



# CERTIFICATE OF ANALYSIS

**REPORTED TO** Regional District of Thompson Nicola  
300 - 465 Victoria Street  
Kamloops, BC V2C 2A9

**TEL** 1-250-377-8673  
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**ATTENTION** Shawn Kratchmer

**WORK ORDER** 3060093

**PO NUMBER** 23929  
**PROJECT** Evergreen CWS  
**PROJECT INFO**

**RECEIVED / TEMP** Jun-04-13 08:05 / 11.0 °C  
**REPORTED** Jun-11-13  
**COC NUMBER** 40837.5581

**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.***

**Locations:**

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## ANALYSIS INFORMATION

**REPORTED TO PROJECT** Regional District of Thompson Nicola  
Evergreen CWS

**WORK ORDER 3060093**  
**REPORTED Jun-11-13**

Analysis Description	Method Reference (* = modified from)		Location
	Preparation	Analysis	
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
Colour, True at 410 nm	N/A	APHA 2120 C *	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 Dissolved Solids	N/A	APHA 2540 C	Kelowna
Total Recoverable Metals	APHA 3030E *	APHA 3125 B	Richmond
Transmissivity at 254nm	N/A	APHA 5910 B	Kelowna
Trihalomethanes	EPA 5030B / 5021A	APHA 6200 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)
%	Percent W/W
Color Unit	Colour referenced against a platinum cobalt standard
mg/L	Milligrams per litre
uS/cm	Microsiemens per centimeter

**SAMPLE ANALYTICAL DATA**

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Evergreen CWS

**WORK ORDER REPORTED** 3060093  
Jun-11-13

Analyte	Result / Recovery	Canadian DW Guideline	MRL / Limit	Units	Prepared	Analyzed	Notes
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**Anions**

**Sample ID: Evergreen CWS (3060093-01) [Water] Sampled: Jun-03-13 11:38 To Jun-03-13 11:48**

Alkalinity, Total as CaCO3	309		1 mg/L		N/A	Jun-04-13	
Alkalinity, Phenolphthalein as CaCO3	< 1		1 mg/L		N/A	Jun-04-13	
Alkalinity, Carbonate as CaCO3	< 1		1 mg/L		N/A	Jun-04-13	
Alkalinity, Bicarbonate as CaCO3	309		1 mg/L		N/A	Jun-04-13	
Alkalinity, Hydroxide as CaCO3	< 1		1 mg/L		N/A	Jun-04-13	
Chloride	12.8	AO ≤ 250	0.10 mg/L		N/A	Jun-05-13	
Fluoride	0.21	MAC = 1.5	0.10 mg/L		N/A	Jun-05-13	
Nitrogen, Nitrate as N	0.297	MAC = 10	0.010 mg/L		N/A	Jun-05-13	
Nitrogen, Nitrite as N	< 0.010	MAC = 1	0.010 mg/L		N/A	Jun-05-13	
Sulfate	260	AO ≤ 500	1.0 mg/L		N/A	Jun-05-13	

**General Parameters**

**Sample ID: Evergreen CWS (3060093-01) [Water] Sampled: Jun-03-13 11:38 To Jun-03-13 11:48**

Colour, True	< 5	AO ≤ 15	5 Color Unit		N/A	Jun-04-13	
Conductivity (EC)	1040		2 uS/cm		N/A	Jun-04-13	
Nitrogen, Ammonia as N, Total	< 0.020		0.020 mg/L		N/A	Jun-06-13	
Solids, Total Dissolved	727	AO ≤ 500	5 mg/L		N/A	Jun-05-13	
UV Transmittance @ 254nm	96.4		0.1 %		N/A	Jun-07-13	

**Calculated Parameters**

**Sample ID: Evergreen CWS (3060093-01) [Water] Sampled: Jun-03-13 11:38 To Jun-03-13 11:48**

Total Trihalomethanes	0.024	0.1	0.004 mg/L		N/A	N/A	
Total Trihalomethanes (as CHCl3)	0.022		0.003 mg/L		N/A	N/A	
Hardness, Total (Total as CaCO3)	552		5.0 mg/L		N/A	N/A	
Hardness, Total (Diss. as CaCO3)	522		5.0 mg/L		N/A	N/A	
Nitrogen, Nitrate+Nitrite as N	0.297		0.020 mg/L		N/A	N/A	

**Dissolved Metals**

**Sample ID: Evergreen CWS (3060093-01) [Water] Sampled: Jun-03-13 11:38 To Jun-03-13 11:48**

Aluminum, dissolved	< 0.05		0.05 mg/L		N/A	Jun-06-13	
Antimony, dissolved	0.002		0.001 mg/L		N/A	Jun-06-13	
Arsenic, dissolved	< 0.005		0.005 mg/L		N/A	Jun-06-13	
Barium, dissolved	< 0.05		0.05 mg/L		N/A	Jun-06-13	
Beryllium, dissolved	< 0.001		0.001 mg/L		N/A	Jun-06-13	
Bismuth, dissolved	< 0.001		0.001 mg/L		N/A	Jun-06-13	
Boron, dissolved	< 0.04		0.04 mg/L		N/A	Jun-06-13	
Cadmium, dissolved	< 0.0001		0.0001 mg/L		N/A	Jun-06-13	
Calcium, dissolved	76		2 mg/L		N/A	Jun-06-13	
Chromium, dissolved	< 0.005		0.005 mg/L		N/A	Jun-06-13	
Cobalt, dissolved	< 0.0005		0.0005 mg/L		N/A	Jun-06-13	
Copper, dissolved	0.005		0.002 mg/L		N/A	Jun-06-13	
Iron, dissolved	< 0.1		0.1 mg/L		N/A	Jun-06-13	

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***Dissolved Metals, Continued***

**Sample ID: Evergreen CWS (3060093-01) [Water] Sampled: Jun-03-13 11:38 To Jun-03-13 11:48, Continued**

Lead, dissolved	< 0.001		0.001	mg/L	N/A	Jun-06-13	
Lithium, dissolved	<b>0.008</b>		0.001	mg/L	N/A	Jun-06-13	
Magnesium, dissolved	<b>80.7</b>		0.1	mg/L	N/A	Jun-06-13	
Manganese, dissolved	< 0.002		0.002	mg/L	N/A	Jun-06-13	
Mercury, dissolved	< 0.0002		0.0002	mg/L	N/A	Jun-06-13	
Molybdenum, dissolved	<b>0.004</b>		0.001	mg/L	N/A	Jun-06-13	
Nickel, dissolved	< 0.002		0.002	mg/L	N/A	Jun-06-13	
Phosphorus, dissolved	< 0.2		0.2	mg/L	N/A	Jun-06-13	
Potassium, dissolved	<b>3.7</b>		0.2	mg/L	N/A	Jun-06-13	
Selenium, dissolved	<b>0.010</b>		0.005	mg/L	N/A	Jun-06-13	
Silicon, dissolved	<b>8</b>		5	mg/L	N/A	Jun-06-13	
Silver, dissolved	< 0.0005		0.0005	mg/L	N/A	Jun-06-13	
Sodium, dissolved	<b>43.8</b>		0.2	mg/L	N/A	Jun-06-13	
Strontium, dissolved	<b>0.70</b>		0.01	mg/L	N/A	Jun-06-13	
Sulfur, dissolved	<b>80</b>		10	mg/L	N/A	Jun-06-13	
Tellurium, dissolved	< 0.002		0.002	mg/L	N/A	Jun-06-13	
Thallium, dissolved	< 0.0002		0.0002	mg/L	N/A	Jun-06-13	
Thorium, dissolved	< 0.001		0.001	mg/L	N/A	Jun-06-13	
Tin, dissolved	< 0.002		0.002	mg/L	N/A	Jun-06-13	
Titanium, dissolved	< 0.05		0.05	mg/L	N/A	Jun-06-13	
Uranium, dissolved	<b>0.0105</b>		0.0002	mg/L	N/A	Jun-06-13	
Vanadium, dissolved	< 0.01		0.01	mg/L	N/A	Jun-06-13	
Zinc, dissolved	< 0.04		0.04	mg/L	N/A	Jun-06-13	
Zirconium, dissolved	< 0.001		0.001	mg/L	N/A	Jun-06-13	

***Total Recoverable Metals***

**Sample ID: Evergreen CWS (3060093-01) [Water] Sampled: Jun-03-13 11:38 To Jun-03-13 11:48**

Aluminum, total	< 0.05	AO ≤ 0.1	0.05	mg/L	Jun-05-13	Jun-07-13	
Antimony, total	<b>0.001</b>	MAC = 0.006	0.001	mg/L	Jun-05-13	Jun-07-13	
Arsenic, total	< 0.005	MAC = 0.01	0.005	mg/L	Jun-05-13	Jun-07-13	
Barium, total	< 0.05	MAC = 1	0.05	mg/L	Jun-05-13	Jun-07-13	
Beryllium, total	< 0.001		0.001	mg/L	Jun-05-13	Jun-07-13	
Bismuth, total	< 0.001		0.001	mg/L	Jun-05-13	Jun-07-13	
Boron, total	< 0.04	MAC = 5	0.04	mg/L	Jun-05-13	Jun-07-13	
Cadmium, total	< 0.0001	MAC = 0.005	0.0001	mg/L	Jun-05-13	Jun-07-13	
Calcium, total	<b>81</b>		2	mg/L	Jun-05-13	Jun-07-13	
Chromium, total	< 0.005	MAC = 0.05	0.005	mg/L	Jun-05-13	Jun-07-13	
Cobalt, total	< 0.0005		0.0005	mg/L	Jun-05-13	Jun-07-13	
Copper, total	<b>0.009</b>	AO ≤ 1	0.002	mg/L	Jun-05-13	Jun-07-13	
Iron, total	< 0.1	AO ≤ 0.3	0.1	mg/L	Jun-05-13	Jun-07-13	
Lead, total	< 0.001	MAC = 0.01	0.001	mg/L	Jun-05-13	Jun-07-13	
Lithium, total	<b>0.009</b>		0.001	mg/L	Jun-05-13	Jun-07-13	
Magnesium, total	<b>84.8</b>		0.1	mg/L	Jun-05-13	Jun-07-13	

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**Total Recoverable Metals, Continued**

**Sample ID: Evergreen CWS (3060093-01) [Water] Sampled: Jun-03-13 11:38 To Jun-03-13 11:48, Continued**

Manganese, total	< 0.002	AO ≤ 0.05	0.002	mg/L	Jun-05-13	Jun-07-13	
Mercury, total	<b>0.0002</b>	MAC = 0.001	0.0002	mg/L	Jun-05-13	Jun-07-13	
Molybdenum, total	<b>0.003</b>		0.001	mg/L	Jun-05-13	Jun-07-13	
Nickel, total	< 0.002		0.002	mg/L	Jun-05-13	Jun-07-13	
Phosphorus, total	< 0.2		0.2	mg/L	Jun-05-13	Jun-07-13	
Potassium, total	<b>3.8</b>		0.2	mg/L	Jun-05-13	Jun-07-13	
Selenium, total	<b>0.010</b>	MAC = 0.01	0.005	mg/L	Jun-05-13	Jun-07-13	
Silicon, total	<b>8</b>		5	mg/L	Jun-05-13	Jun-07-13	
Silver, total	< 0.0005		0.0005	mg/L	Jun-05-13	Jun-07-13	
Sodium, total	<b>45.8</b>	AO ≤ 200	0.2	mg/L	Jun-05-13	Jun-07-13	
Strontium, total	<b>0.74</b>		0.01	mg/L	Jun-05-13	Jun-07-13	
Sulfur, total	<b>77</b>		10	mg/L	Jun-05-13	Jun-07-13	
Tellurium, total	< 0.002		0.002	mg/L	Jun-05-13	Jun-07-13	
Thallium, total	< 0.0002		0.0002	mg/L	Jun-05-13	Jun-07-13	
Thorium, total	< 0.001		0.001	mg/L	Jun-05-13	Jun-07-13	
Tin, total	< 0.002		0.002	mg/L	Jun-05-13	Jun-07-13	
Titanium, total	< 0.05		0.05	mg/L	Jun-05-13	Jun-07-13	
Uranium, total	<b>0.0114</b>	MAC = 0.02	0.0002	mg/L	Jun-05-13	Jun-07-13	
Vanadium, total	< 0.01		0.01	mg/L	Jun-05-13	Jun-07-13	
Zinc, total	< 0.04	AO ≤ 5	0.04	mg/L	Jun-05-13	Jun-07-13	
Zirconium, total	< 0.001		0.001	mg/L	Jun-05-13	Jun-07-13	

**Volatile Organic Compounds (VOC)**

**Sample ID: Evergreen CWS (3060093-01) [Water] Sampled: Jun-03-13 11:38 To Jun-03-13 11:48**

Bromodichloromethane	<b>0.005</b>		0.001	mg/L	N/A	Jun-07-13	
Bromoform	< 0.001		0.001	mg/L	N/A	Jun-07-13	
Chloroform	<b>0.017</b>		0.001	mg/L	N/A	Jun-07-13	
Dibromochloromethane	<b>0.002</b>		0.001	mg/L	N/A	Jun-07-13	
Surrogate: Toluene-d8	85 %		80-120		N/A	Jun-07-13	
Surrogate: 4-Bromofluorobenzene	79 %		80-120		N/A	Jun-07-13	S02

**Sample / Analysis Qualifiers:**

S02 Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.