PUBLIC UTILITIES COMMISSION FOR THE MUNICIPALITY OF CHATHAM-KENT

RIDGETOWN WASTEWATER TREATMENT PLANT

2019 PERFORMANCE REPORT

January 1 to December 31, 2019

Amended Certificate of Approval # 5194-7FWQNB

Plant Description

The Ridgetown Wastewater Treatment Plant provides treatment of wastewater for the community of Ridgetown. Wastewater is collected by a separate sanitary sewer system and conveyed by one raw pump station to the Wastewater Treatment Plant. The treated wastewater is subsequently discharged to the Gawne Drain.

The Ridgetown Wastewater Treatment Plant is an Extended Aeration Plant and was commissioned in 2010. The Ridgetown Wastewater Treatment Plant replaces the former Ridgetown Sewage Treatment Lagoons. Replacement of the lagoon system with the mechanical plant was undertaken to accommodate adequate hydraulic storage and system capacity.

The present treatment system consists of:

- Raw sewage pumping
- Packaged inlet plant which includes screening and grit collection/removal
- Chemical phosphorous removal
- pH adjustment
- Anoxic selector cells for nitrification
- Biological treatment using an Extended Aeration Activated Sludge process
- Final settling using secondary clarifiers
- Tertiary treatment provided by continuous backwash sand filter units
- Disinfection of effluent using Ultra Violet irradiation system
- Sludge collection and pumpage
- Aeration bypass and waste activated sludge holding lagoons

The effluent outfall pipe/chamber/channel discharges to the lateral seasonal drain along Mitton Line that subsequently discharges to the Gawne Drain.

REPORTING REQUIREMENTS UNDER CERTIFICATE OF APPROVAL # 5194-7FWQNB

Summary and Interpretation of Monitoring and Comparison to the Effluent Limits: Condition 10 (6) (a)

Tables 1 and 2 outline monthly average results of parameters tested compared to the limits outlined in the Certificate of Approval Table 2 Effluent Limits.

No criteria were exceeded during this reporting period for the effluent limits as outlined in Condition 7 Effluent Limits of the Certificate of Approval.

Success and Adequacy of the Works

During the reporting period, the annual average daily flow was 1,924 m³/day, which represents approximately 82 % of the rated capacity of 2,347 m³/day. The maximum daily flow was 4,439 m³/day, which is 95 % of the Peak Flow Rate of 4,694 m³/day.

Overall, the Ridgetown Wastewater Treatment Plant performed well for this reporting period.

Table 1: Summary of Monitoring Data and Comparison to Effluent Limits & Objectives – Concentrations as well as rated capacity to the sewage works

Plant Rated Capacity: 2,347m³/day

Total sewage flow to the works during a calendar year divided by the number of days during which sewage was flowing to the works that year

Month	Total Monthly Flow m ³	Avg Daily Flow /Month m ³ /day	Avg Daily Flow /Year m ³ /day	% of Plant Capacity	CBOD₅ mg/L	Total S.S. mg/L	Total ^{Ammonia} mg/L	Total P mg/L	рН	E.Coli /100mL CFU GeoMean
Limits: Receiver <u><</u> 12°C	None	None	2,347	100	10	10	5.0	0.30	6.0 - 9.5	100
Limits: Receiver > 12°C	None	None	2,347	100	10	10	2.0	0.30	6.0 - 9.5	100
Objectives: Receiver <u><</u> 12°C	None	None	2,347	100	5.0	5.0	3.0	0.20	6.0 - 9.5	100
Objectives: Receiver > 12°C	None	None	2,347	100	5.0	5.0	1.0	0.20	6.0 - 9.5	100
Jan	56,130	1,811			2.0	4.8	0.097	0.059	7.56	39
Feb	56,105	2,004			2.0	5.0	1.9	0.061	7.55	90
Mar	56,086	1,809			2.0	5.3	0.33	0.067	7.52	10
Apr	68,060	2,269			2.0	5.4	0.14	0.108	7.61	10
Мау	83,092	2,680			2.0	2.5	0.081	0.083	7.54	10
Jun	63,113	2,104			2.0	3.0	0.080	0.11	7.55	10
Jul	61,306	1,978			2.0	2.2	0.061	0.051	7.45	10
Aug	58,497	1,887			2.0	2.0	0.085	0.038	7.42	10
Sept	51,848	1,728			2.0	1.6	0.071	0.038	7.28	10
Oct	53,885	1,738			2.0	2.5	0.136	0.035	7.26	17
Nov	48,714	1,624			2.0	3.0	0.117	0.054	7.29	17
Dec	45,486	1,277			2.0	4.4	0.482	0.067	7.25	29
Year			1,924	82%						
	Yearly Total Flow m ³				Year	ly Maxim	nums			
	702,322	2,680			2.0	5.4	1.9	0.11	7.61	90

Table 2: Summary of Monitoring Data and Comparison to Effluent Limits & Objectives – Loadings

Month	Avg Daily Influent Flow /Month m ³ /day	CBOD₅ kg/day	Total S.S. kg/day	Total Ammonia kg/day	Total P kg/day
Limits: Receiver ≤12°C	None			11.74	
Limits: Receiver > 12°C	None	23.47	23.47	4.69	0.70
Objectives: Receiver <u><</u> 12°C	None			7.04	
Objectives: Receiver > 12°C	None	11.74	11.74	2.35	0.47
Jan	1,811	3.62	8.69	0.18	0.09
Feb	2,004	4.01	10.02	3.81	0.11
Mar	1,809	3.62	9.50	0.60	0.12
Apr	2,269	4.54	12.25	0.33	0.24
Мау	2,680	6.03	6.70	0.22	0.22
Jun	2,104	4.21	6.31	0.17	0.23
Jul	1,978	3.96	4.35	0.12	0.10
Aug	1,887	3.77	3.77	0.16	0.07
Sept	1,728	3.46	2.77	0.12	0.06
Oct	1,738	3.48	4.35	0.24	0.06
Nov	1,624	2.74	4.11	0.16	0.07
Dec	1,277	2.93	6.46	0.71	0.10
			Yearly I	Maximums	
		6.03	12.25	3.81	0.24

Operating Problems and Corrective Action: Condition 10 (6)(b)

High E.coli results were obtained in February final effluent sampling. A rebuild of two UV reactors has resolved the E Coli issues.

Summary of Maintenance Activities: Condition 10 (6)(c)

Routine maintenance was performed throughout the reporting period. Chatham-Kent PUC utilises an electronic preventative maintenance program to track preventative maintenance. In addition to the routine maintenance, the following additional maintenance activities and equipment replacement were completed for the reporting period:

•	UV Reactor Rebuild	\$	12,900
•	Aeration Mixer Replacement	Ψ	9,800
•	Wildwood Pump Rebuild		9,200
•	Marsh St. Pump Station Pump Rebuild		4,900
•			
•	Skimmer Blades for Clarifier		3,600
•	Flowmeter Verifications		3,500
•	Lagoon Brushing		3,400
•	Methane Sensor Replacement (Screen Room)		2,600
•	Flowmeter Calibration/Service		2,500
•	Genset Service		2,400
•	Clarifier Repair (Lift Rental)		2,300
•	Chemical Feed Pump Actuator		2,040
•	Annual Lifting Device Inspection		1,670
•	Lab Supplies		1,400
•	Unit Heater Repair		1,230
•	Analyser Verifications		1,000
•	Effluent Sampler Rebuild		1,000
•	Huber Repair		700
AN	ID FOR THAMESVILLE PUMP STATIONS:		
•	New Generator and Switch Gear (at Sherman Pump Station)	\$1	144,000
•	Pump and Piping Replacement (at Sherman Pump Station)		32,000

- Modems for all Thamesville Pump Stations
- Reparation of Pump #1 (at Lamilla Pump Station) 2,000

3,000

Quality Assurance and Control Measures: Condition 10 (6)(d)

The Chatham-Kent Public Utilities Commission followed a sampling schedule developed in accordance with the Certificate of Approval and applicable regulations for this reporting period.

Composite chemistry samples of the raw flow were collected using an auto sampler. Chemistry samples were submitted weekly to an accredited laboratory for analysis of BOD₅, Total Suspended Solids, Total Kjeldhal Nitrogen, Total Phosphorus, Total Ammonia Nitrogen, Alkalinity and pH.

Composite chemistry samples of the effluent were collected using an auto sampler. Chemistry samples were submitted weekly to an accredited laboratory for analysis of CBOD₅, Total Suspended Solids, Total Kjeldhal Nitrogen, Total Phosphorus and Total Ammonia Nitrogen, Alkalinity, pH, Nitrite, Nitrate and Unionized Ammonia.

Bacteriological samples of the effluent were collected weekly according to the Sampling Program. Bacteriological samples were submitted weekly to an accredited laboratory for analysis.

In house samples were analysed by a licensed operator for pH and temperature.

Calibration and Maintenance on Effluent Monitoring Equipment Condition 10 (6)(e)

All required probes and sensors are cleaned, maintained and/or calibrated on a monthly basis or as required by manufacturers' specifications.

Monitoring equipment calibration/verification report(s) included for the following:

- Influent flow meter
- Effluent flow meter
- Spectrophotometer
- pH meter

Effluent Objectives Condition 10 (6)(f)

Tables 1 and 2 outline monthly average results of parameters tested compared to the objectives outlined in the Certificate of Approval Table 1 Effluent Objectives.

The following criteria was exceeded during this reporting period for the effluent objectives outlined in Condition 6 Effluent Objectives of the Certificate of Approval:

Total Suspended Solids concentration: March and April

Continuing optimization of chemical feed was practiced throughout the year with the goal of achieving effluent objectives. Effluent filters were also cleaned and maintained throughout the year with the goal of achieving the effluent objectives of Total Suspended Solids in the effluent.

Sludge Management Condition 10 (6)(g)

During the reporting period, waste activated sludge totalling 23,010 m³ was transferred to Lagoon # 2 for sludge stabilization and storage.

Outline of Anticipated Volumes in Next Reporting Period

The sludge production and sludge handling method for the next reporting period is anticipated to be the similar to that of this reporting period.

Community Complaints: Condition 10 (6)(h)

There were no Customer Complaints received during the reporting period.

By-pass, Spill, or Abnormal Discharge Events: Condition 10 (6)(i)

A Pump Station Overflow of approximately 250 m³ occurred from the Thamesville Sewage Pumping Station on April 29. The overflow was due to failure of the body of the air relief mechanism. The air relief mechanism was repaired.

Other Information the District Manager Requires: Condition 10 (6)(j)

No other information was required from the District Manager during this reporting period

APPENDIX A

Yearly Operational Data Summary for the Reporting Period

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Ridgetown Wastewater Treatment Plant Operational Data Yearly Summary

2019

YEAR:

Works # 120002996

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														TOTAL	AVERAGE	HOH	гом	Summer MOE	Winter MOE	Summer Non-	Winter Non-
	NONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST SI	SEPTEMBER (OCTOBER NO	NOVEMBER D	DECEMBER					Objective	Objective	oce	Compliance
RAW SEWAGE FLOW DATA								⊢													
ERIE ST. PUMPING STATION	1000 cu. m.	39.723	39.258	39.907	41.964	48.300	35.184	38.022	35.642	29.823	30.923	30.125	28.245	437.117	36.426	48.300	28.245				
	1000 cu. m.	2.585	3.366	3.124	4.254	4.079	3.421	3.123	2.473	1.271	1.545	1.456	1.752	32.449	2.704	4.254					
	1000 cu. m.	7.877	7.844	8.147	10.109	13.551	8.313	7.580	7.061	6.586	6.976	6.895	6.850	97.789	8.149	13.551					
	1000 cu. m.		1.617	2.803	3.638	7.059	5.785	2.443	1.930	3.822	3.803	2.593	2.748	38.239	3.187	7.059					
(ame	1000 cu. m.	56.130	56.105	56.086	68.060	83.092	63.113	61.306	58.497	51.848	53.885	48.714	45.486	702.322	58.527	83.092	45.486	Ī	Ì		
	1000 cu. m.	1.811	2.004	1.809	2.269	2.680	2.104	1.978	1.887	1.728	1.738	1.624	1.277		1.924	2.680					
TOTAL FLOW MONTH PEAK	1000 cu. m.	2.517	2.646	2.353	4.080	3.623	2.583	4.439	2.453	1.867	2.554	2.052	1.467			4.439	Ţ				
I ACOON EL OW DATA																				Ī	I
W DAIA																					
ASS	1000 cu. m.		Ť	0.09768	Ť			╡				╡	┦	0.098	0.008	0.098	Ţ				
SEPIAGE TOTAL FLOW	1000 cu. m.			0.098										0.098	0000	0.098					
	1000 00			0000										0000	60000	0000]
RAW SEWAGE CHEMICAL																					
AMMONIA NITROGEN	l/gm	24	20	25	30	17	20	21	22	23	33	40	37		26	40	17				
BOD5	l/gm	199	225	203	510	103	120	92	1 09	71	161	253	108		179	510	71		-		
TKN	l/gm	35	30	40	48	23	26	27	27	27	38	47	42		34.1	47.6	23.3				
Hd		7.55	7.69	7.68	7.57	7.91	7.64	7.64	7.78	7.85	7.63	7.78	7.76	-	7.71	7.91	7.55				
TOTAL P	l/gm	6.7	6.1	6.6	10.7	3.4	3.5	3.5	3.7	3.4	5.5	7.6	4.3		5.4	10.7	3.4				
SS	mg/l	382	250	268	360	119	128	122	128	89	222	423	121		218	423	89				
ALKALINITY	mg/l	342	315	353	390	295	310	314	320	310	338	375	368		336	390	295				
FINAL EFFLUENI CHEMIC																				,	
AMMONIA NITROGEN	mg/l	0.097	1.903	0.330	0.144	0.081	0.080	0.061	0.085	0.071	0.136	0.117	0.482		0.299	1.903	0.061	1.0	3.0	2.0	5.0
AMMONIA NITROGEN	kg/day	0.18	3.81	0.60	0.33	0.22	0.17	0.12	0.16	0.12	0.24	0.16	0.71		0.58	3.81	0.12	2.35	7.04	4.69	11.74
UN-IONIZED AMMONIA	mg/l	0.0009	0.0101	0.0026	0.0016	0.0008	0.0010	0.0008	0.0011	0.0007	0.0010	0.0007	0.0029		0.0020	0.0101	0.0007		1		
CBOD5	mg/l	5	2	N	2	N	N	7	0	N	0	5	5		0	N	2	5.0	5.0	10.0	10.0
CBODS	kg/day	3.62	4.01	3.62	4.54	6.03	4.21	3.96	3.77	3.46	3.48	2.74	2.93		3.89	6.03	2.74	11.74	11.74	23.47	23.47
	mg/I	0.5	2.5	0.9	0.7	0.6	0.6	0.4	9.0	0.8	0.7	0.7	0.9		0.8	2.5	0.4			L 0	L 0 0 0
		90.7	46. /	1.52	1.61	704	qq:/	7.92	7 00	7 80	7 04	7 05	92.7		7 0.4	7.04	92.7	5.0-0-2 2.0-0-2	5.0 0.5	C.E - U.O	5.0 0.5
	1/2000	0.050	1.00	20.1	0010	10. C	0440	0.00	96.1 96.1	0000	0.035	0.054	2200		10.0	0110	1.00	0.6 - 0.0	0.0	0.0 - 0.0	C 0 - 0.0
TOTAL P	ka/dav	0.00	0.11	0.12	0.24	0.22	0.23	0.10	0.07	0.06	90.0	0.07	0.10		0.12	0.24	0.06	0.47	0.47	0.70	0.70
SS	l/am	4.8	5.0	5.3	5.4	2.5	3.0	2.2	2.0	1.6	2.5	3.0	4.4		e	5	2	5.0	5.0	10.0	10.0
SS	kg/day	8.69	10.02	9.50	12.25	6.70	6.31	4.35	3.77	2.77	4.35	4.11	6.46		6.68	12.25	2.77	11.74	11.74	23.47	23.47
ALKALINITY	mg/l	188	193	175	196	205	178	160	173	146	140	168	170		174	205	140				
NITRITE	mg/l	0.011	0.033	0.020	0.014	0.014	0.010	0.012	0.011	0.010	0.010	0.012	0.011		0.014	0.033	0.010				
NITRATE	mg/l	7.8	5.2	6.5	5.9	5.7	7.3	8.2	7.4	8.9	7.3	6.8	7.5		7.0	8.9	5.2				
TEMPERATURE	°	10.3	8.9	9.1	10.2	12.5	15.9	18.9	19.6	20.0	17.6	14.1	12.0		14.1	20.0	8.9				
DISSOLVED OXYGEN	mg/l																				
ENAL EEEI LIENE (BACTEBIOL OGICAL)																					
									3		!	!	0					001	100	100	100
E COLI.	# / 100ml	39	06	10	10	10	10	10	10	10	17	17	29		22	06	10	100	100	100	100
EINAL EFELLIENT EL OW																					
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M	1000 cu. m.	1.232	1.402	1.320	1.469	1.734	1.314	1.253	1.105	1.060	1.057	1.016	0.907	0001-04	1.239	107:00	20.110				
MONTH MAX DAY FLOW	1000 cu. m.	1.779	1.816	1.569	2.401	2.165	1.532	4.103	1.734	1.182	1.465	1.222	1.087	<u> </u>		4.103					
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CHATHAM-KENT PUC

Ridgetown Wastewater Treatment Plant Operational Data Yearly Summary

2019

YEAR:

DESCRIPTION

Works # 120002996

MONTH JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER

Summer MOE Objective LOW HIGH AVERAGE

TOTAL

Compliance Winter Non-

Compliance Summer Non-

Objective Winter MOE

Description Constration	RAW SEWAGE FLOW DATA																		
1 1	PARSHALL FLUME 1000 cu.			56.086	68.060	83.092	63.113	61.306	58.497	51.848	53.885		45.486314	702.322	58.527	83.092	45.486		
1 1																			
1 1	AERATION																		
1 1		.a/L																	
1 200	MLVSS MLVSS	l/bu																	
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%4.60 26.201 36.426 36.426 36.426 36.426 36.426 36.426 36.426 36.426 36.426 36.426 36.426 36.426 36.426 36.426 36.426 36.426 36.426 36.426 36.126 </td <td></td>																			
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Distribute International 44.90 41.30 <td>S</td> <td></td> <td></td> <td>744</td> <td>720</td> <td>744</td> <td>720</td> <td>744</td> <td>744</td> <td>720</td> <td>744</td> <td>720</td> <td>744</td> <td>8760</td> <td>730</td> <td>744</td> <td>672</td> <td></td> <td></td>	S			744	720	744	720	744	744	720	744	720	744	8760	730	744	672		
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1000000000000000000000000000000000000	RETURN ACTIVATED SLUDGE																		
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1000 cu m 1.767 1.502 1.502 1.501	WASTE ACTIVATED SLUDGE FLOW																		
ONAL Image: constrained of the constrained of th	OTAL FLOW 1000 cu	E		1 5.85	1 533	1 586	1 537	1 600	3.328	1 811	2 576	2 22R	1 927	23.010	1 917	3 3 2 8	1 532		
OW DATA OW DATA OW DATA CUM DATA <t< th=""><th></th><th></th><th></th><th>000</th><th>0001</th><th>2007-</th><th>201</th><th>200</th><th>0400</th><th>2</th><th>222</th><th></th><th>140</th><th>0</th><th></th><th>21</th><th>400-1</th><th></th><th></th></t<>				000	0001	2007-	201	200	0400	2	222		140	0		21	400-1		
Move 5.27 4.79 5.736 6.44 7.199 6.739 6.579 6.431 7.199 6.051 7.2810 6.051 7.2810 6.051 7.2810 6.051 2.201 2.101 2.804 2.414 2.101 2.804 2.416 2.804 7.7810 2.804 2.711 2.804 2.814 2.814 2.814 2.814 2.814 2.814 2.814 2.814 2.814 2.814 2.814 2.814 2.814 2.814 2.814 <th< td=""><td>FILTER REJECT FLOW DATA</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	FILTER REJECT FLOW DATA																		
MOVAL MOVAL <t< td=""><td></td><td></td><td></td><td>5.755</td><td>8 434</td><td>7 199</td><td>5 759</td><td>6 201</td><td>6.255</td><td>5.488</td><td>5.688</td><td>5.973</td><td>6.051</td><td>72.810</td><td>6.068</td><td>8 434</td><td>4.737</td><td></td><td></td></t<>				5.755	8 434	7 199	5 759	6 201	6.255	5.488	5.688	5.973	6.051	72.810	6.068	8 434	4.737		
MOVAL MOVAL <th< td=""><td></td><td></td><td></td><td></td><td>0</td><td></td><td></td><td></td><td>0</td><td>0</td><td></td><td>0</td><td></td><td>0</td><td>0</td><td></td><td>0</td><td>-</td><td></td></th<>					0				0	0		0		0	0		0	-	
mg/l 164 135 173 144 96 152 163 167 210 167 210 kg 8165 7142 868 7891 807 994 7801 994 701 994 mg/l mg/l 1 1 1 1 1 1 994 701 994 701 994 mg/l 1 1 1 1 1 1 1 994 701 994 701 994 mg/l 1 <td>PHOSPHORUS REMOVAL</td> <td></td>	PHOSPHORUS REMOVAL																		
Kg 8155 7142 7847 6616 7807 7801 7801 701 8994 701 701 7				173	114	98	152	177	132	153	210	192	180		157	210	98		
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$				7847	6616	6968	7891	8407	7660	7907	8994	7860	6970	92416	7701	8994	6616		
mgL mgL <td></td>																			
mgl mgl old old <td>OH ADJUSTMENT</td> <td></td>	OH ADJUSTMENT																		
kg j		'g/L																	
AL EFLUENT DATA (N-HOUSE) mg/L 0.05 0.04 0.05 0.05 0.05 0.05 0.05 0.06 0.06 0.05 0.06 0.06 0.06 0.06 0.06 0.05 0.06 0.06 0.05 0.06 0.06 0.05 0.06 0.06 0.05 0.06 0.06 0.06 0.06 0.05 0.06		kg																	
AL EFLUENT DATA (IN-HOUSE) AL EFLUENT DATA (IN-HOUSE) Image: Constrained by a constra																			
CTIVE P mg/L 0.05 0.04 0.06 0.06 0.05 0.05 0.05 0.06 0.05 0.06 0.05 0.06 0.05 0.06 0.05 0.06 0.05 0.06 0.05 0.06 0.05 0.06 0.05 0.05 0.06 0.05 0.05 0.06 0.05 0.05 0.06 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.06 0.05	FINAL EFFLUENT DATA (IN-HOUSE)																		
MONA NITR OGEN mg/L 0.13 0.33 0.36 0.16 0.30 0.31 0.30 0 0 1.30				0.04	0.06	0.06	0.08	0.05	0.05	0.05	0.05	0.04	0.05		0.05	0.08	0.04		
mg/L I	MONIA NITROGEN			0.60	0.16	0.08	0.11	0.10	0.08	0.08	0.10	0.13	0.30		0.26	1.30	0.08		
Larterly) 3 m3 118372.4 137252.1 104890.4 mpL 2.0 2.1 2.0 1.9 mpL 5.0 3.6 1.9 1.9 Days 90 91 92 1.9		ig/L																	
attenty material 118372.4 13725.1 104890.4 3 mgL 2.0 2.1 2.0 mgL 5.0 3.6 1.9 Days 90 91 92																			
3 m3 118372.4 13752.1 104800.4 m0L 2.0 2.1 2.0 2.0 mgL 5.0 3.6 1.9 2.0 b3rs 90 91 92 92	-	-		Ē															
mg/L 2.0 2.1 2.0 2.1 2.0 1.2 <th1.2< th=""> <th1.2< td="" th2<=""><td></td><td>m3</td><td>118372.4</td><td></td><td>1</td><td>3/252.1</td><td></td><td>Ť</td><td>04890.4</td><td></td><td>دں ا</td><td>913/3.0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th1.2<></th1.2<>		m3	118372.4		1	3/252.1		Ť	04890.4		دں ا	913/3.0							
mgL 5.0 3.0 3.0 1.3 1.3 Days 90 91 92 9		1g/L	Z.U			7.1			2.0			Z-0							
Days 90 91 91 92 92		lg/L	5.0			3.6			1.9			3.3							
		Jays	6			91			92			92							

EDERAL (QUARTERIY)					
inal Flow Qtr. m3	m3	118372.4	137252.1	104890.4	91373.0
:BOD Qtr. mg/L	mg/L	2.0	2.1	2.0	2.0
S Otr. mg/L	mg/L	5.0	3.6	1.9	3.3
umber of Days	Days	06	16	92	92

FEDERAL WSER Acute Lethality Average Daily Volume Effluent (m³): 1238

APPENDIX B

Calibration Reports for the Reporting Period



AS FOUND CERTIFICATION

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

CLIENT DET	AIL				EQUIPMENT DETA	IL.
CUSTOMER	CK-South Area - F	lidgetown		[MUT] MANUFACTURER	Siemer	ıs
CONTACT	Larry Garside			MODEL	Multiranger 20)0
	Chief Operator			CONVERTER SERIAL NUMBER	PBD/X508062	1
	c: 519-358-6661					
				PLANT ID	Ridgetown WWT	P
				METER ID Plant Inf	luent Raw Sewage Flo	
				FIT ID	N/	
				CLIENT TAG	N/	
				OTHER	N/	
VER. BY - FM	Paris Machuk				26.751 W081 54.29	
Quality Man	agement Standards	Information			201101 14001 04.20	7
Reference er	quipment and instru	mentation used	to	VERIFICATION DATE	March 25, 201	0
conduct this	verification test is f	ound in our AC-	6	CAL, FREQUENCY	Annua	-
	ent at the time this			CAL, DUE DATE	March, 202	
				OAL, DOE DATE	Warch, 202	0
	NG PARAMETERS				TOTALIZE	R
THROAT DIM		inches	12	AS FOUND	737821.56 M	3
EMPTY DISTA	NCE	m	0.972	AS LEFT	738144.38 M	3
MAX. HEAD		m	0.745	DIFFERENCE	322.82 M	3
DEAD ZONE		m	0.227		TEST CRITERI	A
BLANKING DI	STANCE	m	0.305	AS FOUND CERTIFICATION TE		
MAX. FLOW		LPS	441.4	ALLOWABLE [%] ERROR	1	
F.S. RANGE -	O/P	LPS	441.4		1	0
				C	OMPONENTS TESTE	D
				CONVERTER DISPLAY	ye	s
				mA OUTPUT	ye	s
				TOTALIZER	ve	
				ACCURACY BASED ON [% o.r.]	N	
Illtraconic Son	cor is not installed hi	ah anavah ta sus.	an full anoth flaur and shitten a			

Ultrasonic Sensor is not installed high enough, to ensure full scale flow conditions

AS FOUND TEST RESULTS 4.7 13.5 38.8 71.9 85.1 % F.S. Range 0.100 0.200 0.400 0.600 0.670 m **REF. FLOW RATE** 20.77 59.65 171.30 317.51 375.58 LPS MUT [Reading] 22.33 62.42 176.30 318.30 377.90 LPS MUT [Difference] 1.56 2.77 5.00 0.79 2.32 LPS MUT [% Error] 7.52 4.65 2.92 0.25 0.62 % mA OUTPUT 4.753 6.162 10.209 15.509 17.614 mΑ MUT [Reading] min. 4.000 mΑ 4.802 6.487 10.384 15.525 17.696 mΑ MUT [Difference] max. 20.000 0.049 0.325 mΑ 0.175 0.016 0.082 mΑ MUT [% Error] 0.25 1.62 0.87 0.08 0.41 % TOTALIZER - REF. FLOW RATE 375.579 LPS TOTALIZER [MUT] 52.43 М3 TEST TIME 152.50 SECONDS CALC. TOTALIZER 57.276 М3 ERROR -9.24 %

COMMENTS	QUALITY MANAGEM	ENT STANDARD	S INFO.	RES	ULTS	
	[QMS] INFORMATION [REFERENCE] LEVEL	IDENT. Sim. BOARD	ID # n/a	TEST	AVG %FS	PASS FAIL
Note: the full scale level exceeds the max level with regards to blanking - the maximum level with this setup would be 0.672 m. Being that SCADA reads 441 I/s when 20 mA applied gives a level of 0.745 m.	PROCESS METER STOP WATCH	PM SW	11 n/a	DISPLAY mA OUTPUT TOTALIZER	2.11 0.65 -9.24	PASS PASS 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.



AS FOUND CERTIFICATION

	FL	.OWMET	RIX		PASS
CLIENT DETA	AL				EQUIPMENT DETAIL
CUSTOMER	CK-South Area - Ri	dgetown		[MUT] MANUFACTURER	Milltronics
CONTACT	Larry Garside			MODEL	OCM-III
	Chief Operator c: 519-358-6661			CONVERTER SERIAL NUMBER	PBD/X0280019
				PLANT ID	Ridgetown WWTP
				METER ID	Effluent Flow
				FIT ID	N/A
				CLIENT TAG	N/A
				OTHER	N/A
VER. BY - FM	Paris Machuk / Ben	don Jacksic		GPS COORDINATES	N/A
Reference ec conduct this	agement Standards quipment and instru verification test is fo ent at the time this t	mentation used ound in our AC-	to	VERIFICATION DATE CAL. FREQUENCY CAL. DUE DATE	March 27, 2019 Annual March, 2020
PROGRAMM	NG PARAMETERS				TOTALIZER
THROAT WID		m	1.5	AS FOUND	86666798 USGAL
EMPTY DISTA	NCE, TX to notch	m	0.489	AS LEFT	86678346 USGAL
	R (TX), to sump flc	m	n/a	DIFFERENCE	11548 USGAL
SUMP LEVEL,	, zero flow	m	n/a		TEST CRITERIA
				AS FOUND CERTIFICATION TEST	Yes
MAX. HEAD		m	0.152	ALLOWABLE [%] ERROR	5
BLANKING DI	STANCE	m	0.250		
DEAD ZONE		m	0.337	CON	PONENTS TESTED
MAX, FLOW		USGPM	2600.2	CONVERTER DISPLAY	yes
F.S. RANGE -	O/P	USGPM	2589.0	mA OUTPUT	yes
				TOTALIZER	yes
				ACCURACY BASED ON [% o.r.]	no
Ultrasonic sens	sor installed to ensure	full scale flow co	ndition	ERROR DOCUMENTED IN THIS RE	EPORT; BASED ON % F.S.

AS FOUND TEST RESULTS

				0.0	18.9	53.4	70.2	88.4	% F.S. Range
				0.000	0.050	0.100	0.120	0.140	<u>_</u>
REF. FLOW RATE				0.0	488.6	1382.0	1816.7	2289.4	USGPM
MUT [Reading]			- 1	0.1	572.6	1447.7	1911.9	2376.0	USGPM
MUT [Difference]				0.1	83.9	65.6	95.2	86.7	USGPM
MUT [% Error]				0.0	3.2	2.5	3.7	3.3	%
mA OUTPUT			T	4.000	7.020	12,541	15.227	18.148	mA
MUT [Reading]	min.	4.000	mA	4.011	7.555	12.999	15.794	18,706	mA
MUT [Difference]	max.	20.000	mA	0.011	0.535	0.458	0.567	0.558	mA
MUT [% Error]				0.06	2.68	2.29	2.83	2.79	%
TOTALIZER - REF. FI	OW RAT	E .						2289.361	USGPM
TOTALIZER [MUT]								4489	USGAL
TEST TIME								113.06	SECONDS
CALC. TOTALIZER								4313.918	USGAL
ERROR								3.90	%

COMMENTS	QUALITY MANAGEME	ENT STANDARD	S INFO.	RES	ULTS	
	[QMS] INFORMATION	IDENT.	ID #	TEST	AVG	PASS
	[REFERENCE] LEVEL	Sim. BOARD	n/a		%FS	FAIL
Note: setup Flowmetrix equipment to	PROCESS METER	PM	11	DISPLAY	3.19	PASS
simulate customer setup and performed test points.	STOP WATCH	SW	n/a	mA OUTPUT	2.13	PASS
unit responded as expected but over reading but within				TOTALIZER	3.90	PASS
limits.						

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.



CUSTOMER CONTACT	Municipality of Chatham-Kent Larry Garside Chief Operator - Ridgetown 4 Tecumseh St Ridgetown, ON N0P 2C0 C: 519-358-6661 E: larryg@chatham-kent.ca	[MUT] MANUFACTURER MODEL SERIAL NUMBER CLIENT TAG LOCATION OTHER	HACH HQ30D 101100048209 n/a CK Ridgetown STP n/a
VER. BY	Randy Nichol	TOLERANCE [pH]	0.05
Standards, refere used to conduct t	nent Standards Information - ence equipment, and instrumentation his test outlining the lot#, and expiry ur current QMS document.	VERIFICATION DATE CAL. FREQUENCY CAL. DUE DATE	Mar 27, 2019 Annual Mar-2020

AS FOUND

99.8
1009
14.5

AS LEFT

99.9
1009
14.6

COMMENTS

[QMS] INFORMATION

ITEM

<u>ID #</u>

Calibration performed as per manufactuer's recommended procedure. Slope 106

NIST Traceable Buffers were used to confirm the overall accuracy of this instrument. "AS FOUND" readings and "AS FOUND" readings are reported within this report. A temperature device was used to measure and record the buffer temperature to correct for pH values due to the effects related to buffer temperature.



2088 Jetstream Road 1602 Old Wooler Road

London, Ontario N5V 3P6	Wooler, Ontario KOK 3M0	[MUT] AS FOUND [MUT] AS LEFT	n/a PASS
CUSTOMER CONTACT	Municipality of Chatham-Kent Larry Garside Chief Operator - Ridgetown 4 Tecumseh St Ridgetown, ON N0P 2C0 C: 519-358-6661 E: larryg@chatham-kent.ca	[MUT] MANUFACTURER MODEL SERIAL NUMBER CLIENT TAG LOCATION OTHER	HACH 2100N 021200008019 n/a Ridgetown STP n/a
VER. BY	Randy Nichol	TOLERANCE [%]	5.0
Standards, referenc used to conduct this	nt Standards Information - e equipment, and instrumentation test outlining the lot#, and expiry current QMS document.	VERIFICATION DATE CAL. FREQUENCY CAL. DUE DATE	March 27, 2019 Annual Mar 2020

TURBIDITY PRIMARY STANDARDS - Sealed StablCAL Formazin Solution

STANDARD	NIST STD [NTU]			READING NTU	PASS FAIL
STD 1	20	+/-	1.0	18.9	FAIL
STD 2	200	+/-	10.0	185	FAIL
STD 3	1000	+/-	50.0	946	FAIL
STD 4	4000	+/-	200.0	3813	PASS
				3731	FAIL

TURBIDITY PRIMARY STANDARDS - Sealed StablCAL Formazin Solution

STANDARD		NIST STD [NTU]	READING NTU	PASS FAIL
STD 1	20.00	+/-	1.0	20	PASS
STD 2	200	+/-	10.0	202	PASS
STD 3	1000	+/-	50.0	1012	PASS
STD 4	4000	+/-	200.0	4002	PASS
				RESULT	PASS

CALIBRATION NOTE

Manufacturers recommendation for calibration is every 3-months (Quarterly), at minimum.

COMMENTS

[QMS] INFORMATION Sealed StablCAL Formazin IDENTIFICATION AS-2100-N <u>ID #</u> 1

BEFORE CALIBRATION

AFTER CALIBRATION

NIST Traceable Primary Standards were used to confirm the overall accuracy of this instrument. All "BEFORE" and "AFTER" calibration values referenced to the primary standards are indicated within this report.

"If we don't measure it, how do you manage it?"



Eastern Office

1602 Old Wooler Road

Western Office

2088 Jetstream Road

London, Ontario N5V 3P6	Wooler, Ontario KOK 3M0	[MUT] AS FOUND	PASS
		[MUT] AS LEFT	PASS
CUSTOMER CONTACT	Municipality of Chatham-Kent Larry Garside Chief Operator - Ridgetown 4 Tecumseh St. Ridgetown, ON N0P 2C0 C: 519-358-6661 E: larryg@chatham-kent.ca	[MUT] MANUFACTURER MODEL SERIAL NUMBER CLIENT TAG LOCATION OTHER	HACH 2100P 09020C034937 n/a Ridgetown n/a
VER. BY	Randy Nichol	TOLERANCE [%]	5.0
Standards, reference used to conduct this	t Standards Information - e equipment, and instrumentation test outlining the lot#, and expiry current QMS document.	VERIFICATION DATE CAL. FREQUENCY CAL. DUE DATE	March 27, 2019 Annual March-2020

TURBIDITY PRIMARY STANDARDS - Sealed StablCAL Formazin Solution

STANDARD		NIST STD [NTU	READING NTU	PASS FAIL	
STD 1	20	+/-	1.0	19.2	PASS
STD 2	100	+/-	5.0	96.9	PASS
STD 3	800	+/	40.0	797	PASS
				RESULT	PASS

TURBIDITY PRIMARY STANDARDS - Sealed StablCAL Formazin Solution

STANDARD	NIST STD [NTU]			READING NTU	PASS	AFTER CALIBRATION
VER 1	10.00	+/-	0.50	9.92	PASS	-
STD 2	20	+/-	1.0	19.8	PASS	-
STD 2	100	+/-	5.0	100.0	PASS	
STD 3	800	+/-	40.0	791	PASS	
				RESULT	PASS	-

CALIBRATION NOTE

Manufacturers recommendation for calibration is every 3-months (Quarterly), at minimum.

COMMENTS

[QMS] INFORMATION Sealed StablCAL Formazin

IDENTIFICATION AS-2100-P/Q <u>ID #</u> 1

BEFORE CALIBRATION

NIST Traceable Primary Standards were used to confirm the overall accuracy of this instrument. All "BEFORE" and "AFTER" calibration values referenced to the primary standards are indicated within this report.