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WWW.OCWA.COM

March 21, 2018

Ms. Denyse Morrissey CAO Town of Shelburne 203 Main Street East Shelburne, ON LON 1S0

Re: 2017 Performance Report for Shelburne Waste Water Treatment Facility

Attached is the 2017 Performance Report for the Shelburne Waste Water Treatment Facility located at Centennial Street in the Town of Shelburne. This report has been completed in accordance with the Amended Certificate of Approval # 6413-ABLQQS dated July 19, 2016 and issued to the Town of Shelburne.

This report was prepared by the Ontario Clean Water Agency on behalf of the Town of Shelburne based on the information we have in our records. The report covers the period from January 1, 2017 to December 31, 2017.

If you have questions regarding the attached report please do not hesitate to contact me at (519) 925-1938.

Kind Regards,

Scott Craggs
Senior Operation

Senior Operations Manager Ontario Clean Water Agency

Highlands Hub

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Annual Report

for the

Shelburne Water Pollution Control Plant

Certificate of Approval No. 6413-ABLQQS

for the year

2017

prepared for the Town of Shelburne by the Ontario Clean Water Agency

Prepared by: Don Irvine Process & Compliance Technician Ontario Clean Water Agency Highlands Hub

Operated by the Ontario Clean Water Agency (OCWA) under contract to the Town of Shelburne for the year 2017

Section 1 - Introduction:

The Ontario Clean Water Agency is pleased to provide the Ministry of the Environment and Climate Change (MOECC) with the 2017 Annual Performance Report for the Shelburne Wastewater Treatment Plant.

This report is designed to inform the MOECC of the quality of effluent being discharged from this facility. The entire treatment process at the Shelburne Wastewater Treatment Plant can best be described as a "transformation".

A transformation from a harmful wastewater into two useful end products:

- a) A disinfected treated effluent
- b) An agricultural liquid fertilizer

Inquiries regarding this report can be directed to Scott Craggs, Senior Operations Manager at the Ontario Clean Water Agency office located at 136 Main St. East, in Shelburne, Ontario. (Tel) (519) 925-1938, Fax (519) 925-0322, email: scraggs@ocwa.com.

Section 2 - Project Description:

The Town of Shelburne is a community of approximately 8,900 people located approximately 100 kilometers northwest of Toronto. The community first obtained a waste disposal system in 1968 with the construction of a 5.5 ha lagoon and associated gravity collection and pumping system. The Town grew consistently over the years and eventually overloaded the lagoon system. In July 1981 construction was completed on a wastewater treatment system located at the present location. This expansion consisted of a new trunk sewer, pumping facilities, secondary and tertiary treatment and modifications to the existing lagoons which now provide storm and effluent holding during excess storm flows and plant upsets and maintenance.

The facility consisted of a wet well, a manual screen, grit channels, an oxidation ditch, one secondary clarifier, four effluent sand filters and a chlorine contact chamber. The oxidation ditch used two brush rotors. The facility operated as an extended aeration plant in this configuration from 1981 until December 1999.

A major expansion (Phase 1) took place at the Shelburne WWTP in 1999, changing the configuration of the plant and the method of treating wastewater. The plant went under construction starting in April 1999 with the start-up of the new process in December of 1999. The Shelburne WWTP is still an extended aeration plant. As an extended aeration plant it is designed to remove suspended solids, CBOD₅ and phosphorus from the wastewater. Major improvements were two aeration tanks constructed with fine bubble diffusers. The sludge treatment system consists of a two stage aerobic sludge digestion system with a total storage volume of $580 \, \mathrm{m}^3$, equipped with coarse bubble aeration system and supernatant decanting. The former oxidation ditch was converted to a sludge storage facility with approximately six months storage.

Sludge loading facilities provide for transfer of digested aerobic sludge to trucks. Digested sludge is land-applied as farm fertilizer.

Two ultra-violet radiation banks replaced the sodium hypochlorite disinfection system.

In March 2006 the Ministry of the Environment issued an amended Certificate of Approval # 9046-6GAJUM for the Phase 2 extension and upgrading including;

- Construction of a hauled sewage receiving station;
- Replacement of the raw sewage pumping station two submersible pumps;
- Replacement of the inlet works;
- Construction of a secondary clarifier;
- · Replacement of the clarifier effluent pump system; and
- Reconfiguration of the stormwater and effluent holding ponds.

New media was introduced into the filters, and OCWA and the Town of Shelburne are debating if a dual media filter is necessary as per the amended Certificate of Approval No. 9972-7FYJUB. Currently the filters are operating on single media, and if the Town of Shelburne continues to use a single media filter an administrative amendment to the Certificate of Approval will have to be submitted to reflect the current plant process. The decommissioning of the filters was completed in January 2017.

In 2017 the Ministry of the Environment and Climate Change issued an amended Environmental Compliance Approval #6413-ABLQQS for upgrading of the filtration and standby power which included;

- Two cloth-filter treatment units with a design capacity of 4,400 m³ each
- One 650 kW standby power diesel generator and 9000L diesel tank with double-walled containment

This facility receives residential, commercial, institutional and industrial wastewater and provides a level of treatment to meet the amended "Environmental Compliance Approval - # 6413-ABLQQS" for discharging into the Beasley Drain a minor tributary of the Boyne River. The

Boyne Creek empties into the Nottawasaga River, ultimately meeting Georgian Bay at Wasaga Beach.

A "Process Flow Schematic" is included in Appendix D of this report.

Section 3 - Plant Facts:

Facilities ➤

Extended Aeration Sewage Treatment Plant

Design Capacity >>

3,420 m³/day

Average Daily Flow 2017 >>

2,550 m³/day

Receiving Water >>

Besley Drain to Boyne Creek to Nottawasaga River

Service Population ➤

approx 8,900 (2018)

Environmental Compliance Approval >> 6413-ABLQQS

Plant Classification >>

WWT-III

Organization Number ➤

5773

Effluent Objectives

Tal	ole 2 – Effluent Objectives
Effluent Parameter	Concentration Objective
	(milligrams per litre unless otherwise indicated)
Column 1	Column 2
CBOD ₅	4.0
Total Suspended Solids	4.0
Total Phosphorous	0.12
Total Ammonia Nitrogen	
Oct 1 – May 31	2.0
Jun 1 – Sept 30	0.5
E-coli	100 organisms /100 mL (monthly Geometric
	Mean Density)
pH of the effluent maintain	ned between 6.5 - 8.5, inclusive, at all times.

Effluent Requirements:

	Table 1 – Ef	fluent Limits	<u> </u>
Effluent Parameter	Maximum	Monthly Average	Annual or Seasonal
	Concentration	Concentration	Average Loading
	(milligrams per litre	(milligrams per litre unless	(kilograms per day unless
	unless otherwise indicated)	otherwise indicated)	otherwise indicated)
Column 1	Column 2	Column 3	Column 4
CBOD5	- 50	5.0	17.1
Total Suspended Solids	-	5.0	17.1
Total Phosphorous	•	0.25	0.86
Total Ammonia Nitrogen			
Oct 1 - May 31	-	2.4	8.2
Jun 1 – Sept 30		0.8	2.7
E-coli	•	200 organisms /100	-
		mL (monthly	
		Geometric Mean	
		Density)	
pH of the effluent maintain	ed between 6.0 to	9.5, inclusive, at all tim	es.

Sampling Requirements >>

Final effluent: a 24 hour composite sample to be collected weekly and tested for BOD₅, CBOD₅, Total Suspended Solids, Total Ammonia Nitrogen, Total Kjeldahl Nitrogen, Nitrite, Nitrate and Total Phosphorus, pH, Alkalinity and Temperature; a weekly grab sample for E.coli.

Raw sewage: a grab sample to be collected monthly and tested for BOD₅, CBOD₅, Total Suspended Solids, Total Kjeldahl Nitrogen, Total Phosphorous, pH and Alkalinity.

Hauled sewage: a grab sample is collected monthly and tested for BOD₅, CBOD₅, Total Suspended Solids, Total Kjeldahl Nitrogen, and Total Phosphorous.

Aerobic sludge: a grab sample is collected monthly during the non-spreading and spreading season and tested for total solids, nitrite, nitrate, total phosphorous, total ammonia nitrogen, total kjeldahl nitrogen, pH and metals.

Section 4 - Sampling Procedures:

Raw sewage is sampled monthly and tested for BOD_{5} , $CBOD_{5}$, Suspended Solids, Total Kjeldahl Nitrogen, pH, Alkalinity and Total Phosphorus. Samples are collected using an automatic composite sampler (over a twenty-four hour period).

Final effluent is sampled weekly and tested for CBOD₅, Total Suspended Solids, Total Phosphorus, pH, Alkalinity, Total Kjeldahl Nitrogen, Total Ammonia Nitrogen, Nitrite and Nitrate. These are collected using an automatic composite sampler (over a twenty-four hour period). A weekly grab sample is collected and tested for E.coli. Grab samples of final effluent is also collected and tested in the plant by the operator for pH and temperature.

The concentration of un-ionized ammonia is calculated using the grab pH and temperature results and the total ammonia concentration result from SGS Lakefield Research Limited.

In-house tests are conducted by licensed operators for monitoring purposes using Standard Methods. The data generated from these tests is used to determine the treatment efficiency while maintaining process control. All in-house monitoring equipment is calibrated based on the manufacturer's recommendations.

Aerobic sludge is collected and tested as per the sampling requirements.

Section 5 - Summary of Report:

In 2017, the Shelburne WWTP provided effective wastewater treatment, producing effluent with removal rates for CBOD₅, TSS, TKN and Total Phosphorus all 98.3 % or better.

The bacteriological quality of the effluent complied with the certificate of approval monthly geometric mean density of <200 organisms per 100 ml sample for every month during 2017.

The aerobic sludge produced at the facility continued to meet all the Guidelines established for agricultural utilization. Wessuc Environmental Services Inc. are contracted to haul and spread sludge from the Shelburne WPCP.

Section 6 - Compliance With Provincial Regulations:

OCWA operates this sewage system in accordance with provincial regulations. Here is how we do it:

 Use of Accredited Labs (SGS Canada Inc.): Analytical tests to monitor the effluent quality are conducted by a laboratory audited by the Canadian Association for Environmental Analytical Laboratories (CAEAL) and accredited by the Standards Council of Canada (SCC). Accreditation ensures that the laboratory has acceptable laboratory protocols and test methods

the analysts performing the test methods. During 2017, all chemical sample analyses were conducted by SGS Lakefield Research Limited.

- Operation by Licensed Operators: This sewage system is operated and maintained by the OCWA's licensed staff. The mandatory licensing program for operators of sewage treatment facilities in Ontario is regulated under the Ontario Water Resources Act (OWRA) Ontario
- Regulation 129/04. Licensing means that an individual meets the education and experience requirements and has successfully passed the certification exam.

The following are certified operators who operated this facility during 2017 with current certified classification, certificate numbers and certificate expiry dates (TABLE 1):

TABLE 1

Operator	Level	Certificate #	Expiry Date
Alex Solonomov	WWT 2	#49144	Jul 31, 2018
	WWC 2	#16652	Jan 31, 2021
Bill Smith	WWT 2	#65685	Aug 31, 2020
	WWC 1	Deemed	Aug 31, 2020
Curtis Parker	WWT 4	#79166	Mar 31, 2019
	WWC 3	#79167	Jul 31, 2018
Emanuel Castro	WWT 1	#95067	Oct 31, 2019
	WWC 1	Deemed	Oct 31, 2019

• Sampling and Analytical Requirements: OCWA follows a sampling and analysis schedule required by the Certificate of Approval.

Section 7 - System Information:

	Town of Shelburne Wast	e	
Facility Name:	Water Treatment Plant	Client Services:	Natalie Baker
	5 1 5	Phone Number	(705) 730-3480
Bossining Meta-	Besley Drain to		
Receiving Water Disinfection Method	Boyne River Ultra Violet	E-mail Address	nbaker@ocwa.com
Dismircotion Method	Ollia violet	Senior Operations Manager	Snott Cragge
Municipal Location	Town of Shelburne	Phone Number	(519) 925-1938
			(, 1000
Service Population	Approx 8,900 (2018)	E-mail Address	scraggs@ocwa.com

Section 8 - Flows:

The total flow treated in 2017 was 930,344 m³. The annual average daily flow of 2,550 m³/day was 74.6% of the design capacity. The monthly daily average design capacity flow was not exceeded during 2017. The maximum peak flow of 4,922 m³/day represents 55.2% of the design peak flow of 8,921 m³/day.

Section 9 - Raw Sewage Quality:

The annual average raw sewage $CBOD_5$ concentration to the plant was 245.42 mg/L. This corresponds to an average $CBOD_5$ loading of 625.82 kg/day. The annual average raw sewage suspended solids (TSS) concentration to the plant was 236.42 mg/L. This corresponds to an average TSS loading of 602.90 kg/day. The annual average raw sewage nitrogen concentration (as represented by TKN) to the plant was 31.37 mg/L. This corresponds to an average TKN loading of 79.99 kg/day. The annual average raw sewage Total Phosphorus concentration to the plant was 4.89 mg/L. This corresponds to an average Total Phosphorus loading of 12.47 kg/day.

Section 10 - Plant Performance & Effluent Quality:

The effluent limit and loading exceedances for Total Ammonia Nitrogen was due to required aeration cell maintenance to correct the low dissolved oxygen levels in both tanks. Refer to Appendix F for more detail. All repairs/maintenance can be found in Section 14.

Detailed analytical results from SGS Lakefield Research Limited are available at the office on request. A summary of flows and plant performance is provided in this report.

The Shelburne WWTP provided effective wastewater treatment with removal rates for CBOD₅, TSS, TKN and Total Phosphorus of 98.3% or better for 2017.

Effluent Limits

The annual average effluent CBOD $_5$ concentration was 2.38 mg/l with a removal efficiency of 99.4%. The annual average effluent TSS concentration was 2.44 mg/l with a removal efficiency of 99.7%. The annual average effluent Total Kjeldahl Nitrogen (TKN) concentration was 0.54 mg/l with a removal efficiency of 98.3%. The annual average effluent Total Phosphorus concentration was 0.05 mg/l with a removal efficiency of 99.4%. The annual average effluent concentration for Total Ammonia-Nitrogen was 1.13 mg/l for the season (Oct 1 to May 31, 2017). The annual average effluent concentration for Total Ammonia-Nitrogen was 0.13 mg/l for the season (June 1 to Sept 30, 2017).

A notice of non-compliance was issued on June 13, 2017 for elevated Total Ammonia Nitrogen levels due to aeration cell maintenance. A notice of non-compliance was issued on April 17, 2018 due to elevated Total Suspended Solids for the month of November 2017. Refer to Appendix F for more information

This facility was not in compliance with all the effluent concentration and loading limits due to elevated ammonia levels in May and for Total Suspended Solids concentration in November for the year 2017. The average waste loadings for the final effluent can be found in Appendix A.

The 2017 bacteriological quality of the effluent complied with the certificate of approval monthly geometric mean density of <200 organisms per 100 ml sample for every month during 2017. The monthly geometric mean densities of organisms were between 1.74 to 7.77 per 100 ml.

Effluent Objectives

The effluent from the facility met the effluent concentration objectives for Total Phosphorus, CBOD₅, and E.coli. The effluent concentration objective for Total Ammonia Nitrogen in May was not met while the Total Suspended Solids concentration was not met for the month of November.

Section 11 - Sludge Management:

Digested sludge produced at the Shelburne WWTP is land-applied in accordance with the Nutrient Management Act 2002 and Ontario Regulation 267/03.

Grab samples of digested (aerobic) sludge are collected and tested as per these requirements. In 2017 sludge sample analysis were carried out by SGS Lakefield Research Limited. A summary of sludge sample results is provided in Appendix B of this report.

Wessuc Environmental Services Inc. was contracted to haul and spread sludge from the Shelburne plant in 2017. (Certificate of Approval - Waste Management System # 1603-4LGJBN)

The following certified sites were utilized in 2017:

- > NASM Plan #23009 David Barker
- NASM Plan #23166 Jon Blydorp
- > NASM Plan #22638 Clinton Smith

Section 12 – A summary of any complaints received during the reporting period and any steps taken to address the complaints:

A standard operating procedure (SOP) has been in place for a number of years to deal with complaints received from the community. All complaints are to be addressed and logged in detail in the facility logbook and a generic "Complaint Form". The information from the form would be entered on OCWA's electronic database system "OPEX". This system contains all the required information and history of all complaints.

There were complaints received during this reporting period with regard to the Shelburne Water Pollution Control Plant due to odors from decay in the spring at the holding cells. A copy of the complaints can be found in Appendix E

Section 13 - Bypassing and Abnormal Conditions:

There were no bypasses at the Shelburne Water Pollution Control Plant during the 2017 reporting period.

Section 14 - Maintenance and Calibration Activities:

Plant maintenance, including non-scheduled maintenance is monitored using Maximo Workplace Management System. Detailed maintenance reports are available. All routine and preventative maintenance was conducted as scheduled in 2017.

A number of repairs or improvements to equipment on the works were made or identified in 2017 as follows:

Plant:

- H2Ontario on site for filter upgrade work
- Alum containment area completed by H2Ontario
- Facility lighting replaced by Belwood Electric
- Inspection and cleaning of north & south aeration cells completed
- Overhead cranes installed at filters
- Equipment failure due to flooding from excessive rain fall
- Replacement of potable water lines in basement due to failure
- Davit installed for primary digester.
- Extra bio solids hauled due to storm pond clean out
- Electric motor for raw pump replaced 7.5 HP
- Filter feed pump repaired and replaced

Bar screen over torque switch repaired by Belwood Electric

Flowmetrix Technical Services Inc. was contracted to calibrate all flow measuring equipment on September 18, 2017. Copies of the calibration reports can be found in Appendix C of this report.

Section 15 – Inspection of the Facility by the Ministry of the Environment and Climate Change:

There was a MOECC inspection of the Shelburne Water Pollution Control Plant on March 8, 2017.

Section 16 – Notice of Modifications:

There were no notices of modifications sent to the Water Supervisor during this reporting period with regard to the Shelburne Water Pollution Control Plant.

Section 17 - Operational Objectives:

The Town of Shelburne Wastewater Treatment Plant continues to provide excellent wastewater treatment. OCWA and its operators will continue to strive through expertise and knowledge to meet all objectives and to continually improve and optimize the efficiency of the facility.

Section 18 - Appendix:

- 2017 Annual Performance Summary Appendix A
- Annual Summary for 2017
- Flows and Effluent Quality 2017
- Sludge Quality Data & Haulage 2017 Appendix B
- Calibration Reports 2017 Appendix C
- Process Flow Schematic 2017 Appendix D
- Community Complaints 2017 Appendix E
- Letter of Non-Compliance 2017 Appendix F

Appendix A

Annual Performance Summary

2017

SHELBURNE WWTP
ANNUAL SUMMARY FOR

2017

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C. of A. LIMIT	_	-	<u></u>															nje														7.15			
<u>د</u> ق	Total	2.550 Average	4.922 Maximun		Total	Total	Total	Total	Total	101																									
	930.345	2.550	4.922 R		0.000	0.0	0.000	0.0	0.000	0.0	ANNUAL	245	236	31.4	4,9	368	ANNUAL		2.38		2.44	2286 900	0.54		1.08	1.53	0.05		0.12	10.05	220	7.63	7.91	8.15	0.006
DEC	68.545	2.211	2.398		0.000	0.0	0.000	0:0	0000	0.0		328	320	41.1	6.4	383			2:00	5.00	2.00	5.00	0.15	2.40	0:30	0.93	90.0	0.25	60.0	10.28	226	7.15	7.96	8.10	0.001
NOV	71,516	2.384	3.240		0.000	0.0	0.000	0:0	0.000	0.0		199	198	25.9	4.9	363			3.00	5.00	5.50	5.00	0.13	2.40	0.20	0.98	0.08	0.25	90.0	11.45	216	7.84	8.02	8.11	0.002
OCT	68.551	2.211	3.044		0.000	0.0	0.000	<u>8</u>	0.000	0.0		302	330	44.9	7.5	394			2.00	5.00	2.00	5.00	0.10	2.40	0.10	1.18	0.05	0.25	0.03	18.34	199	7.89	7.95	8.11	0.002
SEP	58.448	1.948	2.644		00000	0.0	0.000	00	0000	0.0		291	129	28.5	4.7	351			2.00	2.00	2.00	5.00	0.13	0.80	0.20	0.65	0.04	0.25	0.04	9.24	221	7.76	7.89	8.28	0.002
AUG	62.002	2.000	2.249		00000	0.0	0.000	0.0	0.000	0.0		365	646	47.6	6.4	401			2.20	5.00	2.00	5.00	0.12	0.80	0.20	0.76	0.05	0.25	0.03	4.70	244	7.51	7.86	8.33	0.002
'n	87.343	2.818	3.456		0.000	0.0	0.000	90	0000	0.0		211	25	20.7	3.5	373			2.00	5.00	3.00	5.00	0.18	0.80	0.40	2.53	90.0	0.25	0.14	13.13	213	7.79	7.92	8.23	0.003
NOT	97.805	3.260	3.696		0.000	0.0	0.000	00	0000	0.0		74	81	26.2	3.2	378			2.50	5.00	2.00	5.00	0.10	0.80	0.10	1.05	0.05	0.25	0.05	18.58	194	7.55	7.90	8.07	0.001
MAY	103.768	3.347	4.922		0.000	0.0	0.000	0.0	0000	0.0		319	349	26.0	6.4	382			2.40	5.00	2.80	5.00	2.66	2.40	5.80	3.90	0.07	0.25	0.58	9.85	215	7.44	7.83	8.08	0.033
APR		2.953	4.907		0.00	0.0	0.000	0.0	0000	2.		246	84	19.4	2.1	348			4.25	5.00	2.00	5.00	1.53	2.40	3.00	2.35	0.04	0.25	0.18	5.21	216	7.50	7.71	8.06	0.014
MAR	80.036	2.582	3.751		0.000	0.0	0.000	0.0	0000	2		94	128	20.0	2.7	330			2.20	2.00	2.00	5.00	1.00	2.40	1.70	2.50	90.0	0.25	90.0	8.05	201	7.7	7.72	8.04	0.004
EB	72.452		4.130		0.000	0.0	0.000	0.0	0000	0.0		231	269	37.9	5.1	329		ŀ	200	5.00	2.00	5.00	0.33	2.40	0.70	1.00	90.0	0.25	0.13	4.51	252	7.91	8.07		900.0
JAN	71.291	2.300	2.800		0.000	0.0	0.000	0.0	0000	5		285	251	38.2	5.8	354			2.00	2.00	2.00	2.00	0.12	2.40	0.20	0.54	0.04	0.25	0.04	7.32	237	8.01	8.06	8.24	0.002
	1000m3	1000m3/d	1000m3/d		1000m3	hrs.	1000m3	Tro.	1000m3	· ·		l mg/l	mg/l	ngn .	l mg/l] ugu		L	Light I	l/gm		l/gm	l/gm	mg/l	mg/L	mg/l		l/Bu	убш	ng/l	mg/l	- um	Пах	Celsius	Мдш
FLOWS	Total	Avg day flow	Max day flow	BYPASS	Primary Volume	Тіте	Secondary Volume	Time	Tertiary Volume		RAW SEWAGE	CBODS	TSS	TKN	Total P	Alkatinity	FINAL EFFLUENT		CBODS	Monthly Limit	TSS	Monthly Limit	TAN Monthly Average	TAN Monthly Limits	TAN Daily Maximum	TKN	Total P	Monthly Limit	Nitrite	Nitrate	Alkalinity	pH (grab)	pH (grab)	Temperature (grab)	Unionized Ammonia

STREAM LOADING COMPLIANCE is now an Annual Average Loading Limit "Average Waste Loadings"

HAULED SEWAGE

mg/l mg/l	!		1.2 2110.0 1700.0	4.5 827.0 765.0	231.3	1.0 1350.0 858.0	1.0 8350.0 3760.0	3.0 2045.0 1555.0	2.0 1850.0 1547.7	1.0 2030.0 1650.0		2354.17	15.7
mg/l		+	8210.0	2327.3	921.7	2660.0	6150.0	2890.0	4038.0	7160.0		4294,63	
mg/l			15.5	161.5	43.3	189.0	490.0	193.0	242.2	477.0		226.43	
light.		_	2.0	36.3	9.4	43.4	76.0	49.3	67.8	98.4	_	47.82	

Annual Average Total

^{*} Note: the Total Ammonis Nitrogen(TAN) - Average Waste Loadings are "Seasonal Loadings"

SHELBURNE WWTP ANNUAL SUMMARY

FOR 2017

JLAGE	
DGE HAL	
S & SLUI	
EMICAL	
공	

UAL	106563 Total	77.2 Average		5600 Total	2.3 Average
ANNUAL	106			47	
DEC	7232.4	68.4		_	3.4
NOV	7605.5	9.69		-	3.2
OCT	7892.5	76.1	-	2970.0	2.3
SEP	7892.5	90.1	_		2.5
AUG	8839.6	93.0			2.0
JUL	9126.6	68.8			1.1
חחר	8495.2	57.1		635.0	1.8
MAY	12972.4	85.3	_	1995.0	1.7
APR	11996.6	101.7			2.1
MAR	11106.9	94.7	_		2.3
8	6715.8	59.7			2.6
JAN	6687.1 6715.8	62.0	_		2.7
AULAGE	Ę,	mg/l		EE.	<u> </u>
CHEMICALS & SLUDGE HAUL	Alum Used	Alum Dosage		Sludge Haufage	Total Solids

COMPLIANC	COMPLIANCE LOADINGS FOR 2016	
FINAL EFFLUENT		

NOV DEC	2		13.111 4.422	17.1 17.1	0.191 0.132	0.86 0.86	0.298 0.332	8.2 8.2
DCT	Ĺ		4.423 13	17.1	0.101	98.0	0.221	8.2
SEP	3.897	17.1	3.897	17.1	0.077	0.86	0.244	2.7
AUG	4.4	17.1	4.000	17.1	0.103	0.86	0.240	2.7
'n	5.635	17.1	8.453	17.1	0.181	0.86	0.493	2.7
NOC	8.15	17.1	6.52	17.1	0.165	0.86	0.326	2.7
MAY	8,034	17.1	9.373	17.1	0.220	0.86	8.904	8.2
APR	12.55	17.1	5.906	17.1	0.11	0.86	4.503	8.2
MAR	5.68	17.1	5.164	17.1	0.162	0.86	2.582	8.2
FEB	5.175	17.1	5.175	17.1	0.15	98.0	0.863	8.2
JAN	4.599	17.1	4.599	17.1	0.087	0.86	0.276	8.2
	kg/d	kg/d	kg/d	kg/d	kg/d	kg/d	kg/d	kg/d
FINAL EFFLUENT	CBODS	LIMIT	Suspended Solids	LIMIT	Total Phosphorus	LIMIT	Total Ammonia Nitrogen	LIMIT

BACTERIOLOGICAL DATA	2017	JAN	EB	MAR	APR	MAY	N	JUL	AUG	en G	0 CT	NOV	DEC
Sample #1	# per 100 mL	2	2	2	2	2	2	2	2	2	2	2	2
Sample #2	# per 100 mL	2	2	2	2	104	2	2	2	2	2	2	2
Sample #3	# per 100 mL	2	2	2	2	2	2	192	2	2	2	2	26
Sample #4	# per 100 mL	2		2	16	22	2	12	44	2	2	2	2
Sample #5	# per 100 mL	2		0		2			2		2		
Monthly Geo. Mean	# per 100 mL	2.00	2.00	1.74	3.38	7.12	2.00	77.7	3.71	2.00	2.00	2.00	4.60
Annual Geometric Mean C. of A. Regulrement	# per 100 mL # per 100 mL	3.36											

Appendix B

Sludge Quality Data & Haulage

2017

SHELBURNE WMTP
ANNUAL SUMMARY FOR 2017
Stylinger many control of the party of the p

SLUDGE QUALITY DATA - 2017		2				2									
Nutrients		200	9	C E	2	IVE	200	7	SUC.	ņ	5	Š	OEC C	ANNUAL	
Ammonla	rngrJ	223.0	187.0	177.0	200.5	2801.0	301.0	370.0	463.0	384.0	350.0	147.0	281.0	490,4	
Phosphorus	mgrl	530.0	400,0	395.0	355.0	240.0	330.0	210.0	430.0	460.0	470.0	460.0	590.0	405.8	
Nitrato	mg/l	0.30	0.30	0.30	0.30	0.30	0:30	0.30	0.30	0.30	0.30	8.0 8.0	08.30	0.30	
Ammonia + Nitrate	Ω ₀ γ	111.7	93.7	88.7	100.4	140.2	150.7	185.2	231.7	192.2	175.2	73.7	140.7	140,3	
15	mg/l	26900	25500	22550	20750	16950	18300	10900	20100	24600	23000	31800	34200	22963	
Metal Concentrations															
Copper	figm	8.60	6.40	6.20	5.40	3.70	5.40	3.20	6.70	7.50	7.50	7.80	12.00	6.70	
Nickel	mg/J	0.33	0.27	0.26	0,23	0.17	0.24	0.15	0.31	0.34	0.32	0.36	0.52	0.29	_
Lead	mg/l	09:0	0,40	0.40	0.40	0.20	0.40	0.20	0.40	09.0	0.60	0.80	1.00	0.50	
Zinc	mg/l	11.00	7.60	7.10	6.10	4.30	6.70	4.00	8.40	10.00	11.00	12.00	16.00	10.0	
Arsenic	mg/l	0.50	0.40	0:30	0.30	0.20	0.30	0.20	0.40	0.40	0.40	0.40	05.0	0.36	
Cadmium	Tright.	0.012	0.022	0.015	0.014	600.0	0.012	0.008	0.015	0.011	0.015	0.02	0.03	0.02	
Cobalt	ngıl	0.07	0.07	0.07	90.0	0.04	0.05	0.02	0.07	0.09	0.10	0.09	0.10	0.07	
Chronium	mg _i	0.58	0.40	0.42	0.35	0.26	0.36	0.18	0.46	0.51	0.57	0.60	0.90	0.47	
Mercury	mg/J	0.014	0.018	0.012	0,013	0.004	0.018	0.007	0.007	0.014	0.00	0.012	0.026	0.013	_
Malybdenum	mgyl	0,28	0.21	0.21	0.19	0.17	0.26	0.13	0.27	0.28	0.29	0.26	0.35	0.24	_
Selenium	mg/l	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0,10	0.10	1.00	0.18	-
Metal/Solids Concentration											-	ľ	ŀ		
Copper	(Max. 1700)	319.703	250.980	274.945	260.241	218.289	295.082	293.578	333,333	304.878	326.087	245.283	350,877	289	
Nickel		12	11	11	11	10	13	14	15	14	14	Ξ	151	13	_
Lead		22	16	18	19	12	22	18	20	24	28	25	29	21	_
Zhc		409	298	315	294	254	366	367	418	407	478	377	468	371	.,
Arsenic		19	16	13	14	12	16	18	20	16	17	13	15	16	
Cadajua		0.4	6.0	0.6	0.7	0.5	0.7	0.7	0.7	0.4	0.7	0.7	0.9	0.7	
Coball		3	6	3	3	2	3	2	6	4	4	e	67	eri	
Chromium		22	16]	18	17	15	20	17	23	21	25	19	28	20	
Mercury		0.52	0.71	0.51	0.60	0.24	0.98	0.64	0.35	0.57	0.39	0.38	0.78	0.55	_
Molybdenum		10	80	6	ø	10	14	12	13	11	13	80	101	=	_
Selenium		4	V	4	S.	9	2	6	ç	*	4	6	3	IO	-,

			ANNUAL
635.0	IUN JUL AUG SEP	OCT NOV	DEC TOTAL
	_		ŀ
	635.0		2630.0
		1890.0	1890.0
		1080.01	1080
			5600.0

Daily Haulage Summary							
Date	Date 5ite NASM#						
May							
5/30/2017	D1001	23009	1076				
5/31/2017	D1001	23009	879				
Total	m3		1955				
	Ju	ine					
6/1/2017	D1001	23009	675				
Total	m3		675				
	Oct	ober					
10/24/2017	D2001	23166	405				
10/25/2017	D2001	23166	810				
10/26/2017	D2001	23166	675				
10/30/2017	\$6002	22638	1080				
Total	m3		29 70				
Annual	5600		5600				

Daily Haulage Summary						
Date Site NASM # Shelburne Lago						
	October					
10/31/2017	S6 00 2	22638	755.16			
Total	m3		755.16			
	Nov	rember				
11/1/2017	S6002	22638	396.02			
11/8/2017	D1001	23009	829.52			
11/9/2017	D1001	23009	748.79			
11/14/2017	D1001	23009	437.98			
11/15/2017	S6002	2 2638	606.47			
11/16/2017	S6002	2 2638	256.9 6			
Total	m3		3275.74			
Annual			4030.90			

Appendix C

Calibration Reports

2017

Flowmetrix Technical Services Inc.

Western Office 2088 Jetstream Road London, Ontario **N5V 3P6**

Eastern Office 1602 Old Wooler Road Wooler, Ontario KOK 3MO

ar Pressure Transmitter Verification Report

AS FOUND CERTIFICATION

PASS

Magnehelic

2000 Series

N/A

N/A

N/A

N/A

5

no

EQUIPMENT DETAIL

Shelburne WWTP

Digester Flow

OCWA# 62546

CLIENT	DET	AIL
OLIOTO.		-

CUSTOMER Ontario Clean Water Agency

CONTACT

Lisa Benoit

Process Compliance Technician

Highlands Hub 136 Main St East Shelburne, ON L9V 3K5 Tel: 519-925-1938 x225 Cel 519-938-7255 El Ibenoit@ocwa.com

VER. BY - FM Joel Van Veller

Quality Management Standards Information -Reference equipment and instrumentation used to conduct this verification test is found in our AC-QMS document at the time this test was

CONVERTER SERIAL NUMBER PLANT ID

[MUT] MANUFACTURER

METER ID FIT ID **CLIENT TAG**

MODEL

OTHER **GPS COORDINATES**

VERIFICATION DATE

CAL, FREQUENCY CAL. DUE DATE

September 18, 2017

Annual September 2018

PRIMARY DEVICE
MANUFACTURER
PRIMARY ELEMEN
DIAMETER
TRANSMITTED IN

Full-scale Flow Rate

MANUFACTURER		unknown
RIMARY ELEMENT		Venturi
PIAMETER	inches	. ?

TRANSMITTER INFORMATION LSL (Lower Sensor Limit) **PSI** 0.00 **USL (Upper Sensor Limit)** PSI 15 00 SCALING INFORMATION LVL (Lower Value Limit) **PSI** 0.00 **UVL (Upper Value Limit)** PSI 0.92 Full-scale Diff. Pressure PSI 0.92 **TEST CRITERIA** ves

AS FOUND CERTIFICATION TEST ALLOWABLE [%] ERROR ERROR, represented as % F.S.

COMPONENTS TESTED

OOMI ONLING	IESTED
CONVERTER DISPLAY	yes
mA OUTPUT	NO
Flow (F) or Pressure (P)	F
OUTPUT - Linear (L) or SQRT (S)	S

COMPARISON TESTING 0.02 0.06 0.23 0.52 0.92 Target Press. 0.00 6.51 24.97 56.46 99.89 % dP F.S. REF. PRESSURE, actual 0.00 0.06 0.23 0.52 0.92 PSI REF. FLOW RATE, calculated 255.24 499.73 751.40 999.46 LPS MUT [Reading] 0.00 275.00500 00 750.00 1000.00 LPS MUT [Difference] 0.00 19.76 0,27 -1.400.54 LPS MUT [% Error], PRESSURE n/a n/a n/a n/a n/a % O.R. MUT (% Error), FLOWRATE 7.74 0.05 -0.190.05 % O.R. **mA OUTPUT** MUT ¡Reading¡ min. 4 000 mA MUT [Difference max. 20 000 MUT (% Error)

ZERO Balance/Equalization Test

[AF] PSI [AL] PSI

? LPS ? LPS

LPS

1000 00

QUALITY MANAGEMENT STANDARDS INFO.

[QMS] INFORMATION IDENT ID# [REFERENCE] CRYS **PROCESS METER** PM 2

COMMENTS

Note: Poor resoluton on gauge at lower flows Flows estimated based on visual observation

TESTING RESULTS

TEST	AVG	PASS
	% O.R	FAIL
DISPLAY	1.92	PASS
mA OUTPUT	N/A	N/A

A reference pressure gauge was used to verify the overall reading accuracy of this device to within the tolerance limits as define above in this report.

Serving Ontario in Calibration Services

For Service Call 519-870-3569

Flowmetrix Technical Services inc.

Western Office 2088 Jetstream Road London, Ontario N5V 3P6

Eastern Office 1602 Old Wooler Road Wooler, Ontario KOK 3MO

ar Pressure Transmitter Verification Report

AS FOUND CERTIFICATION

PASS

CL	IENT	DET	AIL
011	OTO	4000	-

CUSTOMER CONTACT

Ontario Clean Water Agency

Lisa Benoit

Process Compliance Technician

Highlands Hub 136 Main St. East Shelburne ON L9V 3K5 Tel: 519-925-1938 x225 Cel 519 938-7255

E Ibenoit@ocwa com

VER. BY - FM Joel Van Veller

Quality Management Standards Information -Reference equipment and instrumentation used to conduct this verification test is found in our AC-QMS document at the time this test was

[MUT] MANUFACTURER

MODEL

CONVERTER SERIAL NUMBER

EQUIPMENT DETAIL Magnehelic

2000 Series

N/A

PLANT ID

OTHER

METER ID FIT ID

Shelburne WWTP Aeration Flow

CLIENT TAG

N/A N/A

GPS COORDINATES

OCWA# 62544 N/A

VERIFICATION DATE

September 18, 2017

CAL, FREQUENCY CAL, DUE DATE

mA OUTPUT

Annual September 2018

no

S

MANUFACTURER PRIMARY ELEMENT DIAMETER TRANSMITTER INFORMATION	inches	unknown Venturi ?	AS FOUND CERTIFICATION TEST ALLOWABLE [%] ERROR ERROR, represented as % F.S.	yes 5 no
LSL (Lower Sensor Limit)	psi	0.00	COMPO CONVERTER DISPLAY	NENTS TESTED

USL (Upper Sensor Limit) psi 15 00 **SCALING INFORMATION** LVL (Lower Value Limit) 0.00 psi **UVL (Upper Value Limit)** psi 0.92 Full-scale Diff. Pressure psi 0.92 Full-scale Flow Rate **LPS** 1000:00

Flow (F) or Pressure (P) OUTPUT - Linear (L) or SQRT (S)

COMPARISON TESTING			0.02	0.06	0.23	0.52	0.92	Target Press.
			0.00	6.51	24.97	56.46	100.00	% dP F.S.
REF. PRESSURE, actual			0:00	0.06	0.23	0.52	0.92	psi
REF. FLOW RATE, calcul	ated		0.00	255.24	499.73	751.40	1000.00	LPS
MUT [Reading[10.00	280 00	510.00	760 00	1010:00	LPS
MUT [Difference]			10.00	24.76	10.27	8.60	10.00	LPS
MUT [% Error], PRESSUR	E		n/a	n/a	n/a	n/a	n/a	% O.R.
MUT [% Error], FLOWRAT	E			9.70	2.06	1.14	1.00	% O.R.
mA OUTPUT		7					1.00	A O.K.
MUT [Reading] min.	4 000	mA]	
MUT [Difference max.	20.000	mA					ĺ	
MUT [% Error]								

ZERO Balance/Equalization Test

[AF] psi 7 LPS [AL[psi ? LPS **QUALITY MANAGEMENT STANDARDS INFO.**

[QMS] INFORMATION IDENT ID# [REFERENCE] CRYS 1 PROCESS METER PM 2

COMMENTS

Note: Poor resoluton on gauge at lower flows Flows estimated based on visual observation

TESTING RESULTS

TEST	AVG % O.R.	PASS FAIL
mA OUTPUT	3.48 N/A	PASS N/A

A reference pressure gauge was used to verify the overall reading accuracy of this device to within the tolerance limits as define above in this report

Serving Ontario in Calibration Services

For Service Call 519-870-3569

Technical Services inc.

Western Office 2088 Jetstream Road London, Ontario NSV 3P6

Eastern Office 1602 Old Wooler Road Wooler, Ontario KOK 3MO

Krohne Verification Report

AS FOUND CERTIFICATION FORWARD FLOW DIRECTION

PASS

CLIENT DETA	all .								133
CUSTOMER	Ontario Clean W	later Agency	,		70 AL 1373		EQI	JIPMENT DE	
CONTACT	Lisa Benoit	orei rigerioj	*			MANUFACTURE	ER		rohne
	Process Complia	ance Techni	cian		MODE				010D
	Highlands Hub	arioc regimi	P1011			L NUMBER		A99 1	15693
	136 Main St. Eas	el.			FUSE				
	Shelburne, ON 1				D1 4 1 1				
	Tel: 519-925-193				PLANT			Shelburne W	
	Cel 519-938-72				METER	מוא		WAS	Flow
	E lbenoit@ocwa				FIT ID			F	IT-01
	L IDCHOLGOCIYA	COIN			CLIEN.			OCWA# 6	2478
VER BY - EM	Paris Machuk				OTHER	•			N/A
					GPS C	OORDINATES	N44 05 06	3 W080 11	1.535
Reference on	gement Standard	ds Informat	ion -						
conduct this	uipment and inst erification test is	found in a	in usea to			CATION DATE	Se	ptember 18	2017
QMS docume	ent at the time thi	s test was	ui AC-			REQUENCY		Ar	nnual
		0 1001 1103			CAL. D	UE DATE		September, :	2018
PROGRAMMII	NG PARAMETERS					FORM	55 7574		
DIAMETER (DI		mm	80		AC FOI		RD TOTALIZE		
F.S. FLOW - M	ÁG	LPS	39.6		AS FOI			416203	М3
F.S. RANGE -	O/P	LPS	27 800		AS LEF			416208	М3
CAL: k-FACTO		GKL	5 16700		DIFFER	RENCE		5	M3
		CALLE	3 10700		40.50			TEST CRITE	
						JND CERTIFICA			Yes
						ARD FLOW DIR			Yes
					ALLOW	ABLE [%] ERRO			5
					0011145	DTEC DIED.		NENTS TES	TED
						RTER DISPLAY	•		yes
					mA OU				yes
					TOTAL				Yes
Zero Offset Flo	w	LPS	0.0120		ACCUR	RACY BASED OF	1 [% o.r.[yes
_	**	LI 0	0.0120		ERROR	DOCUMENTED I	N THIS REPORT	BASED ON 9	% O.r.
FLOW TUBE S	IMULATION								
			0.0	0.5	1.0	2.0	5.0	Im/s	
			0.0	5.0	10.0	20.0	50.0	% F.S. Flov	<u></u>
			0.0	7.2	44.2	88.7		73 1 101 101	**

LEGAL LORE SIMOTA	TION							
		[0.0	0.5	1.0	2.0	5.0	lm/s
			0.0	5.0	10.0	20.0	50.0	% F.S. Flow
			0.0	7.2	14.3	28.5	71.2	% F.S. Range
REF. FLOW RATE		ŀ	0.012	1.991	3.970	7.928	19.803	LPS
MUT [Reading[0.012	1.988	3.962	7.922	19.796	LPS
MUT [Difference]		- 1	0.000	-0.003	-0.008	-0.006	-0.007	LPS
MUT (% Error)			0.00	-0.15	-0.21	-0.08	-0.03	%
mA OUTPUT			4.000	5.146	6.285	8.563	15,397	mA
MUT [Reading]	min. 4 000	mΑ	3.991	5.131	6 269	8.552	15.380	mA
MUT [Difference]	max. 20,000	mA	-0.009	-0.015	-0.016	-0.011	-0.017	1
MUT [% Error]		ı	-0.22	-0.29	-0.25	-0.13	-0.11	mA %
TOTALIZER - REF. FL	OW RATE					0.10	19.803	
TOTALIZER [MUT]							19.603	LPS
TEST TIME							3	M3
CALC: TOTALIZER							151.75	SECONDS
ERROR							3,005	M3
		_					-0 17	0/_

COMMENTS						
Q	UALITY MANAGEME	NT STANDA	ARDS INFO.	RES	ULTS	
<u>[C</u>	MS] INFORMATION	IDENT.	ID#	TEST	AVG	PASS
	EFERENCE FTS	KRO	1		% о.г.	FAIL
	ROCESS METER NALOG METER	PM AM	2	DISPLAY	-0.12	PASS
	TOP WATCH	SW	N/A N/A	mA OUTPUT	-0.20	PASS
		311	IANA	TOTALIZER	-0.17	PASS

** Flowmetrix Technical Services Inc.

Western Office 2088 Jetstream Road London, Ontario N5V 3P6

Eastern Office 1602 Old Wooler Road Wooler, Ontario KOK 3M0

Krohne Verification Report

AS FOUND CERTIFICATION FORWARD FLOW DIRECTION

PASS

								P	ASS
CLIENT DETA							EC	UIPMENT C	DETAIL
CUSTOMER	Ontario Clean \	Water Agenc	У			MANUFACTURE	R	1	Krohne
CONTACT	Lisa Benoit				MODE	_)F	C010D
	Process Comp		ician			NUMBER		A99	15978
	Highlands Hub				FUSE			On Boa	rd Plug
	136 Main St Ea								
	Shelburne, ON				PLANT	ID		Shelburne !	WWTP
	Tel 519-925-19				METER	R ID		RAS T	ank #1
	Cel 519-938-7				FIT ID				FIT-02
	E Ibenoit@ocv	va com			CLIEN"	Γ TAG		OCWA#	62479
					OTHER	₹			N/A
VER. BY - FM	Paris Machuk				GPS C	OORDINATES			N/A
Quality Mana	agement Standa	ırds Informa	tion -						
Reference ed	quipment and inverification test	strumentati	on used to		VERIFI	CATION DATE	S	September 18	8 2017
conduct this	verification test	is found in o	our AC-		CAL, F	REQUENCY			Annual
QMS docum	ent at the time the	his test was				UE DATE		Septembe	
								ocpiennic	1, 2010
	NG PARAMETER	RS				FORWA	RD TOTALIZ	ER INFORM	ATION
DIAMETER (D		mm	100		AS FO			7424444	МЗ
F.S. FLOW - N		LPS	62.8		AS LEF	T		7424459	МЗ
F.S. RANGE -	4	LPS	66 700		DIFFER	RENCE		15	МЗ
CAL, k-FACTO	DR	GKL	5 24300					TEST CR	
					AS FO	JND CERTIFICA	TION TEST		Yes
						ARD FLOW DIR			Yes
						ABLE [%] ERRO			5
								ONENTS TE	_
					CONVE	RTER DISPLAY			yes
					mA OU	TPUT			yes
					TOTAL	IZER			Yes
					ACCUR	RACY BASED OF	lio %il		ves
Zero Offset Flo)W	LPS	0.0200		ERROR	DOCUMENTED I	N THIS REPOR	RT: BASED OF	N % or
								10	
FLOW TUBE	SIMULATION				100		· · · · ·		
			0.0	1.0	2.0	5.0	10.0	m/s	
			0.0	10.0	20.0	50.0	100.0	% F.S. F	low
DEE ELOW D			0.0	9.4	18.8	47.1	94.1	% F.S. R	
THE ELDINO	ATE		0.000	0.000					

				0.0	1.0	2.0	5.0	10.0	m/s
				0.0	10.0	20.0	50.0	100.0	% F.S. Flow
				0.0	9.4	18.8	47.1	94.1	% F.S. Range
REF. FLOW RATE				0.020	6.296	12.571	31.398	62.776	LPS
MUT [Reading[0.020	6.290	12 580	31.380	G2.770	LPS
MUT [Difference]				0.000	-0.006	0.009	-0.018	-0.006	LPS
MUT [% Error]		_		0.00	-0.09	0.07	-0.06	-0.01	%
mA OUTPUT			ĺ	4.000	5.510	7.016	11.532	19.059	mA
MUT [Reading]	min.	4 000	mΑ	3.986	5.490	7.006	11.515	19.035	mA
MUT [Difference]	max.	20,000	mA	-0.014	-0.020	-0.010	-0.017	-0.024	mA
MUT (% Error)				-0.35	-0.37	-0.14	-0.15	-0.12	%
TOTALIZER - REF. F	LOW RAT	E						62,776	LPS
TOTALIZER [MUT]								6	M3
TEST TIME								95.78	SECONDS
CALC. TOTALIZER								6.013	M3
ERROR								-0.21	%

COMMENTS					PER	ULTS	
	QUALITY MANAGEME	ENT STANE	DARDS	INFO.	LE9	OF12	
	[QMS] INFORMATION	IDENT.		ID#	TERT	AVG	PASS
	[REFERENCE] FTS	KRO		1	TEST	% o.r.	FAIL
	PROCESS METER	PM		2	DISPLAY	-0.02	PASS
	ANALOG METER	AM		N/A	mA OUTPUT	-0.22	PASS
	STOP WATCH	SW		N/A	TOTALIZER	-0.21	PASS
					1		

* Flowmetrix Technicai Services Inc.

Western Office London, Ontario N5V 3P6

Eastern Office 2088 Jetstream Road 1602 Old Wooler Road Wooler, Ontario кок змо

Kronne **Verification Report**

AS FOUND CERTIFICATION FORWARD FLOW DIRECTION

PASS

CLIENT DETA	IL.				EQUIPMENT DETAIL
CUSTOMER	Ontario Clean Water A	gency		[MUT] MANUFACTURER	Krohne
CONTACT	Lisa Benoit			MODEL	IFC010D
	Process Compliance 1	echnician		SERIAL NUMBER	A99 15977
	Highlands Hub			FUSE	Pull Plug on Board
	136 Main St East				3
	Shelburne, ON L9V 3			PLANT ID	Shelburne WWTP
	Tel 519-925-1938 x22	5		METER ID	RAS Tank #2
	Cel 519-938-7255			FIT ID	FIT-03
	E: lbenoit@ocwa.com			CLIENT TAG	OCWA# 62480
	95 10			OTHER	N/A
VER, BY - FM	Paris Machuk			GPS COORDINATES	N/A
Quality Mana	gement Standards Info	ormation -			
Reference ed	juipment and instrume verification test is foun	ntation used to		VERIFICATION DATE	September 18: 2017
CONDUCT THIS	verification test is foun-	d in our AC-		CAL, FREQUENCY	Annual
CINIO COCUMI	ent at the time this test	was		CAL, DUE DATE	September 2018
PPOCRAMM	NG PARAMETERS				W
DIAMETER (D		n 100			ALIZER INFORMATION
F.S. FLOW - N				AS FOUND	7848832 M3
F.S. RANGE -				AS LEFT	7848840 M3
CAL k-FACTO				DIFFERENCE	8 M3
GAL: K-PACTO	IK SUN	5 31800			TEST CRITERIA
				AS FOUND CERTIFICATION T	
				FORWARD FLOW DIRECTION	
				ALLOWABLE [%] ERROR	5
					COMPONENTS TESTED
				CONVERTER DISPLAY	yes
				mA OUTPUT	yes
				TOTALIZER	Yes
Zero Offset Flo	w LPS	0.0400		ACCURACY BASED ON [% o.r	·I yes
	61	0.0400		ERROR DOCUMENTED IN THIS F	REPORT; BASED ON % o.r.
FLOW TUBE S	SIMULATION				
		0.0	1.0	2.0 5.0 1	0.0 lm/s

		0.0	1.0	2.0	5.0	10.0	lm/s
		0.1	10.1	20.1	50.1	100.1	% F.S. Flow
		0.1	9.6	19.1	47.8	95.5	% F.S. Range
REF. FLOW RATE		0.040	6.405	12.771	31.867	63.694	LPS
MUT [Reading]		0.040	6.410	12.780	31.890	63.740	LPS
MUT [Difference]		0.000	0.005	0.009	0.023	0.046	LPS
MUT [% Error]		0.00	0.07	0.07	0.07	0.07	%
mA OUTPUT		4.000	5.537	7.063	11.644	19.279	mA
MUT [Reading]	min. 4 000 mA	3.994	5.527	7 059	11.652	19.290	mA
MUT [Difference]	max. 20,000 mA	-0.006	-0.010	-0.004	0.008	0.011	mA
MUT [% Error]		-0.15	-0.17	-0.06	0.07	0.06	%
TOTALIZER - REF. F	LOW RATE	-				63.694	LPS
TOTALIZER [MUT]						4	M3
TEST TIME						62 60	SECONDS
CALC: TOTALIZER						0.00.00.00.00	
FRROR						3.987	M3

COMMENTS	QUALITY MANAGEMEN	NT STANDA	ARDS INFO.	RES	ULTS	
		IDENT.	ID#		AVG	PASS
	[REFERENCE] FTS	KRO	1	TEST	% o.r.	FAIL
	PROCESS METER	PM	2	DISPLAY	0.07	PASS
	ANALOG METER	AM	N/A	mA OUTPUT	-0.05	PASS
	STOP WATCH	SW	N/A	TOTALIZER	0.32	PASS

This report reflects the test results of the overall accuracy for the above flow converter using the specified manufacturers flow tube simulator to within the specified tolerance as identified within this report.

ERROR

0.32

%

Technical Services Inc.

Western Office 2088 Jetstream Road London, Ontario NSV 3P6

Eastern Office 1602 Old Wooler Road Wooler, Ontario KOK 3MO

Krohne Verification Report

AS FOUND CERTIFICATION

FORWARD FLOW DIRECTION

PASS

CLIENT DETA	IL.									M33
CUSTOMER	Ontario Clean Wa	ter Anenc	v			Th at 1777		E	QUIPMENT	
CONTACT	Lisa Benoit		7				MANUFACTURE	=K		Krohne
	Process Compliar	nce Techn	ician			MODE				FC010D
	Highlands Hub		161611				L NUMBER			9 15979
	136 Main St. Fast					FUSE			Pull plug or	n Board
	Shelburne, ON L9	9V 3K5				PLAN1	T ID			
	Tel 519-925-1938					METEI			Shelburne	
	Cel 519-938-725					FIT ID	K ID		Truck F	Fill Flow
	E: lbenoit@ocwa	COH				CLIEN	TTAC			FIT 04
						OTHE			~~~	N/A
VER, BY - FM	Joel Van Veller						OORDINATES		OCWA#	
Quality Mana	gement Standards	Informa	tion			GF3 C	OOKDINATES			N/A
Reference ed	Dipment and instr	umentatio	on used to			VEDIC	ICATION DATE			
conduct this	verification test is i	ound in c	HIT AC-				REQUENCY		September 1	
QMS docume	ent at the time this	test was					UE DATE			Annual
						One. D	OC DATE		Septembe	er 2018
	NG PARAMETERS						FORWA	RD TOTAL I	ZER INFORM	ATION
DIAMETER (D		mm	100			AS FO	UND	IND TOTAL	41042	M3
F.S. FLOW - N		LPS	60.4			AS LEF			41060	M3
F.S. RANGE -		LPS	75 000				RENCE		18	M3
CAL k-FACTO)R	GKL	5 04500						TEST CR	
						AS FO	UND CERTIFICA	ATION TEST	TEST ON	Yes
							ARD FLOW DIR			Yes
							VABLE (%) ERRO			5
									PONENTS TI	
						CONVE	ERTER DISPLAY	<i>(</i>	. 4.1.2.1.10 11	yes
						mA OU				yes
						TOTAL	IZER			Yes
7. 07 .0						ACCUR	RACY BASED OF	1.0 %1 V		ves
Zero Offset Flo	W	LPS	0.0300			ERROR	DOCUMENTED	N THIS REPO	RT: BASED OF	N % o.r.
FLOW TUBE S	IMILI ATION								0.7	
. 2011 1000 3	MOLATION		0.0	1.0						
			0.0	1.0	!	2.0	5.0	10.0	m/s	

. LOW TOBE SHADE	ATION						
	l.	0.0	1.0	2.0	5.0	10.0	m/s
	ļ.	0.0	10.0	20.0	50.0	100.0	% F.S. Flow
		0.0	8.1	16.1	40.3	80.6	% F.S. Range
REF. FLOW RATE		0.030	6.069	12,107	30,223	60,416	LPS
MUT [Reading]		0.030	6.050	12.080	30.150	60.260	
MUT [Difference]		0.000	-0.019	-0.027	-0.073	2000 400 2000	LPS
MUT (% Error)		0.00	-0.31	-0.22		-0.156	LPS
mA OUTPUT		4.000	5.295		-0.24	-0.26	%
MUT [Reading]	min. 4 000 mA	3.996		6.583	10.448	16.889	mA
MUT [Difference]		-0.004	5.289	6.583	10.444	16.868	mA
MUT [% Error]	max. 28,000 mA	2000	-0.006	0.000	-0.004	-0.021	mA
TOTALIZER - REF. F	LOWBATE	-0.10	-0.11	0.00	-0.03	-0.12	%
TOTALIZER (MUT)	LOW KATE					60.416	LPS
						10	M3
TEST TIME						166.07	SECONDS
CALC, TOTALIZER						10.033	M3
ERROR						-0.33	
						-0,33	%

COMMENTS Note. Verified programmed parameters matched manufacturer's tube parameters.	QUALITY MANAGEM		ARDS INFO.	RES	ULTS	
manufactura (abe parameters)	[QMS] INFORMATION [REFERENCE] FTS PROCESS METER ANALOG METER STOP WATCH	IDENT. KRO PM AM SW	1 2 N/A N/A	TEST DISPLAY mA OUTPUT TOTALIZER	AVG % o.r. -0.26 -0.07 -0.33	PASS FAIL PASS PASS PASS



Western Office 2088 Jetstream Road London, Ontario N5V 3P6 Eastern Office 1602 Old Wooler Road Wooler, Ontario KOK 3Mo

Harshall Flume Verification/Calibration Report

AS FOUND CERTIFICATION

			PASS
CLIENT DETA CUSTOMER CONTACT	Ontario Clean Water Agency Lisa Benoit Process Compliance Technician Highlands Hub	[MUT] MANUFACTURER MODEL CONVERTER SERIAL NUMBER	EQUIPMENT DETAIL Milltronics OCM-III N/A
VER. BY - FM	136 Main St. East Shelburne, ON L9V 3K5 Tel: 519-925-1938 x225 Cel: 519-938-7255 El: Ibenoit@ocwa.com Paris Machuk/Joef Van Veller	PLANT ID METER ID FIT ID CLIENT TAG OTHER GPS COORDINATES	Shelburne WWTP Effluent Flow FIT-05 OCWA# 62506 N/A
Quality Mana Reference ed conduct this	rgement Standards Information - quipment and instrumentation used to verification test is found in our AC- ent at the time this test was	VERIFICATION DATE CAL. FREQUENCY CAL. DUE DATE	N/A September 18, 2017 Annual September 2018
PROGRAMMII THROAT DIME		AS FOUND	TOTALIZER 14368168 M3

PROGRAMMING PARAMETERS					
				TOTA	IZER
THROAT DIMENSION (DN)	inches	9	AS FOUND	14368168	M3
EMPTY DISTANCE	m	0.870	· - · · -		M
	111	0.070	AS LEFT	14368188	M3
MAX. HEAD	m	0.345	DIFFERENCE	20	
DEAD ZONE	m	0.525	DITTERCE	20	M3
	111	0.525		TEST CRIT	TERIA .
BLANKING DISTANCE	m	0.305	AS FOUND CERTIFICATION TEST		10000000
MAX. FLOW	LPS	105.0			Yes
	LFS	105.0	ALLOWABLE (%) ERROR		5
F.S. RANGE - O/P	LPS	105.0			
F.S. RANGE - O/P	LPS	105.0	ALLOWABLE [%] ERROR		5

COMPONENTS TESTED

CONVERTER DISPLAY yes
mA OUTPUT yes
TOTALIZER yes
ACCURACY BASED ON [% o.r.] no

Ultrasonic sensor installed to ensure full scale flow condition

ERROR DOCUMENTED IN THIS REPORT, BASED ON % F.S.

				0.0	15.0	43.5	80.8	89.2	% F.S. Range
				0,000	0 100	0 200	0.300	0.320	m
REF. FLOW RATE				0.000	15.801	45.630	84.854	93,661	LPS
MUT [Reading]			l	0 024	16,140	45 850	85 200	93.890	LPS
MUT [Difference]				0.024	0.339	0.220	0.346	0.229	LPS
MUT [% Error]			_	n/a	0.32	0.21	0.33	0.22	%
mA OUTPUT				4.000	6.408	10.954	16.931	18.273	mA
MUT [Reading]	min.	4 000	mΑ	3.981	6 438	10 974	16.957	18 290	mA
MUT [Difference]	max.	20.000	mA	-0.019	0.030	0.020	0.026	0.017	mA
MUT [% Error]				-0.10	0.15	0.10	0.13	0.08	WA
TOTALIZER - REF. F	LOW RAT	ΪE					0.10	93.661	LPS
TOTALIZER [MUT]								7	
TEST TIME								70.00	M3
CALC. TOTALIZER								73.90	SECONDS
ERROR								6.922	M3
ZITITOIT								1.12	%

COMMENTS			т——		
	QUALITY MANAGEMENT STANDA	RDS INFO.	RES	ULTS	
	[QMS] INFORMATION IDENT. [REFERENCE] LEVEL Sim. BOARD	ID#	TEST	AVG %FS	PASS FAIL
	PROCESS METER PM STOP WATCH SW	2 n/a	DISPLAY mA OUTPUT TOTALIZER	0.27 0.07 1.12	PASS PASS PASS
]		

** Flowmetrix Technicai Services Inc.

Western Office 2088 Jetstream Road London, Ontario **NSV 3P6**

Eastern Office 1602 Old Wooler Road Wooler, Ontario **KOK 3M0**

ROSEMOUNT

Verification Report

AS FOUND CERTIFICATION FORWARD FLOW DIRECTION

				PASS
CLIENT DETA	Ontario Clean Water	A		EQUIPMENT DETAIL
CONTACT	Lisa Benoit	Agency	[MUT] MANUFACTURER	ROSEMOUNT
	Process Compliance	Technician	MODEL	8712
	Highlands Hub	, 55,1110,1211	CONVERTER SERIAL NUMBER	0860188157
	136 Main St East			
	Shelburne, ON L9V :		PLANT ID	Shelburne WWTP
	Tel: 519-925-1938 x2	25	METER ID	Raw Sewage Flow
	Cel: 519-938-7255		FIT ID	FIT-06
	E: lbenoit@ocwa.com	1	CLIENT TAG	N/A
VED DV EM	1-157 - 170		OTHER	N/A
	Joel Van Veller		GPS COORDINATES	N/A
conduct this v QMS docume	gement Standards In uipment and instrum rerification test is four ent at the time this tes	entation used to	VERIFICATION DATE CAL. FREQUENCY CAL. DUE DATE	September 18, 2017 Annual September 2018
DIAMETER (DI	IG PARAMETERS		FORWARD TOTAL	IZER INFORMATION
F.S. FLOW - M.		m 200	AS FOUND	11825500 LITER
F.S. RANGE - (90110	AG ELI I	0 LITER
TUBE CAL. FA		35 150.000 1025505911000011	DIFFERENCE	-11825500 LITER
1002 0/12:17	OTON	1020000911000011		TEST CRITERIA
			AS FOUND CERTIFICATION TES	7 12 15
			FORWARD FLOW DIRECTION	Yes
			ALLOWABLE [%] ERROR	5
			CONVERTER DISPLAY	MPONENTS TESTED
			mA OUTPUT	yes
			TOTALIZER	yes
	_		ACCURACY BASED ON 1% or I	yes
VERIFICATOR [16-digits]	CAL. FACTOR	1000015010000000	ERROR DOCUMENTED IN THIS REP	yes ORT; BASED ON % o.r.

[16-digits] FLOW TUBE SIMULATION

			0
DISPLAY			0.000
MUT Reading			0.000
MUT % Error			n/a
mA OUTPUT			4.000
MUT Reading	4	mA	3.996
MUT % Error	20	mA	-0.10
TOTALIZER	7.00		-
TEST Accumulation			
TIME			1
CALC, Velocity			
% Ептог			

l ft/s	30	10	3
ft/s	30.000	10.000	3.000
ft/s	30 010	10 000	3.000
%	0.03	0.00	0.00
mA	20.000	9.333	5.600
mA	20 007	9.333	5 599
%	0.04	0.00	-0.02
ft/s	30.00		
ft	5000.00		
seconds	166.59	İ	
ft/s	30.01		
%	0.05		

^{*}All values are for "As Found" values.

Note: Net totalizer value automatically reset after test performed and unit was powered on.	QUALITY MANAGEME		RDS INFO.	RES	ULTS	
Note: Verified programmed parameters matched manufacturer's tube parameters	[QMS] INFORMATION [REFERENCE] FTS PROCESS METER ANALOG METER STOP WATCH	ROS PM AM SW	10# 1 2 1 2	TEST DISPLAY mA OUTPUT TOTALIZER	AVG % o.r. 0.01 0.00 0.05	PASS FAIL PASS PASS PASS



Western Office 2088 Jetstream Road London, Ontario NSV 3P6 Eastern Office 1602 Old Wooler Road Wooler, Ontario KOK 3M0

ABB MAGMASTER

Verification Report

AS FOUND CERTIFICATION

FORWARD FLOW DIRECTION

PASS

CLIENT DETA	AL .				501110111111111111111111111111111111111
CUSTOMER	Ontario Clean W	ater Agen	CV	[MUT] MANUFACTURER	EQUIPMENT DETAIL
CONTACT	Lisa Benoit		~1	MODEL	ABB
	Process Complia	nce Tech	nician	CONVERTER SERIAL NUMBE	MagMaster
	Highlands Hub			FUSE	
	136 Main St. Eas	it		FU3E	Panel G - Breaker #4
	Shelburne, ON L	.9V 3K5		PŁANT ID	Challering 14 Harring
	Tel: 519-925-193			METER ID	Shelburne WWTP
	Cel 519-938-725	55		FIT ID	Storm Flow
	E: lbenoit@ocva			CLIENT TAG	F1T-07
				OTHER	N/A
VER. BY - FM	Joel Van Veller				N/A
Quality Mana	gement Standard	ła lafam.	-Ai	GFS COORDINATES 114	4 05 063 W080 11 535
Reference ed	quipment and inst	ittitulli et tetnamin	ion used to	VERIFICATION DATE	0 1 1 10 00 10
conduct this	verification test is	found in	nur AC-	CAL. FREQUENCY	September 18, 2017
QMS docume	ent at the time thi	s test was	3		Annual
				CAL, DUE DATE	September, 2018
PROGRAMMI	NG PARAMETERS	ì		FORWARD TO	FALIZER INFORMATION
DIAMETER (D	•	mm	250	AS FOUND	487030 M3
F.S. FLOW - N		LPS	670.8	AS LEFT	487059 M3
F.S. RANGE -		LPS	200 000	DIFFERENCE	29 M3
TUBE CAL. FA	CTOR	1	1 36650		TEST CRITERIA
				AS FOUND CERTIFICATION T	
				FORWARD FLOW DIRECTION	
				ALLOWABLE [%] ERROR	5
					COMPONENTS TESTED
				CONVERTER DISPLAY	
				mA OUTPUT	yes
				TOTALIZER	yes
				ACCURACY BASED ON [% o.r	yes
				ERROR DOCUMENTED IN THIS I	·i yes
				- WOULD OF STREET IN THE STREET	TEL OITT, DAGED ON % 0.F.
FLOW TUBE S	SIMULATION				
			0.0		

			L	0.0	0.2	0.5	1.0	2.0	m/s
				0	2	5	10	20	% F.S. Flow
				0.0	6.7	16.8	33.5	67.1	% F.S. Range
REF. FLOW RATE				0.00	13.42	33.54	67.08	134,16	LPS
MUT [Reading]			- 1	0.00	13.33	33.46	66.91	133.75	LPS
MUT [Difference]				0.00	-0.09	-0.08	-0.17	-0.41	LPS
MUT (% Error)	_	_		n/a	-0.64	-0.24	-0.25	-0.30	%
mA OUTPUT		4.1750.00		4.000	5.073	6.683	9.366	14.732	mA mA
MUT [Reading[min.	4.000	mA:	3.991	5 058	6 662	9.336	14.672	mA
MUT [Difference]	max.	20 000	mA	-0.009	-0.015	-0.021	-0.030	-0.060	mA
MUT [% Error]		_		-0.22	-0.30	-0.32	-0.32	-0.41	1 %
TOTALIZER - REF. F	LOW RAT	ΓE					0.00	134,156	LPS
「OTALIZER [MUT]								13	M3
TEST TIME								97.85	1
CALC. TOTALIZER									SECONDS
RROR								13,127	M3
								-0.98	%

COMMENTS	·				
	QUALITY MANAGEMENT STANDA	RDS INFO.	RES	ULTS	
	[QMS] INFORMATION IDENT.	ID#		AVG	PASS
	[REFERENCE] FTS ABBMM	1	TEST	% o.r.	
	PROCESS METER PM	1	DISPLAY	-0.36	PASS
	ANALOG METER AM	N/A	mA OUTPUT	-0.31	PASS
	STOP WATCH SW	Yes	TOTALIZER	-0.98	PASS



Western Office 2088 Jetstream Road London, Ontario N5V 3P6

Eastern Office 1602 Old Wooler Road Wooler, Ontario KOK 3M0

ABB MAGMASTER

Verification Report

AS FOUND CERTIFICATION

FORWARD FLOW DIRECTION

PASS

CLIENT DETA	A11			 			A00
CUSTOMER	Ontario Clean Water	r Anone	***		EQUIPN	IENT D	
CONTACT	Lisa Benoit	rigent	• 3	[MUT] MANUFACTURER			ABB
	Process Compliance	Toch	lician	MODEL			Master
	Highlands Hub	, , , , , , , , , , , , , , , , , , , ,	rcian	CONVERTER SERIAL NU		3200000	
	136 Main St. East			FUSE	Panel C	G - Вгеа	iker#6
	Shelburne ON L9V	3165		DI ALITAD			
	Tel 519 925 1938 x	-		PLANT ID		lburne V	
	Cel 519 938 7255	223		METER ID	Store	n Relun	
	E Ibenoit@ocwa coi	m		FIT ID		ſ	FIT-08
	bc.ron(@001111 CO	111		CLIENT TAG			N/A
VER. BY - FM	Joel Van Veller			OTHER	****		N/A
		,		GPS COORDINATES	N44 05 063	W080 1	11,535
Quality Mana	agement Standards I	ntorma	ition -	1.551516.4516.45			
conduct this	quipment and instrun verification test is for	nentati	on usea to	VERIFICATION DATE	Septer	mber 18	
QMS docume	ent at the time this te	and in	001 AC-	CAL, FREQUENCY			Annual
		, , , , , , , , , , , , , , , , , , , ,	,	CAL, DUE DATE	Sej	olember	2018
PROGRAMMI	NG PARAMETERS			 EODWADD	TOTALIZER IN	50011	
DIAMETER (D		mm	200	AS FOUND		1 FUKMA 09377	
F.S. FLOW - N	/IÁG L	.PS	468.4	AS LEFT			M3
F.S. RANGE -		.PS	100 000	DIFFERENCE	51	09386	M3
TUBE CAL. FA		1	1 49102	DIFFERENCE		9	M3
		•	. , , , , ,	AS EQUIND CERTIFICATION		ST CRIT	
				AS FOUND CERTIFICATION			Yes
				FORWARD FLOW DIREC	IIUN		Yes
				ALLOWABLE [%] ERROR			5
				CONVERTER DISPLAY	COMPONE	NTS TE	
				mA OUTPUT			yes
							yes
				TOTALIZER			yes
				ACCURACY BASED ON [9	% о.г.]		yes
				ERROR DOCUMENTED IN T	HIS REPORT; BA	SED ON	1 % O.F.
FLOW TUBE 5	SIMULATION			 			

FLOW TUBE SIMUL	ATION						
		0.0	0.2	0.5	1.0	2.0	m/s
		0	2	5	10	10	% F.S. Flow
		0.0	9.4	23.4	46.8	46.8	% F.S. Range
REF. FLOW RATE		0.00	9.37	23.42	46.84	46.84	LPS
MUT [Reading]	1	0.00	9.36	23.39	46.72	46.72	LPS
MUT [Difference]		0.00	-0.01	-0.03	-0.12	-0.12	LPS
MUT [% Error]		n/a	-0.09	-0.13	-0.26	-0.26	%
IMA OUTPUT		4.000	5.499	7.747	11.495	11.495	mA mA
MUT [Reading]	min. 4 000 mA	3.991	5.487	7.728	11.456	11.456	mA
MUT [Difference]	max. 20.000 mA	-0.009	-0.012	-0.019	-0.039	-0.039	mA
MUT [% Error]		-0.22	-0.22	-0.25	-0.34	-0.34	%
TOTALIZER - REF. F	LOW RATE					46.842	LPS
TOTALIZER [MUT]						5	M3
TEST TIME						107.87	SECONDS
CALC: TOTALIZER							1
ERROR						5.053	M3
						-1.06	%

COMMENTS		QUALITY MANAGEMENT STANDARDS INFO.				
	[QMS] INFORMATION [REFERENCE] FTS	IDENT. ABBMM	ID# 2	TEST	AVG % o.r.	PASS FAIL
	PROCESS METER ANALOG METER STOP WATCH	PM AM SW	N/A N/A N/A	DISPLAY mA OUTPUT TOTALIZER	-0.19 -0.27 -1.06	PASS PASS PASS



Western Office 2088 Jetstream Road London, Ontario NSV 3P6 Eastern Office 1602 Old Wooler Road Wooler, Ontario KOK 3M0

ABB MAGMASTER

Verification Report

AS FOUND CERTIFICATION

FORWARD FLOW DIRECTION

PASS

CLIENT DETA	MI		1 A33
CUSTOMER CONTACT	Ontario Clean Water Agenc Lisa Benoit Process Compliance Techn Highlands Hub 136 Main St. East		IMUT] MANUFACTURER MODEL CONVERTER SERIAL NUMBER FUSE ABB MagMaster 3KG20000015302 Panel G - Breaker #8
VER. BY - FM	Shelburne, ON 1.9V 3K5 Tel: 519-925-1938 x225 Cel: 519-938-7255 Et		PLANT ID Shelburne WWTP METER ID Sludge Transfer Flow FIT ID FIT-09 CLIENT TAG N/A OTHER N/A
100	CODI VAII VCIICI		GPS COORDINATES N44 05 063 W080 11 535
conduct this QMS docum	agement Standards Informa quipment and instrumentati verification test is found in o ent at the time this test was	on used to our AC-	VERIFICATION DATE CAL, FREQUENCY CAL, DUE DATE September 18, 2017 Annual September, 2018
PROGRAMMI	NG PARAMETERS		FORWARD TOTALIZER INFORMATION
DIAMETER (D F.S. FLOW - N F.S. RANGE - TUBE CAL. FA	MAG LPS O/P LPS	200 468.7 80.000	AS FOUND 23094 M3 AS LEFT 23106 M3 DIFFERENCE 12 M3
TUBE CAL. FA	ACTOR 1	1 49194	TEST CRITERIA
			AS FOUND CERTIFICATION TEST Yes FORWARD FLOW DIRECTION Yes ALLOWABLE [%] ERROR 5
			COMPONENTS TESTED
			CONVERTER DISPLAY MA OUTPUT TOTALIZER ACCURACY BASED ON [% o.r.] ERROR DOCUMENTED IN THIS REPORT; BASED ON % o.r.

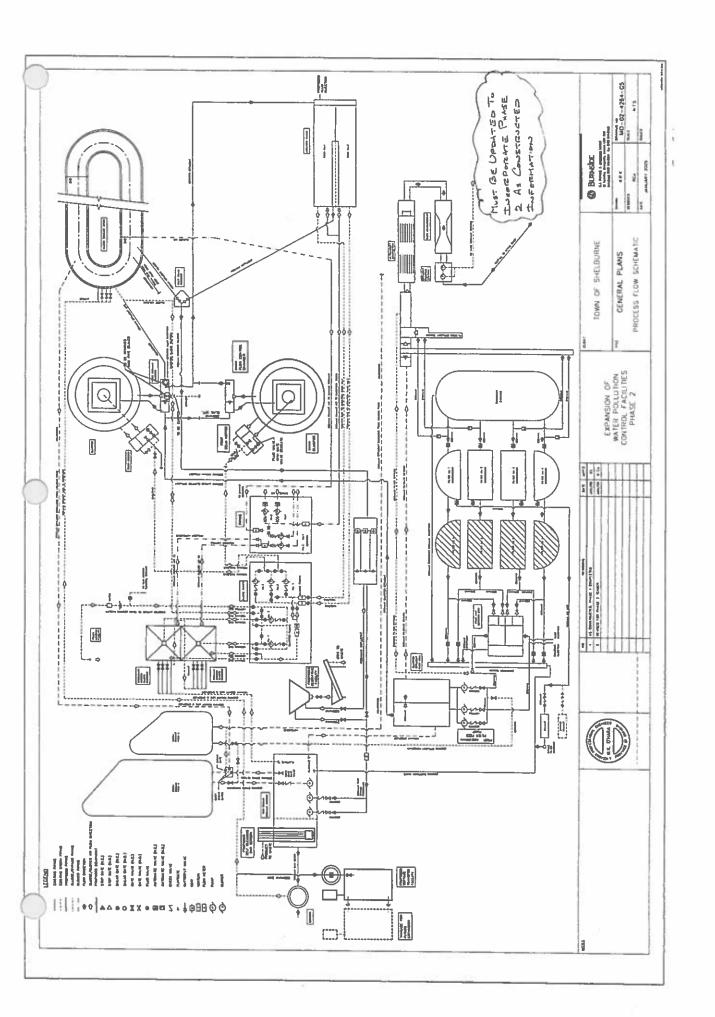
			0.0	0.1	0.2	0.5	1.0	m/s
			0	1	2	5	10	% F.S. Flow
			0.0	5.9	11.7	29.3	58.6	% F.S. Range
REF. FLOW RATE			0.00	4.69	9.37	23.44	46.87	LPS
MUT [Reading]			0.00	4.69	9.39	23.38	46.75	LPS
MUT [Difference]			0.00	0.00	0.02	-0.06	-0.12	LPS
MUT [% Error]			n/a	0.06	0.17	-0.24	-0.26	%
mA OUTPUT			4.000	4.937	5.875	8,687	13.374	mA
MUT [Reading]	min. 4 000 r	mΑ	3.991	4.930	5 864	8 675	13.320	mA
MUT [Difference]	max. 20 000 n	nA	-0.009	-0.007	-0.011	-0.012	-0.054	mA mA
MUT [% Error]			-0.22	-0.15	-0.18	-0.14	-0.40	
TOTALIZER - REF. F	LOW RATE				0110	-0.14	46.871	LPS
TOTALIZER (MUT)							40.67	
TEST TIME							4000	M3
CALC: TOTALIZER							84.89	SECONDS
ERROR							3,979	M3
							0.53	%

COMMENTS						
	QUALITY MANAGEME	RES	RESULTS			
		IDENT.	ID#	TEST	AVG	PASS
	* · · ·	ABBMM	1		% o.r.	FAIL
	PROCESS METER ANALOG METER	PM	1	DISPLAY	-0.07	PASS
	STOP WATCH	AM	N/A	mA OUTPUT	-0.22	PASS
	STOP WATCH	SW	Yes	TOTALIZER	0.53	PASS

Appendix D

Process Flow Schematic

2017



Appendix E

Community Complaints Received

2017

Ontario Clean Water Agency Community Complaints

Facility ID:	5773			
Facility Name:	Shelburne Wastewater Treatment Plant			
Address:	300 Centennial Street			
City:	Shelburne			
Province:	Ontario			
Postal Code:	L0N 1S0			
Name of Person who filed Complaint:	Christine			
Address:	Area of Hwy 89 and Hwy 124			
Phone				
NOTE: If there were multiple complaint and note the numbe	complaints, provide the name of the person who filed the initial er and details in the "Description" field below			
Date of Complaint:	04/02/2017			
Time of Complaint:	03:38:17 PM			
Nature of Complaint				
☐ Noise	☐ Water Supply Taste/Colour ☐ Water Pressure/No Water			
☐ Visual	☐ Service Problem ☐ Basement Flooding			
Odour	Sludge Related			
Other:				
Description:				
A storage sewage smell wa	s reported near the area of Hwy 89 and Hwy 124			
Action taken in response:				
The town staff sent a copy	of the OCWA news release			
	m identified?: • Yes O No scitity/activity?: O Yes • No If "Yes", describe:			

If any remedial action is required, complete action plan form

Updated By: Lisa Benoit 05/25/2017 11:37:53 AM

Investigating Operator:

Comments:

Facility ID:	5773
Facility Name:	Shelburne Wastewater Treatment Plant
Address:	300 Centennial Street
City:	Shelburne
Province:	Ontario
Postal Code:	LON 1SO
Name of Person who filed Complaint:	Jim Ducette
Address:	Rintoul Street
Phone	519-216-0590
complaint and note the number	complaints, provide the name of the person who filed the initial er and details in the "Description" field below
Date of Complaint:	04/05/2017
Time of Complaint:	
Nature of Complaint	
☐ Noisc ☐ Visual ☐ Odour Other: Description:	 □ Water Supply Taste/Colour □ Service Problem □ Basement Flooding □ Sludge Related
Resident close to the WWT	P complaining about odour from the storm ponds. Media release put on the
town website.	
Action taken in response:	
Media release put on town v	vebsite
Was the source of the probler Was the source an OCWA fac	m identified?: Yes No cility/activity?: Yes No If "Yes", describe:
Storm ponds in place for exe	cessive flows to plant. Part of the plant contingency process

If any remedial action is required, complete action plan form



Investigating Operator: Scott Craggs

	5773
Facility Name:	Shelburne Wastewater Treatment Plant
Address:	300 Centennial Street
City:	Shelburne
Province:	Ontario
Postat Code:	L0N 1S0
Name of Person who filed Complaint:	Mary Lynn
Address:	Jelly St. N.
Phone	
complaint and note the numb	complaints, provide the name of the person who filed the initial er and details in the "Description" field below
Date of Complaint:	04/18/2017
Time of Complaint:	11:39:19 AM
☐ Noise ☐ Visual ☐ Odour Other: Description:	 Water Supply Taste/Colour □ Water Pressure/No Water □ Service Problem □ Basement Flooding □ Sludge Related
	lant
Smell from the treatment p	idili
Smell from the treatment p Action taken in response:	ian

Updated By: Lisa Benoit 05/25/2017 11:58:00 AM



Facility Name: Address: City: Province: Postal Code: Name of Person who filed Complaint: Address: Pineview Gardens Phone Shelburne Ontario Brian & Marie Pineview Gardens	
Address: City: Shelburne Province: Ontario Postal Code: Name of Person who filed Complaint: Address: Pineview Gardens	
Province: Postal Code: Name of Person who filed Complaint: Address: Pineview Gardens	
Postal Code: Name of Person who filed Complaint: Address: Pineview Gardens	
Name of Person who filed Complaint: Address: Pineview Gardens	
Complaint: Address: Pineview Gardens	
Theview Gardens	
Phone	
NOTE: If there were multiple complaints, provide the name of the person who complaint and note the number and details in the "Description" field below	filed the initial
Date of Complaint: 04/20/2017	
Time of Complaint: 10:28:00 AM	
ature of Complaint	
☐ Noise ☐ Water Supply Taste/Colour ☐ Water Pres ☐ Visual ☐ Service Problem ☐ Basement I ☐ Odour ☐ Sludge Related Other:	
Description:	
Odour coming from the storm ponds at the wastewater treatment plant	
Action taken in response:	
Town staff followed up with homeowner to advise as to what is happening v	vith the ponds
Was the source of the problem identified?: ● Yes ○ No	
Was the source an OCWA facility/activity?: ○ Yes ● No If "Yes", description	ribe:
	.100,

Updated By: Lisa Benoit 05/25/2017 11:29:27 AM

Investigating Operator:

Facility ID:	5773	
Facility Name:	Shelburne Wastewater Treatment Plant	
Address:	300 Centennial Street	
City:	Shelburne	
Province:	Ontario	
Postal Code:	L0N 1S0	
Name of Person who filed Complaint:	Maria Cabral	
Address:	109 Morden Drive	
Phone	647-404-3460	
NOTE: If there were multiple complaint and note the number	complaints, provide the name of the person who filed the initial er and details in the "Description" field below	
Date of Complaint:	05/18/2017	
Time of Complaint:	01:32:05 PM	
Nature of Complaint		
☐ Noise	☐ Water Supply Taste/Colour ☐ Water Pressure/No Water	
☐ Visual	☐ Service Problem ☐ Basement Flooding	
⊠ Odour	☐ Sludge Related	
Other:		
Description:		
Concerned with odour from	the holding ponds	
Action taken in response:		
OCWA called and talked at trees.	out the town's plans to clean out the holdings, to raise the berms and to p	lant
Was the source of the problem Was the source an OCWA fa	m identified?: • Yes • No Cility/activity?: • Yes • No If "Yes", describe:	

If any remedial action is required, complete action plan form

Updated By: Lisa Benoit 05/25/2017 12:08:51 PM

Investigating Operator:

2017 Annual Performance Report for the Town of Shelburne Wastewater Treatment Plant Certificate of Approval No. 9972-7FYJUB

Appendix F

Letter of Non-Compliance

2017

NOTIFICATION OF NON-COMPLIANCE

Phone: (519) 925-1938 Fax: (519) 925-0322

June 20, 2017

Ms. Carola Serwotka
Provincial Officer
Guelph District Office,
Ministry of the Environment
1 Stone Road West, 4th Floor
Guelph ON
N1G 4Y2

Re: <u>Notification of Non-compliance with Environmental Compliance Approval # 6413-ABLQQS</u>

This is a notification of non-compliance with Environmental Compliance Approval # 6413-ABLQQS Section 7(1); Effluent Limits for the **Shelburne Wastewater Treatment Plant** located in the Town of Shelburne. This written notice confirms the verbal notification provided to Carola Serwotka on June 13th, 2017 by OCWA.

The following effluent limit and loading was exceeded:

Parameter	Date/ Year	Type of Limit	Type of Sample	Result	GofA Limit
Total Ammonia Nitrogen	May 2017	Monthly Average Concentration	Composite	2.660 mg/L	2.4 mg/L
Total Ammonia Nitrogen	May 2017	Monthly Average Waste Loading		8.999 kg/d	8.2 kg/d

The analytical results for all five (5) samples collected during the month of May are as follows:

Date	Effluent Parameter	Effluent Limit	Sample Result
May 2, 2017	Total Ammonia Nitrogen	2.4 mg/L monthly average	0.1 mg/L
May 13, 2017	Total Ammonia Nitrogen	2.4 mg/L monthly average	3.5 mg/L

May 19, 2017	Total Ammonia Nitrogen	2.4 mg/L monthly average	5.8 mg/L
May 27, 2017	Total Ammonia Nitrogen	2.4 mg/L monthly average	3.5 mg/L
May 31, 2017	Total Ammonia Nitrogen	2.4 mg/L monthly average	0.4 mg/L

Comments/Actions Taken:

The effluent limit and loading exceedance for Total Ammonia Nitrogen was due to required aeration cell maintenance to correct the low D.O. levels in both the north and south cells. The north cell was taken out of service on April 26th, 2017 and the south cell was taken out of service on May 23, 2017 in order to drain the tanks and steam clean all of the diffusers to remove the buildup of sludge. Processes were adjusted and in house lab was done to monitor the effluent. All of the sample results prior to and for the month of June have been well below the effluent limit of 0.8 mg/L.

If you have any questions or concerns, please feel free to contact the office.

Kind Regards,

Lisa Benoit

Process & Compliance Technician

souBenoit

Highlands Hub

OČWA

cc: John Telfer, CAO/Clerk, Town of Shelburne

Scott Craggs, Senior Operations Manager, OCWA

Karen Lorente, Regional Hub Manager, OCWA

Camille Leung, Manager of Safety, Process & Compliance, OCWA



NOTIFICATION OF NON-COMPLIANCE

Phone: (519) 925-1938 Fax: (519) 925-0322

April 13, 2018

Ms. Carola Serwotka
Provincial Officer
Guelph District Office,
Ministry of the Environment
1 Stone Road West, 4th Floor
Guelph ON
N1G 4Y2

Re: Notification of Non-compliance with Environmental Compliance Approval # 6413-ABLQQS

This is a notification of non-compliance with Environmental Compliance Approval # 6413-ABLQQS Section 7(2(a)); Effluent Limits for the **Shelburne Wastewater Treatment Plant** located in the Town of Shelburne. This written notice confirms the verbal notification provided to Carola Serwotka on April 11th, 2018 by OCWA.

The following effluent limit and loading was exceeded:

Parameter	Date/ Year	Type of Limit	Type of Sample	Result	CofA Limit
Total Suspended Solids	Nov 2017	Monthly Average Concentration	Composite	5.5 mg/L	5.0 mg/L

The analytical results for all four (4) samples collected during the month of November are as follows:

Date	Effluent Parameter	Effluent Limit	Sample Result
Nov 6, 2017	Total Suspended Solids	5.0 mg/L monthly average	5.0 mg/L
Nov 14, 2017	Total Suspended Solids	5.0 mg/L monthly average	5.0 mg/L
Nov 20, 2017	Total Suspended Solids	5.0 mg/L monthly average	8.0 mg/L
Nov 29, 2017	Total Suspended Solids	5.0 mg/L monthly average	4.0 mg/L

Comments/Actions Taken:

A spreadsheet has been developed to help keep track of the monthly concentrated averages and Operation Staff has been reminded to review all laboratory results upon receiving them weekly. Historically, the TSS results from the laboratory are less than 2 to 3 mg/l on average. In house labs are completed at least once per week; usually they yield results between 2-4 mg/l.

If you have any questions or concerns, please feel free to contact the office.

Kind Regards,

Don Irvine
Process & Compliance Technician
Highlands Hub
OCWA

cc: Denyse Morrissey, CAO/Clerk, Town of Shelburne Scott Craggs, Senior Operations Manager, OCWA Karen Lorente, Regional Hub Manager, OCWA Camille Leung, Manager of Safety, Process & Compliance, OCWA