

COCHRANE

WATER / WASTE WATER SERVICES



WASTEWATER TREATMENT PLANT

2021 ANNUAL REPORT

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2021 Annual Report

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ANNUAL
PERFORMANCE
REPORT

Annual Performance Report

This report is prepared to comply with Amended Environmental Compliance Approval Number 2737-BD4JYH issued June 28, 2019. The report shall contain:

- (a) A summary and interpretation of all Influent monitoring data, including sewage characteristics, flow rates and a comparison to the values used in the design of the Works;

FLOWS	
Total Flow	<i>511, 050 cubic meters</i>
Average Daily Flow	<i>1, 396 cubic meters</i>
Peak Hydraulic Flow	<i>2, 647 cubic meters</i>

RAW SEWAGE RESULTS

RAW SEWAGE	MONTHLY AVERAGE RESULTS
BOD ₍₅₎	94.74 mg/l
TOTAL SUSPENDED SOLIDS	127.48 mg/l
TOTAL PHOSPHORUS	4.00 mg/l
TKN (as N)	60.22 mg/l
AMMONIA & AMMONIA NITROGEN	27.83 mg/l
pH	7.45 mg/L

- (b) A summary and interpretation of all Final Effluent monitoring data, including concentration, flow rates, loading and a comparison to the design objectives and compliance limits in this Approval, including an overview of the success and adequacy of the Works;

FINAL EFFLUENT RESULTS

FINAL EFFLUENT	ANNUAL AVERAGE RESULTS
BOD ₍₅₎	2.63 mg/l
TOTAL SUSPENDED SOLIDS	3.84 mg/l
TOTAL PHOSPHORUS	0.14 mg/l
TKN (as N)	6.98 mg/l
AMMONIA	0.29 mg/l
CHLORINE RESIDUAL	0.0 mg/l
NITRITE	0.07 mg/l
NITRATE	23.39 mg/l
CBOD ₍₅₎	1.83 mg/l
E.COLI	67.05 CFU/100ml
WAS pH MAINTAINED BETWEEN 6.0-9.5 @ ALL TIMES?	Yes

The total flow in 2021 was 511,050 cubic meters which represents a 14 % decrease from 2020. The total flow in 2021 was 26 % of the average day flow design capacity.

The following represents removal efficiencies for the year 2021.

BOD ₍₅₎	88.92%
TOTAL SUSPENDED SOLIDS	95.89%
TOTAL PHOSPHORUS	95.77%
TKN (as N)	85.77%
AMMONIA	96.29%
AVERAGE REMOVAL EFFICIENCY	92.53%

The above represents an increase in overall operating efficiency of 2.5 % over the year 2021.

- (c) A summary of any deviations from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year;

None

- (d) A summary of all operating issues encountered and corrective actions taken;

1. *Repairs to Auger – Key and Bolt*
2. *Installed strainer before backflow preventer on water line in pump room.*

- (e) A summary of all normal and emergency repairs and maintenance activities carried out on any major structure, equipment, apparatus or mechanism forming part of the Works;

1. *Drained and cleaned Contact Chamber*
2. *Cleaned out Grit Chamber*
3. *Changed hose on Ferric Pump*
4. *Replaced bulbs on ultraviolet system*
5. *Replaced filters on Blower*

Other maintenance involved routine oiling, greasing, cleaning, servicing etc.

- (f) A summary of any effluent quality assurance or control measures undertaken;

The monitoring program consists of regular daily rounds ensuring all equipment is functioning and that daily temperature, pH levels, chlorine residuals, dissolved oxygen, Phosphorus and Ammonia tests are recorded, and controlled. Sludge Blanket levels are also monitored and controlled on a daily basis along with scum removal. Monthly samples are taken for BOD, Suspended Solids, TKN, Nitrite, Nitrate, Weekly Samples were taken for E.Coli and Quarterly Samples were taken for Acute Lethality.

- (g) A summary of the calibration and maintenance carried out on all Influent and Final Effluent monitoring equipment to ensure that the accuracy is within the tolerance of that equipment as required in the Approval or recommended by the manufacturer;

Attached to this report is the 2021 calibration records for the instrumentation at the Waste Water Treatment Plant. In 2022 the instruments will once again be checked for their accuracy.

- (h) A summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any required under the following situations: (i) when any of the design objectives is not achieved more than 50% of the time in a year or there is an increasing trend in deterioration of Final Effluent quality and (ii) when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity;

The attached Data Summary shows the Cochrane Waste Water Treatment Plant has not exceeded the effluent concentrations for the Biochemical Oxygen Demand (20 mg/l), Total Suspended Solids (20 mg/L) and Phosphorus Criteria (1.0 mg/l), as specified in Schedule C of the aforementioned certificate of approval. The pH level has been maintained.

Compliance - (Certificate of Approval) The peak hydraulic flow capacity of 11,500 cu. Meters / day was not exceeded during the year 2021.

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

It is anticipated that sludge volume haulage for the year 2022 should be equal to or less than that of 2021 as the Plant is operating at or close to its maximum efficiency.

SLUDGE VOLUME HAULED

YEAR	SLUDGE AMOUNT HAULED
2017	2484 M3
2018	2685 M3
2019	3504 M3
2020	3161 M3
2021	4325 M3

The Town of Cochrane has retained C& H Hauling of Matheson Ontario (C of A 9477-5MGIMT, ECA # H11000003605) to haul and handle the sludge from the Water Pollution Control Plant. C&H Pumping advises that the sludge is dumped at the Landfill Sites (Lot 2, Con2 Fournier Township and Lot 2, Con 4 Carr Township) and not used for any other purpose.

- (j) A summary of any complaints received and any steps taken to address the complaints;

We have received a complaint from customer due to odor, after investigation issues of odor was coming from neighbors not from the plant.

- (k) A summary of all Bypass, spill, Overflows within the meaning of Part X of EPA and abnormal discharge events and other abnormal operating conditions;

The bypass alarm signaled 7 overflows for the year 2021.

DATE	TYPE	DURATION (hours)	FLOW (m3)
2021/03/11	Overflow	4.5	183.7
2021/03/20	Overflow	5.5	82
2021/03/21	Overflow	14.5	437
2021/03/24	Overflow	26.5	866

2021/04/08	Overflow	6.25	647
2021/05/22	Overflow	5.25	730
2021/12/16	Overflow	24.5	1,512.2

The Overflow events were triggered by spring runoff and heavy rains. All bypass /overflow events have been tested for all specified parameters, as per attached Bypass Summary.

The log date, time and duration of any bypasses (overflow) or upset condition will be recorded and sampled for BOD, suspended Solids and Total Phosphorus. Further, the Spills Action Centre (SAC) will be notified, with the completed form sent to the MOE District Office, which is a requirement.

- (l) A copy of all Notice of Modifications to Sewage Works submitted to the Water Supervisor under paragraph 1.d. of Condition 10, with a summary report on status of implementation of all modificatons;

None

- (m) A summary of efforts made to achieve conformance with Procedure F-5-1 including but not limited to projects undertaken and completed in the sanitary sewer system that result in overflow Bypass/Overflow elimination including expenditures and proposed projects to eliminate Bypass/Overflow with estimated budget forecast for the year following that for which the report is submitted.

None

This is the report on the Cochrane Waste Water Treatment Plant for the year 2021. 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

ANNUAL SUMMARY 2021

Municipality: **Cochrane (PUC)**
 Project Name: **Cochrane Water Pollution Control Plant**
 Project Number: **120000355**
 Project Location: **Cochrane, ON**

Month	Parameter	January	February	March	April	May	June	July	August	September	October	November	December	TOTAL	AVERAGE	MAXIMUM	MINIMUM
	Total Flow	27358.63	17618.38	63718.5	65766.15	55105.14	43102.62	37959.53	34955.27	43833.24	46885.25	38024.8	36722.58	511050.09	42587.508	65766.15	17618.38
Influent	Peak Rate	1612.6	1242.5	5479	4980.6	2539.8	2446.82	1803	2399	2179	2439	1832	2812.3	31765.62	2647.14	5479	1242.5
Bypass	Plant-Vol.			1568.75	647	729.9							1512.2	4457.85	1114.46	1568.75	647
	Time - Hrs			51	6.25	5.25							24.5	87	21.75	51	5.25
Raw	Susp. solids	220	105	77	66.3	29.5	263	169	130	230	84	60	96	1529.8	127.48	263	29.5
	BOD	74.2	130	73	49	17	3.7	120	130	170	130	120	120	1136.9	94.74	170	3.7
	TKN	111	46.8	140	30.7	18.5	67.1	38.2	37.3	64	36.3	72.3	60.4	722.6	60.22	140	18.5
	Phosphorus	5.69	4.47	4.18	1.82	1.56	4.48	3.34	4.8	6.31	4.14	3.64	3.51	47.94	4.00	6.31	1.56
	Ammonia	42.8	30.7	53.8	17.2	10.8	27.5	3.28	28.2	39.9	19	31.5	29.3	333.98	27.83	53.8	3.28
	Nitrate	0.05	0.01	0.1	0.05	0.57	0.05	0.1	0.05	0.05	0.05	0.05	0.05	1.18	0.10	0.57	0.01
	Nitrite	0.05	0.01	0.1	0.47	0.44	0.05	0.1	0.05	0.05	0.05	0.05	0.05	1.47	0.12	0.47	0.01
	Phosphate	10.9	8.02	5.52	2.92	2.5	5.82	5.26	7.28	12	9.86	3.6	4.09	77.77	6.48	12	2.5
	pH	7.26	7.29	7.27	7.53	7.54	7.4	7.47	7.73	7.88	7.43	7.3	7.32	89.42	7.45	7.88	7.26
	CBOD	68.7	110	75.5	33	23	170	64	98	120	110	110	110	1092.2	91.02	170	23
Effluent	Susp. solids	3.3	5.7	3.5	10.3	3	4	4.3	3	2.3	0.67	3	3	46.07	3.84	10.3	0.67
	BOD	1.5	2.5	6.7	4.1	1.3	3.5	2.8	2.3	1.7	1.7	1.6	1.8	31.5	2.63	6.7	1.3
	Phosphorus	0.0817619	0.0977368	0.1506087	0.143385	0.14	0.129	0.14808	0.2425833	0.1387727	0.1859524	0.1461304	0.1275	1.7355112	0.14	0.2425833	0.0817619
	Ammonia	0.1590476	0.2021053	0.3442857	0.118	0.0977273	0.2817647	1.1908	0.2354167	0.2005	0.26	0.16	0.2227273	3.4723746	0.29	1.1908	0.0977273
	Nitrate	25.1	28	31	12	10.2	22.9	16.1	29.7	25.2	25.2	30.1	25.2	280.7	23.39	31	10.2
	Nitrite	0.05	0.1	0.05	0.05	0.05	0.05	0.23	0.05	0.05	0.05	0.05	0.05	0.83	0.07	0.23	0.05
	TKN	0.4	4.3	10.9	4.5	3.6	8.2	17.5	3.3	8.6	3.9	9.5	9.1	83.8	6.98	17.5	0.4
	CBOD	0.8	1.6	4	2.7	1.5	2.3	1.6	1.6	1.1	1.6	1.4	1.8	22	1.83	15.2	0.035
	Phosphate	0.09	0.057	0.4	0.171	0.078	15.2	0.035	0.174	0.171	0.199	0.128	0.125	16.828	2.67	525	0.035
	E.Coli	7.25	5.5	28	14.75	525	12	15.25	60	33.75	45.5	41.6	16	804.6	67.05	525	5.5
Date	Acute Lethality		0					0				0		0	0.00	0	0
	Air Used																
	Influent Temp	12.190476	11.3	10.269565	9.959	12.968182	14.905556	14.716667	16.2875	16.027273	15.212857	13.831818	12.922727	160.59162	13.38	16.2875	9.959
	Influent pH	7.940524	8.0321053	7.9195652	7.753	7.5268182	7.52	7.5075	7.5545833	7.6081818	7.9671429	7.7781818	7.8313636	92.938966	7.74	8.0321053	
	Aeration Temp.	9.65	8.109375	8.8805	9.9578947	13.180952	15.76	16.43913	24.9	16.084211	15.27	12.036842	9.4	159.6689	13.31	24.9	8.109375
	30 Min. S.S.	36.531579	35.2	25.9	27.526316	58.105263	34.583333	46.181818	27.095238	31.368421	30.647059	32.947368	32.972222	419.05862	34.92	58.105263	25.9
	D.O. % Level	8.7331579	5.786875	4.9995	5.0789474	5.41	3.092	5.386087	5.4795238	4.9647368	5.8236842	5.4125	5.4378947	65.604907	5.47	8.7331579	3.092
	Effluent pH	7.1631579	7.115625	6.815	7.1863158	7.1985714	7.104	6.8473913	6.6809524	6.8636842	6.8995	6.654	6.7673684	83.295566	6.94	7.1985714	6.654
	Effluent Temp	9.6428571	7.8094737	8.4608696	9.98	13.036364	15.561111	16.34	17.741667	16.127273	15.080952	12.022727	9.6181818	151.42148	12.62	17.741667	7.8094737
Plant	Wasting Vol. m3	46540.8	33277.86	99510.23	103710.63	84910.97	68413.61	60590.35	45059.06	52152.97	56390	45965.29	46603	743124.77	61927.06	0	0
	Chlorine (Kg)													0			
	Cl Dosage (mg/l)													0		0	0
	Cl Residual(mg/l)	0.0005316	0	0	0	0.0000	0.0085333	0	0	0	0	0	0.0006	0.0096649	0.00	0.0085333	0
	Cl2 in Creek													0	#DIV/0!	0	0
Grit	Hauled (Volume)													0	0.00	0	0
Sludge Hauled	Liquid Volume	400.0561	491	519.25		490.98212	501.91127	696.50612	211.98	258.92217	151.42	384.31097	218.7968	4325.1356			
Loading mg/L	Phosphorus	0.0721579	0.0614987	0.3095665	0.3143293	0.2559723	0.1863789	0.1813241	0.2735344	0.2027619	0.2812395	0.1852194	0.1510364	2.4750193	0.2062516	0.3143293	0.0614987
	BOD	1.3238047	1.5730696	13.771418	8.9880405	2.3108607	5.028639	3.4286027	2.5934555	2.4838836	2.5711266	2.0279893	2.1322788	48.233169	4.0194308	13.771418	1.3238047
	Suspended Solids	2.9123703	3.5865988	7.1940242	22.579712	5.3327555	5.747016	5.2653542	3.3827681	3.3605484	1.0133264	3.80248	3.5537981	67.730751	5.6442293	22.579712	1.0133264

PERFORMANCE

ASSESSMENT

REPORTS

BYPASS SUMMARY

NOTIFICATION AND LAB RESULTS

SEWAGE PLANT/LIFT STATION(S)
OVERFLOW BYPASS, SPILL, OR LEAK REPORTING ID #
120000355

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

Date: March 11 2021 Time of Call: 17:05 a.m./p.m.
SAC Reference #: 904925 Person Who Called: Mike Nelson
Called SAC at: 17:10 Reported By: to Clucera
Called MOH at: 17:13 Reported By: _____
Bypass: _____ Spill: _____ Leak: _____ Overflow:
Location of Incident: Cock river SIP
Time of Incident: 18:00 a.m./p.m. Receiver: Lalabelle Creek
Details of Incident: Thaw

Downstream Users: None

Possible Effects on Receiver, Environment or Downstream Users: Nil

904925

NOTE: Take 3 Raw Sewage Samples Per Incident & Have them Tested For every 8 hours during the overflow:

1. 5-day BOD and CBOD, Suspended Solids, pH, TKN and Total phosphorus

Addition Calls

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

Details of Call: _____

Termination of Incident

Date: 03/11/21 Time of Call: 20:45 Person Contacted: Harden

Time of Termination: 18:20 Approximate Volume: 183.7 Cu. Meters

Duration of Bypass: 45

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

Further Action Required: NONE

Reported By: Mike Nelson



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CERTIFICATE OF ANALYSIS

Client: Melissa Hoogenhoud
Company: Town of Cochrane - Wastewater
Address: 171 Fourth Ave, Box 490
Cochrane, ON, P0L 1C0
Phone/Fax: (705) 272-4232 / (705) 272-2634
Email: Melissa.Hoogenhoud@cochraneontario.com

Work Order Number: 425167
PO #:
Regulation: Information not provided
Project #: Overflow
DWS #:
Sampled By: Mike Nelson

Date Order Received: 3/12/2021
Arrival Temperature: 18 °C

Analysis Started: 3/12/2021
Analysis Completed: 3/22/2021

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
Sewage Plant Overflow	1625215	Wastewater	Grab		3/11/2021	6:40 PM
Sewage Plant Overflow 02	1625216	Wastewater	Grab		3/11/2021	8:30 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
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
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
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
TKN Water Dig. (A58)	Kirkland Lake	Determination of Total Kjeldahl Nitrogen in Waters with Block Digestion.	Modified from SM-4500 NOR-G-D
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: 425167

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director



TESTMARK Laboratories Ltd.

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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 425167

Sample Description	Sewage Plant Overflow	Sewage Plant Overflow 02	Units
Sample Date	3/11/2021 6:40 PM	3/11/2021 8:30 PM	
Lab ID	1625215	1625216	
Oxygen Demand	Result	MDL	Result
BOD (5 day)	30	3	30.1
Carbonaceous BOD	23	3	30.4
Sample Description	Sewage Plant Overflow	Sewage Plant Overflow 02	
Sample Date	3/11/2021 6:40 PM	3/11/2021 8:30 PM	
Lab ID	1625215	1625216	
Solids	Result	MDL	Result
Total Suspended Solids	228	4	252
		MDL	4
			mg/L

LEGEND

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

[r]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

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.

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

SEWAGE PLANT/LIFT STATION(S)
OVERFLOW BYPASS, SPILL, OR LEAK REPORTING ID #
120000355

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

Date: March 20 2021 Time of Call: 17:55 a.m./p.m.
Reference #: 904931 Person Who Called: Mike Nelson
Office Called: Succ Reported By: Jermy Weiss
Bypass: no Spill: no Leak: no Overflow:
Location of Incident: Cochran STP
Time of Incident: 17:20 a.m./p.m. Receiver: Lillebelle Creek
Details of Incident: spring thaw

Downstream Users: None

Possible Effects on Receiver, Environment or Downstream Users: NONE

NOTE: Take 2 Raw Sewage Samples Per Incident & Have them Tested For every 8 hours during the overflow:

1. 5-day BOD and CBOD, Suspended Solids, pH, TKN and Total phosphorus

Addition Calls

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

Details of Call: _____

Termination of Incident

Date: Mar 21 2021 Time of Call: 10:17 Person Contacted: Neil Hamilton

Time of Termination: 22:30 Approximate Volume: 81.75 Cu. Meters
March 20 2021

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

Further Action Required: NONE

Reported By: Mike Nelson



CERTIFICATE OF ANALYSIS

Client:	Melissa Hoogenhoud	Work Order Number:	425705
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 #:	Overflow
Email:	Melissa.Hoogenhoud@cochraneontario.com	DWS #:	
Date Order Received:	3/22/2021	Analysis Started:	3/22/2021
Arrival Temperature:	17 °C	Analysis Completed:	3/30/2021
		Sampled By:	Mike Nelson

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
Sewage Plant Overflow #1	1626915	Wastewater	Grab		3/20/2021	5:40 PM
Sewage Plant Overflow #2	1626916	Wastewater	Grab		3/20/2021	10:25 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
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
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
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
TKN Water Dig. (A58)	Kirkland Lake	Determination of Total Kjeldahl Nitrogen in Waters with Block Digestion.	Modified from SM-4500 NOR-G-D
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: 425705

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director



TESTMARK Laboratories Ltd.
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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 425705

WORK ORDER RESULTS

Sample Description	Sewage Plant Overflow #1	Sewage Plant Overflow #2			
Sample Date	3/20/2021 5:40 PM	3/20/2021 10:25 PM			
Lab ID	1626915	1626916			
Anions	Result	MDL	Result	MDL	Units
Nitrate (as N)	<0.05	0.05	<0.05	0.05	mg/L
Nitrite (as N)	<0.05	0.05	<0.05	0.05	mg/L
Sample Description	Sewage Plant Overflow #1	Sewage Plant Overflow #2			
Sample Date	3/20/2021 5:40 PM	3/20/2021 10:25 PM			
Lab ID	1626915	1626916			
General Chemistry	Result	MDL	Result	MDL	Units
Ammonia (as N)	4.43	0.01	6.86	0.02	mg/L
pH	7.09	N/A	7.11	N/A	pH
Total Kjeldahl Nitrogen	72.1	0.8	20.0	0.4	mg/L
Total Phosphorus (as P)	3.53	0.02	1.57	0.02	mg/L
Sample Description	Sewage Plant Overflow #1	Sewage Plant Overflow #2			
Sample Date	3/20/2021 5:40 PM	3/20/2021 10:25 PM			
Lab ID	1626915	1626916			
Microbiology	Result	MDL	Result	MDL	Units
Escherichia coli	2200000 [3400000]	100000	10300000	100000	CFU/100mL



CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 425705

Sample Description	Sewage Plant Overflow #1	Sewage Plant Overflow #2		
Sample Date	3/20/2021 5:40 PM	3/20/2021 10:25 PM		
Lab ID	1626915	1626916		
Oxygen Demand	Result	MDL	Result	MDL
BOD (5 day)	120	30	45	6
Carbonaceous BOD	130	30	13.8	1
	Sewage Plant Overflow #1		Sewage Plant Overflow #2	
Sample Date	3/20/2021 5:40 PM		3/20/2021 10:25 PM	
Lab ID	1626915		1626916	
Solids	Result	MDL	Result	MDL
Total Suspended Solids	378	5	85	2
				mg/L

LEGEND

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

[r]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

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.

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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CERTIFICATE OF ANALYSIS

Client: Melissa Hoogenhoud
Company: Town of Cochrane - Wastewater
Address: 171 Fourth Ave, Box 490
Cochrane, ON, P0L 1C0
Phone/Fax: (705) 272-4232 / (705) 272-2634
Email: Melissa.Hoogenhoud@cochraneontario.com

Work Order Number: 425845
PO #:
Regulation: Information not provided
Project #: Overflow
DWS #:
Sampled By: Mike Nelson

Date Order Received: 3/23/2021
Arrival Temperature: 19 °C

Analysis Started: 3/24/2021
Analysis Completed: 3/30/2021

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
Sewage Plant Overflow	1627419	Wastewater	Grab		3/21/2021	4:19 PM
Sewage Plant Overflow	1627420	Wastewater	Grab		3/21/2021	11:10 PM
Sewage Plant Overflow	1627421	Wastewater	Grab		3/22/2021	7:00 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
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
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
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
TKN Water Dig. (A58)	Kirkland Lake	Determination of Total Kjeldahl Nitrogen in Waters with Block Digestion.	Modified from SM-4500 NOR-G-D
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: 425845

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director



CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 425845

WORK ORDER RESULTS

Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Units
Sample Date	3/21/2021 4:19 PM	3/21/2021 11:10 PM	3/22/2021 7:00 AM	
Lab ID	1627419	1627420	1627421	
Anions	Result	MDL	Result	MDL
Nitrate (as N)	<0.05	0.05	<0.05	0.05
Nitrite (as N)	<0.05	0.05	0.18	0.05
Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	
Sample Date	3/21/2021 4:19 PM	3/21/2021 11:10 PM	3/22/2021 7:00 AM	
Lab ID	1627419	1627420	1627421	
General Chemistry	Result	MDL	Result	MDL
Ammonia (as N)	3.85	0.01	4.52	0.01
pH	7.19	N/A	7.37	N/A
Total Kjeldahl Nitrogen	10.9	0.4	15.1	0.4
Total Phosphorus (as P)	1.05	0.02	1.43	0.02
Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	
Sample Date	3/21/2021 4:19 PM	3/21/2021 11:10 PM	3/22/2021 7:00 AM	
Lab ID	1627419	1627420	1627421	
Microbiology	Result	MDL	Result	MDL
Escherichia coli	800000	100000	1700000	100000
				CFU/100mL



CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 425845

Sample Description	Sewage Plant Overflow	Units				
Sample Date	3/21/2021 4:19 PM	3/21/2021 11:10 PM	3/22/2021 7:00 AM			
Lab ID	1627419	1627420	1627421			
Oxygen Demand	Result	MDL	Result	MDL	Result	MDL
BOD (5 day)	50	6	28	6	78	30
Carbonaceous BOD	42	6	49	6	57	6
Sample Description	Sewage Plant Overflow					
Sample Date	3/21/2021 4:19 PM	3/21/2021 11:10 PM	3/22/2021 7:00 AM			
Lab ID	1627419	1627420	1627421			
Solids	Result	MDL	Result	MDL	Result	MDL
Total Suspended Solids	143.0	2.5	122	2	102.0	2.2
						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.
 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.

SEWAGE PLANT/LIFT STATION(S)
OVERFLOW BYPASS, SPILL, OR LEAK REPORTING ID #
120000355

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

Date: March 24 2021 Time of Call: 17:25 AM PM
Reference #: 904935 Person Who Called: Mike Nelson
Office Called: Sac Reported By: TO
Bypass: not Spill: _____ Leak: _____ Overflow:
Location of Incident: Cochrane STP
Time of Incident: 17:00 a.m./PM Receiver: L. Kabelle Creek
Details of Incident: Spring Thaw Rain
Downstream Users: None
Possible Effects on Receiver, Environment or Downstream Users: None

NOTE: Take 2 Raw Sewage Samples Per Incident & Have them Tested For every 8 hours during the overflow:

1. 5-day BOD and CBOD, Suspended Solids, pH, TKN and Total phosphorus

Addition Calls

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

Details of Call: _____

Termination of Incident

Date: 03-25-21 Time of Call: 20:15 Person Contacted: Maria

Time of Termination: 19:45 Approximate Volume: 865.92 Cu. Meters

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

Further Action Required: None

Reported By: Mike Nelson



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CERTIFICATE OF ANALYSIS

Client: Melissa Hoogenhoud
 Company: Town of Cochrane - Wastewater
 Address: 171 Fourth Ave, Box 490
 Cochrane, ON, P0L 1C0
 Phone/Fax: (705) 272-4232 / (705) 272-2634
 Email: Melissa.Hoogenhoud@cochraneontario.com

Work Order Number: 426149
 PO #: Information not provided
 Regulation: Overflow
 Project #: Mike Neison
 DWS #: Mike Neison
 Sampled By: Mike Neison

Date Order Received: 3/26/2021
 Arrival Temperature: 16 °C
 Analysis Started: 3/26/2021
 Analysis Completed: 4/5/2021

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
Sewage Plant Overflow	1628376	Wastewater	Grab		3/24/2021	5:15 PM
Sewage Plant Overflow	1628377	Wastewater	Grab		3/24/2021	11:15 PM
Sewage Plant Overflow	1628378	Wastewater	Grab		3/25/2021	7:00 AM
Sewage Plant Overflow	1628379	Wastewater	Grab		3/25/2021	3:00 PM
Sewage Plant Overflow	1628380	Wastewater	Grab		3/25/2021	7:50 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
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
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
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
TKN Water Dig. (A58)	Kirkland Lake	Determination of Total Kjeldahl Nitrogen in Waters with Block Digestion.	Modified from SM-4500 NORG-D



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 426149

Method	Lab	Description	Reference
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

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director

CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 426149

WORK ORDER RESULTS

Sample Description	Result	MDL	Sewage Plant Overflow	Result	MDL	Sewage Plant Overflow	Result	MDL	Sewage Plant Overflow	Result	MDL	Units	
Sample Date	1628376		3/24/2021 5:15 PM	1628377		3/24/2021 11:15 PM	1628378		3/25/2021 7:00 AM	1628379		3/25/2021 3:00 PM	
Lab ID	1628376		1628377		1628378		1628379		1628379				
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Nitrate (as N)	<0.05	0.05	1.94	0.05	2.21	0.05	1.39	0.05	0.36	0.05	0.05	0.05	mg/L
Nitrite (as N)	<0.05	0.05	0.24	0.05	<0.05	0.05	0.36	0.05	0.36	0.05	0.05	0.05	mg/L
Sample Description	Sewage Plant Overflow												
Sample Date	3/25/2021 7:50 PM												
Lab ID	1628380												
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Nitrate (as N)	1.20	0.05	6.33	0.02	3.82	0.01	4.09	0.01	7.43	N/A	0.01	0.01	mg/L
Nitrite (as N)	0.39	0.05	7.46	N/A	7.57	N/A	7.43	N/A	7.43	N/A	0.01	0.01	pH
Sample Description	Sewage Plant Overflow												
Sample Date	3/24/2021 5:15 PM												
Lab ID	1628376												
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Ammonia (as N)	4.45	0.01	6.33	0.02	3.82	0.01	4.09	0.01	7.43	N/A	0.01	0.01	mg/L
pH	7.27	N/A	7.46	N/A	7.57	N/A	7.43	N/A	7.43	N/A	0.01	0.01	pH
Total Kjeldahl Nitrogen	12.2 [11.8]	0.4	8.6	0.4	6.5	0.4	9.4	0.4	9.4	0.4	0.4	0.4	mg/L
Total Phosphorus (as P)	0.944	0.002	0.947	0.002	0.539	0.002	0.893	0.002	0.893	0.002	0.002	0.002	mg/L



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 426149

Sample Description Sewage Plant Overflow

Sample Date 3/25/2021 7:50 PM

Lab ID 1628380

General Chemistry

	Result	MDL	Units
Ammonia (as N)	4.19	0.01	mg/L
pH	7.38	N/A	pH
Total Kjeldahl Nitrogen	9.3	0.4	mg/L
Total Phosphorus (as P)	1.060	0.006	mg/L

Sample Description Sewage Plant Overflow

Sample Date 3/24/2021 5:15 PM

Lab ID 1628376

Microbiology

Escherichia coli
4500000
[4700000]

Sample Description Sewage Plant Overflow

Sample Date 3/25/2021 7:50 PM

Lab ID 1628380

Microbiology

Escherichia coli
2300000

Sample Description Sewage Plant Overflow

Sample Date 3/25/2021 11:15 PM

Lab ID 1628377

Microbiology

Escherichia coli
170000

Sample Description Sewage Plant Overflow

Sample Date 3/24/2021 7:00 AM

Lab ID 1628378

Microbiology

Escherichia coli
270000

Sample Description Sewage Plant Overflow

Sample Date 3/25/2021 3:00 PM

Lab ID 1628379

Microbiology

Escherichia coli
240000

Sample Description Sewage Plant Overflow

Sample Date 3/25/2021 7:00 AM

Lab ID 1628378

Microbiology

Escherichia coli
10000

CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 426149

Sample Description	Sample Date	Lab ID	Oxygen Demand	BOD (5 day)	Carbonaceous BOD	Sample Description	Sample Date	Lab ID	Oxygen Demand	BOD (5 day)	Carbonaceous BOD	Sample Description	Sample Date	Lab ID	Solids	Total Suspended Solids	
			Sewage Plant Overflow						Sewage Plant Overflow						Sewage Plant Overflow		
			Result	MDL					Result	MDL					Result	MDL	Units
			20	6					8.8	1					71.5	1	mg/L
			21	6					7.1	1					42	1	mg/L
			Sewage Plant Overflow						Sewage Plant Overflow						Sewage Plant Overflow		
			Result	MDL					Result	MDL					Result	MDL	Units
			31.5	3					7.5	1					71.5	1	mg/L
			[30.9]						5.2	1					71.5	1	mg/L
			38	10													
			[35]														
			Sewage Plant Overflow						Sewage Plant Overflow						Sewage Plant Overflow		
			Result	MDL					Result	MDL					Result	MDL	Units
			184.0	2.9					71	1					71.5	1	mg/L



CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 426149

Sample Description	Sewage Plant Overflow		
Sample Date	3/25/2021 7:50 PM		
Lab ID	1628380		
Solids	Result	MDL	Units
	86	1	mg/L
Total Suspended Solids			

LEGEND

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

[r]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

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.

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

SEWAGE PLANT/LIFT STATION(S)
OVERFLOW BYPASS, SPILL, OR LEAK REPORTING ID #
120000355

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

Date: APRIL 8/21 Time of Call: 0835 a.m./p.m.

SAC Reference #: 904991 Person Who Called: AKOIN MORRISON

Called SAC at: 0835 Reported By: ALIM

Called MOH at: 0844 Reported By: _____

Bypass: _____ Spill: _____ Leak: _____ Overflow:

Location of Incident: STP

Time of Incident: 0815 a.m./p.m. Receiver: LILABULLIE CREEK

Details of Incident: RAIN / SPRING MEET

Downstream Users: NONE

Possible Effects on Receiver, Environment or Downstream Users: NO

NOTE: Take 3 Raw Sewage Samples Per Incident & Have them Tested For every 8 hours during the overflow:

- 1. 5-day BOD and CBOD, Suspended Solids, pH, TKN and Total phosphorus

Addition Calls

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

Termination of Incident

Date: APRIL 8/21 Time of Call: APR 8/21 SAC.
1425 0911 Person Contacted: PETER

Time of Termination: 6 HRS 10 MINS Approximate Volume: 647 Cu. Meters

Duration of Bypass: 6 HRS 10 MINS

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

Further Action Required: _____

Reported By: _____



TESTMARK Laboratories Ltd.

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CERTIFICATE OF ANALYSIS

Client:	Melissa Hoogenhoud	Work Order Number:	427134
Company:	Town of Cochrane - Wastewater	PO #:	
Address:	171 Fourth Ave, Box 490 Cochrane, ON, P0L 1C0	Regulation:	Information not provided
Phone:		Project #:	Overflow
Email:	Melissa.Hoogenhoud@cochraneontario.com	DWS #:	
		Sampled By:	Aaron Morrison
Date Order Received:	4/9/2021	Analysis Started:	4/9/2021
Arrival Temperature:	20 °C	Analysis Completed:	4/19/2021

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
Sewage Plant Overflow	1631626	Wastewater	Grab		4/8/2021	8:20 AM
Sewage Plant Overflow	1631627	Wastewater	Grab		4/8/2021	2:25 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
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
BOD (A3)	Kirkland Lake	Determination of Biochemical Oxygen Demand (BOD)	Modified from SM-5210 B
CBOD (A3)	Kirkland Lake	Determination of 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
TKN Water Dig. (A58)	Kirkland Lake	Determination of Total Kjeldahl Nitrogen in Waters with Block Digestion.	Modified from SM-4500 NORG-D
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

CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 427134

This report has been approved by:



Adam Tam, M.Sc.
Laboratory Director

CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 427134

WORK ORDER RESULTS

Sample Description	Sewage Plant Overflow		Sewage Plant Overflow	
Sample Date	4/8/2021 8:20 AM	4/8/2021 8:20 AM	4/8/2021 2:25 PM	4/8/2021 2:25 PM
Lab ID	1631626		1631627	
Anions	Result	MDL	Result	MDL
Nitrate (as N)	<0.05	0.05	0.46	0.05
Nitrite (as N)	<0.05	0.05	0.82	0.05
Units				mg/L
Sample Description	Sewage Plant Overflow		Sewage Plant Overflow	
Sample Date	4/8/2021 8:20 AM	4/8/2021 8:20 AM	4/8/2021 2:25 PM	4/8/2021 2:25 PM
Lab ID	1631626		1631627	
General Chemistry	Result	MDL	Result	MDL
Ammonia (as N)	9.16	0.02	3.64	0.01
pH	7.29	N/A	7.51	N/A
Total Kjeldahl Nitrogen	19.1	0.4	8.2	0.4
Total Phosphorus (as P)	2.25	0.02	0.78	0.02
Units				mg/L
Sample Description	Sewage Plant Overflow		Sewage Plant Overflow	
Sample Date	4/8/2021 8:20 AM	4/8/2021 8:20 AM	4/8/2021 2:25 PM	4/8/2021 2:25 PM
Lab ID	1631626		1631627	
Microbiology	Result	MDL	Result	MDL
Escherichia coli	3100000 [3000000]	100000	2700000	100000
Units				CFU/100mL

CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 427134

Sample Description	Sewage Plant Overflow		Sewage Plant Overflow	
Sample Date	4/8/2021 8:20 AM		4/8/2021 2:25 PM	
Lab ID	1631626		1631627	
Oxygen Demand	Result	MDL	Result	MDL
BOD (5 day)	65.7	6	15.4	1
Carbonaceous BOD	69	6	10.2	1
Units			mg/L	mg/L
Sample Description	Sewage Plant Overflow		Sewage Plant Overflow	
Sample Date	4/8/2021 8:20 AM		4/8/2021 2:25 PM	
Lab ID	1631626		1631627	
Solids	Result	MDL	Result	MDL
Total Suspended Solids	323.0	6.7	58	4
Units			mg/L	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.
 []: 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.
 Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

SEWAGE PLANT/LIFT STATION(S)
OVERFLOW BYPASS, SPILL, OR LEAK REPORTING ID #
120000355

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

Date: May 22 2021 Time of Call: 21:30 a.m./p.m.
Reference #: 1-6J8FC Person Who Called: ~~Kevin~~ Mike Nelson
Office Called: Sac - Reported ^{to} By: Kim
Bypass: _____ Spill: _____ Leak: _____ Overflow:
Location of Incident: Cochrane STP
Time of Incident: 20:50 a.m./p.m. Receiver: Lillabelle Creek
Details of Incident: Heavy Rain

Downstream Users: None
Possible Effects on Receiver, Environment or Downstream Users: NO

NOTE: Take 2 Raw Sewage Samples Per Incident & Have them Tested For every 8 hours during the overflow:

1. 5-day BOD and CBOD, Suspended Solids, pH, TKN and Total phosphorus

Addition Calls

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

Details of Call: _____

Termination of Incident

Date: 05-23-21 Time of Call: 10:05 Person Contacted: Justin

Time of Termination: 0200 Approximate Volume: 729.9 Cu. Meters

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

Further Action Required: None

Reported By: Mike Nelson



CERTIFICATE OF ANALYSIS

Client:	Lynn Chapleau	Work Order Number:	431250
Company:	Town of Cochrane - Wastewater	PO #:	
Address:	171 Fourth Ave, Box 490 Cochrane, ON, P0L 1C0	Regulation:	Information not provided
Phone/Fax:	(705) 272-5067 / (705) 272-2634	Project #:	Overflow
Email:	lynn.chapleau@cochraneontario.com	DWS #:	
		Sampled By:	Mike Nelson
Date Order Received:	5/26/2021	Analysis Started:	5/27/2021
Arrival Temperature:	20 °C	Analysis Completed:	6/3/2021

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
Sewage Plant Overflow	1646905	Wastewater	Grab		5/22/2021	9:25 PM
Sewage Plant Overflow	1646906	Wastewater	Grab		5/23/2021	2:00 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
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
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
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
TKN Water Dig. (A58)	Kirkland Lake	Determination of Total Kjeldahl Nitrogen in Waters with Block Digestion.	Modified from SM-4500 NORG-D
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.

Committed to Quality and Service

CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 431250

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director



CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 431250

WORK ORDER RESULTS

Sample Description	Sewage Plant Overflow		Sewage Plant Overflow		
Sample Date	5/22/2021 9:25 PM		5/23/2021 2:00 AM		
Lab ID	1646905		1646906		
Anions	Result	MDL	Result	MDL	Units
Nitrate (as N)	<0.05	0.05	<0.05	0.05	mg/L
Nitrite (as N)	<0.05	0.05	<0.05	0.05	mg/L

Sample Description	Sewage Plant Overflow		Sewage Plant Overflow		
Sample Date	5/22/2021 9:25 PM		5/23/2021 2:00 AM		
Lab ID	1646905		1646906		
General Chemistry	Result	MDL	Result	MDL	Units
Ammonia (as N)	6.34	0.01	3.19	0.01	mg/L
pH	6.98	N/A	7.52	N/A	pH
Total Kjeldahl Nitrogen	36.3	0.4	20.6	0.4	mg/L
Total Phosphorus (as P)	2.85	0.02	0.431	0.002	mg/L

Sample Description	Sewage Plant Overflow		Sewage Plant Overflow		
Sample Date	5/22/2021 9:25 PM		5/23/2021 2:00 AM		
Lab ID	1646905		1646906		
Microbiology	Result	MDL	Result	MDL	Units
Escherichia coli	127000	1000	105000	1000	CFU/100mL



CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 431250

Sample Description	Sewage Plant Overflow		Sewage Plant Overflow		
Sample Date	5/22/2021 9:25 PM		5/23/2021 2:00 AM		
Lab ID	1646905		1646906		
Oxygen Demand	Result	MDL	Result	MDL	Units
BOD (5 day)	150 [130]	30	21	3	mg/L
Carbonaceous BOD	180 [180]	30	17	3	mg/L

Sample Description	Sewage Plant Overflow		Sewage Plant Overflow		
Sample Date	5/22/2021 9:25 PM		5/23/2021 2:00 AM		
Lab ID	1646905		1646906		
Solids	Result	MDL	Result	MDL	Units
Total Suspended Solids	472	4	78	4	mg/L

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.

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.

1-1 How B2

Back House

SEWAGE PLANT/LIFT STATION(S)
OVERFLOW BYPASS, SPILL, OR LEAK REPORTING ID #
120000355

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

Date: Dec 16 2021

Time of Call: 11:20 a.m. p.m.

Reference #:

Person Who Called: Mike Nelson

Office Called: Mott Sec

Reported By: Leon

Bypass: _____

Spill: _____

Leak: _____

Overflow:

Location of Incident: Cochrane STP

Time of Incident: 11:00 a.m./p.m. Receiver: L. Babelle Creek

Details of Incident: thru Rain

Downstream Users: Nil

Possible Effects on Receiver, Environment or Downstream Users: None

NOTE: Take 2 Raw Sewage Samples Per Incident & Have them Tested For every 8 hours during the overflow:

- 5-day BOD and CBOD, Suspended Solids, pH, TKN and Total phosphorus

Addition Calls

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

Details of Call: _____

Termination of Incident

Date: Dec 17 2021 Time of Call: 0752 Person Contacted: Sandra

Time of Termination: 23:00 Approximate Volume: 1512.2 Cu. Meters

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

Further Action Required: None

Reported By: Mike Nelson



TESTMARK Laboratories Ltd.

Committed to Quality and Service

CERTIFICATE OF ANALYSIS

Client:	Melissa Hoogenhoud	Work Order Number:	451172
Company:	Town of Cochrane - Wastewater	PO #:	
Address:	171 Fourth Ave, Box 490 Cochrane, ON, P0L 1C0	Regulation:	Information not provided
Phone:	(705) 272-5067	Project #:	Overflow
Email:	Melissa.Hoogenhoud@cochraneontario.com	DWS #:	
		Sampled By:	Mike Nelson
Date Order Received:	12/17/2021	Analysis Started:	12/17/2021
Arrival Temperature:	14 °C	Analysis Completed:	1/6/2022

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
Sewage Plant Overflow	1715405	Wastewater	Grab		12/16/2021	11:10 AM
Sewage Plant Overflow #2	1715406	Wastewater	Grab		12/16/2021	7:00 PM
Sewage Plant Overflow #3	1715407	Wastewater	Grab		12/16/2021	11:00 PM

METHODS AND INSTRUMENTATION

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

Method	Lab	Description	Reference
Ammonia Water (A42)	Timmins	Determination of Ammonial/Ammonium in Water	Modified from EPA 350.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
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
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
TKN Water Dig. (A58)	Kirkland Lake	Determination of Total Kjeldahl Nitrogen in Waters with Block Digestion.	Modified from SM-4500 NORG-D
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: 451172

This report has been approved by:

Kasandra Flynn
Laboratory Director



TESTMARK Laboratories Ltd.
Committed to Quality and Service

CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 451172

WORK ORDER RESULTS

Sample Description	Sewage Plant Overflow		Sewage Plant Overflow #2		Sewage Plant Overflow #3	
Sample Date	12/16/2021 11:10 AM	12/16/2021 7:00 PM	12/16/2021 11:00 PM	12/16/2021 7:00 PM	12/16/2021 11:00 PM	12/16/2021 11:00 PM
Lab ID	1715405	1715406	1715406	1715406	1715407	1715407
Anions	Result	MDL	Result	MDL	Result	MDL
Nitrate (as N)	<0.05	0.05	0.18	0.05	0.91	0.05
Nitrite (as N)	<0.05	0.05	0.86	0.05	0.64	0.05
Units						
						mg/L
						mg/L
Sample Description	Sewage Plant Overflow		Sewage Plant Overflow #2		Sewage Plant Overflow #3	
Sample Date	12/16/2021 11:10 AM	12/16/2021 7:00 PM	12/16/2021 7:00 PM	12/16/2021 11:00 PM	12/16/2021 11:00 PM	12/16/2021 11:00 PM
Lab ID	1715405	1715406	1715406	1715407	1715407	1715407
General Chemistry	Result	MDL	Result	MDL	Result	MDL
Ammonia (as N)	4.16	0.01	2.77	0.01	6.12	0.02
pH	7.14	N/A	7.24	N/A	7.44	N/A
Total Kjeldahl Nitrogen	15.3	0.4	8.9	0.4	12.8	0.4
Total Phosphorus (as P)	1.92	0.02	0.793	0.002	0.95	0.02
Units						
						mg/L
						pH
						mg/L
						mg/L
Sample Description	Sewage Plant Overflow		Sewage Plant Overflow #2		Sewage Plant Overflow #3	
Sample Date	12/16/2021 11:10 AM	12/16/2021 7:00 PM	12/16/2021 7:00 PM	12/16/2021 11:00 PM	12/16/2021 11:00 PM	12/16/2021 11:00 PM
Lab ID	1715405	1715406	1715406	1715407	1715407	1715407
Microbiology	Result	MDL	Result	MDL	Result	MDL
Escherichia coli	2000000 [1840000]	100000	30000000	100000	5200000	100000
Units						
						CFU/100mL



CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 451172

Sample Description	Result	MDL	Sewage Plant Overflow #2	Result	MDL	Sewage Plant Overflow #3	Result	MDL	Units
Sample Date	12/16/2021 11:10 AM		12/16/2021 7:00 PM		12/16/2021 11:00 PM				
Lab ID	1715405		1715406		1715407				
Oxygen Demand	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
BOD (5 day)	69.8 [75]	6	240	30	200	30	200	30	mg/L
Carbonaceous BOD	43	6	200	30	250	30	250	30	mg/L
Sample Description	Result	MDL	Sewage Plant Overflow #2	Result	MDL	Sewage Plant Overflow #3	Result	MDL	Units
Sample Date	12/16/2021 11:10 AM		12/16/2021 7:00 PM		12/16/2021 11:00 PM				
Lab ID	1715405		1715406		1715407				
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Total Suspended Solids	304	8	285	5	275.0	3.3	275.0	3.3	mg/L

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.
 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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Calibration Reports



Instrumentation Calibration/Maintenance Report

Location: _____ Cochrane WWTP _____

ORG # _____ **Work Order #:** _____

Instrument: _____ pH3 SensION + _____

OCWA ID: _____ **Serial #:** _____ 615107 _____

Start Day/Time: 09 / 03 / 21 @ 12 : 45 **End Day/Time:** 09 / 03 / 21 @ 13 : 00
DD/MM/YY 24hour clock DD/MM/YY 24hour clock

of Workers: 1 **Total Man Hours:** 1/4

Type of Work Order:

Scheduled Maintenance Corrective Work Order Other: _____

Instrument Type:

Recorder Transmitter pH Chlorine Turbidity Flow Other: _____

Calibration: See Reverse page for calibration data

Input/Standard	As Found		As Left	
	Actual Value	% Accuracy	Actual Value	% Accuracy
pH 4.00	4.09	97.79%	3.99	99.75%
pH 7.00	7.04	99.43%	7.02	99.71%
pH 10.00	10.07	99.30%	10.08	99.20%

% Accuracy Calculation => $ABS([Actual Value Standard] - 1) \times 100\%$

Material Used:

Quantity	Part #	Description
1	2283449	Hach pH 4 Buffer
1	2283549	Hach pH 7 Buffer
1	2283649	Hach pH 10 Buffer

Comments: _____

Name: _____ Blake Dickinson _____

Signature:



Instrumentation Calibration/Maintenance Report

Location: _____ Cochrane WWTP _____

ORG # _____ **Work Order #:** _____

Instrument: _____ Spectrophotometer DR2800 _____

OCWA ID: _____ **Serial #:** _____ 1230881 _____

Start Day/Time: 09 / 03 / 21 @ 13 : 00 **End Day/Time:** 09 / 03 / 21 @ 13 : 15
DD/MM/YY 24hour clock DD/MM/YY 24hour clock

of Workers: _____ 1 _____ **Total Man Hours:** _____ 1/4 _____

Type of Work Order:

Scheduled Maintenance Corrective Work Order Other: _____

Instrument Type:

Recorder Transmitter pH Chlorine Turbidity Flow Other: Spectrophotometer

Calibration: See Reverse page for calibration data

Input/Standard	As Found		As Left	
	Actual Value	% Accuracy	Actual Value	% Accuracy
See back of page				

% Accuracy Calculation => $ABS([(Actual\ Value\ Standard) - 1] \times 100\%)$

Material Used:

Quantity	Part #	Description
1	2635300	Low Range DPD secondary standards
1	27639-00	DR check absorbency standards

Comments: _____

Name: _____ Blake Dickinson _____

Signature: _____



Instrumentation Calibration/Maintenance Report

Location: _____ Cochrane WWTP _____

ORG # _____ **Work Order #:** _____

Instrument: _____ Portable Dissolved Oxygen Meter _____

OCWA ID: _____ **Serial #:** _____ 160900003927 _____

Start Day/Time: 09 / 03 / 21 @ 13 : 15 **End Day/Time:** 09 / 03 / 21 @ 13 : 30
DD/MM/YY 24hour clock DD/MM/YY 24hour clock

of Workers: 1 **Total Man Hours:** 1/4

Type of Work Order:

Scheduled Maintenance Corrective Work Order Other: _____

Instrument Type:

Recorder Transmitter pH Chlorine Turbidity Flow Other: DO

Calibration: See Reverse page for calibration data

Input/Standard	As Found		As Left	
	Actual Value	% Accuracy	Actual Value	% Accuracy

% Accuracy Calculation => $ABS([(Actual\ Value\ Standard) - 1] \times 100\%)$

Material Used:

Quantity	Part #	Description
1		6mm of Distilled water as per calibration instructions

Comments:

Shake 6mm (1/4") of water in a beaker for 30 seconds. Insert probe in beaker above water. Allow for probe to stabilize. Begin calibration.

Instrument Passed Calibration.

In good working order.

Name: _____ Blake Dickinson _____

Signature: _____



Instrumentation Calibration/Maintenance Report

Location: _____ Cochrane WWTP _____

ORG # _____ **Work Order #:** _____

Instrument: _____ Portable Dissolved Oxygen Meter _____

OCWA ID: _____ **Serial #:** _____ 160900003927 _____

Start Day/Time: 01 / 06 / 21 @ 08 : 00 **End Day/Time:** 01 / 06 / 21 @ 14 : 00
DD/MM/YY 24hour clock DD/MM/YY 24hour clock

of Workers: 2 **Total Man Hours:** 1

Type of Work Order:

Scheduled Maintenance Corrective Work Order Other: _____

Instrument Type:

Recorder Transmitter pH Chlorine Turbidity Flow Other: DO

Calibration: See Reverse page for calibration data

Input/Standard	As Found		As Left	
	Actual Value	% Accuracy	Actual Value	% Accuracy

% Accuracy Calculation => **ABS**([(Actual Value/Standard) -1] x 100%)

Material Used:

Quantity	Part #	Description
1		6mm of Distilled water as per calibration instructions

Comments:

Shake 6mm (1/4") of water in a beaker for 30 seconds. Insert probe in beaker above water. Allow for probe to stabilize. Begin calibration. Instrument Passed Calibration. In good working order.

Calibration performed as per user manual instructions. Unit passed calibration and was put back into service.

Original calibration sheet was lost due to hardware failure on technician's laptop.

Name: _____ Kirk Shorrock _____ **Signature:** _____



Instrumentation Calibration/Maintenance Report

Location: _____ Cochrane WWTP

ORG # _____ **Work Order #:** _____

Instrument: _____ Portable Dissolved Oxygen Meter

OCWA ID: _____ **Serial #:** _____ 160900003927

Start Day/Time: 29 / 10 / 21 @ 11 : 45 **End Day/Time:** 29 / 10 / 21 @ 12 : 00
DD/MM/YY 24hour clock DD/MM/YY 24hour clock

of Workers: 1 **Total Man Hours:** 1/4

Type of Work Order:

Scheduled Maintenance Corrective Work Order Other: _____

Instrument Type:

Recorder Transmitter pH Chlorine Turbidity Flow Other: DO

Calibration: See Reverse page for calibration data

Input/Standard	As Found		As Left	
	Actual Value	% Accuracy	Actual Value	% Accuracy

% Accuracy Calculation => **ABS**([(Actual Value/Standard) -1] x 100%)

Material Used:

Quantity	Part #	Description
1		6mm of Distilled water as per calibration instructions

Comments:

Shake 6mm (1/4") of water in a beaker for 30 seconds. Insert probe in beaker above water. Allow for probe to stabilize. Begin calibration.

Instrument Passed Calibration.

In good working order.

Name: Dan Peplinski Signature: _____



Instrumentation Calibration/Maintenance Report

Location: _____ Cochrane WWTP _____

ORG # _____ **Work Order #:** _____

Instrument: _____ HACH OCM Transmitter - Contact Flow _____

OCWA ID: _____ **Serial #:** _____ 120859005176 _____

Start Day/Time: 29 / 10 / 21 @ 11 : 00 **End Day/Time:** 29 / 10 / 21 @ 11 : 15
DD/MM/YY 24hour clock DD/MM/YY 24hour clock

of Workers: _____ 1 **Total Man Hours:** _____ 1/4

Type of Work Order:

Scheduled Maintenance Corrective Work Order Other: _____

Instrument Type:

Recorder Transmitter pH Chlorine Turbidity Flow Other: _____

Calibration: See Reverse page for calibration data

Input/Standard	As Found		As Left	
	Actual Value	% Accuracy	Actual Value	% Accuracy
16.5cm	16.5cm	100%	16.5cm	100%

% Accuracy Calculation => **ABS**([(Actual Value/Standard) -1] x 100%)

Material Used:

Quantity	Part #	Description

Comments:

Performed 1 point calibration. Measured height of water at flume compared to measurement on flowmeter. Adjusted as needed.

Name: _____ Dan Peplinski _____ **Signature:** _____



Instrumentation Calibration/Maintenance Report

Location: _____ Cochrane WWTP _____

ORG # _____ **Work Order #:** _____

Instrument: _____ HACH OCM Transmitter - East _____

OCWA ID: _____ **Serial #:** _____ PBD/E4170039 _____

Start Day/Time: 29 / 10 / 21 @ 12 : 30 **End Day/Time:** 29 / 10 / 21 @ 12 : 45
DD/MM/YY 24hour clock DD/MM/YY 24hour clock

of Workers: 1 **Total Man Hours:** 1/4

Type of Work Order:

Scheduled Maintenance Corrective Work Order Other: _____

Instrument Type:

Recorder Transmitter pH Chlorine Turbidity Flow Other: _____

Calibration: See Reverse page for calibration data

Input/Standard	As Found		As Left	
	Actual Value	% Accuracy	Actual Value	% Accuracy
3.5cm	3.5cm	100%	3.5cm	100%

% Accuracy Calculation => **ABS**([(Actual Value/Standard) -1] x 100%)

Material Used:

Quantity	Part #	Description

Comments:

Performed 1 point calibration. Measured height of water at flume compared to measurement on flowmeter. Adjusted as needed.

Name: _____ Dan Peplinski _____ **Signature:** _____



Instrumentation Calibration/Maintenance Report

Location: _____ Cochrane WWTP _____

ORG # _____ **Work Order #:** _____

Instrument: _____ HACH OCM Transmitter - Effluent Bypass _____

OCWA ID: _____ **Serial #:** _____ 120859005176 _____

Start Day/Time: 29 / 10 / 21 @ 13 : 00 **End Day/Time:** 29 / 10 / 21 @ 13 : 15
DD/MM/YY 24hour clock DD/MM/YY 24hour clock

of Workers: 1 **Total Man Hours:** 1/4

Type of Work Order:

Scheduled Maintenance Corrective Work Order Other: _____

Instrument Type:

Recorder Transmitter pH Chlorine Turbidity Flow Other: _____

Calibration: See Reverse page for calibration data

Input/Standard	As Found		As Left	
	Actual Value	% Accuracy	Actual Value	% Accuracy
0.00cm	0.00cm	100%		

% Accuracy Calculation => **ABS**([(Actual Value/Standard) -1] x 100%)

Material Used:

Quantity	Part #	Description

Comments:

Performed 1 point calibration. Measured height of water at flume compared to measurement on flowmeter. No flow was present and the flowmeter was reading zero flow.

Name: _____ Dan Peplinski _____ **Signature:** _____



Instrumentation Calibration/Maintenance Report

Location: _____ Cochrane WWTP _____

ORG # _____ **Work Order #:** _____

Instrument: _____ HACH OCM Transmitter - West _____

OCWA ID: _____ **Serial #:** _____ 120859005177 _____

Start Day/Time: 15 / 09 / 20 @ 11 : 15 **End Day/Time:** 15 / 09 / 20 @ 11 : 30
DD/MM/YY 24hour clock DD/MM/YY 24hour clock

of Workers: 1 **Total Man Hours:** 1/4

Type of Work Order:

Scheduled Maintenance Corrective Work Order Other: _____

Instrument Type:

Recorder Transmitter pH Chlorine Turbidity Flow Other: _____

Calibration: See Reverse page for calibration data

Input/Standard	As Found		As Left	
	Actual Value	% Accuracy	Actual Value	% Accuracy
4.0cm	4.0cm	100%	4.0cm	100%

% Accuracy Calculation => **ABS**([(Actual Value/Standard) -1] x 100%)

Material Used:

Quantity	Part #	Description

Comments:

Performed 1 point calibration. Measured height of water at flume compared to measurement on flowmeter. Adjusted as needed.

Name: _____ Blake Dickinson _____ **Signature:** _____



Instrumentation Calibration/Maintenance Report

Location: _____ Cochrane WWTP _____

ORG # _____ **Work Order #:** _____

Instrument: _____ pH Portable SenSION PH3 _____

OCWA ID: _____ **Serial #:** _____ 615107 _____

Start Day/Time: 29 / 10 / 21 @ 11 : 45 **End Day/Time:** 29 / 10 / 21 @ 12 : 00
DD/MM/YY 24hour clock DD/MM/YY 24hour clock

of Workers: 1 **Total Man Hours:** 1/4

Type of Work Order:

Scheduled Maintenance Corrective Work Order Other: _____

Instrument Type:

Recorder Transmitter pH Chlorine Turbidity Flow Other: _____

Calibration: See Reverse page for calibration data

Input/Standard	As Found		As Left	
	Actual Value	% Accuracy	Actual Value	% Accuracy
pH 4.00	pH 4.62	86.6%	pH 4.01	99.8%
pH 7.00	pH 7.57	92.5%	pH 7.02	99.7%
pH 10.00	pH 10.49	95.3%	pH 10.04	99.6%

% Accuracy Calculation => **ABS**([(Actual Value/Standard) -1] x 100%)

Material Used:

Quantity	Part #	Description
1	2283449	Hach pH 4 Buffer
1	2283549	Hach pH 7 Buffer
1	2283649	Hach pH 10 Buffer

Comments: _____

Name: _____ Dan Peplinski _____ **Signature:** _____



Instrumentation Calibration/Maintenance Report

Location: _____ Cochrane WWTP _____

ORG # _____ **Work Order #:** _____

Instrument: _____ Portable Dissolved Oxygen Meter _____

OCWA ID: _____ **Serial #:** _____ 160900003927 _____

Start Day/Time: 14 / 12 / 21 @ 11 : 30 **End Day/Time:** 14 / 12 / 21 @ 11 : 45
DD/MM/YY 24hour clock DD/MM/YY 24hour clock

of Workers: _____ 1 **Total Man Hours:** _____ 1/4

Type of Work Order:

Scheduled Maintenance Corrective Work Order Other: _____

Instrument Type:

Recorder Transmitter pH Chlorine Turbidity Flow Other: DO

Calibration: See Reverse page for calibration data

Input/Standard	As Found		As Left	
	Actual Value	% Accuracy	Actual Value	% Accuracy

% Accuracy Calculation => **ABS**([(Actual Value/Standard) - 1] x 100%)

Material Used:

Quantity	Part #	Description
1		6mm of Distilled water as per calibration instructions

Comments:

Shake 6mm (1/4") of water in a beaker for 30 seconds. Insert probe in beaker above water. Allow for probe to stabilize. Begin calibration.

Instrument Passed Calibration.

In good working order.

Name: _____ Dan Peplinski _____ **Signature:** _____