

**CERTIFICATE OF ANALYSIS**

<b>CLIENT</b>	<b>Regional District of Thompson Nicola</b> 300 - 465 Victoria Street Kamloops BC V2C 2A9	TEL 1-250-377-8673 FAX 1-250-374-6489
<b>ATTENTION</b>	<b>Denise Roberts</b>	
<b>RECEIVED / TEMP REPORTED</b>	May-24-12 08:10 / 8.0 °C Jun-04-12	<b>WORK ORDER</b> 2051243 <b>PROJECT</b> Vavenby System CWS
<b>COC #(s)</b>	40837.5581	

**General Comments:**

CARO Analytical Services employs methods which are based on those found in "Standard Methods for the Examination of Water and Wastewater", 21st Edition, 2005, published by the American Public Health Association (APHA); US EPA protocols found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846", 3rd Edition; protocols published by the British Columbia Ministry of Environment (BCMOE); and/or CCME Canada-wide Standard Reference methods.

Methods not described in these publications are conducted according to procedures accepted by appropriate regulatory agencies, and/or are done 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 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.

- All solids results are reported on a dry weight basis unless otherwise noted
- Units:
  - mg/kg = milligrams per kilogram, equivalent to parts per million (ppm)
  - mg/L = milligrams per litre, equivalent to parts per million (ppm)
  - ug/L = micrograms per litre, equivalent to parts per billion (ppb)
  - ug/g = micrograms per gram, equivalent to parts per million (ppm)
  - ug/m3 = micrograms per cubic meter of air
- "RDL" Reported detection limit
- "<" Less than reported detection limit
- "AO" Aesthetic objective
- "MAC" Maximum acceptable concentration (health-related guideline)
- "LAB" RMD = Richmond location, KEL = Kelowna location, EDM = Edmonton location, SUB = Subcontracted

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

**CARO Analytical Services**

Final Review Per: **Sara Gulenchyn For Jennifer Shanko, ASCT**  
Administration Coordinator, Kelowna

**Locations:**

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**SAMPLE DATA**



**CLIENT** Regional District of Thompson Nicola  
**PROJECT** Vavenby System CWS

**WORK ORDER #** 2051243  
**REPORTED** Jun-04-12

Analyte	Result	Canadian DW Guideline (Dec 10)	RDL	Units	Prepared	Analyzed	Notes
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**General Parameters**

Vavenby CWS (2051243-01) Matrix: Water Sampled: May-23-12 13:00

Alkalinity, Total as CaCO3	43		1	mg/L	May-25-12	May-27-12	
Alkalinity, Phenolphthalein as CaCO3	< 1		1	mg/L	May-25-12	May-28-12	
Alkalinity, Carbonate as CaCO3	< 1		1	mg/L	May-25-12	May-28-12	
Alkalinity, Bicarbonate as CaCO3	43		1	mg/L	May-25-12	May-28-12	
Alkalinity, Hydroxide as CaCO3	< 1		1	mg/L	May-25-12	May-28-12	
Chloride	5.87	AO ≤ 250	0.10	mg/L	May-24-12	May-25-12	
Colour, True	< 5	AO ≤ 15	5	Color Unit	May-25-12	May-29-12	
Conductivity (EC)	125		2	uS/cm	May-25-12	May-25-12	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	May-24-12	May-25-12	
Hardness, Total (Total as CaCO3)	48.6		5.0	mg/L	N/A	N/A	
Hardness, Total (Diss. as CaCO3)	46.7		5.0	mg/L	N/A	N/A	
Nitrogen, Ammonia as N	< 0.020		0.020	mg/L	May-24-12	May-25-12	
Nitrogen, Nitrate+Nitrite as N	0.427		0.020	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	0.427	MAC = 10	0.010	mg/L	May-24-12	May-25-12	
Nitrogen, Nitrite as N	< 0.010	MAC = 1	0.010	mg/L	May-24-12	May-25-12	
Solids, Total Dissolved	73	AO ≤ 500	5	mg/L	May-24-12	May-24-12	
Sulfate	6.9	AO ≤ 500	1.0	mg/L	May-24-12	May-25-12	
UV Transmittance @ 254nm	84.0		0.1	%	May-25-12	May-25-12	

**Dissolved Metals**

Vavenby CWS (2051243-01) Matrix: Water Sampled: May-23-12 13:00

Aluminum, dissolved	< 0.05		0.05	mg/L	May-28-12	May-28-12	
Antimony, dissolved	< 0.001		0.001	mg/L	May-28-12	May-28-12	
Arsenic, dissolved	< 0.005		0.005	mg/L	May-28-12	May-28-12	
Barium, dissolved	< 0.05		0.05	mg/L	May-28-12	May-28-12	
Beryllium, dissolved	< 0.001		0.001	mg/L	May-28-12	May-28-12	
Bismuth, dissolved	< 0.001		0.001	mg/L	May-28-12	May-28-12	
Boron, dissolved	< 0.04		0.04	mg/L	May-28-12	May-28-12	
Cadmium, dissolved	< 0.0001		0.0001	mg/L	May-28-12	May-28-12	
Calcium, dissolved	13		2	mg/L	May-28-12	May-28-12	
Chromium, dissolved	< 0.005		0.005	mg/L	May-28-12	May-28-12	
Cobalt, dissolved	< 0.0005		0.0005	mg/L	May-28-12	May-28-12	
Copper, dissolved	0.005		0.002	mg/L	May-28-12	May-28-12	
Iron, dissolved	< 0.1		0.1	mg/L	May-28-12	May-28-12	
Lead, dissolved	< 0.001		0.001	mg/L	May-28-12	May-28-12	
Lithium, dissolved	0.002		0.001	mg/L	May-28-12	May-28-12	
Magnesium, dissolved	3.4		0.1	mg/L	May-28-12	May-28-12	
Manganese, dissolved	< 0.002		0.002	mg/L	May-28-12	May-28-12	
Mercury, dissolved	< 0.0002		0.0002	mg/L	May-28-12	May-28-12	
Molybdenum, dissolved	< 0.001		0.001	mg/L	May-28-12	May-28-12	
Nickel, dissolved	< 0.002		0.002	mg/L	May-28-12	May-28-12	
Phosphorus, dissolved	< 0.2		0.2	mg/L	May-28-12	May-28-12	
Potassium, dissolved	1.6		0.2	mg/L	May-28-12	May-28-12	
Selenium, dissolved	< 0.005		0.005	mg/L	May-28-12	May-28-12	
Silicon, dissolved	< 5		5	mg/L	May-28-12	May-28-12	
Silver, dissolved	< 0.0005		0.0005	mg/L	May-28-12	May-28-12	

**SAMPLE DATA**



**CLIENT** Regional District of Thompson Nicola  
**PROJECT** Vavenby System CWS

**WORK ORDER #** 2051243  
**REPORTED** Jun-04-12

Analyte	Result	Canadian DW Guideline (Dec 10)	RDL Units	Prepared	Analyzed	Notes
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**Dissolved Metals, Continued**

**Vavenby CWS (2051243-01) Matrix: Water Sampled: May-23-12 13:00, Continued**

Sodium, dissolved	5.7		0.2 mg/L	May-28-12	May-28-12	
Strontium, dissolved	0.09		0.01 mg/L	May-28-12	May-28-12	
Sulfur, dissolved	< 10		10 mg/L	May-28-12	May-28-12	
Tellurium, dissolved	< 0.002		0.002 mg/L	May-28-12	May-28-12	
Thallium, dissolved	< 0.0002		0.0002 mg/L	May-28-12	May-28-12	
Thorium, dissolved	< 0.001		0.001 mg/L	May-28-12	May-28-12	
Tin, dissolved	< 0.002		0.002 mg/L	May-28-12	May-28-12	
Titanium, dissolved	< 0.05		0.05 mg/L	May-28-12	May-28-12	
Uranium, dissolved	0.0009		0.0002 mg/L	May-28-12	May-28-12	
Vanadium, dissolved	< 0.01		0.01 mg/L	May-28-12	May-28-12	
Zinc, dissolved	< 0.04		0.04 mg/L	May-28-12	May-28-12	
Zirconium, dissolved	< 0.001		0.001 mg/L	May-28-12	May-28-12	

**Total Recoverable Metals**

**Vavenby CWS (2051243-01) Matrix: Water Sampled: May-23-12 13:00**

Aluminum, total	< 0.05	AO ≤ 0.1	0.05 mg/L	May-28-12	May-28-12	
Antimony, total	< 0.001	MAC = 0.006	0.001 mg/L	May-28-12	May-28-12	
Arsenic, total	< 0.005	MAC = 0.01	0.005 mg/L	May-28-12	May-28-12	
Barium, total	< 0.05	MAC = 1	0.05 mg/L	May-28-12	May-28-12	
Beryllium, total	< 0.001		0.001 mg/L	May-28-12	May-28-12	
Bismuth, total	< 0.001		0.001 mg/L	May-28-12	May-28-12	
Boron, total	< 0.04	MAC = 5	0.04 mg/L	May-28-12	May-28-12	
Cadmium, total	< 0.0001	MAC = 0.005	0.0001 mg/L	May-28-12	May-28-12	
Calcium, total	14		2 mg/L	May-28-12	May-28-12	
Chromium, total	< 0.005	MAC = 0.05	0.005 mg/L	May-28-12	May-28-12	
Cobalt, total	< 0.0005		0.0005 mg/L	May-28-12	May-28-12	
Copper, total	0.005	AO ≤ 1	0.002 mg/L	May-28-12	May-28-12	
Iron, total	< 0.1	AO ≤ 0.3	0.1 mg/L	May-28-12	May-28-12	
Lead, total	< 0.001	MAC = 0.01	0.001 mg/L	May-28-12	May-28-12	
Lithium, total	0.002		0.001 mg/L	May-28-12	May-28-12	
Magnesium, total	3.5		0.1 mg/L	May-28-12	May-28-12	
Manganese, total	< 0.002	AO ≤ 0.05	0.002 mg/L	May-28-12	May-28-12	
Mercury, total	< 0.0002	MAC = 0.001	0.0002 mg/L	May-28-12	May-28-12	
Molybdenum, total	< 0.001		0.001 mg/L	May-28-12	May-28-12	
Nickel, total	< 0.002		0.002 mg/L	May-28-12	May-28-12	
Phosphorus, total	< 0.2		0.2 mg/L	May-28-12	May-28-12	
Potassium, total	1.7		0.2 mg/L	May-28-12	May-28-12	
Selenium, total	< 0.005	MAC = 0.01	0.005 mg/L	May-28-12	May-28-12	
Silicon, total	< 5		5 mg/L	May-28-12	May-28-12	
Silver, total	< 0.0005		0.0005 mg/L	May-28-12	May-28-12	
Sodium, total	5.8	AO ≤ 200	0.2 mg/L	May-28-12	May-28-12	
Strontium, total	0.09		0.01 mg/L	May-28-12	May-28-12	
Sulfur, total	< 10		10 mg/L	May-28-12	May-28-12	
Tellurium, total	< 0.002		0.002 mg/L	May-28-12	May-28-12	
Thallium, total	< 0.0002		0.0002 mg/L	May-28-12	May-28-12	
Thorium, total	< 0.001		0.001 mg/L	May-28-12	May-28-12	

**SAMPLE DATA**

**CLIENT PROJECT**

Regional District of Thompson Nicola  
Vavenby System CWS

**WORK ORDER # REPORTED**

2051243  
Jun-04-12

Analyte	Result	Canadian DW Guideline (Dec 10)	RDL	Units	Prepared	Analyzed	Notes
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**Total Recoverable Metals, Continued**

Vavenby CWS (2051243-01) Matrix: Water Sampled: May-23-12 13:00, Continued

Tin, total	< 0.002		0.002	mg/L	May-28-12	May-28-12	
Titanium, total	< 0.05		0.05	mg/L	May-28-12	May-28-12	
Uranium, total	0.001	MAC = 0.02	0.0002	mg/L	May-28-12	May-28-12	
Vanadium, total	< 0.0002		0.0002	mg/L	May-28-12	May-28-12	
Zinc, total	< 0.04	AO ≤ 5	0.04	mg/L	May-28-12	May-28-12	
Zirconium, total	< 0.001		0.001	mg/L	May-28-12	May-28-12	

**Volatile Organic Compounds**

Vavenby CWS (2051243-01) Matrix: Water Sampled: May-23-12 13:00

Bromodichloromethane	< 0.001		0.001	mg/L	May-28-12	May-28-12	
Bromoform	< 0.001		0.001	mg/L	May-28-12	May-28-12	
Chloroform	0.038		0.001	mg/L	May-28-12	May-28-12	
Dibromochloromethane	< 0.001		0.001	mg/L	May-28-12	May-28-12	
Total Trihalomethanes	0.038	0.1	0.004	mg/L	N/A	N/A	
Total Trihalomethanes (as CHCl3)	0.038		0.003	mg/L	N/A	N/A	
Surrogate: Toluene-d8	89 %		80-120		May-28-12	May-28-12	
Surrogate: 4-Bromofluorobenzene	92 %		80-120		May-28-12	May-28-12	

**Sample Qualifiers:**

F1 The sample was not field-filtered and was therefore filtered (0.45um) in the laboratory prior to analysis.