

Introduction

The City of Merritt is the purveyor of drinking water to users connected to the City of Merritt Community Water System. This report is provided to City Council and Interior Health for their information, and in fulfillment of the City's obligations under the Provincial Drinking Water Act and associated regulations, as well as the terms and conditions of the City's Water System Operating Permit. Enforcement of the regulations and issuance of water system permits is the responsibility of the Interior Health Authority's Drinking Water Officer.

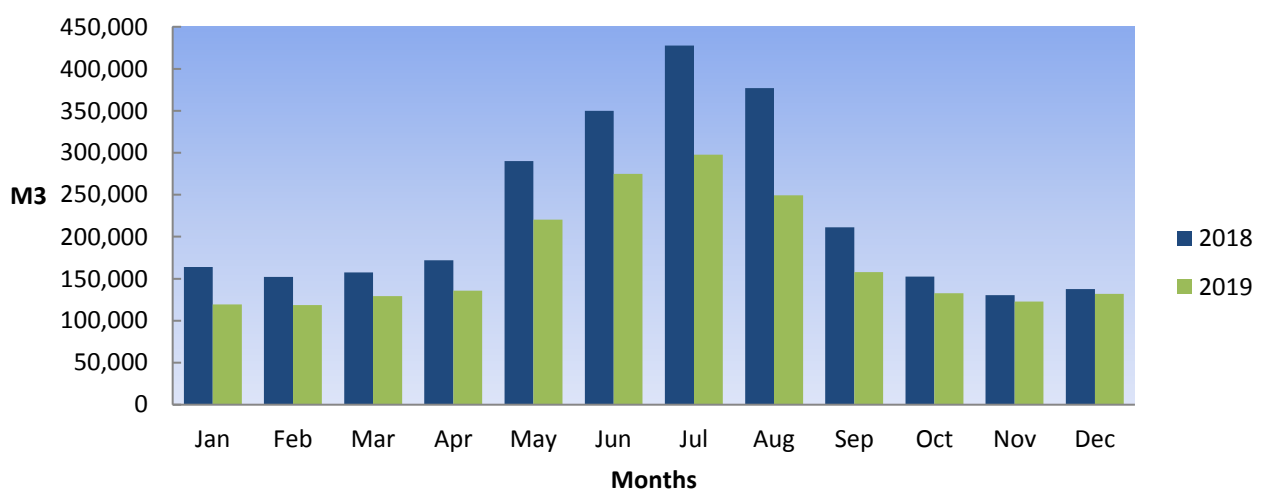
Water Consumption

Raw water for the City of Merritt water system is extracted from an aquifer through five pump stations. The aquifer provided the 2,091,196,000 litres of water consumed within the Merritt system in 2019. This represents a 23.2% decrease in overall water consumption from 2018. Maximum daily water demand peaked at 14,141,000 litres on August 6, 2019 while minimum daily demand occurred on April 14, 2019 at 1,685,000 litres.

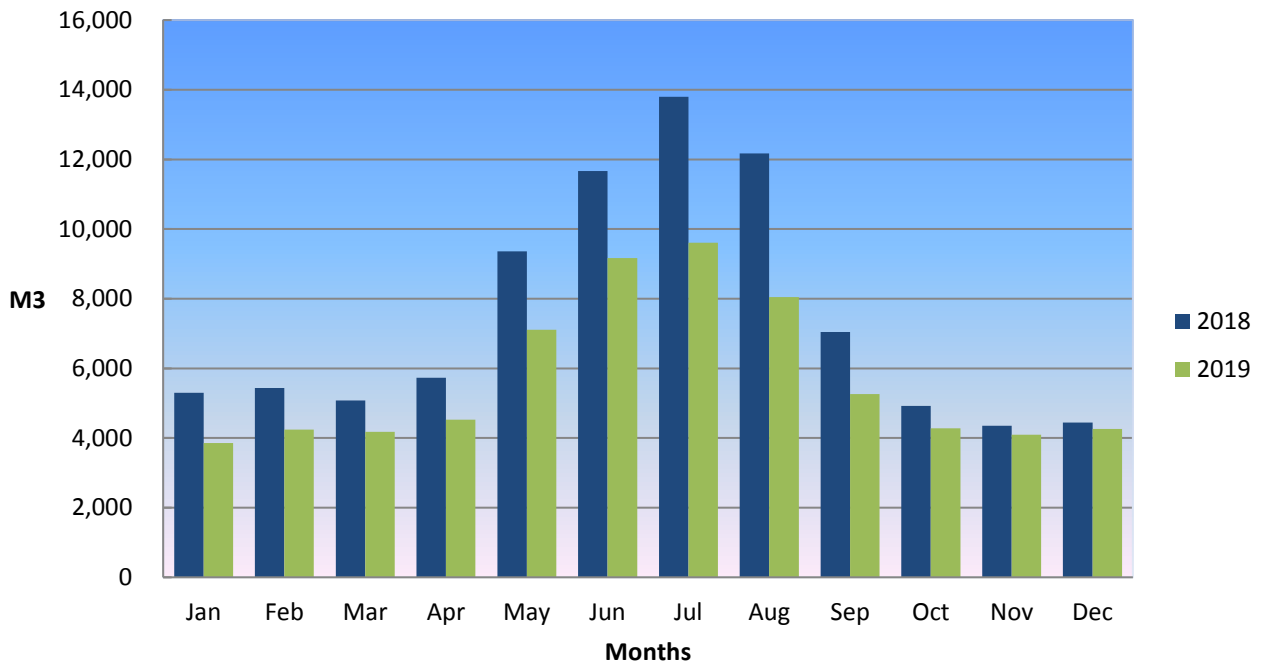
The water consumption for Merritt in 2019 averaged 5,729,304 litres per day. The maximum day (Aug 6th) water consumption was 2020 litres per person, while the minimum day (Apr 14th) consumption was 241 litres per person. The average was 819 litres per person in Merritt every day of the year (based on a population of 7000); average daily consumption in British Columbia is only 296 litres per person (2013 Stats Canada).

The City of Merritt has been tracking water consumption since 1977. The year 2019 had the lowest water consumption in the last 43 years. Due to the level 4 drought the City of Merritt enforced watering restrictions which we believe contributed to this reduced water consumption. To continue a reduction in water usage the enforcement of sprinkling and excess water usage must be a high priority.

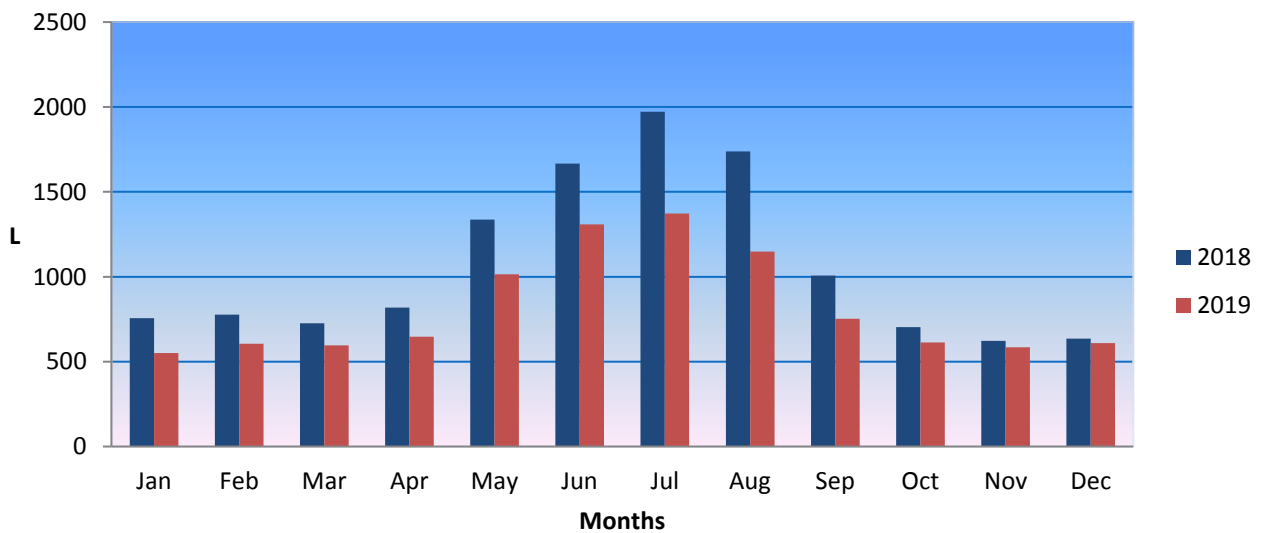
Total Water Use 2018-2019



Average Daily Water Use



Water Consumption Per Person Per Day



Water Storage

Water storage capacity is just over 7.7 million litres between four reservoirs named, Nicola, Grimmer, Grandview and South East Balancing Reservoir. Merritt's distribution system accounts for another approximate 1.5 million litres. Distribution piping sizes range from 100mm to 350mm – approx. 72 Km in total length.

South East Balancing Reservoir



Water Production

All four production water wells are located within the deepest part of the aquifer. Kengard was drilled into a different aquifer.

- **Voght Park #1** - 250hp – rated at 125 L/sec.
- **Voght Park #2** 200hp – rated 112 L/sec.
- **Fairley Park** - 100hp – rated at 60L/sec.
- **Collettville** - 125hp – rated at 60 L/sec.
- **Kengard** – 100hp – rated at 50 L/sec.

In the event of a power outage the Voght Park pumps and Disinfection building are powered by a new diesel generator. Well depths range from 29.8m at Fairley Park to 135m below ground surface at Kengard.

Kengard Pump House



Source Water Quality

The coarse composition of the Aquifer suggests the Aquifer is unconfined - (the Aquifer is not pressurized or capped), and therefore is very vulnerable to contamination. The BC Ministry of Environment Aquifer Classification system categorizes the Merritt Aquifer as type "IA", identifying it as one of the most highly developed and vulnerable Aquifers in the Province. Less than 5% of Aquifers identified in BC currently have this rating. The City has enjoyed a high-quality source of water for many years from this Aquifer. Our water source is also rated as Groundwater at Risk of Pathogens (GARP) therefore we have ongoing plans to protect the Aquifer and the area around it. We have placed signage over the Aquifer to let the public know where it

is to help protect the aquifer. We have also developed a Source Water Protection Plan to help protect our Aquifer.

Source water is tested several times a year for a variety of characteristics from the presence of metals or chemicals to its clarity (turbidity), acidity, base (pH) and temperature. A complete list of the test elements is included as Appendix 'A' to this report and the 2019 Caro lab report is in Appendix "B".

Water Treatment Systems

In June 2019, the City's Water Treatment system was commissioned and fully functional to treat the City's water. The City now has ETS-UV Spectra II SX635 and SX225 reactors followed by Chlorination with complete mix chlorine contact piping installed at each pumphouse.

The City follows Interior Health's 4-3-2-1-0 Drinking Water Objectives.

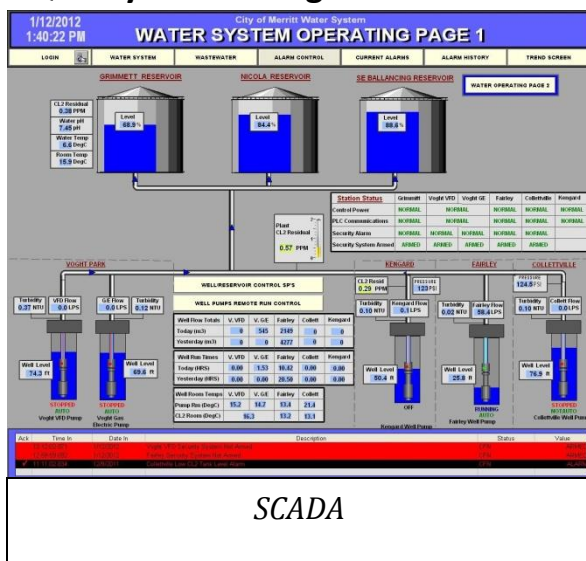
- 4 log inactivation of Viruses (99.99%)
- 3 log removal or inactivation of Giardia Lamblia and Cryptosporidium (99.9%)
- 2 refers to two treatment processes
- 1 for less than 1 NTU of Turbidity
- 0 total and fecal coliforms and E. coli

Interior Health mandated our water supply be treated due to the GARP (Groundwater at Risk of Pathogens) rating of the shallow and unconfined (not pressurized or capped) aquifer the City uses.

Voght Park Disinfection



Quality Monitoring

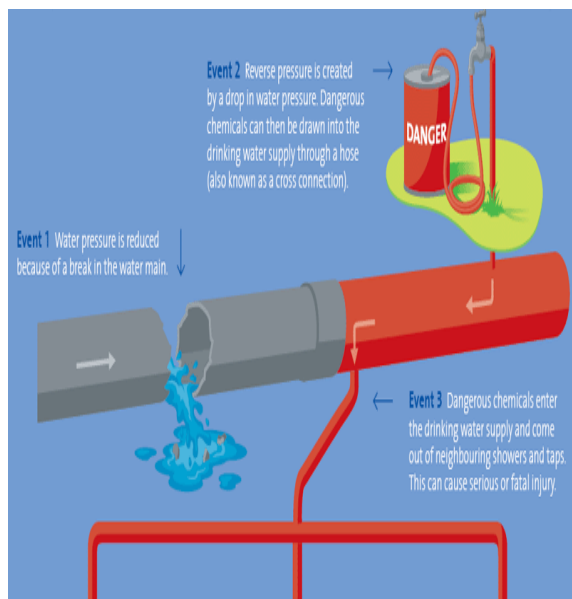


SCADA

Drinking water delivered to users of the city system is subject to a comprehensive and rigorous testing program that ensures quality drinking water. Water samples from up to eleven (11) separate locations within the system were sent in 2019, on a weekly basis, to the *Caro Analytical Services* laboratories to be tested for the presence/absence of E.coli and Total Coliform Bacteria. City staff also perform Chlorine residual testing to ensure proper levels of Chlorine are maintained. Lab results are downloaded by *Caro* directly onto the City's WaterTrax© system as well as emailed to the Chief Operator and Cross Connection Control Officer for review.

The standard protocol when a water sample is found to contain the presence of Coliform (an early indicator that we could have a problem arising), however minute, is to flush and resample the water immediately at the same location and resubmit for testing. The Regional Drinking Water Officer will determine if any further action by the purveyor is necessary.

All five wells, pumps and reservoirs are monitored 24/7 with our water quality monitoring devices. These devices will monitor in real time Flow, Temperature, Turbidity, PH and Chlorine residual. The quality control and accuracy of monitoring greatly increases with these devices online. All information from the different stations is sent back to the central computer system (SCADA) at the Wastewater Treatment Plant for monitoring and review. With this real time monitoring the Operators will be able to instantly check the water quality and tell if a problem is arising. In many cases, before the lab results are finished each week. With the SCADA alarm system Operators will also be made aware of any problems 24/7, if any one system falls outside of the control parameters.



Merritt has a Cross Connection Control Coordinator (CCCC) and he has developed a Cross-connection Control Program for the City of Merritt. This program is designed to inspect and eliminate any possible connections between our potable water system and any other connections that are not potable. For example, a connection to potable water and a sprinkler system that injects fertilizer could possibly contaminate the whole water system without the proper back flow device in place and maintained. Our Cross-Connection Control Coordinator inspects all commercial and industrial connections to our system. Our CCCC also makes sure consumers regularly have their back-flow assemblies inspected, tested and maintained. This is vitally important to ensure safe clean drinking water supply for the City of Merritt.

Records

The City employs an automated and continuously operating system to monitor, Flow, Ph., Turbidity, Water temperature, Well room temperature, Chlorine residual and Reservoir storage. This system is called SCADA, *Supervisory Control and Data Acquisition*, and it assists City staff with maintaining a safe drinking water supply by advising of any monitored change within our water system. The SCADA system will alert staff by way of a portable 2-way radio and/or cell phone to ensure that corrections can be made before water levels or quality can be adversely affected.

Test records are stored on the City's WaterTrax® database. Information from this database can be retrieved in many formats for presentation, analysis or public information. This data is also used to provide information to the provincial Drinking Water Officer, including the completion of this annual report.

The public is able to log in and view information about our water system at: <http://www.watertrax.com> using the name "Merritt Guest" and password of "MerrittGuest1".

Operation

The City of Merritt's Community Water System and Water Treatment facilities are operated and maintained by highly trained and certified operators. The SCADA system continuously monitors the water quality which in turn assists the operators to make necessary adjustments to meet or exceed the provincial drinking water quality objectives established by Interior Health as well as federal Canadian Drinking Water Quality objectives. Water distribution work is also carried out by staff certified for their tasks: water main replacement, water service installation, fire hydrant maintenance, valve maintenance and leak detection. Special tasks such as reservoir cleaning and leak detection are undertaken by qualified contractors with the proper equipment and experience to complete the work.



Operations Staff

- Kevin Vilac
 - - EOCB Wastewater Treatment III
 - - EOCB Water Distribution MU II
 - - EOCB Water Treatment MU I
 - - EOCB Wastewater Collections MU II
 - - BCWWA Chlorine Handling Certificate
 - - ABC Class II Wastewater Treatment Professional Operator
- Jessica Sulz
 - - EOCB Wastewater Treatment MU I
 - - EOCB Water Distribution MU I
 - - EOCB Water Treatment MU I
 - - EOCB Wastewater Collection MU I
 - - BCWWA Chlorine Handling Certificate
- Jeremy Long
 - - EOCB Water Treatment MU I
 - - EOCB Water Distribution MU I
 - - EOCB Small Water System
 - - EOCB Small Wastewater System
 - - BCWWA Chlorine Handling Certificate
- Tom Harrington – EOCB Water Distribution MU II
 - - EOCB Wastewater Collection MU II
- Tim Strayer
 - - EOCB Water Distribution MU I
 - - EOCB Wastewater Treatment MU I
 - - BCWWA Chlorine Handling Certificate

Emergency Callouts – 2019

There was a total of 43 emergency callouts in 2019. UV Reactor alarms made up most calls – totaling 12. The other callouts were ten (10) chlorine pump faults, nine (9) communications alarms, six (6) reservoir alarms, five (5) well alarms and one (1) power outage alarm.



Water Leak

Maintenance / Capital Projects – 2019

- Completed and commissioned UV disinfection
- Installed 7 new Chlorine analyzers
- Replaced 5 Hydrants
- Replaced 5 Water main Valves
- Installed Backup Generator at Voght Park
- 271 Weekly water samples



Initiatives – 2020

In 2020 the City will be building a new chlorine storage building. Replace the outdated PLC at Grimmett Reservoir and install UVT meters in all pump houses. The Cross-Connection Control Coordinator will continue to perform facility hazard assessments throughout the City to identify and work closely with owners to install the proper backflow assemblies. With these devices in place, it is a positive step forward in protecting the City's drinking water system.

Future Water Quality

Council has committed to an on-going program to improve quality and fire flow throughout the City through the reduction of dead-end mains and installation of blow off assemblies where they presently do not exist. The City of Merritt has been advised by the Drinking Water Officer to include compliance with the new Drinking Water Regulation standards in any future capital works plans. Replacement or expansion of major parts of the City's water system will have to include provisions to ensure that standards of treatment required by current regulations are achieved.



Conclusion

The City of Merritt Employees work hard in the effort to maintain, ensure proper water usage, monitoring water quantity, monitoring water quality, and educating the public whenever possible. With these goals the City of Merritt should be able to maintain a quality water source and distribution system for many years to come.

This 2019 City of Merritt Water System Report is presented to the public, by way of posting on the City of Merritt website, as required by the British Columbia Drinking Water Protection Act and Regulations, as well as to meet the terms and conditions of the City's Water System Operating Permit (0210617) issued by the Interior Health Drinking Water Officer.

Weekly Tests

- E. Coli & Total Coliforms
- Free Chlorine Residual
- Temperature, Turbidity & Ph

Appendix "A"



APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO PROJECT Merritt, City of Comprehensive

WORK ORDER REPORTED 9050072 2019-05-09 17:09

Analysis Description	Method Ref.	Technique	Location
Alkalinity in Water	SM 2320 B* (2011)	Titration with H2SO4	Kelowna
Anions in Water	SM 4110 B (2011)	Ion Chromatography	Kelowna
Coliforms, Total in Water	SM 9222* (2006)	Membrane Filtration / Chromocult Agar	Kelowna
Colour, True in Water	SM 2120 C (2011)	Spectrophotometry (456 nm)	Kelowna
Conductivity in Water	SM 2510 B (2011)	Conductivity Meter	Kelowna
Cyanide, SAD in Water	ASTM D7511-12	Flow Injection with In-Line UV Digestion and Amperometry	Kelowna
E. coli in Water	SM 9222* (2006)	Membrane Filtration / Chromocult Agar	Kelowna
Halocacetic Acids in Water	EPA 552.3*	Liquid-Liquid Microextraction, Derivatization and GC-ECD	Richmond
Hardness in Water	SM 2340 B* (2011)	Calculation: 2.497 [total Ca] + 4.118 [total Mg] (Est)	N/A
Langgeller Index in Water	SM 2330 B (2010)	Calculation	N/A
Mercury, total in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
pH in Water	SM 4500-H+ B (2011)	Electrometry	Kelowna
Solids, Total Dissolved in Water	SM 1030 E (2011)	Calculation: 100 x ([Cations]-[Anions])/([Cations]+[Anions])	N/A
Total Metals in Water	EPA 200.2* / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	Richmond
Tributylmethanes in Water	EPA 5030B / EPA 8260D	Purge&Trap / GC-MSD (SIM)	Richmond
Turbidity in Water	SM 2130 B (2011)	Nephelometry	Kelowna
Volatile Organic Compounds in Water	EPA 5030B / EPA 8260D	Purge&Trap / GC-MSD (SIM)	Richmond

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

Glossary of Terms:

RL	Reporting Limit (default)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
°C	Degrees Celcius
AO	Aesthetic Objective
CFU/100 mL	Colony Forming Units per 100 millilitres
CU	Colour Units (referenced against a platinum cobalt standard)
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
pH units	pH < 7 = acidic, pH > 7 = basic
µg/L	Micrograms per litre
µS/cm	Microsiemens per centimetre
ASTM	ASTM International Test Methods
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

Appendix "B"



TEST RESULTS

REPORTED TO Merritt, City of
PROJECT Comprehensive

WORK ORDER 9050072
REPORTED 2019-05-09 17:09

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 1FE5C Grimmer Reservoir (9050072-01) Matrix: Water Sampled: 2019-04-30 11:25						
Anions						
Chloride	30.7	AO ≤ 250	0.10	mg/L	2019-05-01	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	2019-05-01	
Nitrate (as N)	0.617	MAC = 10	0.010	mg/L	2019-05-01	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2019-05-01	
Sulfate	164	AO ≤ 500	1.0	mg/L	2019-05-01	
Calculated Parameters						
Total Trihalomethanes	0.00963	MAC = 0.1	0.00400	mg/L	N/A	
Hardness Total (as CaCO ₃)	297	None Required	0.500	mg/L	N/A	
Langelier Index	0.8	N/A	-5.0		2019-05-08	
Solids Total Dissolved	439	AO ≤ 500	10.0	mg/L	N/A	
General Parameters						
Alkalinity Total (as CaCO ₃)	184	N/A	1.0	mg/L	2019-05-04	
Alkalinity Phenolphthalein (as CaCO ₃)	< 1.0	N/A	1.0	mg/L	2019-05-04	
Alkalinity Bicarbonate (as CaCO ₃)	184	N/A	1.0	mg/L	2019-05-04	
Alkalinity Carbonate (as CaCO ₃)	< 1.0	N/A	1.0	mg/L	2019-05-04	
Alkalinity Hydroxide (as CaCO ₃)	< 1.0	N/A	1.0	mg/L	2019-05-04	
Colour, True	< 5.0	AO ≤ 15	5.0	CU	2019-05-01	
Conductivity (EC)	700	N/A	2.0	µS/cm	2019-05-04	
Cyanide Total	< 0.0020	MAC = 0.2	0.0020	mg/L	2019-05-02	
pH	8.09	7.0-10.5	0.10	pH units	2019-05-04	HT2
Temperature, at pH	22.5	N/A		°C	2019-05-04	HT2
Turbidity	0.16	OG < 1	0.10	NTU	2019-05-02	
Haloacetic Acids						
Monochloroacetic Acid	< 0.0020	N/A	0.0020	mg/L	2019-05-09	
Monobromoacetic Acid	< 0.0020	N/A	0.0020	mg/L	2019-05-09	
Dichloroacetic Acid	< 0.0020	N/A	0.0020	mg/L	2019-05-09	
Trichloroacetic Acid	< 0.0020	N/A	0.0020	mg/L	2019-05-09	
Dibromoacetic Acid	< 0.0020	N/A	0.0020	mg/L	2019-05-09	
Total Haloacetic Acids (HAA5)	< 0.00200	MAC = 0.08	0.00200	mg/L	N/A	
Surrogate: 2-Bromopropionic Acid	105		70-130	%	2019-05-09	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2019-05-01	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2019-05-01	
Total Metals						
Aluminum, total	0.0125	OG < 0.1	0.0050	mg/L	2019-05-07	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2019-05-07	
Arsenic, total	0.00112	MAC = 0.01	0.00050	mg/L	2019-05-07	
Barium, total	0.0941	MAC = 1	0.0050	mg/L	2019-05-07	
Boron, total	0.0337	MAC = 5	0.0050	mg/L	2019-05-07	

Generate Report Results Only



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Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
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WTR# 1FE5C Grimmer Reservoir (9050072-01) | Matrix: Water | Sampled: 2019-04-30 11:25, Continued

Total Metals, Continued

Cadmium, total	< 0.000010	MAC = 0.005	0.000010 mg/L	2019-05-07	
Calcium, total	70.5	None Required	0.20 mg/L	2019-05-07	
Chromium, total	0.00091	MAC = 0.05	0.00050 mg/L	2019-05-07	
Cobalt, total	< 0.00010	N/A	0.00010 mg/L	2019-05-07	
Copper, total	0.00130	AO ≤ 1	0.00040 mg/L	2019-05-07	
Iron, total	0.028	AO ≤ 0.3	0.010 mg/L	2019-05-07	
Lead, total	< 0.00020	MAC = 0.005	0.00020 mg/L	2019-05-07	
Magnesium, total	29.3	None Required	0.010 mg/L	2019-05-07	
Manganese, total	0.0238	AO ≤ 0.05	0.00020 mg/L	2019-05-07	
Mercury, total	< 0.000010	MAC = 0.001	0.000010 mg/L	2019-05-07	
Molybdenum, total	0.00268	N/A	0.00010 mg/L	2019-05-07	
Nickel, total	< 0.00040	N/A	0.00040 mg/L	2019-05-07	
Potassium, total	3.61	N/A	0.10 mg/L	2019-05-07	
Selenium, total	< 0.00050	MAC = 0.05	0.00050 mg/L	2019-05-07	
Sodium, total	25.9	AO ≤ 200	0.10 mg/L	2019-05-07	
Silicon, total	0.581	N/A	0.0010 mg/L	2019-05-07	
Titanium, total	0.00244	MAC = 0.02	0.000020 mg/L	2019-05-07	
Zinc, total	< 0.0040	AO ≤ 5	0.0040 mg/L	2019-05-07	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	MAC = 5	0.5 µg/L	2019-05-04	CT8
Bromodichloromethane	3.5	N/A	1.0 µg/L	2019-05-04	
Bromodichloromethane	0.0030	N/A	0.0010 mg/L	2019-05-06	
Chloroform	2.2	N/A	1.0 µg/L	2019-05-04	
Chloroform	0.0012	N/A	0.0010 mg/L	2019-05-06	
Carbon tetrachloride	< 0.5	MAC = 2	0.5 µg/L	2019-05-04	
Chlorobenzene	< 1.0	AO ≤ 30	1.0 µg/L	2019-05-04	
Chloroethane	< 2.0	N/A	2.0 µg/L	2019-05-04	
Chloroform	1.5	N/A	1.0 µg/L	2019-05-04	
Chloroform	0.0022	N/A	0.0010 mg/L	2019-05-06	
Dibromochloromethane	0.0032	N/A	0.0010 mg/L	2019-05-06	
Dibromochloromethane	4.6	N/A	1.0 µg/L	2019-05-04	
1,2-Dibromoethane	< 0.3	N/A	0.3 µg/L	2019-05-04	
Bromomethane	< 1.0	N/A	1.0 µg/L	2019-05-04	
1,2-Dichlorobenzene	< 0.5	AO ≤ 3	0.5 µg/L	2019-05-04	
1,3-Dichlorobenzene	< 1.0	N/A	1.0 µg/L	2019-05-04	
1,4-Dichlorobenzene	< 1.0	AO ≤ 1	1.0 µg/L	2019-05-04	
1,1-Dichloroethane	< 1.0	N/A	1.0 µg/L	2019-05-04	
1,2-Dichloroethane	< 1.0	MAC = 5	1.0 µg/L	2019-05-04	
1,1-Dichloroethylene	< 1.0	MAC = 14	1.0 µg/L	2019-05-04	
cis-1,2-Dichloroethylene	< 1.0	N/A	1.0 µg/L	2019-05-04	
trans-1,2-Dichloroethylene	< 1.0	N/A	1.0 µg/L	2019-05-04	
Dichloromethane	< 3.0	MAC = 50	3.0 µg/L	2019-05-04	

Sampling Results Summary



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WT# 1FE5C Grimmert Reservoir (9050072-01) Matrix: Water Sampled: 2019-04-30 11:25, Continued						
Volatile Organic Compounds (VOC), Continued						CT8
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	2019-05-04	
1,3-Dichloropropene (cis + trans)	< 1.0	N/A	1.0	µg/L	2019-05-04	
Bromobenzene	< 1.0	AO ≤ 1.6	1.0	µg/L	2019-05-04	
Ethyl tert-butyl ether	< 1.0	AO ≤ 15	1.0	µg/L	2019-05-04	
Styrene	< 1.0	N/A	1.0	µg/L	2019-05-04	
1,1,1,2-Tetrachloroethane	< 0.5	N/A	0.5	µg/L	2019-05-04	
Tetrachloroethylene	< 1.0	MAC = 10	1.0	µg/L	2019-05-04	
Toluene	< 1.0	AO ≤ 24	1.0	µg/L	2019-05-04	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	2019-05-04	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	2019-05-04	
Trichloroethylene	< 1.0	MAC = 5	1.0	µg/L	2019-05-04	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	2019-05-04	
Trichloronitrobenzene	< 1.0	MAC = 2	1.0	µg/L	2019-05-04	
Xylenes (total)	< 2.0	AO ≤ 20	2.0	µg/L	2019-05-04	
Isopropyl Toluene-d8	78		70-130	%	2019-05-04	
Isopropyl 4-Bromofluorobenzene	94		70-130	%	2019-05-04	
Isopropyl 1,4-Dichlorobenzene-d4	101		70-130	%	2019-05-04	
WT# 11D30 Voght Park VFD (9050072-02) Matrix: Water Sampled: 2019-04-30 10:40						
Anions						
Chloride	14.0	AO ≤ 250	0.10	mg/L	2019-05-01	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	2019-05-01	
Nitrate (as N)	0.291	MAC = 10	0.010	mg/L	2019-05-01	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2019-05-01	
Sulfate	31.5	AO ≤ 500	1.0	mg/L	2019-05-01	
Chlorinated Parameters						
Hardness, Total (as CaCO3)	133	None Required	0.500	mg/L	N/A	
Langelier Index	0.1	N/A	-5.0		2019-05-08	
Total Dissolved	176	AO ≤ 500	1.00	mg/L	N/A	
General Parameters						
Alkalinity, Total (as CaCO3)	118	N/A	1.0	mg/L	2019-05-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2019-05-04	
Alkalinity, Bicarbonate (as CaCO3)	118	N/A	1.0	mg/L	2019-05-04	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2019-05-04	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2019-05-04	
Alkalinity, Free	< 5.0	AO ≤ 15	5.0	CU	2019-05-01	
Electrical Conductivity (EC)	309	N/A	2.0	µS/cm	2019-05-04	
Specific Gravity, Total	< 0.0020	MAC = 0.2	0.0020	mg/L	2019-05-02	
pH	7.94	7.0-10.5	0.10	pH units	2019-05-04	HT2
Temperature, at pH	22.4	N/A		°C	2019-05-04	HT2

Carbonyl Sulfide (COS) Observed



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Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
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WT# 11D30 Voght Park VFD (9050072-02) | Matrix: Water | Sampled: 2019-04-30 10:40, Continued

General Parameters, Continued

Turbidity	0.14	OG < 1	0.10	NTU	2019-05-02	
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Microbiological Parameters

Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2019-05-01	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2019-05-01	

Total Metals

Aluminum, total	< 0.0050	OG < 0.1	0.0050	mg/L	2019-05-07	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2019-05-07	
Arsenic, total	< 0.00050	MAC = 0.01	0.00050	mg/L	2019-05-07	
Barium, total	0.0603	MAC = 1	0.0050	mg/L	2019-05-07	
Boron, total	0.0149	MAC = 5	0.0050	mg/L	2019-05-07	
Cadmium, total	< 0.000010	MAC = 0.005	0.000010	mg/L	2019-05-07	
Calcium, total	37.2	None Required	0.20	mg/L	2019-05-07	
Chromium, total	0.00295	MAC = 0.05	0.00050	mg/L	2019-05-07	
Cobalt, total	< 0.00010	N/A	0.00010	mg/L	2019-05-07	
Copper, total	0.00323	AO ≤ 1	0.00040	mg/L	2019-05-07	
Cron, total	0.029	AO ≤ 0.3	0.010	mg/L	2019-05-07	
Lead, total	0.00024	MAC = 0.005	0.00020	mg/L	2019-05-07	
Magnesium, total	9.66	None Required	0.010	mg/L	2019-05-07	
Manganese, total	0.00030	AO ≤ 0.05	0.00020	mg/L	2019-05-07	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2019-05-07	
Molybdenum, total	0.00072	N/A	0.00010	mg/L	2019-05-07	
Nickel, total	0.00119	N/A	0.00040	mg/L	2019-05-07	
Potassium, total	1.27	N/A	0.10	mg/L	2019-05-07	
Selenium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2019-05-07	
Sodium, total	8.41	AO ≤ 200	0.10	mg/L	2019-05-07	
Strontium, total	0.243	N/A	0.0010	mg/L	2019-05-07	
Titanium, total	0.000551	MAC = 0.02	0.000020	mg/L	2019-05-07	
Zinc, total	0.0043	AO ≤ 5	0.0040	mg/L	2019-05-07	

WT# 11D2B Voght Park G/E (9050072-03) | Matrix: Water | Sampled: 2019-04-30 10:28

Anions

Chloride	18.8	AO ≤ 250	0.10	mg/L	2019-05-01	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	2019-05-01	
Nitrate (as N)	0.561	MAC = 10	0.010	mg/L	2019-05-01	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2019-05-01	
Sulfate	28.0	AO ≤ 500	1.0	mg/L	2019-05-01	

Inculated Parameters

Hardness, Total (as CaCO ₃)	137	None Required	0.500	mg/L	N/A	
Langlier Index	0.07	N/A	-5.0		2019-05-08	

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TEST RESULTS

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Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 11D2B Voght Park G/E (9050072-03) Matrix: Water Sampled: 2019-04-30 10:28, Continued						
Calculated Parameters, Continued						
Solids, Total Dissolved	176	AO ≤ 500	1.00	mg/L	N/A	
General Parameters						
Alkalinity, Total (as CaCO ₃)	112	N/A	1.0	mg/L	2019-05-04	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	N/A	1.0	mg/L	2019-05-04	
Alkalinity, Bicarbonate (as CaCO ₃)	112	N/A	1.0	mg/L	2019-05-04	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	N/A	1.0	mg/L	2019-05-04	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	N/A	1.0	mg/L	2019-05-04	
Colour, True	< 5.0	AO ≤ 15	5.0	CU	2019-05-01	
Conductivity (EC)	313	N/A	2.0	µS/cm	2019-05-04	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020	mg/L	2019-05-02	
pH	7.87	7.0-10.5	0.10	pH units	2019-05-04	HT2
Temperature, at pH	22.3	N/A		°C	2019-05-04	HT2
Turbidity	0.16	OG < 1	0.10	NTU	2019-05-02	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2019-05-01	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2019-05-01	
Total Metals						
Aluminum, total	< 0.0050	OG < 0.1	0.0050	mg/L	2019-05-07	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2019-05-07	
Arsenic, total	< 0.00050	MAC = 0.01	0.00050	mg/L	2019-05-07	
Barium, total	0.0661	MAC = 1	0.0050	mg/L	2019-05-07	
Boron, total	0.0149	MAC = 5	0.0050	mg/L	2019-05-07	
Cadmium, total	< 0.000010	MAC = 0.005	0.000010	mg/L	2019-05-07	
Calcium, total	38.9	None Required	0.20	mg/L	2019-05-07	
Chromium, total	0.0153	MAC = 0.05	0.00050	mg/L	2019-05-07	
Cobalt, total	0.00022	N/A	0.00010	mg/L	2019-05-07	
Copper, total	0.00271	AO ≤ 1	0.00040	mg/L	2019-05-07	
Iron, total	0.117	AO ≤ 0.3	0.010	mg/L	2019-05-07	
Lead, total	0.00021	MAC = 0.005	0.00020	mg/L	2019-05-07	
Magnesium, total	9.61	None Required	0.010	mg/L	2019-05-07	
Manganese, total	0.00084	AO ≤ 0.05	0.00020	mg/L	2019-05-07	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2019-05-07	
Molybdenum, total	0.00055	N/A	0.00010	mg/L	2019-05-07	
Nickel, total	0.0108	N/A	0.00040	mg/L	2019-05-07	
Potassium, total	1.18	N/A	0.10	mg/L	2019-05-07	
Selenium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2019-05-07	
Sodium, total	8.43	AO ≤ 200	0.10	mg/L	2019-05-07	
Strontium, total	0.261	N/A	0.0010	mg/L	2019-05-07	
Uranium, total	0.000439	MAC = 0.02	0.000020	mg/L	2019-05-07	
Zinc, total	0.0042	AO ≤ 5	0.0040	mg/L	2019-05-07	

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TEST RESULTS

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Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
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WT# 11D2B Voght Park G/E (9050072-03) | Matrix: Water | Sampled: 2019-04-30 10:28, Continued

Calculated Parameters, Continued

Solids, Total Dissolved	176	AO ≤ 500	1.00	mg/L	N/A	
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General Parameters

Alkalinity, Total (as CaCO ₃)	112	N/A	1.0	mg/L	2019-05-04	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	N/A	1.0	mg/L	2019-05-04	
Alkalinity, Bicarbonate (as CaCO ₃)	112	N/A	1.0	mg/L	2019-05-04	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	N/A	1.0	mg/L	2019-05-04	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	N/A	1.0	mg/L	2019-05-04	
Colour, True	< 5.0	AO ≤ 15	5.0	CU	2019-05-01	
Conductivity (EC)	313	N/A	2.0	µS/cm	2019-05-04	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020	mg/L	2019-05-02	
pH	7.87	7.0-10.5	0.10	pH units	2019-05-04	HT2
Temperature, at pH	22.3	N/A		°C	2019-05-04	HT2
Turbidity	0.16	OG < 1	0.10	NTU	2019-05-02	

Microbiological Parameters

Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2019-05-01	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2019-05-01	

Total Metals

Aluminum, total	< 0.0050	OG < 0.1	0.0050	mg/L	2019-05-07	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2019-05-07	
Arsenic, total	< 0.00050	MAC = 0.01	0.00050	mg/L	2019-05-07	
Barium, total	0.0661	MAC = 1	0.0050	mg/L	2019-05-07	
Boron, total	0.0149	MAC = 5	0.0050	mg/L	2019-05-07	
Cadmium, total	< 0.000010	MAC = 0.005	0.000010	mg/L	2019-05-07	
Calcium, total	38.9	None Required	0.20	mg/L	2019-05-07	
Chromium, total	0.0153	MAC = 0.05	0.00050	mg/L	2019-05-07	
Cobalt, total	0.00022	N/A	0.00010	mg/L	2019-05-07	
Copper, total	0.00271	AO ≤ 1	0.00040	mg/L	2019-05-07	
Iron, total	0.117	AO ≤ 0.3	0.010	mg/L	2019-05-07	
Lead, total	0.00021	MAC = 0.005	0.00020	mg/L	2019-05-07	
Magnesium, total	9.61	None Required	0.010	mg/L	2019-05-07	
Manganese, total	0.00084	AO ≤ 0.05	0.00020	mg/L	2019-05-07	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2019-05-07	
Molybdenum, total	0.00055	N/A	0.00010	mg/L	2019-05-07	
Nickel, total	0.0108	N/A	0.00040	mg/L	2019-05-07	
Potassium, total	1.18	N/A	0.10	mg/L	2019-05-07	
Selenium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2019-05-07	
Sodium, total	8.43	AO ≤ 200	0.10	mg/L	2019-05-07	
Strontium, total	0.261	N/A	0.0010	mg/L	2019-05-07	
Uranium, total	0.000439	MAC = 0.02	0.000020	mg/L	2019-05-07	
Zinc, total	0.0042	AO ≤ 5	0.0040	mg/L	2019-05-07	

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TEST RESULTS

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Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
V/T# 11D29 Colletteville Pump House (9050072-04) Matrix: Water Sampled: 2019-04-30 09:56					
Anions					
Chloride	15.8	AO ≤ 250	0.10 mg/L	2019-05-01	
Fluoride	< 0.10	MAC = 1.5	0.10 mg/L	2019-05-01	
Nitrate (as N)	0.189	MAC = 10	0.010 mg/L	2019-05-01	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2019-05-01	
Sulfate	57.9	AO ≤ 500	1.0 mg/L	2019-05-01	
Calculated Parameters					
Hardness, Total (as CaCO ₃)	190	None Required	0.500 mg/L	N/A	
Langelier Index	0.5	N/A	-5.0	2019-05-08	
Solids, Total Dissolved	250	AO ≤ 500	1.00 mg/L	N/A	
General Parameters					
Alkalinity, Total (as CaCO ₃)	155	N/A	1.0 mg/L	2019-05-04	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	N/A	1.0 mg/L	2019-05-04	
Alkalinity, Bicarbonate (as CaCO ₃)	155	N/A	1.0 mg/L	2019-05-04	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	N/A	1.0 mg/L	2019-05-04	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	N/A	1.0 mg/L	2019-05-04	
Colour, True	< 5.0	AO ≤ 15	5.0 CU	2019-05-01	
Conductivity (EC)	405	N/A	2.0 µS/cm	2019-05-04	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020 mg/L	2019-05-02	
pH	8.03	7.0-10.5	0.10 pH units	2019-05-04	HT2
Temperature, at pH	20.9	N/A	°C	2019-05-04	HT2
Turbidity	4.60	OG < 1	0.10 NTU	2019-05-02	
Microbiological Parameters					
Coliforms, Total	< 1	MAC = 0	1 CFU/100 mL	2019-05-01	
E. coli	< 1	MAC = 0	1 CFU/100 mL	2019-05-01	
Total Metals					
Aluminum, total	< 0.0050	OG < 0.1	0.0050 mg/L	2019-05-07	
Antimony, total	< 0.00020	MAC = 0.006	0.00020 mg/L	2019-05-07	
Arsenic, total	< 0.00050	MAC = 0.01	0.00050 mg/L	2019-05-07	
Barium, total	0.0591	MAC = 1	0.0050 mg/L	2019-05-07	
Boron, total	0.0196	MAC = 5	0.0050 mg/L	2019-05-07	
Cadmium, total	< 0.000010	MAC = 0.005	0.000010 mg/L	2019-05-07	
Calcium, total	49.8	None Required	0.20 mg/L	2019-05-07	
Chromium, total	0.00089	MAC = 0.05	0.00050 mg/L	2019-05-07	
Cobalt, total	< 0.00010	N/A	0.00010 mg/L	2019-05-07	
Copper, total	0.00079	AO ≤ 1	0.00040 mg/L	2019-05-07	
Iron, total	0.233	AO ≤ 0.3	0.010 mg/L	2019-05-07	
Lead, total	< 0.00020	MAC = 0.005	0.00020 mg/L	2019-05-07	
Magnesium, total	15.8	None Required	0.010 mg/L	2019-05-07	
Manganese, total	0.00329	AO ≤ 0.05	0.00020 mg/L	2019-05-07	
Mercury, total	< 0.000010	MAC = 0.001	0.000010 mg/L	2019-05-07	

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Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 11D29 Colletteville Pump House (9050072-04) Matrix: Water Sampled: 2019-04-30 09:56, Continued						
Total Metals, Continued						
Molybdenum, total	0.00174	N/A	0.00010	mg/L	2019-05-07	
Nickel, total	< 0.00040	N/A	0.00040	mg/L	2019-05-07	
Potassium, total	2.05	N/A	0.10	mg/L	2019-05-07	
Selenium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2019-05-07	
Sodium, total	13.4	AO ≤ 200	0.10	mg/L	2019-05-07	
Strontium, total	0.323	N/A	0.0010	mg/L	2019-05-07	
Uranium, total	0.00134	MAC = 0.02	0.000020	mg/L	2019-05-07	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2019-05-07	

WT# 11D2A Fairley Pump House (9050072-05) | Matrix: Water | Sampled: 2019-04-30 09:38

Anions						
Chloride	70.5	AO ≤ 250	0.10	mg/L	2019-05-01	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	2019-05-01	
Nitrate (as N)	2.07	MAC = 10	0.010	mg/L	2019-05-01	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2019-05-01	
Sulfate	45.9	AO ≤ 500	1.0	mg/L	2019-05-01	
Calculated Parameters						
Hardness, Total (as CaCO ₃)	245	None Required	0.500	mg/L	N/A	
Langelier Index	0.5	N/A	-5.0		2019-05-08	
Solids, Total Dissolved	342	AO ≤ 500	1.00	mg/L	N/A	
General Parameters						
Alkalinity, Total (as CaCO ₃)	171	N/A	1.0	mg/L	2019-05-04	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	N/A	1.0	mg/L	2019-05-04	
Alkalinity, Bicarbonate (as CaCO ₃)	171	N/A	1.0	mg/L	2019-05-04	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	N/A	1.0	mg/L	2019-05-04	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	N/A	1.0	mg/L	2019-05-04	
Colour, True	< 5.0	AO ≤ 15	5.0	CU	2019-05-01	
Conductivity (EC)	606	N/A	2.0	µS/cm	2019-05-04	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020	mg/L	2019-05-02	
pH	7.89	7.0-10.5	0.10	pH units	2019-05-04	HT2
Temperature, at pH	21.0	N/A		°C	2019-05-04	HT2
Turbidity	< 0.10	OG < 1	0.10	NTU	2019-05-02	
Microbiological Parameters						
Coliforms, Total	< 1	MAC = 0	1	CFU/100 mL	2019-05-01	
E. coli	< 1	MAC = 0	1	CFU/100 mL	2019-05-01	
Total Metals						
Aluminum, total	< 0.0050	OG < 0.1	0.0050	mg/L	2019-05-07	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2019-05-07	

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Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
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WT# 11D2A Fairley Pump House (9050072-05) | Matrix: Water | Sampled: 2019-04-30 09:38, Continued

Total Metals, Continued

Arsenic, total	< 0.00050	MAC = 0.01	0.00050 mg/L	2019-05-07	
Barium, total	0.145	MAC = 1	0.0050 mg/L	2019-05-07	
Boron, total	0.0209	MAC = 5	0.0050 mg/L	2019-05-07	
Cadmium, total	0.000015	MAC = 0.005	0.000010 mg/L	2019-05-07	
Calcium, total	67.3	None Required	0.20 mg/L	2019-05-07	
Chromium, total	0.00098	MAC = 0.05	0.00050 mg/L	2019-05-07	
Cobalt, total	< 0.00010	N/A	0.00010 mg/L	2019-05-07	
Copper, total	0.00455	AO ≤ 1	0.00040 mg/L	2019-05-07	
Iron, total	< 0.010	AO ≤ 0.3	0.010 mg/L	2019-05-07	
Lead, total	< 0.00020	MAC = 0.005	0.00020 mg/L	2019-05-07	
Magnesium, total	18.7	None Required	0.010 mg/L	2019-05-07	
Manganese, total	< 0.00020	AO ≤ 0.05	0.00020 mg/L	2019-05-07	
Mercury, total	< 0.000010	MAC = 0.001	0.000010 mg/L	2019-05-07	
Molybdenum, total	0.00037	N/A	0.00010 mg/L	2019-05-07	
Nickel, total	< 0.00040	N/A	0.00040 mg/L	2019-05-07	
Potassium, total	1.87	N/A	0.10 mg/L	2019-05-07	
Selenium, total	< 0.00050	MAC = 0.05	0.00050 mg/L	2019-05-07	
Sodium, total	24.3	AO ≤ 200	0.10 mg/L	2019-05-07	
Strontium, total	0.561	N/A	0.0010 mg/L	2019-05-07	
Zinc, total	0.000996	MAC = 0.02	0.000020 mg/L	2019-05-07	
	0.0040	AO ≤ 5	0.0040 mg/L	2019-05-07	

WT# 272CD Kengard Pump House (9050072-06) | Matrix: Water | Sampled: 2019-04-30 11:05

Anions

Chloride	6.55	AO ≤ 250	0.10 mg/L	2019-05-01	
Fluoride	0.12	MAC = 1.5	0.10 mg/L	2019-05-01	
Nitrate (as N)	< 0.010	MAC = 10	0.010 mg/L	2019-05-01	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2019-05-01	
Sulfate	294	AO ≤ 500	1.0 mg/L	2019-05-01	

Calculated Parameters

Hardness, Total (as CaCO ₃)	431	None Required	0.500 mg/L	N/A	
Hardness Index	1.1	N/A	-5.0	2019-05-08	
Solids, Total Dissolved	620	AO ≤ 500	10.0 mg/L	N/A	

General Parameters

Alkalinity, Total (as CaCO ₃)	222	N/A	1.0 mg/L	2019-05-04	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	N/A	1.0 mg/L	2019-05-04	
Alkalinity, Bicarbonate (as CaCO ₃)	222	N/A	1.0 mg/L	2019-05-04	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	N/A	1.0 mg/L	2019-05-04	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	N/A	1.0 mg/L	2019-05-04	
Colour, True	< 5.0	AO ≤ 15	5.0 CU	2019-05-01	

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Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
WT# 272CD Kengard Pump House (9050072-06) Matrix: Water Sampled: 2019-04-30 11:05, Continued					
<i>General Parameters, Continued</i>					
Conductivity (EC)	913	N/A	2.0 µS/cm	2019-05-04	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020 mg/L	2019-05-02	
pH	8.20	7.0-10.5	0.10 pH units	2019-05-04	HT2
Temperature, at pH	21.2	N/A	°C	2019-05-04	HT2
Turbidity	0.18	OG < 1	0.10 NTU	2019-05-02	
<i>Microbiological Parameters</i>					
Coliforms, Total	< 1	MAC = 0	1 CFU/100 mL	2019-05-01	
E. coli	< 1	MAC = 0	1 CFU/100 mL	2019-05-01	
<i>Total Metals</i>					
Aluminum, total	< 0.0050	OG < 0.1	0.0050 mg/L	2019-05-07	
Antimony, total	< 0.00020	MAC = 0.006	0.00020 mg/L	2019-05-07	
Arsenic, total	0.00295	MAC = 0.01	0.00050 mg/L	2019-05-07	
Barium, total	0.0746	MAC = 1	0.0050 mg/L	2019-05-07	
Boron, total	0.0550	MAC = 5	0.0050 mg/L	2019-05-07	
Cadmium, total	< 0.000010	MAC = 0.005	0.000010 mg/L	2019-05-07	
Calcium, total	92.1	None Required	0.20 mg/L	2019-05-07	
Chromium, total	0.00075	MAC = 0.05	0.00050 mg/L	2019-05-07	
Cobalt, total	< 0.00010	N/A	0.00010 mg/L	2019-05-07	
Copper, total	0.00168	AO ≤ 1	0.00040 mg/L	2019-05-07	
Cron, total	0.046	AO ≤ 0.3	0.010 mg/L	2019-05-07	
Lead, total	< 0.00020	MAC = 0.005	0.00020 mg/L	2019-05-07	
Magnesium, total	48.8	None Required	0.010 mg/L	2019-05-07	
Manganese, total	0.116	AO ≤ 0.05	0.00020 mg/L	2019-05-07	
Mercury, total	< 0.000010	MAC = 0.001	0.000010 mg/L	2019-05-07	
Molybdenum, total	0.00562	N/A	0.00010 mg/L	2019-05-07	
Nickel, total	< 0.00040	N/A	0.00040 mg/L	2019-05-07	
Potassium, total	5.98	N/A	0.10 mg/L	2019-05-07	
Selenium, total	< 0.00050	MAC = 0.05	0.00050 mg/L	2019-05-07	
Sodium, total	37.6	AO ≤ 200	0.10 mg/L	2019-05-07	
Sroutium, total	0.787	N/A	0.0010 mg/L	2019-05-07	
Uranium, total	0.00453	MAC = 0.02	0.000020 mg/L	2019-05-07	
Zinc, total	< 0.0040	AO ≤ 5	0.0040 mg/L	2019-05-07	

Sample Qualifiers:

- 8 Headspace in sample container is greater than 5% volume - VOC results may be compromised
- 72 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.



TEST RESULTS

REPORTED TO Merritt, City of
PROJECT Comprehensive

WORK ORDER 9050072
REPORTED 2019-05-09 17:09

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WT# 11D2A Fairley Pump House (9050072-05) Matrix: Water Sampled: 2019-04-30 09:38, Continued						
<i>Total Metals, Continued</i>						
Arsenic, total	< 0.00050	MAC = 0.01	0.00050	mg/L	2019-05-07	
Barium, total	0.145	MAC = 1	0.0050	mg/L	2019-05-07	
Boron, total	0.0209	MAC = 5	0.0050	mg/L	2019-05-07	
Cadmium, total	0.000015	MAC = 0.005	0.000010	mg/L	2019-05-07	
Calcium, total	67.3	None Required	0.20	mg/L	2019-05-07	
Chromium, total	0.00098	MAC = 0.05	0.00050	mg/L	2019-05-07	
Cobalt, total	< 0.00010	N/A	0.00010	mg/L	2019-05-07	
Copper, total	0.00455	AO ≤ 1	0.00040	mg/L	2019-05-07	
Iron, total	< 0.010	AO ≤ 0.3	0.010	mg/L	2019-05-07	
Lead, total	< 0.00020	MAC = 0.005	0.00020	mg/L	2019-05-07	
Magnesium, total	18.7	None Required	0.010	mg/L	2019-05-07	
Manganese, total	< 0.00020	AO ≤ 0.05	0.00020	mg/L	2019-05-07	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2019-05-07	
Molybdenum, total	0.00037	N/A	0.00010	mg/L	2019-05-07	
Nickel, total	< 0.00040	N/A	0.00040	mg/L	2019-05-07	
Potassium, total	1.87	N/A	0.10	mg/L	2019-05-07	
Selenium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2019-05-07	
Sodium, total	24.3	AO ≤ 200	0.10	mg/L	2019-05-07	
Strontium, total	0.561	N/A	0.0010	mg/L	2019-05-07	
Vanadium, total	0.000996	MAC = 0.02	0.000020	mg/L	2019-05-07	
Zinc, total	0.0040	AO ≤ 5	0.0040	mg/L	2019-05-07	
WT# 272CD Kengard Pump House (9050072-06) Matrix: Water Sampled: 2019-04-30 11:05						
<i>Anions</i>						
Chloride	6.55	AO ≤ 250	0.10	mg/L	2019-05-01	
Fluoride	0.12	MAC = 1.5	0.10	mg/L	2019-05-01	
Nitrate (as N)	< 0.010	MAC = 10	0.010	mg/L	2019-05-01	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2019-05-01	
Sulfate	294	AO ≤ 500	1.0	mg/L	2019-05-01	
<i>Calculated Parameters</i>						
Hardness, Total (as CaCO ₃)	431	None Required	0.500	mg/L	N/A	
Langelier Index	1.1	N/A	-5.0		2019-05-08	
Total Dissolved Solids	620	AO ≤ 500	10.0	mg/L	N/A	
<i>General Parameters</i>						
Alkalinity, Total (as CaCO ₃)	222	N/A	1.0	mg/L	2019-05-04	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	N/A	1.0	mg/L	2019-05-04	
Alkalinity, Bicarbonate (as CaCO ₃)	222	N/A	1.0	mg/L	2019-05-04	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	N/A	1.0	mg/L	2019-05-04	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	N/A	1.0	mg/L	2019-05-04	
Colour, True	< 5.0	AO ≤ 15	5.0	CU	2019-05-01	

Cartridge from Results: Obviously