

COCHRANE

WATER / WASTE WATER SERVICES



GLACKMEYER LAGOON

2020 ANNUAL REPORT

Reference Index

2020 Annual Report

- A- Annual Performance Report**
- B- Annual Summary**
- C- Discharge Analytical 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

RAW SEWAGE	MONTHLY AVERAGE RESULTS
BOD	81.73 mg/l
SUSPENDED SOLIDS	85.84 mg/l
TOTAL PHOSPHORUS	2.85 mg/l
TKN	23.89 mg/l
AMMONIA	18.27 mg/l
CBOD	74.23 mg/L
pH	7.82 mg/L

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

Test	Prior to Discharge May 5, 2020	Beginning of Discharge May 19, 2020	During Discharge (25%) May 21, 2020	During Discharge (50%) May 22, 2019	During Discharge (75%) May 24, 2019	End of Discharge May 27, 2019
pH	8.25	8.06	7.52	7.41	7.88	8.26
CBOD	5.1	3.7	14	12	2.6	6.8
SUSPENDED SOLIDS	48.7	20.5	30	33	25.3	11.7
PHOSPHORUS	8.25	0.657	1.99	1.87	1.19	0.653
E.Coli	0	1	2	295	70	16
Un-Ionized AMMONIA	0.004	0.013	0.021	0.017	0.029	0.01
AMMONIA	0.14	0.04	6.58	4.22	1.11	0.14

- 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 2021.

- 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) and the Total Suspended Solids (40 mg/L). However, the Phosphorus Criteria (1.0mg/L) has been exceeded with an annual average of 1.272 mg/L (SAC Report # 7785-BQAG4S). 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;

DATE	TYPE	DURATION (hours)	FLOW (m3)
03/05/2019	Lagoon Overflow	8544	4500
06/10/2020	Lagoon Overflow	Continuous	N/A

- 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.

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

None.

This is the report on the Glackmeyer Lagoon for the year 2020. 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

Respectfully submitted and revised by:

Lynn Chapleau
Infrastructure Supervisor

ANNUAL SUMMARY

DISCHARGE

ANALYTICAL

REPORTS



CERTIFICATE OF ANALYSIS

Client:	Melissa Hoogenhoud	Work Order Number:	399244
Company:	Town of Cochrane - Wastewater	PO #:	9184
Address:	171 Fourth Ave, Box 490 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:	Rob McNabb
Date Order Received:	5/5/2020	Analysis Started:	5/5/2020
Arrival Temperature:	10 °C	Analysis Completed:	5/13/2020

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 % Discharge	1533853	Wastewater	Grab		5/5/2020	9:10 AM
South Lagoon - Prior % Discharge	1533854	Wastewater	Grab		5/5/2020	9:10 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).	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
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

REPORT COMMENTS

BACTI LOT #1929
Unionized ammonia calculated using received temperature and lab pH.



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 399244

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director



CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 399244

WORK ORDER RESULTS

Sample Description	South Lagoon - Prior % Discharge		
Sample Date	5/5/2020 9:10 AM		
Lab ID	1533853		
General Chemistry	Result	MDL	Units
Ammonia (as N)	0.14	0.01	mg/L
pH	8.25	N/A	pH
Total Phosphorus (as P)	0.393	0.002	mg/L
Un-ionized Ammonia (Calc.)	0.004	0.002	mg/L

Sample Description	South Lagoon - Prior % Discharge		
Sample Date	5/5/2020 9:10 AM		
Lab ID	1533854		
Microbiology	Result	MDL	Units
Escherichia coli	0	1	CFU/100mL

Sample Description	South Lagoon - Prior % Discharge		
Sample Date	5/5/2020 9:10 AM		
Lab ID	1533853		
Oxygen Demand	Result	MDL	Units
Carbonaceous BOD	5.1	0.5	mg/L



CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 399244

Sample Description	South Lagoon - Prior % Discharge		
Sample Date	5/5/2020 9:10 AM		
Lab ID	1533853		
Solids	Result	MDL	Units
Total Suspended Solids	48.70	0.67	mg/L

LEGEND

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

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MDL: Method detection limit or minimum reporting limit.

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

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Benzo(b)fluoranthene: Results for benzo(b)fluoranthene may include contributions from benzo(j)fluoranthene.

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.



CERTIFICATE OF ANALYSIS

Client:	Lynn Chapleau	Work Order Number:	400362
Company:	Town of Cochrane - Wastewater	PO #:	9184
Address:	171 Fourth Ave, Box 490 Cochrane, ON, P0L 1C0	Regulation:	Information not provided
Phone/Fax:	(705) 272-5067 / (705) 272-2634	Project #:	Discharge
Email:	lynn.chapleau@cochraneontario.com	DWS #:	
		Sampled By:	Aaron Morrison
Date Order Received:	5/19/2020	Analysis Started:	5/20/2020
Arrival Temperature:	16 °C	Analysis Completed:	5/27/2020

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	1538161	Wastewater	Grab		5/19/2020	8:33 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).	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: 400362

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director



CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 400362

WORK ORDER RESULTS

Sample Description	South Lagoon - 100% Discharge		
Sample Date	5/19/2020 8:33 AM		
Lab ID	1538161		
Field Parameters	Result	MDL	Units
Field pH	9.05	N/A	pH
Field Temp	20.5	N/A	°C

Sample Description	South Lagoon - 100% Discharge		
Sample Date	5/19/2020 8:33 AM		
Lab ID	1538161		
General Chemistry	Result	MDL	Units
Ammonia (as N)	0.04	0.01	mg/L
pH	8.06	N/A	pH
Total Phosphorus (as P)	0.657	0.002	mg/L
Un-ionized Ammonia (Calc.)	0.013	0.002	mg/L

Sample Description	South Lagoon - 100% Discharge		
Sample Date	5/19/2020 8:33 AM		
Lab ID	1538161		
Microbiology	Result	MDL	Units
Escherichia coli	1	1	CFU/100mL



CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 400362

Sample Description	South Lagoon - 100% Discharge		
Sample Date	5/19/2020 8:33 AM		
Lab ID	1538161		
Oxygen Demand	Result	MDL	Units
Carbonaceous BOD	3.7	0.5	mg/L

Sample Description	South Lagoon - 100% Discharge		
Sample Date	5/19/2020 8:33 AM		
Lab ID	1538161		
Received Temperature	Result	MDL	Units
Received Temperature	16	N/A	°C

Sample Description	South Lagoon - 100% Discharge		
Sample Date	5/19/2020 8:33 AM		
Lab ID	1538161		
Solids	Result	MDL	Units
Total Suspended Solids	20.5	1	mg/L



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Town of Cochrane - Wastewater

Work Order Number: 400362

LEGEND

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

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Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

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



CERTIFICATE OF ANALYSIS

Client:	Melissa Hoogenhoud	Work Order Number:	400716
Company:	Town of Cochrane - Wastewater	PO #:	9184
Address:	171 Fourth Ave, Box 490 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:	Tyler Cheff
Date Order Received:	5/21/2020	Analysis Started:	5/21/2020
Arrival Temperature:	18 °C	Analysis Completed:	5/28/2020

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	1538774	Wastewater	Grab		5/21/2020	8:30 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).	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: 400716

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director



CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 400716

WORK ORDER RESULTS

Sample Description	South Lagoon - 25% Discharge		
Sample Date	5/21/2020 8:30 AM		
Lab ID	1538774		
Field Parameters	Result	MDL	Units
Field pH	7.18	N/A	pH
Field Temp	11.6	N/A	°C

Sample Description	South Lagoon - 25% Discharge		
Sample Date	5/21/2020 8:30 AM		
Lab ID	1538774		
General Chemistry	Result	MDL	Units
Ammonia (as N)	6.58	0.02	mg/L
pH	7.52	N/A	pH
Total Phosphorus (as P)	1.99	0.02	mg/L
Un-ionized Ammonia (Calc.)	0.021	0.002	mg/L

Sample Description	South Lagoon - 25% Discharge		
Sample Date	5/21/2020 8:30 AM		
Lab ID	1538774		
Microbiology	Result	MDL	Units
Escherichia coli	2	2	CFU/100mL



CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 400716

Sample Description	South Lagoon - 25% Discharge		
Sample Date	5/21/2020 8:30 AM		
Lab ID	1538774		
Oxygen Demand	Result	MDL	Units
Carbonaceous BOD	14	3	mg/L

Sample Description	South Lagoon - 25% Discharge		
Sample Date	5/21/2020 8:30 AM		
Lab ID	1538774		
Received Temperature	Result	MDL	Units
Received Temperature	18	N/A	°C

Sample Description	South Lagoon - 25% Discharge		
Sample Date	5/21/2020 8:30 AM		
Lab ID	1538774		
Solids	Result	MDL	Units
Total Suspended Solids	30.0	1.3	mg/L



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 400716

LEGEND

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Benzo(b)fluoranthene: Results for benzo(b)fluoranthene may include contributions from benzo(j)fluoranthene.

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.



CERTIFICATE OF ANALYSIS

Client:	Melissa Hoogenhoud	Work Order Number:	400864
Company:	Town of Cochrane - Wastewater	PO #:	9184
Address:	171 Fourth Ave, Box 490 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:	Tyler Cheff
Date Order Received:	5/22/2020	Analysis Started:	5/22/2020
Arrival Temperature:	17 °C	Analysis Completed:	6/1/2020

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	1539301	Wastewater	Distribution		5/22/2020	8:40 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).	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



TESTMARK Laboratories Ltd.

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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 400864

REPORT COMMENTS

E. coli sample received in PET bottle.

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director



CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 400864

WORK ORDER RESULTS

Sample Description	South Lagoon - 50% Discharge		
Sample Date	5/22/2020 8:40 AM		
Lab ID	1539301		
Field Parameters	Result	MDL	Units
Field pH	7.25	N/A	pH
Field Temp	12.6	N/A	°C

Sample Description	South Lagoon - 50% Discharge		
Sample Date	5/22/2020 8:40 AM		
Lab ID	1539301		
General Chemistry	Result	MDL	Units
Ammonia (as N)	4.22	0.01	mg/L
pH	7.41	N/A	pH
Total Phosphorus (as P)	1.87	0.01	mg/L
Un-ionized Ammonia (Calc.)	0.017	0.002	mg/L

Sample Description	South Lagoon - 50% Discharge		
Sample Date	5/22/2020 8:40 AM		
Lab ID	1539301		
Microbiology	Result	MDL	Units
Escherichia coli	285 [295]	5	CFU/100mL



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 400864

Sample Description	South Lagoon - 50% Discharge		
Sample Date	5/22/2020 8:40 AM		
Lab ID	1539301		
Oxygen Demand	Result	MDL	Units
Carbonaceous BOD	12	3	mg/L

Sample Description	South Lagoon - 50% Discharge		
Sample Date	5/22/2020 8:40 AM		
Lab ID	1539301		
Received Temperature	Result	MDL	Units
Received Temperature	17	N/A	°C

Sample Description	South Lagoon - 50% Discharge		
Sample Date	5/22/2020 8:40 AM		
Lab ID	1539301		
Solids	Result	MDL	Units
Total Suspended Solids	33	2	mg/L



TESTMARK Laboratories Ltd.

Committed to Quality and Service

CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 400864

LEGEND

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

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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.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Benzo(b)fluoranthene: Results for benzo(b)fluoranthene may include contributions from benzo(j)fluoranthene.

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.



CERTIFICATE OF ANALYSIS

Client:	Melissa Hoogenhoud	Work Order Number:	400962
Company:	Town of Cochrane - Wastewater	PO #:	9184
Address:	171 Fourth Ave, Box 490 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:	Chris Crawford
Date Order Received:	5/25/2020	Analysis Started:	5/26/2020
Arrival Temperature:	18 °C	Analysis Completed:	6/1/2020

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	1539616	Wastewater	Grab		5/24/2020	12:20 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).	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



TESTMARK Laboratories Ltd.

Committed to Quality and Service

CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 400962

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director



CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 400962

WORK ORDER RESULTS

Sample Description	South Lagoon - 75% Discharge		
Sample Date	5/24/2020 12:20 PM		
Lab ID	1539616		
Field Parameters	Result	MDL	Units
Field pH	7.88	N/A	pH
Field Temp	18.3	N/A	°C

Sample Description	South Lagoon - 75% Discharge		
Sample Date	5/24/2020 12:20 PM		
Lab ID	1539616		
General Chemistry	Result	MDL	Units
Ammonia (as N)	1.11	0.01	mg/L
pH	7.88	N/A	pH
Total Phosphorus (as P)	1.190	0.006	mg/L
Un-ionized Ammonia (Calc.)	0.029	0.002	mg/L

Sample Description	South Lagoon - 75% Discharge		
Sample Date	5/24/2020 12:20 PM		
Lab ID	1539616		
Microbiology	Result	MDL	Units
Escherichia coli	70	5	CFU/100mL



TESTMARK Laboratories Ltd.

Committed to Quality and Service

CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 400962

Sample Description	South Lagoon - 75% Discharge		
Sample Date	5/24/2020 12:20 PM		
Lab ID	1539616		
Oxygen Demand	Result	MDL	Units
Carbonaceous BOD	2.6	0.5	mg/L

Sample Description	South Lagoon - 75% Discharge		
Sample Date	5/24/2020 12:20 PM		
Lab ID	1539616		
Received Temperature	Result	MDL	Units
Received Temperature	18	N/A	°C

Sample Description	South Lagoon - 75% Discharge		
Sample Date	5/24/2020 12:20 PM		
Lab ID	1539616		
Solids	Result	MDL	Units
Total Suspended Solids	25.3	1.3	mg/L



TESTMARK Laboratories Ltd.

Committed to Quality and Service

CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 400962

LEGEND

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

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MDL: Method detection limit or minimum reporting limit.

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

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Benzo(b)fluoranthene: Results for benzo(b)fluoranthene may include contributions from benzo(j)fluoranthene.

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.



CERTIFICATE OF ANALYSIS

Client:	Melissa Hoogenhoud	Work Order Number:	401095
Company:	Town of Cochrane - Wastewater	PO #:	3184
Address:	171 Fourth Ave, Box 490 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:	Aaron Morrison
Date Order Received:	5/26/2020	Analysis Started:	5/26/2020
Arrival Temperature:	14 °C	Analysis Completed:	6/3/2020

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	1540040	Wastewater	Grab		5/26/2020	9:00 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).	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: 401095

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director



CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 401095

WORK ORDER RESULTS

Sample Description	South Lagoon - 100% Discharge		
Sample Date	5/26/2020 9:00 AM		
Lab ID	1540040		
Field Parameters	Result	MDL	Units
Field pH	8.28	N/A	pH
Field Temp	19.5	N/A	°C

Sample Description	South Lagoon - 100% Discharge		
Sample Date	5/26/2020 9:00 AM		
Lab ID	1540040		
General Chemistry	Result	MDL	Units
Ammonia (as N)	0.14	0.01	mg/L
pH	8.26	N/A	pH
Total Phosphorus (as P)	0.653	0.002	mg/L
Un-ionized Ammonia (Calc.)	0.010	0.002	mg/L

Sample Description	South Lagoon - 100% Discharge		
Sample Date	5/26/2020 9:00 AM		
Lab ID	1540040		
Microbiology	Result	MDL	Units
Escherichia coli	16	2	CFU/100mL



CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 401095

Sample Description	South Lagoon - 100% Discharge		
Sample Date	5/26/2020 9:00 AM		
Lab ID	1540040		
Oxygen Demand	Result	MDL	Units
Carbonaceous BOD	6.8	0.5	mg/L

Sample Description	South Lagoon - 100% Discharge		
Sample Date	5/26/2020 9:00 AM		
Lab ID	1540040		
Received Temperature	Result	MDL	Units
Received Temperature	14	N/A	°C

Sample Description	South Lagoon - 100% Discharge		
Sample Date	5/26/2020 9:00 AM		
Lab ID	1540040		
Solids	Result	MDL	Units
Total Suspended Solids	11.70	0.67	mg/L



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 401095

LEGEND

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

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MDL: Method detection limit or minimum reporting limit.

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

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

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

BYPASS SUMMARY
NOTIFICATION AND LAB RESULTS

GLACKMEYER LAGOON
OVERFLOW BYPASS, SPILL, OR LEAK REPORTING ID #
120002068

Spills Action Center Phone No. 1-800-268-6060
MOH Phone No. 1-800-461-1818

Date: MAY 3/19 Time of Call: 1053 a.m./p.m.

Reference #: 903269 Person Who Called: ARON MORRISON

SAC
MOM

Office Called: 1053 Reported ^{TO} By: BLAKE TURNER
" " 1100 " TO KAYLIN
Bypass: _____ Spill: _____ Leak: _____ Overflow:

Location of Incident: GLACKMEYER LAGOON

Time of Incident: 0900 a.m./p.m. Receiver: BROWER CREEK

Details of Incident: OVERFLOW DUE TO SPRINK
RUN OFF

Downstream Users: NONE

Possible Effects on Receiver, Environment or Downstream Users: NO

NOTE: Take 2 Raw Sewage Samples at the start and end Per Incident & Have them Tested for:
1. 5-day BOD, Suspended Solids, Total Phosphorus and TKN

Addition Calls

Town Hall: Phone No. 272-4361 Fax No. 272-6068 Time of Call: _____

Details of Call: _____

Termination of Incident

Date: April 24/20 Time of Call: 8:55am Person Contacted: AKIKO

Time of Termination: 8:30am Approximate Volume: 4,500 Cu. Meters

Current Status: Chlorinating? Yes: _____ No: Explain: _____

Further Action Required: _____

Reported By: Melissa Hoogenhaud



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CERTIFICATE OF ANALYSIS

Client:	Melissa Hoogenhoud	Work Order Number:	371021
Company:	Town of Cochrane - Wastewater	PO #:	
Address:	171 Fourth Ave, Box 490 Cochrane, ON, P0L 1C0	Regulation:	Information not provided
Phone/Fax:	(705) 272-4232 / (705) 272-2634	Project #:	Lagoon Overflow
Email:	Melissa.Hoogenhoud@cochraneontario.com	DWS #:	
		Sampled By:	Aaron Morrison
Date Order Received:	5/3/2019	Analysis Started:	5/6/2019
Arrival Temperature:	6 °C	Analysis Completed:	5/13/2019

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
Lagoon Overflow	1434196	Wastewater	Grab		5/3/2019	11:10 AM

METHODS AND INSTRUMENTATION

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

Method	Lab	Description	Reference
KL-BOD5 (K3)	Kirkland Lake	Determination of 5-Day Biological Oxygen Demand (BOD5)	Modified from APHA-5210B
KL-CBOD5 (K3)	Kirkland Lake	Determination of 5-Day Carbonaceous Biological Oxygen Demand (cBOD5)	Modified from APHA-5210B
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: 371021

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director



CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 371021

WORK ORDER RESULTS

Sample Description		Lagoon Overflow	
Lab ID	1434196		
General Chemistry	Result	MDL	Units
Total Phosphorus (as P)	0.415	0.002	mg/L

Sample Description		Lagoon Overflow	
Lab ID	1434196		
Oxygen Demand	Result	MDL	Units
BOD (5 day)	5.81	2.4	mg/L
Carbonaceous BOD	4.97	2.4	mg/L

Sample Description		Lagoon Overflow	
Lab ID	1434196		
Solids	Result	MDL	Units
Total Suspended Solids	7	0.67	mg/L

LEGEND

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MDL: Method detection limit or minimum reporting limit.

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

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Benzo(b)fluoranthene: Results for benzo(b)fluoranthene may include contributions from benzo(j)fluoranthene.

SEWAGE PLANT/LIFT STATIONS REPORTING ID #

GLACKMEYER LAGOON
OVERFLOW BYPASS, SPILL, OR LEAK REPORTING ID #
1200002068

Spills Action Center Phone No. 1-800-268-6060
MOH Phone No. 1-800-461-1818

Date: OCT 6/20

Time of Call: 1257 a.m./p.m.

Reference #: 904796

Person Who Called: AARON MORRISON

Office Called: SAC

Reported By: SATIMA JABEN
MICHELLE ZAGRODNIK

Bypass: _____

Spill: _____

Leak: _____

Overflow:

Location of Incident: GLACKMEYER LAGOON

Time of Incident: 0845 a.m./p.m. Receiver: BROWER CREEK

Details of Incident: LAGOON OVERFLOWING DUE TO RAIN
PLUS IT'S AT CAPACITY.

Downstream Users: NONE

Possible Effects on Receiver, Environment or Downstream Users: NO

NOTE: Take 2 Raw Sewage Samples at the start and end Per Incident & Have them Tested for:
1. 5-day BOD, Suspended Solids, Total Phosphorus and TKN

Addition Calls

Town Hall: Phone No. 272-4361 Fax No. 272-6068 Time of Call: _____

Details of Call: _____

Termination of Incident

Date: _____ Time of Call: _____ Person Contacted: _____

Time of Termination: _____ Approximate Volume: _____ Cu. Meters

Current Status: Chlorinating? Yes: _____ No: _____ Explain: _____

Further Action Required: _____

Reported By: _____

TIME
1257
1310



CERTIFICATE OF ANALYSIS

Client:	Melissa Hoogenhoud	Work Order Number:	413524
Company:	Town of Cochrane - Wastewater	PO #:	
Address:	171 Fourth Ave, Box 490 Cochrane, ON, P0L 1C0	Regulation:	Information not provided
Phone/Fax:	(705) 272-4232 / (705) 272-2634	Project #:	Lagoon Overflow
Email:	Melissa.Hoogenhoud@cochraneontario.com	DWS #:	
		Sampled By:	Aaron Morrison
Date Order Received:	10/7/2020	Analysis Started:	10/8/2020
Arrival Temperature:	5 °C	Analysis Completed:	10/19/2020

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
Lagoon Overflow - South	1584312	Wastewater	Grab		10/6/2020	1:30 PM

METHODS AND INSTRUMENTATION

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

Method	Lab	Description	Reference
BOD (A3)	Kirkland Lake	Determination of Biochemical Oxygen Demand (BOD)	Modified from SM-5210 B
CBOD (A3)	Kirkland Lake	Determination of Carbonaceous Biochemical Oxygen Demand (CBOD).	Modified from SM-5210-B
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
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



TESTMARK Laboratories Ltd.

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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 413524

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director



CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 413524

WORK ORDER RESULTS

Sample Description	Lagoon Overflow - South		
Sample Date	10/6/2020 1:30 PM		
Lab ID	1584312		
Field Parameters	Result	MDL	Units
Field pH	7.89	N/A	pH
Field Temp	12.6	N/A	°C

Sample Description	Lagoon Overflow - South		
Sample Date	10/6/2020 1:30 PM		
Lab ID	1584312		
General Chemistry	Result	MDL	Units
Total Phosphorus (as P)	0.547	0.002	mg/L

Sample Description	Lagoon Overflow - South		
Sample Date	10/6/2020 1:30 PM		
Lab ID	1584312		
Oxygen Demand	Result	MDL	Units
BOD (5 day)	10.4	1	mg/L
Carbonaceous BOD	14.3	1	mg/L



CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 413524

Sample Description	Lagoon Overflow - South		
Sample Date	10/6/2020 1:30 PM		
Lab ID	1584312		
Solids	Result	MDL	Units
Total Suspended Solids	22.00	0.67	mg/L

LEGEND

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