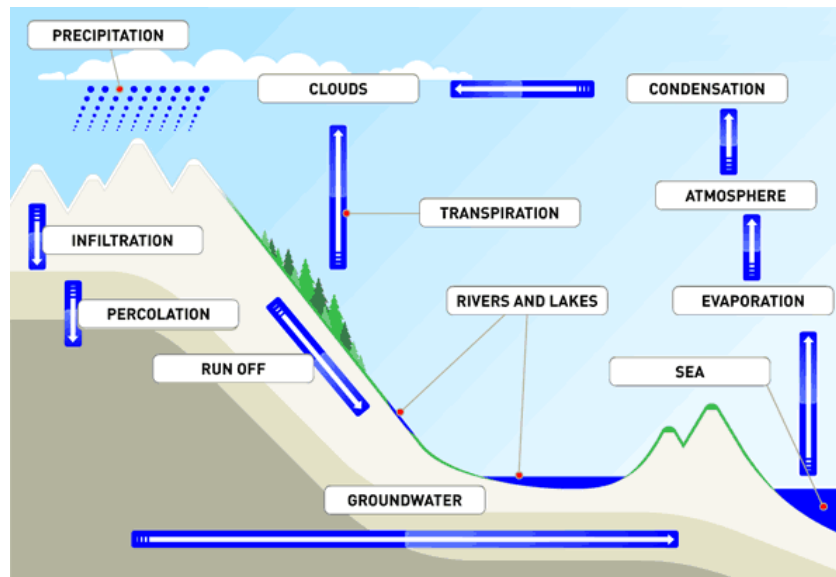




ALBERNI-CLAYOQUOT  
REGIONAL DISTRICT

## 2013 Annual Water System Report



“Hydrologic Cycle”

January, 2014

Environmental Services Department  
Alberni-Clayoquot Regional District  
3008 Fifth Avenue  
Port Alberni, BC

Written by:  
John Thomas  
Environmental Services Technician

## **Introduction**

This annual water systems report will provide an overview of the Alberni-Clayoquot Regional District's (ACRD) water services. It is our responsibility to the community and to the provincial health authority to share this information. This report is for the public review.

Within the Province of British Columbia the Drinking Water Protection Act and the Drinking Water Regulation prescribes the performance of the water suppliers. Examples of some of these are that the supplier must at all times provide potable water and monitor its sources. The Drinking Water Protection Act Section 15 and the Drinking Water Protection Regulation Section 11 outline the basic requirements that pertain to this annual report.

The Province of British Columbia is responsible for public health and the governance is distributed to local health authorities. The ACRD falls under the Island Health Authority (IHA), whose mission is to minimize health risks to the public. IHA's Drinking Water program assists with safe drinking water to our communities. This is looked after by IHA's Public Health Engineer and the Environmental Health Officer, who evaluates water sources, grants permits and performs inspections.

## **Management**

The Environmental Services Department at the ACRD is responsible for the overall management of the water systems including administrative services. The water systems are maintained by Environmental Operators Certificate Program's (EOCP) certified employees. The following is a list of ACRD water systems and who operates them:

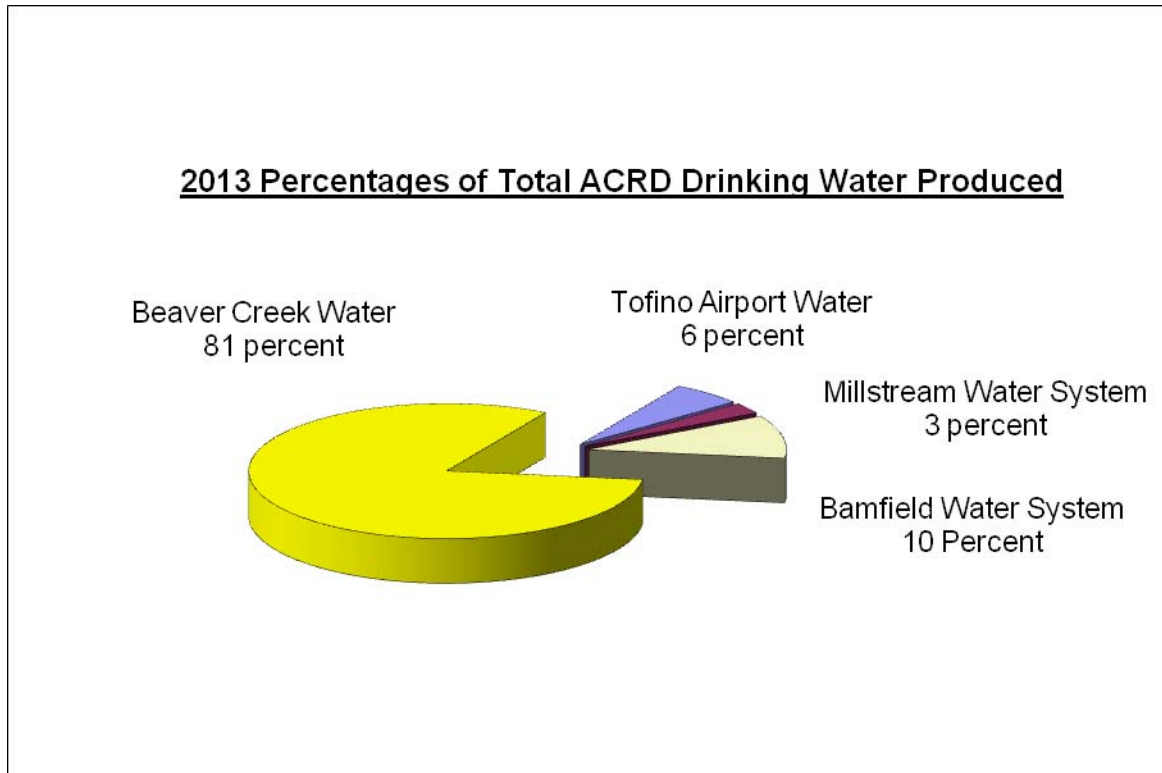
Alberni Valley Airport	ACRD employees
Cougar Smith Park	ACRD employees
Beaver Creek	ACRD employees
Millstream	Contracted employee
Long Beach Airport	Contracted employee
Bamfield	Contracted employee

## **Operations**

The ACRD regularly performs tests to ensure that the water is meeting all standards. A complete water potability test of the raw water is performed annually. The water system's operators regularly check the disinfection and safety of the drinking water. With the systems with chlorine disinfection, the Free Chlorine residual is measured daily. The systems with Ultraviolet Disinfection (UV) are checked weekly to make sure the light intensity is adequately disinfecting the water.

Monthly water samples are submitted to IHA for monitoring for the purpose of the Drinking Water Protection Act. The water samples are analyzed by the British Columbia

Center for Disease Control (BC CDC) for bacteria and specifically Total Coliforms and E. Coli. The IHA's Environmental Health Officer annually checks all permitted drinking water systems. Water mains are regularly flushed to ensure water quality and hydrant maintenance is performed annually.



**Total drinking water produced by the four largest systems**

### **Water Systems Review**

The Alberni-Clayoquot Regional District owns and operates eight individually distinct water systems. In order of the highest annual volumes of water produced the water systems names are:

#### **1. Beaver Creek Water System**

This is a community of 2,820 which borders the City of Port Alberni on the south, the Beaufort Electoral Area on the north and east and the Sproat Lake Electoral Area on the west. The Stamp and Somass Rivers form the western boundary of Beaver Creek. The Beaver Creek Improvement District converted into a local service area of the ACRD on June 1 2012. Beaver Creek Water System has an Advisory Committee made up of the Beaver Creek Director and volunteer members of the community. This committee provides guidance and advice to staff with the water system.

System review:

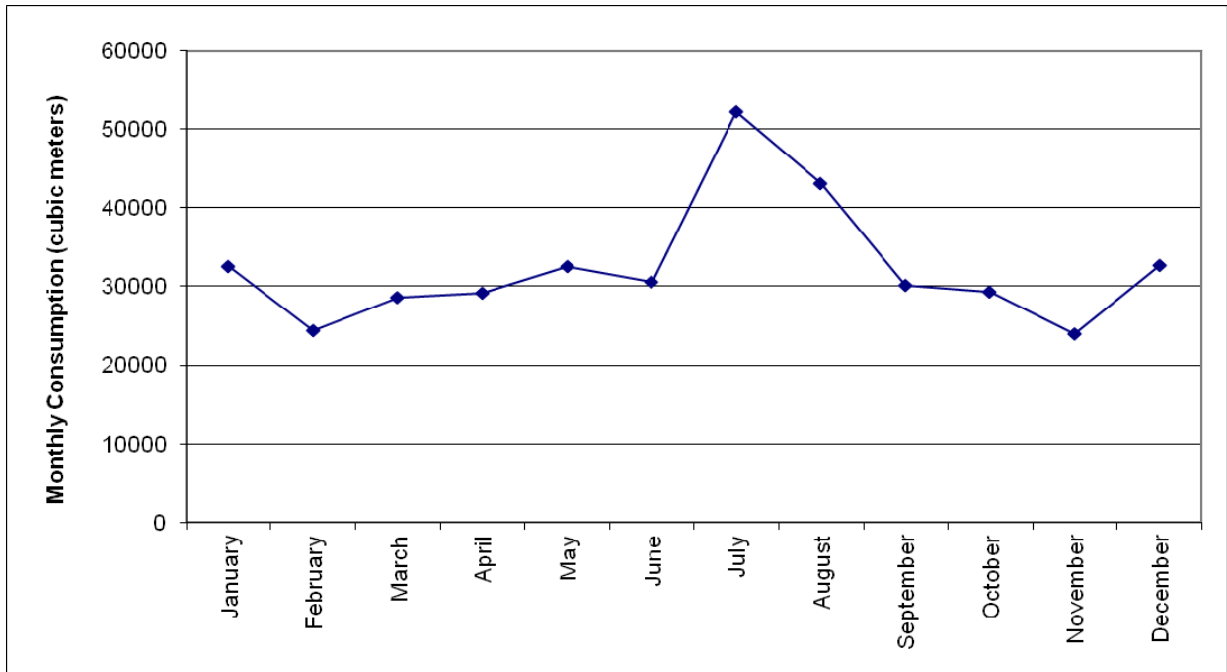
- Water Source: Stamp River
- Treatment: Infiltration Gallery
- Disinfection: Chlorine
- Reservoir(s):
  1. Concrete reservoir on Kitsuksis Road, Volume of 1,135 m<sup>3</sup>
  2. Bolted Steel Reservoir on Beaver Creek Road, Volume of 273 m<sup>3</sup>
  3. Glass Fused Reservoir on Kitsuksis Street, Volume of 1,135 m<sup>3</sup>
- Service connections: 987
- Length of mains: The distribution system consists of a mixture of 100,150,200 and 300 mm diameter piping with a total length of 43,600 meters
- Water main material: The majority of the distribution system is Asbestos Cement (AC) (67.5%) installed in the 1960's. The remainder is made up of polyvinyl chloride (PVC)
- Average Daily Flow: 1066 cubic meters

The majority of the Beaver Creek Water System (BCWS) was constructed in the 1960's. The water mains were originally constructed with asbestos cement pipe and more recent improvements were with polyvinyl. The source water is from the Stamp River accessed through an infiltration gallery. The water is initially chlorinated at the pump house and secondarily rechlorinated at the reservoirs.

The original concrete reservoir on Kitsuksis Road has been experiencing leaks for several years which have necessitated replacement. The new Glass Fused Kitsuksis reservoir has been constructed this past year and has been put into service. A new pump station is in construction and is anticipated to be completed early in 2014. The pump station will provide potable water to the BCWS from the City of Port Alberni. The City of Port Alberni will be installing UV treatment to the system in 2014 to work towards it 4321 compliant with the IHA.

The Beaver Creek Road water main replacement Phase 1 of the North End was completed in 2013. This main replacement has a total of three phases to provide more volume to the north end of the system.

A long term solution to water supply and treatment will be made in consultation with Beaver Creek residents. There will be cost increases required by Beaver Creek to upgrade the water distribution system and to meet the treatment requirements of the IHA.



## Beaver Creek Water Systems 2013 Monthly Consumption

### 2. Bamfield Community Water System

Bamfield is nestled quietly in a protected inlet on the south shore of Barkley Sound located on the outer west coast of Vancouver Island. Europeans founded a small outpost for fur trading and a fishing community sometime in the late 1800s. Bamfield is divided into two sections, separated by about 180 meters of the Bamfield Inlet. The west side of Bamfield is linked by a waterfront boardwalk that connects all the homes and docks on the harbour side. The east side of Bamfield contains most of the businesses, including a pub, a market and café.

In Bamfield there is a committee that works with the ACRD in determining the direction and operation of the water system. The committee is made of the Electoral Area "A" Director and volunteer members of the community. A contracted water operator runs the day to day operations of the Bamfield Water System (BWS). The water operator is certified through the Environmental Operator Certificate Program (EOCP) to operate small water systems.

System review:

- Water Source: Sugsaw Lake
- Treatment: Fine screen intake
- Disinfection: Chlorine
- Reservoir(s): Two Bolted Steel reservoirs, 214 m<sup>3</sup> & 441 m<sup>3</sup>
- Service connections: 207

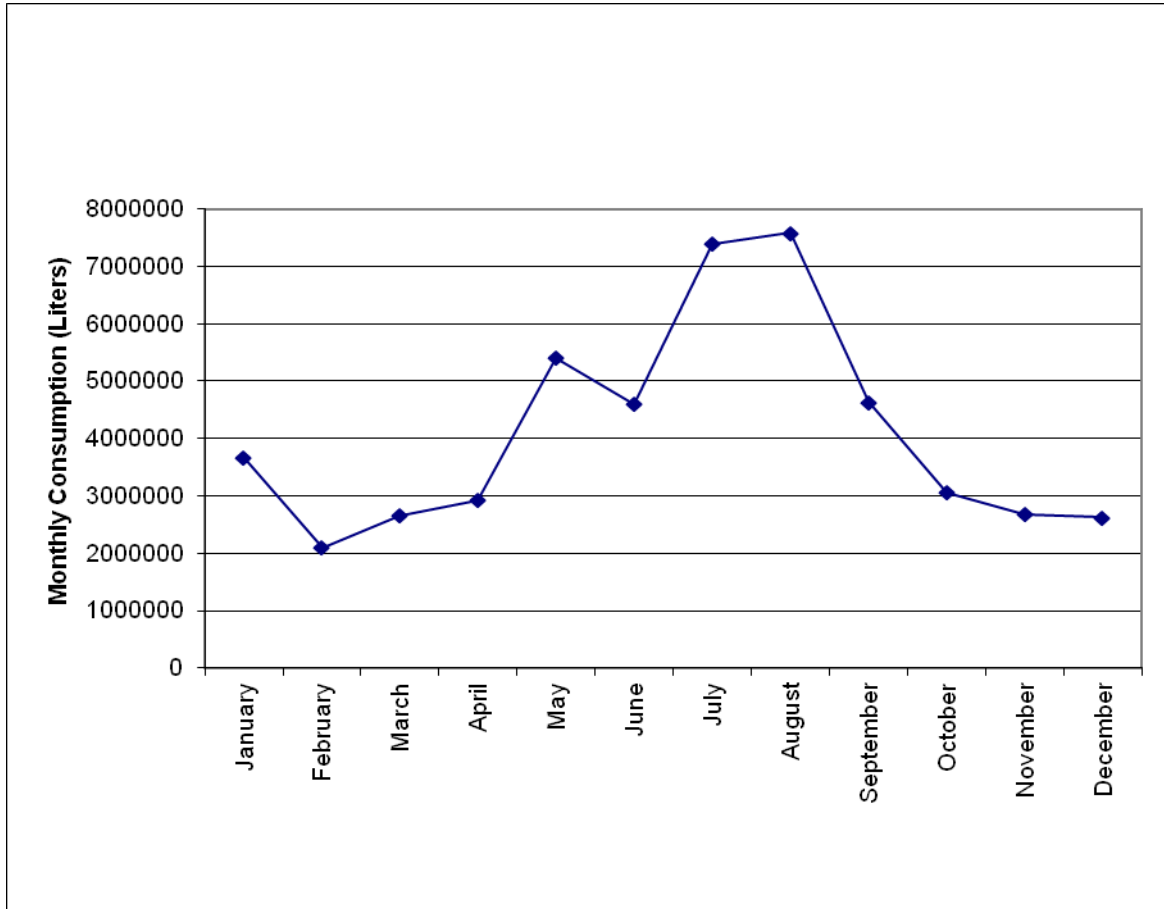
- Length of mains: App. 4550 meters of 150 mm  
App. 1300 meters of 100 mm  
App. 5175 meters of 50 mm  
App. 325 meters of 25 mm
- Water main material: Polyvinyl Chloride and Polyethylene
- Average Daily Flow: 135 cu. meters

The BWS was constructed in 1979 and 1980. Before then, water was collected from individual wells, local springs and rain water collection systems. The BWS complexity is partially due to the various subsurface water lines crossing the inlets in various locations. These marine water lines are challenging to repair, being under water and often under layers of sediment.

The BWS has experienced distribution leaks caused by dissimilar metals and exposed pipes, which are subject to freezing. During a power outage a backup generator provides to prevent any disruption to the water supply.

Quarterly sampling for Trihalomethanes (THM's) had occurred in 2013 as there was a concern due to organics and colour in the water. Trihalomethanes are formed as a by-product predominantly when chlorine is used to disinfect water for drinking. Sample results showed values higher than the Canadian Drinking Water Guidelines. Due to the higher levels of THM's found, a Water Advisory was issued by Island Health on November 2. To try and alleviate the THM's the water system is now being flushed regularly to reduce the age of the water. Infrastructure upgrades are being investigated and the water quality will be monitored to improve the quality.

This last spring a reservoir rechlorination station was completed that automatically controls the chlorine addition to the reservoirs. No Anchoring signs were installed to identify to boaters of the presence of marine water lines. Alarms were installed at the pump house in order to alert the water operator of reservoir low levels and of power outages.



### **Bamfield Water Systems 2013 Monthly Consumption**

#### **3. Long Beach Airport Water System**

The Long Beach Airport Water System (LBAWS) is located within the Long Beach Airport across from Long Beach of the Pacific Rim National Park. The airport is located between the villages of Tofino and Ucluelet, on the west coast of Vancouver Island. The LBAWS was originally constructed during World War II to service the military airport and related services. Currently, the supply and treatment system is comprised of a deep well water source, water softener, chlorination, pump house, reservoir and a distribution system. The water is supplied to the Communities of Ty-Histanis and Esowista (Tla-O-Qui-Aht First Nation), airport service buildings and the Long Beach Golf Course. A contracted water operator runs the day to day operations of the LBAWS. The water operator is certified through the Environmental Operator Certificate Program (EOCP) to operate small water systems.

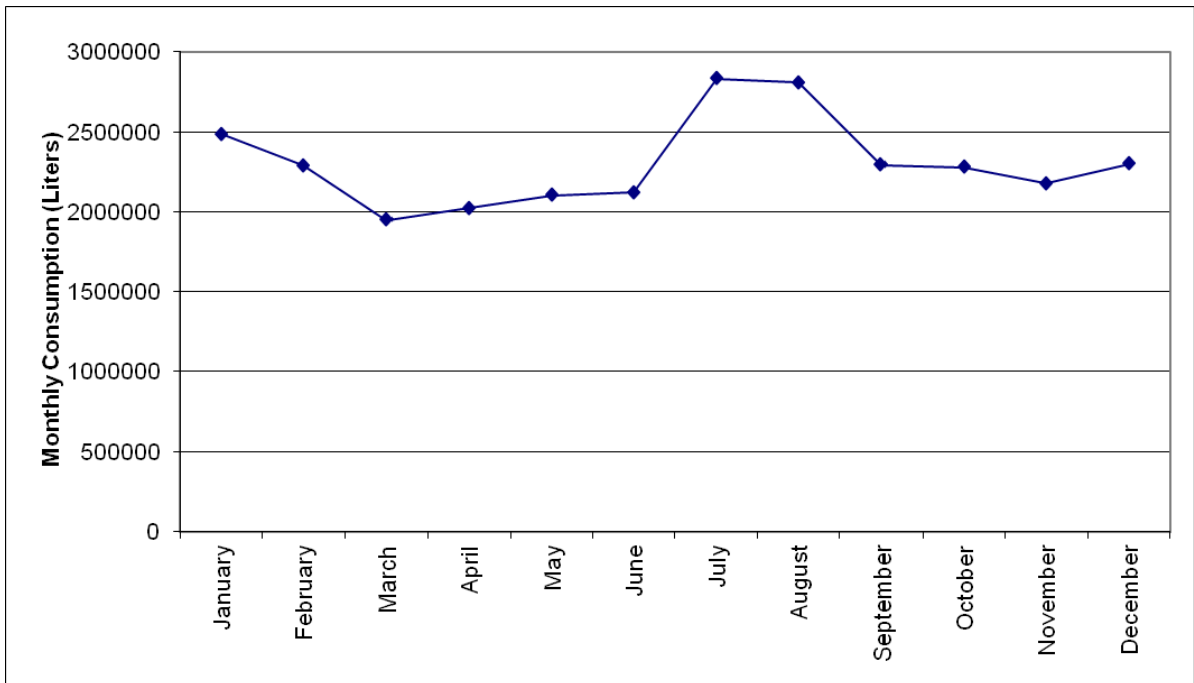
System overview:

- Water Source: Deep drilled well
- Treatment: Ion Exchange (Sodium) water softener
- Disinfection: Chlorine
- Reservoir: One concrete reservoir, 1364 m<sup>3</sup>
- Service connections: 9 connections
- Length of mains: 2730 m of C.I. & 188 m of PVC
- Water main material: Cast Iron (CI), Polyvinyl Chloride (PVC)
- Average Daily Flow: 75.7 cu. meters

In 2013 an additional water source was further investigated to assist with future demand. This was performed using exploratory drilling techniques to determine aquifer capacity. The potential for further aquifer reserves is still being determined.

The reservoir is monitored annually to determine when cleaning is required. Cleaning will remove any precipitate (insoluble solid) that is caused by the oxidation of the chlorine reacting with soluble metals. A new water treatment method will be analyzed to facilitate future growth and environmental concerns.

The exterior of the reservoir was cleaned and brush removed from along the perimeter. A concrete man way into the reservoir required patching. A new water meter was installed for the Long Beach Golf Course to ensure accurate flow measurement and to assist in leak detection. New water meters were installed for airside lease lots to measure the water use and facilitate leak detection.



**Long Beach Airport Water Systems 2013 Monthly Consumption**



#### **4. Millstream Community Water System**

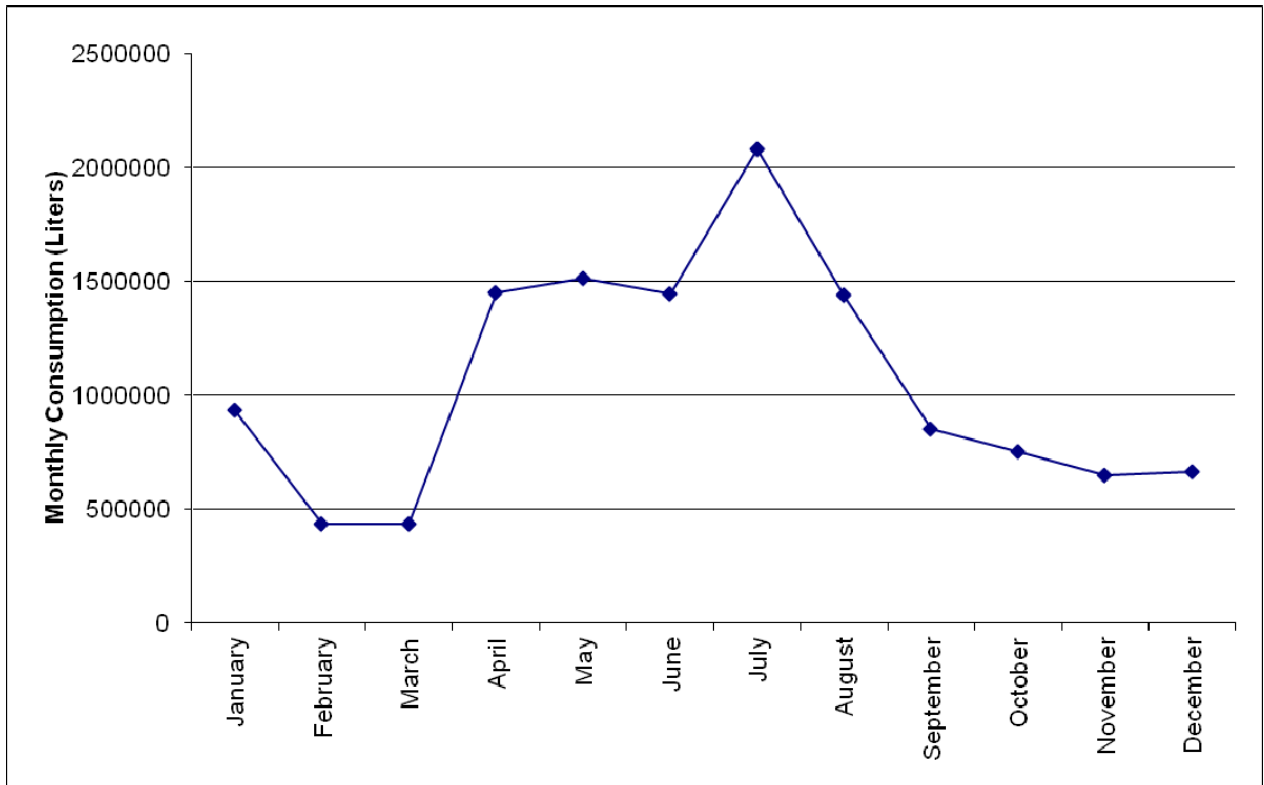
Millstream is a small residential community located approximately 3.5 km north of the District of Ucluelet. The area was originally developed by a logging contractor to provide accommodation for employees and their families. The existing water system was constructed between July and October in 1969. The type of pipe used was asbestos cement (A.C.), which was the current technology at the time. The original wood reservoir was replaced with a metal reservoir in the early 1990's. A contracted water operator runs the day to day operations of the Millstream Community Water System. The water operator is certified through the Environmental Operator Certificate Program (EOCP) to operate small water systems.

System overview:

- Water Source: Two shallow dug wells, 4.1 and 3.6 meters
- Treatment: none
- Disinfection: Chlorine
- Reservoir: Bolted steel, 656 m<sup>3</sup>
- Service connections: 50
- Length of mains: 980 m of 100mm
- Water main material: Asbestos Cement (AC)
- Average Daily Flow: 34.7 cu. meters

The water mains are mostly asbestos cement and are subject to radial fractures and softening over time. In the spring of 2014 the replacement of some of the water mains are scheduled for Lee Street, Mavis Avenue and Albion Crescent. In conjunction with the watermain replacement will be the installation of additional fire hydrants

The reservoir is scheduled to be drawn down for a thorough inspection and cleaning in 2014. A connection to the District of Ucluelet's water system has been approved and was engineered in 2013. The construction is scheduled to commence in the spring of 2014. This connection will enable the community to be supplied with water during maintenance procedures or in drought.



### Millstream Water Systems 2013 Monthly Consumption

#### 5. Cougar Smith Park Small Water System

Cougar Smith Park is in the Sproat Lake area within the Alberni Valley. The park is located on Faber Road situated approximately 13 km northwest of Port Alberni. It has a bike skills park, baseball diamond, tennis courts and playgrounds.

System overview:

- Water Source: Sproat Lake
- Treatment: micro filtration
- Disinfection: Ultraviolet (UV)
- Reservoir capacity and type: No reservoir
- Service connections: Two connections, one for the caretaker residence and one for the public building
- Length of mains: 144 m of 31.75 mm
- Water main material: Polyethylene (PE)

The water system infrastructure is located within a building within the park. Within the building are a pressure tank, an ultraviolet light disinfection system and a five

micron particulate filter. The water system supplies two public washrooms, an irrigation system, a drinking fountain and the caretaker's residence.

In 2012 the source water was switched to its original supply at Sproat Lake from the drilled well. This was done in order to achieve the best water quality and supply as there was a growing need for additional water for irrigation and further park improvements.

## **6. Alberni Valley Regional Airport Small Water System**

The Alberni Valley Regional Airport is located approximately 7 kilometers west of Port Alberni. This small water system at the Alberni Valley Regional Airport was constructed in 1993 to service the site caretaker's residence and the Airport Terminal Building. The Terminal Building has washroom facilities available to the personnel working in three offices and to the public. There is an exterior hose bib that is used for watering plants and washing vehicles.

The microbiological activity in the well water appears to be active during times of high water level. This has been documented in previous years linking it to higher precipitation in the winter. With IHA's recommendation and approval the system was equipped with micro filtration and UV disinfection.

System overview:

- Water Source: Shallow dug well to 5.5 m deep
- Treatment: micro filtration
- Disinfection: Ultraviolet (UV)
- Reservoir capacity and type: No reservoir
- Service connections: Three connections, two caretaker connections and airport terminal building
- Length of mains: approximately 350 meters of 38 mm.
- Water main material: Polyethylene (PE)
- Average Daily Flow: meter installed in 2012

## **7. Alberni Valley Landfill**

The Alberni Valley Landfill is located north west of Port Alberni off of McCoy Lake road.

System overview:

- Water Source: Sproat Lake through Catalyst Paper water main.
- Treatment: none
- Disinfection: none (non potable system)
- Reservoir capacity and type: 970 cubic meters Bolted Steel

- Service connections: Three connections, scale building, work shop, caretakers building
- Length of mains: 1250 meters
- Water main material: Polyvinyl Chloride (PVC)
- Average Daily Flow: Not metered

The Alberni Valley Landfill water system is non potable water for operational use and fire fighting purposes only and is not meant for public consumption.

## **8. West Coast Landfill**

The West Coast Landfill is located adjacent to Pacific Rim National Park Reserve, between the Districts of Tofino and Ucluelet.

System overview:

- Water Source: Shallow dug well
- Treatment: none
- Disinfection: none (non potable system)
- Reservoir capacity and type: no reservoir
- Service connections: one connection to the scale building
- Length of mains: 20 meters
- Water main material: Polyethylene (PE)
- Average Daily Flow: not metered

The West Coast Landfill water system is for non-potable water for operational use only and is not meant for public consumption.



**Alberni Clayoquot Regional District Water Systems**

## **Appendix A**

### **Certificate of Analysis**



# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

## Certificate of Analysis

Report To: Regional District of Alberni &  
Clayoquot  
John Thomas  
3008 5th Ave.  
Port Alberni, BC V9Y 2E3  
V9Y 2E3

Lab Number: 107647  
Date Reported: 31 Dec 13  
Date Completed: 31 Dec 13  
Date Received: 18 Dec 13 9:53

### 107647-01 Millstream RAW

Sampled By:

Sampling Date: 17 Dec 13 0:00

Test	Result	Units	Drinking Water Guideline
Total Coliforms (DES)	1.0	MPN/100mL	<1
E. coli (DES)	<1.0	MPN/100mL	<1
Colour - Apparent	<5	Colour Units	15
UV Transmittance	99.2	%/cm	
Fluoride	<0.05	mg/L	1.5 MAC
Chloride	13.2	mg/L	250 AO
Nitrate (N)	0.88	mg/L	10 MAC
Nitrite (N)	<0.05	mg/L	1 MAC
Sulphate	5.7	mg/L	500 AO
T-Aluminium	0.009	mg/L	0.1 Operational Std.
T-Antimony	<0.0001	mg/L	0.006 MAC
T-Arsenic	0.00033	mg/L	0.010 MAC
T-Barium	0.00251	mg/L	1.0 MAC
T-Beryllium	<0.00005	mg/L	
T-Bismuth	<0.0001	mg/L	
T-Boron	0.029	mg/L	5 IMAC
T-Cadmium	0.00002	mg/L	0.005 MAC
T-Calcium	32	mg/L	
T-Chromium	<0.0005	mg/L	0.05 MAC
T-Cobalt	<0.0001	mg/L	
T-Copper	0.0008	mg/L	1.0 AO
T-Iron	0.014	mg/L	0.3 AO
T-Lead	0.0001	mg/L	0.010 MAC
T-Lithium	0.0008	mg/L	
T-Magnesium	5.96	mg/L	
T-Manganese	0.0042	mg/L	0.05 AO

AO = Aesthetic Objective; MAC = Max. Allowable Concentration; IMAC = Interim MAC

> = Greater than; < = Less than

Results relate only to samples as submitted. This certificate must not be reproduced, except in its entirety, without written consent from the laboratory.

Canadian Drinking Water Guidelines as listed on Dec. 5th, 2005 and are subject to change. Method uncertainties for specified analyses are available upon request.

12/31/2013 11:52

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# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

## 107647-01 Millstream RAW

Sampled By:

Sampling Date: 17 Dec 13 0:00

Test	Result	Units	Drinking Water Guideline
T-Molybdenum	0.00023	mg/L	
T-Nickel	0.0005	mg/L	
T-Potassium	0.7	mg/L	
T-Selenium	0.0003	mg/L	0.01 MAC
T-Silicon	8.65	mg/L	
T-Silver	<0.00005	mg/L	
T-Sodium	11.7	mg/L	200 AO
T-Strontium	0.0802	mg/L	
T-Thallium	<0.00001	mg/L	
T-Tin	0.0002	mg/L	
T-Titanium	<0.0005	mg/L	
T-Uranium	0.00005	mg/L	0.02 MAC
T-Vanadium	0.0008	mg/L	
T-Zinc	0.0015	mg/L	5 AO
Hardness (CaCO <sub>3</sub> )	100	mg/L	
Tannins & Lignins	<0.1	mg/L	0.4 AO
pH at 25 C	6.9	pH Units	6.5-8.5
Alkalinity	96	mg/L (CaCO <sub>3</sub> )	
Turbidity	<0.5	NTU's	5 AO
Total Dissolved Solids (conductivity ca	170	mg/L	500 AO

## 107647-02 Tofino Airport RAW

Sampled By:

Sampling Date: 17 Dec 13 0:00

Test	Result	Units	Drinking Water Guideline
Total Coliforms (DES)	<1.0	MPN/100mL	<1
E. coli (DES)	<1.0	MPN/100mL	<1
Colour - Apparent	430	Colour Units	15
UV Transmittance	78.4	%/cm	
Fluoride	0.07	mg/L	1.5 MAC
Chloride	11.3	mg/L	250 AO
Nitrate (N)	<0.05	mg/L	10 MAC
Nitrite (N)	<0.05	mg/L	1 MAC

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# North Island Laboratories

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## 107647-02 Tofino Airport RAW

Sampled By:

Sampling Date: 17 Dec 13 0:00

Test	Result	Units	Drinking Water Guideline
Sulphate	19.2	mg/L	500 AO
T-Aluminium	0.005	mg/L	0.1 Operational Std.
T-Antimony	<0.0001	mg/L	0.006 MAC
T-Arsenic	0.00076	mg/L	0.010 MAC
T-Barium	0.00766	mg/L	1.0 MAC
T-Beryllium	0.00005	mg/L	
T-Bismuth	<0.0001	mg/L	
T-Boron	0.024	mg/L	5 IMAC
T-Cadmium	<0.00001	mg/L	0.005 MAC
T-Calcium	37	mg/L	
T-Chromium	<0.0005	mg/L	0.05 MAC
T-Cobalt	0.001	mg/L	
T-Copper	0.0023	mg/L	1.0 AO
T-Iron	5.37	mg/L	0.3 AO
T-Lead	0.0002	mg/L	0.010 MAC
T-Lithium	0.0036	mg/L	
T-Magnesium	6.17	mg/L	
T-Manganese	0.411	mg/L	0.05 AO
T-Molybdenum	0.00028	mg/L	
T-Nickel	0.0022	mg/L	
T-Potassium	1.4	mg/L	
T-Selenium	0.0001	mg/L	0.01 MAC
T-Silicon	16.1	mg/L	
T-Silver	<0.00005	mg/L	
T-Sodium	11.1	mg/L	200 AO
T-Strontium	0.12	mg/L	
T-Thallium	<0.00001	mg/L	
T-Tin	0.0003	mg/L	
T-Titanium	<0.0005	mg/L	
T-Uranium	<0.00001	mg/L	0.02 MAC
T-Vanadium	<0.0001	mg/L	
T-Zinc	0.0046	mg/L	5 AO
Hardness (CaCO <sub>3</sub> )	120	mg/L	
Tannins & Lignins	<0.1	mg/L	0.4 AO

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# North Island Laboratories

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## 107647-02 Tofino Airport RAW

Sampled By:

Sampling Date: 17 Dec 13 0:00

Test	Result	Units	Drinking Water Guideline
pH at 25 C	7.2	pH Units	6.5-8.5
Alkalinity	100	mg/L (CaCO <sub>3</sub> )	
Turbidity	57.5	NTU's	5 AO
Total Dissolved Solids (conductivity ca	190	mg/L	500 AO

## 107647-03 Tofino Airport Filtered

Sampled By:

Sampling Date: 17 Dec 13 0:00

Test	Result	Units	Drinking Water Guideline
Total Coliforms (DES)	<1.0	MPN/100mL	<1
E. coli (DES)	<1.0	MPN/100mL	<1
Colour - Apparent	<5	Colour Units	15
UV Transmittance	99.7	%/cm	
Fluoride	0.07	mg/L	1.5 MAC
Chloride	12.6	mg/L	250 AO
Nitrate (N)	<0.05	mg/L	10 MAC
Nitrite (N)	<0.05	mg/L	1 MAC
Sulphate	19.2	mg/L	500 AO
T-Aluminium	<0.005	mg/L	0.1 Operational Std.
T-Antimony	<0.0001	mg/L	0.006 MAC
T-Arsenic	0.00078	mg/L	0.010 MAC
T-Barium	0.0001	mg/L	1.0 MAC
T-Beryllium	0.00008	mg/L	
T-Bismuth	<0.0001	mg/L	
T-Boron	0.023	mg/L	5 IMAC
T-Cadmium	<0.00001	mg/L	0.005 MAC
T-Calcium	0.28	mg/L	
T-Chromium	<0.0005	mg/L	0.05 MAC
T-Cobalt	<0.0001	mg/L	
T-Copper	0.001	mg/L	1.0 AO
T-Iron	0.009	mg/L	0.3 AO
T-Lead	0.0003	mg/L	0.010 MAC
T-Lithium	0.0006	mg/L	

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# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

## 107647-03 Tofino Airport Filtered

Sampled By:

Sampling Date: 17 Dec 13 0:00

Test	Result	Units	Drinking Water Guideline
T-Magnesium	<0.04	mg/L	
T-Manganese	<0.0010	mg/L	0.05 AO
T-Molybdenum	0.00024	mg/L	
T-Nickel	0.0004	mg/L	
T-Potassium	<0.1	mg/L	
T-Selenium	0.0001	mg/L	0.01 MAC
T-Silicon	15.8	mg/L	
T-Silver	<0.00005	mg/L	
T-Sodium	74.3	mg/L	200 AO
T-Strontium	0.001	mg/L	
T-Thallium	<0.00001	mg/L	
T-Tin	<0.0001	mg/L	
T-Titanium	<0.0005	mg/L	
T-Uranium	<0.00001	mg/L	0.02 MAC
T-Vanadium	<0.0001	mg/L	
T-Zinc	0.0011	mg/L	5 AO
Hardness (CaCO <sub>3</sub> )	0.70	mg/L	
Tannins & Lignins	<0.1	mg/L	0.4 AO
pH at 25 C	7.8	pH Units	6.5-8.5
Alkalinity	120	mg/L (CaCO <sub>3</sub> )	
Turbidity	<0.5	NTU's	5 AO
Total Dissolved Solids (conductivity ca	200	mg/L	500 AO

## 107647-04 Cougar Smith Park

Sampled By:

Sampling Date: 17 Dec 13 0:00

Test	Result	Units	Drinking Water Guideline
Total Coliforms (DES)	<1.0	MPN/100mL	<1
E. coli (DES)	<1.0	MPN/100mL	<1
Colour - Apparent	5	Colour Units	15
UV Transmittance	95.7	%/cm	
Fluoride	<0.05	mg/L	1.5 MAC
Chloride	1.4	mg/L	250 AO

AO = Aesthetic Objective; MAC = Max. Allowable Concentration; IMAC = Interim MAC

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12/31/2013 11:52

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# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

## 107647-04 Cougar Smith Park

Sampled By:

Sampling Date: 17 Dec 13 0:00

Test	Result	Units	Drinking Water Guideline
Nitrate (N)	<0.05	mg/L	10 MAC
Nitrite (N)	0.05	mg/L	1 MAC
Sulphate	1.1	mg/L	500 AO
T-Aluminium	0.008	mg/L	0.1 Operational Std.
T-Antimony	<0.0001	mg/L	0.006 MAC
T-Arsenic	0.00015	mg/L	0.010 MAC
T-Barium	0.00263	mg/L	1.0 MAC
T-Beryllium	<0.00005	mg/L	
T-Bismuth	<0.0001	mg/L	
T-Boron	0.014	mg/L	5 IMAC
T-Cadmium	<0.00001	mg/L	0.005 MAC
T-Calcium	8.8	mg/L	
T-Chromium	<0.0005	mg/L	0.05 MAC
T-Cobalt	<0.0001	mg/L	
T-Copper	0.0192	mg/L	1.0 AO
T-Iron	0.006	mg/L	0.3 AO
T-Lead	0.0013	mg/L	0.010 MAC
T-Lithium	<0.0005	mg/L	
T-Magnesium	3.52	mg/L	
T-Manganese	<0.0010	mg/L	0.05 AO
T-Molybdenum	0.00018	mg/L	
T-Nickel	0.0003	mg/L	
T-Potassium	<0.1	mg/L	
T-Selenium	<0.0001	mg/L	0.01 MAC
T-Silicon	0.99	mg/L	
T-Silver	<0.00005	mg/L	
T-Sodium	1.2	mg/L	200 AO
T-Strontium	0.0123	mg/L	
T-Thallium	<0.00001	mg/L	
T-Tin	<0.0001	mg/L	
T-Titanium	<0.0005	mg/L	
T-Uranium	<0.00001	mg/L	0.02 MAC
T-Vanadium	0.0002	mg/L	
T-Zinc	0.0114	mg/L	5 AO

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12/31/2013 11:52

Page 6 of 9



# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

## 107647-04 Cougar Smith Park

Sampled By:

Sampling Date: 17 Dec 13 0:00

Test	Result	Units	Drinking Water Guideline
Hardness (CaCO <sub>3</sub> )	37	mg/L	
Tannins & Lignins	<0.1	mg/L	0.4 AO
pH at 25 C	9.5	pH Units	6.5-8.5
Alkalinity	34	mg/L (CaCO <sub>3</sub> )	
Turbidity	<0.5	NTU's	5 AO
Total Dissolved Solids (conductivity ca	49	mg/L	500 AO

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# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

## 107647-01

We suggest the following Health Canada website for further information regarding the latest drinking water quality guidelines to help you assess your results:

<http://www.hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/guide/index-eng.php>

Test	Method	Analyst	Date
Alkalinity	Titration to 4.5, APHA 2320 B -modified	NiSL	12/20/2013
Chloride	Ion Chromatography, EPA 300.1 -modified	NiSL	12/18/2013
Colour - Apparent	Spectrophotometer, APHA 2120 C -modified	NiSL	12/20/2013
E. coli (DES)	Enzyme Substrate, APHA 9223 B -modified	NiSL	12/18/2013
Fluoride	Ion Chromatography, EPA 300.1 -modified	NiSL	12/18/2013
Hardness (CaCO <sub>3</sub> )	Hardness by Calculation, APHA 2340 B -modified	NiSL	
Hardness (CaCO <sub>3</sub> )	Hardness by Calculation, APHA 2340 B -modified	NiSL	12/31/2013
Nitrate (N)	Ion Chromatography, EPA 300.1 -modified	NiSL	12/18/2013
Nitrite (N)	Ion Chromatography, EPA 300.1 -modified	NiSL	12/18/2013
pH at 25 C	Electrometric, APHA 4500 B -modified	NiSL	12/18/2013
Sulphate	Ion Chromatography, EPA 300.1 -modified	NiSL	12/18/2013
T-Aluminium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Antimony	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Arsenic	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Barium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Beryllium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Bismuth	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Boron	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Cadmium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Calcium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Chromium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Cobalt	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Copper	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Iron	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Lead	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Lithium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Magnesium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Manganese	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Molybdenum	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Nickel	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Potassium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Selenium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Silicon	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013

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# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

T-Silver	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Sodium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Strontium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Thallium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Tin	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Titanium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Uranium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Vanadium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Zinc	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
Tannins & Lignins	Exova Subcontract,Colorimetric,APHA 5550B-modified	EXL	12/24/2013
Total Coliforms (DES)	Enzyme Substrate, APHA 9223 B -modified	NIsL	12/18/2013
Total Dissolved Solids (conducti	Conductivity @25C, APHA 2510 A -modified	NIsL	12/18/2013
Turbidity	Nephelometric, APHA 2130 B -modified	NIsL	12/18/2013
UV Transmittance	APHA 5910 B -modified	NIsL	12/20/2013

Approved By:

Catherine Black, Owner/Operator

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12/31/2013 11:52

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# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

## Certificate of Analysis

Report To: Regional District of Alberni &  
Clayoquot  
John Thomas  
3008 5th Ave.  
Port Alberni, BC V9Y 2E3  
V9Y 2E3

Lab Number: 105370  
Date Reported: 11 Sep 13  
Date Completed: 10 Sep 13  
Date Received: 29 Aug 13 10:29

### 105370-01 BWS Reservoir

### Bamfield WS

Sampled By:

Sampling Date: 27 Aug 13 0:00

Test	Result	Units	Drinking Water Guideline
Bromodichloromethane	0.006	mg/L	0.016 MAC
Bromoform	<0.001	mg/L	
Chloroform	0.198	mg/L	
Dibromochloromethane	<0.001	mg/L	
Total Trihalomethanes	0.204	mg/L	0.100 MAC

### 105370-02 Bamfield Marine Station

### Bamfield WS

Sampled By:

Sampling Date: 27 Aug 13 0:00

Test	Result	Units	Drinking Water Guideline
Bromodichloromethane	0.005	mg/L	0.016 MAC
Bromoform	<0.001	mg/L	
Chloroform	0.155	mg/L	
Dibromochloromethane	<0.001	mg/L	
Total Trihalomethanes	0.16	mg/L	0.100 MAC

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Canadian Drinking Water Guidelines as listed on Dec. 5th, 2005 and are subject to change. Method uncertainties for specified analyses are available upon request.

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# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

**105370-01**

Test	Method	Analyst	Date
Bromodichloromethane	Exova Subcontract-EPA 8260B/5035 - modified	EXL	9/5/2013
Bromoform	Exova Subcontract-EPA 8260B/5035 - modified	EXL	9/5/2013
Chloroform	Exova Subcontract-EPA 8260B/5035 - modified	EXL	9/5/2013
Dibromochloromethane	Exova Subcontract-EPA 8260B/5035 - modified	EXL	9/5/2013
Total Trihalomethanes	Exova Subcontract-EPA 8260B/5035 - modified	EXL	9/5/2013

Approved By:

Catherine Black, Owner/Operator

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# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

## Certificate of Analysis

Report To: Regional District of Alberni &  
Clayoquot  
John Thomas  
3008 5th Ave.  
Port Alberni, BC V9Y 2E3  
V9Y 2E3

Lab Number: 107156  
Date Reported: 12 Dec 13  
Date Completed: 11 Dec 13  
Date Received: 21 Nov 13 10:48

### **107156-01 BWS Reservoir**

Sampled By: John  
Sampling Date: 20 Nov 13 0:00

Test	Result	Units	Drinking Water Guideline
Bromide	<0.02	mg/L	
Chlorate	0.40	mg/L	
Chlorite	<0.2	mg/L	
Bromoacetic Acid	<2.0	ug/L	
Bromochloroacetic Acid	<2.0	ug/L	
Chloroacetic Acid	4.1	ug/L	
Dibromoacetic Acid	<2.0	ug/L	
Dichloroacetic Acid	83.5	ug/L	
Trichloroacetic Acid	203	ug/L	
Total Halo Acetic Acids	290	ug/L	
Bromodichloromethane	0.004	mg/L	0.016 MAC
Bromoform	<0.001	mg/L	
Chloroform	0.199	mg/L	
Dibromochloromethane	<0.001	mg/L	
Total Trihalomethanes	0.203	mg/L	0.100 MAC

### **107156-02 Bamfield Marine Station**

Sampled By: John  
Sampling Date: 20 Nov 13 0:00

Test	Result	Units	Drinking Water Guideline
Bromide	<0.02	mg/L	
Chlorate	0.40	mg/L	
Chlorite	<0.2	mg/L	
Bromoacetic Acid	<2.0	ug/L	
Bromochloroacetic Acid	<2.0	ug/L	

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# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

## 107156-02 Bamfield Marine Station

Sampled By: John

Sampling Date: 20 Nov 13 0:00

Test	Result	Units	Drinking Water Guideline
Chloroacetic Acid	2.9	ug/L	
Dibromoacetic Acid	<2.0	ug/L	
Dichloroacetic Acid	91.8	ug/L	
Trichloroacetic Acid	237	ug/L	
Total Halo Acetic Acids	330	ug/L	
Bromodichloromethane	0.004	mg/L	0.016 MAC
Bromoform	<0.001	mg/L	
Chloroform	0.21	mg/L	
Dibromochloromethane	<0.001	mg/L	
Total Trihalomethanes	0.214	mg/L	0.100 MAC

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# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

## 107156-01

Test	Method	Analyst	Date
Bromide	Exova Subcontract Exova Subcontract	EXL	11/22/2013
Bromoacetic Acid	Exova Subcontract,US EPA 552.3	EXL	12/9/2013
Bromochloroacetic Acid	Exova Subcontract Exova Subcontract	EXL	12/9/2013
Bromodichloromethane	Exova Subcontract-EPA 8260B/5035 - modified	EXL	11/26/2013
Bromoform	Exova Subcontract-EPA 8260B/5035 - modified	EXL	11/26/2013
Chlorate	Exova Subcontract Exova Subcontract	EXL	11/27/2013
Chlorate	Exova Subcontract Exova Subcontract	EXL	12/9/2013
Chlorite	Exova Subcontract Exova Subcontract	EXL	12/9/2013
Chlorite	Exova Subcontract Exova Subcontract	EXL	11/27/2013
Chloroacetic Acid	Exova Subcontract Exova Subcontract	EXL	12/9/2013
Chloroform	Exova Subcontract-EPA 8260B/5035 - modified	EXL	11/26/2013
Dibromoacetic Acid	Exova Subcontract Exova Subcontract	EXL	12/9/2013
Dibromochloromethane	Exova Subcontract-EPA 8260B/5035 - modified	EXL	11/26/2013
Dichloroacetic Acid	Exova Subcontract Exova Subcontract	EXL	12/9/2013
Total Halo Acetic Acids	Exova Subcontract Exova Subcontract	EXL	12/9/2013
Total Trihalomethanes	Exova Subcontract-EPA 8260B/5035 - modified	EXL	11/26/2013
Trichloroacetic Acid	Exova Subcontract Exova Subcontract	EXL	12/9/2013

Approved By:

Catherine Black, Owner/Operator

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# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

## Certificate of Analysis

Report To: Regional District of Alberni &  
Clayoquot  
John Thomas  
3008 5th Ave.  
Port Alberni, BC V9Y 2E3  
V9Y 2E3

Lab Number: 103140  
Date Reported: 20 Jun 13  
Date Completed: 20 Jun 13  
Date Received: 5 Jun 13 11:02

### 103140-01 BWS Reservoir

### Bamfield WS

Sampled By:

Sampling Date: 22 May 13 0:00

Test	Result	Units	Drinking Water Guideline
Bromodichloromethane	0.004	mg/L	0.016 MAC
Bromoform	<0.001	mg/L	
Chloroform	0.211	mg/L	
Dibromochloromethane	<0.001	mg/L	
Total Trihalomethanes	0.215	mg/L	0.100 MAC

### 103140-02 Bamfield Marine Station

### Bamfield WS

Sampled By:

Sampling Date: 22 May 13 0:00

Test	Result	Units	Drinking Water Guideline
Bromodichloromethane	0.002	mg/L	0.016 MAC
Bromoform	<0.001	mg/L	
Chloroform	0.117	mg/L	
Dibromochloromethane	<0.001	mg/L	
Total Trihalomethanes	0.119	mg/L	0.100 MAC

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Canadian Drinking Water Guidelines as listed on Dec. 5th, 2005 and are subject to change. Method uncertainties for specified analyses are available upon request.

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# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

## 103140-01

Test	Method	Analyst	Date
Bromodichloromethane	Exova Subcontract-EPA 8260B/5035 - modified	EXL	6/11/2013
Bromoform	Exova Subcontract-EPA 8260B/5035 - modified	EXL	6/11/2013
Chloroform	Exova Subcontract-EPA 8260B/5035 - modified	EXL	6/11/2013
Dibromochloromethane	Exova Subcontract-EPA 8260B/5035 - modified	EXL	6/11/2013
Total Trihalomethanes	Exova Subcontract-EPA 8260B/5035 - modified	EXL	6/11/2013

Approved By:

Catherine Black, Owner/Operator

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Canadian Drinking Water Guidelines as listed on Dec. 5th, 2005 and are subject to change. Method uncertainties for specified analyses are available upon request.

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# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

## Certificate of Analysis

Report To: Regional District of Alberni &  
Clayoquot  
John Thomas  
3008 5th Ave.  
Port Alberni, BC V9Y 2E3  
V9Y 2E3

Lab Number: 100911  
Date Reported: 5 Mar 13  
Date Completed: 5 Mar 13  
Date Received: 21 Feb 13 10:24

### **100911-01 BWS Reservoir**

### **Bamfield WS**

Sampled By:

Sampling Date: 19 Feb 13 0:00

Test	Result	Units	Drinking Water Guideline
Bromodichloromethane	0.003	mg/L	0.016 MAC
Bromoform	<0.001	mg/L	
Chloroform	0.163	mg/L	
Dibromochloromethane	<0.001	mg/L	
Total Trihalomethanes	0.166	mg/L	0.100 MAC

### **100911-02 Bamfield Marine Station**

### **Bamfield WS**

Sampled By:

Sampling Date: 19 Feb 13 0:00

Test	Result	Units	Drinking Water Guideline
Bromodichloromethane	0.004	mg/L	0.016 MAC
Bromoform	<0.001	mg/L	
Chloroform	0.167	mg/L	
Dibromochloromethane	<0.001	mg/L	
Total Trihalomethanes	0.171	mg/L	0.100 MAC

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Canadian Drinking Water Guidelines as listed on Dec. 5th, 2005 and are subject to

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# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

## 100911-01

This water sample, at the time it was taken, does not meet the Canadian Drinking Water Guidelines for one or more of the parameters tested. Please refer to your results.

This analysis is not to be interpreted as a Water Potability Certificate as this is beyond the authority of North Island Laboratories Ltd.

Test	Method	Analyst	Date
Bromodichloromethane	Exova Subcontract-EPA 8260B/5035 - modified	EXL	2/25/2013
Bromoform	Exova Subcontract-EPA 8260B/5035 - modified	EXL	2/25/2013
Chloroform	Exova Subcontract-EPA 8260B/5035 - modified	EXL	2/25/2013
Dibromochloromethane	Exova Subcontract-EPA 8260B/5035 - modified	EXL	2/25/2013
Total Trihalomethanes	Exova Subcontract-EPA 8260B/5035 - modified	EXL	2/25/2013

Approved By: 

Catherine Black, Owner/Operator

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Canadian Drinking Water Guidelines as listed on Dec. 5th, 2005 and are subject to

3/5/2013 11:40

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# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

## Certificate of Analysis

Report To: Regional District of Alberni &  
Clayoquot  
John Thomas  
3008 5th Ave.  
Port Alberni, BC V9Y 2E3  
V9Y 2E3

Lab Number: 92717  
Date Reported: 18 Jan 12  
Date Completed: 18 Jan 12  
Date Received: 10 Jan 12 10:50

### 92717-01 Alberni Valley Reg Airport

Sampled By: John  
Sampling Date: 9 Jan 12 0:00

Test	Result	Units	Drinking Water Guideline
Fluoride	<0.05	mg/L	1.5 MAC
Chloride	3.0	mg/L	250 AO
Nitrate (N)	0.07	mg/L	10 MAC
Nitrite (N)	<0.05	mg/L	1 MAC
Sulphate	<0.5	mg/L	500 AO
T-Aluminium	0.041	mg/L	0.1 Operational Std.
T-Antimony	<0.0002	mg/L	0.006 MAC
T-Arsenic	<0.0002	mg/L	0.010 MAC
T-Barium	0.001	mg/L	1.0 MAC
T-Beryllium	<0.00004	mg/L	
T-Bismuth	<0.001	mg/L	
T-Boron	0.006	mg/L	5 IMAC
T-Cadmium	<0.00001	mg/L	0.005 MAC
T-Calcium	3.75	mg/L	
T-Chromium	0.0012	mg/L	0.05 MAC
T-Cobalt	0.00006	mg/L	
T-Copper	0.048	mg/L	1.0 AO
T-Iron	0.626	mg/L	0.3 AO
T-Lead	0.0083	mg/L	0.010 MAC
T-Lithium	<0.001	mg/L	
T-Magnesium	0.63	mg/L	
T-Manganese	0.04	mg/L	0.05 AO
T-Molybdenum	<0.0001	mg/L	
T-Nickel	<0.001	mg/L	
T-Phosphorus	<0.01	mg/L	
T-Potassium	<0.1	mg/L	

AO = Aesthetic Objective; MAC = Max. Allowable Concentration; IMAC = Interim MAC

> = Greater than; < = Less than

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# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

## 92717-01 Alberni Valley Reg Airport

Sampled By: John

Sampling Date: 9 Jan 12 0:00

Test	Result	Units	Drinking Water Guideline
T-Selenium	<0.0006	mg/L	0.01 MAC
T-Silicon	3.68	mg/L	
T-Silver	0.00007	mg/L	
T-Sodium	3.3	mg/L	200 AO
T-Strontium	0.014	mg/L	
T-Thallium	<0.00001	mg/L	
T-Tin	0.0012	mg/L	
T-Titanium	0.002	mg/L	
T-Uranium	<0.0004	mg/L	0.02 MAC
T-Vanadium	0.0053	mg/L	
T-Zinc	0.014	mg/L	5 AO
Hardness (CaCO <sub>3</sub> )	12	mg/L	
Colour - Apparent	6	Colour units	15 AO
Tannins & Lignins	<0.1	mg/L	0.4 AO
UV Transmittance	98.4	%/cm	
pH	6.2	pH Units	6.5-8.5
Alkalinity	<20	mg/L (CaCO <sub>3</sub> )	
Turbidity	0.9	NTU's	5 AO
Total Dissolved Solids (conductivity ca	29	mg/L	500 AO

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# North Island Laboratories

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92717-01

Test	Method	Analyst	Date
Alkalinity	Titration to 4.5, APHA 2320 B -modified	NiSL	1/13/2012
Chloride	Ion Chromatography, EPA 300.1 -modified	NiSL	1/10/2012
Colour - Apparent	Exova Subcontract, APHA 2120 C -modified	EXL	1/12/2012
Fluoride	Ion Chromatography, EPA 300.1 -modified	NiSL	1/10/2012
Hardness (CaCO <sub>3</sub> )	Hardness by Calculation, APHA 2340 B -modified	EXL	1/18/2012
Nitrate (N)	Ion Chromatography, EPA 300.1 -modified	NiSL	1/10/2012
Nitrite (N)	Ion Chromatography, EPA 300.1 -modified	NiSL	
pH	Electrometric, APHA 4500 B -modified	NiSL	1/13/2012
Sulphate	Ion Chromatography, EPA 300.1 -modified	NiSL	1/10/2012
T-Aluminium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Antimony	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Arsenic	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Barium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Beryllium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Bismuth	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Boron	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Cadmium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Calcium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Chromium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Cobalt	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Copper	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Iron	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Lead	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Lithium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Magnesium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Manganese	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Molybdenum	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Nickel	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Phosphorus	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Potassium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Selenium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Silicon	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Silver	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Sodium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Strontium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012

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T-Thallium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Tin	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Titanium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Uranium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Vanadium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
T-Zinc	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/11/2012
Tannins & Lignins	Exova Subcontract,Colorimetric,APHA 5550B-modified	EXL	1/16/2012
Total Dissolved Solids (conducti	Conductivity @25C, APHA 2510 A -modified	NIsL	1/13/2012
Turbidity	Nephelometric, APHA 2130 B -modified	NIsL	1/10/2012
UV Transmittance	Exova Subcontract, APHA 5910 B -modified	EXL	1/11/2012

Approved By:

Catherine Black, Owner/Operator

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## Certificate of Analysis

Report To: Beaver Creek Improvement District  
Andy Daniel

Lab Number: 107762  
Date Reported: 15 Jan 14  
Date Completed: 15 Jan 14  
Date Received: 30 Dec 13 14:35

**107762-01 Kitsuksis Reservoir**

**Inside Tap**

Sampled By: Keith Looker  
Sampling Date: 30 Dec 13 0:00

Test	Result	Units	Drinking Water Guideline
Total Coliforms (DES)	<1.0	MPN/100mL	<1
E. coli (DES)	<1.0	MPN/100mL	<1
Colour - Apparent	7	Colour Units	15
UV Transmittance	92.3	%/cm	
Fluoride	<0.05	mg/L	1.5 MAC
Chloride	3.3	mg/L	250 AO
Nitrate (N)	0.06	mg/L	10 MAC
Nitrite (N)	<0.05	mg/L	1 MAC
Sulphate	0.9	mg/L	500 AO
T-Aluminium	0.028	mg/L	0.1 Operational Std.
T-Antimony	<0.0001	mg/L	0.006 MAC
T-Arsenic	0.00008	mg/L	0.010 MAC
T-Barium	0.00254	mg/L	1.0 MAC
T-Beryllium	<0.00005	mg/L	
T-Bismuth	<0.0001	mg/L	
T-Boron	0.006	mg/L	5 IMAC
T-Cadmium	<0.00001	mg/L	0.005 MAC
T-Calcium	7.11	mg/L	
T-Chromium	<0.0005	mg/L	0.05 MAC
T-Cobalt	<0.0001	mg/L	
T-Copper	0.0051	mg/L	1.0 AO
T-Iron	0.036	mg/L	0.3 AO
T-Lead	0.0006	mg/L	0.010 MAC
T-Lithium	<0.0005	mg/L	
T-Magnesium	0.58	mg/L	
T-Manganese	0.0012	mg/L	0.05 AO

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# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

**107762-01 Kitsuksis Reservoir**

**Inside Tap**

Sampled By: Keith Looker

Sampling Date: 30 Dec 13 0:00

Test	Result	Units	Drinking Water Guideline
T-Molybdenum	0.00012	mg/L	
T-Nickel	<0.0002	mg/L	
T-Potassium	<0.1	mg/L	
T-Selenium	<0.0001	mg/L	0.01 MAC
T-Silicon	1.63	mg/L	
T-Silver	<0.00005	mg/L	
T-Sodium	1.6	mg/L	200 AO
T-Strontium	0.013	mg/L	
T-Thallium	<0.00001	mg/L	
T-Tin	0.0013	mg/L	
T-Titanium	0.0008	mg/L	
T-Uranium	<0.00001	mg/L	0.02 MAC
T-Vanadium	0.0002	mg/L	
T-Zinc	0.0054	mg/L	5 AO
Hardness (CaCO <sub>3</sub> )	20	mg/L	
Tannins & Lignins	<0.1	mg/L	0.4 AO
pH at 25 C	7.2	pH Units	6.5-8.5
Alkalinity	<20	mg/L (CaCO <sub>3</sub> )	
Turbidity	1.2	NTU's	5 AO
Total Dissolved Solids (conductivity ca	32	mg/L	500 AO
Bromodichloromethane	0.001	mg/L	0.016 MAC
Bromoform	<0.001	mg/L	
Chloroform	0.047	mg/L	
Dibromochloromethane	<0.001	mg/L	
Total Trihalomethanes	0.048	mg/L	0.100 MAC

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## 107762-01

Test	Method	Analyst	Date
Alkalinity	Titration to 4.5, APHA 2320 B -modified	NiSL	1/3/2014
Bromodichloromethane	Exova Subcontract-EPA 8260B/5035 - modified	EXL	1/6/2014
Bromoform	Exova Subcontract-EPA 8260B/5035 - modified	EXL	1/6/2014
Chloride	Ion Chromatography, EPA 300.1 -modified	NiSL	1/2/2014
Chloroform	Exova Subcontract-EPA 8260B/5035 - modified	EXL	1/6/2014
Colour - Apparent	Spectrophotometer, APHA 2120 C -modified	NiSL	12/31/2013
Dibromochloromethane	Exova Subcontract-EPA 8260B/5035 - modified	EXL	1/6/2014
E. coli (DES)	Enzyme Substrate, APHA 9223 B -modified	NiSL	12/30/2013
Fluoride	Ion Chromatography, EPA 300.1 -modified	NiSL	1/2/2014
Hardness (CaCO3)	Hardness by Calculation, APHA 2340 B -modified	NiSL	1/15/2014
Nitrate (N)	Ion Chromatography, EPA 300.1 -modified	NiSL	1/2/2014
Nitrite (N)	Ion Chromatography, EPA 300.1 -modified	NiSL	1/2/2014
pH at 25 C	Electrometric, APHA 4500 B -modified	NiSL	12/31/2013
Sulphate	Ion Chromatography, EPA 300.1 -modified	NiSL	1/2/2014
T-Aluminium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Antimony	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Arsenic	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Barium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Beryllium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Bismuth	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Boron	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Cadmium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Calcium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Chromium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Cobalt	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Copper	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Iron	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Lead	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Lithium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Magnesium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Manganese	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Molybdenum	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Nickel	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Potassium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Selenium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014

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T-Silicon	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Silver	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Sodium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Strontium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Thallium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Tin	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Titanium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Uranium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Vanadium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
T-Zinc	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	1/7/2014
Tannins & Lignins	Exova Subcontract,Colorimetric,APHA 5550B-modified	EXL	1/10/2014
Total Coliforms (DES)	Enzyme Substrate, APHA 9223 B -modified	NIsL	12/30/2013
Total Dissolved Solids (conducti	Conductivity @25C, APHA 2510 A -modified	NIsL	12/31/2013
Total Trihalomethanes	Exova Subcontract-EPA 8260B/5035 - modified	EXL	1/6/2014
Turbidity	Nephelometric, APHA 2130 B -modified	NIsL	1/3/2014
UV Transmittance	APHA 5910 B -modified	NIsL	12/31/2013

Approved By:

Catherine Black, Owner/Operator

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# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

## Certificate of Analysis

Report To: Regional District of Alberni &  
Clayoquot  
John Thomas  
3008 5th Ave.  
Port Alberni, BC V9Y 2E3  
V9Y 2E3

Lab Number: 107673  
Date Reported: 31 Dec 13  
Date Completed: 31 Dec 13  
Date Received: 19 Dec 13 10:14

### 107673-01 BWS Reservoir

Sampled By:

Sampling Date: 18 Dec 13 0:00

Test	Result	Units	Drinking Water Guideline
Total Coliforms (DES)	<1.0	MPN/100mL	<1
E. coli (DES)	<1.0	MPN/100mL	<1
Colour - Apparent	14	Colour Units	15
UV Transmittance	72.6	%/cm	
Fluoride	<0.05	mg/L	1.5 MAC
Chloride	9.6	mg/L	250 AO
Nitrate (N)	0.06	mg/L	10 MAC
Nitrite (N)	<0.05	mg/L	1 MAC
Sulphate	1.6	mg/L	500 AO
T-Aluminium	0.15	mg/L	0.1 Operational Std.
T-Antimony	<0.0001	mg/L	0.006 MAC
T-Arsenic	<0.00005	mg/L	0.010 MAC
T-Barium	0.00612	mg/L	1.0 MAC
T-Beryllium	0.00036	mg/L	
T-Bismuth	<0.0001	mg/L	
T-Boron	0.024	mg/L	5 IMAC
T-Cadmium	<0.00001	mg/L	0.005 MAC
T-Calcium	2.58	mg/L	
T-Chromium	<0.0005	mg/L	0.05 MAC
T-Cobalt	<0.0001	mg/L	
T-Copper	0.0018	mg/L	1.0 AO
T-Iron	0.133	mg/L	0.3 AO
T-Lead	0.0004	mg/L	0.010 MAC
T-Lithium	<0.0005	mg/L	
T-Magnesium	0.47	mg/L	
T-Manganese	0.0043	mg/L	0.05 AO

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# North Island Laboratories

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## 107673-01 BWS Reservoir

Sampled By:

Sampling Date: 18 Dec 13 0:00

Test	Result	Units	Drinking Water Guideline
T-Molybdenum	0.00009	mg/L	
T-Nickel	<0.0002	mg/L	
T-Potassium	<0.1	mg/L	
T-Selenium	<0.0001	mg/L	0.01 MAC
T-Silicon	1.64	mg/L	
T-Silver	<0.00005	mg/L	
T-Sodium	8.5	mg/L	200 AO
T-Strontium	0.0124	mg/L	
T-Thallium	<0.00001	mg/L	
T-Tin	0.0017	mg/L	
T-Titanium	0.0008	mg/L	
T-Uranium	0.00002	mg/L	0.02 MAC
T-Vanadium	0.0002	mg/L	
T-Zinc	0.0096	mg/L	5 AO
Hardness (CaCO <sub>3</sub> )	8.4	mg/L	
Tannins & Lignins	0.5	mg/L	0.4 AO
pH at 25 C	6.8	pH Units	6.5-8.5
Alkalinity	<20	mg/L (CaCO <sub>3</sub> )	
Turbidity	<0.5	NTU's	5 AO
Total Dissolved Solids (conductivity ca	39	mg/L	500 AO

## 107673-02 BWS Lake

Sampled By:

Sampling Date: 18 Dec 13 0:00

Test	Result	Units	Drinking Water Guideline
Total Coliforms (DES)	27.1	MPN/100mL	<1
E. coli (DES)	<1.0	MPN/100mL	<1
Colour - Apparent	46	Colour Units	15
UV Transmittance	58.3	%/cm	
Fluoride	<0.05	mg/L	1.5 MAC
Chloride	3.2	mg/L	250 AO
Nitrate (N)	0.07	mg/L	10 MAC
Nitrite (N)	<0.05	mg/L	1 MAC

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# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

## 107673-02 BWS Lake

Sampled By:

Sampling Date: 18 Dec 13 0:00

Test	Result	Units	Drinking Water Guideline
Sulphate	1.5	mg/L	500 AO
T-Aluminium	0.148	mg/L	0.1 Operational Std.
T-Antimony	<0.0001	mg/L	0.006 MAC
T-Arsenic	<0.00005	mg/L	0.010 MAC
T-Barium	0.00469	mg/L	1.0 MAC
T-Beryllium	0.00014	mg/L	
T-Bismuth	<0.0001	mg/L	
T-Boron	0.019	mg/L	5 IMAC
T-Cadmium	<0.00001	mg/L	0.005 MAC
T-Calcium	2.27	mg/L	
T-Chromium	<0.0005	mg/L	0.05 MAC
T-Cobalt	<0.0001	mg/L	
T-Copper	0.0003	mg/L	1.0 AO
T-Iron	0.123	mg/L	0.3 AO
T-Lead	<0.0001	mg/L	0.010 MAC
T-Lithium	<0.0005	mg/L	
T-Magnesium	0.47	mg/L	
T-Manganese	0.0143	mg/L	0.05 AO
T-Molybdenum	0.00007	mg/L	
T-Nickel	0.0003	mg/L	
T-Potassium	<0.1	mg/L	
T-Selenium	<0.0001	mg/L	0.01 MAC
T-Silicon	1.58	mg/L	
T-Silver	<0.00005	mg/L	
T-Sodium	2.6	mg/L	200 AO
T-Strontium	0.0112	mg/L	
T-Thallium	<0.00001	mg/L	
T-Tin	0.0018	mg/L	
T-Titanium	0.0006	mg/L	
T-Uranium	0.00001	mg/L	0.02 MAC
T-Vanadium	0.0002	mg/L	
T-Zinc	0.0018	mg/L	5 AO
Hardness (CaCO <sub>3</sub> )	7.6	mg/L	
Tannins & Lignins	1.2	mg/L	0.4 AO

AO = Aesthetic Objective; MAC = Max. Allowable Concentration; IMAC = Interim MAC

> = Greater than; < = Less than

Results relate only to samples as submitted. This certificate must not be reproduced, except in its entirety, without written consent from the laboratory.

Canadian Drinking Water Guidelines as listed on Dec. 5th, 2005 and are subject to change. Method uncertainties for specified analyses are available upon request.

12/31/2013 11:52

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# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

## 107673-02 BWS Lake

Sampled By:

Sampling Date: 18 Dec 13 0:00

Test	Result	Units	Drinking Water Guideline
pH at 25 C	6.5	pH Units	6.5-8.5
Alkalinity	<20	mg/L (CaCO <sub>3</sub> )	
Turbidity	0.5	NTU's	5 AO
Total Dissolved Solids (conductivity ca	19	mg/L	500 AO

AO = Aesthetic Objective; MAC = Max. Allowable Concentration; IMAC = Interim MAC

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Canadian Drinking Water Guidelines as listed on Dec. 5th, 2005 and are subject to change. Method uncertainties for specified analyses are available upon request.

12/31/2013 11:52

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# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

## 107673-01

Test	Method	Analyst	Date
Alkalinity	Titration to 4.5, APHA 2320 B -modified	NiSL	12/20/2013
Chloride	Ion Chromatography, EPA 300.1 -modified	NiSL	12/20/2013
Colour - Apparent	Spectrophotometer, APHA 2120 C -modified	NiSL	12/20/2013
E. coli (DES)	Enzyme Substrate, APHA 9223 B -modified	NiSL	12/19/2013
Fluoride	Ion Chromatography, EPA 300.1 -modified	NiSL	12/20/2013
Hardness (CaCO <sub>3</sub> )	Hardness by Calculation, APHA 2340 B -modified	NiSL	12/31/2013
Nitrate (N)	Ion Chromatography, EPA 300.1 -modified	NiSL	12/20/2013
Nitrite (N)	Ion Chromatography, EPA 300.1 -modified	NiSL	12/20/2013
pH at 25 C	Electrometric, APHA 4500 B -modified	NiSL	12/20/2013
Sulphate	Ion Chromatography, EPA 300.1 -modified	NiSL	12/20/2013
T-Aluminium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Antimony	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Arsenic	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Barium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Beryllium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Bismuth	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Boron	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Cadmium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Calcium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Chromium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Cobalt	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Copper	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Iron	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Lead	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Lithium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Magnesium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Manganese	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Molybdenum	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Nickel	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Potassium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Selenium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Silicon	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Silver	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Sodium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Strontium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013

AO = Aesthetic Objective; MAC = Max. Allowable Concentration; IMAC = Interim MAC

> = Greater than; < = Less than

Results relate only to samples as submitted. This certificate must not be reproduced, except in its entirety, without written consent from the laboratory.

Canadian Drinking Water Guidelines as listed on Dec. 5th, 2005 and are subject to change. Method uncertainties for specified analyses are available upon request.

12/31/2013 11:52

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# North Island Laboratories

• 2755 B Moray Avenue, Courtenay, B.C. V9N 8M9 Tel: (250) 338-7786 Fax: (250) 338-7553

T-Thallium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Tin	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Titanium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Uranium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Vanadium	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
T-Zinc	Exova Subcontract, ICP-AES,EPA6010C,200.8-modified	EXL	12/25/2013
Tannins & Lignins	Exova Subcontract,Colorimetric,APHA 5550B-modified	EXL	12/24/2013
Total Coliforms (DES)	Enzyme Substrate, APHA 9223 B -modified	NIsL	12/19/2013
Total Dissolved Solids (conducti	Conductivity @25C, APHA 2510 A -modified	NIsL	12/20/2013
Turbidity	Nephelometric, APHA 2130 B -modified	NIsL	12/20/2013
UV Transmittance	APHA 5910 B -modified	NIsL	12/20/2013

Approved By:

Catherine Black, Owner/Operator

AO = Aesthetic Objective; MAC = Max. Allowable Concentration; IMAC = Interim MAC

> = Greater than; < = Less than

Results relate only to samples as submitted. This certificate must not be reproduced, except in its entirety, without written consent from the laboratory.

Canadian Drinking Water Guidelines as listed on Dec. 5th, 2005 and are subject to change. Method uncertainties for specified analyses are available upon request.

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## **Appendix B**

### **Facility Sampling History**

# Water Sample Range Report

Vancouver Island Health Authority  
Central Island

**Facility Name:** ALBERNI VALLEY AIRPORT  
**Facility Type:** DWS  
**Date Range:** Jan 1 2013 to Dec 31 2013  
**Date Created:** Feb 21 2014

Sampling Site	Date Collected	Total Coliform	E. Coli	Fecal Coliform
<u>Airport, Alberni Valley Airport, Dist. site, Monthly</u>	1/23/2013	L1	L1	
	2/20/2013	L1	L1	
	3/26/2013	L1	L1	
	4/17/2013	L1	L1	
	5/14/2013	L1	L1	
	6/18/2013	L1	L1	
	7/23/2013	L1	L1	
	8/13/2013	L1	L1	
	9/18/2013	L1	L1	
	11/13/2013	L1	L1	
	12/10/2013	L1	L1	
	<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Result Values:**                      **E - estimated**                      **L - less than**                      **G - greater than**

## Interpreting Sample Reports

In VIHA, the results of drinking water sampling are reported using the following coding system:

**L1** Less than 1 (no detectable bacteria) - Meaning: No bacteria present

**OG** Overgrown - Meaning: Too many background bacteria to give an accurate count

**EST** Estimated Count  
and

**A** Sample not tested; Too long in transit

**C** Sample leaked/broken in transit

**D** Sample not tested; No collection date given

**T** Sample submitted unsatisfactory. Exceeded 30 hours holding time, please resample.

**NS** No sample received with requisition




Samples that contain total coliform:	0	0.00% of total
Samples that contain e. coli:	0	0.00% of total
Samples that contain fecal coliform:	0	0.00% of total
Number of positive samples in last 30 days:	0/1	
Total number of samples:	11	

**Comments:**

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Environmental Health Officer

Feb 25 2014

FOR FURTHER INFORMATION PLEASE CALL: Bruvall, Stephanie (250) 731-1315 Port Alberni

**Operator**

Regional District of Alberni Clayoquot  
ALBERNI CLAYOQUOT REGIONAL DISTRICT  
3008 5th Avenue  
Port Alberni, BC  
V9Y 2E3

(250) 720-2713

# Water Sample Range Report

Vancouver Island Health Authority  
Central Island

**Facility Name:** TOFINO AIRPORT WATER SYSTEM  
**Facility Type:** DWC  
**Date Range:** Jan 1 2013 to Dec 31 2013  
**Date Created:** Feb 21 2014

Sampling Site	Date Collected	Total Coliform	E. Coli	Fecal Coliform
<u>Pumphouse/Estowist</u>				
<u>a, Dist. site, Monthly</u>				
	1/23/2013	L1	L1	
	2/20/2013	L1	L1	
	3/19/2013	L1	L1	
	4/17/2013	L1	L1	
	5/15/2013	L1	L1	
	6/19/2013	L1	L1	
	7/17/2013	L1	L1	
	8/21/2013	L1	L1	
	9/11/2013	L1	L1	
	10/16/2013	L1	L1	
	11/27/2013	<u>L1</u>	<u>L1</u>	
	<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

<u>Reservoir/pumphous</u>				
<u>e, Dist. site, Monthly</u>				
	1/23/2013	L1	L1	
	2/20/2013	L1	L1	
	3/19/2013	L1	L1	
	4/17/2013	L1	L1	
	5/15/2013	L1	L1	
	6/19/2013	L1	L1	
	7/17/2013	L1	L1	
	8/21/2013	L1	L1	
	9/11/2013	L1	L1	
	10/16/2013	L1	L1	
	11/27/2013	<u>L1</u>	<u>L1</u>	
	<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

Washroom,  
AUDIT-Golf Course ,  
Dist. site, No  
Regular Sampling

AUDIT - TOFINO  
AIRPORT WATER  
SYSTEM, AUDIT -  
TOFINO AIRPORT  
WATER SYSTEM,  
Dist. site, Annually

Terminal Building  
Dist. site, Monthly

1/23/2013	L1	L1	
2/20/2013	L1	L1	
3/19/2013	L1	L1	
4/17/2013	L1	L1	
5/15/2013	L1	L1	
6/19/2013	L1	L1	
7/17/2013	L1	L1	
8/21/2013	L1	L1	
9/11/2013	L1	L1	
10/16/2013	L1	L1	
11/27/2013	<u>L1</u>	<u>L1</u>	
<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

Result Values:

E - estimated

L - less than

G - greater than

**Interpreting Sample Reports**

In VIHA, the results of drinking water sampling are reported using the following coding system:

**L1** Less than 1 (no detectable bacteria) - Meaning: No bacteria present

**OG** Overgrown - Meaning: Too many background bacteria to give an accurate count

**EST** Estimated Count

and

**A** Sample not tested; Too long in transit

**C** Sample leaked/broken in transit

**D** Sample not tested; No collection date given

**T** Sample submitted unsatisfactory. Exceeded 30 hours holding time, please resample.

**NS** No sample received with requisition

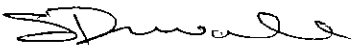
Samples that contain total coliform:	0	0.00% of total
Samples that contain e. coli:	0	0.00% of total
Samples that contain fecal coliform:	0	0.00% of total
Number of positive samples in last 30 days:	0/0	
Total number of samples:	33	

**Comments:**

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Environmental Health Officer

Feb 25 2014

FOR FURTHER INFORMATION PLEASE CALL: Bruvall, Stephanie (250) 731-1315 Port Alberni

**Operator**

Regional District of Alberni Clayoquot  
3008 5th Avenue  
Port Alberni, BC  
V0R 3A0

(250) 720-2713

## Water Sample Range Report

Vancouver Island Health Authority  
Central Island

**Facility Name:** MILLSTREAM COMMUNITY WATER SYSTEM  
**Facility Type:** DWC  
**Date Range:** Jan 1 2013 to Dec 31 2013  
**Date Created:** Feb 21 2014

Sampling Site	Date Collected	Total Coliform	E. Coli	Fecal Coliform
<u>2355 Ucluelet &amp; Tofino Highway, AUDIT - Daley Residence Hose Bib, Dist. site, No Regular Sampling</u>				
	12/31/2013			
	<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>
 <u>262 Karn Avenue, McConnell Residence, Dist. site, Monthly</u>				
	1/23/2013	L1	L1	
	2/20/2013	L1	L1	
	3/19/2013	L1	L1	
	4/17/2013	L1	L1	
	5/15/2013	L1	L1	
	6/19/2013	L1	L1	
	7/17/2013	L1	L1	
	8/21/2013	L1	L1	
	9/11/2013	L1	L1	
	10/16/2013	L1	L1	
	11/27/2013	<u>L1</u>	<u>L1</u>	
	<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>
 <u>. John Gouweleeuw's Residence, Dist. site, Monthly</u>				
	1/23/2013	L1	L1	
	2/20/2013	L1	L1	
	3/19/2013	L1	L1	
	4/17/2013	L1	L1	
	5/15/2013	L1	L1	
	6/19/2013	L1	L1	
	7/17/2013	L1	L1	
	8/21/2013	L1	L1	
	9/11/2013	L1	L1	
	10/16/2013	L1	L1	
	11/27/2013	<u>L1</u>	<u>L1</u>	
	<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Result Values:**                      E - estimated                      L - less than                      G - greater than

**Interpreting Sample Reports**

**L1** Less than 1 (no detectable bacteria) - Meaning: No bacteria present

**OG** Overgrown - Meaning: Too many background bacteria to give an accurate count

**EST** Estimated Count

and

**A** Sample not tested; Too long in transit

**C** Sample leaked/broken in transit

**D** Sample not tested; No collection date given

**T** Sample submitted unsatisfactory. Exceeded 30 hours holding time, please resample.

**NS** No sample received with requisition

Samples that contain total coliform:	0	0.00% of total
Samples that contain e. coli:	0	0.00% of total
Samples that contain fecal coliform:	0	0.00% of total
Number of positive samples in last 30 days:	0/1	
Total number of samples:	23	

**Comments:**

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Environmental Health Officer

Feb 25 2014

FOR FURTHER INFORMATION PLEASE CALL: Bruvall, Stephanie (250) 731-1315 Port Alberni

**Operator**

Millstream Community W. S. (A-CRD)  
 3008 Fifth Street  
 Port Alberni, BC  
 V9Y 2E3

(250) 726-7755

# Water Sample Range Report

Vancouver Island Health Authority  
Central Island

**Facility Name:** MILLSTREAM COMMUNITY WATER SYSTEM  
**Facility Type:** DWC  
**Date Range:** Jan 1 2013 to Dec 31 2013  
**Date Created:** Feb 21 2014

<u>Sampling Site</u>	<u>Date Collected</u>	<u>Total Coliform</u>	<u>E. Coli</u>	<u>Fecal Coliform</u>
<u>Raw water</u> <u>-Millstream, Raw</u> <u>water-Millstream</u> <u>(well), Source site,</u> <u>Annually</u>				

**Result Values:**                      **E - estimated**                      **L - less than**                      **G - greater than**

### Interpreting Sample Reports

In VIHA, the results of drinking water sampling are reported using the following coding system:

- L1** Less than 1 (no detectable bacteria) - Meaning: No bacteria present
- OG** Overgrown - Meaning: Too many background bacteria to give an accurate count
- EST** Estimated Count  
and
- A** Sample not tested; Too long in transit
- C** Sample leaked/broken in transit
- D** Sample not tested; No collection date given
- T** Sample submitted unsatisfactory. Exceeded 30 hours holding time, please resample.
- NS** No sample received with requisition




Samples that contain total coliform:	0	0.00% of total
Samples that contain e. coli:	0	0.00% of total
Samples that contain fecal coliform:	0	0.00% of total
Number of positive samples in last 30 days:	0/0	
Total number of samples:	0	

**Comments:**

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Environmental Health Officer  
Feb 25 2014

FOR FURTHER INFORMATION PLEASE CALL: Bruvall, Stephanie (250) 731-1315 Port Alberni

**Operator**

Millstream Community W. S. (A-CRD)  
3008 Fifth Street  
Port Alberni, BC  
V9Y 2E3

(250) 726-7755

## Water Sample Range Report

Vancouver Island Health Authority  
Central Island

**Facility Name:** BAMFIELD COMMUNITY WWS  
**Facility Type:** DWC  
**Date Range:** Jan 1 2013 to Dec 31 2013  
**Date Created:** Feb 21 2014

Sampling Site	Date Collected	Total Coliform	E. Coli	Fecal Coliform
<u>Bamfield, Butler</u>				
<u>Residence, Dist.</u>				
<u>site, Monthly</u>				
	1/9/2013	L1	L1	
	2/4/2013	L1	L1	
	3/13/2013	L1	L1	
	4/8/2013	L1	L1	
	5/6/2013	L1	L1	
	6/4/2013	L1	L1	
	7/15/2013	L1	L1	
	8/6/2013	L1	L1	
	9/10/2013	L1	L1	
	10/2/2013	L1	L1	
	11/13/2013	L1	L1	
	12/3/2013	<u>L1</u>	<u>L1</u>	
	<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>
<u>Bamfield, Pump</u>				
<u>House Grappler Rd.</u>				
<u>Dist. site, Monthly</u>				
	1/9/2013	L1	L1	
	2/4/2013	L1	L1	
	3/13/2013	L1	L1	
	4/8/2013	L1	L1	
	5/6/2013	L1	L1	
	6/4/2013	L1	L1	
	7/15/2013	L1	L1	
	8/6/2013	L1	L1	
	9/10/2013	L1	L1	
	10/2/2013	L1	L1	
	11/13/2013	L1	L1	
	12/3/2013	<u>L1</u>	<u>L1</u>	
	<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>
<u>Bamfield, Canadian</u>				
<u>Coast Guard Post.</u>				
<u>Dist. site, Monthly</u>				
	1/9/2013	L1	L1	
	2/4/2013	L1	L1	
	3/13/2013	L1	L1	
	4/8/2013	L1	L1	
	5/6/2013	L1	L1	
	6/4/2013	L1	L1	
	7/15/2013	L1	L1	
	8/6/2013	L1	L1	
	9/10/2013	L1	L1	

11/13/2013	L1	L1	
12/3/2013	<u>L1</u>	<u>L1</u>	
<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

Bamfield, Bamfield  
Marine Station, Dist.  
site, Monthly

1/9/2013	L1	L1	
2/4/2013	L1	L1	
3/13/2013	L1	L1	
4/8/2013	L1	L1	
5/6/2013	L1	L1	
6/4/2013	L1	L1	
7/15/2013	L1	L1	
8/6/2013	L1	L1	
9/10/2013	L1	L1	
10/2/2013	L1	L1	
11/13/2013	L1	L1	
12/3/2013	<u>L1</u>	<u>L1</u>	
<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

, AUDIT-Bamfield  
Community Water,  
Dist. site, Annually

Binnacle Road  
-Bamfield, Binnacle  
Road Reservoir,  
Dist. site, Monthly

1/9/2013	L1	L1	
2/4/2013	L1	L1	
3/13/2013	L1	L1	
4/8/2013	L1	L1	
5/6/2013	L1	L1	
6/4/2013	L1	L1	
7/15/2013	L1	L1	
8/6/2013	L1	L1	
9/10/2013	L1	L1	
10/2/2013	L1	L1	
11/13/2013	L1	L1	
12/3/2013	<u>L1</u>	<u>L1</u>	
<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

Bamfield, Burlo  
Island, Dist. site, No  
Regular Sampling

10/2/2013	<u>L1</u>	<u>L1</u>	
<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

Result Values:

E - estimated

L - less than

G - greater than

**Interpreting Sample Reports**

In VIHA, the results of drinking water sampling are reported using the following coding system:

**L1** Less than 1 (no detectable bacteria) - Meaning: No bacteria present

**OG** Overgrown - Meaning: Too many background bacteria to give an accurate count

**EST** Estimated Count

and

**A** Sample not tested; Too long in transit

**D** Sample not tested; No collection date given

**T** Sample submitted unsatisfactory. Exceeded 30 hours holding time, please resample.

**NS** No sample received with requisition


Samples that contain total coliform:	0	0.00% of total
Samples that contain e. coli:	0	0.00% of total
Samples that contain fecal coliform:	0	0.00% of total
Number of positive samples in last 30 days:	0/5	
Total number of samples:	61	

**Comments:**

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Environmental Health Officer  
Feb 25 2014

FOR FURTHER INFORMATION PLEASE CALL: Bruvall, Stephanie (250) 731-1315 Port Alberni

**Operator**

Alberni-Clayoquot Regional District  
135 Regent Street  
Bamfield, BC  
V0R 1B0

(250) 728-1260

# Water Sample Range Report

Vancouver Island Health Authority  
Central Island

**Facility Name:** BEAVER CREEK WATER SYSTEM  
**Facility Type:** DWT  
**Date Range:** Jan 1 2013 to Dec 31 2013  
**Date Created:** Feb 21 2014

<u>Sampling Site</u>	<u>Date Collected</u>	<u>Total Coliform</u>	<u>E. Coli</u>	<u>Fecal Coliform</u>
<u>7656 Beaver Creek</u>				
<u>Road, North</u>				
<u>Reservoir, Dist. site,</u>				
<u>Monthly</u>				
	1/2/2013	L1	L1	
	1/29/2013	L1	L1	
	2/26/2013	L1	L1	
	3/26/2013	L1	L1	
	5/1/2013	L1	L1	
	5/28/2013	L1	L1	
	6/25/2013	L1	L1	
	7/23/2013	L1	L1	
	8/20/2013	L1	L1	
	9/26/2013	L1	L1	
	10/8/2013	L1	L1	
	11/5/2013	L1	L1	
	12/3/2013	<u>L1</u>	<u>L1</u>	
	<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>
<u>7702 Sportsman</u>				
<u>Road, Pumphouse</u>				
<u>Treated, Dist. site,</u>				
<u>Bi-weekly</u>				
	1/2/2013	L1	L1	
	1/8/2013	L1	L1	
	1/16/2013	L1	L1	
	1/22/2013	L1	L1	
	1/29/2013	L1	L1	
	2/5/2013	L1	L1	
	2/13/2013	L1	L1	
	2/20/2013	L1	L1	
	2/26/2013	L1	L1	
	3/12/2013	L1	L1	
	3/20/2013	L1	L1	
	3/26/2013	L1	L1	
	5/1/2013	<u>L1</u>	<u>L1</u>	
	<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>
<u>6000 Kitsuksis</u>				
<u>Road, Kitsuksis</u>				
<u>Road, Dist. site,</u>				
<u>Weekly</u>				
	1/2/2013	L1	L1	
	1/8/2013	L1	L1	
	1/16/2013	L1	L1	
	1/22/2013	L1	L1	

2/13/2013	L1	L1
2/20/2013	L1	L1
2/26/2013	L1	L1
3/5/2013	L1	L1
3/12/2013	L1	L1
3/20/2013	L1	L1
3/26/2013	L1	L1
4/3/2013	L1	L1
4/9/2013	L1	L1
4/16/2013	L1	L1
5/1/2013	L1	L1
5/8/2013	L1	L1
5/15/2013	L1	L1
5/21/2013	L1	L1
5/28/2013	L1	L1
6/4/2013	L1	L1
6/11/2013	L1	L1
6/18/2013	L1	L1
6/25/2013	L1	L1
7/2/2013	L1	L1
7/9/2013	L1	L1
7/18/2013	L1	L1
7/23/2013	L1	L1
7/30/2013	L1	L1
8/6/2013	L1	L1
8/13/2013	L1	L1
8/20/2013	L1	L1
8/27/2013	L1	L1
9/3/2013	L1	L1
9/10/2013	L1	L1
9/17/2013	L1	L1
9/26/2013	L1	L1
10/1/2013	L1	L1
10/9/2013	L1	L1
10/16/2013	L1	L1
10/22/2013	L1	L1
10/29/2013	L1	L1
11/5/2013	L1	L1
11/12/2013	L1	L1
11/20/2013	L1	L1
11/27/2013	L1	L1
12/3/2013	L1	L1
12/10/2013	L1	L1
12/18/2013	L1	L1
<b>Total Positive:</b>	<b>0</b>	<b>0</b>

0

6287 Springfield  
Road, Springfield  
Road, Dist. site,  
Monthly

1/22/2013	L1	L1
2/20/2013	L1	L1
3/20/2013	L1	L1
4/16/2013	L1	L1
5/21/2013	L1	L1
6/18/2013	L1	L1
7/16/2013	L1	L1
8/13/2013	L1	L1
9/10/2013	L1	L1
10/1/2013	L1	L1

11/27/2013	L1	L1	
12/17/2013	<u>L1</u>	<u>L1</u>	
<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

7271 Thompson  
Road, Thompson  
Road, Dist. site,  
Monthly

1/16/2013	L1	L1	
2/13/2013	L1	L1	
3/12/2013	L1	L1	
4/9/2013	L1	L1	
5/15/2013	L1	L1	
6/11/2013	L1	L1	
7/9/2013	L1	L1	
8/6/2013	L1	L1	
9/3/2013	L1	L1	
10/22/2013	L1	L1	
11/20/2013	L1	L1	
12/17/2013	<u>L1</u>	<u>L1</u>	
<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

7000 Swanson  
Road, Swanson  
Road, Dist. site,  
Monthly

1/16/2013	L1	L1	
2/13/2013	L1	L1	
3/12/2013	L1	L1	
4/9/2013	L1	L1	
5/15/2013	L1	L1	
6/11/2013	L1	L1	
7/9/2013	L1	L1	
8/6/2013	L1	L1	
9/3/2013	L1	L1	
10/22/2013	L1	L1	
11/20/2013	L1	L1	
12/17/2013	<u>L1</u>	<u>L1</u>	
<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

5520 Beaver Creek  
Road, Gill School  
Hydrant, Dist. site,  
Monthly

1/16/2013	L1	L1	
2/13/2013	L1	L1	
3/12/2013	L1	L1	
4/9/2013	L1	L1	
5/15/2013	L1	L1	
6/11/2013	L1	L1	
7/9/2013	L1	L1	
8/6/2013	L1	L1	
9/3/2013	L1	L1	
10/22/2013	L1	L1	
11/20/2013	L1	L1	
12/17/2013	<u>L1</u>	<u>L1</u>	
<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>



5535 Maple Road,5535 Maple Road,Dist. site, Monthly

1/2/2013	L1	L1	
1/29/2013	L1	L1	
2/26/2013	L1	L1	
3/26/2013	L1	L1	
5/28/2013	L1	L1	
6/25/2013	L1	L1	
7/23/2013	L1	L1	
8/20/2013	L1	L1	
9/26/2013	L1	L1	
10/8/2013	L1	L1	
11/5/2013	L1	L1	
12/3/2013	<u>L1</u>	<u>L1</u>	
<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

5667 ChapmanRoad, 5667Chapman Road,Dist. site, Monthly

1/8/2013	L1	L1	
2/5/2013	L1	L1	
3/5/2013	L1	L1	
4/3/2013	L1	L1	
5/8/2013	L1	L1	
6/4/2013	L1	L1	
7/2/2013	L1	L1	
7/30/2013	L1	L1	
8/27/2013	L1	L1	
9/17/2013	L1	L1	
10/16/2013	L1	L1	
11/12/2013	L1	L1	
12/10/2013	<u>L1</u>	<u>L1</u>	
<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

6210 DrinkwaterRoad, 6210Drinkwater Road,Dist. site, Monthly

1/8/2013	L1	L1	
2/5/2013	L1	L1	
3/5/2013	L1	L1	
4/3/2013	L1	L1	
5/8/2013	L1	L1	
6/4/2013	L1	L1	
7/2/2013	L1	L1	
7/30/2013	L1	L1	
8/27/2013	L1	L1	
9/17/2013	L1	L1	
10/17/2013	35	L1	
11/12/2013	L1	L1	
12/10/2013	<u>L1</u>	<u>L1</u>	
<b>Total Positive:</b>	<b>1</b>	<b>0</b>	<b>0</b>

6825 LamarqueRoad, 6825Lamarque Road,

1/8/2013	L1	L1	
2/5/2013	L1	L1	
3/5/2013	L1	L1	
4/3/2013	L1	L1	
5/8/2013	L1	L1	
6/4/2013	L1	L1	
7/2/2013	L1	L1	
7/30/2013	L1	L1	
8/27/2013	L1	L1	
9/17/2013	L1	L1	
10/16/2013	L1	L1	
11/12/2013	L1	L1	
12/10/2013	<u>L1</u>	<u>L1</u>	
<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

7296 Dashwood  
Road, Dashwood  
Road, Dist. site,  
Monthly

1/8/2013	L1	L1	
2/5/2013	L1	L1	
3/5/2013	L1	L1	
4/3/2013	L1	L1	
5/8/2013	L1	L1	
6/4/2013	L1	L1	
7/2/2013	L1	L1	
7/30/2013	L1	L1	
8/27/2013	L1	L1	
9/17/2013	L1	L1	
10/16/2013	L1	L1	
11/12/2013	L1	L1	
12/17/2013	<u>L1</u>	<u>L1</u>	
<b>Total Positive:</b>	<b>0</b>	<b>0</b>	<b>0</b>

Shop Building Tap ,  
6038 Beaver Creek  
Road, Dist. site,  
Bi-weekly

1/2/2013	L1	L1	
1/22/2013	L1	L1	
1/29/2013	L1	L1	
2/20/2013	L1	L1	
2/26/2013	L1	L1	
3/20/2013	L1	L1	
3/26/2013	L1	L1	
4/16/2013	L1	L1	
5/1/2013	L1	L1	
5/21/2013	L1	L1	
5/28/2013	L1	L1	
6/18/2013	L1	L1	
6/25/2013	L1	L1	
7/16/2013	L1	L1	
7/23/2013	L1	L1	
8/13/2013	L1	L1	
8/20/2013	L1	L1	
9/10/2013	L1	L1	
9/26/2013	L1	L1	
10/1/2013	L1	L1	
10/8/2013	L1	L1	

11/5/2013

L1

L1

11/27/2013

L1

L1

12/3/2013

L1

L1

12/10/2013

L1

L1

**Total Positive:**

**0**

**0**

**0**

**Result Values:**

**E - estimated**

**L - less than**

**G - greater than**

**Interpreting Sample Reports**

In VIHA, the results of drinking water sampling are reported using the following coding system:

**L1** Less than 1 (no detectable bacteria) - Meaning: No bacteria present

**OG** Overgrown - Meaning: Too many background bacteria to give an accurate count

**EST** Estimated Count

and

**A** Sample not tested; Too long in transit

**C** Sample leaked/broken in transit

**D** Sample not tested; No collection date given

**T** Sample submitted unsatisfactory. Exceeded 30 hours holding time, please resample.

**NS** No sample received with requisition

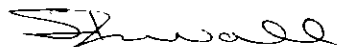
Samples that contain total coliform:	1	0.47% of total
Samples that contain e. coli:	0	0.00% of total
Samples that contain fecal coliform:	0	0.00% of total
Number of positive samples in last 30 days:	0/15	
Total number of samples:	214	

**Comments:**

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Environmental Health Officer

Feb 25 2014

FOR FURTHER INFORMATION PLEASE CALL: Bruvall, Stephanie (250) 731-1315 Port Alberni

**Operator**

Alberni-Clayoquot Regional District  
3008 5th Avenue  
Port Alberni, BC  
V9Y 2E3

(250) 720-2713

# Water Sample Range Report

Vancouver Island Health Authority  
Central Island

**Facility Name:** BEAVER CREEK WATER SYSTEM  
**Facility Type:** DWT  
**Date Range:** Jan 1 2013 to Dec 31 2013  
**Date Created:** Feb 21 2014

Sampling Site	Date Collected	Total Coliform	E. Coli	Fecal Coliform
<u>7702 Sportsman Road, Pumphouse-RAW-surface water, Source site, Bi-weekly</u>				
	1/2/2013	55.4	5.2	
	1/8/2013	62.0	5.2	
	1/16/2013	39.3	2.0	
	1/22/2013	27.5	6.3	
	1/29/2013	47.2	2.0	
	2/5/2013	EST 210	EST 9	
	2/13/2013	28.8	L1	
	2/20/2013	24.0	1.0	
	2/26/2013	86.0	1.0	
	3/12/2013	EST 120	EST 13	
	3/20/2013	1413.6	77.6	
	3/26/2013	40.4	1.0	
	4/9/2013	79.4	2.0	
	5/1/2013	37.4	L1	
	5/15/2013	EST 62	EST 4	
	5/28/2013	218.7	1.0	
	6/11/2013	EST 220	EST 8	
	6/25/2013	816.4	12.1	
	7/9/2013	1553.1	5.2	
	7/23/2013	1203.3	6.3	
	8/6/2013	1299.7	6.3	
	8/20/2013	770.1	5.2	
	9/3/2013	435.2	6.3	
	9/26/2013	727.0	27.8	
	10/8/2013	13.2	L1	
	10/22/2013	344.8	14.6	
	11/5/2013	155.3	8.5	
	11/20/2013	79.4	1.0	
	12/3/2013	2.0	L1	
	12/17/2013	<u>42.6</u>	<u>2.0</u>	
	<b>Total Positive:</b>	<b>30</b>	<b>26</b>	<b>0</b>

**Result Values:**                      E - estimated                      L - less than                      G - greater than

### Interpreting Sample Reports

In VIHA, the results of drinking water sampling are reported using the following coding system:

L1 Less than 1 (no detectable bacteria) - Meaning: No bacteria present

OG Overgrown - Meaning: Too many background bacteria to give an accurate count

EST Estimated Count

and

A Sample not tested; Too long in transit

C Sample leaked/broken in transit

D Sample not tested; No collection date given

T Sample submitted unsatisfactory. Exceeded 30 hours holding time, please resample.



Samples that contain total coliform:	30	100.00% of total
Samples that contain e. coli:	26	86.67% of total
Samples that contain fecal coliform:	0	0.00% of total
Number of positive samples in last 30 days:	2/2	
Total number of samples:	30	

**Comments:**  

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Environmental Health Officer

Feb 25 2014

FOR FURTHER INFORMATION PLEASE CALL: Bruvall, Stephanie (250) 731-1315 Port Alberni

**Operator**

Alberni-Clayoquot Regional District  
3008 5th Avenue  
Port Alberni, BC  
V9Y 2E3

(250) 720-2713

## **Appendix C**

### **Drinking Water Quality Links**



### **Drinking Water Quality Links:**

- Guidelines for Canadian Drinking Water Quality  
<http://www.hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/guide/index-eng.php>
- Drinking Water Protection Act:  
[http://www.bclaws.ca/EPLibraries/bclaws\\_new/document/ID/freeside/00\\_01009\\_01](http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_01009_01)
- Drinking Water Protection Regulation:  
[http://www.bclaws.ca/EPLibraries/bclaws\\_new/document/ID/freeside/10\\_200\\_2003](http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/10_200_2003)
- The Environmental Operators Certificate Program:  
<http://www.eocp.org/>
- British Columbia Water and Wastewater Association:  
<http://www.bcwwa.org/>
- Vancouver Island Health Authority – Water Quality  
<http://www.viha.ca/mho/water/>