

Mississippi Mills Wastewater System

2022 Annual Report

January 1, 2022 – December 31, 2022

Prepared By



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

This report has been prepared to meet the requirements set out in the facility Certificate of Approval #1637-AC8NT7 dated August 8, 2016.

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1 Compliance Report Card

Compliance Event	# of Events	Details
Ministry of Environment Inspections	0	There were no Inspections during the reporting period
Ministry of Labour Inspections	0	There were no Inspections during the reporting period
Effluent Parameter Exceedances	0	There were no parameter exceedances during the reporting period
Bypass/Overflows	3	See Bypass and Overflow section
Community Complaints	0	There were no Community Complaints during the reporting period
Spills	2	Two (2) spill during the reporting period. See spill section
Operating Issues	0	There were no operating issues during the reporting period

2 System/Process Description

Flow enters the Wastewater treatment plant and passes through screen channels which contain fine screens that lead to a screw compactor. Grit is removed using circular vortex grit removal, air lift and grit classifier system units.

Flow then moves to secondary treatment which consists of two (2) treatment trains using the extended aeration activated sludge process. Each train is equipped with an aeration tank, anoxic zone and a secondary clarifier. Chemicals are added to the process for phosphorus control. Tertiary treatment is achieved using Five (5) filter trains with three (3) filtration cells in each. Disinfection is provided using Ultraviolet (UV) lights.

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Waste Activated Sludge (WAS) is transferred from the secondary clarifiers and thickened via rotary disk thickeners. Thickened WAS sludge is pumped into an ATAD for further sludge breakdown and then transferred via pump to the SNDR for stabilization. Digested sludge is pumped to the Fournier press to process cake for future land disposal.

The Mississippi Mills WWTP also consists of a septage receiving station consisting of a storage tank, two (one duty and one standby) dry-pit pumps, and a grinder on the inlet piping.

2.1 Notice of Modifications - Proposed Alterations, Extensions, or Replacement to Works

There were no modifications, proposed alterations, extensions or replacements that would affect Schedule A subsection 1 and subsection 3 of the Certificate of Approval.

3 Effluent Quality Assurance or Control Measures

The Municipality of Mississippi Mills facilities are part of OCWA’s operational Mississippi Cluster. The facilities are supported by regional and corporate resources. Operational Services are delivered by OCWA staff that live and work in the community.

OCWA operates facilities in compliance with applicable regulations. The facility has comprehensive manuals detailing operations, maintenance, instrumentation, and emergency procedures. All procedures are treated as active documents, with annual reviews.

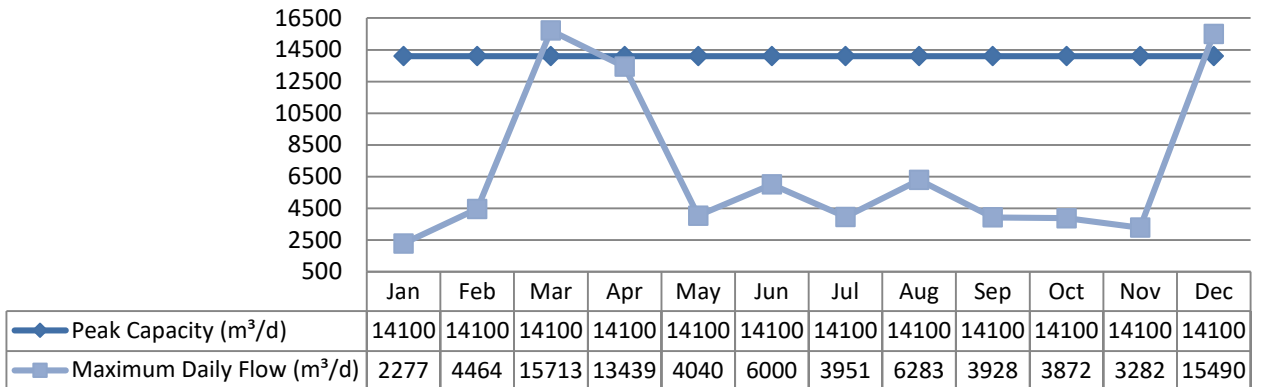
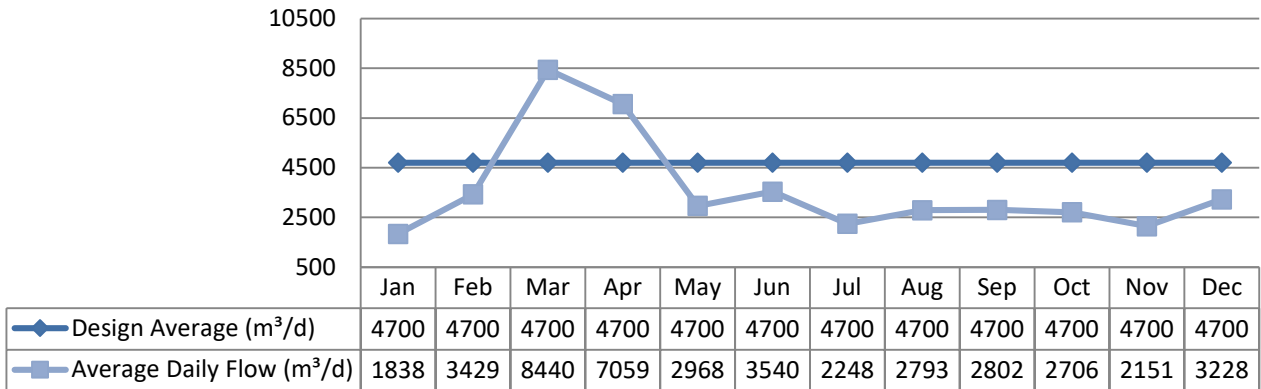
OCWA has additional “Value Added” and operational support services that the Municipality of Mississippi Mills benefits from including:

- Access to a network of operational compliance and support experts at the regional and corporate level, as well as affiliated programs that include the following:
 - Quality & Environmental Management System, Occupational Health & Safety System and an internal compliance audit system
 - Process Data Management (PDM) facility operating information repository, which consolidates field data, online instrumentation, and electronic receipt of lab test results for reporting, tracking and analysis
 - Work Management System (WMS) that tracks and reports maintenance activity, and creates predictive and preventative reports
 - Outpost 5 wide-area SCADA system allows for process optimization and data logging, process trending, remote alarming and optimization of staff time
- Client reporting which includes operational data, equipment inventory, financial statements, maintenance work orders, and capital status reports
- Site-Specific Contingency Plans and Standard Operating Procedures
- Use of accredited laboratories
- Additional support in response to unusual circumstances, and extra support in an emergency.
- Use of sampling schedules for external laboratory sampling

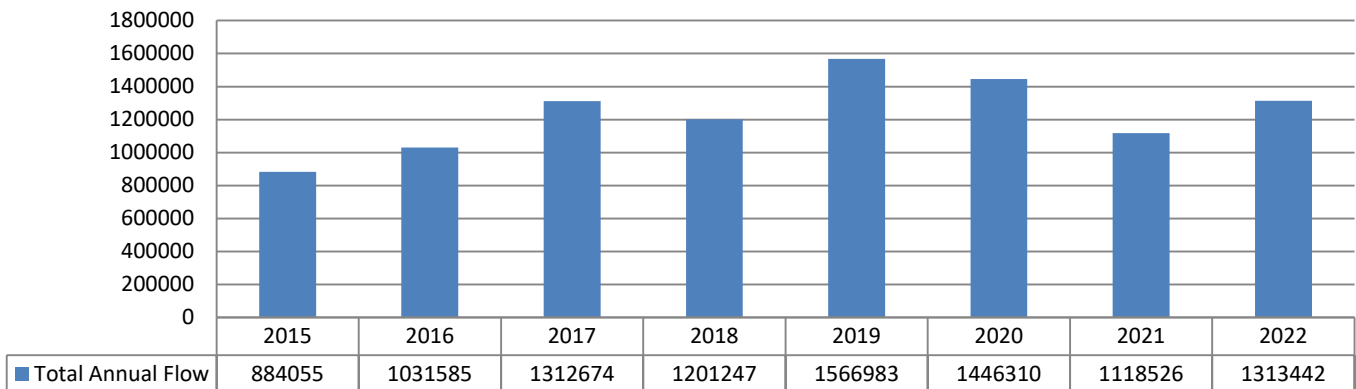
4 Treatment Flows

4.1 Raw Flow (m³/d)

Compliance is calculated as an annual average flow. The annual average flow for 2022 was 3,598.5 m³/d, which is in compliance with the limit of 4,700 m³/d. The flow spikes are associated to wet weather events such as heavy rain and seasonal changes such as the spring snow melt.



4.2 Annual Comparison (m³)



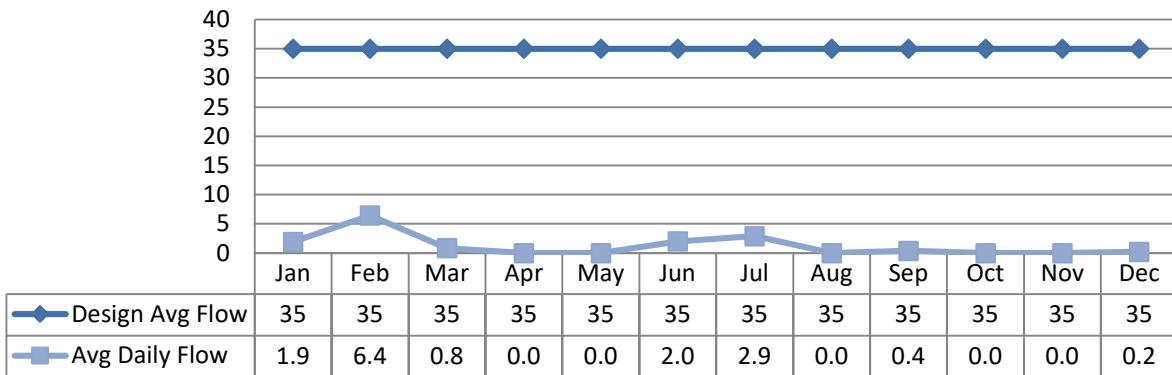
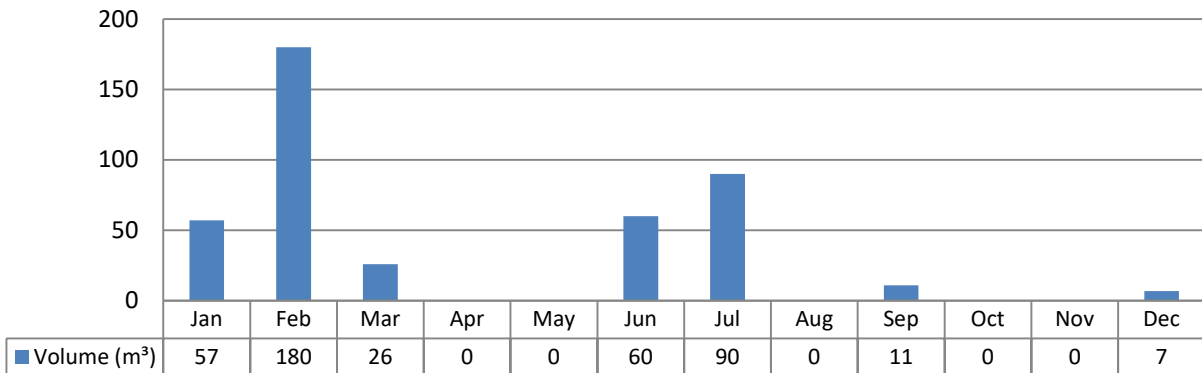
4.3 Septage Volumes

Average daily flow for 2022 = 1.2 m³/d

Total Volume for 2022 = 430.8 m³

Septage flows are included in the Raw Flows as it enters the influent stream prior to the raw flow meter.

Total Monthly Volume Received



5 Raw Sewage Quality

Results of raw sewage concentrations and loadings are available in the Facility Performance Assessment Report in Appendix A.

6 Effluent Quality

The limits are based on current requirements in the facilities Environmental Compliance Approval. Laboratory samples are submitted to an accredited laboratory for regulatory analysis.

The Federal Government also regulates certain sewage effluent parameters under the Federal Fisheries Act. The results are submitted to Environment and Climate Change Canada’s Effluent Regulatory and Reporting Information System (ERRIS) on a quarterly basis.

6.1 Effluent Exceedance Summary

Date	Parameter	Exceedance	Limit	Value	Corrective Action
There were no effluent exceedances during the reporting period					

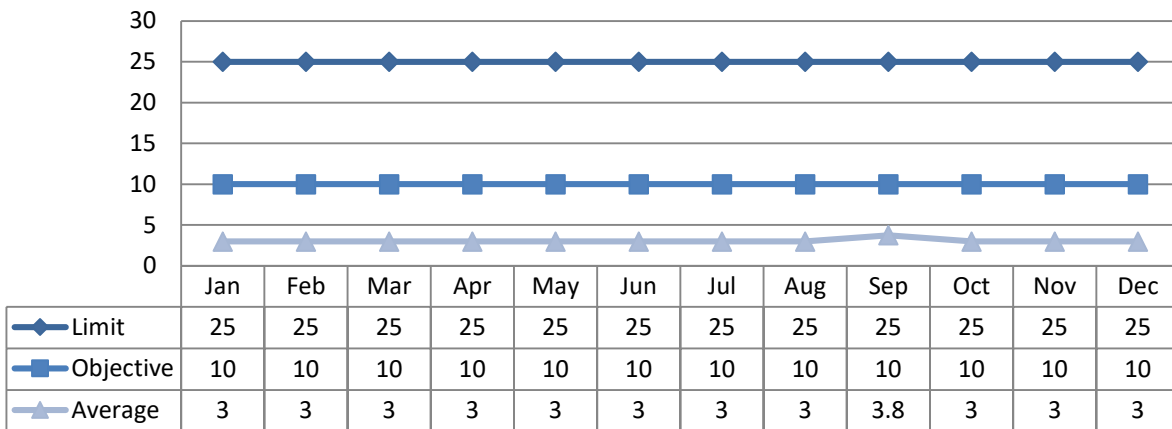
6.2 Other Effluent Sampling Issues

Sample	Legislation	Date	Details	Response
The were no effluent sampling issues during the reporting period				

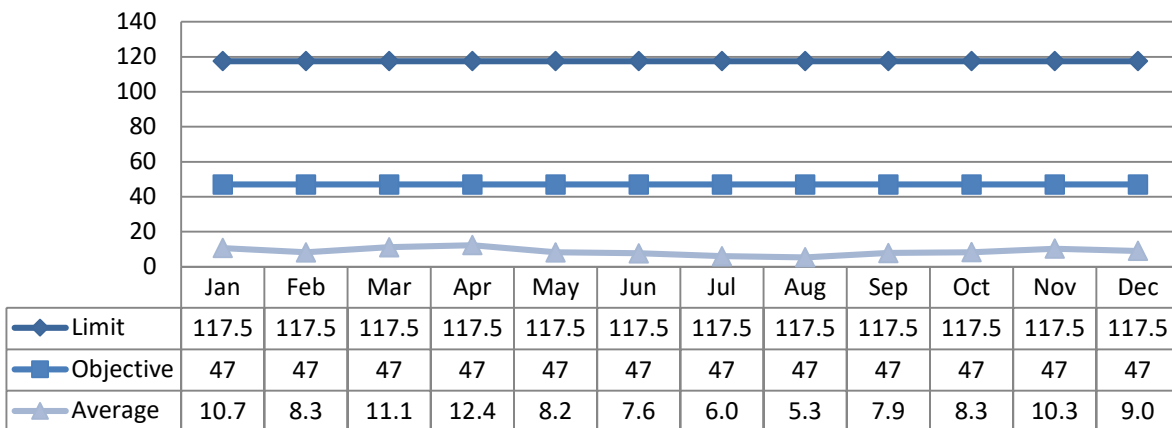
7 Effluent Parameter Summary

7.1 CBOD5

Concentration (mg/L)

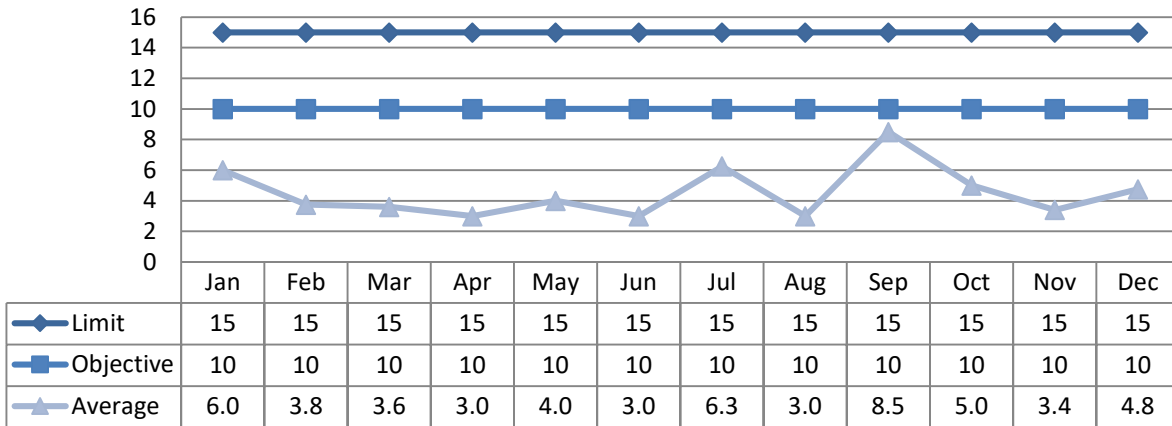


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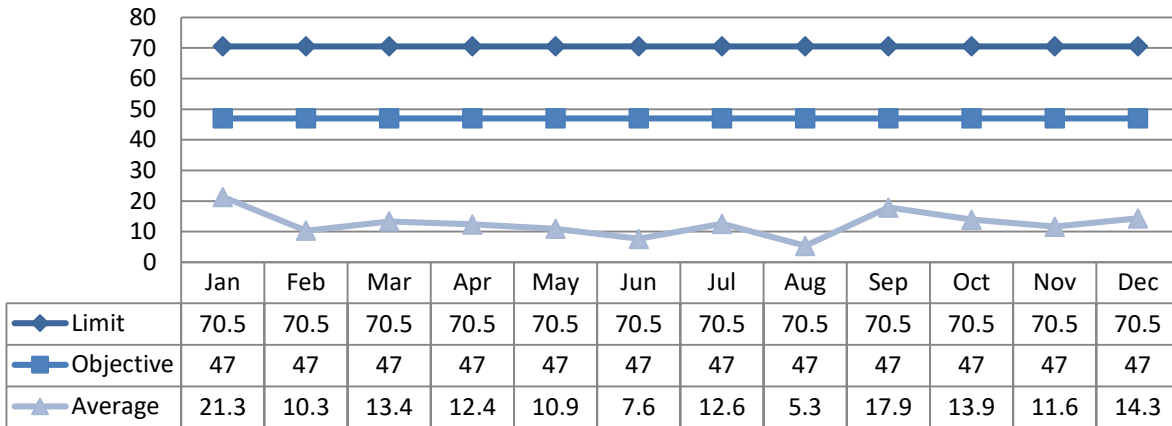


7.2 Total Suspended Solids

Concentration (mg/L)

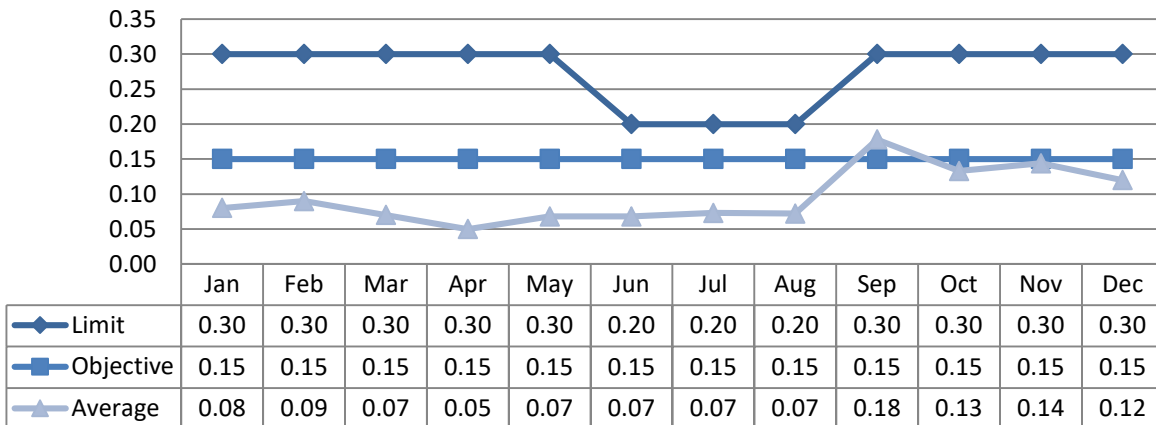


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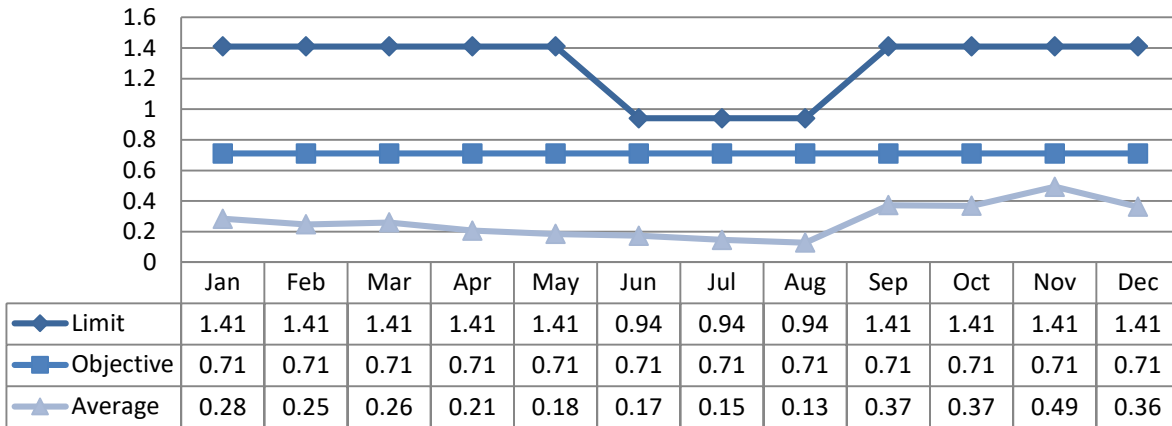


7.3 Total Phosphorus

Concentration (mg/L)

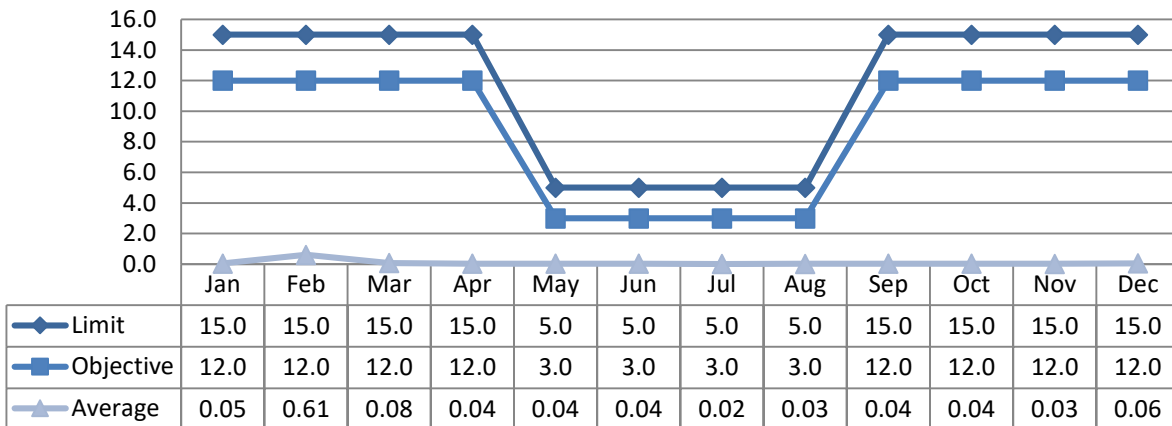


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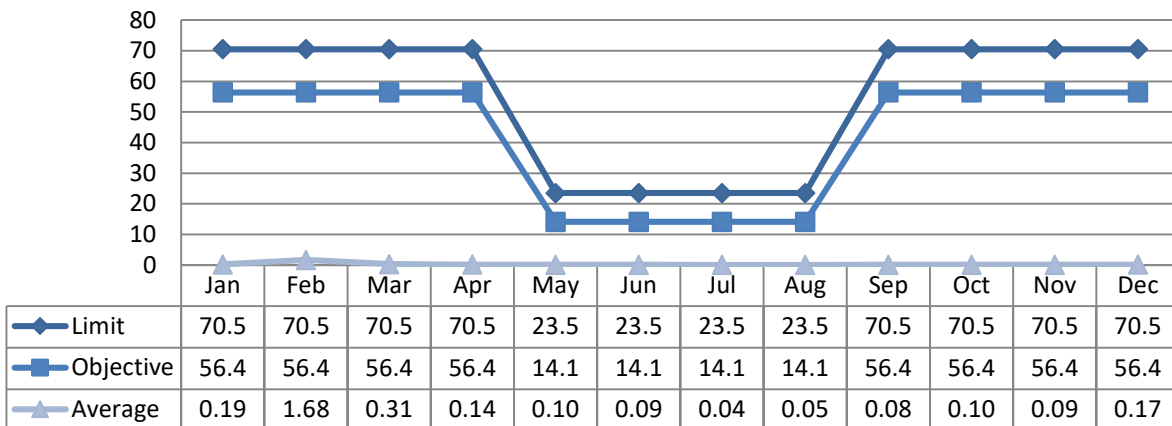


7.4 Total Ammonia Nitrogen

Concentration (mg/L)

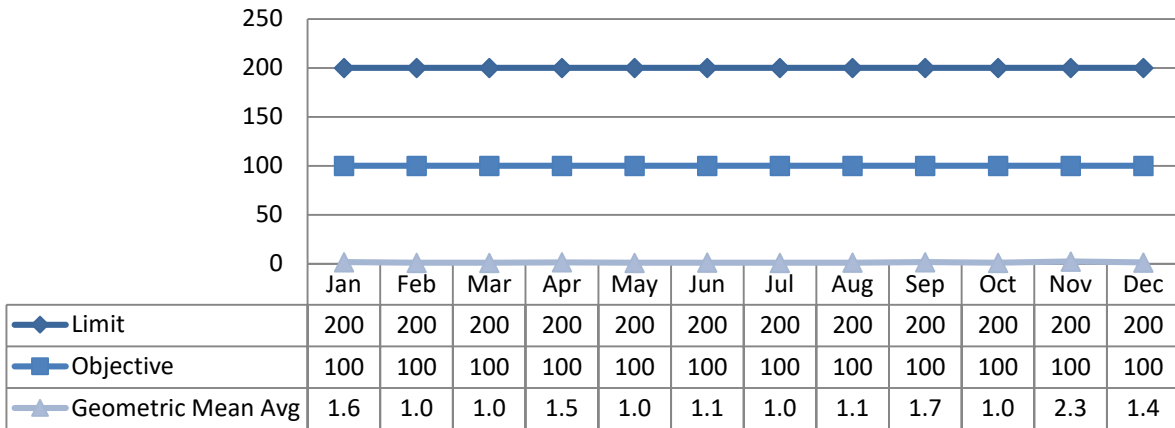


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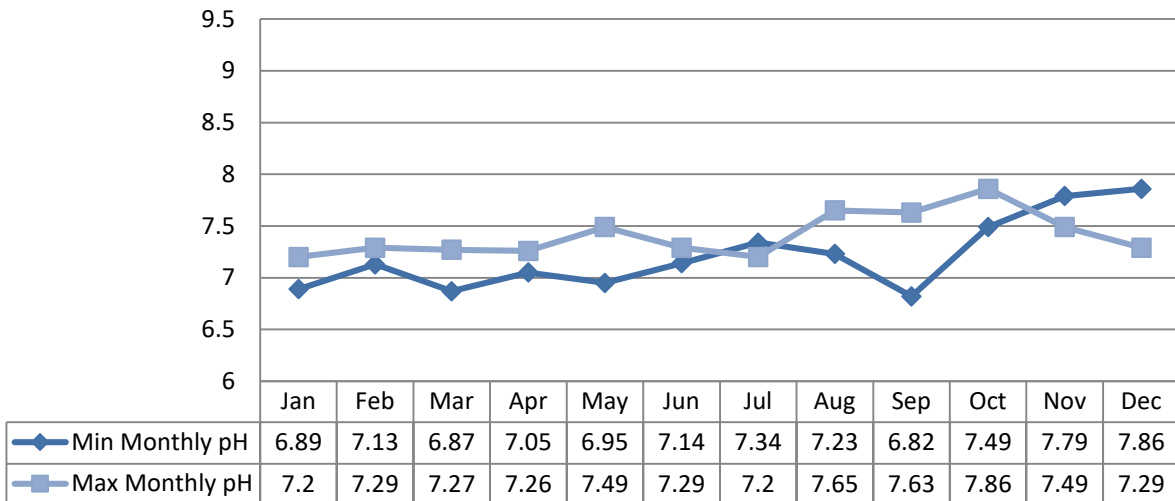


7.5 E-coli

Geometric Mean Average



7.6 pH



7.7 Acute Lethality

There were four (4) samples collected in 2022 and tested for acute lethality (Rainbow Trout and Daphnia Magna). Results are displayed as % mortality.

Quarter	Rainbow Trout	Daphnia Magna
1 st Quarter	0%	0%
2 nd Quarter	0%	0%
3 rd Quarter	0%	0%
4 th Quarter	0%	0%

8 Septage Quality

Septage was tested when received. A summary of the results is attached in Appendix B. Grab samples are collected from each load.

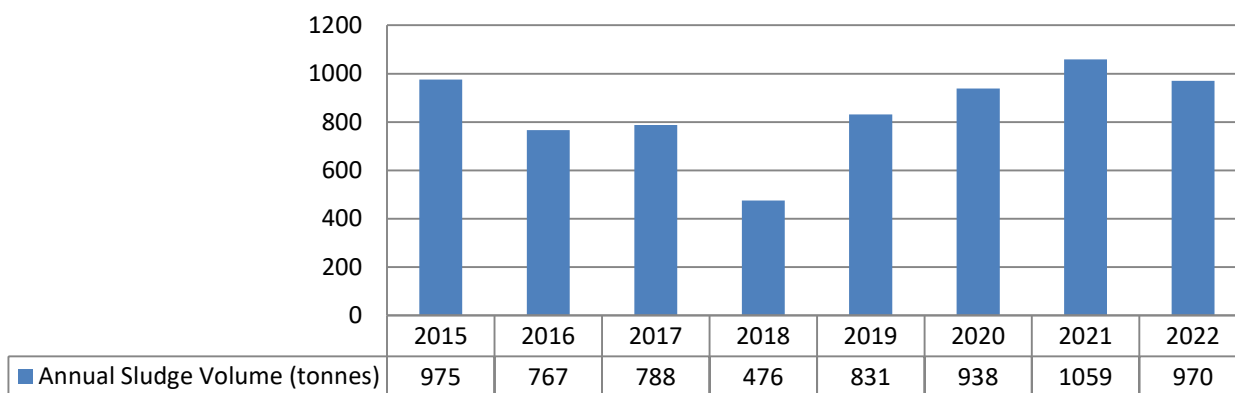
9 Biosolids

Sludge generated from the treatment plant was spread on agricultural land during the spreading season as per the Nutrient Management Act O.Reg 267/03. This facility dewateres and biosolids are handled as cake. During the winter cake is stored on-site until certified sites are ready for spreading.

9.1 Biosolids Disposal Summary

Date	Site	NASM Plan number	Volume (MT)
May 13-25, 2022	Cochran – Steele Farm	23782	568.57
October 24-25 2022	Cochran – Steele Farm	23782	401.67
Total			970.24

9.2 Annual Comparison



9.3 Quality

The biosolids sampling results are summarized in Appendix C. All results met the established guidelines.

10 Summary of Complaints

Date	Location	Details
There were no community complaints for the reporting period.		

11 Summary of Bypass/Overflows

Date	Event	Details of Events
08-Aug-2022	Gemmill’s Bay SPS Overflow	Heavy rain event
17-Dec-2022	Mississippi Mills WWT UV	Power outage occurred and the generator ran to maintain operations. Upon returning to line power, the SCADA system showed the UV system as operational. During Monday rounds, operations staff noticed the UV system was not in operation. Power and communications were reset to the UV system
31-Dec-2022	Gemmill’s Bay SPS Overflow	An extreme rain event and snow melt caused a sudden spike in the flow

12 Summary of Spills/Abnormal Discharges

Date	Event	Details of Events
19-Mar-2022	Effluent Spill	A spill at the Mississippi Mills WWTF occurred due to a root infiltration of the outfall pipe. The spill was from a manhole along the final effluent outfall pipe. The root infiltration would not allow the full capacity of flow to pass and caused the spill
26-Mar-2022	Effluent Spill	Due to root infiltration maintenance along the outfall pipe, flows were diverted to attenuation pond Cell A. Prolonged maintenance and diversion brought Cell A to full capacity. With MECP’s approval, staff pumped raw sewage overland from Cell A to Cell B.

13 Maintenance

OCWA uses a risk-based preventative maintenance framework that ensures assets are maintained to manufacturer’s and/or industry standards. Maintenance is completed using various tools and operational supports. The Ottawa Valley Hub has specialized certified staff such as Millwrights, Electricians and Instrumentation Specialists to name a few.

OCWA uses a Workplace Maintenance System (WMS). WMS is a maintenance tracking system that can generate work orders as well as give summaries of completed and scheduled work. During the year, the operating authority at the facility generates scheduled work orders on a weekly, monthly and annual basis. The service work is recorded in the work order history. This ensures routine and preventive maintenance is carried out. Emergency and capital repair maintenance is completed and added to the system.

Capital projects are listed and provided to the Municipality of Mississippi Mills in the form of a “Capital Forecast”. This list is developed by facility staff and provides recommendations for facility components requiring upgrading or improvement.

13.1 Maintenance Highlights

WO #	Summary
2869261	Capital #1 Blower Replacement
2872290	Capital Alum Pump Head Replacement Kits
2872292	Capital Portable Hach Meters Servicing
2923093	Capital Compressor Service
2963297	Capital Replacement Parts for Compressor #2
2965655	Capital SCADA Programmer Site Visit
3015764	Capital Installed Davit Stand For Mixer for Aeration Tank 1
3016406	Capital Replacement Impeller for Anoxic Mixer
3016681	Capital Hot Water Tank Repairs
3017069	Miscellaneous Capital Items < \$200
3018310	Capital Portable Hach Meter pH Probe
3066173	Capital Main Office AC not working
3107140	Capital Replacement Polymer Injection Check Valve Fournier Press
3107151	Capital Disk Thickener Polymer Panel Check Valve
3145670	Capital Annual Septage Receiving Website Invoice
2634512	Capital WAS Pump Motor Replacement
2635018	Capital UV Sensor Probe
2635039	Capital Hach Technician On Site UVT
2637697	Capital Boiler 1 troubleshooting
2638131	Capital Miscellaneous Items < \$200
2638561	Capital SPS Cleanout by Pump Truck
2638613	Capital CP 7 communications
2676549	Capital Blower 1 - Inverter Fault Alarm
2678121	Capital New Fan Motor for Heater in Blower Room
2680401	Capital UPS battery back up
2681152	Capital Ignition Assembly
2681414	Capital Disk Thickener #2 Pump Motor Faulting
2725647	Capital Alum Panel Replacement Parts
2774261	Capital ATAD valve not responding
2774286	Capital Flow Meter Fault Sludge 2 flow meter
2824015	Capital IR Scan for all roofs
2824892	Capital SCADA Programmer site visit
2867012	Capital Sand Filter Parts
2869324	Capital Backflow Prevention Service and Repair
2871281	Main Breaker Communication Lost
2872288	Capital UV Sensor Assay
2874357	Capital Final Effluent pH Electrode
2921178	Capital Main Office and Lab AC units not working
2923084	Capital Final Effluent pH Probe
2962278	Capital O ₂ Sensor
2962610	Capital Replacement parts for Compressor #2
2963247	Capital Annual Website Registration Fee
3014832	Capital RP Backflow
3015765	Capital Installed Davit Stand for Mixer for Aeration Tank 2
3016126	Capital Replacement Impeller for Anoxic Mixer

WO #	Summary
3016661	Capital New Propeller for Anoxic Mixer 2
3148218	Capital Capital Controls Chain & Flight Control Issues and UV Dosage Alarm

13.2 Calibration

The flow meters were calibrated on January 19th 2022. Records are attached in Appendix D. Analyzers are scheduled for maintenance in the WMS program. Work is completed and logged in the logbook and in the WMS.

14 Collection Highlights

Collection Highlights were provided by the Municipality of Mississippi Mills.

14.1 Collection Highlights

- One (1) quarter of sewage collection system flushed and inspected via CCTV
- Regular sewer inspection program
- Several repairs – main lines and laterals
- Preventative flushing
- Sewer lining on
- New sewer mains commissioned on Mill Street (Phase 1 and 2), 36 Main Street East, and 333 Country Street

14.2 Planning Initiatives

- Water and Wastewater Master Plan
- Union Street North Infrastructure Upgrade Design
- Princess Street Infrastructure Upgrade Design

Appendix A

Facility Assessment Report

5678 MISSISSIPPI MILLS WASTEWATER TREATMENT FACILITY 110000873

	1/ 2022	2/ 2022	3/ 2022	4/ 2022	5/ 2022	6/ 2022	7/ 2022	8/ 2022	9/ 2022	10/ 2022	11/ 2022	12/ 2022	<--Total-->	<--Avg-->	<--Max-->	<-Criteria-->
Flows																
Raw Flow: Total - Raw Sewage m³/d	56,981.66	96,005.20	261,641.91	211,760.35	91,995.37	106,207.90	69,682.05	86,591.46	84,072.98	83,899.58	64,529.12	100,074.90	1,313,442.48			0.00
Raw Flow: Avg - Raw Sewage m³/d	1,838.12	3,428.76	8,440.06	7,058.68	2,967.59	3,540.26	2,247.81	2,793.27	2,802.43	2,706.44	2,150.97	3,228.22		3,598.47		
Raw Flow: Max - Raw Sewage m³/d	2,277.10	4,464.34	15,713.43	13,439.25	4,040.27	6,000.00	3,951.14	6,282.73	3,927.92	3,872.41	3,282.31	15,490.14			15,713.43	0.00
Raw Flow: Count - Raw Sewage m³/d	31.00	28.00	31.00	30.00	31.00	30.00	31.00	31.00	30.00	31.00	30.00	31.00	365.00			0.00
Eff. Flow: Total - Final Effluent m³/d	65,055.49	78,518.86	143,312.57	192,026.02	80,422.64	82,836.77	64,248.32	72,932.69	75,037.35	67,285.87	62,138.33	93,565.86	1,077,380.77			0.00
Eff. Flow: Avg - Final Effluent m³/d	2,168.52	2,804.25	4,622.99	6,400.87	2,594.28	2,761.23	2,072.53	2,352.67	2,501.25	2,170.51	2,071.28	3,018.25		2,959.84		4,700.00
Eff. Flow: Max - Final Effluent m³/d	2,895.37	3,879.97	10,825.35	10,207.63	3,582.00	4,842.87	3,574.60	3,932.42	3,912.32	2,433.91	2,626.29	15,519.65			15,519.65	0.00
Eff Flow: Count - Final Effluent m³/d	30.00	28.00	31.00	30.00	31.00	30.00	31.00	31.00	30.00	31.00	30.00	31.00	364.00			0.00
Biochemical Oxygen Demand: BOD5																
Raw: # of samples of BOD5 - Raw Sewage mg/L	4.00	4.00	8.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	5.00	4.00	55.00			0.00
Carbonaceous Biochemical Oxygen Demand: CBOD																
Raw: # of samples of cBOD5 - Raw Sewage mg/L	4.00	4.00	8.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	5.00	4.00	55.00			0.00
Total Suspended Solids: TSS																
Raw: Avg TSS - Raw Sewage mg/L	432.50	798.25	59.50	107.00	156.50	136.40	226.25	144.00	320.25	180.00	222.60	251.25		252.88	798.25	0.00
Raw: # of samples of TSS - Raw Sewage mg/L	4.00	4.00	8.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	5.00	4.00	55.00			0.00
Total Phosphorus: TP																
Raw: Avg TP - Raw Sewage mg/L	6.82	13.48	1.75	3.05	4.07	3.93	5.60	3.65	5.87	5.58	5.60	6.54		5.49	13.48	0.00
Raw: # of samples of TP - Raw Sewage mg/L	4.00	4.00	8.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	5.00	4.00	55.00			0.00
Nitrogen Series																
Raw: Avg TKN - Raw Sewage mg/L	44.78	63.80	13.26	22.15	28.80	30.18	34.73	27.76	52.93	45.38	46.90	45.85		38.04	63.80	0.00
Raw: # of samples of TKN - Raw Sewage mg/L	4.00	4.00	8.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	5.00	4.00	55.00			0.00
Disinfection																
Eff: GMD E. Coli - Final Effluent cfu/100mL	1.00	1.86	6.53	2.76	1.78	1.00	1.00	1.00	1.50	1.57	1.00	1.68				200.00
Eff: # of samples of E. Coli - Final Effluent cfu/100mL	4.00	4.00	12.00	8.00	4.00	5.00	4.00	5.00	4.00	4.00	5.00	4.00	63.00			0.00

Appendix B

Septage Sample Data

Appendix C

Biosolids Quality

Ontario Clean Water Agency
Time Series Info Report

From: 01/01/2022 to 31/12/2022

Facility Org Number: 5678
 Facility Works Number: 110000873
 Facility Name: MISSISSIPPI MILLS WASTEWATER TREATMENT FACILITY
 Facility Owner: Municipality: Municipality of Mississippi Mills
 Facility Classification: Class 3 Wastewater Treatment
 Receiver: Mississippi River
 Service Population:
 Total Design Capacity: 14100.0 m3/day

	01/2022	02/2022	03/2022	04/2022	05/2022	06/2022	07/2022	08/2022	09/2022	10/2022	11/2022	12/2022	Total	Avg	Max	Min
CAKE / Aluminum: Al Dry Wt - mg/kg																
Count Lab	2	2	2	2	2	2	2	2	2	2	3	2	25			
Max Lab	93600	94800	94100	91100	91400	104000	104000	102000	104000	117000	109000	106000			117000	
Mean Lab	91750	93800	92850	87800	87950	101050	100650	100800	103000	59000	107333.3	104500		94732		
Min Lab	89900	92800	91600	84500	84500	98100	97300	99600	102000	1000	106000	103000				1000
CAKE / Arsenic: As Dry Wt - mg/kg																
Count Lab	2	2	2	2	2	2	2	2	2	2	3	2	25			
Max Lab	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2			< 2	
Mean Lab	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 1.25		< 1.94		
Min Lab	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.5				< 0.5
CAKE / Cadmium: Cd Dry Wt - mg/kg																
Count Lab	2	2	2	2	2	2	2	2	2	2	3	2	25			
Max Lab	1.1	0.7	0.9	< 0.5	0.6	0.7	0.6	< 0.6	0.7	< 0.7	0.8	< 0.5			< 1.1	
Mean Lab	0.85	0.6	0.75	< 0.5	< 0.55	0.6	< 0.55	< 0.55	0.65	< 0.6	0.7	< 0.5		< 0.62		
Min Lab	0.6	0.5	0.6	< 0.5	< 0.5	0.5	< 0.5	< 0.5	0.6	< 0.5	0.6	< 0.5				< 0.5
CAKE / Chromium: Cr Dry Wt - mg/kg																
Count Lab	2	2	2	2	2	2	2	2	2	2	3	2	25			
Max Lab	17	15	14	14	13	15	15	17	16	< 14	17	18			< 18	
Mean Lab	15.5	15	14	14	13	15	14	16.5	15	< 7.5	15.667	17.5		< 14.44		
Min Lab	14	15	14	14	13	15	13	16	14	< 1	15	17				< 1
CAKE / Cobalt: Co Dry Wt - mg/kg																
Count Lab	2	2	2	2	2	2	2	2	2	2	3	2	25			
Max Lab	2	1	3	2	2	2	2	2	2	< 2	2	2			< 3	
Mean Lab	2	1	2.5	2	1.5	2	2	1.5	2	< 1.5	1.333	1.5		< 1.72		
Min Lab	2	1	2	2	1	2	2	1	2	< 1	1	1				< 1
CAKE / Copper: Cu Dry Wt - mg/kg																
Count Lab	2	2	2	2	2	2	2	2	2	2	3	2	25			
Max Lab	459	455	706	464	424	389	402	444	464	498	451	433			706	
Mean Lab	441.5	447.5	618	415	395.5	377.5	372	428	448	251	449.333	425.5		423.48		
Min Lab	424	440	530	366	367	366	342	412	432	4	447	418				4
CAKE / E. Coli: EC Dry Wt - cfu/g																
Count Lab	2	2	2	2	2	2	2	2	2	2	3	2	25			
Max Lab	495400	56497	61350	87250	64858	> 200000	> 200000	112426	47004	> 200000	83218	122449			> 495400	
Mean Lab	486950	52058	53402.5	67017	34447.5	> 102399.5	> 102732	74618	26204.5	> 116535	40707.33	67620		> 99603.6		
Min Lab	478500	47619	45455	46784	4037	> 4799	5464	36810	5405	> 33070	18634	12791				> 4037
CAKE / Lead: Pb Dry Wt - mg/kg																
Count Lab	2	2	2	2	2	2	2	2	2	2	3	2	25			
Max Lab	9	8	8	6	7	7	8	8	9	< 10	10	9			< 10	
Mean Lab	8.5	7	7.5	6	6.5	6.5	7	7.5	8.5	< 7.5	9.667	8.5		< 7.64		
Min Lab	8	6	7	6	6	6	6	7	8	< 5	9	8				< 5
CAKE / Mercury: Hg Dry Wt - mg/kg																
Count Lab	2	2	2	2	2	2	2	2	2	2	3	2	25			
Max Lab	0.34	0.32	0.37	0.41	0.42	0.37	0.37	0.49	0.34	0.39	0.41	0.46			0.49	

Count Lab	2	2	2	2	2	2	2	2	2	2	2	3	2	25				
Max Lab	58	60.1	58.1	61.1	61	59.8	58.9	56	68	55.3	55.9	58.1				68		
Mean Lab	55.85	59.35	57.1	61	58	59.15	56.75	55.55	60.9	54.15	55.267	57.2			57.432			
Min Lab	53.7	58.6	56.1	60.9	55	58.5	54.6	55.1	53.8	53	54.1	56.3					53	
CAKE / Zinc: Zn Dry Wt - mg/kg																		
Count Lab	2	2	2	2	2	2	2	2	2	2	3	2	25					
Max Lab	404	348	311	262	276	251	289	349	373	431	417	401				431		
Mean Lab	380.5	343.5	309.5	248.5	257	246.5	271.5	344.5	367	217	408	394			319.32			
Min Lab	357	339	308	235	238	242	254	340	361	3	403	387					3	
CAKE / pH - ---																		
Count Lab	2	2	2	2	2	2	2	2	2	2	3	2	25					
Max Lab	6.86	7.23	7.07	7.58	7.14	7.31	7.62	7.27	7.4	7.04	7.12	7.07				7.62		
Mean Lab	6.76	7.11	6.995	7.325	7.02	7.195	7.41	7.155	7.21	7.01	7.1	7.03			7.11			
Min Lab	6.66	6.99	6.92	7.07	6.9	7.08	7.2	7.04	7.02	6.98	7.07	6.99					6.66	

Appendix D

Calibration Records

CapitalControls

Electrical/Control Panels – PLC/SCADA Programming – Instrumentation Calibrations

03-1333 Michael St Ottawa, ON K1B-3M9 Ph. 613 248-1999 Fax: 613 248-1997

The Town of Almonte

Waste Water Calibration / Verification of Instrumentation

Report January 24, 2022

Calibration Date: January 19, 2022

Calibration Due: January 19, 2023

Calibrations performed by Tim Stewart

Report prepared by Tim Stewart

CapitalControls

Electrical/Control Panels – PLC/SCADA Programming – Instrumentation Calibrations

03-1333 Michael St Ottawa, ON K1B-3M9 Ph. 613 248-1999 Fax: 613 248-1997

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CapitalControls

Electrical/Control Panels – PLC/SCADA Programming – Instrumentation Calibrations

03-1333 Michael St Ottawa, ON K1B-3M9 Ph. 613 248-1999 Fax: 613 248-1997

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1 List of Verified Devices

This letter is to confirm that annual verification on the following devices has been completed. Results of the all verifications are listed below.

ID	Process	Make/Model	Results
FIT-310	Septage Inlet Grinder	E&H/ Promag 53W	Passed
FIT-350	Septage Tank	E&H/ Promag 53P	Passed
FIT-611	R.A.S.	E&H/ Promag 10P	Passed
FIT-612	W.A.S.	E&H/ Promag 10P	Passed
FIT-631	R.A.S.	E&H/ Promag 10P	Passed
FIT-621	R.A.S.	E&H/ Promag 10P	Passed
FIT-622	W.A.S.	E&H/ Promag 10P	Passed
FIT-632	W.A.S.	E&H/ Promag 10P	Passed
FIT-750	Filtrate Tank	E&H/ Promag 10P	Passed
FIT-1091	Service Water	E&H/ Promag 10P	Passed
FIT-405	Attenuation	E&H/ Promag 53P	Passed
FIT-946	Fournier Press #1 Polymer	E&H/ Promag 50P	Passed
FIT-940	Fournier Press#1 Sludge	E&H/ Promag 50W	Passed
FIT-956	Fournier Press #2 Polymer	E&H/ Promag 50P	Passed
FIT-950	Fournier Press#2 Sludge	E&H/ Promag 50W	Passed
FIT-470	Raw Sewage Vortex #1	Siemens/Multiranger200	Passed
FIT-480	Raw Sewage Vortex #1	Siemens/Multiranger200	Passed
FIT-01	White Tail Ridge	E&H/ Promag 10	Passed
FIT-700	Sludge Flow	Rosemount/8712	Passed
FIT-1180	Final Effluent	Siemens/OCM III	Passed

Signed by Field Technician:

Tim Stewart

2 Equipment Used

The following equipment was used to perform the calibrations:

Fluke 725 Multifunction Process Calibrator used to measure current and pressure.

Level Simulator for the Flume Flow Meters

Endress and Hauser FieldCheck for Magnetic Flow Meters

3 Procedures Used

To verify the equipment standard verification procedures developed by the Township were used and standard industry practice.

3.1 Flowmeter Verification

Verification, Magnetic Flow Meter:

The verification of Endress & Hauser Flow measuring devices (the device under test) are checked for the following characteristic values:

1. Functionality and deviation in flow measurement.
2. Deviation in the current and frequency outputs in reference to the flow rate data determined by the measuring device.

Measuring devices: The verification system consists of the FlowCheck flow simulator, the Simubox and the appropriate connection cables.

FieldCheck: The FieldCheck flow simulator generates the flow simulation signals and processes the measured values sent back from the transmitter.

Simubox: The Simubox ensures that the FieldCheck simulation signal are correctly converted in the transmitter, by comparing the measurements returned from the transmitter to data stored within the Simubox for various parameters (Electromagnetic Field vs. Flow, Flow vs. Current, and various other parameters important in verifying the proper functionality of the device under test.

Verification of Rosemount flow meters is carried out using the 8714D flow tube simulator.

Verification of Flume Flow Meters:

By use of a mechanical level simulating tool installed in the Parshall Flume an exact level can be simulated causing the transmitter to display flow based on the simulator adjusted level.

Shown below is a picture of a simple level simulator used to simulate flows/levels in a Parshall Flume.



By adjusting the reflector upward from the bottom ridge of the base, which will sit on the floor of the flume directly under the level sensor, the flow meter will transmit and display the flow proportional to the simulated level. In this case a 24inch Parshall flume with the simulator set to 240mm can be verified against the chart on the next page. The flow on the transmitter should be comparable to 156.4 l/s.

FLOW CHART
GREYLINE INSTRUMENTS INC.
24" Parshall Flume

Formula: $Q = KH^n$,
where: Q = Flow in Liters per Second.
K = 0.031982
H = Head in Millimeters.
n = 1.5500
H maximum: 750.0 Millimeters
H increment: 5 Millimeters

mm	L/s	mm	L/s	mm	L/s	mm	L/s
5.000	0.3875	195.0	113.4	385.0	325.4	575.0	605.9
10.00	1.135	200.0	117.9	390.0	331.9	580.0	614.1
15.00	2.127	205.0	122.5	395.0	338.6	585.0	622.3
20.00	3.323	210.0	127.2	400.0	345.2	590.0	630.6
25.00	4.696	215.0	131.9	405.0	351.9	595.0	638.9
30.00	6.229	220.0	136.7	410.0	358.7	600.0	647.2
35.00	7.911	225.0	141.5	415.0	365.5	605.0	655.6
40.00	9.730	230.0	146.4	420.0	372.3	610.0	664.0
45.00	11.68	235.0	151.4	425.0	379.2	615.0	672.5
50.00	13.75	240.0	156.4	430.0	386.2	620.0	681.0
55.00	15.94	245.0	161.5	435.0	393.2	625.0	689.5
60.00	18.24	250.0	166.6	440.0	400.2	630.0	698.1
65.00	20.65	255.0	171.8	445.0	407.3	635.0	706.7
70.00	23.16	260.0	177.1	450.0	414.4	640.0	715.3
75.00	25.78	265.0	182.4	455.0	421.5	645.0	724.0
80.00	28.49	270.0	187.7	460.0	428.7	650.0	732.7
85.00	31.30	275.0	193.1	465.0	436.0	655.0	741.5
90.00	34.20	280.0	198.6	470.0	443.3	660.0	750.2
95.00	37.19	285.0	204.1	475.0	450.6	665.0	759.1
100.0	40.26	290.0	209.7	480.0	458.0	670.0	767.9
105.0	43.43	295.0	215.3	485.0	465.4	675.0	776.8
110.0	46.67	300.0	221.0	490.0	472.8	680.0	785.8
115.0	50.00	305.0	226.8	495.0	480.3	685.0	794.8
120.0	53.41	310.0	232.6	500.0	487.9	690.0	803.8
125.0	56.90	315.0	238.4	505.0	495.5	695.0	812.8
130.0	60.47	320.0	244.3	510.0	503.1	700.0	821.9
135.0	64.11	325.0	250.2	515.0	510.8	705.0	831.0
140.0	67.83	330.0	256.2	520.0	518.5	710.0	840.2
145.0	71.62	335.0	262.3	525.0	526.2	715.0	849.3
150.0	75.48	340.0	268.4	530.0	534.0	720.0	858.6
155.0	79.42	345.0	274.5	535.0	541.8	725.0	867.8
160.0	83.43	350.0	280.7	540.0	549.7	730.0	877.1
165.0	87.50	355.0	286.9	545.0	557.6	735.0	886.5
170.0	91.64	360.0	293.2	550.0	565.6	740.0	895.8
175.0	95.86	365.0	299.5	555.0	573.5	745.0	905.2
180.0	100.1	370.0	305.9	560.0	581.6	750.0	914.7
185.0	104.5	375.0	312.4	565.0	589.6		
190.0	108.9	380.0	318.8	570.0	597.7		

4 Instrument Verification

See the following pages of reports for individual equipment.

4.1 FIT- 310 Septage Inlet Grinder

Flow Transmitter
As Found Results

Instrument Calibration/Verification Report

Date: January 18th, 2022

Client Details

Customer Almonte O.C.W.A.
Contact Austin Mitchell
613-257-9188

Calibrations by: Tim Stewart
Capital Controls
613-248-1999

Instrument Details

Manufacturer Eand H
Model Promag 53 W DN 100
Serial Number E309B116000
Location Almonte W.W.T.P.
Process Septage Inlet Grinder
Tag ID FIT-310
Output 4-20 mA

Calibration Equipment

Make	Fluke Meter	FieldCheck
Model	725	50098801
Serial #	8759025	99081402000

0

Test Procedure

FieldCheck

Zero Test

Current out = -0.005 mA

Amplifier

MP1 = -0.61 %
MP2 = -0.10 %
MP3 = -0.06 %
MP4 = -0.06 %

Current Output

MP1 = -0.006 mA
MP2 = -0.021 mA
MP3 = -0.003 mA
MP4 = +0.004 mA

Sensor Test

Rated for 5.00
Actual = 7.90
0.00...14.25
Coil Current Stability Passed

Potential Difference

Actual = 0.00
Lower Limit = 0.00
Upper Limit = 300.00

Comments

The instrument under test has passed the annual calibration.

4.2 FIT- 350 Septage Tank

Flow Transmitter
As Found Results

Instrument Calibration/Verification Report

Date: January 18th, 2022

Client Details

Customer Almonte O.C.W.A.
Contact Austin Mitchell
613-257-9188

Calibrations by: Tim Stewart
Capital Controls
613-248-1999

Instrument Details

Manufacturer Eand H
Model Promag 53 P DN 100
Serial Number E60E6616000
Location Almonte W.W.T.P.
Process Septage Tank
Tag ID FIT-350
Output 4-20 mA

Calibration Equipment

Make	Fluke Meter	FieldCheck
Model	725	50098801
Serial #	8759025	99081402000

Test Procedure

FieldCheck

Zero Test

Current out = -0.009 mA

Amplifier

MP1 = -0.52 %
MP2 = -0.52 %
MP3 = -0.00 %
MP4 = +0.04 %

Current Output

MP1 = -0.008 mA
MP2 = -0.020 mA
MP3 = -0.001 mA
MP4 = +0.013 mA

Sensor Test

Rated for 5.00
Actual = 6.27
0.00...14.25
Coil Current Stability Passed

Potential Difference

Actual = 0.00
Lower Limit = 0.00
Upper Limit = 300.00

Comments

The instrument under test has passed the annual calibration.

CapitalControls

Electrical/Control Panels – PLC/SCADA Programming – Instrumentation Calibrations

03-1333 Michael St Ottawa, ON K1B 3M9 Ph. 613 248-1999 Fax: 613 248-1997

4.3 FIT- 611 R.A.S.

Flow Transmitter
As Found Results

Instrument Calibration/Verification Report

Date: January 19th, 2022

Client Details

Customer Almonte O.C.W.A.
Contact Austin Mitchell
613-257-9188

Calibrations by: Tim Stewart
Capital Controls
613-248-1999

Instrument Details

Manufacturer Eand H
Model Promag 10 P DN 150
Serial Number E6085316000
Location Almonte W.W.T.P.
Process RAS
Tag ID FIT-611
Output 4-20 mA

Calibration Equipment

Make	Fluke Meter	FieldCheck
Model	725	50098801
Serial #	8759025	99081402000

Test Procedure

FieldCheck

Zero Test

Current out = -0.002 mA

Amplifier

MP1 = -1.28 %
MP2 = -0.03 %
MP3 = -0.19 %
MP4 = -0.15 %

Current Output

MP1 = -0.002 mA
MP2 = -0.003 mA
MP3 = +0.008 mA
MP4 = +0.021 mA

Sensor Test

Rated for 83.30
Actual = 66.48
20...83.30

Coil Current Stability Passed

Potential Difference

Actual = 0.00
Lower Limit = 0.00
Upper Limit = 300.00

Comments

The instrument under test has passed the annual calibration.

CapitalControls

Electrical/Control Panels – PLC/SCADA Programming – Instrumentation Calibrations

03-1333 Michael St Ottawa, ON K1B 3M9 Ph. 613 248-1999 Fax: 613 248-1997

4.4 FIT- 612 W.A.S.

Flow Transmitter
As Found Results

Instrument Calibration/Verification Report

Date: January 19th, 2022

Client Details

Customer Almonte O.C.W.A.
Contact Austin Mitchell
613-257-9188

Calibrations by: Tim Stewart
Capital Controls
613-248-1999

Instrument Details

Manufacturer Eand H
Model Promag 10 P DN 80
Serial Number E6086D16000
Location Almonte W.W.T.P.
Process WAS
Tag ID FIT-612
Output 4-20 mA

Calibration Equipment

Make	Fluke Meter	FieldCheck
Model	725	50098801
Serial #	8759025	99081402000

Test Procedure

FieldCheck

Zero Test

Current out = -0.004 mA

Amplifier

MP1 = -0.50 %	MP1 = -0.004 mA
MP2 = -0.06 %	MP2 = -0.003 mA
MP3 = -0.02 %	MP3 = +0.001 mA
MP4 = -0.04 %	MP4 = +0.008 mA

Current Output

Sensor Test

Rated for 50.00

Actual = 43.20

13.34...50.00

Coil Current Stability Passed

Potential Difference

Actual = 0.00

Lower Limit = 0.00

Upper Limit = 300.00

Comments

The instrument under test has passed the annual calibration.

CapitalControls

Electrical/Control Panels – PLC/SCADA Programming – Instrumentation Calibrations

03-1333 Michael St Ottawa, ON K1B 3M9 Ph. 613 248-1999 Fax: 613 248-1997

4.5 FIT- 631 R.A.S.

Flow Transmitter
As Found Results

Instrument Calibration/Verification Report

Date: January 19th, 2022

Client Details

Customer Almonte O.C.W.A.
Contact Austin Mitchell
613-257-9188

Calibrations by: Tim Stewart
Capital Controls
613-248-1999

Instrument Details

Manufacturer Eand H
Model Promag 10 P DN 150
Serial Number E608FE16000
Location Almonte W.W.T.P.
Process RAS
Tag ID FIT-631
Output 4-20 mA

Calibration Equipment

Make	Fluke Meter	FieldCheck
Model	725	50098801
Serial #	8759025	99081402000

Test Procedure

FieldCheck

Zero Test

Current out = +0.002 mA

Amplifier

MP1 = -1.30 %
MP2 = -0.06 %
MP3 = -0.11 %
MP4 = -0.02 %

Current Output

MP1 = -0.004 mA
MP2 = -0.005 mA
MP3 = -0.005 mA
MP4 = -0.001 mA

Sensor Test

Rated for 83.30
Actual = 66.79
20.00...83.30

Coil Current Stability Passed

Potential Difference

Actual = 0.00
Lower Limit = 0.00
Upper Limit = 300.00

Comments

The instrument under test has passed the annual calibration.

CapitalControls

Electrical/Control Panels – PLC/SCADA Programming – Instrumentation Calibrations

03-1333 Michael St Ottawa, ON K1B 3M9 Ph. 613 248-1999 Fax: 613 248-1997

4.6 FIT- 621 R.A.S.

Flow Transmitter
As Found Results

Instrument Calibration/Verification Report

Date: January 19th, 2022

Client Details

Customer Almonte O.C.W.A.
Contact Austin Mitchell
613-257-9188

Calibrations by: Tim Stewart
Capital Controls
613-248-1999

Instrument Details

Manufacturer Eand H
Model Promag 10 P DN 150
Serial Number E6087E16000
Location Almonte W.W.T.P.
Process RAS
Tag ID FIT-621
Output 4-20 mA

Calibration Equipment

Make	Fluke Meter	FieldCheck
Model	725	50098801
Serial #	8759025	99081402000

Test Procedure

FieldCheck

Zero Test

Current out = +0.002 mA

Amplifier

MP1 = -1.26 %
MP2 = -0.17 %
MP3 = -0.12 %
MP4 = -0.03 %

Current Output

MP1 = -0.005 mA
MP2 = -0.005 mA
MP3 = -0.007 mA
MP4 = -0.006 mA

Sensor Test

Rated for 83.30
Actual = 66.56
20.00...83.30

Coil Current Stability Passed

Potential Difference

Actual = 0.00
Lower Limit = 0.00
Upper Limit = 300.00

Comments

The instrument under test has passed the annual calibration.

CapitalControls

Electrical/Control Panels – PLC/SCADA Programming – Instrumentation Calibrations

03-1333 Michael St Ottawa, ON K1B 3M9 Ph. 613 248-1999 Fax: 613 248-1997

4.7 FIT- 622 W.A.S.

Flow Transmitter
As Found Results

Instrument Calibration/Verification Report

Date: January 19th, 2022

Client Details		Instrument Details	
Customer	Almonte O.C.W.A.	Manufacturer	Eand H
Contact	Austin Mitchell 613-257-9188	Model	Promag 10 P DN 150
		Serial Number	E6087E16000
		Location	Almonte W.W.T.P.
Calibrations by:	Tim Stewart Capital Controls 613-248-1999	Process	RAS
		Tag ID	FIT-621
		Output	4-20 mA

Calibration Equipment

Make	Fluke Meter	FieldCheck
Model	725	50098801
Serial #	8759025	99081402000

Test Procedure

FieldCheck

Zero Test	Amplifier	Current Output	Sensor Test	Potential Difference
Current out = +0.002 mA	MP1 = -1.26 %	MP1 = -0.005 mA	Rated for 83.30	Actual = 0.00
	MP2 = -0.17 %	MP2 = -0.005 mA	Actual = 66.56	Lower Limit = 0.00
	MP3 = -0.12 %	MP3 = -0.007 mA	20.00...83.30	Upper Limit = 300.00
	MP4 = -0.03 %	MP4 = -0.006 mA	Coil Current Stability Passed	

Comments

The instrument under test has passed the annual calibration.

CapitalControls

Electrical/Control Panels – PLC/SCADA Programming – Instrumentation Calibrations

03-1333 Michael St Ottawa, ON K1B 3M9 Ph. 613 248-1999 Fax: 613 248-1997

4.8 FIT- 632 W.A.S.

Flow Transmitter
As Found Results

Instrument Calibration/Verification Report

Date: January 19th, 2022

Client Details

Customer Almonte O.C.W.A.
Contact Austin Mitchell
613-257-9188

Calibrations by: Tim Stewart
Capital Controls
613-248-1999

Instrument Details

Manufacturer Eand H
Model Promag 10 P DN 80
Serial Number E6088416000
Location Almonte W.W.T.P.
Process WAS
Tag ID FIT-632
Output 4-20 mA

Calibration Equipment

Make	Fluke Meter	FieldCheck
Model	725	50098801
Serial #	8759025	99081402000

Test Procedure

FieldCheck

Zero Test

Current out = +0.005 mA

Amplifier

MP1 = -0.35 %
MP2 = -0.83 %
MP3 = -0.10 %
MP4 = -0.06 %

Current Output

MP1 = -0.001 mA
MP2 = -0.001 mA
MP3 = -0.001 mA
MP4 = +0.002 mA

Sensor Test

Rated for 50.00
Actual = 43.31
13.34...50.00

Coil Current Stability Passed

Potential Difference

Actual = 0.00
Lower Limit = 0.00
Upper Limit = 300.00

Comments

The instrument under test has passed the annual calibration.

4.9 FIT- 750 Filtrate Tank

Flow Transmitter
As Found Results

Instrument Calibration/Verification Report

Date: January 19th, 2022

Client Details

Customer Almonte O.C.W.A.
Contact Austin Mitchell
613-257-9188

Calibrations by: Tim Stewart
Capital Controls
613-248-1999

Instrument Details

Manufacturer Eand H
Model Promag 10 P DN 80
Serial Number E6086E16000
Location Almonte W.W.T.P.
Process Filtrate Tank
Tag ID FIT-750
Output 4-20 mA

Calibration Equipment

Make	Fluke Meter	FieldCheck
Model	725	50098801
Serial #	8759025	99081402000

Test Procedure

FieldCheck

Zero Test

Current out = +0.005 mA

Amplifier

MP1 = -0.68 %
MP2 = -0.23 %
MP3 = -0.05 %
MP4 = -0.04 %

Current Output

MP1 = +0.003 mA
MP2 = +0.003 mA
MP3 = +0.006 mA
MP4 = +0.010 mA

Sensor Test

Rated for 50.00
Actual = 43.78
13.34...50.00

Coil Current Stability Passed

Potential Difference

Actual = 0.00
Lower Limit = 0.00
Upper Limit = 300.00

Comments

The instrument under test has passed the annual calibration.

4.10 FIT- 1091 Service Water

Flow Transmitter
As Found Results

Instrument Calibration/Verification Report

Date: January 18th, 2022

Client Details

Customer Almonte O.C.W.A.
Contact Austin Mitchell
613-257-9188

Calibrations by: Tim Stewart
Capital Controls
613-248-1999

Instrument Details

Manufacturer Eand H
Model Promag 10 P DN 150
Serial Number E608F16000
Location Almonte W.W.T.P.
Process Service Water
Tag ID FIT-1091
Output 4-20 mA

Calibration Equipment

Make	Fluke Meter	FieldCheck
Model	725	50098801
Serial #	8759025	99081402000

Test Procedure

FieldCheck

Zero Test

Current out = +0.004 mA

Amplifier

MP1 = -1.16 %
MP2 = +0.14 %
MP3 = -0.01 %
MP4 = -0.04 %

Current Output

MP1 = +0.005 mA
MP2 = +0.005 mA
MP3 = +0.009 mA
MP4 = +0.009 mA

Sensor Test

Rated for 83.30
Actual = 66.50
20.00...83.30
Coil Current Stability Passed

Potential Difference

Actual = 3.23
Lower Limit = 0.00
Upper Limit = 300.00

Comments

The instrument under test has passed the annual calibration.

4.11 FIT- 405 Attenuation

Flow Transmitter
As Found Results

Instrument Calibration/Verification Report

Date: January 18th, 2022

Client Details

Customer Almonte O.C.W.A.
Contact Austin Mitchell
613-257-9188

Calibrations by: Tim Stewart
Capital Controls
613-248-1999

Instrument Details

Manufacturer Eand H
Model Promag 53 P DN 200
Serial Number E6088316000
Location Almonte W.W.T.P.
Process Attenuation
Tag ID FIT-350
Output 4-20 mA

Calibration Equipment

Make	Fluke Meter	FieldCheck
Model	725	50098801
Serial #	8759025	99081402000

Test Procedure

FieldCheck

Zero Test

Current out = -0.004 mA

Amplifier

MP1 = -0.53 %
MP2 = -0.07%
MP3 = -0.01 %
MP4 = +0.03 %

Current Output

MP1 = -0.004 mA
MP2 = -0.015 mA
MP3 = +0.001 mA
MP4 = +0.007 mA

Sensor Test

Rated for 13.30
Actual = 18.45
0.00...27.63
Coil Current Stability Passed

Potential Difference

Pipe Empty
Not Tested

Comments

The instrument under test has passed the annual calibration.

4.12 FIT- 946 Fournier Press #1 Polymer Flow

Flow Transmitter
As Found Results

Instrument Calibration/Verification Report

Date: January 18th, 2022

Client Details

Customer Almonte O.C.W.A.
Contact Austin Mitchell
613-257-9188

Calibrations by: Tim Stewart
Capital Controls
613-248-1999

Instrument Details

Manufacturer Eand H
Model Promag 50 P DN 25
Serial Number DA084316000
Location Almonte W.W.T.P.
Process Polymer Flow
Tag ID FIT-946
Output 4-20 mA

Calibration Equipment

Make	Fluke Meter	FieldCheck
Model	725	50098801
Serial #	8759025	99081402000

Test Procedure

FieldCheck

Zero Test

Current out = -0.004 mA

Amplifier

MP1 = -0.54 %
MP2 = -0.05 %
MP3 = +0.01 %
MP4 = +0.02 %

Current Output

MP1 = -0.004 mA
MP2 = -0.018 mA
MP3 = -0.000 mA
MP4 = +0.006 mA

Sensor Test

Rated for 2.40
Actual = 3.58
0.00...8.75
Coil Current Stability Passed

Potential Difference

Actual = 3.27
Lower Limit = 0.00
Upper Limit = 300.00

Comments

The instrument under test has passed the annual calibration.

4.13 FIT- 940 Fournier Press #1 Sludge Flow

Flow Transmitter
As Found Results

Instrument Calibration/Verification Report

Date: January 18th, 2022

Client Details

Customer Almonte O.C.W.A.
Contact Austin Mitchell
613-257-9188

Calibrations by: Tim Stewart
Capital Controls
613-248-1999

Instrument Details

Manufacturer Eand H
Model Promag 50 W DN 25
Serial Number D2012116000
Location Almonte W.W.T.P.
Process Sludge Flow
Tag ID FIT-940
Output 4-20 mA

Calibration Equipment

Make	Fluke Meter	FieldCheck
Model	725	50098801
Serial #	8759025	99081402000

Test Procedure

FieldCheck

Zero Test

Current out = -0.004 mA

Amplifier

MP1 = -0.57 %
MP2 = +0.01 %
MP3 = -0.01 %
MP4 = +0.03 %

Current Output

MP1 = -0.004 mA
MP2 = -0.017 mA
MP3 = -0.002 mA
MP4 = +0.003 mA

Sensor Test

Rated for 4.20
Actual = 5.34
0.00...16.25
Coil Current Stability Passed

Potential Difference

Actual = 3.23
Lower Limit = 0.00
Upper Limit = 300.00

Comments

The instrument under test has passed the annual calibration.

4.14 FIT- 956 Fournier Press # 2 Polymer Flow

Flow Transmitter
As Found Results

Instrument Calibration/Verification Report

Date: January 18th, 2022

Client Details

Customer Almonte O.C.W.A.
Contact Austin Mitchell
613-257-9188

Calibrations by: Tim Stewart
Capital Controls
613-248-1999

Instrument Details

Manufacturer Eand H
Model Promag 50 W DN 25
Serial Number DA084616000
Location Almonte W.W.T.P.
Process Polymer Flow
Tag ID FIT-956
Output 4-20 mA

Calibration Equipment

Make	Fluke Meter	FieldCheck
Model	725	50098801
Serial #	8759025	99081402000

Test Procedure

FieldCheck

Zero Test

Current out = -0.004 mA

Amplifier

MP1 = -0.54 %
MP2 = -0.02 %
MP3 = +0.03 %
MP4 = +0.03 %

Current Output

MP1 = -0.004 mA
MP2 = -0.018 mA
MP3 = +0.001 mA
MP4 = +0.003 mA

Sensor Test

Rated for 2.40
Actual = 3.65
0.00...8.755
Coil Current Stability Passed

Potential Difference

Actual = 3.27
Lower Limit = 0.00
Upper Limit = 300.00

Comments

The instrument under test has passed the annual calibration.

4.15 FIT – 950 Fournier Press #2 Sludge Flow

Flow Transmitter
As Found Results

Instrument Calibration/Verification Report

Date: January 18th, 2022

Client Details

Customer Almonte O.C.W.A.
Contact Austin Mitchell
613-257-9188

Calibrations by: Tim Stewart
Capital Controls
613-248-1999

Instrument Details

Manufacturer Eand H
Model Promag 50 W DN 80
Serial Number D4010116000
Location Almonte W.W.T.P.
Process Sludge Flow
Tag ID FIT-950
Output 4-20 mA

Calibration Equipment

Make	Fluke Meter	FieldCheck
Model	725	50098801
Serial #	8759025	99081402000

Test Procedure

FieldCheck

Zero Test

Current out = -0.004 mA

Amplifier

MP1 = -0.44 %
MP2 = +0.01%
MP3 = +0.03 %
MP4 = +0.08 %

Current Output

MP1 = -0.006 mA
MP2 = -0.018 mA
MP3 = +0.005 mA
MP4 = +0.004 mA

Sensor Test

Rated for 4.20
Actual = 4.88
0.00...12.65
Coil Current Stability Passed

Potential Difference

Actual 3.27
Lower Limit = 0.00
Upper Limit 300.00

Comments

The instrument under test has passed the annual calibration.

4.16 FIT 470 Raw Sewage Vortex #1

Flow Meter
As Found Results

Instrument Calibration/Verification Report

Date: January 19th 2022

Client Details

Customer: Almonte O.C.W.A.
Contact: Austin Mitchell
613-257-9188
Calibrations by: Tim Stewart
Capital Controls
613-248-1999

Instrument Details

Manufacturer: Siemens
Model: Multi ranger 200
Order Code:
Serial Number: PBD/B5180380
Location: W.W.T.P.
Output: 4-20 mA
Process: Raw Sewage Flow
Tag ID: FIT-470

Programming Parameters

Exponential Device
Ratiometric
Meters
Range at zero head= 1.095 m
Max head= .762 m
Flow Exponent U0=1.522

12 inch Parshall Flume

Calibration Equipment

Make: Fluke Multimeter
Model: 725
Serial #: 8759025

Level stand for simulating levels

4-20 mA= 0 - 39984 m3/day

Test Procedure

Level Simulation

Pass/Fail Criteria: 5% of Full Scale

Errors are expressed in percentage of Full Scale

Flow rate units are m3/day

Simulated Height	2.5 inch	10.25 inch	14.5 inch
Calculated Flow	849.6	7596	12958
Transmitter Value	842	7278	12634
Error	0.02%	0.80%	0.81%
Expected mA	4.34 mA	7.04 mA	9.19 mA
Actual mA	4.33 mA	6.98 mA	9.03 mA
Error	0.06%	0.38%	1.00%

Comments

The instrument under test is within error tolerance and has passed the annual calibration.

4.17 FIT- 480 Raw sewage Vortex #2

Flow Meter
As Found Results

Instrument Calibration/Verification Report

Date: January 19th 2022

Client Details

Customer: Almonte O.C.W.A.
Contact: Austin Mitchell
613-257-9188

Calibrations by: Tim Stewart
Capital Controls
613-248-1999

Instrument Details

Manufacturer: Siemens
Model: Multi ranger 200
Order Code:
Serial Number: PBD/B5180395
Location: W.W.T.P.
Output: 4-20 mA
Process: Raw Sewage Flow
Tag ID: FIT-480

Programming Parameters

Exponential Device
Ratiometric
Meters
Range at zero head= 1.095 m
Max head= .762 m
Flow Exponent U0=1.522

12 inch Parshall Flume

Calibration Equipment

Make: Fluke Multimeter
Model: 725
Serial #: 8759025

Level stand for simulating levels

4-20 mA= 0 - 39984 m3/day

Test Procedure

Level Simulation

Pass/Fail Criteria: 5% of Full Scale

Errors are expressed in percentage of Full Scale

Flow rate units are m3/day

Simulated height	2.5 inch	10.25 inch	14.5 inch
Calculated Flow	849.6	7596	12958
Transmitter Value	874	7966	13457
Error	0.06%	0.93%	1.25%
Expected mA	4.34 mA	7.04 mA	9.19 mA
Actual mA	4.35 mA	7.17 mA	9.36 mA
Error	0.06%	0.81%	1.06%

Comments

The instrument under test is within error tolerance and has passed the annual calibration.

4.18 FIT-01 White Tail Ridge Pumping Station

Flow Transmitter
As Found Results

Instrument Calibration/Verification Report

Date: January 19th, 2022

Client Details

Customer Almonte O.C.W.A.
Contact Austin Mitchell
613-257-9188

Calibrations by: Tim Stewart
Capital Controls
613-248-1999

Instrument Details

Manufacturer Eand H
Model Promag 10 DN 80
Serial Number DC068219000
Location White Tail Ridge
Process Sewage
Tag ID FIT-01
Output 4-20 mA

Calibration Equipment

Make	Fluke Meter	FieldCheck
Model	725	50098801
Serial #	8759025	99081402000

Test Procedure

FieldCheck

Zero Test

Current out = -0.003 mA

Amplifier

MP1 = -0.78 %
MP2 = -0.06 %
MP3 = -0.07 %
MP4 = +0.01 %

Current Output

MP1 = -0.008 mA
MP2 = -0.008 mA
MP3 = -0.003 mA
MP4 = +0.010 mA

Sensor Test

Rated for 50.00
Actual = 43.20
13.33...50.00

Coil Current Stability Passed

Potential Difference

Actual = 0.00
Lower Limit = 0.00
Upper Limit = 300.00

Comments

The instrument under test has passed the annual calibration.

4.19 FIT 700 Sludge Flow

Flow Meter Instrument Calibration/Verification Report Date: January 18th, 2022
As Found Results

Client Details

Customer Almonte O.C.W.A.
Contact Kurtis Winkenweeder
613-257-9623

Calibrations by: Tim Stewart
Capital Controls
613-248-1999

Instrument Details

Manufacturer Rosemount
Model 8712
Serial Number 318926
Location W.W.T.P.
Output 4-20 mA
Process Sludge Flow
Tag ID FIT-700

Programming Parameters

Units l/min
Full Scale 2617 l/min
Cal Factor 0946405609424005#

Calibration Equipment

Make Fluke Rosemount
Model 725 8714D
Serial # 8759025 21040206

4-20 mA = 0-2617 l/min

Errors are expressed in percentage of Full Scale

Test Procedure

Simulation using flow tube simulator

Pass/Fail Criteria: 5% of Full Scale

					Avg Error	
Simulated Value	0.00 ft/s	3.00 ft/s	10.00 ft/s	30.00 ft/s		
Instrument Display	0.00 ft/s	3.00 ft/s	10.00 ft/s	30.00 ft/s		
Display Error	0.00%	0.00%	0.00%	0.00%	0.00%	
Expected mA Output	4.00 mA	5.60 mA	9.33 mA	20.00 mA		
Actual mA Output	4.02 mA	5.62 mA	9.35 mA	20.01 mA		
mA Output Error	0.13%	0.13%	0.13%	0.06%	0.13%	

Coil resistance = 14.3 Ohms

Coil resistance to ground = Mohms

Comments

The instrument under test is within error tolerance and has passed the annual calibration.

4.20 FIT-1180 Final Effluent

Flow Meter
As Found Results

Instrument Calibration/Verification Report

Date: January 19th, 2022

Client Details

Customer: Almonte O.C.W.A.
Contact: Austin Mitchell
613-257-9188

Calibrations by: Tim Stewart
Capital Controls
613-248-1999

Instrument Details

Manufacturer: Siemens
Transmitter: Sensor
Model: Siemens
Order Code: OCM III
Serial Number: XRS-5
PBD
Location: Mississippi Mills
Output: 4-20 mA
Process: Plant Effluent
Tag ID: FIT- 1180

Programming Parameters

Exponential Device
Ratiometric
Meters
Range at zero head= 97.5 cm
Max head= 51.20619 cm
Flow Exponent U0=1.522

12 inch Parshall Flume
22 valid echos per 100
B.D. = 30.48 cm

Calibration Equipment

Make: Fluke Multimeter
Model: 725
Serial #: 8759025

Level stand for simulating levels

4-20 mA= 0 - 21554.5 m3/day

Test Procedure

Level Simulation

Pass/Fail Criteria: 5% of Full Scale

Errors are expressed in percentage of Full Scale

Flow rate units are m3/day

Actual Height	11.8 cm	13.1 cm	51.2 cm
Calculated Flow	2222	2607	21554
Transmitter Value	2295	2669	21774
Error	0.34%	0.29%	1.02%
Expected mA	5.64 mA	5.94 mA	20 mA
Actual mA	5.69 mA	5.98 mA	20.02 mA
Error	0.31%	0.25%	0.13%

Comments

The instrument under test is within error tolerance and has passed the annual calibration.

03-1333 Michael St Ottawa, ON K1B 3M9 Ph. 613 248-1999 Fax: 613 248-1997
Appendix A- Equipment Calibration Certificates



www.pylonelectronics.com

Pylon Electronics Inc.
 147 Coronado Road
 Ottawa, ON K2E 7L9

Page: 1 of 1

CERTIFICATE OF CALIBRATION

Description	MULTI FUNCTION PROCESS	Work Order	N0921415
Model Number	725	Serial Number	8759025
Instrument Id	N/A	Cal Procedure	667581
Manufacturer	FLUKE	Cal Date	31 Mar 2021
Customer Name	CAPITAL CONTROLS	Recal Cycle	52 Weeks
		Next Cal Date	31 Mar 2022
		Purchase Order	PO REQUIRED

Calibration Environment: Temperature 23.5 °C Relative Humidity 32.6 %RH
 Received Condition: Within Tolerance
 Completed Condition: Within Tolerance
 Remarks: TAB OF STANDARDS BROKEN.

Standards Used to Establish Traceability

Instrument Type	Model	Asset #	Cal Date/Date
CALIBRATOR WITH SCOPE OPTION	5522A-SC1100	240-1210	21 Dec 2021
MULTIMETER	34401A	354-933	22 Sep 2021


Pylon certifies that, on the date of calibration, the above listed instruments meet or comply all of the specifications defined on the Test Data Sheet (TDS), unless otherwise indicated. The Certificate received and completed conditions and the TDS qualifications are based on the procedures and the specification(s) referenced on the TDS, unless otherwise indicated. Any statement of compliance is made without the "instrument" being put into "operational" use as to the instrument's performance against the test limits determined on the Test Data Sheet.


The above listed instrument has been calibrated using standards that are traceable to a International System of Units (SI) through a National Metrological Institute (such as NRC or NIST). Pylon's quality system meets the requirements of ASME B31.9022.2017, unless otherwise specified. Pylon maintains a minimum of a 4:1 ratio between the measurement under test and the measurement system.


This report consists of two parts with sequential page numbering schemes; the Certificate of Calibration and the Test Data Sheet (TDS). Copyright of this report is owned by the issuing laboratory and may not be reproduced, either in whole, except with the prior written permission of the issuing laboratory.

The data is found and final test results are for the instrument's reported test results. Certificate remarks identify if adjustments were performed.

Metrologist: *9/5* Quality Assurance: *302* Date of Issue: 31 Mar 2021 Pylon Inc. 18
 19 0001
 HALIFAX MONTRÉAL OTTAWA TORONTO EDMONTON CALGARY

		<h2>Calibration Test Data</h2>			
Description: MULTI FUNCTION PROCESS CALIB		Work order: N0921415			
Model: 725		Serial: 8759025			
Customer ID: N/A		Procedure: 667581		Rev: 05May2007	
Manufacturer: FLUKE		Proc. Rev.: 01-Apr-2014		AF-1	
Customer: CAPITAL CONTROLS		Cal Date: 31-Mar-2021		E-0	
725 Fluke Mk		Twin: 151		Apex 032	
07-Sep-2016					
TEST REF.	TEST DESCRIPTION	RESULTS			
		MIN	AS FOUND	FINAL	MAX
P. 25	UPPER DISPLAY VOLTAGE MEASUREMENT TESTS				
	APPLIED (V)	V	V		V
	0	-0.002	0.006		0.002
	15	14.995	15.001		15.005
	30	29.992	30.004		30.008
P. 26	LOWER DISPLAY mV/TC MEASUREMENT TESTS				
	APPLIED (V)	V	V	V	V
	0.00 m	-0.02 m	0.00 m		0.02 m
	45.00 m	44.97 m	44.99 m		45.03 m
	90.00 m	89.96 m	89.99 m		90.04 m
P. 27	LOWER DISPLAY VOLTAGE MEASUREMENT TESTS				
	APPLIED (V)	V	V	V	V
	0.000	-0.002	0.000		0.002
	10.000	9.996	9.999		10.004
	20.000	19.994	19.999		20.006
P. 28	UPPER DISPLAY mA MEASUREMENT TESTS				
	APPLIED (A)	A	A	A	A
	4.000 m	3.997 m	3.999 m		4.003 m
	12.000 m	11.995 m	12.001 m		12.005 m
	24.000 m	23.998 m	24.004 m		24.002 m

		Calibration Test Data			
Description: MULTI FUNCTION PROCESS CALIB		Work order: N0921415			
Model: 725		Serial: 8759025			
TEST REF.	TEST DESCRIPTION	RESULTS			
		MIN	AS FOUND	FINAL	MAX
P. 29	LOWER DISPLAY mA MEASUREMENT TESTS				
	APPLIED (A)	A	A	A	A
	4.000 mA	3.997 mA	4.000 mA		4.003 mA
	12.000 mA	11.999 mA	12.000 mA		12.005 mA
	24.000 mA	23.999 mA	24.002 mA		24.007 mA
P. 30	LOWER DISPLAY FREQUENCY MEASUREMENT TESTS				
	APPLIED FRQ (Hz)	Hz	Hz	Hz	Hz
	1 V P P SQ 10 k	9.98 k	10.00 k		10.02 k
P. 31	LOWER DISPLAY FREQUENCY SOURCE TEST				
	“TIOJIPU” (Hz)	Hz	Hz	Hz	Hz
	10 k	9.975 k	10.000 k		10.025 k
P. 32	LOWER DISPLAY 4-W RESISTANCE MEASUREMENT TESTS				
	APPLIED (Ω)	Ω	Ω	Ω	Ω
	15	14.90	14.99		15.10
	250	249.00	249.97		250.10
	500	499.5	499.9		500.5
	1500	1499.5	1499.9		1500.5
	3200	3199.0	3199.7		3201.0
P. 33	LOWER DISPLAY 3-WIRE RTD MEASUREMENT TESTS				
	APPLIED (Ω)	Ω	Ω	Ω	Ω
	350	349.80	349.85		350.20

		Calibration Test Data				
Description: MULTI FUNCTION PROCESS CALIB		Work order: N0921415				
Model: 725		Serial: 8759025				
TEST REF	TEST DESCRIPTION	RESULTS				
		MIN	AS FOUND	FINAL	MAX	
P. 34	LOWER DISPLAY T/C MEASUREMENT TESTS					
	APPLIED (°C) (V)	°C	°C	°C	°C	
	0 0.000 m	-0.7	-0.2		0.7	
P. 35	LOWER DISPLAY T/C SOURCE TEST					
	APPLIED (°C)	°C	°C	°C	°C	
	0	-0.7	-0.1		0.7	
P. 36	LOWER DISPLAY mA SOURCE TESTS					
	OUTPUT (A)	A	A	A	A	
	4 m	3.9972 m	3.9985 m		4.0026 m	
	12 m	11.9958 m	11.9986 m		12.0024 m	
	24 m	23.9932 m	23.9980 m		24.0068 m	
P. 37	LOWER DISPLAY mV SOURCE TESTS					
	OUTPUT (V)	V	V	V	V	
	0.00 m	-0.020 m	0.000 m		0.020 m	
	45.00 m	44.970 m	44.997 m		45.030 m	
	100.00 m	99.980 m	99.990 m		100.040 m	
	LOWER DISPLAY VOLTAGE SOURCE TESTS					
	OUTPUT (V)	V	V	V	V	
	0.000	-0.002	0.000		0.002	
	5.000	4.9970	5.0000		5.0030	
	10.000	9.9960	10.0000		10.0040	

Calibration Certificate Kalibrations-Zertifikat

FieldCheck

Page 1 of 2
Seite 1 of 2

Production Number Fabrikationsnummer	240223
Serial Number Seriennummer	990B1402000
Manufacturer Hersteller	Endress+Hauser Flowtec AG CH-4153 Reinach
Date Of Calibration Kalibrierdatum	03/03/2021
Location Ort	DG-Grainwood
Testing Instruction Prüfanweisung	CstCenter_2
Test Program Prüfprogramm	V1.01.10
Test Engineer Prüfer	Jamie
Used Test/Calibration Interface Verwendete Prüf-/Kalibriermittel	**
Used Test/Calibration Tools Verwendete Prüf-/Kalibriermittel	KalHKEY DMM2700 due 07/2021 Yokogawa CAL100 due 07/2021
Max. Deviation (Specification) Max. Abweichung (Spezifikation)	
Current Source Stromquelle	0,01% of and value / des Endwertes (20mA) + 0,02% of signal / des Signals
Frequency Source Frequenzgeber	0,01% of signal / des Signals
Notes Bemerkungen	The above mentioned calibration tools are traceable to national standards / NIST Die oben genannten Kalibriermittel sind rückführbar auf nationale Normale

Date, Signature: 03/03/2021,



Calibration Certificate Kalibrations-Zertifikat

FieldCheck

Production Number / Fabrikationsnummer: 240223
Serial Number / Seriennummer: 92061402000

Page 2 of 2
Seite 2 of 2

Measuring Data On Incoming Inspection Messdaten bei der Eingangsprüfung		Rated Value Vorgabewert	Meas. Value Messwert	Limit Value +/- Grenzwert +/-	Pass / Fail Gut/Fehlerhaft
Current Input Strom-Eingang	mA	0.000	0.000	0.005	Pass/Gut
	mA	20.000	20.003	0.010	Pass/Gut
Frequency Input Frequenz-Eingang	Hz	0.0	0.0	0.0	Pass/Gut
	Hz	8000.0	7999.9	4.0	Pass/Gut

Measuring Data After Calibration Messdaten nach Kalibrierung		Rated Value Vorgabewert	Meas. Value Messwert	Limit Value +/- Grenzwert +/-
Current Input Strom-Eingang	mA	0.000	0.002	0.002
	mA	10.000	10.003	0.004
	mA	20.000	20.001	0.005
Frequency Input Frequenz-Eingang	Hz	0.0	0.0	0.0
	Hz	1000.0	1000.0	1.0
	Hz	8000.0	8000.0	2.0

Functional Safety Check Funktionaler Sicherheitscheck

This unit has passed the complete Functional Safety Check.
Alle voltages and currents produced by this unit are within tolerances.

Dieses Gerät hat den vollständigen funktionalen Sicherheitscheck bestanden.
Alle von diesem Gerät produzierten Spannungen und Ströme sind innerhalb der Toleranz.

Date, Signature: 03/03/2021,



Calibration Certificate Kalibrations-Zertifikat

Simubox MID

Page 1 of 2
Seite 1 of 2

Production Number Fabrikationsnummer	9784351
Serial Number Seriennummer	JA0FE402000
Manufacturer Hersteller	Endress+Hauser Flowtec AG CH-4153 Reinach

Date Of Calibration Kalibrierdatum	03/03/2021
Location Ort	DG-Greenwood
Testing Instruction Prüfanweisung	CalCenter_2
Test Program Prüfprogramm	V1.01.10
Test Engineer Prüfer	Jamie

Used Test-Calibration Interface Verwendete Prüf-Kalibrieranschrittsstelle	–
Used Test-Calibration Tools Verwendete Prüf-Kalibriermittel	Kalithley DMM2700 due 07/2021 Yokogawa CAL100 due 07/2021
Max. Deviation (Specification) Max. Abweichung (Spezifikation)	
Current Source Stromquelle	0,01% of end value / des Endwertes (20mA) + 0,02% of signal / des Signals
Frequency Source Frequenzgeber	0,01% of signal / des Signals

Notes Bemerkungen	The above mentioned calibration tools are traceable to national standards / NIST Die oben genannten Kalibriermittel sind rückführbar auf nationale Normale
----------------------	---

Date, Signature: 03/03/2021,



Calibration Certificate Kalibrations-Zertifikat

SimuBox MID

Production Number / Fabrikationsnummer:
Serial Number / Seriennummer:

8784051
LAD# = 402000

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Measuring Data On Incoming Inspection Messdaten bei der Eingangsprüfung (Calculated Mean Values / Berechnete Mittelwerte)	Rated Value Vorgabewert [µV]	Meas. Value Messwert [µV]	Lim: Value +/- Grenzwert +/- [µV]	Pass / Fail Gut/Fehlerraff
Meas. Range 1	57.0	57.0	1.0	Pass/Gut
Meas. Range 2	331.0	332.7	3.0	Pass/Gut
Meas. Range 3	2084.0	2081.7	10.0	Pass/Gut
Meas. Range 4	11826.0	11821.2	20.0	Pass/Gut

Measuring Data After Calibration Messdaten nach Kalibrierung (Calculated Mean Values / Berechnete Mittelwerte)	Rated Value Vorgabewert [µV]	Meas. Value Messwert [µV]	Lim: Value +/- Grenzwert +/- [µV]
Meas. Range 1	50.0	49.8	0.5
Meas. Range 2	300.0	300.0	1.0
Meas. Range 3	2000.0	2000.0	3.0
Meas. Range 4	10000.0	9999.6	5.0

Date, Signature: 03/09/2021,



CapitalControls

Electrical/Control Panels – PLC/SCADA Programming – Instrumentation Calibrations

03-1333 Michael St Ottawa, ON K1B 3M9 Ph. 613 248-1999 Fax: 613 248-1997

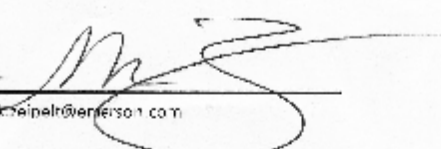
Calibration Data

Switch Position	As Received	After Calibration	Accuracy	Yearly Drift Specification
10	29.9999	29.9999	±.05%	+0.100%
10	10.0000	10.0000	±.10%	±0.100%
3	2.9998	2.9998	±.10%	+0.100%

Recommended Calibration Date: 11/22

Measuring and test equipment used in the manufacture and inspection of the above item is directly traceable to the National Institute of Standards and Technology. This traceability is intended to satisfy the intent of MIL-STD-45662, Notice 1.

X


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