

**COCHRANE**

**WATER / WASTE WATER SERVICES**



**GLACKMEYER LAGOON**

**2022 ANNUAL REPORT**

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**2022 Annual Report**

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**ANNUAL**  
**PERFORMANCE**  
**REPORT**

## **Annual Performance Report**

This report is prepared to comply with Section 9 (5) of the Environmental Compliance Approval Number 1561-ADZNH4, issued February 21, 2017. The report shall contain:

- a) A summary and interpretation of all monitoring data and a comparison to the effluent limits outlined Condition 6, including an overview of the success and adequacy of the Works;

### **RAW SEWAGE RESULTS**

| <b>RAW SEWAGE</b> | <b>MONTHLY AVERAGE RESULTS</b> |
|-------------------|--------------------------------|
| BOD               | 118.88 mg/l                    |
| SUSPENDED SOLIDS  | 91.58 mg/l                     |
| TOTAL PHOSPHORUS  | 4.64 mg/l                      |
| TKN               | 42.47 mg/l                     |
| AMMONIA           | 21.46 mg/l                     |
| CBOD              | 107.34 mg/L                    |
| pH                | 7.65 mg/L                      |

*The following are samples taken before and during discharging the Glackmeyer Lagoon.*

| Test               | Prior to Discharge<br>May 10, 2022 | Beginning of Discharge<br>May 19, 2022 | During Discharge (25%)<br>May 23, 2022 | During Discharge (50%)<br>May 25, 2022 | During Discharge (75%)<br>May 27, 2022 | End of Discharge<br>May 30, 2022 |
|--------------------|------------------------------------|--|--|--|--|----------------------------------|
| pH                 | 7.60                               | 7.56                                   | 7.84                                   | 7.85                                   | 8.05                                   | 7.28                             |
| CBOD               | 3.3                                | 9.2                                    | 6.6                                    | 6.4                                    | 2.1                                    | 3.0                              |
| SUSPENDED SOLIDS   | 16.7                               | 63.3                                   | 29                                     | 18                                     | 7                                      | 46.7                             |
| PHOSPHORUS         | 0.593                              | 1.94                                   | 1.06                                   | 0.597                                  | 0.478                                  | 0.646                            |
| E.Coli             | 14                                 | 130                                    | 500                                    | 460                                    | 520                                    | 50                               |
| Un-Ionized AMMONIA | 0.24                               | 0.002                                  | 0.014                                  | 0.012                                  |  | 0.002                            |
| AMMONIA            | 0.24                               | 0.06                                   | 1.46                                   | 0.58                                   | 0.48                                   | 0.3                              |

- b) A description of any operating problems encountered, and corrective actions taken;

*None.*

- c) A summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works;

*None.*

- d) A summary of any effluent assurance or control measures undertaken in the reporting period;

*The monitoring programs consists of regular weekly rounds ensuring all equipment is functioning (valves) and take a weekly pH sample in both lagoons during months when access is available (ex. snow) and weekly from the pumping station pit.*

- e) A summary of the calibration and maintenance carried out on all effluent monitoring equipment;

***The effluent flow meter will be calibrated in 2023.***

- f) A description of efforts made and results achieved in meeting the Effluent Objectives of Condition 5.

***The attached Data Summary shows the Glackmeyer Lagoon has not exceeded the effluent concentrations for the CBOD (30 mg/l), the Total Suspended Solids (40 mg/L) and the Phosphorus Criteria (1.0mg/L). pH levels (6.5-8.5) were maintained.***

- g) A tabulation of the volume of sludge generated in the reporting period, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed;

***None.***

- h) A summary of any complaints received during the reporting period and any steps taken to address the complaints;

***None.***

- i) A summary of all by-pass, spills or abnormal discharge events;

***None.***

- j) A copy of all Notice of Modifications submitted to the Water Supervisor as a result of Schedule B, Section 1, with a status report on the implementation of each modification;

***None.***

- k) A report summarizing all modifications completed as results of Schedule B, Section 3;

***None.***

- l) Any other information the Water Supervisor requires from time to time;

***None.***

*This is the report on the Glackmeyer Lagoon for the year 2022. I certify that the information in this document and all the attachments are correct, accurate and complete to the best of my knowledge.*

Prepared by,  
Melissa Hoogenhoud  
Asset Coordinator

## **ANNUAL SUMMARY**



| Glackmeyer Lagoon / Lab Results |             |             |              |              |                 |                    |                    |                    |                    |             | 2022        |             | ID: 120002068 |             |  |  |  |  |  |            |                 |  |
|---------------------------------|-------------|-------------|--------------|--------------|-----------------|--------------------|--------------------|--------------------|--------------------|-------------|-------------|-------------|---------------|-------------|--|--|--|--|--|------------|-----------------|--|
| month                           | Jan.        | Feb.        | March        | April        | May             | June               | July               | Aug.               | Sept.              | Oct.        | Nov.        | Dec.        | TOTAL         | AVG.        |  |  |  |  |  |            |                 |  |
| <b>Number of Samples</b>        |             |             |              |              |                 |                    |                    |                    |                    |             |             |             |               |             |  |  |  |  |  |            |                 |  |
| BOD (mg/l)                      | 96          | 200         | 290          | 110          | 29              | 39                 | 98                 | 39                 | 140                | 200         | 65.6        | 120         | 1426.6        | 118.88      |  |  |  |  |  | BOD (mg/l) |                 |  |
| SS (mg/l)                       | 65.7        | 110         | 163          | 90           | 45.3            | 24                 | 50                 | 100                | 63                 | 110         | 58          | 220         | 1099          | 91.583      |  |  |  |  |  |            | SS (mg/l)       |  |
| TKN (mg/l)                      | 58.6        | 81.4        | 76           | 31.5         | 12.6            | 12.7               | 37.6               | 14.8               | 33.6               | 90.2        | 26.3        | 34.3        | 509.6         | 42.467      |  |  |  |  |  |            | TKN (mg/l)      |  |
| Total P. (mg/l)                 | 4.35        | 9.17        | 12.2         | 3.99         | 1.27            | 2.07               | 3.67               | 1.92               | 3.73               | 7.72        | 2.87        | 2.7         | 55.66         | 4.6383      |  |  |  |  |  |            | Total P. (mg/l) |  |
| Ammonia (mg/l)                  | 31.3        | 30.5        | 40.4         | 9.88         | 5.68            | 9.5                | 14.9               | 9.8                | 23.4               | 43.6        | 19.3        | 19.2        | 257.46        | 21.455      |  |  |  |  |  |            | Ammonia (mg/l)  |  |
| CBOD (mg/L)                     | 110         | 190         | 320          | 110          | 25              | 90.1               | 84                 | 42                 | 150                | 3           | 44          | 120         | 1288.1        | 107.34      |  |  |  |  |  |            | CBOD (mg/L)     |  |
| <b>Number of Samples</b>        | 4           | 3           | 3            | 5            | 4               | 3                  | 2                  | 3                  | 3                  | 2           | 2           | 3           |               |             |  |  |  |  |  |            |                 |  |
| North Lagoon pH                 |             |             |              |              | 7.625           | 7.41               | 7.26               |                    |                    |             |             |             | 0             | 7.4317      |  |  |  |  |  |            |                 |  |
| South Lagoon pH                 |             |             |              |              | 7.44            |                    | 7.24               | 7.58               | 7.76               | 7.55        | 7.55        |             | 15.1          | 7.52        |  |  |  |  |  |            |                 |  |
| Pumping Station pH              | 7.61        | 7.67        | 7.54         | 7.59         |                 | 7.56               | 7.34               |                    |                    | 7.84        | 8.09        | 7.63        | 68.87         | 7.6522      |  |  |  |  |  |            |                 |  |
|                                 |             |             |              |              |                 |                    |                    |                    |                    |             |             |             |               |             |  |  |  |  |  |            |                 |  |
|                                 |             |             |              |              |                 |                    |                    |                    |                    |             |             |             |               |             |  |  |  |  |  |            |                 |  |
|                                 |             |             |              |              |                 |                    |                    |                    |                    |             |             |             |               |             |  |  |  |  |  |            |                 |  |
|                                 |             |             |              |              |                 |                    |                    |                    |                    |             |             |             |               |             |  |  |  |  |  |            |                 |  |
| <b>month</b>                    | <b>Jan.</b> | <b>Feb.</b> | <b>March</b> | <b>April</b> | <b>May</b>      | <b>June</b>        | <b>July</b>        | <b>Aug.</b>        | <b>Sept.</b>       | <b>Oct.</b> | <b>Nov.</b> | <b>Dec.</b> | <b>TOTAL</b>  | <b>AVG.</b> |  |  |  |  |  |            |                 |  |
| <b>Prior To Discharge</b>       |             |             |              |              |                 |                    |                    |                    |                    |             |             |             |               |             |  |  |  |  |  |            |                 |  |
| CBOD (mg/l)                     |             |             |              |              | 3.3             |                    |                    |                    |                    |             |             |             | 3.3           | 3.3         |  |  |  |  |  |            |                 |  |
| SS (mg/l)                       |             |             |              |              | 16.7            |                    |                    |                    |                    |             |             |             | 16.7          | 16.7        |  |  |  |  |  |            |                 |  |
| Ammonia (mg/l)                  |             |             |              |              | 0.24            |                    |                    |                    |                    |             |             |             | 0.24          | 0.24        |  |  |  |  |  |            |                 |  |
| pH (mg/l)                       |             |             |              |              | 7.6             |                    |                    |                    |                    |             |             |             | 7.6           | 7.6         |  |  |  |  |  |            |                 |  |
| Total P. (mg/l)                 |             |             |              |              | 0.593           |                    |                    |                    |                    |             |             |             | 0.593         | 0.593       |  |  |  |  |  |            |                 |  |
| Un-ionized Ammonia (mg/l)       |             |             |              |              | 0.24            |                    |                    |                    |                    |             |             |             | 0.24          | 0.24        |  |  |  |  |  |            |                 |  |
| E.Coli                          |             |             |              |              | 14              |                    |                    |                    |                    |             |             |             | 14            | 14          |  |  |  |  |  |            |                 |  |
| <b>During Discharge</b>         |             |             |              |              | 2022-05-19 - 0% | May 23, 2022 - 25% | May 25, 2022 - 50% | May 27, 2022 - 75% | May 30, 2020 - End |             |             |             |               |             |  |  |  |  |  |            |                 |  |
| CBOD (mg/l)                     |             |             |              |              | 9.2             | 6.6                | 6.4                | 2.1                | 3                  |             |             |             | 27.3          | 5.46        |  |  |  |  |  |            |                 |  |
| SS (mg/l)                       |             |             |              |              | 63.3            | 29                 | 18                 | 7                  | 46.7               |             |             |             | 164           | 32.8        |  |  |  |  |  |            |                 |  |
| Total P. (mg/l)                 |             |             |              |              | 1.94            | 1.06               | 0.597              | 0.478              | 0.646              |             |             |             | 4.721         | 0.9442      |  |  |  |  |  |            |                 |  |
| Ammonia (as N) (mg/l)           |             |             |              |              | 0.06            | 1.46               | 0.58               | 0.48               | 0.3                |             |             |             | 2.88          | 0.576       |  |  |  |  |  |            |                 |  |
| Un-ionized Amm (mg/l)           |             |             |              |              | 0.002           | 0.014              | 0.012              |                    | 0.002              |             |             |             | 0.03          | 0.0075      |  |  |  |  |  |            |                 |  |
| pH                              |             |             |              |              | 7.56            | 7.84               | 7.85               | 8.05               | 7.28               |             |             |             | 38.58         | 7.716       |  |  |  |  |  |            |                 |  |
| Temperature                     |             |             |              |              | 14              | 17                 | 15                 | 16                 | 16                 |             |             |             | 78            | 15.6        |  |  |  |  |  |            |                 |  |
| E.Coli (CFU)                    |             |             |              |              | 130             | 500                | 460                | 520                | 50                 |             |             |             | 1660          | 332         |  |  |  |  |  |            |                 |  |

**DISCHARGE**

**ANALYTICAL**

**REPORTS**



## CERTIFICATE OF ANALYSIS

|                      |  |                     |                          |
|----------------------|--|---------------------|--------------------------|
| Client:              | Melissa Hoogenhoud                               | Work Order Number:  | 462289                   |
| Company:             | Town of Cochrane - Wastewater                    | PO #:               |                          |
| Address:             | 171 Fourth Ave, Box 490<br>Cochrane, ON, P0L 1C0 | Regulation:         | Information not provided |
| Phone/Fax:           | (705) 272-4232 / (705) 272-2634                  | Project #:          |                          |
| Email:               | Melissa.Hoogenhoud@cochraneontario.com           | DWS #:              |                          |
|                      |  | Sampled By:         | Benoit Parent            |
| Date Order Received: | 5/10/2022  | Analysis Started:   | 5/10/2022                |
| Arrival Temperature: | 17.3 °C  | Analysis Completed: | 5/18/2022                |

### WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

| Sample Description              | Lab ID  | Matrix     | Type | Comments | Date Collected | Time Collected |
|---------------------------------|---------|------------|------|----------|----------------|----------------|
| South Lagoon Prior to Discharge | 1752003 | Wastewater | Grab |          | 5/10/2022      | 8:45 AM        |

### METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

| Method                         | Lab           | Description  | Reference                              |
|--------------------------------|---------------|--|--|
| Ammonia Water (A42)            | Timmins       | Determination of Ammonia/Ammonium in Water                                 | Modified from EPA 350.1                |
| CBOD (A3)                      | Kirkland Lake | Determination of Carbonaceous Biochemical Oxygen Demand (CBOD) 5-Day.      | Modified from SM-5210-B                |
| E.coli by MF on mFC-BCIG (A10) | Timmins       | Determination of E. coli in water by Membrane Filtration on mFC-BCIG media | Modified from MOE E3371                |
| Field pH (R112)                | Timmins       | Client Supplied Field Determination of pH of Water                         | Field Test                             |
| Field Temp (R113)              | Timmins       | Client Supplied Field Determination of Temperature of Water                | Field Test                             |
| pH of Water (A2.0)             | Timmins       | Determination of Water pH by Ion Selective Electrode                       | Modified from APHA-4500H+ B            |
| Received Temperature (A113)    | Timmins       | Temperature of Sample Upon Receipt   | In House                               |
| TP Water (A23.2)               | Kirkland Lake | Determination of Total Phosphorus in Water.                                | Modified from EPA 365.3 and ESS 310.2, |
| TSS (A27)                      | Timmins       | Determination of Total Suspended Solids in water by gravimetry             | Modified from SM-2540                  |
| Un-ionized NH3 (A42.4)         | Timmins       | Calculation of Un-Ionized Ammonia  | Modified from APHA-4500                |



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## CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 462289

### REPORT COMMENTS

Un-ionized ammonia calculated using lab pH and received temperature.

This report has been approved by:

Adam Tam, M.Sc.  
Laboratory Director



## CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 462289

### WORK ORDER RESULTS

| South Lagoon Prior to Discharge |                   |       |       |
|---------------------------------|-------------------|-------|-------|
| Sample Description              |                   |       |       |
| Sample Date                     | 5/10/2022 8:45 AM |       |       |
| Lab ID                          | 1752003           |       |       |
| General Chemistry               | Result            | MDL   | Units |
| Ammonia (as N)                  | 0.24              | 0.01  | mg/L  |
| pH                              | 7.6               | N/A   | pH    |
| Total Phosphorus (as P)         | 0.593             | 0.002 | mg/L  |
| Un-ionized Ammonia (Calc.)      | 0.003             | 0.002 | mg/L  |

| South Lagoon Prior to Discharge |                   |     |           |
|---------------------------------|-------------------|-----|-----------|
| Sample Description              |                   |     |           |
| Sample Date                     | 5/10/2022 8:45 AM |     |           |
| Lab ID                          | 1752003           |     |           |
| Microbiology                    | Result            | MDL | Units     |
| Escherichia coli                | 14                | 1   | CFU/100mL |

| South Lagoon Prior to Discharge |                   |     |       |
|---------------------------------|-------------------|-----|-------|
| Sample Description              |                   |     |       |
| Sample Date                     | 5/10/2022 8:45 AM |     |       |
| Lab ID                          | 1752003           |     |       |
| Oxygen Demand                   | Result            | MDL | Units |
| Carbonaceous BOD                | 3.3               | 1   | mg/L  |



## CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 462289

|                             |                                 |            |              |
|-----------------------------|---------------------------------|------------|--------------|
| <b>Sample Description</b>   | South Lagoon Prior to Discharge |            |              |
| <b>Sample Date</b>          | 5/10/2022 8:45 AM               |            |              |
| <b>Lab ID</b>               | 1752003                         |            |              |
| <b>Received Temperature</b> | <b>Result</b>                   | <b>MDL</b> | <b>Units</b> |
| Received Temperature        | 17.3                            | N/A        | °C           |

|                           |                                 |            |              |
|---------------------------|---------------------------------|------------|--------------|
| <b>Sample Description</b> | South Lagoon Prior to Discharge |            |              |
| <b>Sample Date</b>        | 5/10/2022 8:45 AM               |            |              |
| <b>Lab ID</b>             | 1752003                         |            |              |
| <b>Solids</b>             | <b>Result</b>                   | <b>MDL</b> | <b>Units</b> |
| Total Suspended Solids    | 16.7                            | 1.3        | mg/L         |

### LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

MDL: Method detection limit or minimum reporting limit.

Quality Control: All associated Quality Control data is available on request.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

Reproduction of Report: Report shall not be reproduced, except in full, without the approval of Testmark Laboratories Ltd.

ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.



## CERTIFICATE OF ANALYSIS

|                      |  |                     |                          |
|----------------------|--|---------------------|--------------------------|
| Client:              | Melissa Hoogenhoud                               | Work Order Number:  | 463407                   |
| Company:             | Town of Cochrane - Wastewater                    | PO #:               |                          |
| Address:             | 171 Fourth Ave, Box 490<br>Cochrane, ON, P0L 1C0 | Regulation:         | Information not provided |
| Phone/Fax:           | (705) 272-4232 / (705) 272-2634                  | Project #:          | Discharge                |
| Email:               | Melissa.Hoogenhoud@cochraneontario.com           | DWS #:              |                          |
|                      |  | Sampled By:         | Mike Nelson              |
| Date Order Received: | 5/19/2022  | Analysis Started:   | 5/19/2022                |
| Arrival Temperature: | 14 °C  | Analysis Completed: | 5/30/2022                |

### WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

| Sample Description                    | Lab ID  | Matrix     | Type | Comments | Date Collected | Time Collected |
|---------------------------------------|---------|------------|------|----------|----------------|----------------|
| South Lagoon - 0% Discharge Beginning | 1755685 | Wastewater | Grab |          | 5/19/2022      | 12:00 PM       |

### METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

| Method                         | Lab           | Description  | Reference                              |
|--------------------------------|---------------|--|--|
| Ammonia Water (A42)            | Timmins       | Determination of Ammonia/Ammonium in Water                                 | Modified from EPA 350.1                |
| CBOD (A3)                      | Kirkland Lake | Determination of Carbonaceous Biochemical Oxygen Demand (CBOD) 5-Day.      | Modified from SM-5210-B                |
| E.coli by MF on mFC-BCIG (A10) | Timmins       | Determination of E. coli in water by Membrane Filtration on mFC-BCIG media | Modified from MOE E3371                |
| Field pH (R112)                | Timmins       | Client Supplied Field Determination of pH of Water                         | Field Test                             |
| Field Temp (R113)              | Timmins       | Client Supplied Field Determination of Temperature of Water                | Field Test                             |
| pH of Water (A2.0)             | Timmins       | Determination of Water pH by Ion Selective Electrode                       | Modified from APHA-4500H+ B            |
| Received Temperature (A113)    | Timmins       | Temperature of Sample Upon Receipt   | In House                               |
| TP Water (A23.2)               | Kirkland Lake | Determination of Total Phosphorus in Water.                                | Modified from EPA 365.3 and ESS 310.2, |
| TSS (A27)                      | Timmins       | Determination of Total Suspended Solids in water by gravimetry             | Modified from SM-2540                  |
| Un-ionized NH3 (A42.4)         | Timmins       | Calculation of Un-Ionized Ammonia  | Modified from APHA-4500                |



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## CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 463407

This report has been approved by:

Adam Tam, M.Sc.  
Laboratory Director





## CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 463407

### WORK ORDER RESULTS

|                           |                                       |            |              |
|---------------------------|---------------------------------------|------------|--------------|
| <b>Sample Description</b> | South Lagoon - 0% Discharge Beginning |            |              |
| <b>Sample Date</b>        | 5/19/2022 12:00 PM                    |            |              |
| <b>Lab ID</b>             | 1755685                               |            |              |
| <b>Field Parameters</b>   | <b>Result</b>                         | <b>MDL</b> | <b>Units</b> |
| Field pH                  | 7.54                                  | N/A        | pH           |
| Field Temp                | 17.1                                  | N/A        | °C           |

|                            |                                       |            |              |
|----------------------------|---------------------------------------|------------|--------------|
| <b>Sample Description</b>  | South Lagoon - 0% Discharge Beginning |            |              |
| <b>Sample Date</b>         | 5/19/2022 12:00 PM                    |            |              |
| <b>Lab ID</b>              | 1755685                               |            |              |
| <b>General Chemistry</b>   | <b>Result</b>                         | <b>MDL</b> | <b>Units</b> |
| Ammonia (as N)             | 0.06                                  | 0.01       | mg/L         |
| pH                         | 7.56                                  | N/A        | pH           |
| Total Phosphorus (as P)    | 1.94                                  | 0.02       | mg/L         |
| Un-ionized Ammonia (Calc.) | <0.002                                | 0.002      | mg/L         |

|                           |                                       |            |              |
|---------------------------|---------------------------------------|------------|--------------|
| <b>Sample Description</b> | South Lagoon - 0% Discharge Beginning |            |              |
| <b>Sample Date</b>        | 5/19/2022 12:00 PM                    |            |              |
| <b>Lab ID</b>             | 1755685                               |            |              |
| <b>Microbiology</b>       | <b>Result</b>                         | <b>MDL</b> | <b>Units</b> |
| Escherichia coli          | 130<br>[120]                          | 5          | CFU/100mL    |



## CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 463407

|                           |                                       |            |              |
|---------------------------|---------------------------------------|------------|--------------|
| <b>Sample Description</b> | South Lagoon - 0% Discharge Beginning |            |              |
| <b>Sample Date</b>        | 5/19/2022 12:00 PM                    |            |              |
| <b>Lab ID</b>             | 1755685                               |            |              |
| <b>Oxygen Demand</b>      | <b>Result</b>                         | <b>MDL</b> | <b>Units</b> |
| Carbonaceous BOD          | 9.2                                   | 3          | mg/L         |

|                             |                                       |            |              |
|-----------------------------|---------------------------------------|------------|--------------|
| <b>Sample Description</b>   | South Lagoon - 0% Discharge Beginning |            |              |
| <b>Sample Date</b>          | 5/19/2022 12:00 PM                    |            |              |
| <b>Lab ID</b>               | 1755685                               |            |              |
| <b>Received Temperature</b> | <b>Result</b>                         | <b>MDL</b> | <b>Units</b> |
| Received Temperature        | 14                                    | N/A        | °C           |

|                           |                                       |            |              |
|---------------------------|---------------------------------------|------------|--------------|
| <b>Sample Description</b> | South Lagoon - 0% Discharge Beginning |            |              |
| <b>Sample Date</b>        | 5/19/2022 12:00 PM                    |            |              |
| <b>Lab ID</b>             | 1755685                               |            |              |
| <b>Solids</b>             | <b>Result</b>                         | <b>MDL</b> | <b>Units</b> |
| Total Suspended Solids    | 63.3                                  | 3.3        | mg/L         |



**TESTMARK Laboratories Ltd.**

*Committed to Quality and Service*

## CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 463407

### LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

Quality Control: All associated Quality Control data is available on request.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.



## CERTIFICATE OF ANALYSIS

|                      |  |                     |                          |
|----------------------|--|---------------------|--------------------------|
| Client:              | Melissa Hoogenhoud                               | Work Order Number:  | 463646                   |
| Company:             | Town of Cochrane - Wastewater                    | PO #:               |                          |
| Address:             | 171 Fourth Ave, Box 490<br>Cochrane, ON, P0L 1C0 | Regulation:         | Information not provided |
| Phone/Fax:           | (705) 272-4232 / (705) 272-2634                  | Project #:          | Discharge                |
| Email:               | Melissa.Hoogenhoud@cochraneontario.com           | DWS #:              |                          |
|                      |  | Sampled By:         | Mike Nelson              |
| Date Order Received: | 5/24/2022  | Analysis Started:   | 5/24/2022                |
| Arrival Temperature: | 17 °C  | Analysis Completed: | 5/31/2022                |

### WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

| Sample Description           | Lab ID  | Matrix     | Type | Comments | Date Collected | Time Collected |
|------------------------------|---------|------------|------|----------|----------------|----------------|
| South Lagoon - 25% Discharge | 1756672 | Wastewater | Grab |          | 5/23/2022      | 12:40 PM       |

### METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

| Method                         | Lab           | Description  | Reference                              |
|--------------------------------|---------------|--|--|
| Ammonia Water (A42)            | Timmins       | Determination of Ammonia/Ammonium in Water                                 | Modified from EPA 350.1                |
| CBOD (A3)                      | Kirkland Lake | Determination of Carbonaceous Biochemical Oxygen Demand (CBOD) 5-Day.      | Modified from SM-5210-B                |
| E.coli by MF on mFC-BCIG (A10) | Timmins       | Determination of E. coli in water by Membrane Filtration on mFC-BCIG media | Modified from MOE E3371                |
| Field pH (R112)                | Timmins       | Client Supplied Field Determination of pH of Water                         | Field Test                             |
| Field Temp (R113)              | Timmins       | Client Supplied Field Determination of Temperature of Water                | Field Test                             |
| pH of Water (A2.0)             | Timmins       | Determination of Water pH by Ion Selective Electrode                       | Modified from APHA-4500H+ B            |
| Received Temperature (A113)    | Timmins       | Temperature of Sample Upon Receipt   | In House                               |
| TP Water (A23.2)               | Kirkland Lake | Determination of Total Phosphorus in Water.                                | Modified from EPA 365.3 and ESS 310.2, |
| TSS (A27)                      | Timmins       | Determination of Total Suspended Solids in water by gravimetry             | Modified from SM-2540                  |
| Un-ionized NH3 (A42.4)         | Timmins       | Calculation of Un-Ionized Ammonia  | Modified from APHA-4500                |



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## CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 463646

This report has been approved by:

Adam Tam, M.Sc.  
Laboratory Director



## CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 463646

### WORK ORDER RESULTS

|                           |                              |            |              |
|---------------------------|------------------------------|------------|--------------|
| <b>Sample Description</b> | South Lagoon - 25% Discharge |            |              |
| <b>Sample Date</b>        | 5/23/2022 12:40 PM           |            |              |
| <b>Lab ID</b>             | 1756672                      |            |              |
| <b>Field Parameters</b>   | <b>Result</b>                | <b>MDL</b> | <b>Units</b> |
| Field pH                  | 7.6                          | N/A        | pH           |
| Field Temp                | 13.9                         | N/A        | °C           |

|                            |                              |            |              |
|----------------------------|------------------------------|------------|--------------|
| <b>Sample Description</b>  | South Lagoon - 25% Discharge |            |              |
| <b>Sample Date</b>         | 5/23/2022 12:40 PM           |            |              |
| <b>Lab ID</b>              | 1756672                      |            |              |
| <b>General Chemistry</b>   | <b>Result</b>                | <b>MDL</b> | <b>Units</b> |
| Ammonia (as N)             | 1.46                         | 0.01       | mg/L         |
| pH                         | 7.84                         | N/A        | pH           |
| Total Phosphorus (as P)    | 1.06                         | 0.02       | mg/L         |
| Un-ionized Ammonia (Calc.) | 0.014                        | 0.002      | mg/L         |

|                           |                              |            |              |
|---------------------------|------------------------------|------------|--------------|
| <b>Sample Description</b> | South Lagoon - 25% Discharge |            |              |
| <b>Sample Date</b>        | 5/23/2022 12:40 PM           |            |              |
| <b>Lab ID</b>             | 1756672                      |            |              |
| <b>Microbiology</b>       | <b>Result</b>                | <b>MDL</b> | <b>Units</b> |
| Escherichia coli          | 500<br>[490]                 | 10         | CFU/100mL    |



## CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 463646

|                           |                              |            |              |
|---------------------------|------------------------------|------------|--------------|
| <b>Sample Description</b> | South Lagoon - 25% Discharge |            |              |
| <b>Sample Date</b>        | 5/23/2022 12:40 PM           |            |              |
| <b>Lab ID</b>             | 1756672                      |            |              |
| <b>Oxygen Demand</b>      | <b>Result</b>                | <b>MDL</b> | <b>Units</b> |
| Carbonaceous BOD          | 6.6                          | 1          | mg/L         |

|                             |                              |            |              |
|-----------------------------|------------------------------|------------|--------------|
| <b>Sample Description</b>   | South Lagoon - 25% Discharge |            |              |
| <b>Sample Date</b>          | 5/23/2022 12:40 PM           |            |              |
| <b>Lab ID</b>               | 1756672                      |            |              |
| <b>Received Temperature</b> | <b>Result</b>                | <b>MDL</b> | <b>Units</b> |
| Received Temperature        | 17                           | N/A        | °C           |

|                           |                              |            |              |
|---------------------------|------------------------------|------------|--------------|
| <b>Sample Description</b> | South Lagoon - 25% Discharge |            |              |
| <b>Sample Date</b>        | 5/23/2022 12:40 PM           |            |              |
| <b>Lab ID</b>             | 1756672                      |            |              |
| <b>Solids</b>             | <b>Result</b>                | <b>MDL</b> | <b>Units</b> |
| Total Suspended Solids    | 29                           | 2          | mg/L         |



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## CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 463646

### LEGEND

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[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

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## CERTIFICATE OF ANALYSIS

|                      |  |                     |                          |
|----------------------|--|---------------------|--------------------------|
| Client:              | Melissa Hoogenhoud                               | Work Order Number:  | 463864                   |
| Company:             | Town of Cochrane - Wastewater                    | PO #:               |                          |
| Address:             | 171 Fourth Ave, Box 490<br>Cochrane, ON, P0L 1C0 | Regulation:         | Information not provided |
| Phone/Fax:           | (705) 272-4232 / (705) 272-2634                  | Project #:          | Discharge                |
| Email:               | Melissa.Hoogenhoud@cochraneontario.com           | DWS #:              |                          |
|                      |  | Sampled By:         | Mike Nelson              |
| Date Order Received: | 5/25/2022  | Analysis Started:   | 5/25/2022                |
| Arrival Temperature: | 15 °C  | Analysis Completed: | 6/1/2022                 |

### WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

| Sample Description           | Lab ID  | Matrix     | Type | Comments | Date Collected | Time Collected |
|------------------------------|---------|------------|------|----------|----------------|----------------|
| South Lagoon - 50% Discharge | 1757498 | Wastewater | Grab |          | 5/25/2022      | 10:40 AM       |

### METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

| Method                         | Lab           | Description  | Reference                              |
|--------------------------------|---------------|--|--|
| Ammonia Water (A42)            | Timmins       | Determination of Ammonia/Ammonium in Water                                 | Modified from EPA 350.1                |
| CBOD (A3)                      | Kirkland Lake | Determination of Carbonaceous Biochemical Oxygen Demand (CBOD) 5-Day.      | Modified from SM-5210-B                |
| E.coli by MF on mFC-BCIG (A10) | Timmins       | Determination of E. coli in water by Membrane Filtration on mFC-BCIG media | Modified from MOE E3371                |
| Field pH (R112)                | Timmins       | Client Supplied Field Determination of pH of Water                         | Field Test                             |
| Field Temp (R113)              | Timmins       | Client Supplied Field Determination of Temperature of Water                | Field Test                             |
| pH of Water (A2.0)             | Timmins       | Determination of Water pH by Ion Selective Electrode                       | Modified from APHA-4500H+ B            |
| Received Temperature (A113)    | Timmins       | Temperature of Sample Upon Receipt   | In House                               |
| TP Water (A23.2)               | Kirkland Lake | Determination of Total Phosphorus in Water.                                | Modified from EPA 365.3 and ESS 310.2, |
| TSS (A27)                      | Timmins       | Determination of Total Suspended Solids in water by gravimetry             | Modified from SM-2540                  |
| Un-ionized NH3 (A42.4)         | Timmins       | Calculation of Un-Ionized Ammonia  | Modified from APHA-4500                |



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## CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 463864

This report has been approved by:

Adam Tam, M.Sc.  
Laboratory Director



## CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 463864

### WORK ORDER RESULTS

|                           |                              |            |              |
|---------------------------|------------------------------|------------|--------------|
| <b>Sample Description</b> | South Lagoon - 50% Discharge |            |              |
| <b>Sample Date</b>        | 5/25/2022 10:40 AM           |            |              |
| <b>Lab ID</b>             | 1757498                      |            |              |
| <b>Field Parameters</b>   | <b>Result</b>                | <b>MDL</b> | <b>Units</b> |
| Field pH                  | 7.78                         | N/A        | pH           |
| Field Temp                | 17.9                         | N/A        | °C           |

|                            |                              |            |              |
|----------------------------|------------------------------|------------|--------------|
| <b>Sample Description</b>  | South Lagoon - 50% Discharge |            |              |
| <b>Sample Date</b>         | 5/25/2022 10:40 AM           |            |              |
| <b>Lab ID</b>              | 1757498                      |            |              |
| <b>General Chemistry</b>   | <b>Result</b>                | <b>MDL</b> | <b>Units</b> |
| Ammonia (as N)             | 0.58                         | 0.01       | mg/L         |
| pH                         | 7.85                         | N/A        | pH           |
| Total Phosphorus (as P)    | 0.597                        | 0.002      | mg/L         |
| Un-ionized Ammonia (Calc.) | 0.012                        | 0.002      | mg/L         |

|                           |                              |            |              |
|---------------------------|------------------------------|------------|--------------|
| <b>Sample Description</b> | South Lagoon - 50% Discharge |            |              |
| <b>Sample Date</b>        | 5/25/2022 10:40 AM           |            |              |
| <b>Lab ID</b>             | 1757498                      |            |              |
| <b>Microbiology</b>       | <b>Result</b>                | <b>MDL</b> | <b>Units</b> |
| Escherichia coli          | 460                          | 10         | CFU/100mL    |



## CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 463864

|                           |                              |            |              |
|---------------------------|------------------------------|------------|--------------|
| <b>Sample Description</b> | South Lagoon - 50% Discharge |            |              |
| <b>Sample Date</b>        | 5/25/2022 10:40 AM           |            |              |
| <b>Lab ID</b>             | 1757498                      |            |              |
| <b>Oxygen Demand</b>      | <b>Result</b>                | <b>MDL</b> | <b>Units</b> |
| Carbonaceous BOD          | 6.4                          | 0.5        | mg/L         |

|                             |                              |            |              |
|-----------------------------|------------------------------|------------|--------------|
| <b>Sample Description</b>   | South Lagoon - 50% Discharge |            |              |
| <b>Sample Date</b>          | 5/25/2022 10:40 AM           |            |              |
| <b>Lab ID</b>               | 1757498                      |            |              |
| <b>Received Temperature</b> | <b>Result</b>                | <b>MDL</b> | <b>Units</b> |
| Received Temperature        | 15                           | N/A        | °C           |

|                           |                              |            |              |
|---------------------------|------------------------------|------------|--------------|
| <b>Sample Description</b> | South Lagoon - 50% Discharge |            |              |
| <b>Sample Date</b>        | 5/25/2022 10:40 AM           |            |              |
| <b>Lab ID</b>             | 1757498                      |            |              |
| <b>Solids</b>             | <b>Result</b>                | <b>MDL</b> | <b>Units</b> |
| Total Suspended Solids    | 18                           | 1          | mg/L         |



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## CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 463864

### LEGEND

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## CERTIFICATE OF ANALYSIS

|                      |  |                     |                          |
|----------------------|--|---------------------|--------------------------|
| Client:              | Melissa Hoogenhoud                               | Work Order Number:  | 464207                   |
| Company:             | Town of Cochrane - Wastewater                    | PO #:               |                          |
| Address:             | 171 Fourth Ave, Box 490<br>Cochrane, ON, P0L 1C0 | Regulation:         | Information not provided |
| Phone:               |  | Project #:          | Discharge                |
| Email:               | Melissa.Hoogenhoud@cochraneontario.com           | DWS #:              |                          |
|                      |  | Sampled By:         | Mike Nelson              |
| Date Order Received: | 5/27/2022  | Analysis Started:   | 5/27/2022                |
| Arrival Temperature: | 16 °C  | Analysis Completed: | 6/6/2022                 |

### WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

| Sample Description           | Lab ID  | Matrix     | Type | Comments | Date Collected | Time Collected |
|------------------------------|---------|------------|------|----------|----------------|----------------|
| South Lagoon - 75% Discharge | 1758632 | Wastewater | Grab |          | 5/27/2022      | 9:45 AM        |

### METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

| Method                         | Lab           | Description  | Reference                              |
|--------------------------------|---------------|--|--|
| Ammonia Water (A42)            | Timmins       | Determination of Ammonia/Ammonium in Water                                 | Modified from EPA 350.1                |
| CBOD (A3)                      | Kirkland Lake | Determination of Carbonaceous Biochemical Oxygen Demand (CBOD) 5-Day.      | Modified from SM-5210-B                |
| E.coli by MF on mFC-BCIG (A10) | Timmins       | Determination of E. coli in water by Membrane Filtration on mFC-BCIG media | Modified from MOE E3371                |
| pH of Water (A2.0)             | Timmins       | Determination of Water pH by Ion Selective Electrode                       | Modified from APHA-4500H+ B            |
| Received Temperature (A113)    | Timmins       | Temperature of Sample Upon Receipt   | In House                               |
| TP Water (A23.2)               | Kirkland Lake | Determination of Total Phosphorus in Water.                                | Modified from EPA 365.3 and ESS 310.2, |
| TSS (A27)                      | Timmins       | Determination of Total Suspended Solids in water by gravimetry             | Modified from SM-2540                  |



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## CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 464207

This report has been approved by:

Adam Tam, M.Sc.  
Laboratory Director



**TESTMARK Laboratories Ltd.**

Committed to Quality and Service

## CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 464207

### WORK ORDER RESULTS

|                           |                              |  |  |
|---------------------------|------------------------------|--|--|
| <b>Sample Description</b> | South Lagoon - 75% Discharge |  |  |
| <b>Sample Date</b>        | 5/27/2022 9:45 AM            |  |  |
| <b>Lab ID</b>             | 1758632                      |  |  |

| <b>General Chemistry</b> | <b>Result</b> | <b>MDL</b> | <b>Units</b> |
|--------------------------|---------------|------------|--------------|
| Ammonia (as N)           | 0.48          | 0.01       | mg/L         |
| pH                       | 8.05          | N/A        | pH           |
| Total Phosphorus (as P)  | 0.478         | 0.002      | mg/L         |

|                           |                              |  |  |
|---------------------------|------------------------------|--|--|
| <b>Sample Description</b> | South Lagoon - 75% Discharge |  |  |
| <b>Sample Date</b>        | 5/27/2022 9:45 AM            |  |  |
| <b>Lab ID</b>             | 1758632                      |  |  |

| <b>Microbiology</b> | <b>Result</b> | <b>MDL</b> | <b>Units</b> |
|---------------------|---------------|------------|--------------|
| Escherichia coli    | 520<br>[460]  | 20         | CFU/100mL    |

|                           |                              |  |  |
|---------------------------|------------------------------|--|--|
| <b>Sample Description</b> | South Lagoon - 75% Discharge |  |  |
| <b>Sample Date</b>        | 5/27/2022 9:45 AM            |  |  |
| <b>Lab ID</b>             | 1758632                      |  |  |

| <b>Oxygen Demand</b> | <b>Result</b> | <b>MDL</b> | <b>Units</b> |
|----------------------|---------------|------------|--------------|
| Carbonaceous BOD     | 2.1           | 0.5        | mg/L         |





## CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 464207

|                             |                              |            |              |
|-----------------------------|------------------------------|------------|--------------|
| <b>Sample Description</b>   | South Lagoon - 75% Discharge |            |              |
| <b>Sample Date</b>          | 5/27/2022 9:45 AM            |            |              |
| <b>Lab ID</b>               | 1758632                      |            |              |
| <b>Received Temperature</b> | <b>Result</b>                | <b>MDL</b> | <b>Units</b> |
| Received Temperature        | 16                           | N/A        | °C           |

|                           |                              |            |              |
|---------------------------|------------------------------|------------|--------------|
| <b>Sample Description</b> | South Lagoon - 75% Discharge |            |              |
| <b>Sample Date</b>        | 5/27/2022 9:45 AM            |            |              |
| <b>Lab ID</b>             | 1758632                      |            |              |
| <b>Solids</b>             | <b>Result</b>                | <b>MDL</b> | <b>Units</b> |
| Total Suspended Solids    | 7.00                         | 0.67       | mg/L         |

## LEGEND

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## CERTIFICATE OF ANALYSIS

|                      |  |                     |                          |
|----------------------|--|---------------------|--------------------------|
| Client:              | Melissa Hoogenhoud                               | Work Order Number:  | 464316                   |
| Company:             | Town of Cochrane - Wastewater                    | PO #:               |                          |
| Address:             | 171 Fourth Ave, Box 490<br>Cochrane, ON, P0L 1C0 | Regulation:         | Information not provided |
| Phone/Fax:           | (705) 272-4232 / (705) 272-2634                  | Project #:          | Discharge                |
| Email:               | Melissa.Hoogenhoud@cochraneontario.com           | DWS #:              |                          |
|                      |  | Sampled By:         | Dominic Jezic            |
| Date Order Received: | 5/30/2022  | Analysis Started:   | 5/30/2022                |
| Arrival Temperature: | 16 °C  | Analysis Completed: | 6/6/2022                 |

### WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

| Sample Description                | Lab ID  | Matrix     | Type | Comments | Date Collected | Time Collected |
|-----------------------------------|---------|------------|------|----------|----------------|----------------|
| South Lagoon - 100% Discharge End | 1759070 | Wastewater | Grab |          | 5/30/2022      |                |

### METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

| Method                         | Lab           | Description  | Reference                              |
|--------------------------------|---------------|--|--|
| Ammonia Water (A42)            | Timmins       | Determination of Ammonia/Ammonium in Water                                 | Modified from EPA 350.1                |
| CBOD (A3)                      | Kirkland Lake | Determination of Carbonaceous Biochemical Oxygen Demand (CBOD) 5-Day.      | Modified from SM-5210-B                |
| E.coli by MF on mFC-BCIG (A10) | Timmins       | Determination of E. coli in water by Membrane Filtration on mFC-BCIG media | Modified from MOE E3371                |
| Field pH (R112)                | Timmins       | Client Supplied Field Determination of pH of Water                         | Field Test                             |
| Field Temp (R113)              | Timmins       | Client Supplied Field Determination of Temperature of Water                | Field Test                             |
| pH of Water (A2.0)             | Timmins       | Determination of Water pH by Ion Selective Electrode                       | Modified from APHA-4500H+ B            |
| Received Temperature (A113)    | Timmins       | Temperature of Sample Upon Receipt   | In House                               |
| TP Water (A23.2)               | Kirkland Lake | Determination of Total Phosphorus in Water.                                | Modified from EPA 365.3 and ESS 310.2, |
| TSS (A27)                      | Timmins       | Determination of Total Suspended Solids in water by gravimetry             | Modified from SM-2540                  |
| Un-ionized NH3 (A42.4)         | Timmins       | Calculation of Un-Ionized Ammonia  | Modified from APHA-4500                |



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## CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 464316

This report has been approved by:

Adam Tam, M.Sc.  
Laboratory Director



## CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 464316

### WORK ORDER RESULTS

|                           |                                   |            |              |
|---------------------------|-----------------------------------|------------|--------------|
| <b>Sample Description</b> | South Lagoon - 100% Discharge End |            |              |
| <b>Sample Date</b>        | 5/30/2022 12:00 AM                |            |              |
| <b>Lab ID</b>             | 1759070                           |            |              |
| <b>Field Parameters</b>   | <b>Result</b>                     | <b>MDL</b> | <b>Units</b> |
| Field pH                  | 7.28                              | N/A        | pH           |
| Field Temp                | 21.1                              | N/A        | °C           |

|                            |                                   |            |              |
|----------------------------|-----------------------------------|------------|--------------|
| <b>Sample Description</b>  | South Lagoon - 100% Discharge End |            |              |
| <b>Sample Date</b>         | 5/30/2022 12:00 AM                |            |              |
| <b>Lab ID</b>              | 1759070                           |            |              |
| <b>General Chemistry</b>   | <b>Result</b>                     | <b>MDL</b> | <b>Units</b> |
| Ammonia (as N)             | 0.30                              | 0.01       | mg/L         |
| pH                         | 7.54                              | N/A        | pH           |
| Total Phosphorus (as P)    | 0.646                             | 0.002      | mg/L         |
| Un-ionized Ammonia (Calc.) | 0.002                             | 0.002      | mg/L         |

|                           |                                   |            |              |
|---------------------------|-----------------------------------|------------|--------------|
| <b>Sample Description</b> | South Lagoon - 100% Discharge End |            |              |
| <b>Sample Date</b>        | 5/30/2022 12:00 AM                |            |              |
| <b>Lab ID</b>             | 1759070                           |            |              |
| <b>Microbiology</b>       | <b>Result</b>                     | <b>MDL</b> | <b>Units</b> |
| Escherichia coli          | 50                                | 10         | CFU/100mL    |



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## CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 464316

|                           |                                   |            |              |
|---------------------------|-----------------------------------|------------|--------------|
| <b>Sample Description</b> | South Lagoon - 100% Discharge End |            |              |
| <b>Sample Date</b>        | 5/30/2022 12:00 AM                |            |              |
| <b>Lab ID</b>             | 1759070                           |            |              |
| <b>Oxygen Demand</b>      | <b>Result</b>                     | <b>MDL</b> | <b>Units</b> |
| Carbonaceous BOD          | 3.0                               | 0.5        | mg/L         |

|                             |                                   |            |              |
|-----------------------------|-----------------------------------|------------|--------------|
| <b>Sample Description</b>   | South Lagoon - 100% Discharge End |            |              |
| <b>Sample Date</b>          | 5/30/2022 12:00 AM                |            |              |
| <b>Lab ID</b>               | 1759070                           |            |              |
| <b>Received Temperature</b> | <b>Result</b>                     | <b>MDL</b> | <b>Units</b> |
| Received Temperature        | 16                                | N/A        | °C           |

|                           |                                   |            |              |
|---------------------------|-----------------------------------|------------|--------------|
| <b>Sample Description</b> | South Lagoon - 100% Discharge End |            |              |
| <b>Sample Date</b>        | 5/30/2022 12:00 AM                |            |              |
| <b>Lab ID</b>             | 1759070                           |            |              |
| <b>Solids</b>             | <b>Result</b>                     | <b>MDL</b> | <b>Units</b> |
| Total Suspended Solids    | 46.70                             | 0.67       | mg/L         |



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## CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 464316

### LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

MDL: Method detection limit or minimum reporting limit.

Quality Control: All associated Quality Control data is available on request.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.