

# REGIONAL DISTRICT OF NANAIMO

## Water Service Area Annual Report 2021



## Whiskey Creek Water Service Area

June 2022

REGIONAL DISTRICT OF NANAIMO

*Water & Utility Services Department*

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Appendix A - Map of Whiskey Creek Water Service Area

Appendix B - Water Quality Testing Results

Appendix C - Emergency Response & Contingency Plan

## 1.0 Introduction

The following annual report describes the Whiskey Creek Water Service Area and summarizes the water quality and production data from 2021. This report also includes a summary of inquiries and complaints, completed and proposed maintenance activities, Operator Certification, the Emergency Response & Contingency Plan, and the Cross Connection Control Program.

This report is to be submitted to Island Health by the spring of 2022.

## 2.0 Whiskey Creek Water System

The Whiskey Creek water system was constructed in the 1970s and was initially operated by the subdivision developer, Westerlea Estates Ltd. The water system is located eight kilometres southwest of Qualicum Beach on the south side of Highway 4. There are 130 residential lots connected to the water system. In January 2011, the ownership and operation of the Whiskey Creek Water District was transferred to the RDN. A map of the Whiskey Creek Water Service Area is provided in Appendix A for reference.

### 2.1 Source Water

Two water licenses allowed surface water to be extracted from nearby Crocker Creek for over 45 years. Water from Crocker Creek was temporarily stored in a raw water storage pond and wet well on Hebert Road. The water was dosed with a polymer, pumped through a pressure filter, chlorinated, and stored in a reservoir. Drinking water was then pumped into the water system via two booster pumps.

A permanent groundwater source has been found as a better quality and more reliable water supply for the service area. In 2020, two test wells were drilled near Carson Road and source approval was received from Island Health. By the fall of 2021, a temporary overland groundwater supply line was installed and the switch was made from surface to groundwater sourcing. The location and depth of the permanent well supply infrastructure to the water storage reservoir is being designed in 2022, and will be installed by 2023. A permanent emergency backup generator is available in the event of a power failure.

### 2.2 Reservoirs

One service reservoir (concrete) is present at 979 Poplar Way, and has a capacity of 195 m<sup>3</sup> (43,000 imperial gallons).

### 2.3 Distribution System

The water distribution system in Whiskey Creek is summarized in the table below. There are 9 fire hydrants and 4 flush-outs in the system.

Watermain Material	Length of mains in Whiskey Creek Water Service Area	Prevalence in Water Service Area
Asbestos-concrete: 100mm or smaller	1,280 m	40%
150mm or larger	1,920 m	60%

### 3.0 Water Sampling and Testing Program

Water sampling and testing is carried out weekly in the distribution system. The following table includes a summary of all testing:

Timing	Location	Tests
Weekly	BC Centre for Disease Control	Total coliforms, E.Coli
Weekly	RDN (in-house) Laboratory	Total coliforms, E.Coli Temperature, pH, Conductivity TDS, Chlorine residual, Salinity
Monthly	Bureau Veritas	Aluminum
Quarterly	Bureau Veritas	Trihalomethanes (THMs), Total coliforms, and E.Coli tested at the reservoir site and 844 Carson Rd.
Annual Source Water Testing (every Fall)	Bureau Veritas	Complete potability testing of raw source water incl. tannins and lignins
Annual System Water Testing (every Spring)	Bureau Veritas	Complete potability testing of distribution system water

### 4.0 Water Quality - Source Water and Distribution System

Up-to-date water quality reports and lab data are posted monthly on the RDN website at [www.rdn.bc.ca/whiskey-creek](http://www.rdn.bc.ca/whiskey-creek). Tables of water quality testing results for both the source water and distribution system are provided at the end of this report under Appendix B.

When Crocker Creek was in use, the turbidity of water in the distribution system was closely monitored with an online turbidity meter and alarm. Occasionally, during high turbidity events, such as heavy rainfall in/near Crocker Creek, the filtration system could not effectively filter the surface water. In those cases, the surface water intake was temporarily shut down while drinking water was trucked-in from another RDN water system nearby to top up the water storage reservoir until the high turbidity event passed. Turbidity events are no longer an issue since sourcing was switched to groundwater.

### 5.0 Water Quality Inquiries and Complaints

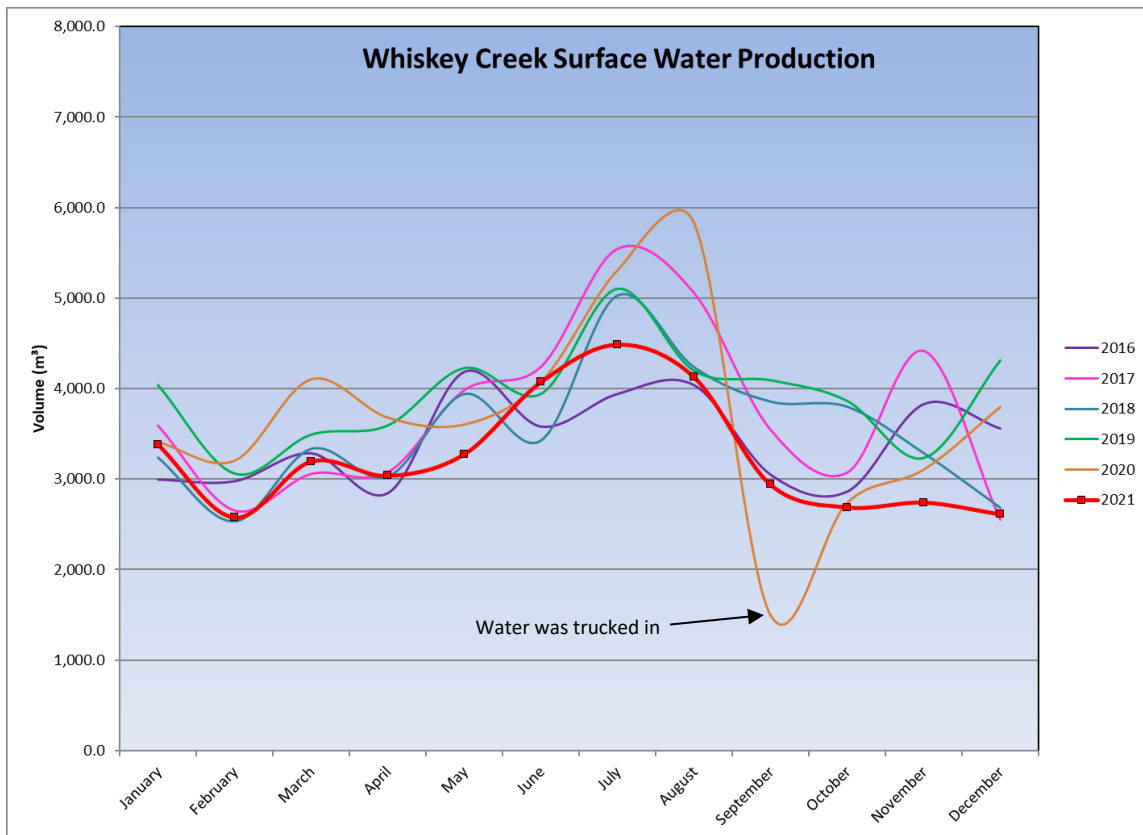
A few inquiries were received from the Whiskey Creek water service area in 2021 and were typically related to water billing, high turbidity events, and seasonal restrictions.

A summary of the water system incidents in 2021 is given in the table below.

Activity in 2021	Date(s)	History/Notes
Boil Water Advisories	None	None
High Turbidity Events	Spring and Fall	Trucked-in water
Equipment Malfunction	None	None
Water Main Breaks	Jan 2021	Service line leak in road at 924 Poplar Way
Pump Failures	Monthly	Temp power outages

### 6.0 Water Consumption

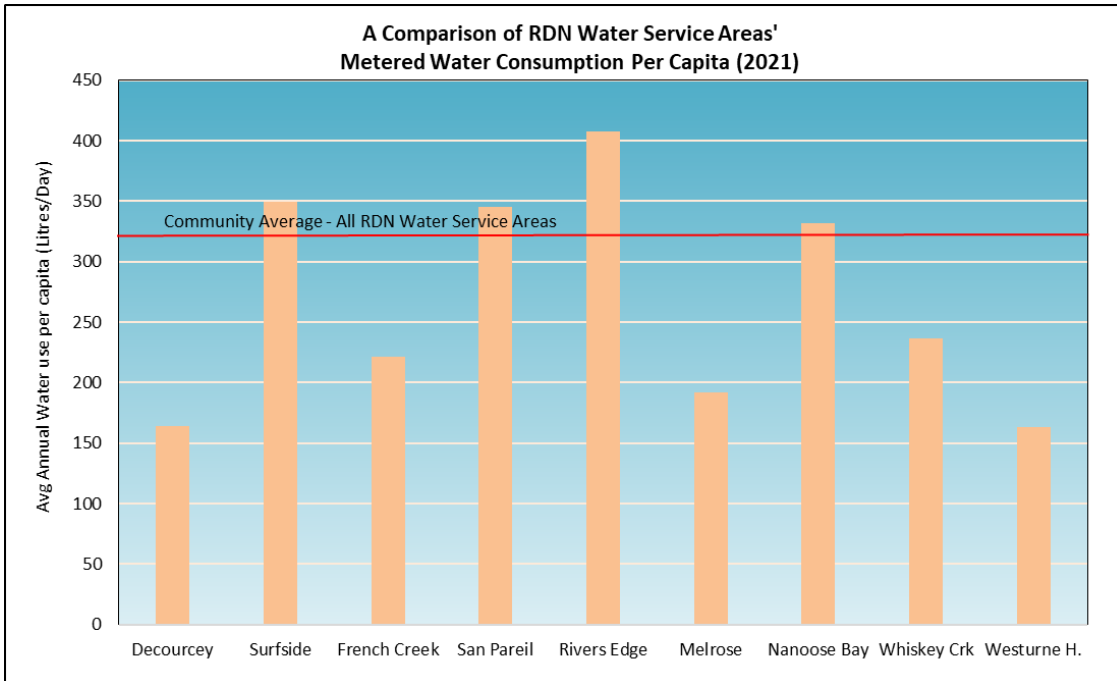
Monthly water production for the Whiskey Creek Water Service Area for the past 6 years is shown in the chart below. Water production in 2021 was below average in comparison to previous years. Production levels in November and December represent groundwater sourcing.



#### Consumption

In the Fall/Winter of 2021, the average usage per home in Whiskey Creek was 0.50 cubic metres per day (110 imperial gallons). In the summer, the average water usage was 0.70 cubic metres per day (154 imperial gallons). Based on these figures, the annual consumption per capita is

estimated to be 237 L/day (based on 2.4 people/household). This consumption is *26% less* than the RDN system average of 321 L/day/capita in 2021.



## 7.0 Maintenance Program

Daily pump station inspections are carried out to reduce or eliminate the risk of contamination and system failure, and to ensure the consistent application of chlorine for treatment purposes. Watermains are flushed once annually in the spring. Fire hydrants (9) are serviced once per year (either 'A-level' or 'B-level' maintenance) in the fall. Twenty-four hour on-call coverage is in place to respond to water system emergencies and alarms.

Fire hydrants in the Whiskey Creek water system cannot be relied on for fire insurance purposes due to insufficient supply and capacity for fire flows. Upgrades to water supply volumes and reservoir storage may be required in the future but would not proceed without community support and financing.

## 8.0 Operator Certification

The Regional District Water & Utility Services staff are comprised of one Manager, one Project Engineer, one Engineering Technologist, one Engineering Technician, one Chief Operator, and seven certified operators.

The operators receive ongoing training and certification in:

- |                            |   |                            |
|----------------------------|---|----------------------------|
| ✓ Water Treatment          | ✓ Chlorine Handling                                       | ✓ Confined Space Awareness |
| ✓ Water Distribution       | ✓ WHMIS (Workplace Hazardous Material Information System) | ✓ Traffic Control          |
| ✓ Wastewater Collection    | ✓ TDG (Transportation of Dangerous Goods)                 | ✓ Fall Protection          |
| ✓ Cross Connection Control |   | ✓ First Aid                |
| ✓ Asbestos Awareness       |   | ✓ Silica Awareness         |

## 9.0 Water Service Area Projects

### 9.1 2021 Completed Studies & Projects

- Switched from surface water to ground water sourcing;
- Cleaned storage reservoir;
- Developed aluminum monitoring and sampling plan;
- Designed and installed UV disinfection system;
- Constructed temporary overland transmission line;
- Corresponded with residents regarding water conservation;
- Enforced outdoor sprinkling regulations;
- Advised residents regarding water leak repairs;
- Implemented the 2021-2030 Water Conservation Plan;
- Completed regular watermain flushing and hydrant maintenance;
- Maintained a high level of water quality;
- Continued quality control through regular testing and monitoring of water system;
- Implemented the Water Systems SCADA Master Plan; and
- Began valve maintenance program.



Poplar Way in Whiskey Creek

## 9.2 2022 Proposed Projects & Upgrades

- Design and begin transmission main and pump station upgrades;
- Complete water reservoir structural assessment;
- Complete irrigation checks for high-water users;
- Continue watermain flushing program and hydrant maintenance;
- Implement Phase 2 Water Systems SCADA Master Plan;
- Utilize leak detection equipment and tracking;
- Continue valve maintenance program;
- Continue the 2021-2030 DWWP Water Conservation Plan; and
- Continue to offer numerous water-saving incentives via rebates.

## 10.0 Emergency Response & Contingency Plan

The Regional District Emergency Response & Contingency Plan (ERCP) contains procedures and contact information to efficiently respond to water system emergencies such as contamination of water supply, loss of supply, pump failure, and drought management. The ERCP was reviewed and updated in 2020, and copies are available on our website, at each RDN office, in each pumphouse, and in each Water Services vehicle. A copy of the ERCP is also attached to this report in Appendix C.



**Water Source Area Protection sign on Hebert Rd.**

## 11.0 Cross Connection Control

The RDN's Cross Connection Control Program was put in place to protect the public health by reducing the risk of contaminants flowing back into the public water supply. The RDN Manager of Water Services is the designated Cross Connection Control Manager.

The RDN's Cross Connection Control Program addresses cross connection threats through operating policies and procedures, as well as assisting customers with backflow preventer selection, installation, testing, maintenance and reporting. The program receives its authority from *RDN Cross Connection Control Regulation Bylaw No. 1788*, and the *British Columbia Building Code, Part 7*, which requires that potable water be protected from contamination. Additionally, a webpage has been established at <https://rdn.bc.ca/cross-connection-control-program> to educate RDN water service customers about cross connection hazards, and lists the relevant links to current standards and resources. Two of the RDN's water system operators received certification as backflow assembly testers through the British Columbia Water & Waste Association (BCWWA).



## 12.0 Cyber Security

The RDN uses a multi-level approach to cyber-security. Corporate network security is employed via a universal threat management gateway that implements various methods of data security, which includes daily definition updates to block known cyber threats. In addition, all RDN PC's are protected with anti-virus software. RDN water systems are connected to the corporate network via IP-Sec VPN's for remote management by information technology and equipment operators. Future infrastructure upgrades will see our water systems located on segregated networks to limit the vulnerability from cybersecurity threats.

## 13.0 Closing

An annual report for the year 2022 will be prepared and submitted to Island Health in the spring of 2023. Annual reports are also available on our website at: [www.rdn.bc.ca/whiskey-creek](http://www.rdn.bc.ca/whiskey-creek).



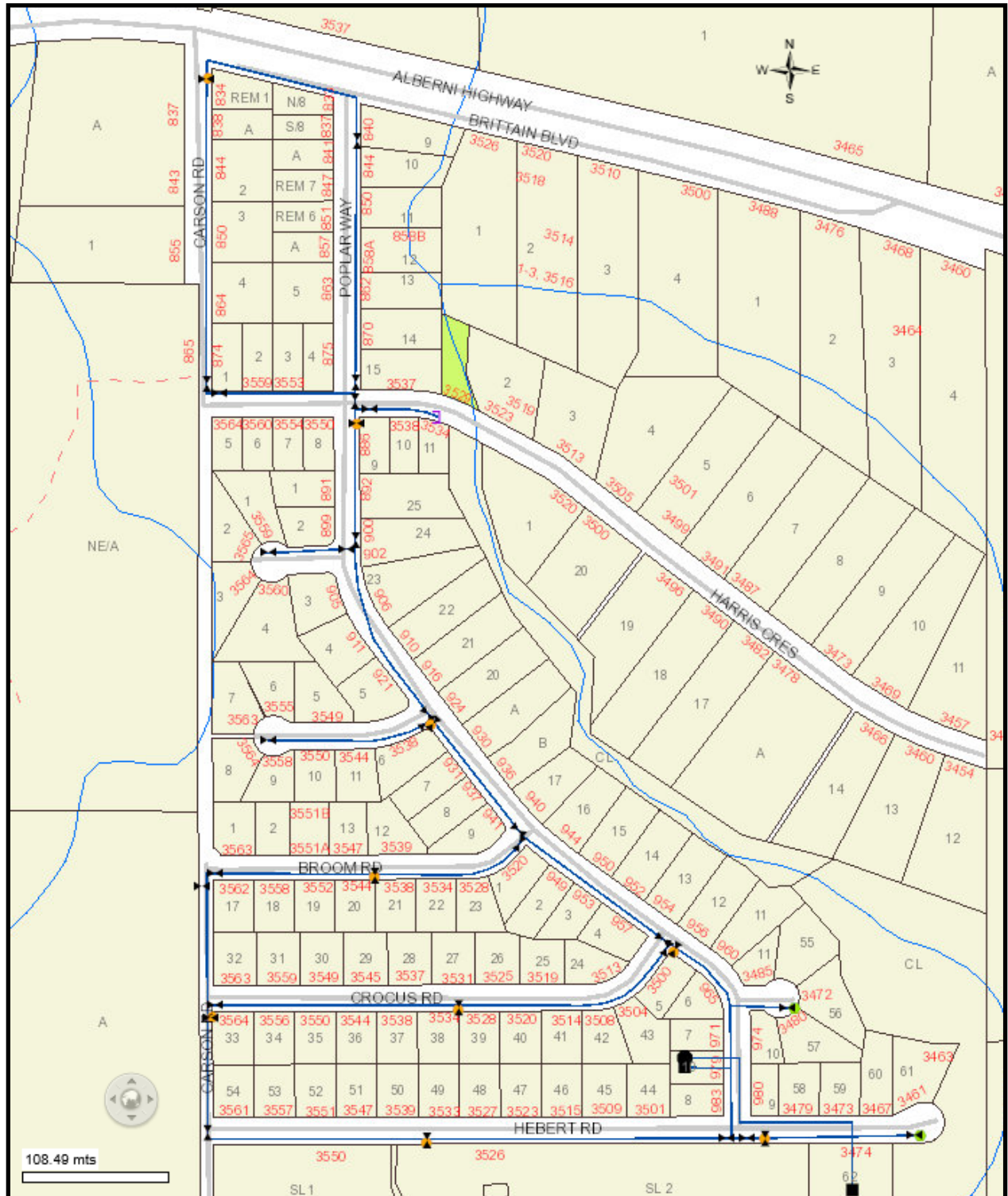
Land clearing and well site  
construction in Whiskey Creek

**APPENDIX A**

**MAP OF WHISKEY CREEK**

**WATER SERVICE AREA**

WHISKEY CREEK WATER SERVICE AREA



## APPENDIX B

### WATER QUALITY TESTING RESULTS

# WHISKEY CREEK WATER SERVICE AREA


**Facility Location:**

979 Poplar Way, Qualicum Beach

**Facility Information:** Facility Type: 15-300 connections DWC

**Facility Sampling History:**

<u>Date Collected</u>	<u>Drinking Water System</u>	<u>Total E. Coli</u>	<u>Total Coliform</u>	<u>Site Name</u>
01/11/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3533 Hebert Road
02/22/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3533 Hebert Road
03/10/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3533 Hebert Road
03/10/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3533 Hebert Road
03/22/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3533 Hebert Road
04/26/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3533 Hebert Road
05/25/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3533 Hebert Road
06/21/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3533 Hebert Road
07/27/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3533 Hebert Road
08/16/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3533 Hebert Road
09/28/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3533 Hebert Road
10/25/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3533 Hebert Road
11/16/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3533 Hebert Road
12/14/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3533 Hebert Road
01/18/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3537 Harris Crescent
02/03/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3537 Harris Crescent
03/03/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3537 Harris Crescent

<u>Date Collected</u>	<u>Drinking Water System</u>	<u>Total E. Coli</u>	<u>Total Coliform</u>	<u>Site Name</u>
04/06/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3537 Harris Crescent
05/03/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3537 Harris Crescent
06/01/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3537 Harris Crescent
07/06/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3537 Harris Crescent
08/03/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3537 Harris Crescent
09/07/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3537 Harris Crescent
10/04/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3537 Harris Crescent
11/01/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3537 Harris Crescent
12/07/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3537 Harris Crescent
01/06/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3564 Foxglove Road
02/17/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3564 Foxglove Road
03/15/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3564 Foxglove Road
04/19/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3564 Foxglove Road
05/17/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3564 Foxglove Road
06/14/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3564 Foxglove Road
07/19/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3564 Foxglove Road
08/09/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3564 Foxglove Road
09/20/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3564 Foxglove Road
10/13/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3564 Foxglove Road
11/22/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3564 Foxglove Road
12/14/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	3564 Foxglove Road
01/11/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	844 Carson Road
02/08/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	844 Carson Road

<u>Date Collected</u>	<u>Drinking Water System</u>	<u>Total E. Coli</u>	<u>Total Coliform</u>	<u>Site Name</u>
04/12/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	844 Carson Road
05/10/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	844 Carson Road
06/07/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	844 Carson Road
07/12/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	844 Carson Road
08/09/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	844 Carson Road
09/13/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	844 Carson Road
10/18/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	844 Carson Road
12/14/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	844 Carson Road
12/14/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	Temporary Overland Water Main
01/06/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	28.2	Whiskey Creek Raw Wet Well PRE TREATMENT
02/08/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	18.9	Whiskey Creek Raw Wet Well PRE TREATMENT
03/22/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	8.6	Whiskey Creek Raw Wet Well PRE TREATMENT
04/12/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	14.8	Whiskey Creek Raw Wet Well PRE TREATMENT
05/03/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	35.9	Whiskey Creek Raw Wet Well PRE TREATMENT
06/01/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	52.9	Whiskey Creek Raw Wet Well PRE TREATMENT
07/06/2021	WHISKEY CREEK WATER SERVICE AREA	6.3	275.5	Whiskey Creek Raw Wet Well PRE TREATMENT
08/03/2021	WHISKEY CREEK WATER SERVICE AREA	14.6	275.5	Whiskey Creek Raw Wet Well PRE TREATMENT
09/07/2021	WHISKEY CREEK WATER SERVICE AREA	3.0	238.2	Whiskey Creek Raw Wet Well PRE TREATMENT

<b><u>Date Collected</u></b>	<b><u>Drinking Water System</u></b>	<b><u>Total E. Coli</u></b>	<b><u>Total Coliform</u></b>	<b><u>Site Name</u></b>
10/04/2021	WHISKEY CREEK WATER SERVICE AREA	6.3	160.7	Whiskey Creek Raw Wet Well PRE TREATMENT
11/01/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	51.2	Whiskey Creek Raw Wet Well PRE TREATMENT
12/07/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	Whiskey Creek Well Tag No 42538
12/14/2021	WHISKEY CREEK WATER SERVICE AREA	LT1	LT1	Whiskey Creek Well Tag No 42538

### **Interpreting Sample Reports**

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

- LT1 Less than 1 (no detectable bacteria) - Meaning: No bacteria present
- L1 Less than 1 (no detectable bacteria) - Meaning: No bacteria present





# Regional District of Nanaimo - Water Services Department

## Whiskey Creek Water Analysis - 2021 Monthly Report

		BC Centre for Disease Control		RDN In-House Laboratory and Spectrophotometer									
Date	Sample Location (Address)	E. coli *	Total Coliform *	E.coli *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
07-Dec-21	3537 Harris			0	0	8	7.06	0.70	63.0	0.05	120.1	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at <a href="https://www.rdn.bc.ca/whiskey-creek">https://www.rdn.bc.ca/whiskey-creek</a>	
07-Dec-21	Temp Supply Main			0	0	6	7.11	1.12	31.1	0.03	66.1		
14-Dec-21	979 Poplar			0	0	9	7.12	1.05	30.4	0.03	64.9		
14-Dec-21	844 Carson			0	0	9	7.12	0.76	29.4	0.03	62.5		
14-Dec-21	3533 Hebert			0	0	9		0.94					
14-Dec-21	3564 Foxglove			0	0	9		0.79					
20-Dec-21	844 Carson			0	0	8	7.32	0.72	38.6	0.04	81.9		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	0.02 AO 0.12 MAC

**Legend:**

\* Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Orange font indicates non-compliance with the Aesthetic Objective (AO) in the Canadian Drinking Water Guidelines (CDWG)

Red font indicates non-compliance with the Maximum Acceptable Concentration (MAC) in the CDWG

**Comments:**

Iron and Manganese are no longer being tested in-house.

A full potability scan is completed once per year at an external lab that includes metals and minerals.



# Regional District of Nanaimo - Water Services Department

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Date	Sample Location (Address)	BC Centre for Disease Control		RDN In-House Laboratory and Spectrophotometer									
		E. coli *	Total Coliform *	E.coli *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
01-Nov-21	3537 Harris	0	0	0	0	11	7.56	1.23	67.8	0.07	143.1	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at <a href="https://www.rdn.bc.ca/whiskey-creek">https://www.rdn.bc.ca/whiskey-creek</a>	
08-Nov-21	844 Carson	0	0	0	0	10	7.35	0.71	220.0	0.22	460.0		
15-Nov-21	3533 Hebert			0	0	9	7.27	1.05	54.4	0.05	115.2		
22-Nov-21	3564 Foxglove			0	0	8	7.45	1.20	59.2	0.06	125.3		
29-Nov-21	844 Carson			0	0	9	7.04	0.95	62.1	0.06	131.4		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	0.02 AO 0.12 MAC

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		E. coli *	Total Coliform *	E.coli *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
05-Oct-21	3537 Harris	0	0	0	0	15	7.31	1.21	58.7	0.06	124.2	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at <a href="https://www.rdn.bc.ca/whiskey-creek">https://www.rdn.bc.ca/whiskey-creek</a>	
13-Oct-21	3564 Foxglove	0	0	0	0	15	7.55	1.38	74.2	0.07	156.8		
18-Oct-21	844 Carson	0	0	0	0	13	7.28	1.04	78.0	0.08	163.4		
25-Oct-21	3533 Hebert	0	0	0	0	13	7.23	1.00	72.0	0.07	153.3		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	0.02 AO 0.12 MAC

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07-Sep-21	3537 Harris	0	0	0	0	15	7.24	1.16	75.1	0.07	149.9	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at <a href="https://www.rdn.bc.ca/whiskey-creek">https://www.rdn.bc.ca/whiskey-creek</a>	
13-Sep-21	844 Carson	0	0	0	0	15	7.26	0.88	73.1	0.07	150.1		
20-Sep-21	3564 Foxglove	0	0	0	0	14	7.50	1.07	66.8	0.07	141.2		
27-Sep-21	3533 Hebert	0	0	0	0	15	7.54	1.33	71.8	0.07	151.4		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	0.02 AO 0.12 MAC

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Date	Sample Location (Address)	BC Centre for Disease Control		RDN In-House Laboratory and Spectrophotometer									
		E. coli *	Total Coliform *	E.coli *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
03-Aug-21	3537 Harris	0	0	0	0		7.12	0.73	62.1	0.06	131.4	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at <a href="https://www.rdn.bc.ca/whiskey-creek">https://www.rdn.bc.ca/whiskey-creek</a>	
09-Aug-21	844 Carson	0	0	0	0	17	7.18	0.76	61.8	0.06	130.7		
09-Aug-21	3564 Foxglove	0	0	0	0	17	7.19	0.74	62.9	0.06	128.2		
16-Aug-21	3533 Hebert	0	0	0	0	18	7.27	1.22	62.5	0.06	132.1		
23-Aug-21	3533 Hebert			0	0	19	7.34	0.91	61.1	0.06	129.4		
30-Aug-21	844 Carson			0	0	17	7.29	0.64	72.1	0.07	151.9		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	0.02 AO 0.12 MAC

### Legend:

\* Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Orange font indicates non-compliance with the Aesthetic Objective (AO) in the Canadian Drinking Water Guidelines (CDWG)

Red font indicates non-compliance with the Maximum Acceptable Concentration (MAC) in the CDWG

### Comments:

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A full potability scan is completed once per year at an external lab that includes metals and minerals.



# Regional District of Nanaimo - Water Services Department

## Whiskey Creek Water Analysis - 2021 Monthly Report

Date	Sample Location (Address)	BC Centre for Disease Control		RDN In-House Laboratory and Spectrophotometer									
		E. coli *	Total Coliform *	E.coli *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
06-Jul-21	3537 Harris	0	0	0	0	17.5	6.78	0.02	60.8	0.21	128.7	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at <a href="https://www.rdn.bc.ca/whiskey-creek">https://www.rdn.bc.ca/whiskey-creek</a>	
12-Jul-21	844 Carson	0	0	0	0	16	7.06	0.93	62.7	0.06	132.5		
19-Jul-21	3564 Foxglove	0	0	0	0	17	7.30	1.37	60.7	0.06	128.3		
27-Jul-21	3533 Hebert	0	0	0	0	18	7.65	1.34	63.3	0.06	133.8		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	0.02 AO 0.12 MAC

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Notes below about pH (2015) from [https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/water-quality/guidelines-canadian-drinking-water-quality-summary-table.html#\\_ftn1](https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/water-quality/guidelines-canadian-drinking-water-quality-summary-table.html#_ftn1)

Type	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Comments
Treatment-related	pH (2015)	None	7.0-10.5	Not applicable	Not applicable	The control of pH is important to maximize treatment effectiveness, control corrosion and reduce leaching from distribution system and plumbing components.



# Regional District of Nanaimo - Water Services Department

## Whiskey Creek Water Analysis - 2021 Monthly Report

Date	Sample Location (Address)	BC Centre for Disease Control		RDN In-House Laboratory and Spectrophotometer									
		E. coli *	Total Coliform *	E.coli *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
01-Jun-21	3537 Harris	0	0	0	0	12	7.49	1.55	58.1	0.06	123.0	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at <a href="https://www.rdn.bc.ca/whiskey-creek">https://www.rdn.bc.ca/whiskey-creek</a>	
07-Jun-21	844 Carson	0	0	0	0	12	7.38	1.04	60.7	0.06	128.4		
14-Jun-21	3564 Foxglove	0	0	0	0	12	7.41	1.06	57.4	0.06	121.4		
21-Jun-21	3533 Hebert	0	0	0	0	15	7.19	1.01	59.7	0.06	126.9		
29-Jun-21	844 Carson	0	0	0	0	16	7.02	0.99	60.3	0.06	127.3		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	0.02 AO 0.12 MAC

**Legend:**

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# Regional District of Nanaimo - Water Services Department

## Whiskey Creek Water Analysis - 2021 Monthly Report

Date	Sample Location (Address)	BC Centre for Disease Control		RDN In-House Laboratory and Spectrophotometer									
		E. coli *	Total Coliform *	E.coli *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
03-May-21	3537 Harris	0	0	0	0	10	7.22	1.34	58.6	0.06	123.9	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at <a href="https://www.rdn.bc.ca/whiskey-creek">https://www.rdn.bc.ca/whiskey-creek</a>	
10-May-21	844 Carson	0	0	0	0	9	7.40	0.87	59.5	0.06	125.9		
17-May-21	3564 Foxglove	0	0	0	0	11	7.15	0.89	58.5	0.06	124.0		
25-May-21	3533 Hebert	0	0	0	0	13	7.20	1.89	59.1	0.06	126.0		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	0.02 AO 0.12 MAC

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# Regional District of Nanaimo - Water Services Department

## Whiskey Creek Water Analysis - 2021 Monthly Report

		BC Centre for Disease Control		RDN In-House Laboratory and Spectrophotometer									
Date	Sample Location (Address)	E. coli *	Total Coliform *	E.coli *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
06-Apr-21	3537 Harris	0	0	0	0	8	7.38	1.04	54.6	0.05	115.9	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at <a href="https://www.rdn.bc.ca/whiskey-creek">https://www.rdn.bc.ca/whiskey-creek</a>	
12-Apr-21	844 Carson	0	0	0	0	8	7.34	0.82	56.0	0.06	118.7		
19-Apr-21	3564 Foxglove	0	0	0	0	9	7.39	0.79	53.2	0.05	112.8		
26-Apr-21	3533 Hebert	0	0	0	0	10	7.35	1.23	56.7	0.06	120.0		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	0.02 AO 0.12 MAC

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Date	Sample Location (Address)	BC Centre for Disease Control		RDN In-House Laboratory and Spectrophotometer									
		E. coli *	Total Coliform *	E.coli *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
03-Mar-21	3537 Harris	0	0	0	0	7	7.34	1.37	54.1	0.05	111.0	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at <a href="https://www.rdn.bc.ca/whiskey-creek">https://www.rdn.bc.ca/whiskey-creek</a>	
08-Mar-21	3533 Hebert	0	0	0	0	8	7.01	1.28	66.6	0.08	128.4		
15-Mar-21	3564 Foxglove	0	0	0	0	6	7.42	0.83	57.0	0.06	120.7		
22-Mar-21	3533 Hebert	0	0	0	0	7	7.50	0.67	64.0	0.06	119.9		
28-Mar-21	3533 Hebert			0	0	7	7.39	0.89	58.2	0.06	122.9		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	0.02 AO 0.12 MAC

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# Regional District of Nanaimo - Water Services Department

## Whiskey Creek Water Analysis - 2021 Monthly Report

Date	Sample Location (Address)	BC Centre for Disease Control		RDN In-House Laboratory and Spectrophotometer									
		E. coli *	Total Coliform *	E.coli *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
03-Feb-21	3537 Harris	0	0	0	0	8	6.79	1.45	52.6	0.05	111.3	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at <a href="https://www.rdn.bc.ca/whiskey-creek">https://www.rdn.bc.ca/whiskey-creek</a>	
08-Feb-21	844 Carson	0	0	0	0	7	6.89	0.78	55.9	0.06	118.2		
17-Feb-21	3564 Foxglove	0	0	0	0	6	7.50	1.18	55.7	0.05	117.1		
22-Feb-21	3533 Hebert	0	0	0	0	8	7.44	0.97	48.4	0.05	104.6		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	0.02 AO 0.12 MAC

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Notes below about pH (2015) from [https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/water-quality/guidelines-canadian-drinking-water-quality-summary-table.html#\\_ftn1](https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/water-quality/guidelines-canadian-drinking-water-quality-summary-table.html#_ftn1)

Type	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Comments
Treatment-related	pH (2015)	None	7.0-10.5	Not applicable	Not applicable	The control of pH is important to maximize treatment effectiveness, control corrosion and reduce leaching from distribution system and plumbing components.



# Regional District of Nanaimo - Water Services Department

## Whiskey Creek Water Analysis - 2021 Monthly Report

Date	Sample Location (Address)	BC Centre for Disease Control		RDN In-House Laboratory and Spectrophotometer									
		E. coli *	Total Coliform *	E.coli *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
06-Jan-21	3564 Foxglove	0	0	0	0	8	6.92	0.84	56.9	0.06	120.3	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at <a href="https://www.rdn.bc.ca/whiskey-creek">https://www.rdn.bc.ca/whiskey-creek</a>	
11-Jan-21	844 Carson	0	0	0	0	8	6.63	1.48	53.9	0.05	114.1		
11-Jan-21	3533 Hebert	0	0	0	0	8	6.66	1.53	56.0	0.05	116.0		
18-Jan-21	3537 Harris	0	0	0	0	8	6.62	1.49	50.3	0.05	106.7		
25-Jan-21	3564 Foxglove			0	0	6	7.20	1.38	217.0	0.22	453.0		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	0.02 AO 0.12 MAC

### Legend:

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Type	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Comments
Treatment-related	pH (2015)	None	7.0-10.5	Not applicable	Not applicable	The control of pH is important to maximize treatment effectiveness, control corrosion and reduce leaching from distribution system and plumbing components.

CDWG=Canadian Drinking Water Guidelines  
 OG= Operational Guidance Value

 MAC=Maximum Acceptable Concentration  
 AO=Aesthetic Objective

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	Units	CDWG		October 25 2018	October 3 2019	October 21 2020	October 14 2021
<b>Miscellaneous Inorganics</b>							
Fluoride	mg/L	1.5	MAC	0.033	<0.05	<0.05	<0.005
Alkalinity (total as CaCO )	mg/L			42.8	41	36	47
<b>Anions</b>							
Dissolved Sulphate	mg/L	500	AO	<1.0	<1.0	<1	<1
Dissolved Chloride	mg/L	250	AO	3	8.8	5.5	3.8
Nitrite	mg/L	1	MAC	<0.0050	<0.005	<0.005	<0.005
<b>Miscellaneous</b>							
Apparent Colour	Colour Unit			15	15	80	40
Tannins & Lignins	mg/L			0.43	0.35	1.25	
<b>Nutrients</b>							
Total Ammonia	mg/L			<0.020	0.06	<0.015	<0.015
<b>Physical Properties</b>							
Conductivity	µS/cm			93	110	96	98
pH	pH	7.0:10.5	OG	7.74	7.55	7.02	7.73
TDS	mg/L	500	AO	72	78	94	90
Turbidity	NTU			0.17	0.15	0.28	0.24
<b>Microbiological Parameters</b>							
E.coli	MPN/100mL	<1	MAC	1	0	0	0
Total Coliforms	MPN/100mL	<1	MAC	34	170	24	3
<b>Calculated Parameters</b>							
Total Hardness (CaCO )	mg/L			41	44.6	41.5	41.6
Nitrate	mg/L	10	MAC	<0.020	0.06	0.123	0.107
<b>Elements</b>							
Total Mercury	mg/L	0.001	MAC	0.000077	<0.000002	0.0000028	<0.000019
<b>Total Metals</b>							
Total Aluminum	mg/L	0.1	OG	0.0162	0.0143	0.0464	0.0342
Total Antimony	mg/L	0.006	MAC	<0.0005	<0.0005	<0.0006	<0.0005
Total Arsenic	mg/L	0.01	MAC	<0.0001	<0.0001	0.000169	<0.0001
Total Barium	mg/L	1	MAC	<0.001	<0.001	0.000794	<0.0001
Total Beryllium	mg/L			<0.0001	<0.0001	<0.0001	<0.0001
Total Bismuth	mg/L			<0.001	<0.001	<0.001	<0.001
Total Boron	mg/L	5	MAC	<0.050	<0.05	<0.05	<0.05
Total Cadmium	mg/L	0.005	MAC	<0.00001	<0.00001	0.0000066	<0.00001
Total Chromium	mg/L	0.05	MAC	<0.001	0.0011	0.00071	<0.001
Total Cobalt	mg/L			<0.0002	<0.0002	0.00004	<0.0002
Total Copper	mg/L	1	AO	0.00206	0.0017	0.0036	0.00203
Total Iron	mg/L	0.3	AO	0.0395	0.0494	0.128	0.0106
Total Lead	mg/L	0.01	MAC	<0.0002	<0.0002	0.000222	<0.0002
Total Manganese	mg/L	0.02 0.12	AO MAC	0.0019	0.0021	0.00848	0.0094
Total Molybdenum	mg/L			<0.001	<0.001	0.000173	<0.001
Total Nickel	mg/L			<0.001	<0.001	0.00029	<0.001
Total Selenium	mg/L	0.05	MAC	<0.0001	<0.0001	0.000045	<0.0001
Total Silicon	mg/L			8.9	8.8	8.9	9.15
Total Silver	mg/L			<0.00002	<0.00002	<0.000010	<0.00002
Total Strontium	mg/L			0.024	0.027	0.0271	0.0269
Total Thallium	mg/L			<0.00001	<0.00001	<0.000002	<0.00001
Total Tin	mg/L			<0.005	<0.005	<0.0002	<0.005
Total Titanium	mg/L			<0.005	<0.005	<0.002	<0.005
Total Uranium	mg/L	0.02	MAC	<0.0001	<0.0001	<0.000005	<0.0001
Total Vanadium	mg/L			<0.005	<0.005	0.00164	<0.005
Total Zinc	mg/L	5	AO	<0.005	<0.005	0.006	<0.005
Total Zirconium	mg/L			<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium	mg/L			10.9	11.7	10.9	10.9
Total Magnesium	mg/L			3.35	3.71	3.46	3.48
Total Potassium	mg/L			0.139	0.173	0.601	0.216
Total Sodium	mg/L	200	AO	3.22	3.59	3.65	3.68
Total Sulphur	mg/L			<3.0	<3.0	<0.6	<3

CDWG=Canadian Drinking Water Guidelines  
OG= Operational Guidance Value

MAC=Maximum Acceptable Concentration  
AO= Asthetic Objective.

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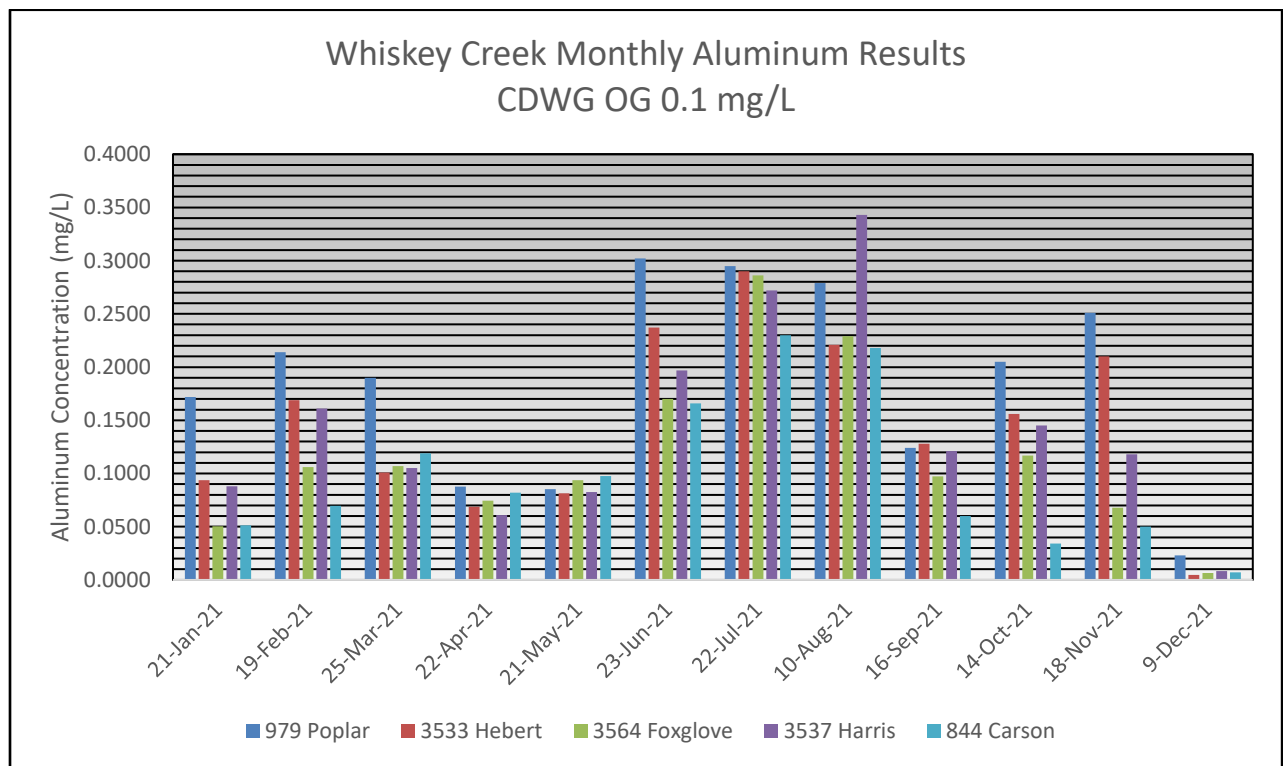
	Units	CDWG		May 19 2015	May 10 2016	May 8 2017	May 7 2018	May 13 2019	May 21 2020	May 27 2021
<b>Miscellaneous Inorganics</b>										
Fluoride	mg/L	1.5	MAC	0.034	0.026	0.026	0.025	0.022	<0.05	<0.005
Alkalinity (total as CaCO <sub>3</sub> )	mg/L			32	32.7	31.1	27.1	29.1	26	35
<b>Anions</b>										
Dissolved Sulphate	mg/L	500	AO	2.76	2.91	2.82	3.9	3	4.2	2.9
Dissolved Chloride	mg/L	250	AO	12	12	12	12	21	23	16
Nitrite	mg/L	1	MAC	<0.0050	<0.0050	<0.0050	<0.0050	<0.005	<0.005	<0.005
<b>Miscellaneous</b>										
Apparent Colour	Colour Unit			<5	10	10	10	<2	5	5
<b>Nutrients</b>										
Total Ammonia	mg/L			0.0057	0.0096	0.12	<0.020	<0.015	0.041	<0.015
<b>Physical Properties</b>										
Conductivity	µS/cm			111	105	105	103	136	140	120
pH	pH	7.0:10.5	AO	7.67	7.56	7.62	7.53	<b>6.99</b>	7.13	7.6
TDS	mg/L	500	AO	80	52	80	56	100	100	110
Turbidity	NTU			0.17	0.14	0.19	0.17	0.22	0.12	0.35
<b>Microbiological Parameters</b>										
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	0	0	0
Total Coliforms	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	0	0	0
<b>Calculated Parameters</b>										
Total Hardness (CaCO <sub>3</sub> )	mg/L			40.8	34.4	42.9	35.7	47.1	41	38.1
Nitrate	mg/L	10	MAC	0.066	0.072	0.071	0.067	0.056	0.07	0.063
<b>Elements</b>										
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.00001	<0.00001	<0.000002	<0.000002	<0.0000019	<0.0000019
<b>Total Metals</b>										
Total Aluminum	mg/L	0.1	OG	<b>0.302</b>	<b>0.126</b>	<b>0.256</b>	<b>0.123</b>	0.026	0.0865	<b>0.235</b>
Total Antimony	mg/L	0.006	MAC	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Total Arsenic	mg/L	0.01	MAC	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Barium	mg/L	1	MAC	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Beryllium	mg/L			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Bismuth	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Boron	mg/L	5	MAC	<0.050	<0.050	<0.050	<0.050	<0.05	<0.05	<0.05
Total Cadmium	mg/L	0.005	MAC	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Total Chromium	mg/L	0.05	MAC	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Cobalt	mg/L			<0.0005	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Total Copper	mg/L	1	AO	0.00983	0.0059	0.00521	0.00931	0.00493	0.00704	0.00886
Total Iron	mg/L	0.3	AO	0.0245	<0.005	0.0114	0.0079	<0.005	0.0071	0.0081
Total Lead	mg/L	0.01	MAC	0.00051	0.00021	0.00028	0.00095	0.00025	0.00044	0.00116
Total Manganese	mg/L	0.02 0.12	AO MAC	0.0031	0.0023	0.0028	0.0024	0.0018	0.0038	0.0026
Total Molybdenum	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Nickel	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Selenium	mg/L	0.05	MAC	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Silicon	mg/L			9.43	8.96	10.4	8.55	8.01	8.25	7.79
Total Silver	mg/L			<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Total Strontium	mg/L			0.0231	0.0215	0.0233	0.0229	0.0288	0.0272	0.0227
Total Thallium	mg/L			<0.00005	<0.00005	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Total Tin	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Titanium	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Uranium	mg/L	0.02	MAC	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Vanadium	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Zinc	mg/L	5	AO	0.0084	<0.005	0.0062	0.0056	<0.005	<0.005	0.0066
Total Zirconium	mg/L			<0.0005	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium	mg/L			11.2	9.01	11.5	9.52	12.6	10.9	10.1
Total Magnesium	mg/L			3.13	2.88	3.42	2.9	3.81	3.36	3.13
Total Potassium	mg/L			0.137	0.134	0.233	0.173	0.216	0.413	0.29
Total Sodium	mg/L	200	AO	6.14	6.07	6.95	5.75	6.19	7.66	7.14
Total Sulphur	mg/L			<3.0	<3.0	<3.0	<3.0	<3	<3	<3

Notes below about Aluminum from: [www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/water-quality/guidelines-canadian-drinking-water-quality-summary-table.html](http://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/water-quality/guidelines-canadian-drinking-water-quality-summary-table.html)

Type	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Comments
T-treatment related parameter	Aluminum (1998)	None	Operational Guideline: < 0.1 (conventional treatment); or < 0.2 (other treatment types)	Aluminum salts used as coagulants in drinking water treatment; naturally occurring.	There is no consistent, convincing evidence that aluminum in drinking water causes adverse health effects in humans.	The operational guideline applies to treatment plants using aluminum-based coagulants; it does not apply to naturally occurring aluminum found in groundwater. For treatment plants using aluminum-based coagulants, monthly samples should be taken of the water leaving the plant; the OGs are based on a running annual average of monthly samples.

**Whiskey Creek Total Aluminum (mg/L)**  
Operational Guideline (0.1 mg/L)

Date	979 Poplar Way	3533 Hebert Rd	3564 Foxglove Road	3537 Harris Rd	844 Carson
21-Jan-21	<b>0.1720</b>	0.0937	0.0505	0.0881	0.0513
19-Feb-21	<b>0.2140</b>	<b>0.1690</b>	<b>0.1060</b>	<b>0.1610</b>	0.0698
25-Mar-21	<b>0.1900</b>	<b>0.1010</b>	<b>0.1070</b>	<b>0.1050</b>	<b>0.1190</b>
22-Apr-21	0.0878	0.0688	0.0744	0.0609	0.0819
21-May-21	0.0853	0.0813	0.0936	0.0825	0.0975
23-Jun-21	<b>0.3020</b>	<b>0.2370</b>	<b>0.1700</b>	<b>0.1970</b>	<b>0.1660</b>
22-Jul-21	<b>0.2950</b>	<b>0.2900</b>	<b>0.2860</b>	<b>0.2720</b>	<b>0.2300</b>
10-Aug-21	<b>0.2790</b>	<b>0.2210</b>	<b>0.2290</b>	<b>0.3430</b>	<b>0.2180</b>
16-Sep-21	<b>0.1240</b>	<b>0.1280</b>	0.0972	<b>0.1210</b>	0.0602
14-Oct-21	<b>0.2050</b>	<b>0.1560</b>	<b>0.1170</b>	<b>0.1450</b>	0.0343
18-Nov-21	<b>0.2510</b>	<b>0.2100</b>	0.0679	<b>0.1180</b>	0.0500
9-Dec-21	0.0232	0.0047	0.0066	0.0082	0.0071
<b>Average</b>	<b>0.266</b>	<b>0.142</b>	<b>0.802</b>	<b>0.159</b>	<b>0.133</b>



**Whiskey Creek Wet Well**

Date	pH	Total Organic Carbon	Apparent Colour	True Colour	Tannins/Lignins
21-Aug-20	7.42		150	99.5	2.19
27-Aug-20		8.9			
10/23/2020		7.8			1.25
10/14/2021	7.73		40		



### Individual THM Lab Results (mg/L)

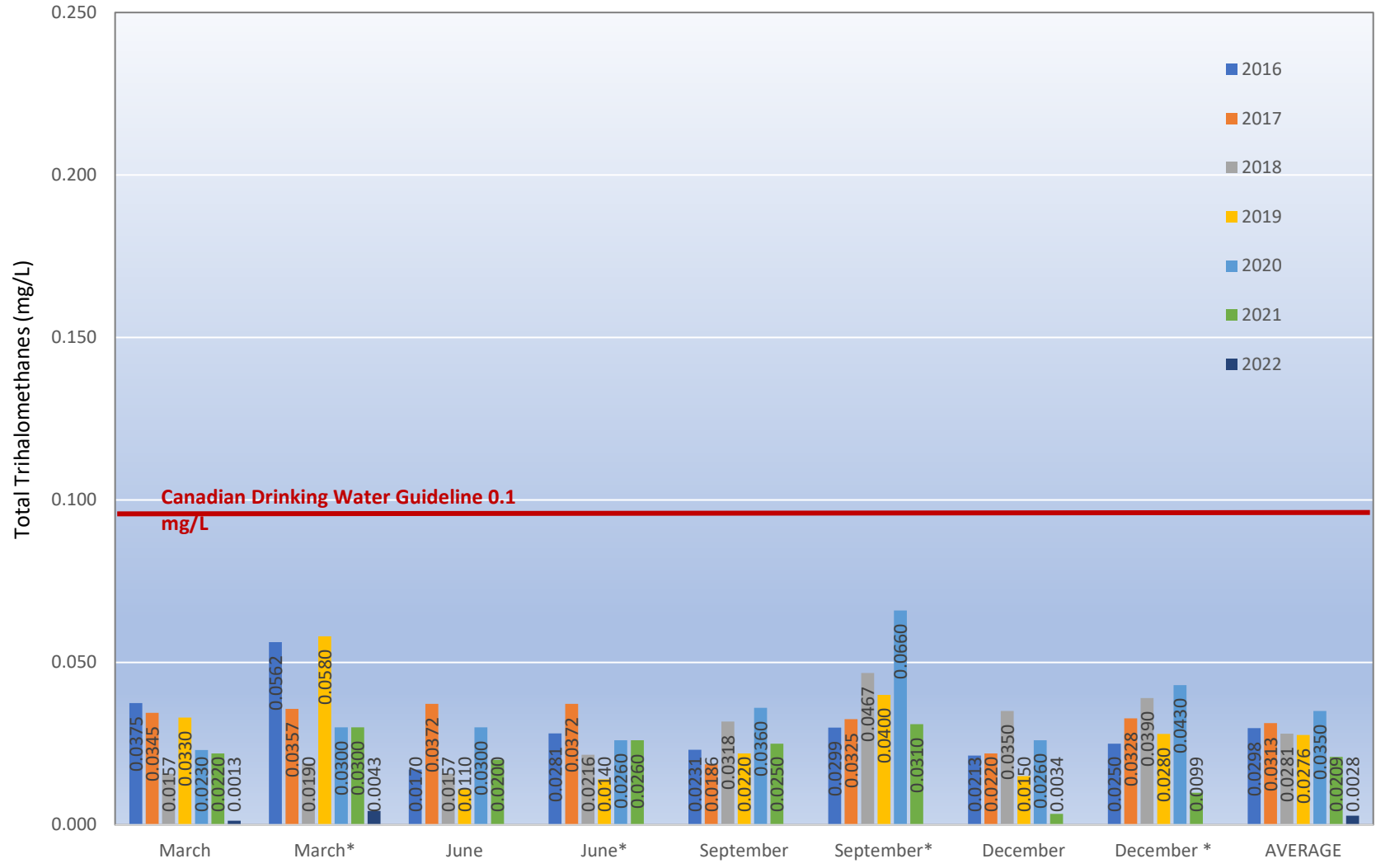
Location	Date	Bromodichloro- methane	Bromoform	Chloroform	Dibromochloro- methane	Total Trihalo- methanes (MAC 0.1 mg/L)	Total Coliforms	E.coli
959 Poplar Way	25-Mar-21	0.0026	<0.001	0.02	<0.001	0.022	0	0
844 Carson	25-Mar-21	0.0029	<0.001	0.027	<0.001	0.03	0	0
979 Poplar Way	23-Jun-21	0.0025	<0.001	0.017	<0.001	0.02	0	0
844 Carson	23-Jun-21	0.0032	<0.001	0.022	<0.001	0.02	0	0
979 Poplar Way	16-Sep-21	0.0044	<0.001	0.021	<0.001	0.025	0	0
844 Carson	16-Sep-21	0.0053	<0.001	0.026	<0.001	0.031	0	0
979 Poplar Way	9-Dec-21	<0.001	<0.001	0.0034	<0.001	0.0034	0	0
844 Carson	9-Dec-21	0.0017	<0.001	0.0082	<0.001	0.0099	0	0



**Total Trihalomethanes (THM's)  
(mg/L)**

Location	Month	2017	2018	2019	2020	2021
979 Poplar Way	January					
979 Poplar Way	February					
979 Poplar Way	March	0.0345	0.0157	0.0330	0.0230	0.0220
844 Carson Road	March*	0.0357	0.0190	0.0580	0.0300	0.0300
979 Poplar Way	April					
979 Poplar Way	9-May					
844 Carson Road	May 9 *					
979 Poplar Way	17-May					
844 Carson Road	May 17 *					
979 Poplar Way	24-May					
844 Carson Road	May 24 *					
979 Poplar Way	30-May					
844 Carson Road	May 30 *					
979 Poplar Way	7-Jun					
844 Carson Road	June 7 *					
979 Poplar Way	June	0.0372	0.0157	0.0110	0.0300	0.0200
844 Carson Road	June*	0.0372	0.0216	0.0140	0.0260	0.0260
979 Poplar Way	August				0.0440	
844 Carson Road	August				0.0660	
979 Poplar Way	September	0.0186	0.0318	0.0220	0.0360	0.0250
844 Carson Road	September*	0.0325	0.0467	0.0400	0.0660	0.0310
	October					
	November					
979 Poplar Way	December	0.0220	0.0350	0.0150	0.0260	0.0034
844 Carson Road	December *	0.0328	0.0390	0.0280	0.0430	0.0099
	<b>AVERAGE</b>	<b>0.0313</b>	<b>0.0281</b>	<b>0.0276</b>	<b>0.0350</b>	<b>0.0209</b>

### Whiskey Creek Quarterly THM Results



\*\*Sample collected 979 Poplar Way \* Sample collected at 844 Carson Road