



## CERTIFICATE OF ANALYSIS

|  |   |
|--|---|
| <p><b>Work Order</b> : <b>FC2302547</b></p> <p><b>Amendment</b> : <b>1</b></p> <p><b>Client</b> : <b>Regional Municipality of Wood Buffalo</b></p> <p><b>Contact</b> : Water Treatment Plant</p> <p><b>Address</b> : 1 Silin Forest Road<br/>Fort McMurray AB Canada T9H 5A1</p> <p><b>Telephone</b> : 780-762-5863</p> <p><b>Project</b> : Fort Chipewyan Imperial Release</p> <p><b>PO</b> : 4500051416</p> <p><b>C-O-C number</b> : ----</p> <p><b>Sampler</b> : DM/DF</p> <p><b>Site</b> : Schedule 4: Fort Chip</p> <p><b>Quote number</b> : Q61323 (Fort chip)</p> <p><b>No. of samples received</b> : 2</p> <p><b>No. of samples analysed</b> : 2</p> | <p><b>Page</b> : 1 of 8</p> <p><b>Laboratory</b> : ALS Environmental - Fort McMurray</p> <p><b>Account Manager</b> : Megan Trydal</p> <p><b>Address</b> : #4, 340 Macalpine Crescent<br/>Fort McMurray AB Canada T9H 4A8</p> <p><b>Telephone</b> : +1 780 791 1524</p> <p><b>Date Samples Received</b> : 06-Sep-2023 15:45</p> <p><b>Date Analysis Commenced</b> : 07-Sep-2023</p> <p><b>Issue Date</b> : 11-Sep-2023 12:55</p> |
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i>                            | <i>Laboratory Department</i>          |
|--------------------|--|---------------------------------------|
| Archana Neupane    | Lab Assistant                              | Metals, Calgary, Alberta              |
| Geoff Berg         | Lab Analyst                                | Organics, Edmonton, Alberta           |
| Joshua Stessun     | Laboratory Analyst                         | Organics, Calgary, Alberta            |
| Jyotsnarani Devi   | Laboratory Analyst                         | Organics, Calgary, Alberta            |
| Katarzyna Glinka   | Analyst                                    | Inorganics, Calgary, Alberta          |
| Kevin Baxter       | Team Leader - Inorganics                   | Inorganics, Calgary, Alberta          |
| Naeun Kim          | Analyst                                    | Metals, Calgary, Alberta              |
| Sorina Motea       | Laboratory Analyst                         | Organics, Calgary, Alberta            |
| Tracy Harley       | Supervisor - Water Quality Instrumentation | Inorganics, Burnaby, British Columbia |



## General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances  
LOR: Limit of Reporting (detection limit).

| <i>Unit</i> | <i>Description</i>          |
|-------------|-----------------------------|
| -           | no units                    |
| %           | percent                     |
| µg/L        | micrograms per litre        |
| µS/cm       | microsiemens per centimetre |
| meq/L       | milliequivalents per litre  |
| mg/L        | milligrams per litre        |
| pH units    | pH units                    |
| psu         | practical salinity units    |

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.



## Analytical Results

| Sub-Matrix: Water                                       |            |                  |         |          | Client sample ID            | Treated Water     | Raw Water Chamber Tap | ---   | ---   | --- |
|---|------------|------------------|---------|----------|-----------------------------|-------------------|-----------------------|-------|-------|-----|
| (Matrix: Water)   |            |                  |         |          | Client sampling date / time | 05-Sep-2023 09:00 | 05-Sep-2023 09:30     | ---   | ---   | --- |
| Analyte   | CAS Number | Method/Lab       | LOR     | Unit     | FC2302547-001               | FC2302547-002     | -----                 | ----- | ----- |     |
|   |            |                  |         |          | Result                      | Result            | ---                   | ---   | ---   |     |
| <b>Physical Tests</b>                                   |            |                  |         |          |                             |                   |                       |       |       |     |
| Alkalinity, bicarbonate (as HCO <sub>3</sub> )          | 71-52-3    | E290/CG          | 1.0     | mg/L     | 112                         | 98.2              | ---                   | ---   | ---   |     |
| Alkalinity, carbonate (as CO <sub>3</sub> )             | 3812-32-6  | E290/CG          | 1.0     | mg/L     | 4.8                         | <1.0              | ---                   | ---   | ---   |     |
| Alkalinity, hydroxide (as OH)                           | 14280-30-9 | E290/CG          | 1.0     | mg/L     | <1.0                        | <1.0              | ---                   | ---   | ---   |     |
| Alkalinity, total (as CaCO <sub>3</sub> )               | ---        | E290/CG          | 1.0     | mg/L     | 100                         | 80.5              | ---                   | ---   | ---   |     |
| <b>Conductivity</b>                                     | ---        | E100/CG          | 1.0     | µS/cm    | 367                         | 194               | ---                   | ---   | ---   |     |
| <b>Hardness (as CaCO<sub>3</sub>), dissolved</b>        | ---        | EC100/CG         | 0.50    | mg/L     | 83.6                        | 80.0              | ---                   | ---   | ---   |     |
| <b>Hardness (as CaCO<sub>3</sub>), from total Ca/Mg</b> | ---        | EC100A/CG        | 0.50    | mg/L     | 86.6                        | 83.4              | ---                   | ---   | ---   |     |
| <b>pH</b>   | ---        | E108/CG          | 0.10    | pH units | 8.53                        | 7.85              | ---                   | ---   | ---   |     |
| <b>Salinity</b>   | ---        | EC100S/VA        | 1.0     | psu      | <1.0                        | <1.0              | ---                   | ---   | ---   |     |
| <b>Solids, total dissolved [TDS], calculated</b>        | ---        | EC103/CG         | 1.0     | mg/L     | 199                         | 112               | ---                   | ---   | ---   |     |
| <b>Anions and Nutrients</b>                             |            |                  |         |          |                             |                   |                       |       |       |     |
| Chloride  | 16887-00-6 | E235.Cl/CG       | 0.50    | mg/L     | 48.3                        | 4.90              | ---                   | ---   | ---   |     |
| Fluoride  | 16984-48-8 | E235.F/CG        | 0.020   | mg/L     | <0.020                      | 0.076             | ---                   | ---   | ---   |     |
| Nitrate (as N)  | 14797-55-8 | E235.NO3/CG      | 0.020   | mg/L     | 0.045                       | 0.041             | ---                   | ---   | ---   |     |
| Nitrate + Nitrite (as N)                                | ---        | EC235.N+N/C<br>G | 0.0300  | mg/L     | 0.0450                      | 0.0410            | ---                   | ---   | ---   |     |
| Nitrite (as N)  | 14797-65-0 | E235.NO2/CG      | 0.010   | mg/L     | <0.010                      | <0.010            | ---                   | ---   | ---   |     |
| Sulfate (as SO <sub>4</sub> )                           | 14808-79-8 | E235.SO4/CG      | 0.30    | mg/L     | 12.1                        | 14.9              | ---                   | ---   | ---   |     |
| <b>Total Sulfides</b>                                   |            |                  |         |          |                             |                   |                       |       |       |     |
| Sulfide, total (as S)                                   | 18496-25-8 | E395/VA          | 0.0015  | mg/L     | <0.0015                     | <0.0015           | ---                   | ---   | ---   |     |
| <b>Ion Balance</b>                                      |            |                  |         |          |                             |                   |                       |       |       |     |
| Anion sum   | ---        | EC101/CG         | 0.10    | meq/L    | 3.62                        | 2.06              | ---                   | ---   | ---   |     |
| Cation sum  | ---        | EC101/CG         | 0.10    | meq/L    | 3.53                        | 1.95              | ---                   | ---   | ---   |     |
| Ion balance (APHA)                                      | ---        | EC101/CG         | 0.01    | %        | -1.26                       | -2.74             | ---                   | ---   | ---   |     |
| Ion balance (cations/anions)                            | ---        | EC101/CG         | 0.010   | %        | 97.5                        | 94.7              | ---                   | ---   | ---   |     |
| <b>Total Metals</b>                                     |            |                  |         |          |                             |                   |                       |       |       |     |
| Aluminum, total   | 7429-90-5  | E420/CG          | 0.0030  | mg/L     | 0.0173                      | 0.185             | ---                   | ---   | ---   |     |
| Antimony, total   | 7440-36-0  | E420/CG          | 0.00010 | mg/L     | <0.00010                    | 0.00012           | ---                   | ---   | ---   |     |
| Arsenic, total  | 7440-38-2  | E420/CG          | 0.00010 | mg/L     | 0.00044                     | 0.00085           | ---                   | ---   | ---   |     |



## Analytical Results

| Sub-Matrix: Water<br>(Matrix: Water) |            |            |           |      | Client sample ID     | Treated Water        | Raw Water Chamber Tap | ----  | ----  | ---- |
|--------------------------------------|------------|------------|-----------|------|----------------------|----------------------|-----------------------|-------|-------|------|
| Client sampling date / time          |            |            |           |      | 05-Sep-2023<br>09:00 | 05-Sep-2023<br>09:30 | ----                  | ----  | ----  |      |
| Analyte                              | CAS Number | Method/Lab | LOR       | Unit | FC2302547-001        | FC2302547-002        | -----                 | ----- | ----- |      |
|                                      |            |            |           |      | Result               | Result               | ---                   | ---   | ---   |      |
| <b>Total Metals</b>                  |            |            |           |      |                      |                      |                       |       |       |      |
| Barium, total                        | 7440-39-3  | E420/CG    | 0.00010   | mg/L | 0.0499               | 0.0510               | ---                   | ---   | ---   |      |
| Beryllium, total                     | 7440-41-7  | E420/CG    | 0.000020  | mg/L | <0.000020            | <0.000020            | ---                   | ---   | ---   |      |
| Bismuth, total                       | 7440-69-9  | E420/CG    | 0.000050  | mg/L | <0.000050            | <0.000050            | ---                   | ---   | ---   |      |
| Boron, total                         | 7440-42-8  | E420/CG    | 0.010     | mg/L | 0.021                | 0.022                | ---                   | ---   | ---   |      |
| Cadmium, total                       | 7440-43-9  | E420/CG    | 0.0000050 | mg/L | <0.0000050           | 0.0000072            | ---                   | ---   | ---   |      |
| Calcium, total                       | 7440-70-2  | E420/CG    | 0.050     | mg/L | 23.6                 | 22.7                 | ---                   | ---   | ---   |      |
| Cesium, total                        | 7440-46-2  | E420/CG    | 0.000010  | mg/L | <0.000010            | 0.000018             | ---                   | ---   | ---   |      |
| Chromium, total                      | 7440-47-3  | E420/CG    | 0.00050   | mg/L | <0.00050             | <0.00050             | ---                   | ---   | ---   |      |
| Cobalt, total                        | 7440-48-4  | E420/CG    | 0.00010   | mg/L | <0.00010             | <0.00010             | ---                   | ---   | ---   |      |
| Copper, total                        | 7440-50-8  | E420/CG    | 0.00050   | mg/L | 0.00133              | 0.00204              | ---                   | ---   | ---   |      |
| Iron, total                          | 7439-89-6  | E420/CG    | 0.010     | mg/L | <0.010               | 0.329                | ---                   | ---   | ---   |      |
| Lead, total                          | 7439-92-1  | E420/CG    | 0.000050  | mg/L | <0.000050            | 0.000166             | ---                   | ---   | ---   |      |
| Lithium, total                       | 7439-93-2  | E420/CG    | 0.0010    | mg/L | 0.0045               | 0.0048               | ---                   | ---   | ---   |      |
| Magnesium, total                     | 7439-95-4  | E420/CG    | 0.0050    | mg/L | 6.73                 | 6.49                 | ---                   | ---   | ---   |      |
| Manganese, total                     | 7439-96-5  | E420/CG    | 0.00010   | mg/L | 0.0186               | 0.0346               | ---                   | ---   | ---   |      |
| Molybdenum, total                    | 7439-98-7  | E420/CG    | 0.000050  | mg/L | 0.000370             | 0.000860             | ---                   | ---   | ---   |      |
| Nickel, total                        | 7440-02-0  | E420/CG    | 0.00050   | mg/L | 0.00081              | 0.00140              | ---                   | ---   | ---   |      |
| Phosphorus, total                    | 7723-14-0  | E420/CG    | 0.050     | mg/L | <0.050               | <0.050               | ---                   | ---   | ---   |      |
| Potassium, total                     | 7440-09-7  | E420/CG    | 0.050     | mg/L | 1.47                 | 1.50                 | ---                   | ---   | ---   |      |
| Rubidium, total                      | 7440-17-7  | E420/CG    | 0.00020   | mg/L | 0.00152              | 0.00173              | ---                   | ---   | ---   |      |
| Selenium, total                      | 7782-49-2  | E420/CG    | 0.000050  | mg/L | 0.000079             | 0.000165             | ---                   | ---   | ---   |      |
| Silicon, total                       | 7440-21-3  | E420/CG    | 0.10      | mg/L | 2.01                 | 2.85                 | ---                   | ---   | ---   |      |
| Silver, total                        | 7440-22-4  | E420/CG    | 0.000010  | mg/L | <0.000010            | <0.000010            | ---                   | ---   | ---   |      |
| Sodium, total                        | 7440-23-5  | E420/CG    | 0.050     | mg/L | 43.4                 | 7.38                 | ---                   | ---   | ---   |      |
| Strontium, total                     | 7440-24-6  | E420/CG    | 0.00020   | mg/L | 0.152                | 0.154                | ---                   | ---   | ---   |      |
| Sulfur, total                        | 7704-34-9  | E420/CG    | 0.50      | mg/L | 4.09                 | 5.18                 | ---                   | ---   | ---   |      |
| Tellurium, total                     | 13494-80-9 | E420/CG    | 0.00020   | mg/L | <0.00020             | <0.00020             | ---                   | ---   | ---   |      |
| Thallium, total                      | 7440-28-0  | E420/CG    | 0.000010  | mg/L | <0.000010            | <0.000010            | ---                   | ---   | ---   |      |
| Thorium, total                       | 7440-29-1  | E420/CG    | 0.00010   | mg/L | <0.00010             | <0.00010             | ---                   | ---   | ---   |      |
| Tin, total                           | 7440-31-5  | E420/CG    | 0.00010   | mg/L | <0.00010             | <0.00010             | ---                   | ---   | ---   |      |



## Analytical Results

| Sub-Matrix: Water<br>(Matrix: Water) |            |            |           |      | Client sample ID     | Treated Water        | Raw Water Chamber Tap | ----  | ----  | ---- |
|--------------------------------------|------------|------------|-----------|------|----------------------|----------------------|-----------------------|-------|-------|------|
| Client sampling date / time          |            |            |           |      | 05-Sep-2023<br>09:00 | 05-Sep-2023<br>09:30 | ----                  | ----  | ----  |      |
| Analyte                              | CAS Number | Method/Lab | LOR       | Unit | FC2302547-001        | FC2302547-002        | -----                 | ----- | ----- |      |
|                                      |            |            |           |      | Result               | Result               | ---                   | ---   | ---   |      |
| <b>Total Metals</b>                  |            |            |           |      |                      |                      |                       |       |       |      |
| Titanium, total                      | 7440-32-6  | E420/CG    | 0.00030   | mg/L | <0.00030             | 0.00698              | ---                   | ---   | ---   |      |
| Tungsten, total                      | 7440-33-7  | E420/CG    | 0.00010   | mg/L | <0.00010             | <0.00010             | ---                   | ---   | ---   |      |
| Uranium, total                       | 7440-61-1  | E420/CG    | 0.000010  | mg/L | 0.000010             | 0.000323             | ---                   | ---   | ---   |      |
| Vanadium, total                      | 7440-62-2  | E420/CG    | 0.00050   | mg/L | <0.00050             | 0.00076              | ---                   | ---   | ---   |      |
| Zinc, total                          | 7440-66-6  | E420/CG    | 0.0030    | mg/L | <0.0030              | <0.0030              | ---                   | ---   | ---   |      |
| Zirconium, total                     | 7440-67-7  | E420/CG    | 0.00020   | mg/L | <0.00020             | 0.00065              | ---                   | ---   | ---   |      |
| <b>Dissolved Metals</b>              |            |            |           |      |                      |                      |                       |       |       |      |
| Aluminum, dissolved                  | 7429-90-5  | E421/CG    | 0.0010    | mg/L | 0.0143               | 0.0395               | ---                   | ---   | ---   |      |
| Antimony, dissolved                  | 7440-36-0  | E421/CG    | 0.00010   | mg/L | <0.00010             | 0.00011              | ---                   | ---   | ---   |      |
| Arsenic, dissolved                   | 7440-38-2  | E421/CG    | 0.00010   | mg/L | 0.00045              | 0.00070              | ---                   | ---   | ---   |      |
| Barium, dissolved                    | 7440-39-3  | E421/CG    | 0.00010   | mg/L | 0.0483               | 0.0491               | ---                   | ---   | ---   |      |
| Beryllium, dissolved                 | 7440-41-7  | E421/CG    | 0.000020  | mg/L | <0.000020            | <0.000020            | ---                   | ---   | ---   |      |
| Bismuth, dissolved                   | 7440-69-9  | E421/CG    | 0.000050  | mg/L | <0.000050            | <0.000050            | ---                   | ---   | ---   |      |
| Boron, dissolved                     | 7440-42-8  | E421/CG    | 0.010     | mg/L | 0.022                | 0.021                | ---                   | ---   | ---   |      |
| Cadmium, dissolved                   | 7440-43-9  | E421/CG    | 0.0000050 | mg/L | <0.0000050           | <0.0000050           | ---                   | ---   | ---   |      |
| Calcium, dissolved                   | 7440-70-2  | E421/CG    | 0.050     | mg/L | 23.0                 | 21.7                 | ---                   | ---   | ---   |      |
| Cesium, dissolved                    | 7440-46-2  | E421/CG    | 0.000010  | mg/L | <0.000010            | <0.000010            | ---                   | ---   | ---   |      |
| Chromium, dissolved                  | 7440-47-3  | E421/CG    | 0.00050   | mg/L | <0.00050             | <0.00050             | ---                   | ---   | ---   |      |
| Cobalt, dissolved                    | 7440-48-4  | E421/CG    | 0.00010   | mg/L | <0.00010             | <0.00010             | ---                   | ---   | ---   |      |
| Copper, dissolved                    | 7440-50-8  | E421/CG    | 0.00020   | mg/L | 0.00093              | 0.00167              | ---                   | ---   | ---   |      |
| Iron, dissolved                      | 7439-89-6  | E421/CG    | 0.010     | mg/L | <0.010               | 0.125                | ---                   | ---   | ---   |      |
| Lead, dissolved                      | 7439-92-1  | E421/CG    | 0.000050  | mg/L | <0.000050            | 0.000077             | ---                   | ---   | ---   |      |
| Lithium, dissolved                   | 7439-93-2  | E421/CG    | 0.0010    | mg/L | 0.0049               | 0.0049               | ---                   | ---   | ---   |      |
| Magnesium, dissolved                 | 7439-95-4  | E421/CG    | 0.0050    | mg/L | 6.35                 | 6.28                 | ---                   | ---   | ---   |      |
| Manganese, dissolved                 | 7439-96-5  | E421/CG    | 0.00010   | mg/L | 0.00047              | 0.0105               | ---                   | ---   | ---   |      |
| Molybdenum, dissolved                | 7439-98-7  | E421/CG    | 0.000050  | mg/L | 0.000421             | 0.000837             | ---                   | ---   | ---   |      |
| Nickel, dissolved                    | 7440-02-0  | E421/CG    | 0.00050   | mg/L | 0.00068              | 0.00121              | ---                   | ---   | ---   |      |
| Phosphorus, dissolved                | 7723-14-0  | E421/CG    | 0.050     | mg/L | <0.050               | <0.050               | ---                   | ---   | ---   |      |
| Potassium, dissolved                 | 7440-09-7  | E421/CG    | 0.050     | mg/L | 1.44                 | 1.40                 | ---                   | ---   | ---   |      |
| Rubidium, dissolved                  | 7440-17-7  | E421/CG    | 0.00020   | mg/L | 0.00146              | 0.00154              | ---                   | ---   | ---   |      |



## Analytical Results

| Sub-Matrix: Water<br>(Matrix: Water)           |             |            |          |      | Client sample ID     | Treated Water        | Raw Water Chamber Tap | ----  | ----  | ---- |
|--|-------------|------------|----------|------|----------------------|----------------------|-----------------------|-------|-------|------|
| Client sampling date / time                    |             |            |          |      | 05-Sep-2023<br>09:00 | 05-Sep-2023<br>09:30 | ----                  | ----  | ----  |      |
| Analyte  | CAS Number  | Method/Lab | LOR      | Unit | FC2302547-001        | FC2302547-002        | -----                 | ----- | ----- |      |
|  |             |            |          |      | Result               | Result               | ---                   | ---   | ---   |      |
| <b>Dissolved Metals</b>                        |             |            |          |      |                      |                      |                       |       |       |      |
| Selenium, dissolved                            | 7782-49-2   | E421/CG    | 0.000050 | mg/L | 0.000068             | 0.000157             | ---                   | ---   | ---   |      |
| Silicon, dissolved                             | 7440-21-3   | E421/CG    | 0.050    | mg/L | 2.02                 | 2.48                 | ---                   | ---   | ---   |      |
| Silver, dissolved                              | 7440-22-4   | E421/CG    | 0.000010 | mg/L | <0.000010            | <0.000010            | ---                   | ---   | ---   |      |
| Sodium, dissolved                              | 7440-23-5   | E421/CG    | 0.050    | mg/L | 41.8                 | 7.07                 | ---                   | ---   | ---   |      |
| Strontium, dissolved                           | 7440-24-6   | E421/CG    | 0.00020  | mg/L | 0.149                | 0.152                | ---                   | ---   | ---   |      |
| Sulfur, dissolved                              | 7704-34-9   | E421/CG    | 0.50     | mg/L | 4.26                 | 5.24                 | ---                   | ---   | ---   |      |
| Tellurium, dissolved                           | 13494-80-9  | E421/CG    | 0.00020  | mg/L | <0.00020             | <0.00020             | ---                   | ---   | ---   |      |
| Thallium, dissolved                            | 7440-28-0   | E421/CG    | 0.000010 | mg/L | <0.000010            | <0.000010            | ---                   | ---   | ---   |      |
| Thorium, dissolved                             | 7440-29-1   | E421/CG    | 0.00010  | mg/L | <0.00010             | <0.00010             | ---                   | ---   | ---   |      |
| Tin, dissolved                                 | 7440-31-5   | E421/CG    | 0.00010  | mg/L | <0.00010             | <0.00010             | ---                   | ---   | ---   |      |
| Titanium, dissolved                            | 7440-32-6   | E421/CG    | 0.00030  | mg/L | <0.00030             | 0.00280              | ---                   | ---   | ---   |      |
| Tungsten, dissolved                            | 7440-33-7   | E421/CG    | 0.00010  | mg/L | <0.00010             | <0.00010             | ---                   | ---   | ---   |      |
| Uranium, dissolved                             | 7440-61-1   | E421/CG    | 0.000010 | mg/L | 0.000017             | 0.000314             | ---                   | ---   | ---   |      |
| Vanadium, dissolved                            | 7440-62-2   | E421/CG    | 0.00050  | mg/L | <0.00050             | <0.00050             | ---                   | ---   | ---   |      |
| Zinc, dissolved                                | 7440-66-6   | E421/CG    | 0.0010   | mg/L | <0.0010              | <0.0010              | ---                   | ---   | ---   |      |
| Zirconium, dissolved                           | 7440-67-7   | E421/CG    | 0.00030  | mg/L | <0.00030             | 0.00035              | ---                   | ---   | ---   |      |
| Dissolved metals filtration location           | ----        | EP421/CG   | -        | -    | Laboratory           | Laboratory           | ---                   | ---   | ---   |      |
| <b>Aggregate Organics</b>                      |             |            |          |      |                      |                      |                       |       |       |      |
| Naphthenic acids                               | ----        | E565-L/EO  | 0.10     | mg/L | <0.10                | <0.10                | ---                   | ---   | ---   |      |
| <b>Volatile Organic Compounds [BTEXS+MTBE]</b> |             |            |          |      |                      |                      |                       |       |       |      |
| Benzene  | 71-43-2     | E611A/CG   | 0.50     | µg/L | <0.50                | <0.50                | ---                   | ---   | ---   |      |
| Ethylbenzene                                   | 100-41-4    | E611A/CG   | 0.50     | µg/L | <0.50                | <0.50                | ---                   | ---   | ---   |      |
| Toluene  | 108-88-3    | E611A/CG   | 0.50     | µg/L | <0.50                | <0.50                | ---                   | ---   | ---   |      |
| Xylene, m+p-                                   | 179601-23-1 | E611A/CG   | 0.50     | µg/L | <0.50                | <0.50                | ---                   | ---   | ---   |      |
| Xylene, o-                                     | 95-47-6     | E611A/CG   | 0.50     | µg/L | <0.50                | <0.50                | ---                   | ---   | ---   |      |
| Xylenes, total                                 | 1330-20-7   | E611A/CG   | 0.75     | µg/L | <0.75                | <0.75                | ---                   | ---   | ---   |      |
| BTEX, total                                    | ----        | E611A/CG   | 1.2      | µg/L | <1.2                 | <1.2                 | ---                   | ---   | ---   |      |
| <b>Hydrocarbons</b>                            |             |            |          |      |                      |                      |                       |       |       |      |
| F1 (C6-C10)                                    | ----        | E581.F1/CG | 100      | µg/L | <100                 | <100                 | ---                   | ---   | ---   |      |
| F1-BTEX  | ----        | EC580/CG   | 100      | µg/L | <100                 | <100                 | ---                   | ---   | ---   |      |



## Analytical Results

| Sub-Matrix: Water                            |            |            |        |      | Client sample ID            | Treated Water     | Raw Water Chamber Tap | ----  | ----  | ---- |
|--|------------|------------|--------|------|-----------------------------|-------------------|-----------------------|-------|-------|------|
| (Matrix: Water)                              |            |            |        |      | Client sampling date / time | 05-Sep-2023 09:00 | 05-Sep-2023 09:30     | ----  | ----  | ---- |
| Analyte                                      | CAS Number | Method/Lab | LOR    | Unit | FC2302547-001               | FC2302547-002     | -----                 | ----- | ----- |      |
|  |            |            |        |      | Result                      | Result            | ----                  | ----  | ----  |      |
| <b>Hydrocarbons</b>                          |            |            |        |      |                             |                   |                       |       |       |      |
| F2 (C10-C16)                                 | ---        | E601/CG    | 100    | µg/L | <100                        | <100              | ----                  | ----  | ----  |      |
| F3 (C16-C34)                                 | ---        | E601/CG    | 250    | µg/L | <250                        | <250              | ----                  | ----  | ----  |      |
| F4 (C34-C50)                                 | ---        | E601/CG    | 250    | µg/L | <250                        | <250              | ----                  | ----  | ----  |      |
| Hydrocarbons, total (C6-C50)                 | ---        | EC581/CG   | 400    | µg/L | <400                        | <400              | ----                  | ----  | ----  |      |
| <b>Hydrocarbons Surrogates</b>               |            |            |        |      |                             |                   |                       |       |       |      |
| Bromobenzotrifluoride, 2- (F2-F4 surrogate)  | 392-83-6   | E601/CG    | 1.0    | %    | 88.2                        | 94.6              | ----                  | ----  | ----  |      |
| Dichlorotoluene, 3,4-                        | 95-75-0    | E581.F1/CG | 1.0    | %    | 119                         | 118               | ----                  | ----  | ----  |      |
| <b>Volatile Organic Compounds Surrogates</b> |            |            |        |      |                             |                   |                       |       |       |      |
| Bromofluorobenzene, 4-                       | 460-00-4   | E611A/CG   | 1.0    | %    | 89.8                        | 90.4              | ----                  | ----  | ----  |      |
| Difluorobenzene, 1,4-                        | 540-36-3   | E611A/CG   | 1.0    | %    | 90.4                        | 89.1              | ----                  | ----  | ----  |      |
| <b>Polycyclic Aromatic Hydrocarbons</b>      |            |            |        |      |                             |                   |                       |       |       |      |
| Acenaphthene                                 | 83-32-9    | E641A/CG   | 0.010  | µg/L | <0.010                      | <0.010            | ----                  | ----  | ----  |      |
| Acenaphthylene                               | 208-96-8   | E641A/CG   | 0.010  | µg/L | <0.010                      | <0.010            | ----                  | ----  | ----  |      |
| Acridine                                     | 260-94-6   | E641A/CG   | 0.010  | µg/L | <0.010                      | <0.010            | ----                  | ----  | ----  |      |
| Anthracene                                   | 120-12-7   | E641A/CG   | 0.010  | µg/L | <0.010                      | <0.010            | ----                  | ----  | ----  |      |
| Benz(a)anthracene                            | 56-55-3    | E641A/CG   | 0.010  | µg/L | <0.010                      | <0.010            | ----                  | ----  | ----  |      |
| Benzo(a)pyrene                               | 50-32-8    | E641A/CG   | 0.0050 | µg/L | <0.0050                     | <0.0050           | ----                  | ----  | ----  |      |
| Benzo(b+j)fluoranthene                       | n/a        | E641A/CG   | 0.010  | µg/L | <0.010                      | <0.010            | ----                  | ----  | ----  |      |
| Benzo(b+j+k)fluoranthene                     | n/a        | E641A/CG   | 0.015  | µg/L | <0.015                      | <0.015            | ----                  | ----  | ----  |      |
| Benzo(g,h,i)perylene                         | 191-24-2   | E641A/CG   | 0.010  | µg/L | <0.010                      | <0.010            | ----                  | ----  | ----  |      |
| Benzo(k)fluoranthene                         | 207-08-9   | E641A/CG   | 0.010  | µg/L | <0.010                      | <0.010            | ----                  | ----  | ----  |      |
| Chrysene                                     | 218-01-9   | E641A/CG   | 0.010  | µg/L | <0.010                      | <0.010            | ----                  | ----  | ----  |      |
| Dibenz(a,h)anthracene                        | 53-70-3    | E641A/CG   | 0.0050 | µg/L | <0.0050                     | <0.0050           | ----                  | ----  | ----  |      |
| Fluoranthene                                 | 206-44-0   | E641A/CG   | 0.010  | µg/L | <0.010                      | <0.010            | ----                  | ----  | ----  |      |
| Fluorene                                     | 86-73-7    | E641A/CG   | 0.010  | µg/L | <0.010                      | <0.010            | ----                  | ----  | ----  |      |
| Indeno(1,2,3-c,d)pyrene                      | 193-39-5   | E641A/CG   | 0.010  | µg/L | <0.010                      | <0.010            | ----                  | ----  | ----  |      |
| Methylnaphthalene, 1-                        | 90-12-0    | E641A/CG   | 0.010  | µg/L | <0.010                      | <0.010            | ----                  | ----  | ----  |      |
| Methylnaphthalene, 1+2-                      | ---        | E641A/CG   | 0.015  | µg/L | <0.015                      | <0.015            | ----                  | ----  | ----  |      |
| Methylnaphthalene, 2-                        | 91-57-6    | E641A/CG   | 0.010  | µg/L | <0.010                      | <0.010            | ----                  | ----  | ----  |      |
| Naphthalene                                  | 91-20-3    | E641A/CG   | 0.050  | µg/L | <0.050                      | <0.050            | ----                  | ----  | ----  |      |



## Analytical Results

| Sub-Matrix: Water<br>(Matrix: Water)               |            |            |       |      | Client sample ID     | Treated Water        | Raw Water Chamber Tap | ----  | ----  | ---- |
|--|------------|------------|-------|------|----------------------|----------------------|-----------------------|-------|-------|------|
| Client sampling date / time                        |            |            |       |      | 05-Sep-2023<br>09:00 | 05-Sep-2023<br>09:30 | ----                  | ----  | ----  |      |
| Analyte  | CAS Number | Method/Lab | LOR   | Unit | FC2302547-001        | FC2302547-002        | -----                 | ----- | ----- |      |
|  |            |            |       |      | Result               | Result               | ----                  | ----  | ----  |      |
| <b>Polycyclic Aromatic Hydrocarbons</b>            |            |            |       |      |                      |                      |                       |       |       |      |
| Phenanthrene                                       | 85-01-8    | E641A/CG   | 0.020 | µg/L | <0.020               | <0.020               | ----                  | ----  | ----  |      |
| Pyrene   | 129-00-0   | E641A/CG   | 0.010 | µg/L | <0.010               | <0.010               | ----                  | ----  | ----  |      |
| Quinoline  | 91-22-5    | E641A/CG   | 0.050 | µg/L | <0.050               | <0.050               | ----                  | ----  | ----  |      |
| B(a)P total potency equivalents [B(a)P TPE]        | ----       | E641A/CG   | 0.010 | µg/L | <0.010               | <0.010               | ----                  | ----  | ----  |      |
| PAHs, high molecular weight (BC AWQ)               | n/a        | E641A/CG   | 0.030 | µg/L | <0.030               | <0.030               | ----                  | ----  | ----  |      |
| PAHs, low molecular weight (BC AWQ)                | n/a        | E641A/CG   | 0.060 | µg/L | <0.060               | <0.060               | ----                  | ----  | ----  |      |
| PAHs, total (CCME sewer 18)                        | n/a        | E641A/CG   | 0.070 | µg/L | <0.070               | <0.070               | ----                  | ----  | ----  |      |
| PAHs, total (EPA 16)                               | n/a        | E641A/CG   | 0.065 | µg/L | <0.065               | <0.065               | ----                  | ----  | ----  |      |
| <b>Polycyclic Aromatic Hydrocarbons Surrogates</b> |            |            |       |      |                      |                      |                       |       |       |      |
| Chrysene-d12                                       | 1719-03-5  | E641A/CG   | 0.1   | %    | 112                  | 97.3                 | ----                  | ----  | ----  |      |
| Naphthalene-d8                                     | 1146-65-2  | E641A/CG   | 0.1   | %    | 112                  | 108                  | ----                  | ----  | ----  |      |
| Phenanthrene-d10                                   | 1517-22-2  | E641A/CG   | 0.1   | %    | 103                  | 89.1                 | ----                  | ----  | ----  |      |

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

Please refer to the Accreditation section for an explanation of analyte accreditations.