



# CITY OF MERRITT 2025 ANNUAL WATER SYSTEM REPORT



Kevin Vilac PO CWP CWWP

## Introduction

The City of Merritt is the purveyor of drinking water to users connected to the City of Merritt Community Water System (679). This report is provided to Merritt's Mayor & 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 Merritt'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.

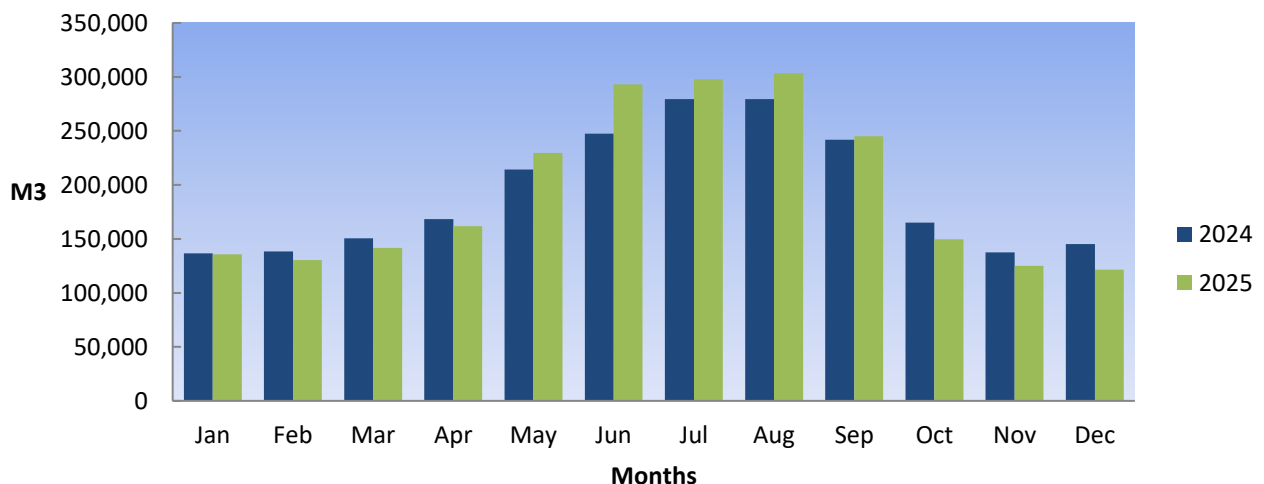
## Water Consumption

Raw water for the City of Merritt water system is extracted from an aquifer through five pump stations. The aquifer provided 2,335,290,000 litres of water consumed within the Merritt system in 2025. This represents a 1.3% increase in overall water consumption from 2024. Maximum daily water demand peaked at 12,049,000 litres on July 29, 2025, while minimum daily demand occurred on January 30, 2025, at 3,257,000 litres.

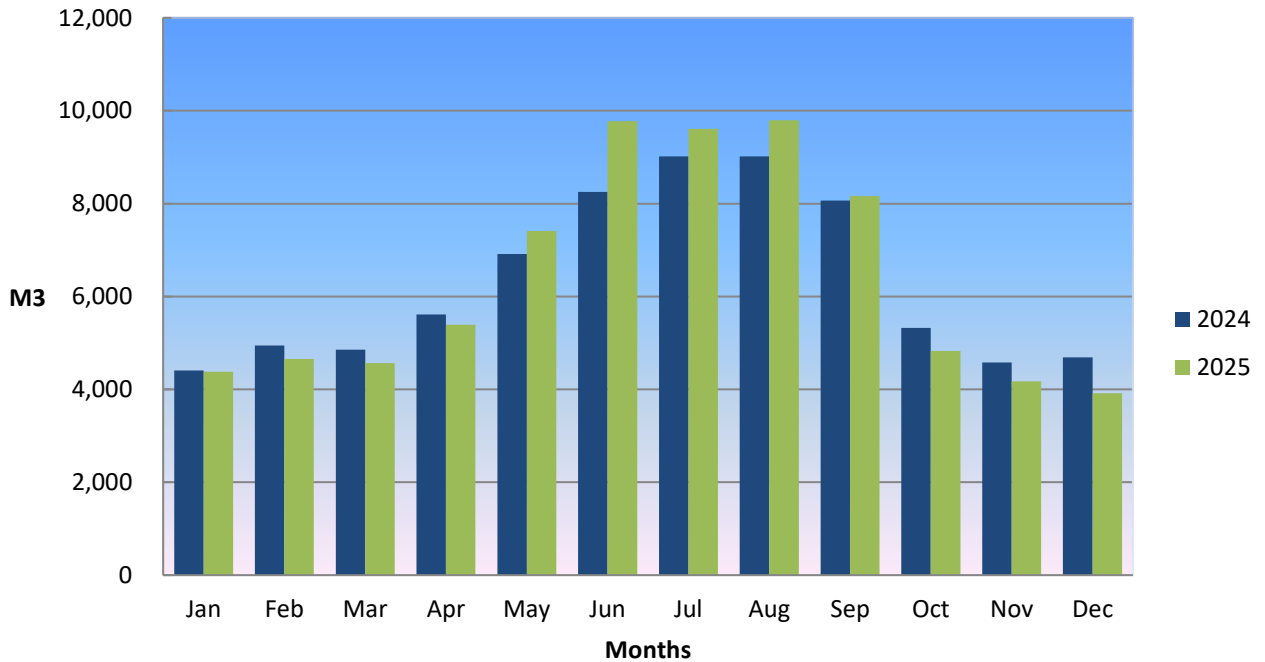
The water consumption for Merritt in 2025 averaged 6,398,000 litres per day. The maximum day (July 29th) water consumption was 1,709 litres per person, while the minimum day (Jan 30) consumption was 462 litres per person. The average was 907 litres per person in Merritt every day of the year (based on a population of 7,051 2021 Census); average daily consumption in British Columbia is only 465 litres per person (2021 Stats Canada Survey of Drinking Water Plants).

The City of Merritt has been tracking water consumption since 1977. The year 2019 had the lowest water consumption in the last 49 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, excess water usage and repairing water leaks must be a high priority.

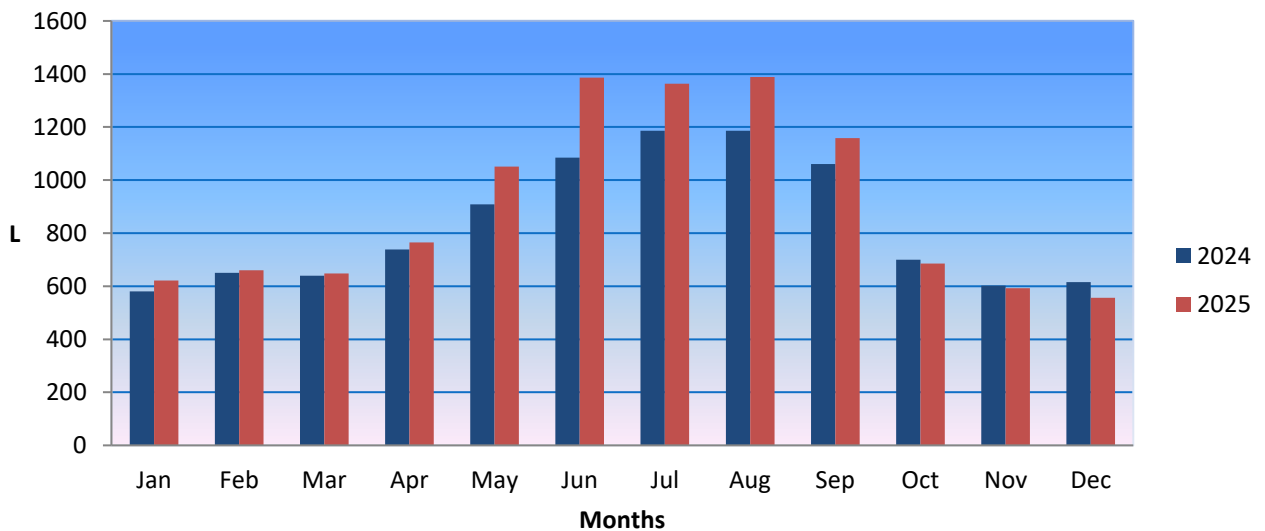
### Total Water Use 2024-2025



### Average Daily Water Use

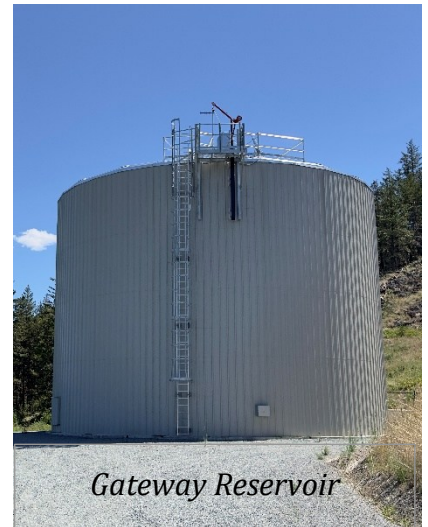


### Water Consumption Per Person Per Day



## Water Storage

Water storage capacity is just over 10.5 million litres between five reservoirs: Active Mountain, Gateway, Grandview, Grimmer, Nicola, and Southeast Balancing Reservoir. Merritt's distribution system accounts for another approximately 2 million litres. Distribution piping sizes range from 100mm to 350mm – approx. 96 Km in total length.



*Gateway Reservoir*

## Water Production

Three of the production water wells are located within the deepest part of the upper aquifer. One of the production wells is located within the deepest part of the middle aquifer and Kengard was drilled into the lower aquifer. These rates are based on the monthly pumping average on each well.

- **Voght Park #1** - 200hp – rated at 110 L/sec.
- **Voght Park #2** 250hp – rated 140 L/sec.
- **Fairley Park** - 100hp – rated at 53 L/sec.
- **Collettville** - 125hp – rated at 52 L/sec.
- **Kengard** – 100hp – rated at 48 L/sec.

Well depths range from 29.8m at Fairley Park to 135m below ground surface at Kengard.

In the event of a power outage the Voght Park pumps, and Disinfection building are powered by a diesel generator.



*Gateway Booster Station*

## Source Water Quality

The coarse composition of the Aquifer suggests the Aquifer is unconfined - (the Aquifer is not pressurized or capped) therefore it 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 of Merritt 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.

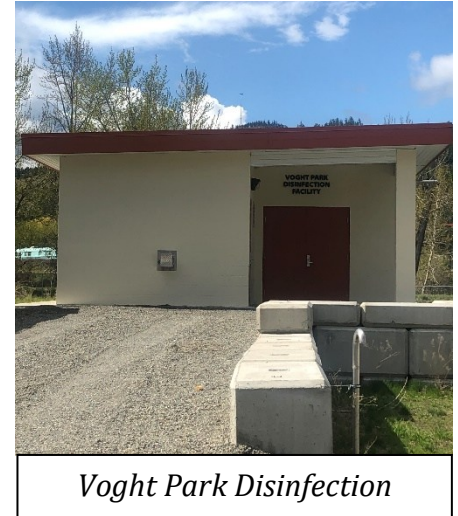
Source water is tested several times a year for a variety of characteristics from the presence of metals or chemicals to its clarity (turbidity), acidity, base (pH) and temperature. The 2025 ALS Analytical lab results are in Appendix "A".

## Water Treatment Systems

The City uses ETS-UV Spectra II SX635 and SX225 reactors followed by Chlorination with complete mix chlorine contact piping installed at each pumphouse. The UV reactors are set up to deliver a minimum dose of 40 mj/cm2. If the reactors fail to meet this set point, they shut down the pump and send an alarm via SCADA to the operator on call.

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

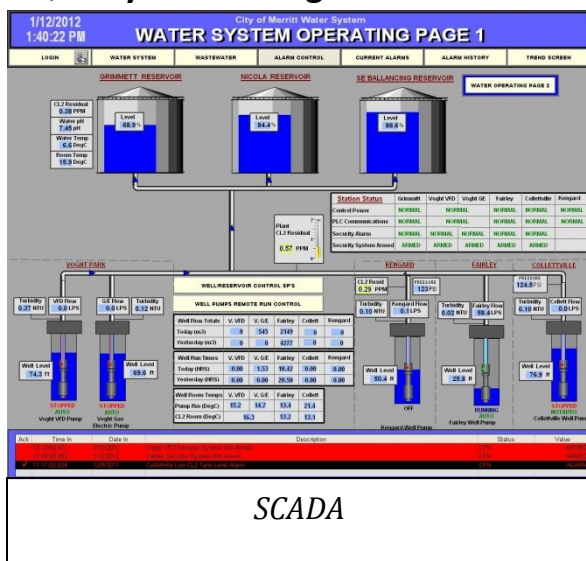
- 4 log inactivation of Viruses (99.99%)
- 3 log removal or inactivation of Giardia Lamblia and Cryptosporidium (99.9%)
- 2 refers to two treatment processes.
- 1 for less than 1 NTU of Turbidity
- 0 total coliforms and E. coli



*Voght Park Disinfection*

Interior Health mandated our water supply to 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.

## Quality Monitoring



*SCADA*

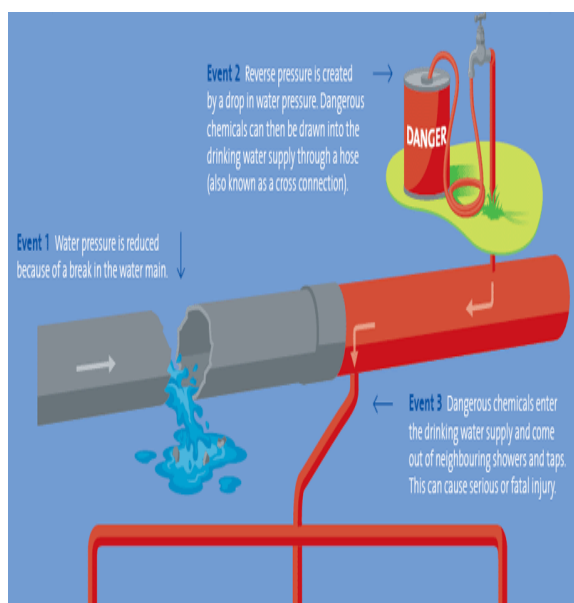
Drinking water delivered to users of the city system is subject to a comprehensive and rigorous testing program that ensures quality drinking water. Water samples from up to seven (7) separate locations within the system were sent in 2025, on a bi-weekly basis, to *ALS Environmental-Kamloops* to be tested 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 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 City of Merritt 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, UVT, PH and Chlorine residual. The quality

control and accuracy of monitoring 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 can 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.

## Cross Connection Control Program



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 a safe clean drinking water supply for the City of Merritt.

## Records

The City of Merritt employs an automated and continuous 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 us 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. 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.

Appendix A contains comprehensive water samples completed in 2025.

## 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 are undertaken by qualified contractors with the proper equipment and experience to complete the work.



## Operations Staff

- Kevin Vilac
  - EOCB Wastewater Treatment IV
  - - EOCB Water Distribution IV
  - - EOCB Water Treatment MU II
  - - EOCB Wastewater Collections MU II
  - - BCWWA Chlorine Handling Certificate
  - - ABC Class II Wastewater Treatment Professional Operator
  - Cross Connection Control Inspector Certificate
- Jessica Sulz
  - EOCB Wastewater Treatment MU II
  - - EOCB Water Distribution MU II
  - - EOCB Water Treatment MU II
  - - EOCB Wastewater Collection MU I
  - - BCWWA Chlorine Handling Certificate
- Jeremy Long
  - EOCB Water Treatment MU II
  - - EOCB Water Distribution MU II
  - -EOCB Wastewater Treatment MU II
  - - EOCB Wastewater Collection MU II
  - - EOCB Small Water System
  - - EOCB Small Wastewater System
  - - BCWWA Chlorine Handling Certificate
- Craig Fournier
  - EOCB Wastewater Treatment MU II
  - EOCB Water Treatment MU II
  - EOCB Water Distribution MU II
  - EOCB Wastewater Collection MUI

- Tom Harrington – EOCP Water Distribution II
  - EOCP Wastewater Collection II
- Tyronne Hamm - EOCP Water Distribution MU I
- Jordan Pehr – EOCP Water Distribution I
- Ryan Peck – EOCP Water Distribution II
  - EOCP Water Treatment MU I
  - Cross Connection Control Inspector Certificate
  - Backflow Preventer Tester Certification
  - BCWWA Chlorine Handling Certificate
  - Occupational First Aid Level II Certificate
- Remo Jacoe - EOCP Water Distribution I
- Dallas Trufanenko - EOCP Water Distribution I
  - EOCP Wastewater Treatment II
  - EOCP Wastewater Collection I



## Emergency Callouts – 2025

There was a total of twenty-six (26) emergency callouts in 2025. The callouts were two (2) UV reactor alarms, three (3) communication alarms, ten (10) power outage alarms, six (6) transmitter faults, three (3) chlorine pump faults and two (2) security alarms.

## Maintenance - 2025

- Replaced six (6) gate valves.
- 129 Weekly water samples.
- 61 Dead-ends flushed twice a year (April and October)
- 93 Hydrants pressure tested and flow tested.
- 57 Hydrants serviced. (full teardown)
- Repaired five (5) water main leaks and eleven (11) water service leaks.
- Replaced three (3) hydrants with pumper ports.



## Capital Projects – 2025

- Installed a new water main to Nicola Reservoir.
- Watermain extension on Falcon Crescent.
- Installed a new water main and two (2) hydrants into the City of Merritt Compost site.
- New water main installed between Bremner and Belshaw.
- Capped a water main blow off at the end of Burgess ave.
- Universal water metering program completed.
- Gateway Booster Station and Reservoir completed.
- Completed Collettville Well cleaning and rehabilitation.

## **Initiatives – 2026**

In 2026 the city will inspect, clean and replace the sacrificial anodes in Southeast Balancing Reservoir. Replace and old leaking water main in the alley between Quilchena Ave and Granite Ave. The city is also going to continue the consultation and designing of water treatment for Kengard Well. 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 Drinking Water Officer has advised the City of Merritt 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, monitor water quantity, monitor 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 2025 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.*

## Appendix "A"

Work Order : KS2502423  
Client : City of Merritt  
Project : City of Merritt 9158 Annual Comprehensive



### Analytical Results

Sub-Matrix: Water  
(Matrix: Water)

|                                         |            |            |        |          | Fairley Pump House | Collettsville Pumphouse | Voght Park G/E    | Voght Park VFD    | Grimmett Reservoir |
|-----------------------------------------|------------|------------|--------|----------|--------------------|-------------------------|-------------------|-------------------|--------------------|
|                                         |            |            |        |          | 24-Jun-2025 08:00  | 24-Jun-2025 09:00       | 24-Jun-2025 08:20 | 24-Jun-2025 08:35 | 24-Jun-2025 07:30  |
| Client sample ID                        |            |            |        |          | KS2502423-001      | KS2502423-002           | KS2502423-003     | KS2502423-004     | KS2502423-005      |
| Analyte                                 | CAS Number | Method/Lab | LOR    | Unit     | Result             | Result                  | Result            | Result            | Result             |
| <b>Physical Tests</b>                   |            |            |        |          |                    |                         |                   |                   |                    |
| Absorbance, UV (@ 254nm), unfiltered    | ----       | E405/VA    | 0.0050 | AU/cm    | 0.0080             | 0.0100                  | 0.0060            | 0.0080            | 0.0080             |
| Alkalinity, total (as CaCO3)            | ----       | E290/VA    | 1.0    | mg/L     | 145                | 143                     | 118               | 122               | 125                |
| Colour, true                            | ----       | E329/VA    | 5.0    | CU       | <5.0               | <5.0                    | <5.0              | <5.0              | <5.0               |
| Conductivity                            | ----       | E100/VA    | 2.0    | µS/cm    | 435                | 402                     | 339               | 348               | 367                |
| Hardness (as CaCO3), from total Ca/Mg   | ----       | EC100A/VA  | 0.60   | mg/L     | 165                | 171                     | 145               | 152               | 153                |
| Langelier index (@ 15°C)                | ----       | EC105A/VA  | 0.010  | -        | 0.099              | 0.314                   | -0.166            | 0.040             | 0.057              |
| Langelier index (@ 20°C)                | ----       | EC105A/VA  | 0.010  | -        | 0.174              | 0.388                   | -0.092            | 0.114             | 0.131              |
| Langelier index (@ 25°C)                | ----       | EC105A/VA  | 0.010  | -        | 0.245              | 0.458                   | -0.020            | 0.186             | 0.203              |
| Langelier index (@ 4°C)                 | ----       | EC105A/VA  | 0.010  | -        | -0.075             | 0.140                   | -0.342            | -0.134            | -0.117             |
| Langelier index (@ 60°C)                | ----       | EC105A/VA  | 0.010  | -        | 0.692              | 0.905                   | 0.429             | 0.633             | 0.650              |
| Langelier index (@ 77°C)                | ----       | EC105A/VA  | 0.010  | -        | 0.892              | 1.10                    | 0.630             | 0.834             | 0.850              |
| pH                                      | ----       | E108/VA    | 0.10   | pH units | 7.75               | 7.99                    | 7.61              | 7.79              | 7.79               |
| Solids, total dissolved [TDS]           | ----       | E162/VA    | 10     | mg/L     | 266                | 263                     | 222               | 222               | 241                |
| Turbidity                               | ----       | E121/VA    | 0.10   | NTU      | <0.10              | 0.31                    | <0.10             | 0.23              | <0.10              |
| pH, saturation (@ 4°C)                  | ----       | EC105A/VA  | 0.010  | pH units | 7.82               | 7.85                    | 7.95              | 7.92              | 7.91               |
| Transmittance, UV (@ 254nm), unfiltered | ----       | E405/VA    | 1.0    | % T/cm   | 98.2               | 97.7                    | 98.6              | 98.2              | 98.2               |
| pH, saturation (@ 15°C)                 | ----       | EC105A/VA  | 0.010  | pH units | 7.65               | 7.68                    | 7.78              | 7.75              | 7.73               |
| pH, saturation (@ 20°C)                 | ----       | EC105A/VA  | 0.010  | pH units | 7.58               | 7.60                    | 7.70              | 7.68              | 7.66               |
| pH, saturation (@ 25°C)                 | ----       | EC105A/VA  | 0.010  | pH units | 7.50               | 7.53                    | 7.63              | 7.60              | 7.59               |
| pH, saturation (@ 60°C)                 | ----       | EC105A/VA  | 0.010  | pH units | 7.06               | 7.08                    | 7.18              | 7.16              | 7.14               |
| pH, saturation (@ 77°C)                 | ----       | EC105A/VA  | 0.010  | pH units | 6.86               | 6.89                    | 6.98              | 6.96              | 6.94               |

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## Analytical Results

Sub-Matrix: Water  
(Matrix: Water)

|                                          |            |               |         |            | Client sample ID            | Fairley Pump House | Collettville Pumphouse | Voght Park G/E    | Voght Park VFD    | Grimmett Reservoir |
|------------------------------------------|------------|---------------|---------|------------|-----------------------------|--------------------|------------------------|-------------------|-------------------|--------------------|
|                                          |            |               |         |            | Client sampling date / time | 24-Jun-2025 08:00  | 24-Jun-2025 09:00      | 24-Jun-2025 08:20 | 24-Jun-2025 08:35 | 24-Jun-2025 07:30  |
| Analyte                                  | CAS Number | Method/Lab    | LOR     | Unit       |                             | KS2502423-001      | KS2502423-002          | KS2502423-003     | KS2502423-004     | KS2502423-005      |
|                                          |            |               |         |            |                             | Result             | Result                 | Result            | Result            | Result             |
| Anions and Nutrients                     |            |               |         |            |                             |                    |                        |                   |                   |                    |
| Ammonia, total (as N)                    | 7664-41-7  | E298/VA       | 0.0050  | mg/L       |                             | <0.0050            | 0.0204                 | <0.0050           | <0.0050           | <0.0050            |
| Bromide                                  | 24959-67-9 | E235.Br-L/VA  | 0.050   | mg/L       |                             | <0.050             | <0.050                 | <0.050            | <0.050            | <0.050             |
| Chloride                                 | 16887-00-6 | E235.Cl/VA    | 0.50    | mg/L       |                             | 29.1               | 10.9                   | 14.1              | 11.6              | 17.0               |
| Fluoride                                 | 16984-48-8 | E235.F/VA     | 0.020   | mg/L       |                             | 0.056              | 0.073                  | 0.047             | 0.049             | 0.049              |
| Kjeldahl nitrogen, total [TKN]           | ----       | E318/VA       | 0.050   | mg/L       |                             | 0.116              | 0.053                  | 0.078             | 0.052             | <0.050             |
| Nitrate (as N)                           | 14797-55-8 | E235.NO3-L/VA | 0.0050  | mg/L       |                             | 0.716              | 0.0998                 | 0.342             | 0.182             | 0.360              |
| Nitrite (as N)                           | 14797-65-0 | E235.NO2-L/VA | 0.0010  | mg/L       |                             | 0.0015             | <0.0010                | <0.0010           | <0.0010           | <0.0010            |
| Nitrogen, total organic                  | ----       | EC363/VA      | 0.050   | mg/L       |                             | 0.116              | <0.050                 | 0.078             | 0.052             | <0.050             |
| Sulfate (as SO4)                         | 14808-79-8 | E235.SO4/VA   | 0.30    | mg/L       |                             | 30.3               | 51.5                   | 32.8              | 38.1              | 35.9               |
| Cyanides                                 |            |               |         |            |                             |                    |                        |                   |                   |                    |
| Cyanide, strong acid dissociable (Total) | ----       | E333/VA       | 0.0050  | mg/L       |                             | <0.0050            | <0.0050                | <0.0050           | <0.0050           | <0.0050            |
| Organic / Inorganic Carbon               |            |               |         |            |                             |                    |                        |                   |                   |                    |
| Carbon, total organic [TOC]              | ----       | E355-L/VA     | 0.50    | mg/L       |                             | <0.50              | 0.98                   | 0.75              | <0.50             | <0.50              |
| Microbiological Tests                    |            |               |         |            |                             |                    |                        |                   |                   |                    |
| Coliforms, total                         | ----       | E010/KS       | 1       | MPN/100 mL |                             | <1                 | <1                     | <1                | <1                | <1                 |
| Coliforms, Escherichia coli [E. coli]    | ----       | E010/KS       | 1       | MPN/100 mL |                             | <1                 | <1                     | <1                | <1                | <1                 |
| Total Metals                             |            |               |         |            |                             |                    |                        |                   |                   |                    |
| Aluminum, total                          | 7429-90-5  | E420/VA       | 0.0030  | mg/L       |                             | <0.0030            | <0.0030                | <0.0030           | 0.0040            | <0.0030            |
| Antimony, total                          | 7440-36-0  | E420/VA       | 0.00010 | mg/L       |                             | <0.00010           | <0.00010               | <0.00010          | <0.00010          | <0.00010           |
| Arsenic, total                           | 7440-38-2  | E420/VA       | 0.00010 | mg/L       |                             | 0.00012            | 0.00050                | <0.00010          | 0.00014           | 0.00014            |
| Barium, total                            | 7440-39-3  | E420/VA       | 0.00010 | mg/L       |                             | 0.0902             | 0.0466                 | 0.0653            | 0.0629            | 0.0660             |

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## Analytical Results

Sub-Matrix: Water  
(Matrix: Water)

|                     |            |            |          |      | Client sample ID            | Fairley Pump House | Collettville Pumphouse | Voght Park G/E    | Voght Park VFD    | Grimmett Reservoir |
|---------------------|------------|------------|----------|------|-----------------------------|--------------------|------------------------|-------------------|-------------------|--------------------|
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|                     |            |            |          |      |                             | Result             | Result                 | Result            | Result            | Result             |
| <b>Total Metals</b> |            |            |          |      |                             |                    |                        |                   |                   |                    |
| Beryllium, total    | 7440-41-7  | E420/VA    | 0.000100 | mg/L |                             | <0.000100          | <0.000100              | <0.000100         | <0.000100         | <0.000100          |
| Bismuth, total      | 7440-69-9  | E420/VA    | 0.000050 | mg/L |                             | <0.000050          | <0.000050              | <0.000050         | <0.000050         | <0.000050          |
| Boron, total        | 7440-42-8  | E420/VA    | 0.010    | mg/L |                             | 0.018              | 0.017                  | 0.016             | 0.014             | 0.016              |
| Cadmium, total      | 7440-43-9  | E420/VA    | 0.000050 | mg/L |                             | <0.000050          | 0.000054               | <0.000050         | <0.000050         | <0.000050          |
| Calcium, total      | 7440-70-2  | E420/VA    | 0.050    | mg/L |                             | 47.3               | 45.3                   | 42.0              | 43.3              | 44.6               |
| Cesium, total       | 7440-46-2  | E420/VA    | 0.000010 | mg/L |                             | <0.000010          | <0.000010              | <0.000010         | <0.000010         | <0.000010          |
| Chromium, total     | 7440-47-3  | E420/VA    | 0.00050  | mg/L |                             | <0.00050           | <0.00050               | <0.00050          | <0.00050          | <0.00050           |
| Cobalt, total       | 7440-48-4  | E420/VA    | 0.00010  | mg/L |                             | <0.00010           | <0.00010               | <0.00010          | <0.00010          | <0.00010           |
| Copper, total       | 7440-50-8  | E420/VA    | 0.00050  | mg/L |                             | 0.00473            | 0.00388                | 0.00279           | 0.00134           | 0.00424            |
| Iron, total         | 7439-89-6  | E420/VA    | 0.010    | mg/L |                             | <0.010             | 0.015                  | <0.010            | <0.010            | <0.010             |
| Lead, total         | 7439-92-1  | E420/VA    | 0.000050 | mg/L |                             | 0.000206           | 0.000109               | 0.000266          | 0.000065          | 0.000102           |
| Lithium, total      | 7439-93-2  | E420/VA    | 0.0010   | mg/L |                             | <0.0010            | <0.0010                | <0.0010           | <0.0010           | <0.0010            |
| Magnesium, total    | 7439-95-4  | E420/VA    | 0.0050   | mg/L |                             | 11.3               | 14.0                   | 9.84              | 10.8              | 10.1               |
| Manganese, total    | 7439-96-5  | E420/VA    | 0.00010  | mg/L |                             | 0.00011            | 0.00397                | <0.00010          | 0.00043           | 0.00057            |
| Mercury, total      | 7439-97-6  | E508/VA    | 0.000050 | mg/L |                             | <0.000050          | <0.000050              | <0.000050         | <0.000050         | <0.000050          |
| Molybdenum, total   | 7439-98-7  | E420/VA    | 0.000050 | mg/L |                             | 0.000406           | 0.00179                | 0.000567          | 0.000775          | 0.000612           |
| Nickel, total       | 7440-02-0  | E420/VA    | 0.00050  | mg/L |                             | <0.00050           | <0.00050               | <0.00050          | <0.00050          | <0.00050           |
| Phosphorus, total   | 7723-14-0  | E420/VA    | 0.050    | mg/L |                             | <0.050             | <0.050                 | <0.050            | <0.050            | <0.050             |
| Potassium, total    | 7440-09-7  | E420/VA    | 0.050    | mg/L |                             | 1.65               | 2.00                   | 1.30              | 1.44              | 1.37               |
| Rubidium, total     | 7440-17-7  | E420/VA    | 0.00020  | mg/L |                             | 0.00022            | 0.00022                | 0.00025           | 0.00025           | 0.00024            |
| Selenium, total     | 7782-49-2  | E420/VA    | 0.000050 | mg/L |                             | 0.000086           | <0.000050              | 0.000074          | <0.000050         | 0.000057           |

Work Order : KS2502423  
Client : City of Merritt  
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## Analytical Results

Sub-Matrix: Water  
(Matrix: Water)

|                                   |            |            |          |      | Client sample ID            | Fairley Pump House | Collettville Pumphouse | Voght Park G/E    | Voght Park VFD    | Grimmett Reservoir |
|-----------------------------------|------------|------------|----------|------|-----------------------------|--------------------|------------------------|-------------------|-------------------|--------------------|
|                                   |            |            |          |      | Client sampling date / time | 24-Jun-2025 08:00  | 24-Jun-2025 09:00      | 24-Jun-2025 08:20 | 24-Jun-2025 08:35 | 24-Jun-2025 07:30  |
| Analyte                           | CAS Number | Method/Lab | LOR      | Unit |                             | KS2502423-001      | KS2502423-002          | KS2502423-003     | KS2502423-004     | KS2502423-005      |
|                                   |            |            |          |      |                             | Result             | Result                 | Result            | Result            | Result             |
| <b>Total Metals</b>               |            |            |          |      |                             |                    |                        |                   |                   |                    |
| Silicon, total                    | 7440-21-3  | E420/VA    | 0.10     | mg/L |                             | 6.35               | 6.80                   | 6.41              | 6.57              | 6.34               |
| Silver, total                     | 7440-22-4  | E420/VA    | 0.000010 | mg/L |                             | <0.000010          | <0.000010              | <0.000010         | <0.000010         | <0.000010          |
| Sodium, total                     | 7440-23-5  | E420/VA    | 0.050    | mg/L |                             | 22.4               | 12.7                   | 9.99              | 9.77              | 12.6               |
| Strontium, total                  | 7440-24-6  | E420/VA    | 0.00020  | mg/L |                             | 0.348              | 0.285                  | 0.266             | 0.263             | 0.274              |
| Sulfur, total                     | 7704-34-9  | E420/VA    | 0.50     | mg/L |                             | 10.1               | 17.0                   | 11.4              | 12.5              | 12.1               |
| Tellurium, total                  | 13494-80-9 | E420/VA    | 0.00020  | mg/L |                             | <0.00020           | <0.00020               | <0.00020          | <0.00020          | <0.00020           |
| Thallium, total                   | 7440-28-0  | E420/VA    | 0.000010 | mg/L |                             | <0.000010          | <0.000010              | <0.000010         | <0.000010         | <0.000010          |
| Thorium, total                    | 7440-29-1  | E420/VA    | 0.00010  | mg/L |                             | <0.00010           | <0.00010               | <0.00010          | <0.00010          | <0.00010           |
| Tin, total                        | 7440-31-5  | E420/VA    | 0.00010  | mg/L |                             | <0.00010           | <0.00010               | <0.00010          | <0.00010          | <0.00010           |
| Titanium, total                   | 7440-32-6  | E420/VA    | 0.00030  | mg/L |                             | <0.00030           | <0.00030               | <0.00030          | <0.00030          | <0.00030           |
| Tungsten, total                   | 7440-33-7  | E420/VA    | 0.00010  | mg/L |                             | <0.00010           | <0.00010               | <0.00010          | <0.00010          | <0.00010           |
| Uranium, total                    | 7440-61-1  | E420/VA    | 0.000010 | mg/L |                             | 0.000620           | 0.00112                | 0.000522          | 0.000695          | 0.000587           |
| Vanadium, total                   | 7440-62-2  | E420/VA    | 0.00050  | mg/L |                             | 0.00068            | 0.00103                | 0.00059           | 0.00063           | 0.00062            |
| Zinc, total                       | 7440-66-6  | E420/VA    | 0.0030   | mg/L |                             | 0.0062             | 0.0080                 | 0.0099            | <0.0030           | 0.0038             |
| Zirconium, total                  | 7440-67-7  | E420/VA    | 0.00020  | mg/L |                             | <0.00020           | <0.00020               | <0.00020          | <0.00020          | <0.00020           |
| <b>Volatile Organic Compounds</b> |            |            |          |      |                             |                    |                        |                   |                   |                    |
| Chlorobenzene                     | 108-90-7   | E611C/VA   | 0.50     | µg/L |                             | <0.50              | <0.50                  | <0.50             | <0.50             | <0.50              |
| Chloromethane                     | 74-87-3    | E611C/VA   | 5.0      | µg/L |                             | <5.0               | <5.0                   | <5.0              | <5.0              | <5.0               |
| Dichlorobenzene, 1,2-             | 95-50-1    | E611C/VA   | 0.50     | µg/L |                             | <0.50              | <0.50                  | <0.50             | <0.50             | <0.50              |
| Dichlorobenzene, 1,3-             | 541-73-1   | E611C/VA   | 0.50     | µg/L |                             | <0.50              | <0.50                  | <0.50             | <0.50             | <0.50              |
| Dichlorobenzene, 1,4-             | 106-46-7   | E611C/VA   | 0.50     | µg/L |                             | <0.50              | <0.50                  | <0.50             | <0.50             | <0.50              |

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## Analytical Results

Sub-Matrix: Water  
(Matrix: Water)

|                                                 |            |            |      |      | Client sample ID            | Fairley Pump House | Collettville Pumphouse | Voght Park G/E    | Voght Park VFD    | Grimmett Reservoir |
|-------------------------------------------------|------------|------------|------|------|-----------------------------|--------------------|------------------------|-------------------|-------------------|--------------------|
|                                                 |            |            |      |      | Client sampling date / time | 24-Jun-2025 08:00  | 24-Jun-2025 09:00      | 24-Jun-2025 08:20 | 24-Jun-2025 08:35 | 24-Jun-2025 07:30  |
| Analyte                                         | CAS Number | Method/Lab | LOR  | Unit |                             | KS2502423-001      | KS2502423-002          | KS2502423-003     | KS2502423-004     | KS2502423-005      |
|                                                 |            |            |      |      |                             | Result             | Result                 | Result            | Result            | Result             |
| <b>Volatile Organic Compounds</b>               |            |            |      |      |                             |                    |                        |                   |                   |                    |
| Dichloropropane, 1,2-                           | 78-87-5    | E611C/VA   | 0.50 | µg/L |                             | <0.50              | <0.50                  | <0.50             | <0.50             | <0.50              |
| Dichloropropylene, cis-1,3-                     | 10061-01-5 | E611C/VA   | 0.50 | µg/L |                             | <0.50              | <0.50                  | <0.50             | <0.50             | <0.50              |
| Dichloropropylene, cis+trans-1,3-               | 542-75-6   | E611C/VA   | 0.75 | µg/L |                             | <0.75              | <0.75                  | <0.75             | <0.75             | <0.75              |
| Tetrachloroethane, 1,1,1,2-                     | 630-20-6   | E611C/VA   | 0.50 | µg/L |                             | <0.50              | <0.50                  | <0.50             | <0.50             | <0.50              |
| Tetrachloroethane, 1,1,2,2-                     | 79-34-5    | E611C/VA   | 0.20 | µg/L |                             | <0.20              | <0.20                  | <0.20             | <0.20             | <0.20              |
| Trichloroethane, 1,1,2-                         | 79-00-5    | E611C/VA   | 0.50 | µg/L |                             | <0.50              | <0.50                  | <0.50             | <0.50             | <0.50              |
| Trichlorofluoromethane                          | 75-69-4    | E611C/VA   | 0.50 | µg/L |                             | <0.50              | <0.50                  | <0.50             | <0.50             | <0.50              |
| <b>Volatile Organic Compounds [Drycleaning]</b> |            |            |      |      |                             |                    |                        |                   |                   |                    |
| Carbon tetrachloride                            | 56-23-5    | E611C/VA   | 0.50 | µg/L |                             | <0.50              | <0.50                  | <0.50             | <0.50             | <0.50              |
| Chloroethane                                    | 75-00-3    | E611C/VA   | 0.50 | µg/L |                             | <0.50              | <0.50                  | <0.50             | <0.50             | <0.50              |
| Dichloroethane, 1,1-                            | 75-34-3    | E611C/VA   | 0.50 | µg/L |                             | <0.50              | <0.50                  | <0.50             | <0.50             | <0.50              |
| Dichloroethane, 1,2-                            | 107-06-2   | E611C/VA   | 0.50 | µg/L |                             | <0.50              | <0.50                  | <0.50             | <0.50             | <0.50              |
| Dichloroethylene, 1,1-                          | 75-35-4    | E611C/VA   | 0.50 | µg/L |                             | <0.50              | <0.50                  | <0.50             | <0.50             | <0.50              |
| Dichloroethylene, cis-1,2-                      | 156-59-2   | E611C/VA   | 0.50 | µg/L |                             | <0.50              | <0.50                  | <0.50             | <0.50             | <0.50              |
| Dichloroethylene, trans-1,2-                    | 156-60-5   | E611C/VA   | 0.50 | µg/L |                             | <0.50              | <0.50                  | <0.50             | <0.50             | <0.50              |
| Dichloromethane                                 | 75-09-2    | E611C/VA   | 1.0  | µg/L |                             | <1.0               | <1.0                   | <1.0              | <1.0              | <1.0               |
| Dichloropropylene, trans-1,3-                   | 10061-02-6 | E611C/VA   | 0.50 | µg/L |                             | <0.50              | <0.50                  | <0.50             | <0.50             | <0.50              |
| Tetrachloroethylene                             | 127-18-4   | E611C/VA   | 0.50 | µg/L |                             | <0.50              | <0.50                  | <0.50             | <0.50             | <0.50              |
| Trichloroethane, 1,1,1-                         | 71-55-6    | E611C/VA   | 0.50 | µg/L |                             | <0.50              | <0.50                  | <0.50             | <0.50             | <0.50              |
| Trichloroethylene                               | 79-01-6    | E611C/VA   | 0.50 | µg/L |                             | <0.50              | <0.50                  | <0.50             | <0.50             | <0.50              |
| Vinyl chloride                                  | 75-01-4    | E611C/VA   | 0.40 | µg/L |                             | <0.40              | <0.40                  | <0.40             | <0.40             | <0.40              |

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## Analytical Results

Sub-Matrix: Water  
(Matrix: Water)

|                                              |             |            |       |      | Fairley Pump House | Collettsville Pumphouse | Voght Park G/E    | Voght Park VFD    | Grimmett Reservoir |
|----------------------------------------------|-------------|------------|-------|------|--------------------|-------------------------|-------------------|-------------------|--------------------|
|                                              |             |            |       |      | ****               | ****                    | ****              | ****              | ****               |
| Client sample ID                             |             |            |       |      | 24-Jun-2025 08:00  | 24-Jun-2025 09:00       | 24-Jun-2025 08:20 | 24-Jun-2025 08:35 | 24-Jun-2025 07:30  |
| Client sampling date / time                  |             |            |       |      | KS2502423-001      | KS2502423-002           | KS2502423-003     | KS2502423-004     | KS2502423-005      |
| Analyte                                      | CAS Number  | Method/Lab | LOR   | Unit | Result             | Result                  | Result            | Result            | Result             |
| <b>Volatile Organic Compounds [Fuels]</b>    |             |            |       |      |                    |                         |                   |                   |                    |
| Benzene                                      | 71-43-2     | E611C/VA   | 0.50  | µg/L | <0.50              | <0.50                   | <0.50             | <0.50             | <0.50              |
| Ethylbenzene                                 | 100-41-4    | E611C/VA   | 0.50  | µg/L | <0.50              | <0.50                   | <0.50             | <0.50             | <0.50              |
| Methyl-tert-butyl ether [MTBE]               | 1634-04-4   | E611C/VA   | 0.50  | µg/L | <0.50              | <0.50                   | <0.50             | <0.50             | <0.50              |
| Styrene                                      | 100-42-5    | E611C/VA   | 0.50  | µg/L | <0.50              | <0.50                   | <0.50             | <0.50             | <0.50              |
| Toluene                                      | 108-88-3    | E611C/VA   | 0.40  | µg/L | <0.40              | <0.40                   | <0.40             | <0.40             | <0.40              |
| Xylene, m+p-                                 | 179601-23-1 | E611C/VA   | 0.40  | µg/L | <0.40              | <0.40                   | <0.40             | <0.40             | <0.40              |
| Xylene, o-                                   | 95-47-6     | E611C/VA   | 0.30  | µg/L | <0.30              | <0.30                   | <0.30             | <0.30             | <0.30              |
| Xylenes, total                               | 1330-20-7   | E611C/VA   | 0.50  | µg/L | <0.50              | <0.50                   | <0.50             | <0.50             | <0.50              |
| <b>Volatile Organic Compounds [THMs]</b>     |             |            |       |      |                    |                         |                   |                   |                    |
| Bromodichloromethane                         | 75-27-4     | E611C/VA   | 0.50  | µg/L | <0.50              | <0.50                   | <0.50             | <0.50             | 2.85               |
| Bromoform                                    | 75-25-2     | E611C/VA   | 0.50  | µg/L | <0.50              | <0.50                   | <0.50             | <0.50             | <0.50              |
| Chloroform                                   | 67-66-3     | E611C/VA   | 0.50  | µg/L | 0.65               | <0.50                   | <0.50             | <0.50             | 6.65               |
| Dibromochloromethane                         | 124-48-1    | E611C/VA   | 0.50  | µg/L | <0.50              | <0.50                   | <0.50             | <0.50             | 1.62               |
| <b>Volatile Organic Compounds Surrogates</b> |             |            |       |      |                    |                         |                   |                   |                    |
| Bromofluorobenzene, 4-                       | 460-00-4    | E611C/VA   | 1.0   | %    | 106                | 80.8                    | 80.0              | 79.7              | 81.0               |
| Difluorobenzene, 1,4-                        | 540-36-3    | E611C/VA   | 1.0   | %    | 105                | 98.0                    | 98.5              | 98.5              | 97.5               |
| <b>Polycyclic Aromatic Hydrocarbons</b>      |             |            |       |      |                    |                         |                   |                   |                    |
| Acenaphthene                                 | 83-32-9     | E641A/VA   | 0.010 | µg/L | <0.010             | <0.010                  | <0.010            | <0.010            | <0.010             |
| Acenaphthylene                               | 208-96-8    | E641A/VA   | 0.010 | µg/L | <0.010             | <0.010                  | <0.010            | <0.010            | <0.010             |
| Acridine                                     | 260-94-6    | E641A/VA   | 0.010 | µg/L | <0.010             | <0.010                  | <0.010            | <0.010            | <0.010             |
| Anthracene                                   | 120-12-7    | E641A/VA   | 0.010 | µg/L | <0.010             | <0.010                  | <0.010            | <0.010            | <0.010             |

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## Analytical Results

Sub-Matrix: Water  
(Matrix: Water)

|                                                    |            |            |        |      | Fairley Pump House | Colletville Pumphouse | Voght Park G/E    | Voght Park VFD    | Grimmett Reservoir |
|----------------------------------------------------|------------|------------|--------|------|--------------------|-----------------------|-------------------|-------------------|--------------------|
|                                                    |            |            |        |      | 24-Jun-2025 08:00  | 24-Jun-2025 09:00     | 24-Jun-2025 08:20 | 24-Jun-2025 08:35 | 24-Jun-2025 07:30  |
| Client sample ID                                   |            |            |        |      | KS2502423-001      | KS2502423-002         | KS2502423-003     | KS2502423-004     | KS2502423-005      |
| Analyte                                            | CAS Number | Method/Lab | LOR    | Unit | Result             | Result                | Result            | Result            | Result             |
| <b>Polycyclic Aromatic Hydrocarbons</b>            |            |            |        |      |                    |                       |                   |                   |                    |
| Benz(a)anthracene                                  | 56-55-3    | E641A/VA   | 0.010  | µg/L | <0.010             | <0.010                | <0.010            | <0.010            | <0.010             |
| Benzo(a)pyrene                                     | 50-32-8    | E641A/VA   | 0.0050 | µg/L | <0.0050            | <0.0050               | <0.0050           | <0.0050           | <0.0050            |
| Benzo(b+j)fluoranthene                             | n/a        | E641A/VA   | 0.010  | µg/L | <0.010             | <0.010                | <0.010            | <0.010            | <0.010             |
| Benzo(b+j+k)fluoranthene                           | n/a        | E641A/VA   | 0.015  | µg/L | <0.015             | <0.015                | <0.015            | <0.015            | <0.015             |
| Benzo(g,h,i)perylene                               | 191-24-2   | E641A/VA   | 0.010  | µg/L | <0.010             | <0.010                | <0.010            | <0.010            | <0.010             |
| Benzo(k)fluoranthene                               | 207-08-9   | E641A/VA   | 0.010  | µg/L | <0.010             | <0.010                | <0.010            | <0.010            | <0.010             |
| Chrysene                                           | 218-01-9   | E641A/VA   | 0.010  | µg/L | <0.010             | <0.010                | <0.010            | <0.010            | <0.010             |
| Dibenz(a,h)anthracene                              | 53-70-3    | E641A/VA   | 0.0050 | µg/L | <0.0050            | <0.0050               | <0.0050           | <0.0050           | <0.0050            |
| Fluoranthene                                       | 206-44-0   | E641A/VA   | 0.010  | µg/L | <0.010             | <0.010                | <0.010            | <0.010            | <0.010             |
| Fluorene                                           | 86-73-7    | E641A/VA   | 0.010  | µg/L | <0.010             | <0.010                | <0.010            | <0.010            | <0.010             |
| Indeno(1,2,3-c,d)pyrene                            | 193-39-5   | E641A/VA   | 0.010  | µg/L | <0.010             | <0.010                | <0.010            | <0.010            | <0.010             |
| Methylnaphthalene, 1-                              | 90-12-0    | E641A/VA   | 0.010  | µg/L | <0.010             | <0.010                | <0.010            | <0.010            | <0.010             |
| Methylnaphthalene, 2-                              | 91-57-6    | E641A/VA   | 0.010  | µg/L | <0.010             | <0.010                | <0.010            | <0.010            | <0.010             |
| Naphthalene                                        | 91-20-3    | E641A/VA   | 0.050  | µg/L | <0.050             | <0.050                | <0.050            | <0.050            | <0.050             |
| Phenanthrene                                       | 85-01-8    | E641A/VA   | 0.020  | µg/L | <0.020             | <0.020                | <0.020            | <0.020            | <0.020             |
| Pyrene                                             | 129-00-0   | E641A/VA   | 0.010  | µg/L | <0.010             | <0.010                | <0.010            | <0.010            | <0.010             |
| Quinoline                                          | 91-22-5    | E641A/VA   | 0.050  | µg/L | <0.050             | <0.050                | <0.050            | <0.050            | <0.050             |
| <b>Polycyclic Aromatic Hydrocarbons Surrogates</b> |            |            |        |      |                    |                       |                   |                   |                    |
| Chrysene-d12                                       | 1719-03-5  | E641A/VA   | 0.1    | %    | 99.7               | 102                   | 93.2              | 102               | 95.7               |
| Naphthalene-d8                                     | 1146-65-2  | E641A/VA   | 0.1    | %    | 93.3               | 98.8                  | 90.5              | 99.8              | 93.2               |
| Phenanthrene-d10                                   | 1517-22-2  | E641A/VA   | 0.1    | %    | 102                | 108                   | 98.5              | 107               | 101                |

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## Analytical Results

Sub-Matrix: Water  
(Matrix: Water)

|                                |            |            |      |      | Client sample ID            | Fairley Pump House | Collettville Pumphouse | Voght Park G/E    | Voght Park VFD    | Grimmett Reservoir |
|--------------------------------|------------|------------|------|------|-----------------------------|--------------------|------------------------|-------------------|-------------------|--------------------|
|                                |            |            |      |      | Client sampling date / time | 24-Jun-2025 08:00  | 24-Jun-2025 09:00      | 24-Jun-2025 08:20 | 24-Jun-2025 08:35 | 24-Jun-2025 07:30  |
| Analyte                        | CAS Number | Method/Lab | LOR  | Unit |                             | KS2502423-001      | KS2502423-002          | KS2502423-003     | KS2502423-004     | KS2502423-005      |
|                                |            |            |      |      |                             | Result             | Result                 | Result            | Result            | Result             |
| <b>Haloacetic Acids</b>        |            |            |      |      |                             |                    |                        |                   |                   |                    |
| Bromochloroacetic acid         | 5589-96-8  | E750/WT    | 1.00 | µg/L |                             | ---                | ---                    | ---               | ---               | <1.00              |
| Dibromoacetic acid             | 631-64-1   | E750/WT    | 1.00 | µg/L |                             | ---                | ---                    | ---               | ---               | <1.00              |
| Dichloroacetic acid            | 79-43-6    | E750/WT    | 1.00 | µg/L |                             | ---                | ---                    | ---               | ---               | 1.28               |
| Monobromoacetic acid           | 79-08-3    | E750/WT    | 1.00 | µg/L |                             | ---                | ---                    | ---               | ---               | <1.00              |
| Monochloroacetic acid          | 79-11-8    | E750/WT    | 1.00 | µg/L |                             | ---                | ---                    | ---               | ---               | <1.00              |
| Trichloroacetic acid           | 76-03-9    | E750/WT    | 1.00 | µg/L |                             | ---                | ---                    | ---               | ---               | <1.00              |
| Haloacetic acids, total [HAA5] | n/a        | E750/WT    | 5.00 | µg/L |                             | ---                | ---                    | ---               | ---               | <5.00              |

Please refer to the General Comments section for an explanation of any qualifiers detected.