



**CASH CLIENTS - WINNIPEG  
 NATURIST LEGACY INC  
 BOX 1955 STN MAIN  
 WINNIPEG MB R3C 3R2  
 ATTN: JOHN KUNDERT**

**Date:** 17-AUG-11  
**PO No.:** CLIENT PAID \$539.33 WITH VISA  
**WO No.:** L1042227  
**Project Ref:** BROKENHEAD  
**Sample ID:** JOHN KUNDERT - NATURIST LEGACY SAMPLE  
**Sampled By:**  
**Date Collected:** 09-AUG-11  
**Lab Sample ID:** L1042227-1  
**Matrix:** UNTREATED WELL

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<b>MB Conservation test 973</b>						
Langelier Index (4 C)	0.83					17-AUG-11
Langelier Index (60 C)	1.6					17-AUG-11
*Nitrate and Nitrite as N	<0.0051		mg/L	10		09-AUG-11
<b>pH</b>						
pH	8.25		pH units			12-AUG-11
<b>Transmittance, UV (254 nm)</b>						
Transmittance, UV (254 nm)	85.2		% T			11-AUG-11
<b>Total Metals by ICP-MS</b>						
Aluminum (Al)-Total	<0.0050		mg/L		0.1	11-AUG-11
Antimony (Sb)-Total	<0.00020		mg/L	0.006		11-AUG-11
Arsenic (As)-Total	0.00106		mg/L	0.01		11-AUG-11
Barium (Ba)-Total	0.0742		mg/L	1		11-AUG-11
Beryllium (Be)-Total	<0.00020		mg/L			11-AUG-11
Bismuth (Bi)-Total	<0.00020		mg/L			11-AUG-11
Boron (B)-Total	0.023		mg/L	5		11-AUG-11
Cadmium (Cd)-Total	0.000013		mg/L	0.005		11-AUG-11
Calcium (Ca)-Total	68.4		mg/L			11-AUG-11
Cesium (Cs)-Total	<0.00010		mg/L			11-AUG-11
Chromium (Cr)-Total	<0.0010		mg/L	0.05		11-AUG-11
Cobalt (Co)-Total	0.00021		mg/L			11-AUG-11
Copper (Cu)-Total	0.0984		mg/L		1.0	11-AUG-11
Iron (Fe)-Total	0.72		mg/L		0.3	11-AUG-11
Lead (Pb)-Total	0.00450		mg/L	0.01		11-AUG-11
Lithium (Li)-Total	0.0100		mg/L			11-AUG-11
Magnesium (Mg)-Total	24.2		mg/L			11-AUG-11
Manganese (Mn)-Total	0.0168		mg/L		0.05	11-AUG-11
Molybdenum (Mo)-Total	0.00126		mg/L			11-AUG-11
Nickel (Ni)-Total	<0.0020		mg/L			11-AUG-11
Phosphorus (P)-Total	<0.20		mg/L			11-AUG-11
Potassium (K)-Total	2.95		mg/L			11-AUG-11
Rubidium (Rb)-Total	0.00208		mg/L			11-AUG-11
Selenium (Se)-Total	<0.0010		mg/L	0.01		11-AUG-11
Silicon (Si)-Total	7.01		mg/L			11-AUG-11
Silver (Ag)-Total	<0.00010		mg/L			11-AUG-11
Sodium (Na)-Total	27.6		mg/L		200	11-AUG-11
Strontium (Sr)-Total	0.115		mg/L			11-AUG-11
Tellurium (Te)-Total	<0.00020		mg/L			11-AUG-11
Thallium (Tl)-Total	<0.00010		mg/L			11-AUG-11
Thorium (Th)-Total	<0.00010		mg/L			11-AUG-11
Tin (Sn)-Total	0.00031		mg/L			11-AUG-11
Titanium (Ti)-Total	0.00031		mg/L			11-AUG-11

ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721  
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<b>MB Conservation test 973</b>						
<b>Total Metals by ICP-MS</b>						
Tungsten (W)-Total	<0.0010		mg/L			11-AUG-11
Uranium (U)-Total	0.00108		mg/L	0.02		11-AUG-11
Vanadium (V)-Total	<0.00020		mg/L			11-AUG-11
Zinc (Zn)-Total	0.0891		mg/L		5.0	11-AUG-11
Zirconium (Zr)-Total	<0.00040		mg/L			11-AUG-11
<b>Total Dissolved Solids</b>						
Total Dissolved Solids	370		mg/L		500	12-AUG-11
<b>Sulfate</b>						
Sulfate	23.5		mg/L		500	11-AUG-11
<b>Nitrite as N</b>						
*Nitrite-N	<0.0010		mg/L	1		11-AUG-11
<b>Nitrate as N</b>						
*Nitrate-N	<0.0050		mg/L	10		11-AUG-11
<b>Ion Balance Calculation</b>						
Ion Balance	98.8		%			17-AUG-11
TDS (Calculated)	339		mg/L		500	17-AUG-11
Hardness (as CaCO3)	270		mg/L		500	17-AUG-11
<b>Fluoride</b>						
Fluoride	0.110		mg/L	1.5		11-AUG-11
<b>Conductivity</b>						
Conductivity	579		umhos/cm			12-AUG-11
<b>Colour, True</b>						
Colour, True	<5.0		CU			12-AUG-11
<b>Chloride</b>						
Chloride	29.4		mg/L		250	11-AUG-11
<b>Carbons</b>						
Total Carbon	66.4		mg/L			12-AUG-11
Total Inorganic Carbon	65.2		mg/L			12-AUG-11
Total Organic Carbon	1.2		mg/L			12-AUG-11
<b>Ammonia by colour</b>						
Ammonia as N	0.073		mg/L			16-AUG-11
<b>Alkalinity</b>						
Alkalinity, Total (as CaCO3)	272		mg/L			12-AUG-11
Bicarbonate (HCO3)	332		mg/L			12-AUG-11
Carbonate (CO3)	<0.60		mg/L			12-AUG-11
Hydroxide (OH)	<0.40		mg/L			12-AUG-11

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Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<b>Total Coliform and E.coli</b>						
Total Coliforms	0		MPN/100mL	0		10-AUG-11
Escherichia Coli	0		MPN/100mL	0		10-AUG-11
<b>CDWQG = Health Canada Guideline Limits updated MAY 2008</b>						
* 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. * 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 - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.						
Approved by <u><i>Robert S. Kitlar</i></u> Robert S. Kitlar Project Manager						

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## Guidelines & Objectives

### 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.

\*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 <sub>3</sub> -1
Carbonate	See Alkalinity. Reported at the anion CO <sub>3</sub> -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.
Manganese	Elevated levels may cause staining of laundry and porcelain.
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.