



Date: 29-MAY-20

PO No.:

WO No.: L2447817

LSD:

Project Ref: SAVONA WTP

Sample ID: SAVONA TREATMENT PLANT

Sampled By:

Date Collected: 14-MAY-20

Lab Sample ID: L2447817-1

Matrix: Water

THOMPSON NICOLA REGIONAL DISTRICT
300 - 465 Victoria Street
Kamloops BC V2C 2A9
ATTN: Tyrone McCabe

PAGE 1 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Physical Tests						
UV Absorbance (254 nm), Unfiltered	0.114		Abs/cm			15-MAY-20
Colour, True	<5.0		CU		15	17-MAY-20
Hardness (as CaCO3)	45.1		mg/L		500	28-MAY-20
Transmittance @ 254 NM, Un-Filtered	76.9		%T/cm			18-MAY-20
Organic / Inorganic Carbon						
Total Organic Carbon	3.87		mg/L			26-MAY-20
Total Metals						
Aluminum (Al)-Total	0.519		mg/L		0.1	19-MAY-20
Antimony (Sb)-Total	<0.00010		mg/L	0.006		19-MAY-20
Arsenic (As)-Total	0.00029		mg/L	0.01		19-MAY-20
Barium (Ba)-Total	0.0141		mg/L	2		19-MAY-20
Beryllium (Be)-Total	<0.00010		mg/L			19-MAY-20
Bismuth (Bi)-Total	<0.000050		mg/L			19-MAY-20
Boron (B)-Total	<0.010		mg/L	5		19-MAY-20
Cadmium (Cd)-Total	0.0000068		mg/L	0.005		19-MAY-20
Calcium (Ca)-Total	13.3		mg/L			19-MAY-20
Cesium (Cs)-Total	0.000073		mg/L			19-MAY-20
Chromium (Cr)-Total	0.00116		mg/L	0.05		19-MAY-20
Cobalt (Co)-Total	0.00039		mg/L			19-MAY-20
Copper (Cu)-Total	0.00530		mg/L	2.0	1.0	19-MAY-20
Iron (Fe)-Total	0.723		mg/L		0.3	19-MAY-20
Lead (Pb)-Total	0.000398		mg/L	0.005		19-MAY-20
Lithium (Li)-Total	0.0015		mg/L			19-MAY-20
Magnesium (Mg)-Total	2.91		mg/L			19-MAY-20
Manganese (Mn)-Total	0.0344		mg/L	0.12	0.02	19-MAY-20
Mercury (Hg)-Total	<0.0000050		mg/L	0.001		28-MAY-20
Molybdenum (Mo)-Total	0.00100		mg/L			19-MAY-20
Nickel (Ni)-Total	0.00164		mg/L			19-MAY-20
Phosphorus (P)-Total	<0.050		mg/L			19-MAY-20
Potassium (K)-Total	1.11		mg/L			19-MAY-20
Rubidium (Rb)-Total	0.00221		mg/L			19-MAY-20
Selenium (Se)-Total	0.000151		mg/L	0.05		19-MAY-20
Silicon (Si)-Total	4.26		mg/L			19-MAY-20
Silver (Ag)-Total	<0.000010		mg/L			19-MAY-20
Sodium (Na)-Total	5.50		mg/L		200	19-MAY-20
Strontium (Sr)-Total	0.0869		mg/L	7		19-MAY-20
Sulfur (S)-Total	2.15		mg/L			19-MAY-20
Tellurium (Te)-Total	<0.00020		mg/L			19-MAY-20
Thallium (Tl)-Total	0.000013		mg/L			19-MAY-20
Thorium (Th)-Total	0.00011		mg/L			19-MAY-20
Tin (Sn)-Total	<0.00010		mg/L			19-MAY-20
Titanium (Ti)-Total	0.0294		mg/L			19-MAY-20

ADDRESS: 1445 McGill Rd, Unit 2B, Kamloops BC, V2C 6K7 | Phone: +1 250 372 3588 | Fax: +1 250 372 3670

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Tungsten (W)-Total	<0.00010		mg/L			19-MAY-20
Uranium (U)-Total	0.000408		mg/L	0.02		19-MAY-20
Vanadium (V)-Total	0.00167		mg/L			19-MAY-20
Zinc (Zn)-Total	0.0194		mg/L		5.0	19-MAY-20
Zirconium (Zr)-Total	0.00031		mg/L			19-MAY-20
Dissolved Metals						
Dissolved Mercury Filtration Location	FIELD					16-MAY-20
Dissolved Metals Filtration Location	FIELD					26-MAY-20
Aluminum (Al)-Dissolved	0.0337		mg/L		0.1	28-MAY-20
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		28-MAY-20
Arsenic (As)-Dissolved	0.00015		mg/L	0.01		28-MAY-20
Barium (Ba)-Dissolved	0.00869		mg/L	2		28-MAY-20
Beryllium (Be)-Dissolved	<0.00010		mg/L			28-MAY-20
Bismuth (Bi)-Dissolved	<0.000050		mg/L			28-MAY-20
Boron (B)-Dissolved	<0.010		mg/L	5		28-MAY-20
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		28-MAY-20
Calcium (Ca)-Dissolved	13.5		mg/L			28-MAY-20
Cesium (Cs)-Dissolved	<0.000010		mg/L			28-MAY-20
Chromium (Cr)-Dissolved	0.00012		mg/L	0.05		28-MAY-20
Cobalt (Co)-Dissolved	<0.00010		mg/L			28-MAY-20
Copper (Cu)-Dissolved	0.00234		mg/L	2.0	1.0	28-MAY-20
Iron (Fe)-Dissolved	0.044		mg/L		0.3	28-MAY-20
Lead (Pb)-Dissolved	0.000302		mg/L	0.005		28-MAY-20
Lithium (Li)-Dissolved	<0.0010		mg/L			28-MAY-20
Magnesium (Mg)-Dissolved	2.75		mg/L			28-MAY-20
Manganese (Mn)-Dissolved	0.00203		mg/L	0.12	0.02	28-MAY-20
Mercury (Hg)-Dissolved	<0.0000050		mg/L	0.001		16-MAY-20
Molybdenum (Mo)-Dissolved	0.00112		mg/L			28-MAY-20
Nickel (Ni)-Dissolved	0.00068		mg/L			28-MAY-20
Phosphorus (P)-Dissolved	<0.050		mg/L			28-MAY-20
Potassium (K)-Dissolved	0.939		mg/L			28-MAY-20
Rubidium (Rb)-Dissolved	0.00123		mg/L			28-MAY-20
Selenium (Se)-Dissolved	0.000109		mg/L	0.05		28-MAY-20
Silicon (Si)-Dissolved	3.52		mg/L			28-MAY-20
Silver (Ag)-Dissolved	<0.000010		mg/L			28-MAY-20
Sodium (Na)-Dissolved	2.25		mg/L		200	28-MAY-20
Strontium (Sr)-Dissolved	0.0818		mg/L	7		28-MAY-20
Sulfur (S)-Dissolved	2.31		mg/L			28-MAY-20
Tellurium (Te)-Dissolved	<0.00020		mg/L			28-MAY-20
Thallium (Tl)-Dissolved	<0.000010		mg/L			28-MAY-20
Thorium (Th)-Dissolved	<0.00010		mg/L			28-MAY-20
Tin (Sn)-Dissolved	<0.00010		mg/L			28-MAY-20

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Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Titanium (Ti)-Dissolved	0.00085		mg/L			28-MAY-20
Tungsten (W)-Dissolved	<0.00010		mg/L			28-MAY-20
Uranium (U)-Dissolved	0.000382		mg/L	0.02		28-MAY-20
Vanadium (V)-Dissolved	<0.00050		mg/L			28-MAY-20
Zinc (Zn)-Dissolved	0.0038		mg/L		5.0	28-MAY-20
Zirconium (Zr)-Dissolved	<0.00020		mg/L			28-MAY-20
Trihalomethanes						
Bromodichloromethane	0.0014		mg/L			17-MAY-20
Bromoform	<0.0010		mg/L			17-MAY-20
Dibromochloromethane	<0.0010		mg/L			17-MAY-20
Chloroform	0.103		mg/L			17-MAY-20
Total THMs	0.105		mg/L	0.1		20-MAY-20
Haloacetic Acids						
Bromochloroacetic Acid	<1.0		ug/L			20-MAY-20
Dibromoacetic Acid	<1.0		ug/L			20-MAY-20
Dichloroacetic Acid	33.2		ug/L			20-MAY-20
Total Haloacetic Acids 5	94.0		ug/L			20-MAY-20
Bromoacetic Acid	<1.0		ug/L			20-MAY-20
Chloroacetic acid	<5.0		ug/L			20-MAY-20
Trichloroacetic Acid	60.8	DLHC	ug/L			20-MAY-20
CDWQG = Health Canada Guideline Limits updated JUNE 2019						
<p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit.</p> <p>* Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality</p> <p>- A blank entry designates no known limit.</p> <p>- A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by </p> <p>Amanda Lampreau Account Manager</p>						

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Guidelines & Objectives

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

Health Canada MAC Health Related Criteria Limits

Nitrate/Nitrite-N*	Criteria limit is 10 mg/L (1.0 mg/L if present as all Nitrite-N). High concentrations may contribute to blue baby syndrome in infants.
Lead*	A cumulative body poison, uncommon in naturally occurring hard waters.
Fluoride*	Present in fluoridated water supplies at 0.8 mg/L to reduce dental caries. Elevated levels causes fluorosis (mottling of teeth).
Total Coliforms*	Criteria is 0 CFU/100mL. Adverse health effects.
E. Coli*	Criteria is 0 CFU/100 mL. Certain E. Coli bacteria can be life threatening.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*Health Canada Canadian Drinking Water Quality Guidelines (MAC limit)

Aesthetic Objective Concentration Levels

Alkalinity	Acid neutralizing capacity. Usually a measure of carbonate and bicarbonates and calculated and reported as calcium carbonate.
Balance	Quality control parameter ratioing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -2
Calcium	See Hardness. Common major cation of water chemistry.
Chloride	Common major anion of water chemistry.
Conductance	Physical test measuring water salinity (dissolved ions or solids)
Hardness	Classical measure or capacity of water to precipitate soap (chiefly calcium and magnesium ions). Causes scaling tendency in water if carbonates/bicarbonates are present (if >200 mg/L). For drinking water purposes waters with results <200 mg/L are considered acceptable, results >200 mg/L are considered poor but can be tolerated. Results >500 mg/L are unacceptable.
Hydroxide	See alkalinity
Magnesium	See hardness. Common major cation of water chemistry. Elevated levels (>125 mg/L) may exert a cathartic or diuretic action.
pH	Measure of water acidity/alkalinity. Normal range is 7.0-8.5.
Potassium	Common major cation of water chemistry.
Sodium	Common major cation of water chemistry. Measure of salinity (saltiness).
Sulphate	Common major anion of water chemistry. Elevated levels may exert a cathartic or diuretic action.
Total Dissolved Solids	A measure of water salinity.
Iron	Causes staining to laundry and porcelain and astringent taste. Oxidizes to red-brown precipitate on exposure to air.
Heterotrophic Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

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 wwt - 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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 15 -

Page of

www.alsglobal.com

Contact and company name below will appear on the final report

Report Format / Distribution

Select Service Level Below - Please confirm all EAP TATs with your A.M. - surcharges will apply

Company: Thompson Nicola Regional District

Select Report Format: PDF EXCEL EDD (DIGITAL)

Regular TAT: Standard TAT if received by 3 pm - business days - no surcharges apply

Contact: Tyrone McCabe

Quality Control (QC) Report with Report YES NO

4 day (P4) 3 day (P3) 2 day (P2) 1 Business day (E1) Same Day, Weekend or Statutory holiday (E0)

Phone: 250-377-8873

Company address below will appear on the final report

EMERGENCY

Street: 300 - 465 Victoria St

Select Distribution: EMAIL MAIL FAX

Date and Time Required for all EAP TATs: _____

City/Province: Kamloops BC

Email 1 or Fax: skratzmer@trnd.ca

For tests that can not be performed according to the service level selected, you will be contacted.

Postal Code: V2C 2A9

Email 2: tmcabeb@trnd.ca

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below

Invoice To: Same as Report To

Invoice Distribution: EMAIL MAIL FAX

Analysis Request

Copy of Invoice with Report YES NO

Select Invoice Distribution: EMAIL MAIL FAX

Number of Containers

Company: Thompson Nicola Regional District

Email 1 or Fax: finance@trnd.ca

Contact: Accounts Payable

Email 2

ALS Account # / Quote #: TNR100 Q79867

Oil and Gas Required Fields (client use)

Job #: Savona WTP

AFECost Center: _____

PO / AFE: Savona WTP

Major/Minor Code: _____

LSD: _____

Requisitioner: _____

ALS Lab Work Order # (lab use only) L22447817

ALS Contact: Amanda Lampreau

ALS Sample # (lab use only) Savona Treatment Plant

Date (dd-mm-yy) 14-May-20

Time (hh:mm) 10:30

Sample Identification and/or Coordinates (This description will appear on the report)

Sample Type: Water



Drinking Water (DW) Samples (client use)

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Are samples taken from a Regulated DW System? YES NO

Are samples for human drinking water use? YES NO

SHIPPING RELEASE (client use)

Date: May 14/20

Time: 12:16

Received by: _____

INITIAL SHIPMENT RECEPTION (lab use only)

Date: MAY 14 2020

Time: 12:25

Received by: _____

FINAL SHIPMENT RECEPTION (lab use only)

Sample Condition as Received (lab use only)

Frozen Ice Packs Cooling Initiated

Silic Observations Yes No

Customer seal intact Yes No

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy. 1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FORM