L	Jul-08-13	Jul-08-13	
Iron, total	< 0.1	AO ≤ 0.3	0.1	mg/L	Jul-08-13	Jul-08-13	
Lead, total	< 0.001	MAC = 0.01	0.001	mg/L	Jul-08-13	Jul-08-13	
Lithium, total	< 0.001		0.001	mg/L	Jul-08-13	Jul-08-13	
Magnesium, total	**4.0**		0.1	mg/L	Jul-08-13	Jul-08-13	
Manganese, total	< 0.002	AO ≤ 0.05	0.002	mg/L	Jul-08-13	Jul-08-13	
Mercury, total	< 0.0002	MAC = 0.001	0.0002	mg/L	Jul-08-13	Jul-08-13	
Molybdenum, total	< 0.001		0.001	mg/L	Jul-08-13	Jul-08-13	
Nickel, total	< 0.002		0.002	mg/L	Jul-08-13	Jul-08-13	

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Total Recoverable Metals, Continued							
Sample ID: WTP Treated (3070251-01) [Water] Sampled: Jul-03-13 10:40, Continued							
Phosphorus, total	< 0.2		0.2	mg/L	Jul-08-13	Jul-08-13	
Potassium, total	**0.3**		0.2	mg/L	Jul-08-13	Jul-08-13	
Selenium, total	< 0.005	MAC = 0.01	0.005	mg/L	Jul-08-13	Jul-08-13	
Silicon, total	< 5		5	mg/L	Jul-08-13	Jul-08-13	
Silver, total	< 0.0005		0.0005	mg/L	Jul-08-13	Jul-08-13	
Sodium, total	**1.6**	AO ≤ 200	0.2	mg/L	Jul-08-13	Jul-08-13	
Strontium, total	**0.10**		0.01	mg/L	Jul-08-13	Jul-08-13	
Sulfur, total	< 10		10	mg/L	Jul-08-13	Jul-08-13	
Tellurium, total	< 0.002		0.002	mg/L	Jul-08-13	Jul-08-13	
Thallium, total	< 0.0002		0.0002	mg/L	Jul-08-13	Jul-08-13	
Thorium, total	< 0.001		0.001	mg/L	Jul-08-13	Jul-08-13	
Tin, total	< 0.002		0.002	mg/L	Jul-08-13	Jul-08-13	
Titanium, total	< 0.05		0.05	mg/L	Jul-08-13	Jul-08-13	
Uranium, total	**0.0003**	MAC = 0.02	0.0002	mg/L	Jul-08-13	Jul-08-13	
Vanadium, total	< 0.01		0.01	mg/L	Jul-08-13	Jul-08-13	
Zinc, total	< 0.04	AO ≤ 5	0.04	mg/L	Jul-08-13	Jul-08-13	
Zirconium, total	< 0.001		0.001	mg/L	Jul-08-13	Jul-08-13	