

# Deep River Wastewater System

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Waterworks # 120000612

## Annual Report

Prepared For: Town of Deep River

Reporting Period of January 1<sup>st</sup> – December 31<sup>st</sup>, 2019

Issued: Mar 30<sup>th</sup>, 2020

Revision: 0

Operating Authority:



This report has been prepared to meet the requirements set out in the facility Environmental Compliance Approval (ECA) #1655-7P8SPE issued February 26, 2009.

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## Operations and Compliance Reliability Indices

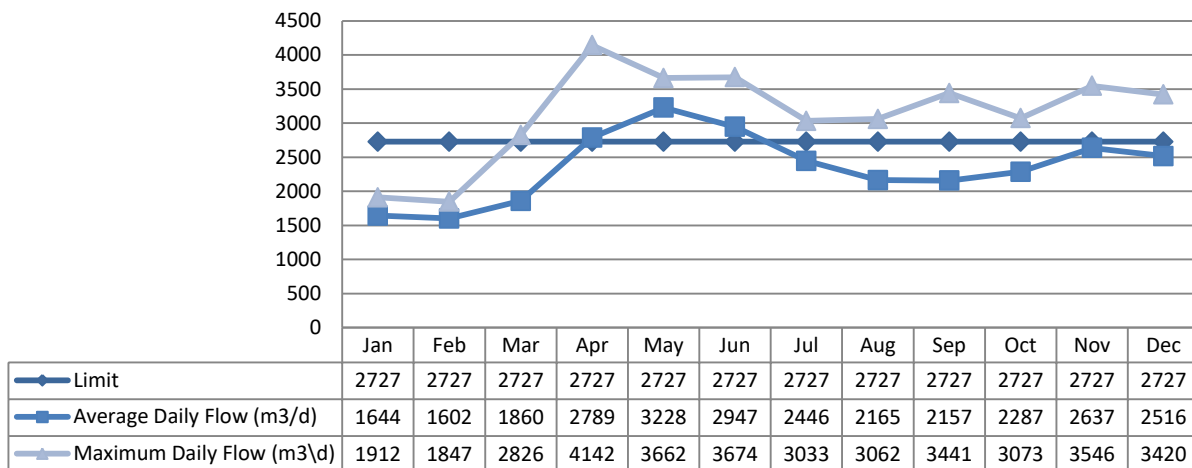
Compliance Event	# of Events
Ministry of the Environment, Conservation and Parks (MECP) Inspections	There were no inspections during this reporting period.
Ministry of Labour Inspections	There were no inspections during this reporting period.
Non-Compliances to MECP/EC	One (1) – by-pass during spring flooding.
Community Complaints	There were no complaints during this reporting period.
Spills	There were no spills reported during this reporting period.
By-Pass/Overflows	One (1) – by-pass during spring flooding.

## Treatment Flows

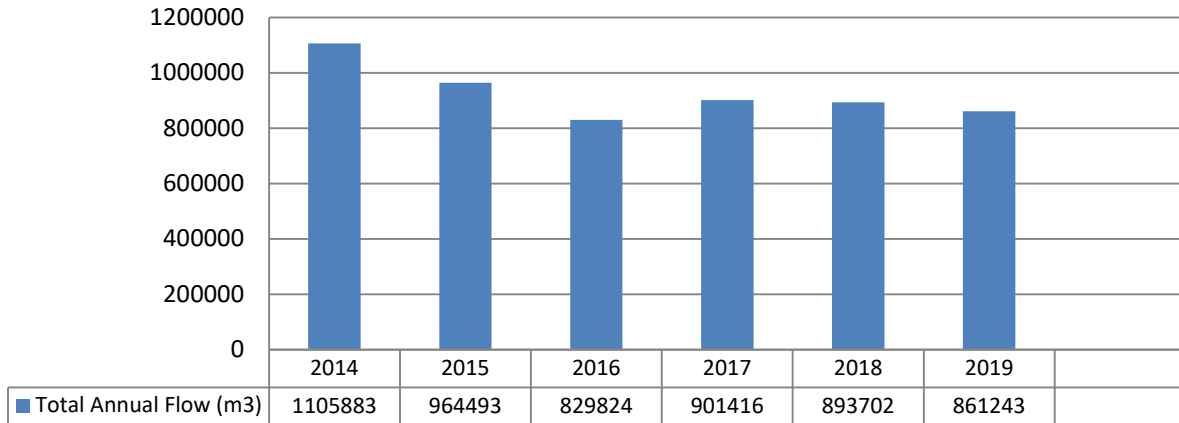
### Flows (m3/d)

In 2019, the average daily raw flow was approx. 86.4% of the current design capacity.

The rated capacity based on the annual average daily raw flow exceeds 80%. Recommendations to reduce this influx to the sewage plant are being addressed by the Town by decreasing the Infiltration & Inflow (I&I) problems throughout the collection system piping and the manhole levels. This will involve a long-term strategy to deal with I&I issues, along with the sub drain to try and deal with the ongoing water table issues that also contribute to I&I problems within the town.



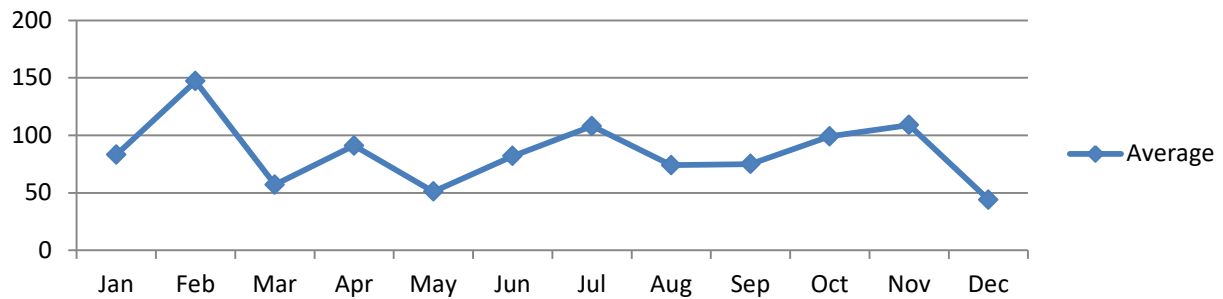
Annual Comparison (m3)



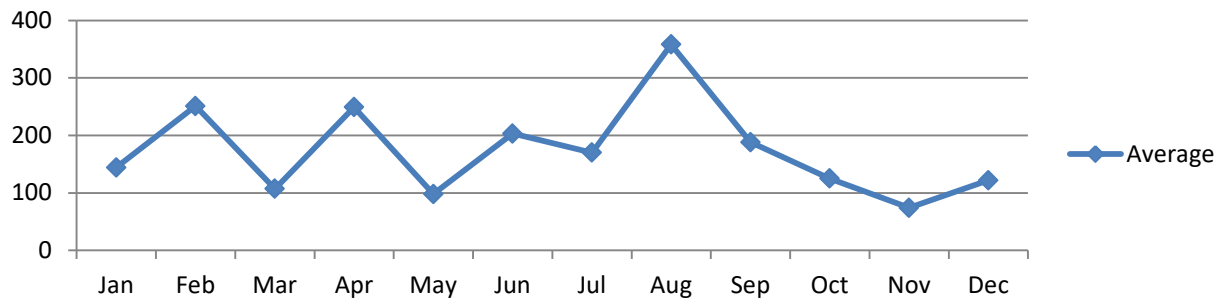
**Raw Sewage Quality**

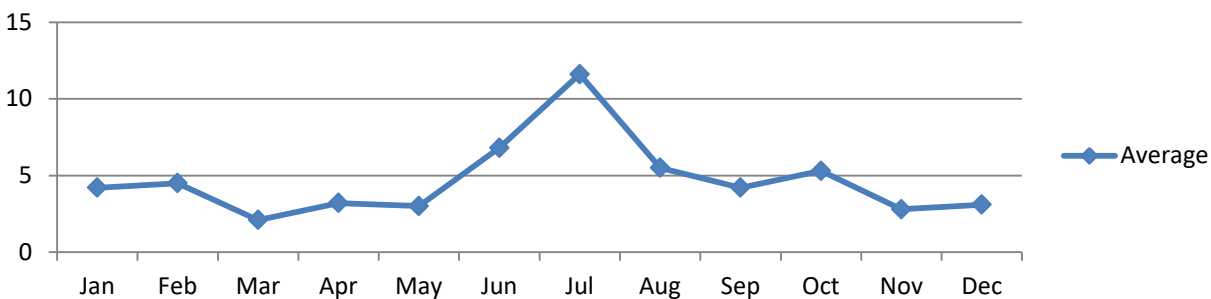
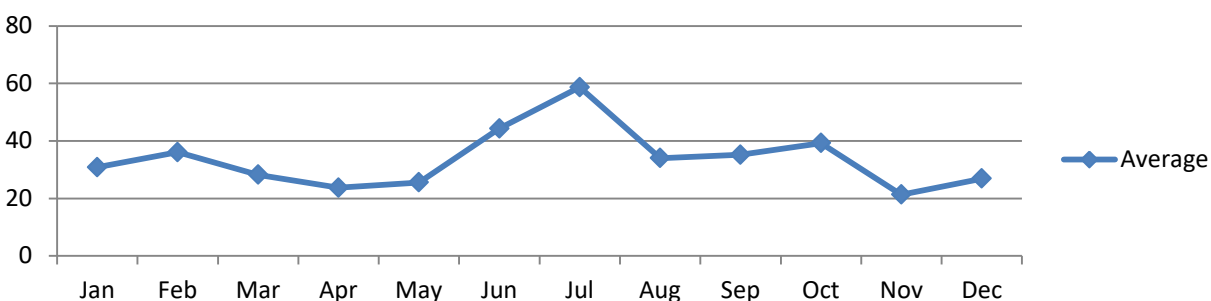
Further details are included in the Performance Report (PAR) in Appendix A.

CBOD5 (mg/L)



Total Suspended Solids (mg/L)



**Total Phosphorus (mg/L)****Total Kjeldahl Nitrogen (mg/L)****Effluent Quality Assurance and Control Measures Taken**

Effluent control measures include in-house sampling and testing for operational parameters such as suspended solids, phosphorus, and dissolved oxygen. In-house testing provides real time results which are then used to enhance process and operational performance. All in-house sampling and analysis are performed by certified operations staff utilizing approved methods and protocols for sampling, analysis and recording as specified in the Ministry's Procedure F-10-1, "Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works", the Ministry's publication, "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater" and the publication, "Standard Methods for the Examination of Water and Wastewater".

All final effluent samples collected during the reporting period to meet ECA sampling requirements were submitted to Eurofins laboratory in Ottawa for analysis. Eurofins is accredited by the Canadian Association for Laboratory Accreditation (CALA), meeting strict provincial guidelines including an extensive quality assurance/quality control program. By choosing this laboratory, the Ontario Clean Water Agency is ensuring appropriate control measures are undertaken during sample analysis. The pH and temperature parameters were analyzed in the field at the time of sample collection by certified operators, to ensure accuracy and precision of the results obtained. The unionized ammonia was calculated using the total ammonia nitrogen concentration, pH and temperature, as required by the facility ECA. The Deep River STP uses AquaTox Testing & Consulting Inc. for the testing of Acute Lethality. It's laboratory in Puslinch, ON is also accredited under CALA.

## Effluent Quality

Further details are included in the Performance Report (PAR) in Appendix A.

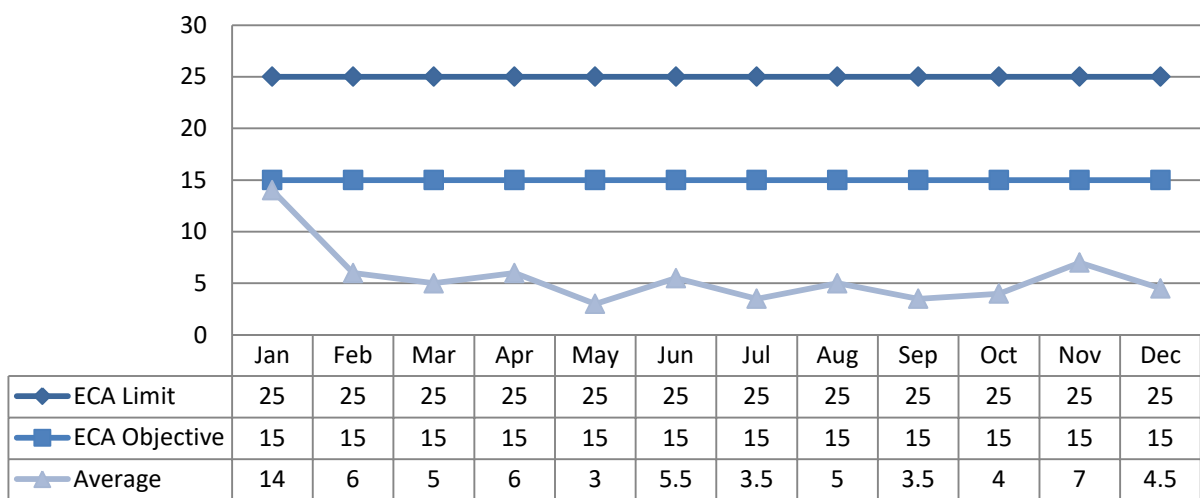
### CBOD5

#### Compliance

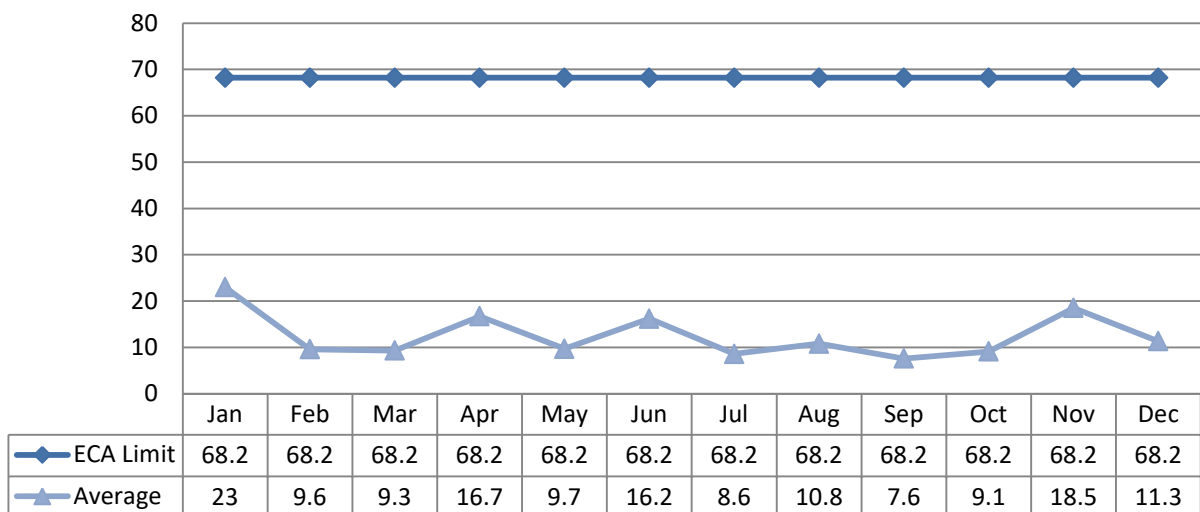
Compliance is based on an Annual Average Concentration and Annual Average Loading.

	Limit	Annual Average	Met Compliance
Concentration	25.0 mg/L	5.6 mg/L	Met
Loading	68.2 kg/d	12.5 kg/d	Met

#### Concentration (mg/L)



#### Loading (kg/d)



## Total Suspended Solids

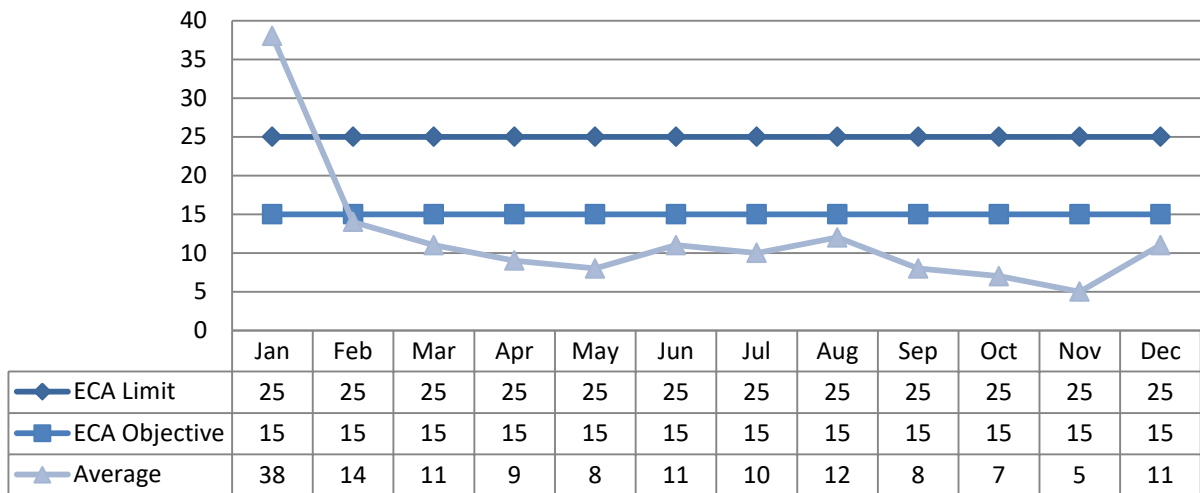
### Compliance

Compliance limit is based on an Annual Average Concentration and Annual Average Loading.

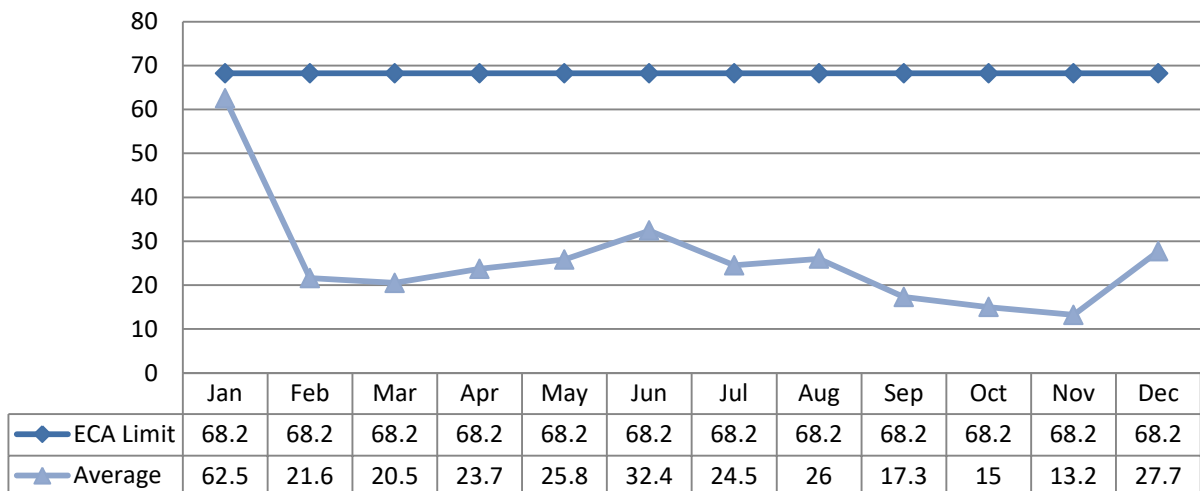
	Limit	Annual Average	Met Compliance
Concentration	25.0 mg/L	11.9 mg/L	Met
Loading	68.2 kg/d	25.8 kg/d	Met

Date	Exceedance of	Limit	Value	Corrective Action
Jan 2019	ECA Objective	15 mg/L	38 mg/L	Checked decanting rates, adjusted settling times, and increased wasting rates gradually.

### Concentration (mg/L)



### Loading (kg/d)





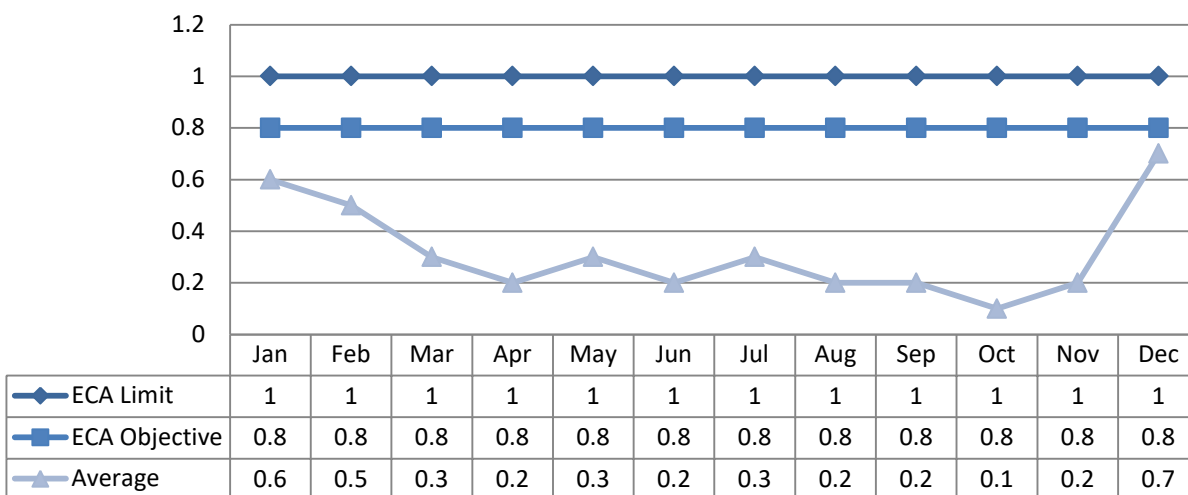
## Total Phosphorus

### Compliance

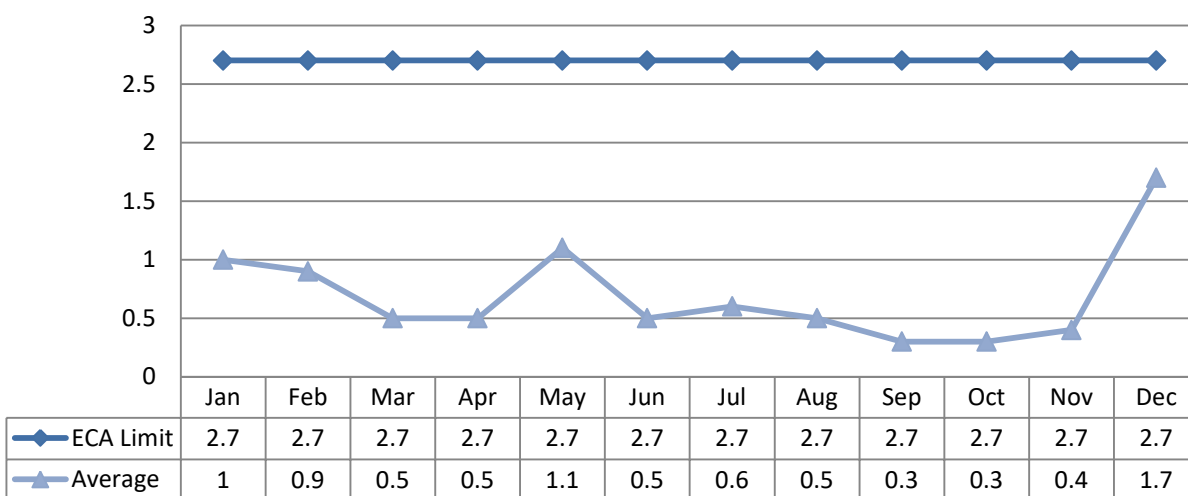
Compliance is based on a Monthly Average Concentration and Monthly Average Loading.

	Limit	Monthly Average	Met Compliance
Concentration	1.0 mg/L	0.3 mg/L	Met
Loading	2.7 kg/d	0.7 kg/d	Met

### Concentration (mg/L)



### Loading (kg/d)



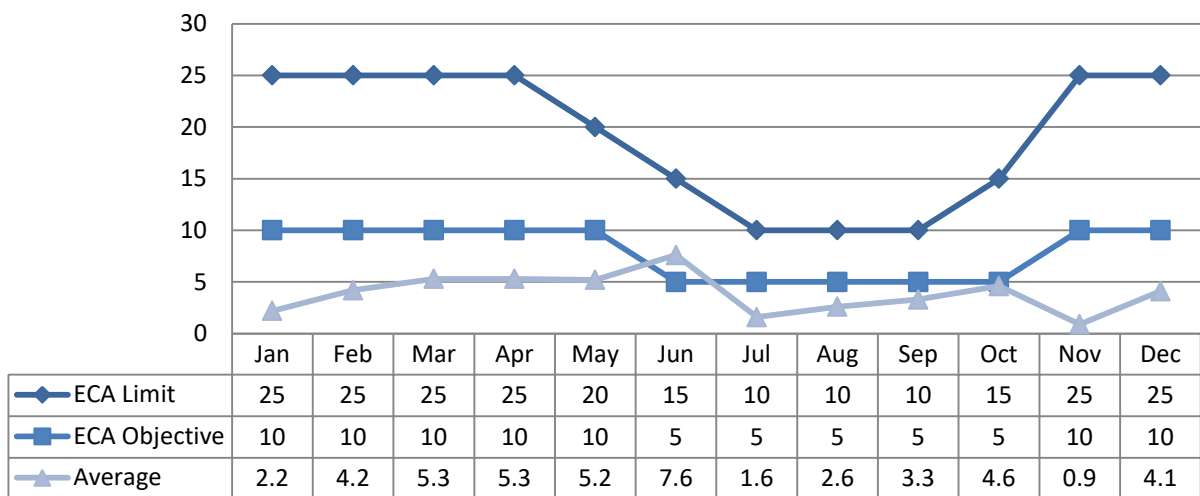
## Total Ammonia Nitrogen

### Compliance

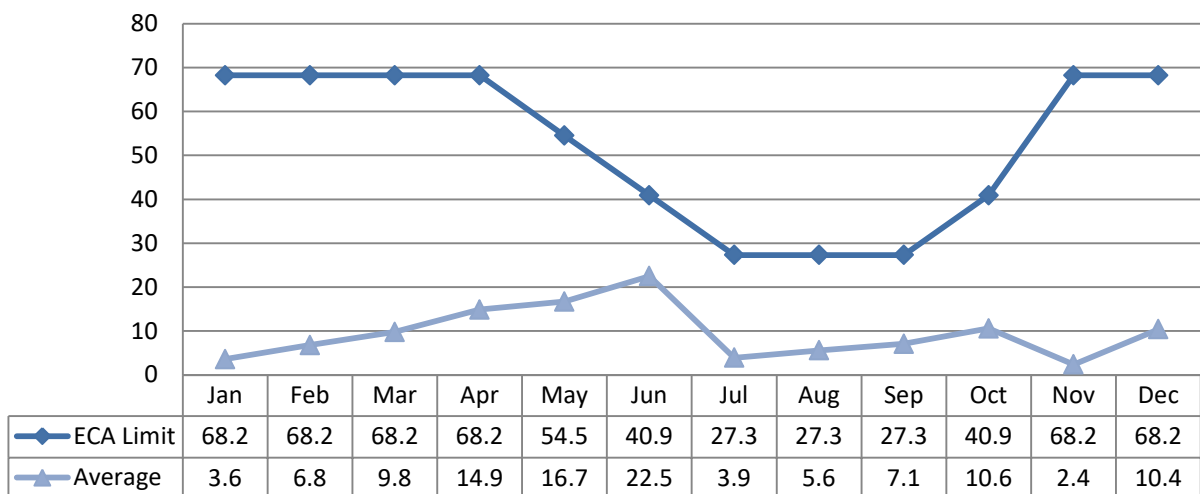
Compliance is based on a various Monthly Average Concentrations and various Monthly Average Loadings.

Date	Exceedance of	Limit	Value	Corrective Action
Jun 2019	ECA Objective	5.0 mg/L	7.6 mg/L	Checked SBR aeration rates, sludge blanket depth, return sludge rates, and monitored DO performance.

### Concentration (mg/L)



### Loading (kg/d)

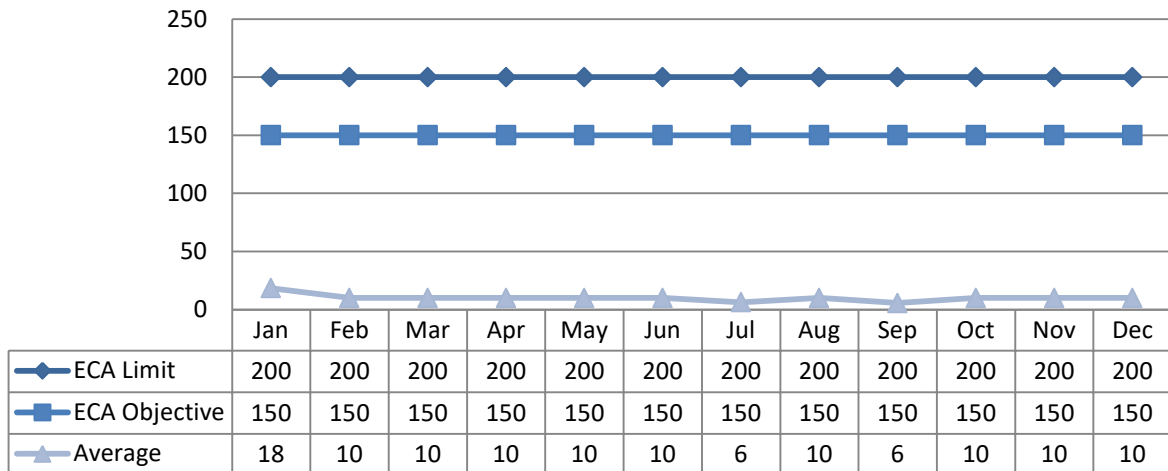


## E-coli

### Compliance

Date	Exceedance of	Limit	Value	Corrective Action
There were no Non-Compliance events during the reporting period.				

### Geometric Mean (cfu/100mL)

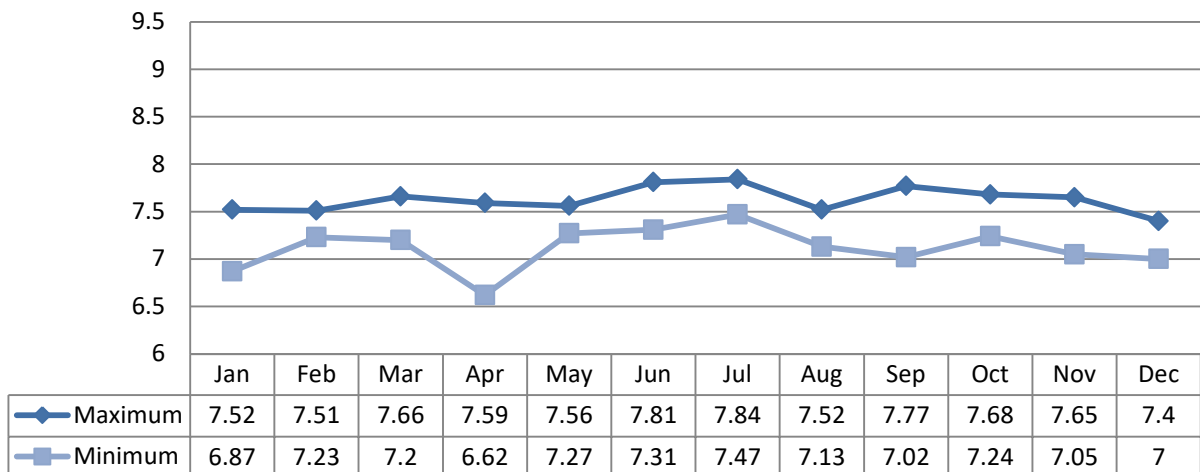


## pH

### Compliance

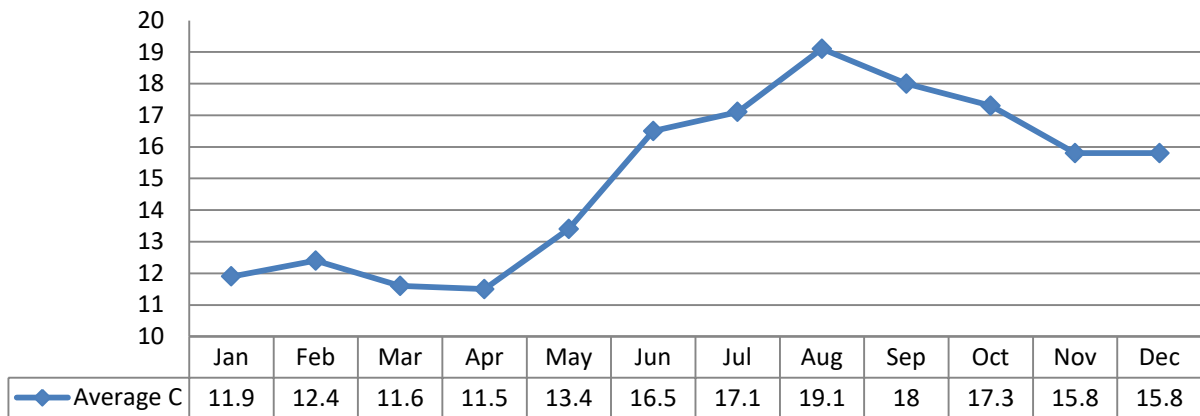
Date	Exceedance of	Limit	Value	Corrective Action
There were no Non-Compliance events during the reporting period.				

pH is to remain in the range of 6.0-9.5. Each instance the pH is outside of that range, it is reported as non-compliant. The objective is 6.5-9.0 inclusively.



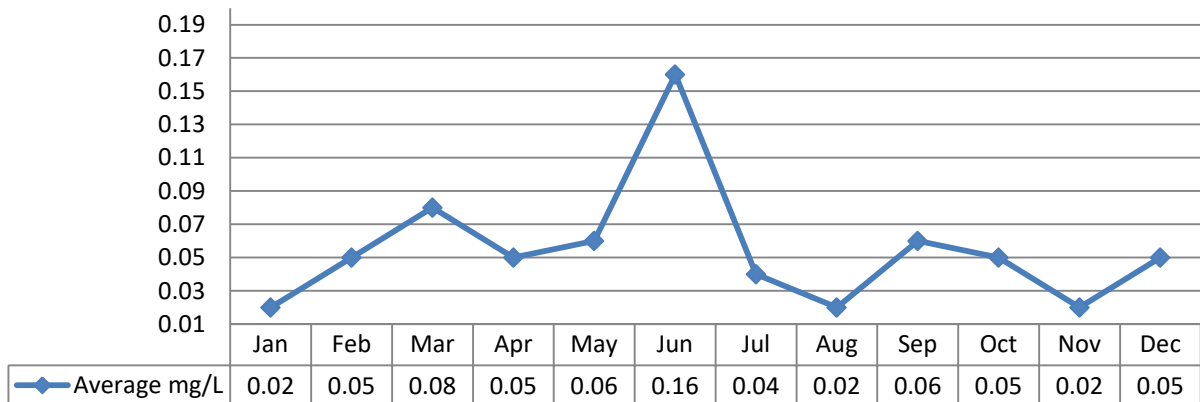
### Temperature

Temperature is required to be tested, but there are no compliance limits for this parameter.



### Un-ionized Ammonia

Un-ionized is required to be tested, but there are no compliance limits for this parameter.



### Acute Lethality

There were two (2) samples collected in 2019 and tested for acute lethality for both Rainbow Trout and Daphnia magna. This sampling is required annually, both provincially and federally. Results are displayed as % mortality. An adverse result is a > 50% mortality rate.

Date	Rainbow Trout	Daphnia Magna
Jul 16, 2019	0	3.3%
Jul 26, 2019	0	0

## Operating Issues

The spring freshet in 2019 caused extensive flooding along the Ottawa River. This event caused the plant to have a process by-pass. As a contingency, OCWA staff acquired, prepared, and tested four standby gas pumps, in the event that the level of the Ottawa River exceeded the level of the discharge pipe at the plant, eliminating the ability for effluent to leave the plant.

## Maintenance

The Deep River STP uses a Workplace Management System (WMS) called Maximo. This is a comprehensive computerized maintenance tracking system. The system creates work orders for scheduled maintenance on an annual, semi-annual, monthly, quarterly and weekly basis. The service work is recorded in the work order history. This ensures routine and preventive maintenance is performed. Emergency and capital repair maintenance is completed and added to the system.

During the 2019 calendar year, a total of 391 Work Orders were completed at the Deep River Sewage Treatment Plant. A breakdown of this total is listed below:

Maintenance Type	# Completed in 2019
Corrective Work Orders	31
Emergency Work Orders	3
Preventative Work Orders	257
Operational Work Orders	68
Capital Work Orders	16
Call Back Work Orders	16

### Major Maintenance Summary (Capital)

WO #	Description
1177794	Purchase of SCADA remote screen.
1178067	Installation of new decant valve.
1257013	Bulbs for plant, wood to build cover for garage floor, replace lab fan belt, hose, replacement valve plug for mixing pump at SBR #1, cap screws for raw sampler, adaptor for water supply for grit pump, module for raw pump, new lights for SBR side of the building, and other miscellaneous hardware.

WO #	Description
1138575	Purchase of seal kits to repair plug valves.
1101961/1138253	Furnace filters, electrical supplies for new SCADA, fittings for new blower #1, hardware supplies, pipes for water at SBR mixers, relay board, heat trace cable, hose for washing machine, electric cable hoist, shop crane and other miscellaneous hardware.
1217584	Silicone for blower repair, plug for digester line, valmatic repair kits, link for UV crane, fittings to thaw IMOFF tank, manufactured SBR decant valve bracket and gaskets, batteries and hooks for sludge judge, belt for exhaust fan, machine keyways in SBR #1 & SBR #2, glycol for sewage raw pump, bearings for hoist assembly, material for SCADA, material to fix switches, CO2 detectors, repair kit for backflow in basement, photocells for LED light in UV room, and other miscellaneous hardware.
1138542/1176521	Replacement of composite raw sewage sampler, due to old age.
1176529	Replacement of grit pump.
1217641/1219962	Replacement of Rotork actuator for SBR #2 decant valve.
1138660	Replacement of mixing pump mechanical seal.

### Calibration Reports

Flow meter calibration reports are included in Appendix B.

### Proposed Alterations, Extensions, or Replacement to Works

In 2019, a new treated water sampler and grit pump were purchased and installed. OCWA has purchased a new rising stem valve for SBR #1 and plan to install it in the spring of 2020, when the SBR tank is drained and cleaned out. OCWA hopes to purchase in 2020, a replacement blower for both the sludge holding tank and an SBR.

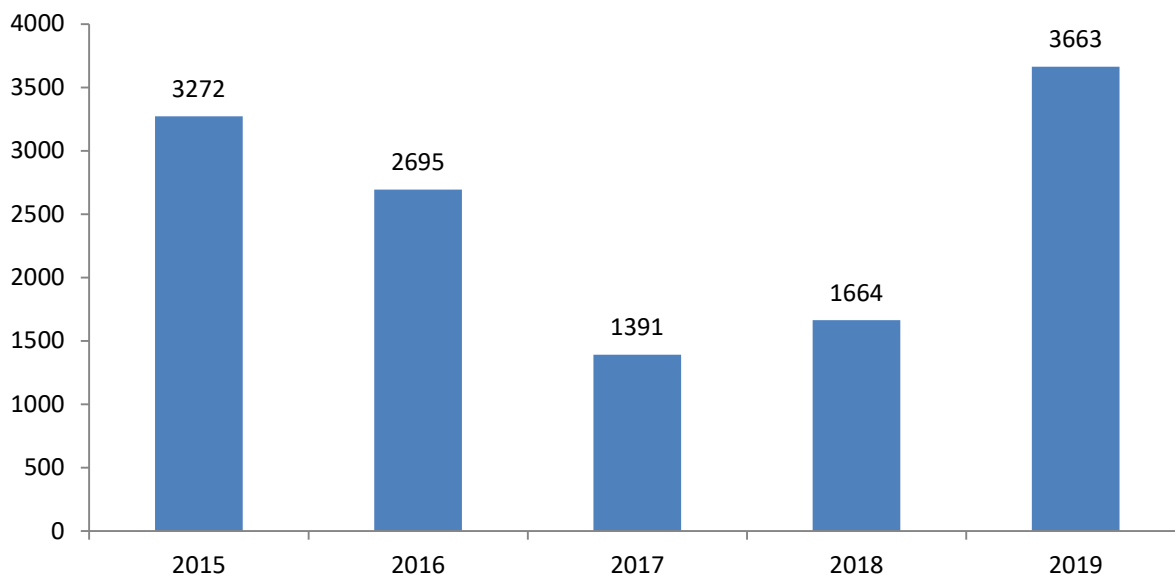
### **Sludge Generation**

Sludge generated from the treatment plant is spread on agricultural land during the spreading season, as per the Nutrient Management Act, O. Reg. 267/03. OCWA contracted the sludge hauling in 2019 to Bio-Ag. All NASM Plans are done under their authority.

### Sludge Disposal Summary

Date	Disposal Location	NASM Approval Number	Total Volume (m3)
Nov 2019/Sep 2019	Yantha – TV Tower Farm	24041	2374
Jul 2019	Tabbert – Biggs Farm	23184	354
Jul 2019	Sunny Hillcrest – Moore Farm	22328	429
Jun 2019	Sunny Hillcrest – Home Farm	22328	506
Total Sludge			3663

### Annual Comparison (m3/year)



It is anticipated that sludge volumes will be similar in the 2020 season, as in 2019.

### Summary of Complaints

Location	Date	Nature of Complaint	Actions Taken
There were no complaints received during this reporting period.			

## Summary of By-Pass, Overflows, Spill or Abnormal Discharge Events

Date/Time	Duration	Cause	Details	Volume (m3)
May 7, 2019 20:45	12.25 h	Flooding in Ottawa River reduced ability for treated effluent to leave the plant	Operators pumped overland treated effluent to the Ottawa River. Due to the high Ottawa River level, effluent could not leave the plant at the required rate. Flow that was pumped was disinfected using Sodium hypochlorite and was pumped from the chlorine contact channel. The majority of the flow left the plant using the primary route, the effluent outfall.	Unknown



# Appendix A

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## Performance Assessment Report (PAR)

Ontario Clean Water Agency  
Performance Assessment Report Wastewater/Lagoon

From: 01/01/2019 to 31/12/2019

Report extracted 02/12/2020 08:21

Facility: [5853] DEEP RIVER WASTEWATER TREATMENT FACILITY

Works: [120000612]

	01/2019	02/2019	03/2019	04/2019	05/2019	06/2019	07/2019	08/2019	09/2019	10/2019	11/2019	12/2019	<-Total-->	<-Avg-->	<-Max-->	<-Criteria-->
<b>Flows:</b>																
Raw Flow: Total - Raw Sewage (m³)	50968.81	44846.67	57662.25	83665.91	100060.16	88395.96	75823.77	67108.26	64716.08	70899.42	79109.70	77985.88	861242.87			
Raw Flow: Avg - Raw Sewage (m³/d)	1644.16	1601.67	1860.07	2788.86	3227.75	2946.53	2445.93	2164.78	2157.20	2287.08	2636.99	2515.67		2356.39		
Raw Flow: Max - Raw Sewage (m³/d)	1911.71	1847.16	2825.85	4141.87	3662.20	3674.27	3033.49	3062.00	3441.10	3073.33	3545.50	3420.37			4141.87	
Eff. Flow: Total - Final Effluent (m³)	50968.81	44846.67	57662.25	83665.91	100060.16	88395.96	75823.77	67108.26	64716.08	70899.42	79109.70	77985.88	861242.87			
Eff. Flow: Avg - Final Effluent (m³/d)	1644.16	1601.67	1860.07	2788.86	3227.75	2946.53	2445.93	2164.78	2157.20	2287.08	2636.99	2515.67		2356.39		2727.0
Eff. Flow: Max - Final Effluent (m³/d)	1911.71	1847.16	2825.85	4141.87	3662.20	3674.27	3033.49	3062.00	3441.10	3073.33	3545.50	3420.37			4141.87	
<b>Carbonaceous Biochemical Oxygen Demand: CBOD:</b>																
Raw: Avg cBOD5 - Raw Sewage (mg/L)	83.000	146.500	56.500	91.000	50.500	81.500	108.000	74.000	75.000	99.000	109.000	44.000		84.833	146.500	
Raw: # of samples of cBOD5 - Raw Sewage (mg/L)	2	2	2	2	2	2	2	2	2	2	2	2	24			
Eff: Avg cBOD5 - Final Effluent (mg/L)	14.000	6.000	< 5.000	6.000	3.000	5.500	3.500	5.000	3.500	4.000	7.000	4.500		< 5.583	14.000	25.0
Eff: # of samples of cBOD5 - Final Effluent (mg/L)	2	2	2	2	2	2	2	2	2	2	2	2	24			
Loading: cBOD5 - Final Effluent (kg/d)	23.018	9.610	< 9.300	16.733	9.683	16.206	8.561	10.824	7.550	9.148	18.459	11.321		< 12.534	23.018	
<b>Biochemical Oxygen Demand: BOD5:</b>																
<b>Total Suspended Solids: TSS:</b>																
Raw: Avg TSS - Raw Sewage (mg/L)	143.500	251.000	106.500	248.500	97.500	202.500	169.500	357.500	187.500	124.500	73.500	122.000		173.667	357.500	
Raw: # of samples of TSS - Raw Sewage (mg/L)	2	2	2	2	2	2	2	2	2	2	2	2	24			
Eff: Avg TSS - Final Effluent (mg/L)	38.000	13.500	11.000	8.500	< 8.000	11.000	10.000	12.000	< 8.000	6.500	5.000	11.000		< 11.875	38.000	25.0
Eff: # of samples of TSS - Final Effluent (mg/L)	2	2	2	2	2	2	2	2	2	2	2	2	24			
Loading: TSS - Final Effluent (kg/d)	62.478	21.623	20.461	23.705	< 25.822	32.412	24.459	25.977	< 17.258	14.866	13.185	27.672		< 25.827	62.478	
Percent Removal: TSS - Raw Sewage (mg/L)	73.519	94.622	89.671	96.579	91.795	94.568	94.100	96.643	95.733	94.779	93.197	90.984			96.643	
<b>Total Phosphorus: TP:</b>																
Raw: Avg TP - Raw Sewage (mg/L)	4.242	4.538	2.130	3.158	2.793	6.797	11.636	5.453	4.165	5.338	2.763	3.098		4.676	11.636	
Raw: # of samples of TP - Raw Sewage (mg/L)	5	4	4	5	4	4	5	4	4	5	4	4	52			
Eff: Avg TP - Final Effluent (mg/L)	0.615	0.538	0.278	0.182	0.345	0.161	0.259	0.231	0.157	0.133	0.151	0.664		0.309	0.664	1.0
Eff: # of samples of TP - Final Effluent (mg/L)	6	4	4	5	4	4	5	4	4	5	4	4	53			
Loading: TP - Final Effluent (kg/d)	1.011	0.861	0.516	0.508	1.114	0.474	0.634	0.500	0.338	0.304	0.398	1.669		0.694	1.669	
Percent Removal: TP - Raw Sewage (mg/L)	85.502	88.154	86.972	94.237	87.637	97.635	97.771	95.763	96.235	97.510	94.534	78.579			97.771	
<b>Nitrogen Series:</b>																
Raw: Avg TKN - Raw Sewage (mg/L)	30.820	36.050	28.225	23.700	25.525	44.325	< 58.640	34.000	35.175	39.260	21.325	26.875		< 33.660	58.640	

Raw: # of samples of TKN - Raw Sewage (mg/L)	5	4	4	5	4	4	5	4	4	5	4	4	52			
Eff: Avg TAN - Final Effluent (mg/L)	2.164	4.223	5.252	5.342	5.175	7.625	1.596	2.570	3.303	4.638	0.901	4.116		3.909	7.625	15.0 - 10.0 - 15.0 - 25.0
Eff: # of samples of TAN - Final Effluent (mg/L)	5	4	4	5	4	4	5	4	4	5	4	4	52			
Loading: TAN - Final Effluent (kg/d)	3.558	6.763	9.770	14.898	16.704	22.467	3.903	5.563	7.124	10.607	2.375	10.354		9.507	22.467	
Disinfection:																
Eff: GMD E. Coli - Final Effluent (cfu/100mL)	18.384	10.000	10.000	10.000	10.000	10.000	6.310	10.000	5.623	10.000	10.000	10.000		10.026	18.384	200.0
Eff: # of samples of E. Coli - Final Effluent (cfu/100mL)	5	4	4	5	4	4	5	4	4	5	4	4	52			

# Appendix B

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## Calibration Reports

*Deep River WWT*



**INSTRUMENTATION LIMITED**

P.O. Box 337 P: 905-888-0063 F: 905-888-6381  
 14 Gormley Industrial Ave. Unit #5  
 Gormley, Ontario L0H-1G0 Canada  
 E-Mail: [sales@aciltld.ca](mailto:sales@aciltld.ca) Website: [WWW.ACILTLD.CA](http://WWW.ACILTLD.CA)

## FIELD SERVICE REPORT

Quote Date: October 30, 2019

PAGES: 2

*ACI Instrumentation Limited is pleased to provide you with our field service report for you as follows:*

<b>Site Location / Date:</b>	<b>ON Site- Krohne Magnetic Flow Meters 2019 VERIFICATION</b>
------------------------------	---

<b>Customer:</b>	<b>Stephen Bird</b> Ontario Clean Water Agency 177 River Road Deep River Ontario. K0J 1P0	<b>Telephone: 613-584-3141</b>  <b>E-Mail Address: <a href="mailto:sbird@OCWA.com">sbird@OCWA.com</a></b>
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Further to our site visit on October 18, 2019, we are pleased to confirm the Krohne Magnetic flowmeters all PASSED Verification using the Krohne MagCheck and GS8B simulator. The meters / converters settings as found and left after the verification process:

**Size: 8 inch**  
**Converter Model # IFC010**

**Size: 8 inch**  
**Converter Model # IFC010**

**Size: 8 inch**  
**Converter Model # IFC010**

**IFC010 - Settings as follows:**

**IFC010 - Settings as follows:**

**IFC010 - Settings as follows:**

**SIZE: 8 inch (200 mm)**

**SIZE: 8 inch (200 mm)**

**SIZE: 8 inch (200 mm)**

**GK: 9.089**

**GK: 9.346**

**GK: 9.275**

**FIELD FREQUENCY: 1/6**

**FIELD FREQUENCY: 1/6**

**FIELD FREQUENCY: 1/6**

**Current Output: 4 - 20mA**

**Current Output: 4 - 20mA**

**Current Output: 4 - 20mA**

**MEASUREMENT: VOLUME FLOW**

**MEASUREMENT: VOLUME FLOW**

**MEASUREMENT: VOLUME FLOW**

**RANGE: 0 to 92.58 l/sec**

**RANGE: 0 to 333.3 m3/hr**

**RANGE: 0 to 333.3 m3/hr**

**Time Constant: 5 sec**

**Time Constant: 3 sec**

**Time Constant: 3 sec**

**Counter:**

**Counter:**

**Counter:**

**Counter: ON**

**Counter: ON**

**Counter: ON**

**Measurement: Volume**

**Measurement: Volume**

**Measurement: Volume**

**Volume: m3**

**Volume: m3**

**Volume: m3**

Device identification: DR WAS  
Medium: WAS  
Converter type: IFC010  
Number: 00069498  
Order number:

Full scale range: 60 l/s  
Current output: 4 - 20  
Frequency output: 0-1000 Hz  
Diameter: 80 mm / 3 inch  
PC: 2.5  
Field frequency: 1/6  
Empty pipe: No

**Field current**

Nullvalue: 133.237 mA Lower limit: 132.837 mA (-0.3%) Upper limit: 133.637 mA (+0.3%)  
18-10-2019: 133.202 mA (-0.03%)

**Field frequency**

Nullvalue: 9.167 Hz Lower limit: 7.792 Hz (-15%) Upper limit: 10.542 Hz (+15%)  
18-10-2019: 10.001 Hz (-8.34%)

**ADC 25%**

Nullvalue: 25 % Lower limit: 24.9 % (-0.4%) Upper limit: 25.1 % (+0.4%)  
18-10-2019: 24.967 % (-0.14%)

**ADC 50%**

Nullvalue: 50 % Lower limit: 49.8 % (-0.4%) Upper limit: 50.2 % (+0.4%)  
18-10-2019: 49.959 % (-0.09%)

**ADC 75%**

Nullvalue: 75 % Lower limit: 74.7 % (-0.4%) Upper limit: 75.3 % (+0.4%)  
18-10-2019: 74.96 % (-0.06%)

**ADC 100%**

Nullvalue: 100 % Lower limit: 99.6 % (-0.4%) Upper limit: 100.4 % (+0.4%)  
18-10-2019: 99.935 % (-0.07%)

**Current output 4mA**

Nullvalue: 4 mA Lower limit: 3.968 mA (-0.3% - 0.02 mA) Upper limit: 4.032 mA (+0.3% + 0.02 mA)  
18-10-2019: 3.998 mA (-0.05%)

**Current output 20mA**

Nullvalue: 20 mA Lower limit: 19.92 mA (-0.3% - 0.02 mA) Upper limit: 20.08 mA (+0.3% + 0.02 mA)  
18-10-2019: 19.989 mA (-0.06%)

**Pulse output**

Nullvalue: 500 Hz Lower limit: 499 Hz (-0.2%) Upper limit: 501 Hz (+0.2%)  
18-10-2019: 499.969 Hz (-0.01%)

**Coil resistance**

Lower limit: 30 Ohm Upper limit: 250 Ohm  
18-10-2019: 102.85 Ohm

**Resistance electrode 1 with filled pipe**

Lower limit: 0.15 kOhm Upper limit: 250 kOhm  
18-10-2019: 4.066 kOhm

**Resistance electrode 1 with empty pipe**

18-10-2019: Not measured

**Resistance electrode 2 with filled pipe**

Lower limit: 0.15 kOhm Upper limit: 250 kOhm  
18-10-2019: 4.426 kOhm

**Resistance electrode 2 with empty pipe**

18-10-2019: Not measured

**Isolation**

Lower limit: 2 MOhm  
18-10-2019: 21 MOhm

**Tag # Raw Sewage**

**Size: 10-inch**

**Converter Model # IFC100W**

**IFC100 - Settings as follows:**

**SIZE: 10-inch (250 mm)**

**GK: 4.372**

**FIELD FREQUENCY: 1/6**

**Current Output: 4 - 20mA**

**MEASUREMENT: VOLUME FLOW**

**RANGE: 0 to 175 l/sec**

**Time Constant: 3 sec**

**Counter:**

**Counter: OFF**

**Measurement: Volume**

**Volume: m3**

**Tag # WAS**

**Size: 3 inch**

**Converter Model # IFC010**

**IFC010 - Settings as follows:**

**SIZE: 3 inch (80 mm)**

**GK: 2.5**

**FIELD FREQUENCY: 1/6**

**Current Output: 4 - 20mA**

**MEASUREMENT: VOLUME FLOW**

**RANGE: 0 to 60 l/sec**

**Time Constant: 3 sec**

**Counter:**

**Counter: OFF**

**Measurement: Volume**

**Volume: m3**

**Site Visit Notes:**

- All remaining configuration parameters at Krohne factory defaults.
- Hooked up MAGCHECK Verificator during site visit at each IFC010 converter and initiated the verification procedure. See attached PDF certificates and Trend reports. ALL Meters / Converters PASSED verification.
- Hooked up GS8B simulator during site visit at the IFC100W converter on the 250mm Raw Sewage flowmeter. Simulated flows and documented results of flow rate indications at converter display.

**Note: See copies of GS8B simulation report attached for the Raw Sewage Flow Meter.**

**Should additional Information be required, please feel free to contact us.**

**Best regards,**

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**Angelo Valente**  
**ACI Instrumentation Limited**

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**ACI Instrumentation Limited**

**F.O.B. Gormley, Ontario; Freight and Taxes extra; Terms Net 30 Days.**

**This quotation is subject to ACI Instrumentation Limited standard terms and conditions of sale; prices valid for 30 days, E. & O.E.**

# GS 8 B On-Site Verification Record

## GS 8 B STANDARD SETTINGS

This spreadsheet is protected, thus entry is only allowed in the drop-down boxes & bright green cells. To use this calculator, you will only need to input the requested information in the bright green cells from your data tags. The Converter type, engineering units, diameter and frequency have drop down boxes, allowing the user to simply choose from the list. This spreadsheet will automatically choose inch or metric (depending upon the converter), and state which GK(L) to use. Printing of the programming results is allowed by simply choosing "Print" through your File menu.

**Important:** If there is a flowrate value present at the zero setting, you must compensate to obtain proper evaluation values. You can zero your converter, but this might mean that you would have to redo a zero calibration once you reconnect with your primary head. If you are unable to redo a zero calibration after reconnecting, then you should use the offset-compensated tables on the second sheet of this spreadsheet (Calculator + Zero Compensation).

Date Recorded: October 18, 2019

Serial #: S16319115

Tag #: Raw Sewage

Flow Tube Model #: IFC300F

Commission #:

Tested by: Angelo Valente

$$X = \frac{Q_{100\%} \cdot K \cdot F}{GK(L) \cdot DN^2} = \frac{1462053.283}{273250} = 5.351$$

$$Y_{MAX} = \frac{Q_{100\%} \cdot K \cdot F}{GK(L) \cdot DN^2} = 5.0$$

Max Knob Setting = D

Output Current = 18.952 mA

Output Frequency = 934.473 Hz

Calibrated Flowrate = 163.533 liters/sec

INPUT VARIABLES		DATA INPUT AREAS (in green)
Converter	=	IFC 100
Q Fullscale	=	175 liters/sec
Select Meter Dia.	=	inch mm
DN	=	10 250
Diameter	=	250 mm
I <sub>0%</sub>	=	10.0 inch (ref only)
I <sub>100%</sub>	=	4 mA
P <sub>100%</sub> (Hz)	=	20 mA
GK	=	1000 Hz
GKL	=	4.3720 <use GK(L)
K	=	Value automatically chosen from K value table

GS 8 B Knob Setting	Current Output (mA)	Frequency Output (Hz)	Calculated Flowrate (liters/sec)	Observed Flowrate (liters/sec)	Deviation
0	4.00	0.00	0.00	0.000	
A	5.50	93.45	16.35	16.330	-0.14%
B	6.99	186.89	32.71	32.680	-0.08%
C	9.98	373.79	65.41	65.400	-0.02%
D	18.95	934.47	163.53	163.530	0.01%
E					

Version: Rev 1.3.2-USA