Mississippi Mills Wastewater System

2021 Annual Report

January 1, 2021 – December 31, 2021

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.

Contents

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	1	Gemmill's Bay SPS • March 26 2021
Community Complaints	0	There were no Community Complaints during the reporting period
Spills	0	There were no spills during the reporting period

System/Process Description

Flow enters the treatment 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 aeration tanks, anoxic tanks 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. There is ability for chlorine disinfection in the event the UV units fail.

Solids from the biological process are transferred from the waste tank to a rotary disk thickener. From there the solids are processed through autothermic thermophilic aerobic digesters. The solids are then pressed to a cake form.

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

Proposed Alterations, Extensions, or Replacement to Works

There are no proposed alterations, extensions or replacements that would affect the Certificate of Approval.

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.

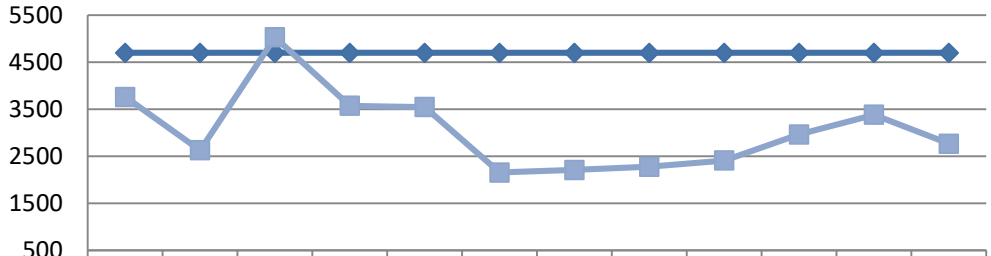
OCWA has additional "Value Added" and operational support services that the Municipality of Mississippi Mills benefits from including:

- 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

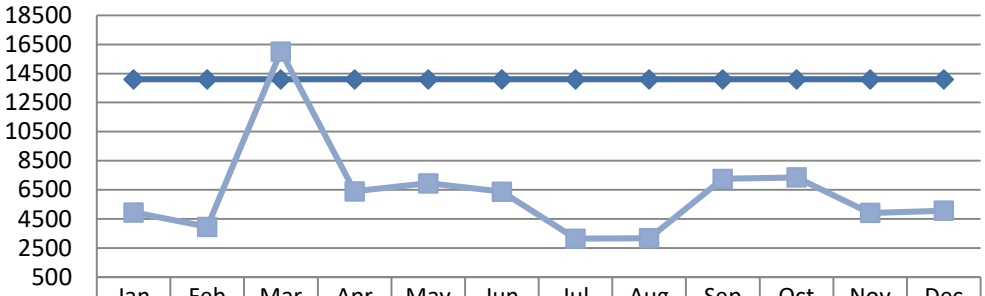
Treatment Flows

Raw Flow (m³/d)

Compliance is calculated as an annual average flow. The annual average flow for 2021 was 3059 m³/d, which is in compliance with the limit of 4700 m³/d. The flow spikes are associated to wet weather events such as rain and seasonal changes such as the spring snow melt.

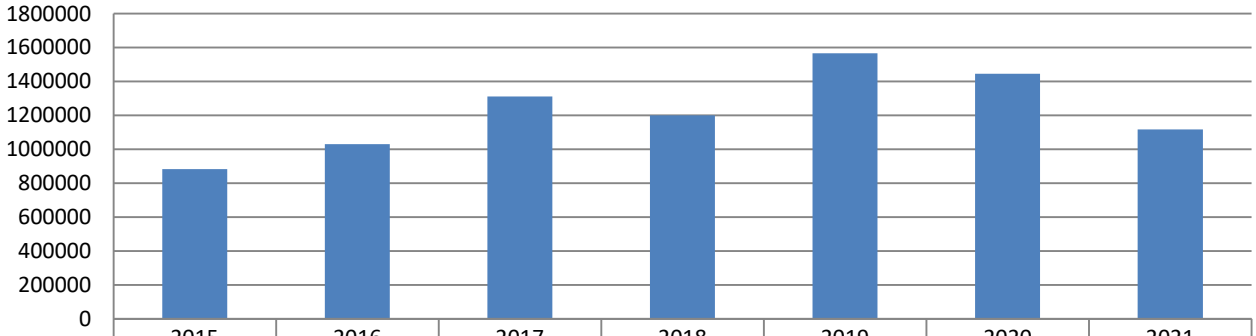


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design Average (m³/d)	4700	4700	4700	4700	4700	4700	4700	4700	4700	4700	4700	4700
Average Daily Flow (m³/d)	3761	2629	5033	3573	3547	2155	2210	2277	2408	2964	3384	2767



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Peak Capacity (m³/d)	14100	14100	14100	14100	14100	14100	14100	14100	14100	14100	14100	14100
Maximum Daily Flow (m³/d)	4946	3955	16013	6400	6953	6373	3148	3180	7255	7353	4911	5063

Annual Comparison (m³)



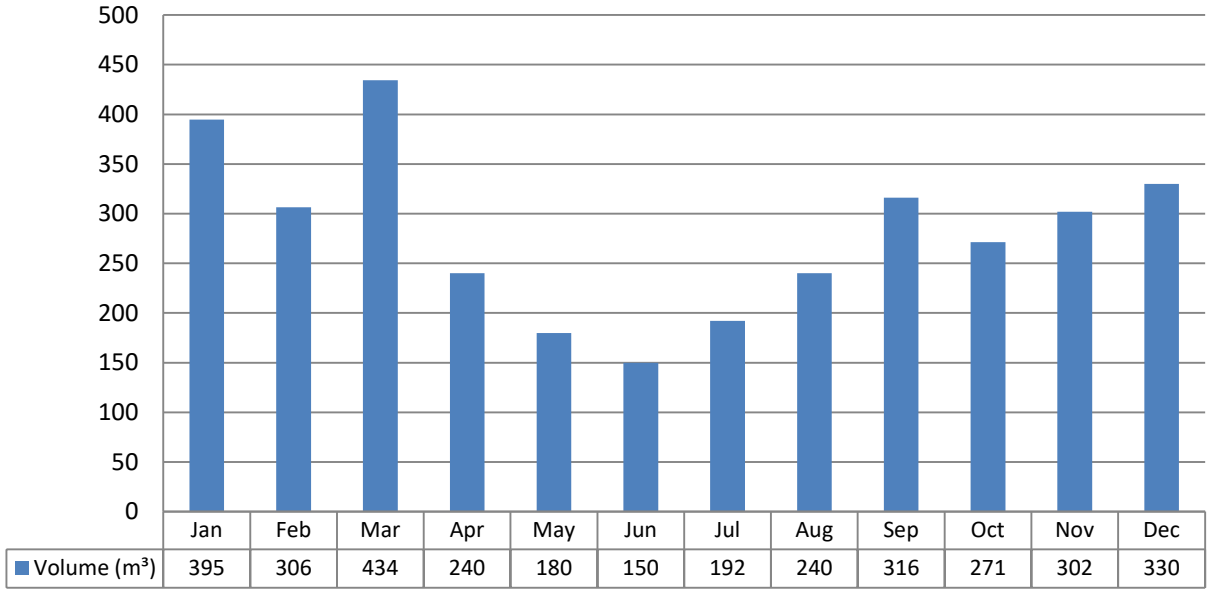
	2015	2016	2017	2018	2019	2020	2021
Total Annual Flow	884055	1031585	1312674	1201247	1566983	1446310	1118526

Septage Volumes

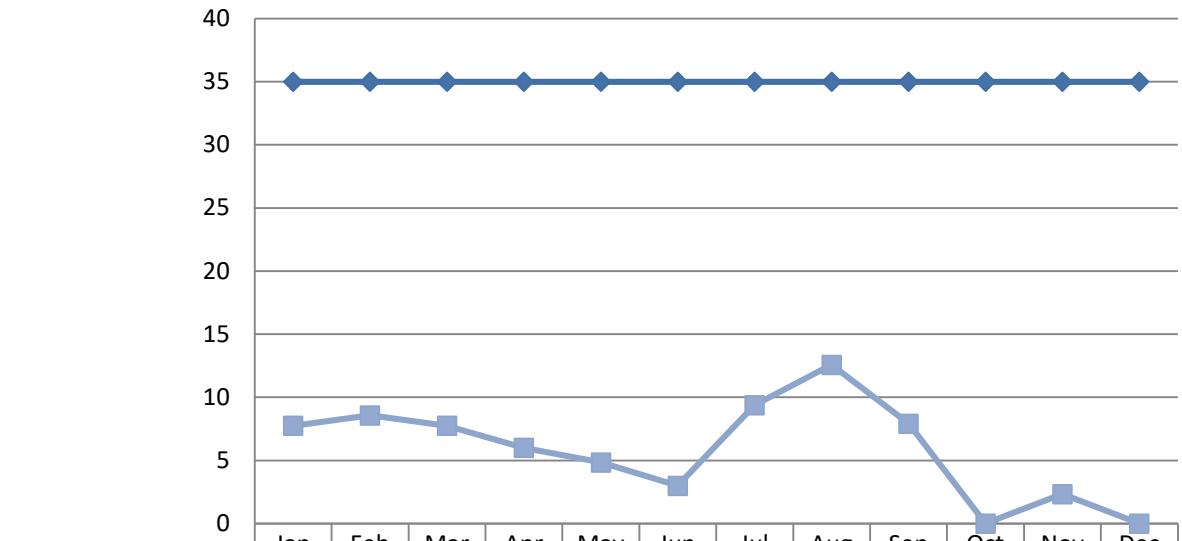
Average daily flow for 2021 = 5.8 m³/d
Total Volume for 2021 = 2128.27 m³

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

Total Monthly Volume Received



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Volume (m³)	395	306	434	240	180	150	192	240	316	271	302	330



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design Avg Flow	35	35	35	35	35	35	35	35	35	35	35	35
Avg Daily Flow	8	9	8	6	5	3	9	13	8	0	2	0

Raw Sewage Quality

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

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.

Effluent Exceedance Summary

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

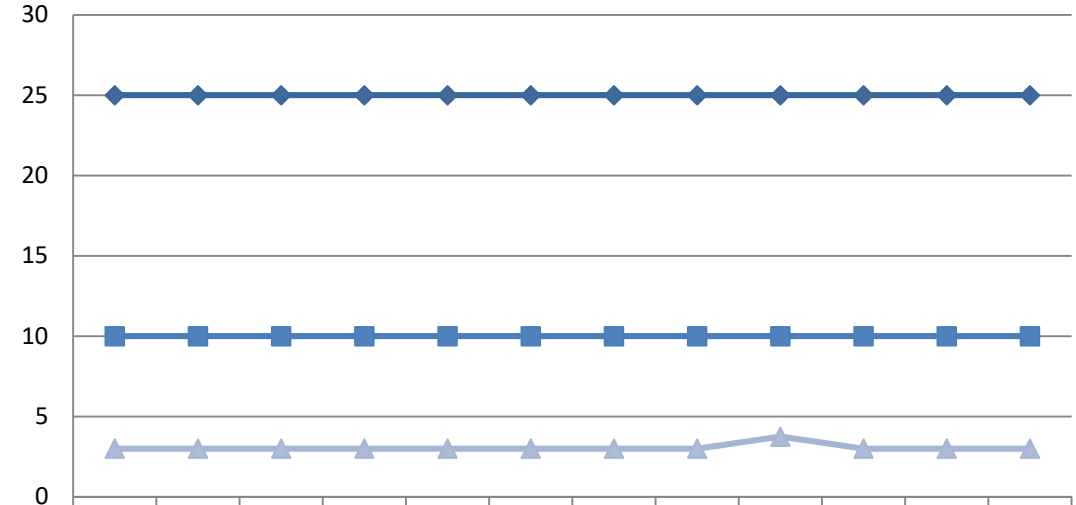
Other Effluent Sampling Issues

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

Effluent Parameter Summary

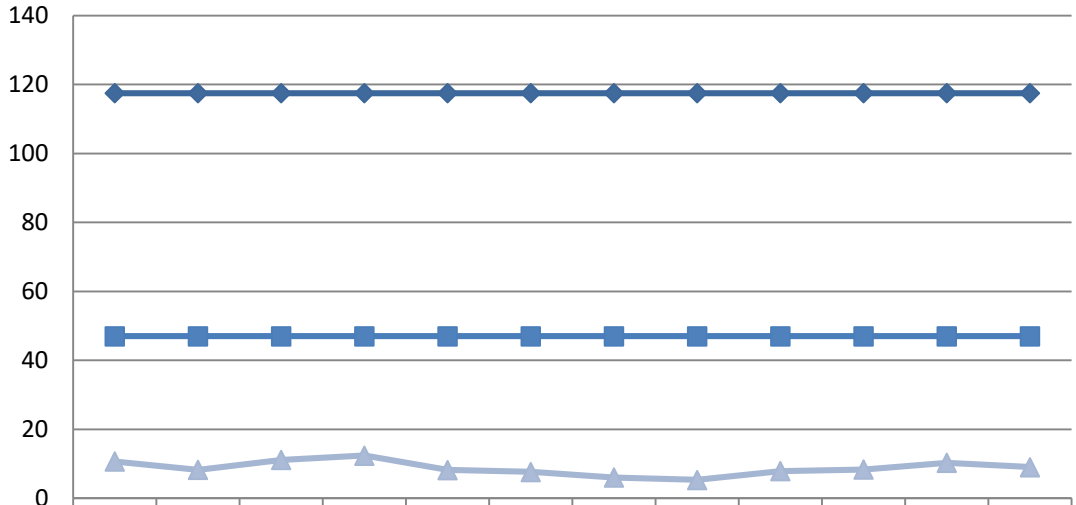
CBOD5

Concentration (mg/L)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit	25	25	25	25	25	25	25	25	25	25	25	25
Objective	10	10	10	10	10	10	10	10	10	10	10	10
Average	3	3	3	3	3	3	3	3	3.8	3	3	3

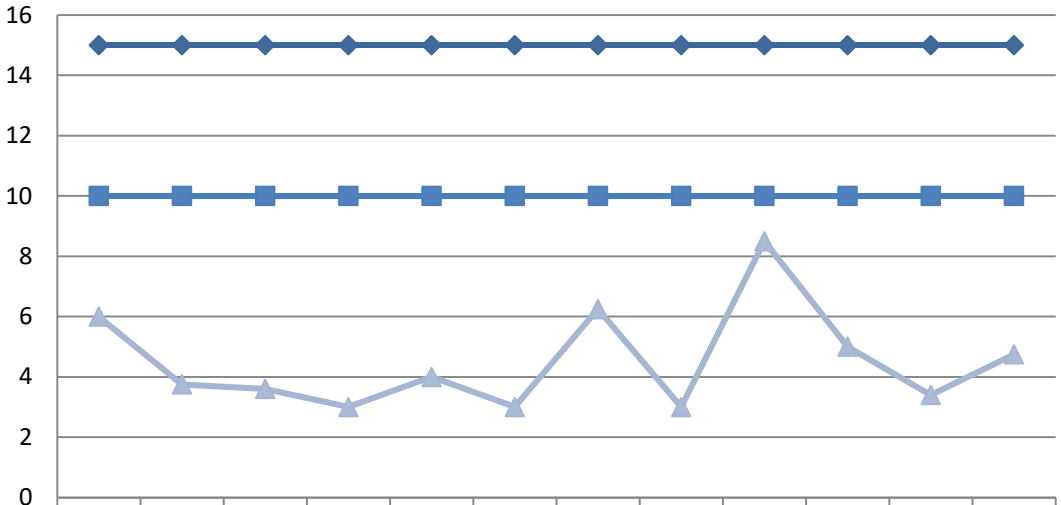
Loading (kg/d)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit	117.5	117.5	117.5	117.5	117.5	117.5	117.5	117.5	117.5	117.5	117.5	117.5
Objective	47	47	47	47	47	47	47	47	47	47	47	47
Average	10.7	8.3	11.1	12.4	8.2	7.6	6.0	5.3	7.9	8.3	10.3	9.0

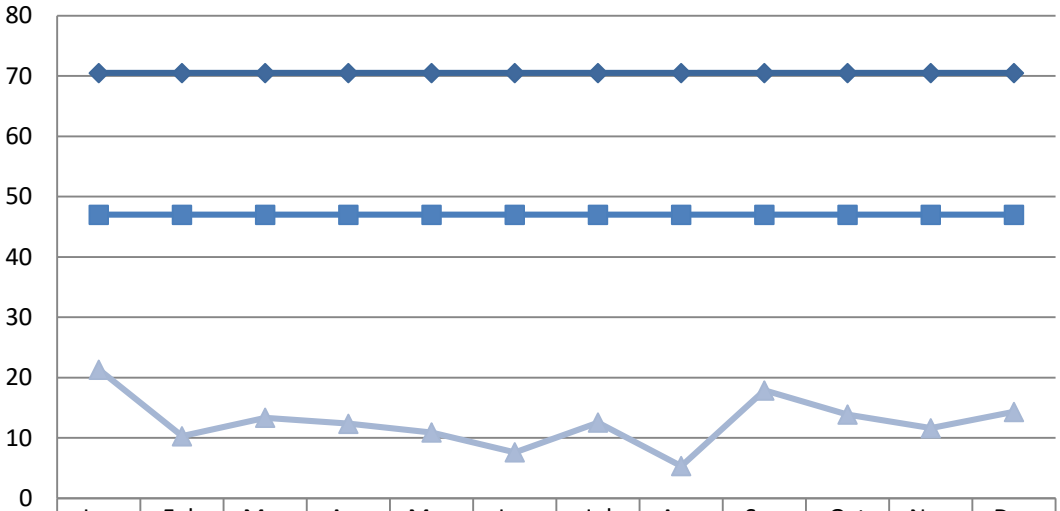
Total Suspended Solids

Concentration (mg/L)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit	15	15	15	15	15	15	15	15	15	15	15	15
Objective	10	10	10	10	10	10	10	10	10	10	10	10
Average	6.0	3.8	3.6	3.0	4.0	3.0	6.3	3.0	8.5	5.0	3.4	4.8

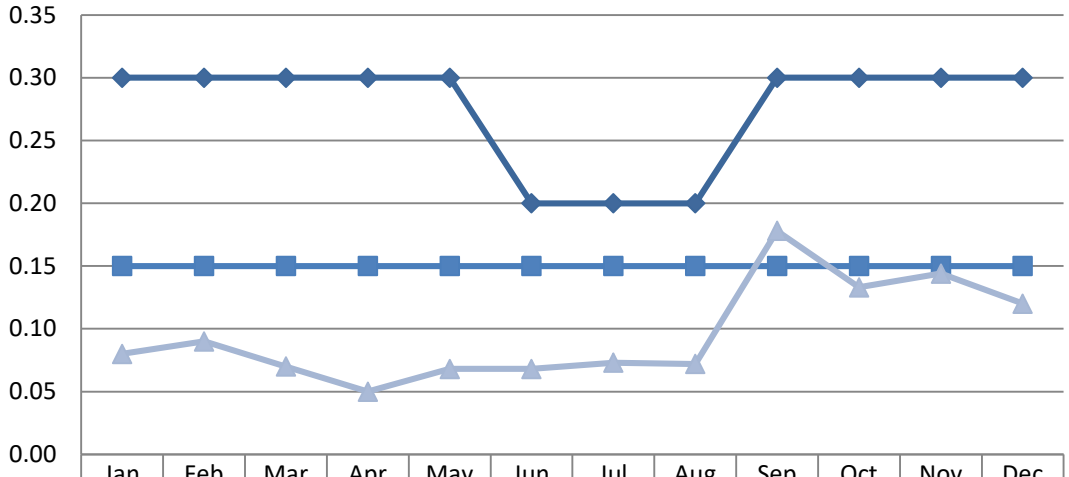
Loading (kg/d)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5
Objective	47	47	47	47	47	47	47	47	47	47	47	47
Average	21.3	10.3	13.4	12.4	10.9	7.6	12.6	5.3	17.9	13.9	11.6	14.3

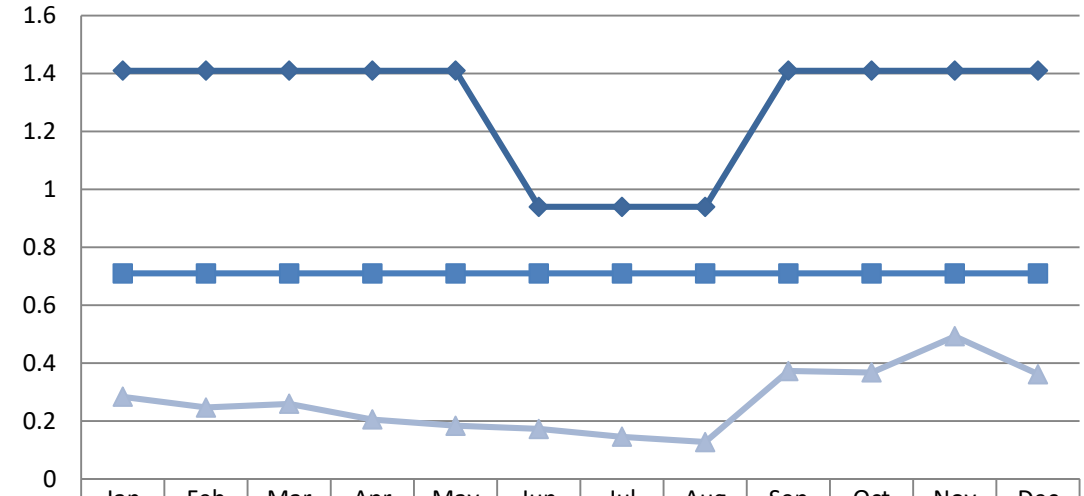
Total Phosphorus

Concentration (mg/L)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit	0.30	0.30	0.30	0.30	0.30	0.20	0.20	0.20	0.30	0.30	0.30	0.30
Objective	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Average	0.08	0.09	0.07	0.05	0.07	0.07	0.07	0.07	0.18	0.13	0.14	0.12

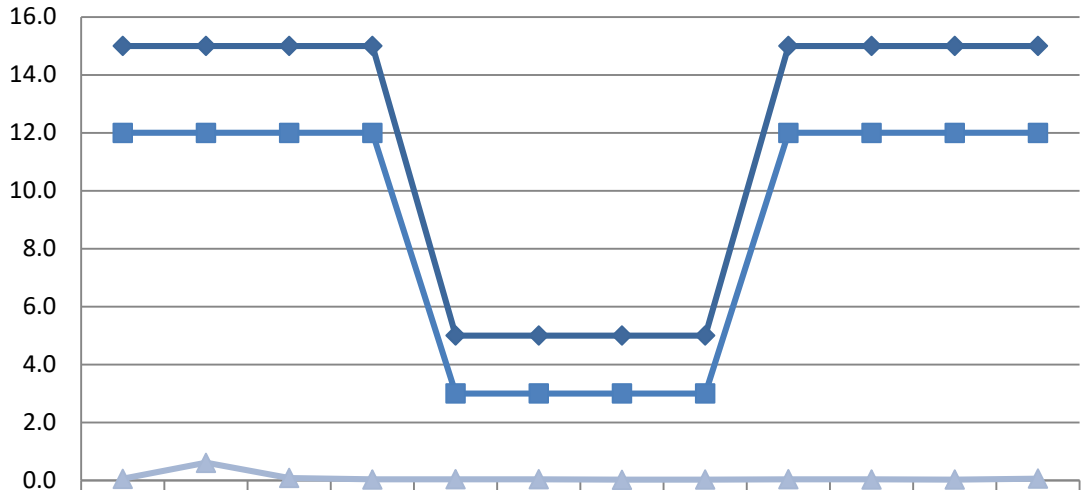
Loading (kg/d)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit	1.41	1.41	1.41	1.41	1.41	0.94	0.94	0.94	1.41	1.41	1.41	1.41
Objective	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Average	0.28	0.25	0.26	0.21	0.18	0.17	0.15	0.13	0.37	0.37	0.49	0.36

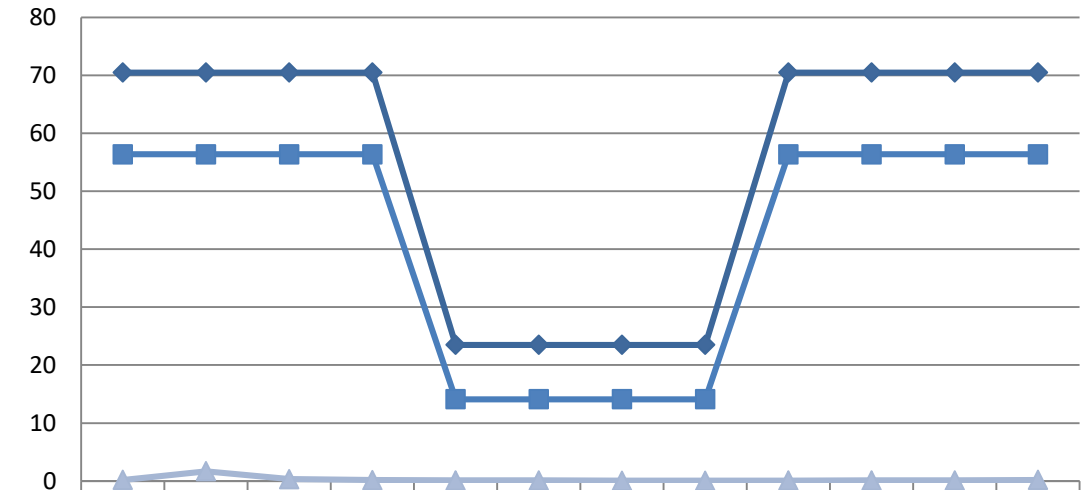
Total Ammonia Nitrogen

Concentration (mg/L)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit	15.0	15.0	15.0	15.0	5.0	5.0	5.0	5.0	15.0	15.0	15.0	15.0
Objective	12.0	12.0	12.0	12.0	3.0	3.0	3.0	3.0	12.0	12.0	12.0	12.0
Average	0.05	0.61	0.08	0.04	0.04	0.04	0.02	0.03	0.04	0.04	0.03	0.06

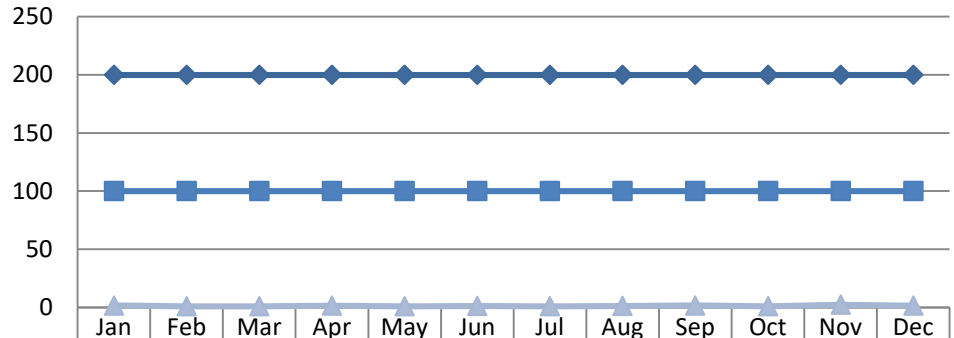
Loading (kg/d)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit	70.5	70.5	70.5	70.5	23.5	23.5	23.5	23.5	70.5	70.5	70.5	70.5
Objective	56.4	56.4	56.4	56.4	14.1	14.1	14.1	14.1	56.4	56.4	56.4	56.4
Average	0.19	1.68	0.31	0.14	0.10	0.09	0.04	0.05	0.08	0.10	0.09	0.17

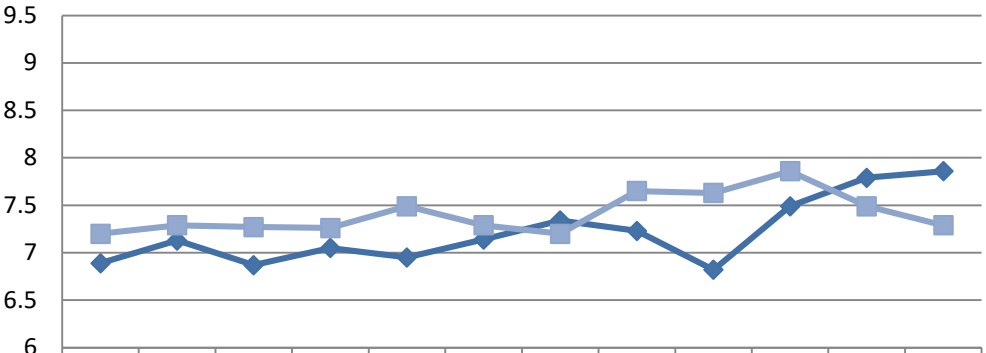
E-coli

Geometric Mean Average



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit	200	200	200	200	200	200	200	200	200	200	200	200
Objective	100	100	100	100	100	100	100	100	100	100	100	100
Geometric Mean Avg	1.6	1.0	1.0	1.5	1.0	1.1	1.0	1.1	1.7	1.0	2.3	1.4

pH



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Min Monthly pH	6.89	7.13	6.87	7.05	6.95	7.14	7.34	7.23	6.82	7.49	7.79	7.86
Max Monthly pH	7.2	7.29	7.27	7.26	7.49	7.29	7.2	7.65	7.63	7.86	7.49	7.29

Acute Lethality

There were four (4) samples collected in 2021 and tested for acute lethality (Rainbow Trout and Daphnia Magna). Results are displayed as % mortality.

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

Septage Quality

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

The spill containment area for the septage receiving station received an upgrade in 2020. The upgrade included relocate piping to the catch basin adjacent to the WWTP, relocated piping to the septage tank in the WWTP and proper slope of septage receiving station to ensure no spill or overflow from the spill containment area to the natural environment will occur.

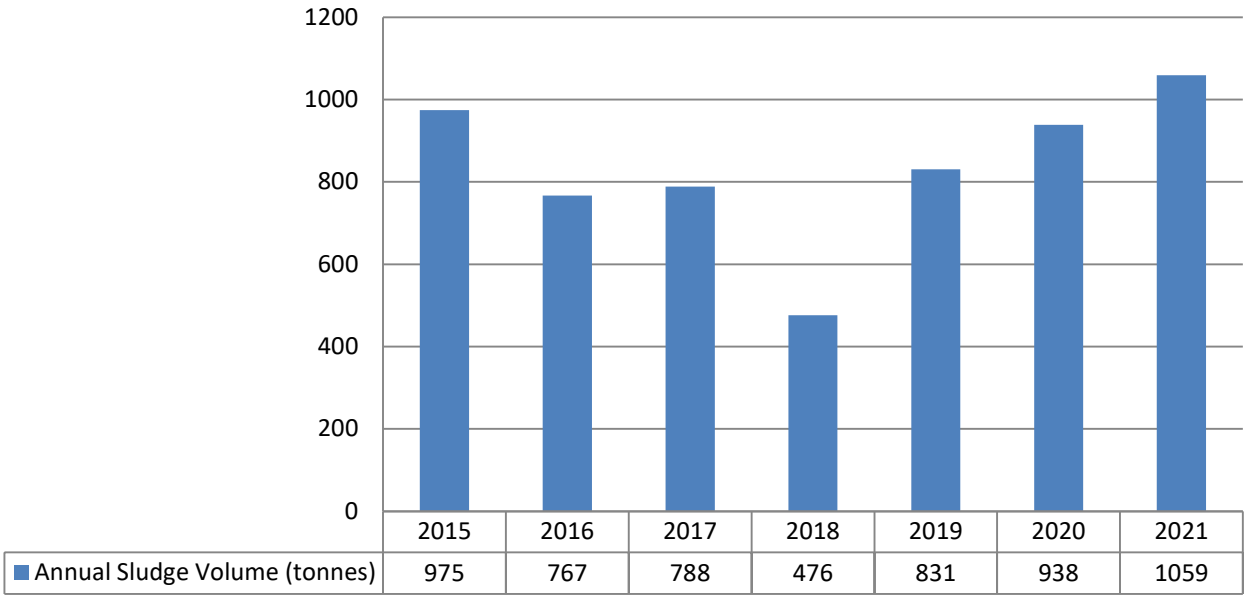
Biosolids

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 dewaters and biosolids are handled as cake. During the winter cake is stored on-site until certified sites are ready for spreading.

Biosolids Disposal Summary

Date	Site	NASM Plan number	Volume (MT)
February 11-25 2021	UTEAU		341.04
May 18 2021	Cochran – Steele Farm	23782	310.87
November 5 -8 2021	Cochran – Steele Farm	23782	407.10
		Total	1059.01

Annual Comparison



Quality

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

Summary of Complaints

The following community complaints were received related to the operations of the Mississippi Mills WWTP.

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

Summary of Bypass/Overflows

Event	Details of Events
Gemmill's Bay SPS March 26 2021	A heavy rain and snow melt caused high flows at Gemmill's Bay sewage pumping station. Both pumps were running at full speed could not keep up with the flow. This resulted in an overflow of raw sewage.

Summary of Spills/Abnormal Discharges

Event	Details of Events
There was no spills or abnormal discharges during the reporting period	

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.

Maintenance Highlights

Gemmill's Bay Sewage Pumping Station is equipped with a diesel generator and an automatic transfer switch to provide backup power to the pumping station in the event of a power outage. The transfer switch was replaced in 2021.

WO #	Summary
2091150	Capital UV Panel battery
2091967	Capital UV panel 2 "mother board"
2092247	Capital - Capital Control on site for ATAD and UV controls
2092534	Capital Disk Thickener Solenoid valve
2093256	Capital Generator Transfer Switch - loss of PLC program
2093444	Capital Turbo Blower #3 Breaker overloads
2093475	Capital ThermAer2 50hp VFD replacement
2093788	Capital Rebuild filtrate pump
2130202	Capital Replace 50 HP VFD
2133264	Capital Emergency lights batteries
2133265	Capital Bruce Mechanical on site for Boilers/ HVAC
2133643	Capital Replacement LED bulbs
2173650	Capital Sludge judge
2312491	Capital Filter Trough
2317503	Capital ATAD Roof Repair - Revised scope-Change Order Report
2317516	Capital Chemical flow sensor
2361534	Capital Disk Thickener Level sensor
2501694	Capital UVI sensor unit
2542901	Capital RAS Pump Replacement Parts
2542963	Capital Annual Website Registration Fee
2580857	Capital TrojanUV3000plus- Sensor Assay
2176011	Capital Replace motor bearings on SNDR ThemAer pump 3
2178260	Capital Replacement filtrate pump
2178269	Capital Parts and install for RAS pumps
2222409	Capital ATAD pump requires new Bearings
2224143	Capital Aeration transfer pump rebuild
2224163	Capital Rebuild filtrate pump
2224819	Capital Repair Epoxy paint on discharge side of plates on Fournier press
2267126	Capital Bruce Mechanical on site
2270365	Capital Front door lock
2314067	Capital Air Conditioner Maintenance
2316876	Capital SCADA service call
2362008	Capital Turbo blower #1 VFD Failure
2364805	Capital Clarifier drive sprocket
2365184	Capital SCADA system failure

WO #	Summary
2402453	Capital UV replacement parts
2407342	Capital MAU 1 On Head works Roof Not Starting
2407410	Capital Repair Back Flow Preventers
2449219	Capital - Capital Controls on site
2449819	Capital Facility Refrigerator
2450745	Capital ATAD process relay failure
2453763	Capital Rebuild #2 RAS pump
2455070	Capital Installing Davit stand for anoxic zone mixer in aeration tank #1
2498085	Capital CP7 ATAD Transfer Pump Controls - Capital Control
2498086	Capital Fournier Press polymer pump
2500965	Capital Chemical barrel scale
2501689	Capital Modify Fournier press cake arms
2580859	Capital Disk Thicker sludge pump 2 fault

Calibration

The flow meters were calibrated on January 29, 2021. 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.

Collection Highlights

Collection Highlights were provided by the Municipality of Mississippi Mills.

Collection Highlights

Maintenance & Operations

- One (1) quarter of Town of Almonte flushed and CCTV
- Sewer inspection program
- Several repairs – multiple laterals to main line
- Preventative flushing
- Lining of sewer on Mitcheson
- New sewer mains commissioned in White Tail Ridge Phase 3 & 4 Subdivision (Small Bore), Mill Run Phase 6 Subdivision, and new industrial subdivision.

Planning Initiatives

- New Sewer mains on Princess Street
- Lining of sewer mains various locations
- Preventative flushing
- Update to Water and Waste Water Master Plan in Preventative flushing

Appendix A

Facility Assessment Report

Ontario Clean Water Agency
Performance Assessment Report Wastewater/Lagoon

From:

Facility: [5678] MISSISSIPPI MILLS WASTEWATER TREATMENT FACILITY
Works: [110000873]

		01/2021	02/2021	03/2021	04/2021	05/2021	06/2021	07/2021	08/2021	09/2021	10/2021	11/2021	12/2021	<--Total-->	<--Avg.-->	<--Max.-->	<--Criteria-->
Flows:																	
Raw Flow: Total - Raw Sewage (m^3)		116592.27	73616.04	156012.05	107194.06	109944.20	64647.17	68503.35	70602.17	72242.66	91869.45	101528.60	85773.87	1118525.89			
Raw Flow: Avg - Raw Sewage (m^3/d)		3761.04	2629.14	5032.65	3573.14	3546.59	2154.91	2209.79	2277.49	2408.09	2963.53	3384.29	2766.90		3058.96		
Raw Flow: Max - Raw Sewage (m^3/d)		4946.20	3955.15	16013.12	6400.38	6952.57	6372.80	3148.31	3180.00	7254.58	7353.13	4910.83	5063.24			16013.12	
Eff. Flow: Total - Final Effluent (m^3)		110230.96	76995.49	115033.66	123588.44	84660.98	76237.68	62283.21	55117.90	63096.87	86150.42	102688.27	93471.03	1049554.91			
Eff. Flow: Avg - Final Effluent (m^3/d)		3555.84	2749.84	3710.76	4119.61	2731.00	2541.26	2009.14	1778.00	2103.23	2779.05	3422.94	3015.19		2876.32		
Eff. Flow: Max - Final Effluent (m^3/d)		4130.23	3699.39	6517.26	34370.00	4148.13	7788.69	2566.58	2441.93	3645.00	5465.71	5115.56	4476.81			34370.00	
Carbonaceous Biochemical Oxygen Demand: CBOD:																	
Raw: # of samples of cBOD5 - Raw Sewage (mg/L)		4	4	5	5	4	5	4	5	3	4	5	4	52			
Eff: Avg cBOD5 - Final Effluent (mg/L)	<	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.750	3.000	3.000	3.000		< 3.063	< 3.750	25.0
Eff: # of samples of cBOD5 - Final Effluent (mg/L)		4	4	5	4	4	5	4	5	4	4	5	4	52			
Loading: cBOD5 - Final Effluent (kg/d)	<	10.668	8.250	11.132	12.359	8.193	7.624	6.027	5.334	7.887	8.337	10.269	9.046		< 8.760	< 12.359	117.5
Percent Removal: cBOD5 - Raw Sewage (mg/L)		96.947	98.046	96.964	99.039	97.260	97.914	98.125	98.552	97.745	97.321	97.596	96.319			99.039	
Biochemical Oxygen Demand: BOD5:																	
Raw: # of samples of BOD5 - Raw Sewage (mg/L)		4	4	5	5	4	5	4	5	4	4	5	4	53			
Eff: Avg BOD5 - Final Effluent (mg/L)	<	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000		< 3.000	< 3.000	25.0
Loading: BOD5 - Final Effluent (kg/d)	<	10.668	8.250	11.132	12.359	8.193	7.624	6.027	5.334	6.310	8.337	10.269	9.046		< 8.629	< 12.359	
Percent Removal: BOD5 - Raw Sewage (mg/L)		97.674	98.370	98.003	99.252	97.917	98.260	98.017	98.709	98.616	97.924	98.047	97.229			99.252	
Total Suspended Solids: TSS:																	
Raw: Avg TSS - Raw Sewage (mg/L)		180.000	171.250	117.800	207.800	277.500	256.800	210.250	440.400	445.250	252.000	198.000	156.000		242.754	445.250	
Raw: # of samples of TSS - Raw Sewage (mg/L)		4	4	5	5	4	5	4	5	4	4	5	4	53			
Eff: Avg TSS - Final Effluent (mg/L)	<	6.000	3.750	3.600	3.000	4.000	3.000	6.250	3.000	8.500	5.000	3.400	4.750		< 4.521	8.500	15.0
Eff: # of samples of TSS - Final Effluent (mg/L)		4	4	5	4	4	5	4	5	4	4	5	4	52			
Loading: TSS - Final Effluent (kg/d)	<	21.335	10.312	13.359	12.359	10.924	7.624	12.557	5.334	17.877	13.895	11.638	14.322		< 12.628	21.335	70.5
Percent Removal: TSS - Raw Sewage (mg/L)		96.667	97.810	96.944	98.556	98.559	98.832	97.027	99.319	98.091	98.016	98.283	96.955			99.319	
Total Phosphorus: TP:																	
Raw: Avg TP - Raw Sewage (mg/L)		3.290	5.408	3.602	4.390	6.713	7.836	5.575	9.432	10.523	4.528	4.714	2.580		5.716	10.523	
Raw: # of samples of TP - Raw Sewage (mg/L)		4	4	5	5	4	5	4	5	4	4	5	4	53			
Eff: Avg TP - Final Effluent (mg/L)		0.080	0.090	0.070	0.050	0.068	0.068	0.073	0.072	0.178	0.133	0.144	0.120		0.095	0.178	0.2 - 0.3
Eff: # of samples of TP - Final Effluent (mg/L)		4	4	5	4	4	5	4	5	4	4	5	4	52			
Loading: TP - Final Effluent (kg/d)		0.284	0.247	0.260	0.206	0.184	0.173	0.146	0.128	0.373	0.368	0.493	0.362		0.269	0.493	1.41
Percent Removal: TP - Raw Sewage (mg/L)		97.568	98.336	98.057	98.861	98.994	99.132	98.700	99.237	98.313	97.073	96.945	95.349			99.237	
Nitrogen Series:																	
Raw: Avg TKN - Raw Sewage (mg/L)		28.125	39.350	25.360	34.640	37.100	43.720	36.550	53.960	45.075	38.850	28.500	28.350		36.632	53.960	
Raw: # of samples of TKN - Raw Sewage (mg/L)		4	4	5	5	4	5	4	5	4	4	5	4	53			
Eff: Avg TAN - Final Effluent (mg/L)		0.053	0.610	0.084	0.035	0.038	0.036	0.020	0.028	0.040	0.035	0.026	0.058		< 0.088	0.610	5.0 - 15.0
Eff: # of samples of TAN - Final Effluent (mg/L)		4	4	5	4	4	5	4	5	4	4	5	4	52			
Loading: TAN - Final Effluent (kg/d)		0.187	1.677	0.312	0.144	0.102	0.091	0.040	0.050	0.084	0.097	0.089	0.173		< 0.254	1.677	70.5
Disinfection:																	
Eff: GMD E. Coli - Final Effluent (cfu/100mL)		1.627	1.000	1.000	1.495	1.000	1.149	1.000	1.149	1.682	1.000	2.339	1.414		1.321	2.339	200.0
Eff: # of samples of E. Coli - Final Effluent (cfu/100mL)		4	4	5	4	4	5	4	5	4	4	5	4	52			

Appendix B

Septage Sample Data

Ontario Clean Water Agency
Time Series Info Report

From: 01/01/2021 to 31/12/2021

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

	01/2021	02/2021	03/2021	04/2021	05/2021	06/2021	07/2021	08/2021	09/2021	10/2021	11/2021	12/2021	Total	Avg	Max	Min
Septage / Biochemical Oxygen Demand: BOD5 - mg/L																
Count Lab	0	0	0	0	0	0	1	0	0	0	1	0	2			
Max Lab							1180				659				1180	
Mean Lab							1180				659			919.5		
Min Lab							1180				659					659
Septage / Total Kjeldahl Nitrogen: TKN - mg/L																
Count Lab	0	0	0	0	0	0	1	0	0	0	1	0	2			
Max Lab							3970				1070				3970	
Mean Lab							3970				1070			2520		
Min Lab							3970				1070					1070
Septage / Total Phosphorus: TP - mg/L																
Count Lab	0	0	0	0	0	0	1	0	0	0	1	0	2			
Max Lab							750				905				905	
Mean Lab							750				905			827.5		
Min Lab							750				905					750
Septage / Total Solids: TS - mg/L																
Count Lab	0	0	0	0	0	0	1	0	0	0	1	0	2			
Max Lab							5600				24600				24600	
Mean Lab							5600				24600			15100		
Min Lab							5600				24600					5600
Septage / Total Suspended Solids: TSS - mg/L																
Count Lab	0	0	0	0	0	0	1	0	0	0	1	0	2			
Max Lab							3400				21600				21600	
Mean Lab							3400				21600			12500		
Min Lab							3400				21600					3400
Septage / pH - ---																
Count Lab	0	0	0	0	0	0	1	0	0	0	1	0	2			
Max Lab							6.75				5.97				6.75	
Mean Lab							6.75				5.97			6.36		
Min Lab							6.75				5.97					5.97

Appendix C

Biosolids Quality

Ontario Clean Water Agency
Biosolids Quality Report - Liquid
Digestor Type: AEROBIC
Solids and Nutrients

Facility: MISSISSIPPI MILLS WASTEWATER TREATMENT FACILITY
Works: 5678
Period: 01/01/2021 to 12/01/2021

Facility Works Number: *1.10000873E8*
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*
Period Being Reported: 01/01/2021 12/01/2021

Note: all parameters in this report will be derived from the Bslq Station

Month	Total Sludge Hauled (m3)	Avg. Total Solids (mg/L)	Avg. Volatile Solids (mg/L)	Avg. Total Phosphorus (mg/L)	Ammonia (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	TKN (mg/L)	Ammonia + Nitrate (mg/L)	Potassium (mg/L)
Site	**MISSISSIPPI MILLS WASTEWATER TREATMENT FACILITY**									
Station	**Bslq Station only**									
Parameter Short Name	**HauledVol**	**TS**	**VS**	**TP**	**NH3p_NH4p_N**	**NO3-N**	**NO2-N**	**TKN**	**calculation in report - no T/S**	**K**
T/s	**IH Month.Total**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**		**Lab Published Month Mean**
Jan		44,950.000	25,900.000	1,276.000	3.930	127.100	0.550	1,825.000	65.515	
Feb		43,550.000	26,000.000	1,400.000	2.545	78.400	0.300	2,130.000	40.473	
Mar		40,550.000	25,400.000	1,350.000	279.500	0.133	0.167	2,810.000	139.817	
Apr		37,450.000	22,650.000	1,120.000	247.550	1.100	0.250	2,260.000	124.325	
May		42,466.667	23,633.333	1,170.000	182.800	0.433	0.400	1,786.667	91.617	
Jun		46,100.000	26,600.000	1,415.000	20.150	128.000	1.000	1,780.000	74.075	
Jul		52,550.000	30,900.000	1,550.000	186.500	1.000	1.000	1,945.000	93.750	
Aug		54,866.667	29,733.333	2,206.667	22.343	31.600	1.000	1,940.000	26.972	
Sep		48,050.000	25,750.000	2,230.000	63.000	12.750	1.000	1,980.000	37.875	

Oct		62,450.000	34,100.000	1,730.000	15.150	28.000	0.550	1,650.000	21.575	
Nov		53,666.667	29,233.333	1,600.000	7.900	3.000	1.000	1,686.667	5.450	
Dec		52,650.000	28,100.000	1,465.000	36.200	31.950	1.000	1,665.000	34.075	
Average		48,275.000	27,333.333	1,542.722	88.964	36.956	0.685	1,954.861	62.960	
Total	0.000	579,300.000	328,000.000	18,512.667	1,067.568	443.467	8.217	23,458.333	755.518	0.000

Ontario Clean Water Agency
Biosolids Quality Report - Liquid
Digestor Type: AEROBIC
Metals and Criteria

Facility: MISSISSIPPI MILLS WASTEWATER TREATMENT FACILITY
Works: 5678
Period: 01/01/2021 to 12/01/2021

Note: all parameters in this report will be derived from the Bslq Station

Month	Arsenic (mg/L)	Cadmium (mg/L)	Cobalt (mg/L)	Chromium (mg/L)	Copper (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Lead (mg/L)	Selenium (mg/L)	Zinc (mg/L)
Site	MISSISSIPPI MILLS WASTEWATER TREATMENT FACILITY										
Station	Bslq Station only										
Parameter Short Name	As	Cd	Co	Cr	Cu	Hg	Mo	Ni	Pb	Se	Zn
T/s	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean
Jan											
Feb											
Mar											
Apr											
May											
Jun											
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Average											
Max. Permissible Metal Concentrations (mg/kg of Solids)	170.000	34.000	340.000	2,800.000	1,700.000	11.000	94.000	420.000	1,100.000	34.000	4,200.000
Metal Concentrations in Sludge (mg/kg)											

Ontario Clean Water Agency
Biosolids Quality Report - Liquid - Based on Last 4 Samples
Digestor Type: AEROBIC

Facility: MISSISSIPPI MILLS WASTEWATER TREATMENT FACILITY
Works: 5678
Period: 01/01/2021 to 12/01/2021

Note: all parameters in this report will be derived from the Bslq Station

Parameter Short Name	Time Series	11/15/2021	11/29/2021	12/06/2021	12/21/2021	Average	Metal Concentrations in Sludge (mg/kg):	Max. Permissible Metal Concentrations (mg/kg of Solids):
As (mg/L)	Lab Published							170
Cd (mg/L)	Lab Published							34
Co (mg/L)	Lab Published							340
Cr (mg/L)	Lab Published							2800
Cu (mg/L)	Lab Published							1700
Hg (mg/L)	Lab Published							11
Mo (mg/L)	Lab Published							94
Ni (mg/L)	Lab Published							420
Pb (mg/L)	Lab Published							1100
Se (mg/L)	Lab Published							34
Zn (mg/L)	Lab Published							4200
E. Coli: Dry Wt (cfu/g)	Lab Published						E.Coli average is the GMD	
TS (mg/L)	Lab Published	51,500.000	52,400.000	57,800.000	47,500.000	52,300.000		
VS (mg/L)	Lab Published	28,200.000	28,800.000	31,100.000	25,100.000	28,300.000		
TP (mg/L)	Lab Published	1,310.000	1,180.000	1,570.000	1,360.000	1,355.000		
NO2-N (mg/L)	Lab Published	1.000	1.000	1.000	1.000	1.000		
TKN (mg/L)	Lab Published	1,360.000	1,330.000	1,700.000	1,630.000	1,505.000		
K (mg/L)	Lab Published							
NH3p_NH4p_N (mg/L)	Lab Published	10.000	2.100	63.800	8.600	21.125		
NO3-N (mg/L)	Lab Published	4.700	3.300	1.000	62.900	17.975		

Appendix D

Calibration Records

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

10-830 Industrial Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

The Town of Almonte

Waste Water
Calibration / Verification of Instrumentation

Report January 29, 2021

Calibration Date: January 27, 2021

Calibration Due: January 27, 2022

Verifications performed by Tim Stewart

Report prepared by Tim Stewart

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

10-830 Industrial Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

Table of Contents

10-830 Industrial Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

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

10-830 Industrial Ave. Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

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

Instruments used during verification are Traceable to NIST standards. See Appendix for Calibration Reports

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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 developped 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 functionally of the device under test.

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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.

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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		

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4 Instrument Verification

See the following pages of reports for individual equipment.

4.1 FIT- 310 Septage Inlet Grinder

DTM Version: 3.33.00 Page 1/3

Flowmeter Verification Certificate Transmitter

Customer	Plant

Order code	Tag Name
PROMAG 53 W DN100	1.2931 - 1.2931
Device type	K-Factor
E309B116000	6
Serial number	Zero point
V2.03.00	V1.05.03
Software Version Transmitter	Software Version I/O-Module
01/27/2021	05:13 PM
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.53 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	**Simubox Details**
240223	8784351
Production number	Production number
1.07.10	1.00.01
Software Version	Software Version
03/2020	03/2020
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. 1)

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

Endress+Hauser
People for Process Automation

10-830 Industrial Ave. Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

FieldCheck - Result Tab Transmitter

Customer		Plant	
Order code		Tag Name	——
Device type	PROMAG 53 W DN100	K-Factor	1.2931 - 1.2931
Serial number	E309B116000	Zero point	6
Software Version Transmitter	V2.03.00	Software Version I/O-Module	V1.05.03
Verification date	01/27/2021	Verification time	05:13 PM

Verification Flow end value (100 %): 4633.180 m3/d
Flow speed 6.83 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	231.659 m3/d (5%)	1.09 %	-0.44 %
✓		463.318 m3/d (10.0%)	0.79 %	-0.16 %
✓		2316.590 m3/d (50.0%)	0.56 %	-0.09 %
✓		4633.180 m3/d (100%)	0.53 %	-0.08 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	-0.005 mA
✓		4.800 mA (5%)	0.05 mA	-0.005 mA
✓		5.600 mA (10.0%)	0.05 mA	-0.017 mA
✓		12.000 mA (50.0%)	0.05 mA	-0.004 mA
✓		20.000 mA (100%)	0.05 mA	0.003 mA
–	Pulse Output 1	—	—	—
		Start value	Limits range	Measured value
	Test Sensor			
✓	Coil Curr. Rise	5.000 ms	0.000..14.250 ms	7.891 ms
✓	Coil Curr. Stability		—	—
✓	Electrode Integrity	mV	0.0..300.000 mV	0.000 mV

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

10-830 Industrial Ave. Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

FieldCheck: Parameters Transmitter

Customer		Plant	
Order code		Tag Name	———
Device type	PROMAG 53 W DN100	K-Factor	1.2931 - 1.2931
Serial number	E309B116000	Zero point	6
Software Version Transmitter	V2.03.00	Software Version I/O-Module	V1.05.03
Verification date	01/27/2021	Verification time	05:13 PM

Curent Output	Assign	Current Range	Value 0_4mA	Value 20 mA		
Terminal 26/27	VOLUME FLOW	4-20 mA activ	0.0 m3/d	3270.60 m3/d		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	0.004 m3/P	Passive/Negative	20.00 ms		

Actual System Ident. 121.0

4.2 FIT- 350 Septage Tank

DTM Version: 3.33.00 Page 1/3

Flowmeter Verification Certificate Transmitter

Customer	Plant: FIT350
Order code: PROMAG 53 P DN100	Tag Name: 1.2918 - 1.2918
Device type: E60E6616000	K-Factor: 2
Serial number: V2.03.00	Zero point: V1.05.03
Software Version Transmitter: 01/27/2021	Software Version I/O-Module: 05:04 PM
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.55 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	Simubox Details
240223	8784351
Production number	Production number
1.07.10	1.00.01
Software Version	Software Version
03/2020	03/2020
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. 1)

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

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FieldCheck - Result Tab Transmitter

Customer		Plant	
Order code		Tag Name	FIT350
Device type	PROMAG 53 P DN100	K-Factor	1.2918 - 1.2918
Serial number	E60E6616000	Zero point	2
Software Version Transmitter	V2.03.00	Software Version I/O-Module	V1.05.03
Verification date	01/27/2021	Verification time	05:04 PM

Verification Flow end value (100 %): 2714.336 m3/d
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	135.717 m3/d (5%)	1.50 %	-0.41 %
✓		271.434 m3/d (10.0%)	1.00 %	-0.44 %
✓		1357.168 m3/d (50.0%)	0.60 %	-0.06 %
✓		2714.336 m3/d (100%)	0.55 %	-0.01 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	-0.005 mA
✓		4.800 mA (5%)	0.05 mA	-0.005 mA
✓		5.600 mA (10.0%)	0.05 mA	-0.016 mA
✓		12.000 mA (50.0%)	0.05 mA	-0.001 mA
✓		20.000 mA (100%)	0.05 mA	0.005 mA
–	Pulse Output 1	—	—	—
		Start value	**Limits range**	**Measured value**
	Test Sensor			
✓	Coil Curr. Rise	5.000 ms	0.000..14.250 ms	6.254 ms
✓	Coil Curr. Stability		—	—
✓	Electrode Integrity	mV	0.0..300.000 mV	3.272 mV

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

10-830 Industrial Ave. Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

FieldCheck: Parameters Transmitter

Customer		Plant	
Order code		Tag Name	FIT350
Device type	PROMAG 53 P DN100	K-Factor	1.2918 - 1.2918
Serial number	E60E6616000	Zero point	2
Software Version Transmitter	V2.03.00	Software Version I/O-Module	V1.05.03
Verification date	01/27/2021	Verification time	05:04 PM

Curent Output	Assign	Current Range	Value 0_4mA	Value 20 mA		
Terminal 26/27	VOLUME FLOW	4-20 mA activ	0.0 m3/d	4320.00 m3/d		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	0.008 m3/P	Passive/Positive	100.00 ms		

Actual System Ident. 121.0

4.3 FIT- 611 R.A.S.

DTM Version: 3.33.00 Page 1/3

Flowmeter Verification Certificate Transmitter

Customer	Plant
	FIT-611
Order code	Tag Name
PROMAG 10 P DN150	1.0042 - 1.0042
Device type	K-Factor
E6085316000	0
Serial number	Zero point
V1.03.00	
Software Version Transmitter	Software Version I/O-Module
01/27/2021	12:42 PM
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.65 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	Simubox Details
240223	8784351
Production number	Production number
1.07.10	1.00.01
Software Version	Software Version
03/2020	03/2020
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. 1)

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

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FieldCheck - Result Tab Transmitter

Customer		Plant	
Order code		Tag Name	FIT-611
Device type	PROMAG 10 P DN150	K-Factor	1.0042 - 1.0042
Serial number	E6085316000	Zero point	0
Software Version Transmitter	V1.03.00	Software Version I/O-Module	
Verification date	01/27/2021	Verification time	12:42 PM

Verification Flow end value (100 %): 6107.256 m3/d
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	305.363 m3/d (5%)	1.60 %	-0.22 %
✓		610.726 m3/d (10.0%)	1.10 %	0.30 %
✓		3053.628 m3/d (50.0%)	0.70 %	-0.10 %
✓		6107.256 m3/d (100%)	0.65 %	-0.08 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	0.002 mA
✓		4.800 mA (5%)	0.05 mA	0.003 mA
✓		5.600 mA (10.0%)	0.05 mA	0.002 mA
✓		12.000 mA (50.0%)	0.05 mA	0.009 mA
✓		20.000 mA (100%)	0.05 mA	0.017 mA
–	Pulse Output 1	—	—	—
		Start value	**Limits range**	**Measured value**
	Test Sensor			
✓	Coil Curr. Rise	83.300 ms	20.000..83.300 ms	66.711 ms
✓	Coil Curr. Stability		—	—

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

10-830 Industrial Ave. Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

FieldCheck: Parameters Transmitter

Customer		Plant	
Order code		Tag Name	FIT-611
Device type	PROMAG 10 P DN150	K-Factor	1.0042 - 1.0042
Serial number	E6085316000	Zero point	0
Software Version Transmitter	V1.03.00	Software Version I/O-Module	
Verification date	01/27/2021	Verification time	12:42 PM

Curent Output	Assign	Current Range	Value 0_4mA	Value 20 mA		
Terminal 26/27	VOLUME FLOW	4-20 mA activ	0.0 m3/d	5000.00 m3/d		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	0.025 m3/P	Passive/Positive	100.00 ms		

Actual System Ident. 125.0

10-830 Industrial Ave. Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

4.4 FIT- 612 W.A.S.

DTM Version: 3.33.00 Page 1/3

Flowmeter Verification Certificate Transmitter

Customer	Plant
	FIT-612
Order code	Tag Name
PROMAG 10 P DN80	1.0337 - 1.0337
Device type	K-Factor
E6086D16000	0
Serial number	Zero point
V1.03.00	
Software Version Transmitter	Software Version I/O-Module
01/27/2021	01:39 PM
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.65 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	Simubox Details
240223	8784351
Production number	Production number
1.07.10	1.00.01
Software Version	Software Version
03/2020	03/2020
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. 1)

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

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Instruments used during verification are Traceable to NIST standards. See Appendix for Calibration Reports

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FieldCheck - Result Tab Transmitter

Customer		Plant	
Order code		Tag Name	FIT-612
Device type	PROMAG 10 P DN80	K-Factor	1.0337 - 1.0337
Serial number	E6086D16000	Zero point	0
Software Version Transmitter	V1.03.00	Software Version I/O-Module	
Verification date	01/27/2021	Verification time	01:39 PM

Verification Flow end value (100 %): 1737.175 m3/d
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	86.859 m3/d (5%)	1.60 %	-0.40 %
✓		173.717 m3/d (10.0%)	1.10 %	-0.16 %
✓		868.588 m3/d (50.0%)	0.70 %	-0.05 %
✓		1737.175 m3/d (100%)	0.65 %	0.00 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	0.000 mA
✓		4.800 mA (5%)	0.05 mA	-0.001 mA
✓		5.600 mA (10.0%)	0.05 mA	-0.001 mA
✓		12.000 mA (50.0%)	0.05 mA	-0.001 mA
✓		20.000 mA (100%)	0.05 mA	-0.001 mA
–	Pulse Output 1	—	—	—
		Start value	Limits range	Measured value
	Test Sensor			
✓	Coil Curr. Rise	50.000 ms	13.340..50.000 ms	43.229 ms
✓	Coil Curr. Stability		—	—

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

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FieldCheck: Parameters Transmitter

Customer		Plant	
Order code		Tag Name	FIT-612
Device type	PROMAG 10 P DN80	K-Factor	1.0337 - 1.0337
Serial number	E6086D16000	Zero point	0
Software Version Transmitter	V1.03.00	Software Version I/O-Module	
Verification date	01/27/2021	Verification time	01:39 PM

Curent Output	Assign	Current Range	Value 0_4mA	Value 20 mA		
Terminal 26/27	VOLUME FLOW	4-20 mA activ	0.0 m3/d	864.00 m3/d		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	0.005 m3/P	Passive/Positive	100.00 ms		

Actual System Ident. 127.0

4.5 FIT- 631 R.A.S.

DTM Version: 3.33.00 Page 1/3

Flowmeter Verification Certificate Transmitter

Customer	Plant
	FIT-631
Order code	Tag Name
PROMAG 10 P DN150	1.016 - 1.016
Device type	K-Factor
E608FE16000	0
Serial number	Zero point
V1.03.00	
Software Version Transmitter	Software Version I/O-Module
01/27/2021	01:30 PM
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.65 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	Simubox Details
240223	8784351
Production number	Production number
1.07.10	1.00.01
Software Version	Software Version
03/2020	03/2020
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. 1)

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

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FieldCheck - Result Tab Transmitter

Customer		Plant	
Order code		Tag Name	FIT-631
Device type	PROMAG 10 P DN150	K-Factor	1.016 - 1.016
Serial number	E608FE16000	Zero point	0
Software Version Transmitter	V1.03.00	Software Version I/O-Module	
Verification date	01/27/2021	Verification time	01:30 PM

Verification Flow end value (100 %): 6107.256 m3/d
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	305.363 m3/d (5%)	1.60 %	-0.57 %
✓		610.726 m3/d (10.0%)	1.10 %	0.01 %
✓		3053.628 m3/d (50.0%)	0.70 %	-0.11 %
✓		6107.256 m3/d (100%)	0.65 %	-0.03 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	0.006 mA
✓		4.800 mA (5%)	0.05 mA	-0.001 mA
✓		5.600 mA (10.0%)	0.05 mA	-0.002 mA
✓		12.000 mA (50.0%)	0.05 mA	-0.006 mA
✓		20.000 mA (100%)	0.05 mA	-0.008 mA
–	Pulse Output 1	—	—	—
		Start value	Limits range	Measured value
	Test Sensor			
✓	Coil Curr. Rise	83.300 ms	20.000..83.300 ms	66.816 ms
✓	Coil Curr. Stability		—	—

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

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FieldCheck: Parameters Transmitter

Customer		Plant	
Order code		Tag Name	FIT-631
Device type	PROMAG 10 P DN150	K-Factor	1.016 - 1.016
Serial number	E608FE16000	Zero point	0
Software Version Transmitter	V1.03.00	Software Version I/O-Module	
Verification date	01/27/2021	Verification time	01:30 PM

Curent Output	Assign	Current Range	Value 0_4mA	Value 20 mA		
Terminal 26/27	VOLUME FLOW	4-20 mA activ	0.0 m3/d	5000.00 m3/d		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	0.025 m3/P	Passive/Positive	100.00 ms		

Actual System Ident. 127.0

4.6 FIT- 621 R.A.S.

DTM Version: 3.33.00 Page 1/3

Flowmeter Verification Certificate Transmitter

Customer	Plant
	FIT-621
Order code	Tag Name
PROMAG 10 P DN150	1.0176 - 1.0176
Device type	K-Factor
E6087E16000	0
Serial number	Zero point
V1.03.00	
Software Version Transmitter	Software Version I/O-Module
01/27/2021	01:49 PM
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.65 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	Simubox Details
240223	8784351
Production number	Production number
1.07.10	1.00.01
Software Version	Software Version
03/2020	03/2020
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. 1)

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

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FieldCheck - Result Tab Transmitter

Customer		Plant	
Order code		Tag Name	FIT-621
Device type	PROMAG 10 P DN150	K-Factor	1.0176 - 1.0176
Serial number	E6087E16000	Zero point	0
Software Version Transmitter	V1.03.00	Software Version I/O-Module	
Verification date	01/27/2021	Verification time	01:49 PM

Verification Flow end value (100 %): 6107.256 m3/d
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	305.363 m3/d (5%)	1.60 %	-0.69 %
✓		610.726 m3/d (10.0%)	1.10 %	-0.27 %
✓		3053.628 m3/d (50.0%)	0.70 %	-0.13 %
✓		6107.256 m3/d (100%)	0.65 %	-0.04 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	0.004 mA
✓		4.800 mA (5%)	0.05 mA	-0.003 mA
✓		5.600 mA (10.0%)	0.05 mA	-0.004 mA
✓		12.000 mA (50.0%)	0.05 mA	-0.009 mA
✓		20.000 mA (100%)	0.05 mA	-0.014 mA
–	Pulse Output 1	—	—	—
		Start value	**Limits range**	**Measured value**
	Test Sensor			
✓	Coil Curr. Rise	83.300 ms	20.000..83.300 ms	66.399 ms
✓	Coil Curr. Stability		—	—

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

10-830 Industrial Ave. Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

FieldCheck: Parameters Transmitter

Customer		Plant	
Order code		Tag Name	FIT-631
Device type	PROMAG 10 P DN150	K-Factor	1.016 - 1.016
Serial number	E608FE16000	Zero point	0
Software Version Transmitter	V1.03.00	Software Version I/O-Module	
Verification date	01/27/2021	Verification time	01:30 PM

Curent Output	Assign	Current Range	Value 0_4mA	Value 20 mA		
Terminal 26/27	VOLUME FLOW	4-20 mA activ	0.0 m3/d	5000.00 m3/d		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	0.025 m3/P	Passive/Positive	100.00 ms		

Actual System Ident. 127.0

4.7 FIT- 622 W.A.S.

DTM Version: 3.33.00 Page 1/3

Flowmeter Verification Certificate Transmitter

Customer	Plant
	FIT-622
Order code	Tag Name
PROMAG 10 P DN80	1.0288 - 1.0288
Device type	K-Factor
E608FC16000	0
Serial number	Zero point
V1.03.00	
Software Version Transmitter	Software Version I/O-Module
01/27/2021	01:59 PM
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.65 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	Simubox Details
240223	8784351
Production number	Production number
1.07.10	1.00.01
Software Version	Software Version
03/2020	03/2020
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. 1)

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

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FieldCheck - Result Tab Transmitter

Customer		Plant	
Order code		Tag Name	FIT-622
Device type	PROMAG 10 P DN80	K-Factor	1.0288 - 1.0288
Serial number	E608FC16000	Zero point	0
Software Version Transmitter	V1.03.00	Software Version I/O-Module	
Verification date	01/27/2021	Verification time	01:59 PM

Verification Flow end value (100 %): 1737.175 m3/d
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	86.859 m3/d (5%)	1.60 %	-0.45 %
✓		173.717 m3/d (10.0%)	1.10 %	0.04 %
✓		868.588 m3/d (50.0%)	0.70 %	-0.10 %
✓		1737.175 m3/d (100%)	0.65 %	-0.01 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	0.008 mA
✓		4.800 mA (5%)	0.05 mA	0.002 mA
✓		5.600 mA (10.0%)	0.05 mA	0.003 mA
✓		12.000 mA (50.0%)	0.05 mA	0.004 mA
✓		20.000 mA (100%)	0.05 mA	0.010 mA
–	Pulse Output 1	—	—	—
		Start value	Limits range	Measured value
	Test Sensor			
✓	Coil Curr. Rise	50.000 ms	13.340..50.000 ms	43.099 ms
✓	Coil Curr. Stability		—	—

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

10-830 Industrial Ave. Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

FieldCheck: Parameters Transmitter

Customer		Plant	
Order code		Tag Name	FIT-622
Device type	PROMAG 10 P DN80	K-Factor	1.0288 - 1.0288
Serial number	E608FC16000	Zero point	0
Software Version Transmitter	V1.03.00	Software Version I/O-Module	
Verification date	01/27/2021	Verification time	01:59 PM

Curent Output	Assign	Current Range	Value 0_4mA	Value 20 mA		
Terminal 26/27	VOLUME FLOW	4-20 mA activ	0.0 m3/d	864.00 m3/d		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	0.005 m3/P	Passive/Positive	100.00 ms		

Actual System Ident. 127.0

4.8 FIT- 632 W.A.S.

DTM Version: 3.33.00 Page 1/3

Flowmeter Verification Certificate Transmitter

Customer	Plant
	FIT-632
Order code	Tag Name
PROMAG 10 P DN80	1.055 - 1.055
Device type	K-Factor
E6088416000	0
Serial number	Zero point
V1.03.00	
Software Version Transmitter	Software Version I/O-Module
01/27/2021	02:14 PM
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.65 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	Simubox Details
240223	8784351
Production number	Production number
1.07.10	1.00.01
Software Version	Software Version
03/2020	03/2020
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. 1)

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

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FieldCheck - Result Tab Transmitter

Customer		Plant	
Order code		Tag Name	FIT-632
Device type	PROMAG 10 P DN80	K-Factor	1.055 - 1.055
Serial number	E6088416000	Zero point	0
Software Version Transmitter	V1.03.00	Software Version I/O-Module	
Verification date	01/27/2021	Verification time	02:14 PM

Verification Flow end value (100 %): 1737.175 m3/d
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	86.859 m3/d (5%)	1.60 %	-0.88 %
✓		173.717 m3/d (10.0%)	1.10 %	-0.70 %
✓		868.588 m3/d (50.0%)	0.70 %	-0.11 %
✓		1737.175 m3/d (100%)	0.65 %	-0.02 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	0.001 mA
✓		4.800 mA (5%)	0.05 mA	0.000 mA
✓		5.600 mA (10.0%)	0.05 mA	0.001 mA
✓		12.000 mA (50.0%)	0.05 mA	0.002 mA
✓		20.000 mA (100%)	0.05 mA	0.005 mA
–	Pulse Output 1	—	—	—
		Start value	Limits range	Measured value
	Test Sensor			
✓	Coil Curr. Rise	50.000 ms	13.340..50.000 ms	43.307 ms
✓	Coil Curr. Stability		—	—

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

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FieldCheck: Parameters Transmitter

Customer		Plant	
Order code		Tag Name	FIT-632
Device type	PROMAG 10 P DN80	K-Factor	1.055 - 1.055
Serial number	E6088416000	Zero point	0
Software Version Transmitter	V1.03.00	Software Version I/O-Module	
Verification date	01/27/2021	Verification time	02:14 PM

Curent Output	Assign	Current Range	Value 0_4mA	Value 20 mA		
Terminal 26/27	VOLUME FLOW	4-20 mA activ	0.0 m3/d	864.00 m3/d		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	0.005 m3/P	Passive/Positive	100.00 ms		

Actual System Ident. 127.0

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4.9 FIT- 750 Filtrate Tank

DTM Version: 3.33.00 Page 1/3

Flowmeter Verification Certificate Transmitter

Customer	Plant: FIT-750
Order code: PROMAG 10 P DN80	Tag Name: 1.1234 - 1.1234
Device type: E6086E16000	K-Factor: 0
Serial number: V1.03.00	Zero point
Software Version Transmitter: 01/27/2021	Software Version I/O-Module: 02:26 PM
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.65 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	Simubox Details
Production number: 240223	Production number: 8784351
Software Version: 1.07.10	Software Version: 1.00.01
Last Calibration Date: 03/2020	Last Calibration Date: 03/2020

Date ..... Operator's Sign ..... Inspector's Sign .....

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. 1)

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

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FieldCheck - Result Tab Transmitter

Customer		Plant	
Order code		Tag Name	FIT-750
Device type	PROMAG 10 P DN80	K-Factor	1.1234 - 1.1234
Serial number	E6086E16000	Zero point	0
Software Version Transmitter	V1.03.00	Software Version I/O-Module	
Verification date	01/27/2021	Verification time	02:26 PM

Verification Flow end value (100 %): 1737.175 m3/d
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	86.859 m3/d (5%)	1.60 %	-0.63 %
✓		173.717 m3/d (10.0%)	1.10 %	-0.24 %
✓		868.588 m3/d (50.0%)	0.70 %	-0.14 %
✓		1737.175 m3/d (100%)	0.65 %	-0.04 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	0.003 mA
✓		4.800 mA (5%)	0.05 mA	0.002 mA
✓		5.600 mA (10.0%)	0.05 mA	0.002 mA
✓		12.000 mA (50.0%)	0.05 mA	0.003 mA
✓		20.000 mA (100%)	0.05 mA	0.008 mA
–	Pulse Output 1	—	—	—
		Start value	**Limits range**	**Measured value**
	Test Sensor			
✓	Coil Curr. Rise	50.000 ms	13.340..50.000 ms	43.802 ms
✓	Coil Curr. Stability		—	—

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

10-830 Industrial Ave. Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

FieldCheck: Parameters Transmitter

Customer		Plant	
Order code		Tag Name	FIT-750
Device type	PROMAG 10 P DN80	K-Factor	1.1234 - 1.1234
Serial number	E6086E16000	Zero point	0
Software Version Transmitter	V1.03.00	Software Version I/O-Module	
Verification date	01/27/2021	Verification time	02:26 PM

Curent Output	Assign	Current Range	Value 0_4mA	Value 20 mA		
Terminal 26/27	VOLUME FLOW	4-20 mA activ	0.0 m3/d	4320.00 m3/d		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	0.005 m3/P	Passive/Positive	100.00 ms		

Actual System Ident. 127.0

4.10 FIT- 1091 Service Water

DTM Version: 3.33.00 Page 1/3

Flowmeter Verification Certificate Transmitter

Customer	Plant
	FIT-1091
Order code	Tag Name
PROMAG 10 P DN150	1.0062 - 1.0062
Device type	K-Factor
E608FD16000	0
Serial number	Zero point
V1.03.00	
Software Version Transmitter	Software Version I/O-Module
01/27/2021	02:37 PM
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.65 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	Simubox Details
240223	8784351
Production number	Production number
1.07.10	1.00.01
Software Version	Software Version
03/2020	03/2020
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. 1)

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

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FieldCheck - Result Tab Transmitter

Customer		Plant	
Order code		Tag Name	FIT-1091
Device type	PROMAG 10 P DN150	K-Factor	1.0062 - 1.0062
Serial number	E608FD16000	Zero point	0
Software Version Transmitter	V1.03.00	Software Version I/O-Module	
Verification date	01/27/2021	Verification time	02:37 PM

Verification Flow end value (100 %): 70.686 l/s
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	3.534 l/s (5%)	1.60 %	-0.16 %
✓		7.069 l/s (10.0%)	1.10 %	0.07 %
✓		35.343 l/s (50.0%)	0.70 %	-0.10 %
✓		70.686 l/s (100%)	0.65 %	-0.08 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	0.000 mA
✓		4.800 mA (5%)	0.05 mA	0.001 mA
✓		5.600 mA (10.0%)	0.05 mA	0.001 mA
✓		12.000 mA (50.0%)	0.05 mA	0.005 mA
✓		20.000 mA (100%)	0.05 mA	0.012 mA
–	Pulse Output 1	—	—	—
		Start value	**Limits range**	**Measured value**
	Test Sensor			
✓	Coil Curr. Rise	83.300 ms	20.000..83.300 ms	66.477 ms
✓	Coil Curr. Stability		—	—

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

10-830 Industrial Ave. Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

FieldCheck: Parameters Transmitter

Customer		Plant	
Order code		Tag Name	FIT-1091
Device type	PROMAG 10 P DN150	K-Factor	1.0062 - 1.0062
Serial number	E608FD16000	Zero point	0
Software Version Transmitter	V1.03.00	Software Version I/O-Module	
Verification date	01/27/2021	Verification time	02:37 PM

Curent Output	Assign	Current Range	Value 0_4mA	Value 20 mA		
Terminal 26/27	VOLUME FLOW	4-20 mA activ	0.0 l/s	50.00 l/s		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	0.025 m3/P	Passive/Positive	100.00 ms		

Actual System Ident. 125.0

10-830 Industrial Ave. Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

4.11 FIT- 405 Attenuation

DTM Version: 3.33.00 Page 1/3

Flowmeter Verification Certificate Transmitter

Customer	Plant
	FIT-405
Order code	Tag Name
PROMAG 53 P DN200	1.0223 - 1.0223
Device type	K-Factor
E6088316000	11
Serial number	Zero point
V2.03.00	V1.05.03
Software Version Transmitter	Software Version I/O-Module
01/27/2021	05:25 PM
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.55 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	Simubox Details
240223	8784351
Production number	Production number
1.07.10	1.00.01
Software Version	Software Version
03/2020	03/2020
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. 1)

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

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Instruments used during verification are Traceable to NIST standards. See Appendix for Calibration Reports

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FieldCheck - Result Tab Transmitter

Customer		Plant	
Order code		Tag Name	FIT-405
Device type	PROMAG 53 P DN200	K-Factor	1.0223 - 1.0223
Serial number	E6088316000	Zero point	11
Software Version Transmitter	V2.03.00	Software Version I/O-Module	V1.05.03
Verification date	01/27/2021	Verification time	05:25 PM

Verification Flow end value (100 %): 125.664 l/s
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	6.283 l/s (5%)	1.50 %	-0.41 %
✓		12.566 l/s (10.0%)	1.00 %	-0.11 %
✓		62.832 l/s (50.0%)	0.60 %	-0.06 %
✓		125.664 l/s (100%)	0.55 %	-0.01 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	-0.006 mA
✓		4.800 mA (5%)	0.05 mA	-0.007 mA
✓		5.600 mA (10.0%)	0.05 mA	-0.021 mA
✓		12.000 mA (50.0%)	0.05 mA	-0.003 mA
✓		20.000 mA (100%)	0.05 mA	0.004 mA
–	Pulse Output 1	—	—	—
		Start value	**Limits range**	**Measured value**
	Test Sensor			
✓	Coil Curr. Rise	13.300 ms	0.000..27.625 ms	18.286 ms
✓	Coil Curr. Stability		—	—
✓	Electrode Integrity	mV	0.0..300.000 mV	3.269 mV

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

10-830 Industrial Ave. Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

FieldCheck: Parameters Transmitter

Customer		Plant	
Order code		Tag Name	FIT-405
Device type	PROMAG 53 P DN200	K-Factor	1.0223 - 1.0223
Serial number	E6088316000	Zero point	11
Software Version Transmitter	V2.03.00	Software Version I/O-Module	V1.05.03
Verification date	01/27/2021	Verification time	05:25 PM

Curent Output	Assign	Current Range	Value 0_4mA	Value 20 mA		
Terminal 26/27	VOLUME FLOW	4-20 mA activ	0.0 l/s	150.00 l/s		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	37.854 l/P	Passive/Positive	100.00 ms		

Actual System Ident. 121.0

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4.12 FIT- 946 Fournier Press #1 Polymer Flow

DTM Version: 3.33.00 Page 1/3

Flowmeter Verification Certificate Transmitter

Customer	Plant

Order code	Tag Name
PROMAG 50 P DN25	0.8218 - 0.8218
Device type	K-Factor
DA084316000	7
Serial number	Zero point
V2.03.00	V1.04.02
Software Version Transmitter	Software Version I/O-Module
01/27/2021	03:14 PM
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.55 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	Simubox Details
240223	8784351
Production number	Production number
1.07.10	1.00.01
Software Version	Software Version
03/2020	03/2020
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. 1)

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

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Instruments used during verification are Traceable to NIST standards. See Appendix for Calibration Reports

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FieldCheck - Result Tab Transmitter

Customer		Plant	
Order code		Tag Name	——
Device type	PROMAG 50 P DN25	K-Factor	0.8218 - 0.8218
Serial number	DA084316000	Zero point	7
Software Version Transmitter	V2.03.00	Software Version I/O-Module	V1.04.02
Verification date	01/27/2021	Verification time	03:14 PM

Verification Flow end value (100 %): 7068.583 l/h
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	353.429 l/h (5%)	1.50 %	-0.36 %
✓		706.858 l/h (10.0%)	1.00 %	-0.04 %
✓		3534.292 l/h (50.0%)	0.60 %	0.00 %
✓		7068.583 l/h (100%)	0.55 %	0.02 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	-0.004 mA
✓		4.800 mA (5%)	0.05 mA	-0.003 mA
✓		5.600 mA (10.0%)	0.05 mA	-0.015 mA
✓		12.000 mA (50.0%)	0.05 mA	-0.001 mA
✓		20.000 mA (100%)	0.05 mA	0.004 mA
–	Pulse Output 1	—	—	—
		Start value	**Limits range**	**Measured value**
	Test Sensor			
✓	Coil Curr. Rise	2.400 ms	0.000..8.750 ms	3.584 ms
✓	Coil Curr. Stability		—	—
✓	Electrode Integrity	mV	0.0..300.000 mV	3.268 mV

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

10-830 Industrial Ave. Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

FieldCheck: Parameters Transmitter

Customer		Plant	
Order code		Tag Name	———
Device type	PROMAG 50 P DN25	K-Factor	0.8218 - 0.8218
Serial number	DA084316000	Zero point	7
Software Version Transmitter	V2.03.00	Software Version I/O-Module	V1.04.02
Verification date	01/27/2021	Verification time	03:14 PM

Curent Output	Assign	Current Range	Value 0_4mA	Value 20 mA		
Terminal 26/27	VOLUME FLOW	4-20 mA activ	0.0 l/h	4088.24 l/h		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	0.757 l/P	Passive/Positive	100.00 ms		

Actual System Ident. 123.0

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4.13 FIT- 940 Fournier Press #1 Sludge Flow

DTM Version: 3.33.00 Page 1/3

Flowmeter Verification Certificate Transmitter

Customer	Plant

Order code	Tag Name
PROMAG 50 W DN80	0.9282 - 0.9282
Device type	K-Factor
D2012116000	4
Serial number	Zero point
V2.03.00	V1.04.01
Software Version Transmitter	Software Version I/O-Module
01/27/2021	03:23 PM
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.55 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	**Simubox Details**
240223	8784351
Production number	Production number
1.07.10	1.00.01
Software Version	Software Version
03/2020	03/2020
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. 1)

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

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Instruments used during verification are Traceable to NIST standards. See Appendix for Calibration Reports

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FieldCheck - Result Tab Transmitter

Customer		Plant	
Order code		Tag Name	——
Device type	PROMAG 50 W DN80	K-Factor	0.9282 - 0.9282
Serial number	D2012116000	Zero point	4
Software Version Transmitter	V2.03.00	Software Version I/O-Module	V1.04.01
Verification date	01/27/2021	Verification time	03:23 PM

Verification Flow end value (100 %): 72.382 m3/h
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	3.619 m3/h (5%)	1.50 %	-0.35 %
✓		7.238 m3/h (10.0%)	1.00 %	-0.05 %
✓		36.191 m3/h (50.0%)	0.60 %	-0.02 %
✓		72.382 m3/h (100%)	0.55 %	0.02 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	-0.004 mA
✓		4.800 mA (5%)	0.05 mA	-0.002 mA
✓		5.600 mA (10.0%)	0.05 mA	-0.016 mA
✓		12.000 mA (50.0%)	0.05 mA	-0.002 mA
✓		20.000 mA (100%)	0.05 mA	0.003 mA
–	Pulse Output 1	—	—	—
		Start value	**Limits range**	**Measured value**
	Test Sensor			
✓	Coil Curr. Rise	4.200 ms	0.000..12.650 ms	5.341 ms
✓	Coil Curr. Stability		—	—
✓	Electrode Integrity	mV	0.0..300.000 mV	3.228 mV

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

10-830 Industrial Ave. Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

FieldCheck: Parameters Transmitter

Customer		Plant	
Order code		Tag Name	———
Device type	PROMAG 50 W DN80	K-Factor	0.9282 - 0.9282
Serial number	D2012116000	Zero point	4
Software Version Transmitter	V2.03.00	Software Version I/O-Module	V1.04.01
Verification date	01/27/2021	Verification time	03:23 PM

Curent Output	Assign	Current Range	Value 0_4mA	Value 20 mA		
Terminal 26/27	VOLUME FLOW	4-20 mA activ	0.0 m3/h	45.42 m3/h		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	0.008 m3/P	Passive/Positive	100.00 ms		

Actual System Ident. 123.0

10-830 Industrial Ave. Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

4.14 FIT- 956 Fournier Press # 2 Polymer Flow

DTM Version: 3.33.00 Page 1/3

Flowmeter Verification Certificate Transmitter

Customer	Plant

Order code	Tag Name
PROMAG 50 P DN25	0.8082 - 0.8082
Device type	K-Factor
DA084616000	16
Serial number	Zero point
V2.03.00	V1.04.02
Software Version Transmitter	Software Version I/O-Module
01/27/2021	02:53 PM
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.55 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	Simubox Details
240223	8784351
Production number	Production number
1.07.10	1.00.01
Software Version	Software Version
03/2020	03/2020
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. 1)

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

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Instruments used during verification are Traceable to NIST standards. See Appendix for Calibration Reports

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FieldCheck - Result Tab Transmitter

Customer		Plant	
Order code		Tag Name	——
Device type	PROMAG 50 P DN25	K-Factor	0.8082 - 0.8082
Serial number	DA084616000	Zero point	16
Software Version Transmitter	V2.03.00	Software Version I/O-Module	V1.04.02
Verification date	01/27/2021	Verification time	02:53 PM

Verification Flow end value (100 %): 7068.583 l/h
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	353.429 l/h (5%)	1.50 %	-0.37 %
✓		706.858 l/h (10.0%)	1.00 %	-0.05 %
✓		3534.292 l/h (50.0%)	0.60 %	0.03 %
✓		7068.583 l/h (100%)	0.55 %	0.02 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	-0.004 mA
✓		4.800 mA (5%)	0.05 mA	-0.004 mA
✓		5.600 mA (10.0%)	0.05 mA	-0.017 mA
✓		12.000 mA (50.0%)	0.05 mA	-0.002 mA
✓		20.000 mA (100%)	0.05 mA	0.004 mA
–	Pulse Output 1	—	—	—
		Start value	**Limits range**	**Measured value**
	Test Sensor			
✓	Coil Curr. Rise	2.400 ms	0.000..8.750 ms	3.646 ms
✓	Coil Curr. Stability		—	—
✓	Electrode Integrity	mV	0.0..300.000 mV	3.266 mV

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

10-830 Industrial Ave. Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

FieldCheck: Parameters Transmitter

Customer		Plant	
Order code		Tag Name	———
Device type	PROMAG 50 P DN25	K-Factor	0.8082 - 0.8082
Serial number	DA084616000	Zero point	16
Software Version Transmitter	V2.03.00	Software Version I/O-Module	V1.04.02
Verification date	01/27/2021	Verification time	02:53 PM

Curent Output	Assign	Current Range	Value 0_4mA	Value 20 mA		
Terminal 26/27	VOLUME FLOW	4-20 mA activ	0.0 l/h	4088.24 l/h		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	0.757 l/P	Passive/Positive	100.00 ms		

Actual System Ident. 123.0

10-830 Industrial Ave. Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

4.15 FIT – 950 Fournier Press #2 Sludge Flow

DTM Version: 3.33.00 Page 1/3

Flowmeter Verification Certificate Transmitter

Customer	Plant

Order code	Tag Name
PROMAG 50 W DN80	1.0487 - 1.0487
Device type	K-Factor
D4010116000	0
Serial number	Zero point
V2.03.00	V1.04.01
Software Version Transmitter	Software Version I/O-Module
01/27/2021	03:03 PM
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.55 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	Simubox Details
240223	8784351
Production number	Production number
1.07.10	1.00.01
Software Version	Software Version
03/2020	03/2020
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. 1)

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

Endress+Hauser
People for Process Automation

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FieldCheck - Result Tab Transmitter

Customer		Plant	
Order code		Tag Name	——
Device type	PROMAG 50 W DN80	K-Factor	1.0487 - 1.0487
Serial number	D4010116000	Zero point	0
Software Version Transmitter	V2.03.00	Software Version I/O-Module	V1.04.01
Verification date	01/27/2021	Verification time	03:03 PM

Verification Flow end value (100 %): 72.382 m3/h
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	3.619 m3/h (5%)	1.50 %	-0.29 %
✓		7.238 m3/h (10.0%)	1.00 %	0.01 %
✓		36.191 m3/h (50.0%)	0.60 %	0.03 %
✓		72.382 m3/h (100%)	0.55 %	0.07 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	-0.004 mA
✓		4.800 mA (5%)	0.05 mA	-0.004 mA
✓		5.600 mA (10.0%)	0.05 mA	-0.018 mA
✓		12.000 mA (50.0%)	0.05 mA	-0.002 mA
✓		20.000 mA (100%)	0.05 mA	0.003 mA
–	Pulse Output 1	—	—	—
		Start value	**Limits range**	**Measured value**
	Test Sensor			
✓	Coil Curr. Rise	4.200 ms	0.000..12.650 ms	4.890 ms
✓	Coil Curr. Stability		—	—
✓	Electrode Integrity	mV	0.0..300.000 mV	0.000 mV

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

10-830 Industrial Ave. Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

FieldCheck: Parameters Transmitter

Customer		Plant	
Order code		Tag Name	———
Device type	PROMAG 50 W DN80	K-Factor	1.0487 - 1.0487
Serial number	D4010116000	Zero point	0
Software Version Transmitter	V2.03.00	Software Version I/O-Module	V1.04.01
Verification date	01/27/2021	Verification time	03:03 PM

Curent Output	Assign	Current Range	Value 0_4mA	Value 20 mA		
Terminal 26/27	VOLUME FLOW	4-20 mA activ	0.0 m3/h	45.42 m3/h		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	0.008 m3/P	Passive/Positive	100.00 ms		

Actual System Ident. 123.0

10-830 Industrial Ave. Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

4.16 FIT 470 Raw Sewage Vortex #1

Flow Meter — Instrument Calibration/Verification Report — Date: January 27th 2021

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	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 Paramaters

Exponential Device
Ratiometric
Meters
Range at zero head= 1.095 m
Max head= .765 m
Flow Exponent U0=1.522

12 inch Parshall Flume

4-20 mA= 0 - 39984 m3/day

Calibration Equipment

Make Fluke Multimeter
Model 725
Serial # 8759025

Level stand for simulating levels

Pass/Fail Criteria: 5% of Full Scale
Errors are expressed in percentage of Full Scale

Test Procedure
Level Simulation

Flow rate units are **m3/day**

Simulated Height	3 cm		5.5 cm		27 cm
Calculated Flow	266		679		8008
Transmitter Value	243		695		8231
Error	0.06%		0.04%		0.56%
Expected mA	4.11		4.27		7.20
Actual mA	4.10		4.30		7.28
Error	0.06%		0.18%		0.50%

Comments

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

10-830 Industrial Ave. Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

4.17 FIT- 480 Raw sewage Vortex #2

Flow Meter — Instrument Calibration/Verification Report — Date: January 27th 2021

As Found Results

Client Details		Instrument Details	
		Manufacturer	Siemens
Customer	Almonte O.C.W.A.		
Contact	Kurtis Winkenweeder	Model	Multi ranger 200
	613-257-9623	Order Code	
		Serial Number	PBD/B5180395
Calibrations by:	Tim Stewart	Location	W.W.T.P.
	Capital Controls	Output	4-20 mA
	613-248-1999	Process	Raw Sewage Flow
		Tag ID	FIT-480

Programming Paramaters
Exponential Device
Ratiometric
Meters
Range at zero head= 1.095 m
Max head= .765 m
Flow Exponent U0=1.522

12 inch Parshall Flume

4-20 mA= 0 - 39984 m3/day

Calibration Equipment
Make Fluke Multimeter
Model 725
Serial # 8759025

Level stand for simulating levels

Pass/Fail Criteria: 5% of Full Scale
Errors are expressed in percentage of Full Scale

Test Procedure
Level Simulation

Flow rate units are **m3/day**

Simulated height	5.4 cm		6.7 cm		27.9 cm
Calculated Flow	660		924		8657
Transmitter Value	710		994		8904
Error	0.13%		0.18%		0.62%
Expected mA	4.26		4.39		7.46
Actual mA	4.28		4.36		7.58
Error	0.13%		0.19%		0.13%

Comments

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

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4.18 FIT-01 White Tail Ridge Pumping Station

DTM Version: 3.33.00 Page 1/3

Flowmeter Verification Certificate Transmitter

Customer	Plant

Order code	Tag Name
PROMAG 10 ? DN80	1.0161 - 1.0161
Device type	K-Factor
DC068219000	0
Serial number	Zero point
V1.03.00	
Software Version Transmitter	Software Version I/O-Module
01/27/2021	07:32 PM
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.65 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	Simubox Details
240223	8784351
Production number	Production number
1.07.10	1.00.01
Software Version	Software Version
03/2020	03/2020
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. 1)

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

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Instruments used during verification are Traceable to NIST standards. See Appendix for Calibration Reports

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FieldCheck - Result Tab Transmitter

Customer		Plant	
Order code		Tag Name	——
Device type	PROMAG 10 ? DN80	K-Factor	1.0161 - 1.0161
Serial number	DC068219000	Zero point	0
Software Version Transmitter	V1.03.00	Software Version I/O-Module	
Verification date	01/27/2021	Verification time	07:32 PM

Verification Flow end value (100 %): 20.106 l/s
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	1.005 l/s (5%)	1.60 %	-0.31 %
✓		2.011 l/s (10.0%)	1.10 %	-0.34 %
✓		10.053 l/s (50.0%)	0.70 %	-0.11 %
✓		20.106 l/s (100%)	0.65 %	-0.05 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	-0.006 mA
✓		4.800 mA (5%)	0.05 mA	-0.010 mA
✓		5.600 mA (10.0%)	0.05 mA	-0.011 mA
✓		12.000 mA (50.0%)	0.05 mA	-0.006 mA
✓		20.000 mA (100%)	0.05 mA	0.013 mA
–	Pulse Output 1	—	—	—
		Start value	Limits range	Measured value
	Test Sensor			
✓	Coil Curr. Rise	50.000 ms	13.333..50.000 ms	43.177 ms
✓	Coil Curr. Stability		—	—

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

10-830 Industrial Ave. Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

FieldCheck: Parameters Transmitter

Customer		Plant	
Order code		Tag Name	———
Device type	PROMAG 10 ? DN80	K-Factor	1.0161 - 1.0161
Serial number	DC068219000	Zero point	0
Software Version Transmitter	V1.03.00	Software Version I/O-Module	
Verification date	01/27/2021	Verification time	07:32 PM

Curent Output	Assign	Current Range	Value 0_4mA	Value 20 mA		
Terminal 26/27	VOLUME FLOW	4-20 mA activ	0.0 l/s	10.00 l/s		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	0.001 m3/P	Passive/Positive	100.00 ms		

Actual System Ident. 115.0

10-830 Industrial Ave. Ottawa, ON K1G-4B8 Ph. 613 248-1999 Fax: 613 248-1997

4.19 FIT 700 Sludge Flow

Flow Meter — Instrument Calibration/Verification Report — Date: January 27th 2021

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 Paramaters

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 simualtor

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		20.02 mA	
mA Output Error	0.13%		0.13%		0.13%		0.13%	0.13%

Comments

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

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4.20 FIT-1180 Final Effluent

Flow Meter — Instrument Calibration/Verification Report — Date: January 27th 2021

As Found Results

Client Details		Instrument Details		
		Manufacturer	Siemens	
Customer	Almonte O.C.W.A.		Transmitter	Sensor
Contact	Kurtis Winkenweeder	Model	Siemens	Siemens
	613-257-9623	Order Code	OCM III	XRS-5
		Serial Number	PBD	
Calibrations by:	Tim Stewart	Location	Mississippi Mills	
	Capital Controls	Output	4-20 mA	
	613-248-1999	Process	Plant Effluent	
		Tag ID	FIT- 1180	

Programming Paramaters
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
24 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

Pass/Fail Criteria: 5% of Full Scale
Errors are expressed in percentage of Full Scale

Test Procedure
Level Simulation

Flow rate units are **m3/day**

Actual Height	13 cm		13.85 cm		14.49 cm		14.91 cm
Calculated Flow	2583		2842		3049		3188
Transmitter Value	2674		2743		3136		3274
Error	0.42%		0.46%		0.40%		0.39%
Expected mA	5.92		6.11		6.26		6.37
Actual mA	5.98		6.03		6.32		6.43
Error	0.38%		0.50%		0.25%		0.38%

Comments

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

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Appendix A- Equipment Calibration Certificates

www.pylonelectronics.com

PYLON

Pylon Electronics Inc.
147 Colonnade Road
Ottawa, ON K2L 7L9

Page 1 of 1

CERTIFICATE OF CALIBRATION

Description	MULTI FUNCTION PROCESS	Work Order	N0847119
Model Number	725	Serial Number	8759025
Instrument Id	N/A	Cal Procedure	667581
Manufacturer	FLUKE	Cal Date	28 Apr 2020
Customer Name	CAPITAL CONTROLS	Recall Cycle	52 Weeks
		Next Cal Date	28 Apr 2021
		Purchase Order	CC1804-PI

Calibration Environment: Temperature 23.2 °C Relative Humidity 24 %RH

Received Condition: Within Tolerance

Completed Condition: Within Tolerance

Standards Used to Establish Traceability

Instrument Type	Model	Asset #	Cal Due Date
CALIBRATOR WITH SCOPE OPTION	5522A-SC1100	240-1155	25 Sep 2020
MULTIMETER	34401A	240-120	29 Jun 2021

Pylon certifies that, at the time of calibration, the above listed instrument meets or exceeds all of the specifications defined on the Test Data Sheet (TDS), unless otherwise indicated. The Certificate received and completed as listed and the TDS specifications are based on the parameter(s) and/or specification(s) referenced on the TDS unless otherwise indicated. Any statement of compliance is made without taking measurement uncertainty into account and is based on the instrument's performance against the test limits documented on the test data sheet.

The above listed instrument has been calibrated using standards that are traceable to the International System of Units (SI) through a National Metrological Institute (such as NRC or NIST). Pylon's quality system meets the requirements of ISO/IEC 17025:2005. Unless otherwise specified, Pylon maintains a minimum of a 4:1 ratio between the equipment under test and the measurement system.

This report consists of two parts with separate 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, other than in full, except with the prior written permission of the issuing laboratory.

The data As Found and Final (as left) results are the same unless specified otherwise. Certificate remarks identify if adjustments were performed.

Metrologist: 171 Quality Assurance: 301 Date of Issue: 29 Apr 2020

HALIFAX MONTREAL OTTAWA TORONTO EDMONTON CALGARY

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PYLON

Calibration Test Data

Description:	MULTI FUNCTION PROCESS CALIBI	Work order:	N0847119
Model:	725	Serial:	8759025
Customer ID.:	N/A	Procedure:	667581
Manufacturer:	FLUKE	Proc. Rev.:	01-Apr-2014
Customer:	CAPITAL CONTROLS	Cal Date:	28-Apr-2020

TEST REF.	TEST DESCRIPTION	RESULTS MIN	AS FOUND	FINAL	MAX
P. 25	UPPER DISPLAY VOLTAGE MEASUREMENT TESTS				
	APPLIED (V)	V	V		V
	0	-0.032	0.000		0.032
	15	14.995	15.000		15.005
	30	29.992	30.002		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	12.000 m		12.005 m
	24.000 m	23.993 m	24.004 m		24.007 m

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PYLON

Calibration Test Data

Description: MULTI FUNCTION PROCESS CALIBI Work order: N0847119
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 m	3.997 m	4.000 m		4.003 m
	12.000 m	11.995 m	12.000 m		12.005 m
	24.000 m	23.993 m	24.000 m		24.007 m
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				
	TI OUTPUT (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	14.98		15.10
	350	349.90	349.97		350.10
	500	499.8	499.9		500.5
	1500	1499.5	1500.0		1500.5
	3200	3196.0	3199.8		3201.0
P. 33	LOWER DISPLAY 3-WIRE RTD MEASUREMENT TESTS				
	APPLIED (Ω)	Ω	Ω	Ω	Ω
	350	349.80	349.92		350.20

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Calibration Test Data

Description: MULTI FUNCTION PROCESS CALIB Work order: N0647119
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	0.1		0.7
P. 35	LOWER DISPLAY T/C SOURCE TEST					
	APPLIED (°C)		°C	°C	°C	°C
	0		-0.7	-0.2		0.7
P. 36	LOWER DISPLAY mA SOURCE TESTS					
	OUTPUT (A)		A	A	A	A
	4 m		3.9972 m	3.9965 m		4.0026 m
	12 m		11.9956 m	11.9974 m		12.0044 m
	24 m		23.9932 m	23.9950 m		24.0068 m
P. 37	LOWER DISPLAY mV SOURCE TESTS					
	OUTPUT (V)		V	V	V	V
	0.00 m		-0.020 m	0.001 m		0.020 m
	45.00 m		44.970 m	45.003 m		45.030 m
	100.00 m		99.960 m	100.005 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	9.9999		10.0040

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Calibration Test Data

Description: MULTI FUNCTION PROCESS CALIBI Work order: N0847119
Model: 725 Serial: 8759025

	TEST DESCRIPTION	RESULTS MIN	AS FOUND	FINAL	MAX
P. 38	**LOWER DISPLAY RESISTANCE SOURCE TESTS**				
	OUTPUT (Ω)	Ω	Ω	Ω	Ω
	15	14.9	15.1		15.1
	360	359.9	360.1		360.1
	500	499.5	499.8		500.5
	1500	1499.5	1500.2		1500.5
	3200	3199.0	3200.3		3201.0
P. 39	**PRESSURE MODULE INPUT**				
	(WITH 700 SERIES PRESSURE MODULE)				
	TI DISPLAY SHOWS (PSI)	Pass / Fail	Pass		

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CC1803

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	03/03/2020
Location Ort	DG-Greenwood
Testing Instruction Prüfanweisung	CalCenter_2
Test Program Prüfprogramm	V1.01.10
Test Engineer Prüfer	Riley
Used Test-/Calibration Interface Verwendete Prüf-/Kalibrierschnittstelle	-
Used Test-/Calibration Tools Verwendete Prüf-/Kalibriermittel	Keithley DMM2700 due 07/2020 Yokogawa CAL100 due 07/2020
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: 03/03/2020, Christopher Riley

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Calibration Certificate
Kalibrations-Zertifikat

FieldCheck

Production Number / Fabrikationsnummer: 240223
Serial Number / Seriennummer: 960B1402000

Measuring Data On Incoming Inspection / Messdaten bei der Eingangsprüfung		Rated Value / Vorgabewert	Meas. Value / Messwert	Limit Value +/- / Grenzwert +/-	Pass / Fail / Gut/Fehlerhaft
Current Input	mA	0.000	**-0.004**	0.005	Pass/Gut
Strom-Eingang	mA	20.000	**20.015**	0.010	Fail/Fehlerhaft
Frequency Input	Hz	0.0	**0.0**	0.0	Pass/Gut
Frequenz-Eingang	Hz	8000.0	**7999.8**	4.0	Pass/Gut

Measuring Data After Calibration / Messdaten nach Kalibrierung		Rated Value / Vorgabewert	Meas. Value / Messwert	Limit Value +/- / Grenzwert +/-
Current Input	mA	0.000	**0.002**	0.002
Strom-Eingang	mA	10.000	**10.002**	0.004
	mA	20.000	**20.002**	0.005
Frequency Input	Hz	0.0	**0.0**	0.0
Frequenz-Eingang	Hz	1000.0	**999.9**	1.0
	Hz	8000.0	**8000.1**	2.0

Functional Safety Check
Funktionaler Sicherheitscheck

This unit has passed the complete Functional Safety Check.
All 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: 03/03/2020,

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CC1803

Calibration Certificate
Kalibrations-Zertifikat

Simubox MID

Page 1 of 2
Seite 1 of 2

Production Number Fabrikationsnummer	8784351
Serial Number Seriennummer	JA0FE402000
Manufacturer Hersteller	Endress+Hauser Flowtec AG CH-4153 Reinach

Date Of Calibration Kalibrierdatum	03/03/2020
Location Ort	DG-Greenwood
Testing Instruction Prüfanweisung	CalCenter_2
Test Program Prüfprogramm	V1.01.10
Test Engineer Prüfer	Riley

Used Test-/Calibration Interface Verwendete Prüf-/Kalibrierschnittstelle	--
Used Test-/Calibration Tools Verwendete Prüf-/Kalibriermittel	Keithley DMM2700 due 07/2020 Yokogawa CAL100 due 07/2020
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: 03/03/2020, Christopher Riley

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Calibration Certificate
Kalibrations-Zertifikat

SimuBox MID

Production Number / Fabrikationsnummer: 6784361
Serial Number / Seriennummer: JA0FE402000

Measuring Data On Incoming Inspection Messdaten bei der Eingangsprüfung (Calculated Mean values / Berechnete Mittelwerte)	Rated Value Vorgabewert [µV]	Meas. Value Messwert [µV]	Limit Value +/- Grenzwert +/- [µV]	Pass / Fail Gut/Fehlerhaft
Meas. Range 1	57.0	57.0	1.0	Pass/Gut
Meas. Range 2	334.0	332.6	3.0	Pass/Gut
Meas. Range 3	2064.0	2061.9	10.0	Pass/Gut
Meas. Range 4	11626.0	11621.3	20.0	Pass/Gut

Measuring Data After Calibration Messdaten nach Kalibrierung (Calculated Mean values / Berechnete Mittelwerte)	Rated Value Vorgabewert [µV]	Meas. Value Messwert [µV]	Limit Value +/- Grenzwert +/- [µV]
Meas. Range 1	50.0	49.8	0.5
Meas. Range 2	300.0	299.9	1.0
Meas. Range 3	2000.0	1999.8	3.0
Meas. Range 4	10000.0	9999.5	5.0

Date, Signature: 03/09/2020,