



District of Peachland
Annual Drinking Water Report – 2016



INTRODUCTION

The District of Peachland is legally required by the *Drinking Water Protection Act* to provide an annual report on their water supply systems. The annual report will provide water system users with an overview of the system, a summary of all water tests performed and an update to any maintenance and/or improvements made to the system.

Facility Name/Number: District of Peachland Water Distribution System (#561)

Facility Name/Number: Peachland Creek Water Treatment Facility (#2288)

Facility Name/Number: Trepanier Creek Water Treatment Facility (#2289)

Facility Name/Number: Okanagan Lake Pumps Water Treatment Facility (#2290)

WATER SOURCES

Water for the District of Peachland is supplied from three surface water sources;

- Trepanier Creek,
- Peachland Creek and
- Okanagan Lake.

It should be noted that in the past, Peachland Creek sometimes been referred to as “Deep Creek”. As such, any information within this report that notes Deep Creek is ultimately referring to Peachland Creek.

The Deep Creek system supplies water to all properties accessed from Princeton Avenue as well as those that lie further south. It also supplies the properties accessed from Ponderosa Drive and the downtown area as far north as 11th Street (approximately). The Trepanier system supplies water to the remainder of the properties in the District (from 11th Street north). When the Okanagan Lake pumps are operated in place of the Trepanier Creek Intake, the supply area is identical to the Trepanier system.

The majority of water is supplied from the Deep Creek (DCI) system (approximately 2/3) with the remainder supplied by the Trepanier Creek (TCI) system (approximately 1/3) and the Okanagan Lake Pumps. The Okanagan Lake Pumps (LPH) are typically operated during spring freshet/runoff to supply less turbid water to the Trepanier system. In 2016, the Okanagan Lake Pumps were active from April 26 – May 18.

DISTRIBUTION SYSTEM

The District of Peachland currently uses chlorine gas as its primary disinfectant. The disinfectant is injected using flow paced technology and is dosed to provide inactivation of bacteria, viruses and giardia cysts which may be present within the surface water source. District staff maintains a first user residual ranging from 0.9 – 1.2 mg/L (depending on the time of year and clarity of the raw water). At the ends of the system, a chlorine residual goal is set for approximately 0.2 mg/L. A residual of chlorine remaining in the distribution system extends

a measure of protection against any possible contamination entering the system after disinfection.

The distribution system and supply includes:

- 16 pressure reducing stations,
- 2 high consequence dams (Peachland Lake and Silver Lake)
- 1 significant consequence dam (Glen Lake)
- 4 active reservoirs
- 6 active pump stations
- Approximately 81 km of pipeline

The Water Department is staffed by operators certified through the Environmental Operators Certification Program (EOCP – the association responsible for certification of system operators and classification of water distribution and treatment systems within British Columbia), with their certifications noted below;

- Leadhand: Water Distribution Level IV / Water Treatment Level II
- Water Mechanic: Water Distribution Level II / Water Treatment Level I
- Water Mechanic: Water Distribution Level II

These operators have the capability to monitor the system at all times (24 hours a day, 365 days a year) through the use of the SCADA system (supervisory control and data acquisition). The system is set to alarm if it drifts beyond pre-determined set points, calling the standby operator to alert them.

ROUTINE MAINTENANCE

Fire Hydrants

All municipally owned fire hydrants are inspected and flushed annually. Hydrants undergo a complete tear down and rebuild on an as-needed basis.

Main Valve Exercising

Main valves are exercised at least biennially or on an as-needed basis.

System Flushing

System flushing occurs annually during the fall. Hydrants and blowoffs are used to pass higher velocity water through the system in order to scour any sediment that may have settled in the system over the year.

Pressure Reducing Valves (PRVs)

PRV's are inspected monthly and rebuilt or repaired on an as-needed basis.

WATER MASTER PLAN

In 2007, the then mayor and council adopted the Water Master Plan (WMP), a set of comprehensive upgrades that was anticipated to provide treated water to Peachland in its entirety by the years 2023/24.

If more in-depth information is desired, it is available at the District's website (<http://www.peachland.ca/water-master-plan-2015>)

In early 2016, the District applied for a government grant of approximately \$6,900,000 to go towards construction of a water treatment plant facility. As of the end of 2016, there had still been no decision made by the provincial government.

The installation of this water treatment plant will allow the District to meet the minimum requirements of the Drinking Water Treatment Objectives for Surface Water Supplies in British Columbia. If the minimum requirements are not met, water users can potentially be at increased risk of illness from protozoan pathogens.

WATER SAMPLING

Drinking water samples are tested weekly for *E.Coli* and total coliform counts by Caro Analytical Services in Kelowna. There were no positive bacteriological samples detected in 2016.

District employees monitor and record daily turbidity values along with pH and chlorine levels. Turbidity is one of the main parameters leading to a water quality advisory or a boil water notice. As the turbidity increases over 1 NTU, a Water Quality Advisory is instituted. Similarly, as it increases over 5 NTU, a Boil Water Notice is instituted. For ease of understanding, if one of the sources increases over the noted thresholds, the entire system is placed on an Advisory/Notice. Turbidity can affect the number and type of microorganisms that enter a surface water source. As surface waters experience increased flows (ie. Spring runoff, major rainfall events, etc), turbidity can fluctuate dramatically and the public is notified accordingly. Records of average daily turbidity values can be found in Appendix V.

Chlorine concentrations are monitored continuously at 5-6 stations throughout the system (depending on the time of year) as well as daily grab samples at a number of locations to ensure instrument accuracy, allowing CT values to be monitored.

Samples are also collected annually in order to perform a comprehensive analysis, giving an indication of any changes occurring within the water supplies. It should be noted that all raw sources tested are within the maximum allowable concentration (MAC) limits set out in the Guidelines for Canadian Drinking Water Quality. Lastly, trihalomethanes (THM`s) are also tested annually to provide an indication of the level of disinfection byproducts present in the water supply system. The results from the comprehensive and THM analyses are included in Appendices I and II, respectively. The result sheets also indicate the limit or guideline for each parameter listed.

WATER QUALITY ADVISORIES / BOIL WATER NOTICES / DO NOT USE NOTICE

Water Quality Advisories and Boil Water Notices are notifications designed to inform the public of possible public health threats. The decision to institute an advisory or notice is typically made in discussion with staff at the Interior Health Authority (IHA).

A Water Quality Advisory (WQA) is the lowest-level notification and used in situations where the possible public health threat is modest. These advisories are instituted when the turbidity in the water source increases over a value of 1 NTU (nephelometric turbidity units). Details of WQA's issued are noted below.

A Boil Water Notice (BWN) is a moderate-level notification used in situations where the possible public health threat is one that can be effectively addressed by boiling the water. These notices are typically instituted when the water source turbidity increases over 5 NTU or there is a failure in the disinfection system. Details of BWN's issued are noted below.

A do not use notice is the highest level of notification. It is used in situations where a significant public health threat exists (ie. Chemical spill, etc). There were no do not use notices issued in 2016.

- April 2/2016 – a WQA was initiated due to turbidity values increasing above 1 NTU in the Trepanier Creek source (due to spring freshet).
- April 4/2016 - the WQA was downgraded to a BWN due to turbidity values increasing above 5 NTU in the Deep Creek source (due to spring freshet).
- May 5/2016 - the BWN was upgraded to a WQA due to turbidity values decreasing below the 5 NTU threshold.
- May 24/2016 - with turbidity decreasing below 1 NTU, the WQA was rescinded.
- July 9/2016 - a BWN was initiated due to turbidity in the Deep Creek source increasing above 5 NTU. This sudden increase was due to an extreme rainfall event.
- July 25/2016 - with turbidity decreasing below 1 NTU, the BWN was rescinded.

WATER CONSUMPTION

In 2016, there was a total of 513,755,400 Imperial Gallons (or 2335.6 ML) passing through the District Intakes. A monthly summary of consumption per intake can be found in Appendix III.

WORKS COMPLETED AND IN PROGRESS

- A leak detection company (Watermark Solutions) was contracted to investigate the entire District for possible water leaks in the distribution system. A number of leaks were identified within the distribution system which were either repaired or slated to be repaired.
- The Greata PRV replacement was nominally completed. The new equipment replaces infrastructure that was nearing the end of its life cycle and also allowed for the installation of telemetry. With new flowmeters and pressure sensors, this allows a better understanding of the system in the area and will be valuable in the future in detecting leaks and pressure surges.
- Due to an increased number of leaks appearing, all galvanized service lines on 4th Avenue were replaced with PE tubing.

Appendix I – Comprehensive Analyses (Deep Creek Intake, Trepanier Creek Intake)



CERTIFICATE OF ANALYSIS

REPORTED TO	Peachland, Corporation of the District of 5806 Beach Avenue PEACHLAND, BC V0H 1X7	TEL	(250) 767-2647
		FAX	(250) 767-6370
ATTENTION	Shawn Grundy	WORK ORDER	6112063
PO NUMBER		RECEIVED / TEMP	2016-11-29 12:40 / 8°C
PROJECT	Comprehensive	REPORTED	2016-12-06
PROJECT INFO		COC NUMBER	B42723

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

Authorized By: **Ed Hoppe, B.Sc., P.Chem.**
Division Manager, Kelowna

If you have any questions or concerns, please contact your Account Manager:
Kristin McKeown (kmckeown@caro.ca)

Locations:

#110 4011 Viking Way
Richmond, BC V6V 2K9
Tel: 604-279-1499 Fax: 604-279-1599

#102 3677 Highway 97N
Kelowna, BC V1X 5C3
Tel: 250-765-9646 Fax: 250-765-3893

17225 109 Avenue
Edmonton, AB T5S 1H7
Tel: 780-489-9100 Fax: 780-489-9700

www.caro.ca

REPORTED TO Peachland, Corporation of the District of
PROJECT Comprehensive

WORK ORDER 6112063
REPORTED 2016-12-06

Analysis Description	Method Reference	Technique	Location
Alkalinity in Water	APHA 2320 B*	Titration with H2SO4	Kelowna
Anions by IC in Water	APHA 4110 B	Ion Chromatography with Chemical Suppression of Eluent Conductivity	Kelowna
Colour, True in Water	APHA 2120 C	Spectrophotometry (456 nm)	Kelowna
Conductivity in Water	APHA 2510 B	Conductivity Meter	Kelowna
Cyanide, SAD in Water	ASTM D7511-12	Flow Injection Analysis with In-Line Ultraviolet Digestion and Amperometric Detection	Kelowna
Hardness (as CaCO3) in Water	APHA 2340 B*	Calculation: 2.497 [total Ca] + 4.118 [total Mg] (Estimated)	N/A
Langelier Index in Water	APHA 2330 B	Calculation	N/A
Mercury, total by CVAFS in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
pH in Water	APHA 4500-H+ B	Electrometry	Kelowna
Solids, Total Dissolved (calc) in Water	APHA 1030 E	Calculation: 100 x (([Cations]-[Anions])/([Cations]+[Anions]))	N/A
Temperature (lab) in Water	APHA 2550 B	Thermometer	Kelowna
Total Metals by ICPMS in Water	APHA 3030E* / APHA 3125 B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	Richmond
Trihalomethanes in Water	EPA 5030B / APHA 6200 B	Purge&Trap / Purge and Trap Capillary Column GC-MSD	Richmond
Turbidity in Water	APHA 2130 B	Nephelometry	Kelowna

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Method Reference Descriptions:

APHA	Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health Association/American Water Works Association/Water Environment Federation
ASTM	ASTM International Test Methods
EPA	United States Environmental Protection Agency Test Methods

Glossary of Terms:

MRL	Method Reporting Limit
<	Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such as dilutions, limited sample volume, high moisture, or interferences
AO	Aesthetic objective
MAC	Maximum acceptable concentration (health based)
OG	Operational guideline (treated water)
°C	Degrees Celcius
CU	Colour Units (referenced against a platinum cobalt standard)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
pH units	pH < 7 = acidic, pH > 7 = basic
µS/cm	Microsiemens per centimetre

Standards / Guidelines Referenced in this Report:

Guidelines for Canadian Drinking Water Quality (Oct 2014)

Website: http://www.hc-sc.gc.ca/ewh-semt/all_formats/pdf/pubs/water-eau/sum_guide-res_recom/sum_guide-res_recom-eng.pdf

Note: In some cases, the values displayed on the report represent the lowest guideline and are to be verified by the end user

REPORTED TO Peachland, Corporation of the District of
PROJECT Comprehensive

WORK ORDER 6112063
REPORTED 2016-12-06

Analyte	Result / Recovery	Standard / Guideline	MRL / Units / Limits	Prepared	Analyzed	Notes
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Sample ID: Sherburn PRV (6112063-01) [Water] Sampled: 2016-11-29 00:00

<i>Anions</i>						
Chloride	4.57	AO ≤ 250	0.10 mg/L	N/A	2016-11-30	
Fluoride	< 0.10	MAC = 1.5	0.10 mg/L	N/A	2016-11-30	
Nitrate (as N)	0.027	MAC = 10	0.010 mg/L	N/A	2016-11-30	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	N/A	2016-11-30	
Sulfate	13.4	AO ≤ 500	1.0 mg/L	N/A	2016-11-30	
<i>General Parameters</i>						
Alkalinity, Total (as CaCO3)	112	N/A	2 mg/L	N/A	2016-12-01	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2 mg/L	N/A	2016-12-01	
Alkalinity, Bicarbonate (as CaCO3)	112	N/A	2 mg/L	N/A	2016-12-01	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2 mg/L	N/A	2016-12-01	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2 mg/L	N/A	2016-12-01	
Colour, True	< 5	AO ≤ 15	5 CU	N/A	2016-12-01	
Conductivity (EC)	254	N/A	2 µS/cm	N/A	2016-12-01	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020 mg/L	N/A	2016-11-30	
pH	7.89	6.5-8.5	0.01 pH units	N/A	2016-12-01	HT2
Temperature	22	N/A	°C	N/A	2016-12-01	HT2
Turbidity	0.39	OG < 0.1	0.10 NTU	N/A	2016-11-30	
<i>Calculated Parameters</i>						
Total Trihalomethanes	0.060	MAC = 0.1	0.004 mg/L	N/A	N/A	
Hardness, Total (as CaCO3)	127	N/A	0.50 mg/L	N/A	N/A	
Langelier Index	0.1	N/A	-5.0 -	N/A	2016-12-06	
Solids, Total Dissolved (calc)	140	N/A	1.00 mg/L	N/A	N/A	
<i>Total Metals</i>						
Aluminum, total	0.010	OG < 0.1	0.005 mg/L	2016-12-02	2016-12-05	
Antimony, total	< 0.0001	MAC = 0.006	0.0001 mg/L	2016-12-02	2016-12-05	
Arsenic, total	0.0007	MAC = 0.01	0.0005 mg/L	2016-12-02	2016-12-05	
Barium, total	0.025	MAC = 1	0.005 mg/L	2016-12-02	2016-12-05	
Boron, total	0.008	MAC = 5	0.004 mg/L	2016-12-02	2016-12-05	
Cadmium, total	< 0.00001	MAC = 0.005	0.00001 mg/L	2016-12-02	2016-12-05	
Calcium, total	42.3	N/A	0.2 mg/L	2016-12-02	2016-12-05	
Chromium, total	< 0.0005	MAC = 0.05	0.0005 mg/L	2016-12-02	2016-12-05	
Cobalt, total	< 0.00005	N/A	0.00005 mg/L	2016-12-02	2016-12-05	
Copper, total	0.0025	AO ≤ 1	0.0002 mg/L	2016-12-02	2016-12-05	
Iron, total	0.06	AO ≤ 0.3	0.01 mg/L	2016-12-02	2016-12-05	
Lead, total	0.0008	MAC = 0.01	0.0001 mg/L	2016-12-02	2016-12-05	
Magnesium, total	5.12	N/A	0.01 mg/L	2016-12-02	2016-12-05	
Manganese, total	0.0033	AO ≤ 0.05	0.0002 mg/L	2016-12-02	2016-12-05	
Mercury, total	< 0.00002	MAC = 0.001	0.00002 mg/L	2016-12-01	2016-12-01	
Molybdenum, total	0.0105	N/A	0.0001 mg/L	2016-12-02	2016-12-05	
Nickel, total	0.0003	N/A	0.0002 mg/L	2016-12-02	2016-12-05	
Potassium, total	1.82	N/A	0.02 mg/L	2016-12-02	2016-12-05	
Selenium, total	< 0.0005	MAC = 0.05	0.0005 mg/L	2016-12-02	2016-12-05	
Sodium, total	4.70	AO ≤ 200	0.02 mg/L	2016-12-02	2016-12-05	
Uranium, total	0.00161	MAC = 0.02	0.00002 mg/L	2016-12-02	2016-12-05	

SAMPLE ANALYTICAL DATA

REPORTED TO Peachland, Corporation of the District of
PROJECT Comprehensive

WORK ORDER 6112063
REPORTED 2016-12-06

Analyte	Result / Recovery	Standard / Guideline	MRL / Units Limits	Prepared	Analyzed	Notes
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Sample ID: Sherburn PRV (6112063-01) [Water] Sampled: 2016-11-29 00:00, Continued

<i>Total Metals, Continued</i>						
Zinc, total	0.008	AO ≤ 5	0.004 mg/L	2016-12-02	2016-12-05	
<i>Volatile Organic Compounds (VOC)</i>						
Bromodichloromethane	0.003	N/A	0.001 mg/L	N/A	2016-12-03	
Bromoform	< 0.001	N/A	0.001 mg/L	N/A	2016-12-03	
Chloroform	0.057	N/A	0.001 mg/L	N/A	2016-12-03	
Dibromochloromethane	< 0.001	N/A	0.001 mg/L	N/A	2016-12-03	
Surrogate: Toluene-d8	108		70-130 %	N/A	2016-12-03	
Surrogate: 4-Bromofluorobenzene	101		70-130 %	N/A	2016-12-03	

Sample ID: Trepanier Intake (Raw) (6112063-02) [Water] Sampled: 2016-11-29 00:00

<i>Anions</i>						
Chloride	20.5	AO ≤ 250	0.10 mg/L	N/A	2016-11-30	
Fluoride	< 0.10	MAC = 1.5	0.10 mg/L	N/A	2016-11-30	
Nitrate (as N)	0.051	MAC = 10	0.010 mg/L	N/A	2016-11-30	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	N/A	2016-11-30	
Sulfate	12.1	AO ≤ 500	1.0 mg/L	N/A	2016-11-30	

<i>General Parameters</i>						
Alkalinity, Total (as CaCO3)	66	N/A	2 mg/L	N/A	2016-12-01	
Alkalinity, Phenolphthalein (as CaCO3)	< 1	N/A	2 mg/L	N/A	2016-12-01	
Alkalinity, Bicarbonate (as CaCO3)	66	N/A	2 mg/L	N/A	2016-12-01	
Alkalinity, Carbonate (as CaCO3)	< 1	N/A	2 mg/L	N/A	2016-12-01	
Alkalinity, Hydroxide (as CaCO3)	< 1	N/A	2 mg/L	N/A	2016-12-01	
Colour, True	16	AO ≤ 15	5 CU	N/A	2016-12-01	
Conductivity (EC)	224	N/A	2 µS/cm	N/A	2016-12-01	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020 mg/L	N/A	2016-11-30	
pH	7.74	6.5-8.5	0.01 pH units	N/A	2016-12-01	HT2
Temperature	22	N/A	°C	N/A	2016-12-01	HT2
Turbidity	0.32	OG < 0.1	0.10 NTU	N/A	2016-11-30	

<i>Calculated Parameters</i>						
Hardness, Total (as CaCO3)	93.0	N/A	0.50 mg/L	N/A	N/A	
Langelier Index	-0.4	N/A	-5.0 -	N/A	2016-12-06	
Solids, Total Dissolved (calc)	118	N/A	1.00 mg/L	N/A	N/A	

<i>Total Metals</i>						
Aluminum, total	0.025	OG < 0.1	0.005 mg/L	2016-12-02	2016-12-05	
Antimony, total	0.0001	MAC = 0.006	0.0001 mg/L	2016-12-02	2016-12-05	
Arsenic, total	< 0.0005	MAC = 0.01	0.0005 mg/L	2016-12-02	2016-12-05	
Barium, total	0.050	MAC = 1	0.005 mg/L	2016-12-02	2016-12-05	
Boron, total	0.006	MAC = 5	0.004 mg/L	2016-12-02	2016-12-05	
Cadmium, total	< 0.00001	MAC = 0.005	0.00001 mg/L	2016-12-02	2016-12-05	
Calcium, total	29.4	N/A	0.2 mg/L	2016-12-02	2016-12-05	
Chromium, total	< 0.0005	MAC = 0.05	0.0005 mg/L	2016-12-02	2016-12-05	
Cobalt, total	< 0.00005	N/A	0.00005 mg/L	2016-12-02	2016-12-05	

SAMPLE ANALYTICAL DATA

REPORTED TO PROJECT Peachland, Corporation of the District of Comprehensive

WORK ORDER REPORTED 6112063 2016-12-06

Analyte	Result / Recovery	Standard / Guideline	MRL / Units Limits	Prepared	Analyzed	Notes
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Sample ID: Trepanier Intake (Raw) (6112063-02) [Water] Sampled: 2016-11-29 00:00, Continued

Total Metals, Continued

Copper, total	0.0011	AO ≤ 1	0.0002 mg/L	2016-12-02	2016-12-05	
Iron, total	0.06	AO ≤ 0.3	0.01 mg/L	2016-12-02	2016-12-05	
Lead, total	< 0.0001	MAC = 0.01	0.0001 mg/L	2016-12-02	2016-12-05	
Magnesium, total	4.76	N/A	0.01 mg/L	2016-12-02	2016-12-05	
Manganese, total	0.0024	AO ≤ 0.05	0.0002 mg/L	2016-12-02	2016-12-05	
Mercury, total	< 0.00002	MAC = 0.001	0.00002 mg/L	2016-12-02	2016-12-05	CT5
Molybdenum, total	0.0065	N/A	0.0001 mg/L	2016-12-02	2016-12-05	
Nickel, total	0.0003	N/A	0.0002 mg/L	2016-12-02	2016-12-05	
Potassium, total	1.82	N/A	0.02 mg/L	2016-12-02	2016-12-05	
Selenium, total	< 0.0005	MAC = 0.05	0.0005 mg/L	2016-12-02	2016-12-05	
Sodium, total	9.30	AO ≤ 200	0.02 mg/L	2016-12-02	2016-12-05	
Uranium, total	0.00214	MAC = 0.02	0.00002 mg/L	2016-12-02	2016-12-05	
Zinc, total	< 0.004	AO ≤ 5	0.004 mg/L	2016-12-02	2016-12-05	

Sample / Analysis Qualifiers:

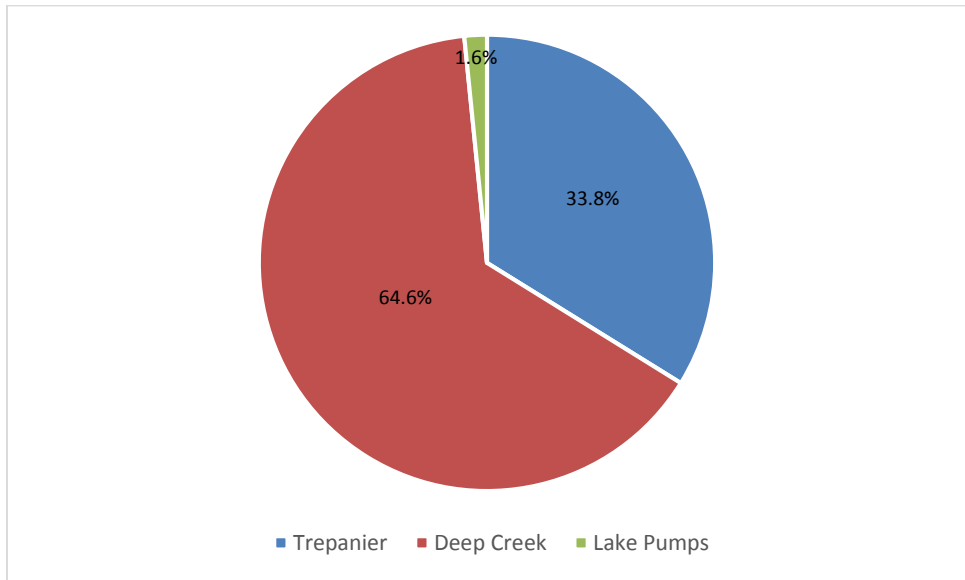
- CT5 This sample has been incorrectly preserved for Mercury analysis
- HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.

Appendix II – Trihalomethane Analyses

Please see Appendix I – Page 3.

Appendix III – 2016 Water Consumption

Month	Volume (IGal)				Volume	
	Trepanier	Deep Creek	Lake Pumps	Total	m ³	ML
January	6,939,700	14,522,000	0	21,461,700	97,651	97.57
February	7,643,900	13,937,000	0	21,580,900	98,193	98.11
March	8,537,100	12,870,000	0	21,407,100	97,402	97.32
April	18,689,600	20,439,000	2,446,500	41,575,100	189,167	189.00
May	18,292,000	33,773,000	5,752,500	57,817,500	263,070	262.84
June	23,899,600	32,364,000	0	56,263,600	255,999	255.78
July	24,012,300	54,550,000	0	78,562,300	357,458	357.15
August	27,661,500	52,119,000	0	79,780,500	363,001	362.69
September	19,201,500	32,739,000	0	51,940,500	236,329	236.13
October	9,428,300	21,732,000	0	31,160,300	141,779	141.66
November	5,231,800	15,452,000	0	20,683,800	94,111	94.03
December	4,297,100	27,225,000	0	31,522,100	143,426	143.30
TOTALS	173,834,400	331,722,000	8,199,000	513,755,400	2,337,587	2,335.58



Peachland water source use (percentage)

Appendix IV – Turbidity data

	Daily Average Turbidity (NTU)		
	DCI	TCI	LPH
01/01/2016 0:00	0.34	0.23	
02/01/2016 0:00	0.35	0.22	
03/01/2016 0:00	0.33	0.2	
04/01/2016 0:00	0.31	0.2	
05/01/2016 0:00	0.3	0.21	
06/01/2016 0:00	0.31	0.31	
07/01/2016 0:00	0.39	0.28	
08/01/2016 0:00	0.37	0.22	
09/01/2016 0:00	0.58	0.2	
10/01/2016 0:00	0.59	0.21	
11/01/2016 0:00	0.66	0.2	
12/01/2016 0:00	0.59	0.19	
13/01/2016 0:00	0.59	0.2	
14/01/2016 0:00	0.6	0.19	
15/01/2016 0:00	0.61	0.2	
16/01/2016 0:00	0.61	0.19	
17/01/2016 0:00	0.66	0.21	
18/01/2016 0:00	0.61	0.23	
19/01/2016 0:00	0.75	0.22	
20/01/2016 0:00	0.6	0.19	
21/01/2016 0:00	0.65	0.2	
22/01/2016 0:00	0.61	0.21	

23/01/2016 0:00	0.63	0.21	
24/01/2016 0:00	0.67	0.2	
25/01/2016 0:00	0.65	0.21	
26/01/2016 0:00	0.64	0.19	
27/01/2016 0:00	0.64	0.21	
28/01/2016 0:00	0.61	0.25	
29/01/2016 0:00	0.61	0.27	
30/01/2016 0:00	0.72	0.22	
31/01/2016 0:00	0.69	0.22	
01/02/2016 0:00	0.66	0.21	
02/02/2016 0:00	0.64	0.18	
03/02/2016 0:00	0.62	0.17	
04/02/2016 0:00	0.67	0.17	
05/02/2016 0:00	0.64	0.17	
06/02/2016 0:00	0.71	0.2	
07/02/2016 0:00	0.72	0.19	
08/02/2016 0:00	0.73	0.23	
09/02/2016 0:00	0.66	0.27	
10/02/2016 0:00	0.66	0.16	
11/02/2016 0:00	0.68	0.19	
12/02/2016 0:00	0.48	0.23	
13/02/2016 0:00	0.4	0.23	
14/02/2016 0:00	0.39	0.21	
15/02/2016 0:00	0.39	0.17	
16/02/2016 0:00	0.39	0.18	

17/02/2016 0:00	0.4	0.2	
18/02/2016 0:00	0.39	0.22	
19/02/2016 0:00	0.6	0.21	
20/02/2016 0:00	0.93	0.22	
21/02/2016 0:00	0.7	0.22	
22/02/2016 0:00	0.56	0.2	
23/02/2016 0:00	0.48	0.22	
24/02/2016 0:00	0.46	0.17	
25/02/2016 0:00	0.51	0.19	
26/02/2016 0:00	0.46	0.18	
27/02/2016 0:00	0.46	0.17	
28/02/2016 0:00	0.5	0.19	
29/02/2016 0:00	0.48	0.18	
01/03/2016 0:00	0.51	0.15	
02/03/2016 0:00	0.51	0.17	
03/03/2016 0:00	0.51	0.16	
04/03/2016 0:00	0.59	0.2	
05/03/2016 0:00	0.53	0.19	
06/03/2016 0:00	0.55	0.18	
07/03/2016 0:00	0.66	0.31	
08/03/2016 0:00	1.65	0.42	
09/03/2016 0:00	1.32	0.34	
10/03/2016 0:00	0.83	0.28	
11/03/2016 0:00	0.64	0.28	
12/03/2016 0:00	0.52	0.25	

13/03/2016 0:00	0.49	0.27	
14/03/2016 1:00	0.45	0.29	
15/03/2016 1:00	0.51	0.35	
16/03/2016 1:00	0.41	0.25	
17/03/2016 1:00	0.38	0.2	
18/03/2016 1:00	0.36	0.2	
19/03/2016 1:00	0.36	0.2	
20/03/2016 1:00	0.42	0.23	
21/03/2016 1:00	0.39	0.24	
22/03/2016 1:00	0.62	0.23	
23/03/2016 1:00	0.38	0.42	
24/03/2016 1:00	0.36	0.56	
25/03/2016 1:00	0.38	0.54	
26/03/2016 1:00	0.39	0.62	
27/03/2016 1:00	0.42	0.67	
28/03/2016 1:00	0.4	0.62	
29/03/2016 1:00	0.48	0.59	
30/03/2016 1:00	0.52	0.55	
31/03/2016 1:00	0.47	0.59	
01/04/2016 1:00	0.48	0.77	
02/04/2016 1:00	0.66	1.31	
03/04/2016 1:00	1.02	1.59	
04/04/2016 1:00	1.88	1.97	
05/04/2016 1:00	9.86	2.22	
06/04/2016 1:00	23.9	1.84	

07/04/2016 1:00	6.78	1.44	
08/04/2016 1:00	6.85	1.55	
09/04/2016 1:00	11.54	1.84	
10/04/2016 1:00	17.98	2.61	
11/04/2016 1:00	11.74	1.95	
12/04/2016 1:00	8.48	1.55	
13/04/2016 1:00	5.74	1.42	
14/04/2016 1:00	4.04	1.22	
15/04/2016 1:00	2.97	1.19	
16/04/2016 1:00	2.41	1.06	
17/04/2016 1:00	2.12	0.99	
18/04/2016 1:00	2.73	1.02	
19/04/2016 1:00	3.11	2.16	
20/04/2016 1:00	5.45	3.93	
21/04/2016 1:00	5.65	4.56	
22/04/2016 1:00	4.85	5	
23/04/2016 1:00	4.81	4.82	
24/04/2016 1:00	3.63	3.49	
25/04/2016 1:00	3.05	3.11	
26/04/2016 1:00	2.62	2.51	1.62
27/04/2016 1:00	2.24	2	0.37
28/04/2016 1:00	1.97	1.89	0.72
29/04/2016 1:00	1.74	1.63	0.7
30/04/2016 1:00	1.58	1.54	0.38
01/05/2016 1:00	1.41	1.6	0.49

02/05/2016 1:00	1.36	1.49	0.63
03/05/2016 1:00	1.37	1.52	0.58
04/05/2016 1:00	1.5	2.23	0.53
05/05/2016 1:00	1.45	2.36	0.54
06/05/2016 1:00	1.69	2.52	0.61
07/05/2016 1:00	1.65	2.11	0.56
08/05/2016 1:00	1.52	2.02	0.51
09/05/2016 1:00	1.48	2.19	0.35
10/05/2016 1:00	1.4	2.01	0.51
11/05/2016 1:00	1.31	1.92	0.6
12/05/2016 1:00	1.3	1.93	0.43
13/05/2016 1:00	1.17	2.04	0.5
14/05/2016 1:00	1.27	2.07	0.6
15/05/2016 1:00	1.2	2.14	0.51
16/05/2016 1:00	1.1	2.15	0.65
17/05/2016 1:00	1.15	2.19	0.35
18/05/2016 1:00	1.16	1.54	0.57
19/05/2016 1:00	1.09	0.62	
20/05/2016 1:00	0.95	0.53	
21/05/2016 1:00	0.82	0.46	
22/05/2016 1:00	0.75	0.45	
23/05/2016 1:00	0.73	0.39	
24/05/2016 1:00	0.68	0.35	
25/05/2016 1:00	0.66	0.35	
26/05/2016 1:00	0.68	0.47	

27/05/2016 1:00	0.67	0.56	
28/05/2016 1:00	0.68	0.49	
29/05/2016 1:00	0.61	0.48	
30/05/2016 1:00	0.6	0.47	
31/05/2016 1:00	0.59	0.5	
01/06/2016 1:00	0.58	0.44	
02/06/2016 1:00	0.57	0.43	
03/06/2016 1:00	0.56	0.34	
04/06/2016 1:00	0.57	0.31	
05/06/2016 1:00	0.52	0.34	
06/06/2016 1:00	0.51	0.3	
07/06/2016 1:00	0.53	0.33	
08/06/2016 1:00	0.66	0.3	
09/06/2016 1:00	0.77	0.33	
10/06/2016 1:00	0.71	0.33	
11/06/2016 1:00	0.59	0.31	
12/06/2016 1:00	0.75	0.27	
13/06/2016 1:00	0.72	0.26	
14/06/2016 1:00	0.64	0.27	
15/06/2016 1:00	0.6	0.26	
16/06/2016 1:00	0.57	0.24	
17/06/2016 1:00	0.56	0.23	
18/06/2016 1:00	0.53	0.21	
19/06/2016 1:00	0.53	0.26	
20/06/2016 1:00	0.55	0.29	

21/06/2016 1:00	0.56	0.32	
22/06/2016 1:00	0.52	0.25	
23/06/2016 1:00	0.52	0.28	
24/06/2016 1:00	0.67	0.27	
25/06/2016 1:00	0.57	0.31	
26/06/2016 1:00	0.76	0.33	
27/06/2016 1:00	0.66	0.29	
28/06/2016 1:00	0.56	0.24	
29/06/2016 1:00	0.55	0.25	
30/06/2016 1:00	0.53	0.27	
01/07/2016 1:00	0.52	0.27	
02/07/2016 1:00	0.52	0.28	
03/07/2016 1:00	0.49	0.25	
04/07/2016 1:00	0.49	0.24	
05/07/2016 1:00	0.5	0.23	
06/07/2016 1:00	0.48	0.27	
07/07/2016 1:00	0.49	0.24	
08/07/2016 1:00	0.51	0.22	
09/07/2016 1:00	0.47	0.26	
10/07/2016 1:00	5.88	1.25	
11/07/2016 1:00	5.85	0.48	
12/07/2016 1:00	4.02	0.31	
13/07/2016 1:00	1.71	0.29	
14/07/2016 1:00	1.04	0.29	
15/07/2016 1:00	0.74	0.29	

16/07/2016 1:00	0.84	0.31	
17/07/2016 1:00	2.46	0.47	
18/07/2016 1:00	8.05	0.47	
19/07/2016 1:00	2.77	0.35	
20/07/2016 1:00	2.05	0.34	
21/07/2016 1:00	1.58	0.33	
22/07/2016 1:00	1.28	0.38	
23/07/2016 1:00	1.12	0.26	
24/07/2016 1:00	0.88	0.26	
25/07/2016 1:00	0.75	0.24	
26/07/2016 1:00	0.78	0.23	
27/07/2016 1:00	0.85	0.24	
28/07/2016 1:00	1.01	0.29	
29/07/2016 1:00	0.75	0.31	
30/07/2016 1:00	0.7	0.14	
31/07/2016 1:00	0.93	0.16	
01/08/2016 1:00	0.77	0.19	
02/08/2016 1:00	0.59	0.22	
03/08/2016 1:00	0.69	0.24	
04/08/2016 1:00	0.67	0.19	
05/08/2016 1:00	0.61	0.14	
06/08/2016 1:00	0.66	0.18	
07/08/2016 1:00	0.54	0.12	
08/08/2016 1:00	0.66	0.13	
09/08/2016 1:00	0.66	0.18	

10/08/2016 1:00	0.47	0.22	
11/08/2016 1:00	0.45	0.18	
12/08/2016 1:00	0.47	0.23	
13/08/2016 1:00	0.61	0.27	
14/08/2016 1:00	0.6	0.2	
15/08/2016 1:00	0.61	0.23	
16/08/2016 1:00	0.61	0.19	
17/08/2016 1:00	0.62	0.15	
18/08/2016 1:00	0.61	0.16	
19/08/2016 1:00	0.62	0.21	
20/08/2016 1:00	0.6	0.26	
21/08/2016 1:00	0.62	0.31	
22/08/2016 1:00	0.62	0.22	
23/08/2016 1:00	0.64	0.23	
24/08/2016 1:00	0.58	0.19	
25/08/2016 1:00	0.6	0.18	
26/08/2016 1:00	0.69	0.17	
27/08/2016 1:00	0.6	0.15	
28/08/2016 1:00	0.6	0.17	
29/08/2016 1:00	0.61	0.13	
30/08/2016 1:00	0.6	0.11	
31/08/2016 1:00	0.6	0.09	
01/09/2016 1:00	0.61	0.13	
02/09/2016 1:00	0.63	0.2	
03/09/2016 1:00	0.62	0.17	

04/09/2016 1:00	1.02	0.16	
05/09/2016 1:00	0.68	0.2	
06/09/2016 1:00	0.64	0.17	
07/09/2016 1:00	0.6	0.17	
08/09/2016 1:00	0.6	0.17	
09/09/2016 1:00	0.6	0.2	
10/09/2016 1:00	0.58	0.17	
11/09/2016 1:00	0.58	0.16	
12/09/2016 1:00	0.61	0.17	
13/09/2016 1:00	0.59	0.19	
14/09/2016 1:00	0.59	0.2	
15/09/2016 1:00	0.58	0.27	
16/09/2016 1:00	0.59	0.2	
17/09/2016 1:00	0.58	0.2	
18/09/2016 1:00	0.61	0.21	
19/09/2016 1:00	0.7	0.24	
20/09/2016 1:00	0.65	0.21	
21/09/2016 1:00	0.64	0.26	
22/09/2016 1:00	0.6	0.21	
23/09/2016 1:00	0.6	0.24	
24/09/2016 1:00	0.6	0.23	
25/09/2016 1:00	0.61	0.22	
26/09/2016 1:00	0.62	0.24	
27/09/2016 1:00	0.72	0.27	
28/09/2016 1:00	0.66	0.34	

29/09/2016 1:00	0.64	0.28	
30/09/2016 1:00	0.6	0.24	
01/10/2016 1:00	0.59	0.3	
02/10/2016 1:00	0.62	0.22	
03/10/2016 1:00	0.62	0.24	
04/10/2016 1:00	0.57	0.28	
05/10/2016 1:00	0.52	0.24	
06/10/2016 1:00	0.53	0.21	
07/10/2016 1:00	0.54	0.24	
08/10/2016 1:00	0.79	0.36	
09/10/2016 1:00	0.75	0.28	
10/10/2016 1:00	0.74	0.28	
11/10/2016 1:00	0.63	0.27	
12/10/2016 1:00	0.55	0.35	
13/10/2016 1:00	0.52	0.29	
14/10/2016 1:00	0.57	0.27	
15/10/2016 1:00	0.62	0.32	
16/10/2016 1:00	0.71	0.31	
17/10/2016 1:00	0.64	0.31	
18/10/2016 1:00	0.59	0.35	
19/10/2016 1:00	0.61	0.38	
20/10/2016 1:00	0.57	0.33	
21/10/2016 1:00	0.56	0.43	
22/10/2016 1:00	0.59	0.68	
23/10/2016 1:00	0.56	0.51	

24/10/2016 1:00	0.56	0.4	
25/10/2016 1:00	0.57	0.41	
26/10/2016 1:00	0.53	0.43	
27/10/2016 1:00	0.56	0.48	
28/10/2016 1:00	0.64	0.92	
29/10/2016 1:00	0.92	0.67	
30/10/2016 1:00	1.02	0.51	
31/10/2016 1:00	0.8	0.51	
01/11/2016 1:00	0.69	0.53	
02/11/2016 1:00	0.65	0.55	
03/11/2016 1:00	0.6	0.59	
04/11/2016 1:00	0.6	0.58	
05/11/2016 1:00	0.58	0.61	
06/11/2016 1:00	0.57	0.61	
07/11/2016 0:00	0.58	0.65	
08/11/2016 0:00	0.6	0.69	
09/11/2016 0:00	0.55	0.67	
10/11/2016 0:00	0.54	0.67	
11/11/2016 0:00	0.54	0.67	
12/11/2016 0:00	0.54	0.67	
13/11/2016 0:00	0.54	0.67	
14/11/2016 0:00	0.54	0.67	
15/11/2016 0:00	0.54	0.67	
16/11/2016 0:00	0.59	0.73	
17/11/2016 0:00	0.62	0.86	

18/11/2016 0:00	0.6	0.4	
19/11/2016 0:00	0.57	0.23	
20/11/2016 0:00	0.57	0.2	
21/11/2016 0:00	0.59	0.2	
22/11/2016 0:00	0.58	0.21	
23/11/2016 0:00	0.58	0.21	
24/11/2016 0:00	0.57	0.23	
25/11/2016 0:00	0.8	0.18	
26/11/2016 0:00	0.65	0.16	
27/11/2016 0:00	0.66	0.16	
28/11/2016 0:00	0.83	0.14	
29/11/2016 0:00	0.76	0.16	
30/11/2016 0:00	0.7	0.14	
01/12/2016 0:00	0.64	0.15	
02/12/2016 0:00	0.62	0.18	
03/12/2016 0:00	0.62	0.19	
04/12/2016 0:00	0.63	0.27	
05/12/2016 0:00	0.61	0.15	
06/12/2016 0:00	0.78	0.2	
07/12/2016 0:00	0.86	0.28	
08/12/2016 0:00	0.69	0.19	
09/12/2016 0:00	0.63	0.39	
10/12/2016 0:00	0.76	0.25	
11/12/2016 0:00	0.77	0.18	
12/12/2016 0:00	0.99	0.23	

13/12/2016 0:00	0.81	0.31	
14/12/2016 0:00	0.61	0.23	
15/12/2016 0:00	0.55	0.18	
16/12/2016 0:00	0.6	0.23	
17/12/2016 0:00	0.61	0.19	
18/12/2016 0:00	0.59	0.19	
19/12/2016 0:00	0.71	0.2	
20/12/2016 0:00	0.9	0.21	
21/12/2016 0:00	0.89	0.29	
22/12/2016 0:00	0.92	0.31	
23/12/2016 0:00	0.75	0.29	
24/12/2016 0:00	0.69	0.24	
25/12/2016 0:00	0.67	0.25	
26/12/2016 0:00	0.65	0.19	
27/12/2016 0:00	0.63	0.18	
28/12/2016 0:00	0.9	0.18	
29/12/2016 0:00	0.9	0.21	
30/12/2016 0:00	0.89	0.18	
31/12/2016 0:00	0.86	0.19	