

Municipality Of Huron East 2013 Operations Report Seaforth Wastewater Facilities Reporting Period Jan-Dec 2013

1. Introduction

The treatment system consists of a mechanical extended aeration plant and three lagoon cells that operate as a 'Sutton System'. Wastewater flows from the Town of Seaforth wastewater collection system are directed by gravity flow to the Seaforth Pump Station located on Oak Street. Flows from this pump station are directed via force main to the treatment works. The Certificate of Approval was updated in October 2003 to permit the installation of a direct discharge line to the disinfection chamber, bypassing the lagoon system. This bypass line was to avoid instances of the production of hydrogen sulfide gas and elevated suspended solids in the lagoons during the winter months. The plant is normally operated in the 'the direct discharge mode' where flows from the mechanical plant are routed directly to the UV disinfection chamber and then to the outfall. During certain high flow conditions, excess flows from the treatment plant, are routed to lagoon cells #2 and #3. Lagoon cell #1 is used for the storage of waste activated sludge from the treatment plant. The final effluent is treated by UV disinfection before discharging to the Crozier Drain and then to the Bayfield River which is approximately 1.5 kms away.

Following is a list the facilities main treatment components.

- An inlet works consisting of a centrifuge grit removal system and a grit comminutor
- Two aeration tanks equipped with two surface aerators per tank.
- Two secondary clarifiers
- A return sludge pump station.
- Three facultative lagoon cells.
- An UV system rated for a total flow of 2,400 m³/day
- A weir and ultrasonic flow measurement device in the outlet channel.
- An alum storage tank and two metering pumps.

The sewage works, including the Oak Street pump station, are owned by the Corporation of the Municipality of Huron East and operated by CH2MHill . The waste water collection System is both owned and operated by the municipality of Huron East.

2. Regulatory Issues

CH2MHILL has made every effort during the reporting period to operate this wastewater system in accordance with applicable laws, certificates and regulations. To the best of our knowledge, the following report truthfully and accurately reflects any and all matters of non-compliance regarding the ownership and operation of the wastewater treatment plant during the reporting period.

During this period, the plant was operated in full compliance with applicable laws, regulations and the WWTP'S Certificate of Approval, save and except the following:

X	None during this period
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Or

Requirement	Date of Failure	Measures to Correct the Failure

3. Compliance with Quality/Quantity Criteria

Month	Average Volume/Day m ³ /d	Plant Utilization (based on Avg. Day)	Max Volume/Day m ³ /d
Jan	2081	109%	2387
Feb	2173	114%	2470
Mar	2490	131%	3443
April	3168	166%	3511
May	2663	140%	3489
June	2232	117%	2690
July	2147	113%	2594
Aug	1741	91%	2450
Sept	1576	82%	2213
Oct	2225	117%	3092
Nov	3797	199%	5118
Dec	3179	167%	4853
Plant Average Day Design Capacity is 1900 m ³ /d			

4. Quality Assurance/Quality Control

- Maxxam Analytics Inc. conducts the required physical, chemical and biological testing of influent and effluent from each WWTP.

5. Maintenance Summary

Seaforth Pump Station

- Install new low level alarm float
- Replace U joint on drive shaft # 1 pump
- BGL Contracting installed two new flow meters

Seaforth WPCP

- Muffin Monster install new starter switch
- Installed 24 new UV bulbs
- Working on skirting for Aerators(on going)
- Drain, clean, inspect East Aeration tank
- Install new blades North East Aerator
- Re-installed South East Aerator

General

- Maintained Aerators, return pumps and sewage pumps.
- Yearly inspections and test run all diesel generators monthly.
- Maintained all chemical pumps and injection systems.

6. Environmental/Operating Problems

- There were no unusual environmental/operating problems during 2013

7. Proposed Alterations, Extensions or Replacements

- None during this period

8. Calibration Procedures

- Flow meters were calibrated in 2013

9. Health & Safety Items

- Lifting equipment, Fire extinguishers, Gas monitors Monthly/Yearly inspections. Weekly Safety meeting along with Quarterly walk through completed for 2013

10. Status of Capital Projects

None during this period

11. Other Items

None

2013

MONTH: Jan

Seaforth S.T.P.
 Operating Number 110001177
 Operating Authority: CH2MHILL
 Municipality of Huron East

YEAR 2013

ANALYST Maxxam

Test # Date	MLSS		RAW INFLUENT					FINAL EFFLUENT							
	East Aeration S.S.	West Aeration S.S.	BOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 2-Jan	2936	3209	30	23	14.0	1.2	330	5.0	10.0	0.14	250	6.10	72	7.82	10.06
2 7-Jan	3103	3100	530	270	31.0	3.1	310	4.0	10.0	0.10	240	1.60	51	7.51	9.19
3 14-Jan	3331	3456	190	83	11.0	1.2	270	6.0	9.0	0.12	160	1.00	4	7.97	10.89
4 21-Jan	3223	3388	140	100	26.0	2.6	350	6.0	13.0	0.10	190	0.72	1	8.06	11.69
5 28-Jan	2803	3155	150	130	23.0	2.7	340	5.0	11.0	0.11	230	0.74	1	7.76	10.60
6															
Number of tests			5	5	5	5	5	5	5	5	5	5	5	5	5
Monthly Averages mg/l			208	121	21.0	2.2	320	5.2	10.6	0.11	214	2.03	7	7.82	10.49
Monthly Averages kg/d								1.1	2.2	0.02		0.422			
Monthly Objectives								10.0/19	10.0/19	0.8/1.5		2.0/3.8	0		
Limits mg/l/kg/d								15.0/28.5	15.0/28.5	1.0/1.9		4.0/7.6	150		

Comments: See C of A for singal cell concentration, pH is to be maintained in the range of 6.5 to 9.5 inclusive at all times
 Hydrogen Sulfide (if odour is present) weelky grab

2013

MONTH: Feb

Seaforth S.T.P.
 Operating Number 110001177
 Operating Authority: CH2MHILL
 Municipality of Huron East

YEAR 2013

ANALYST Maxxam

Test # Date	MLSS		RAW INFLUENT					FINAL EFFLUENT							
	East Aeration S.S.	West Aeration S.S.	BOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 4-Feb	3038	2957	130	79	15.0	1.6	330	4.0	4.0	0.10	230	1.60	19	8.05	10.02
2 11-Feb	2927	3106	58	100	23.0	2.7	340	2.0	5.0	0.10	230	1.30	1	7.81	11.99
3 19-Feb	2726	2805	41	110	14.0	1.7	230	3.0	5.0	0.09	250	1.50	1	7.78	10.2
4 23-Feb	2412	2460	130	120	26.0	3.0	360	2.0	1.0	0.02	1	0.05	2	7.76	12.9
5															
6															
Number of tests			4	4	4	4	4	4	4	4	4	4	4	4	4
Monthly Averages mg/l			90	102	19.5	2.3	315	2.8	3.8	0.08	178	1.11	2	7.85	11.27
Monthly Averages kg/d								0.6	0.8	0.02		0.241			
Monthly Objectives								10.0/19	10.0/19	0.8/1.5		2.0/3.8	0		
Monthly Limits mg/l/kg/d								15.0/28.5	15.0/28.5	1.0/1.9		4.0/7.6	150		

Comments: See C of A for sigal cell concentration, pH is to be maintained in the range of 6.5 to 9.5 inclusive at all times
 Hydrogen Sulfide (if odour is present) weelky grab

2013

Seaforth S.T.P.
 Operating Number 110001177
 Operating Authority: CH2MHILL
 Municipality of Huron East

MONTH: Mar

YEAR 2013

ANALYST Maxxam

Test # Date	MLSS		RAW INFLUENT					FINAL EFFLUENT							
	East Aeration S.S.	West Aeration S.S.	BOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 4-Mar	2943	2943	92	94	23.0	2.7	340	3.0	5.0	0.06	260	2.10	1	7.68	12.44
2 11-Mar	2116	1611	40	51	9.0	1.2	280	6.0	9.0	0.10	270	1.60	1	7.91	9.9
3 18-Mar	2737	2901	140	99	20.0	3.2	320	10.0	15.0	0.09	250	1.30	1	8.07	9.87
4 25-Mar	2858	2917	89	90	28.0	2.6	360	7.0	10.0	0.07	250	1.30	3	7.72	11.30
5															
6 /															
Number of tests			4	4	4	4	4	4	4	4	4	4	4	4	4
Monthly Averages mg/l			90	84	20.0	2.4	325	6.5	9.8	0.08	258	1.58	1	7.85	10.88
Monthly Averages kg/d								1.6	2.4	0.02		0.39			
Monthly Objectives								10.0/19	10.0/19	0.8/1.5		2.0/3.8	0		
Monthly Limits mg/l/kg/d								15.0/28.5	15.0/28.5	1.0/1.9		4.0/7.6	150		

Comments: See C of A for singal cell concentration, pH is to be maintained in the range of 6.5 to 9.5 inclusive at all times
 Hydrogen Sulfide (if odour is present) weelky grab

2013

MONTH: Apr

Seaforth S.T.P.
 Operating Number 110001177
 Operating Authority: CH2MHILL
 Municipality of Huron East

YEAR 2013

ANALYST Maxxam

Test # Date	MLSS		RAW INFLUENT					FINAL EFFLUENT							
	East Aeration S.S.	West Aeration S.S.	BOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 2-Apr	2399	2663	100	83	18.0	1.9	340	5.0	6.0	0.08	240	1.60	1	8.17	10.5
8-Apr	2690	3069	730	390	28.0	3.4	330	4.0	8.0	0.05	240	1.80	1	8.01	9.6
3 15-Apr	2854	2648	350	120	15.0	1.2	230	4.0	16.0	0.10	240	1.50	1	8.11	9.8
4 22-Apr	2905	2791	73	65	12.0	0.6	330	5.0	9.0	0.06	220	1.20	1	8.09	9.72
5 29-Apr	3256	2829	110	99	19.0	2.0	330	3.0	8.0	0.06	220	0.74	10	8	8
6 /															
Number of tests			5	5	5	5	5	5	5	5	5	5	5	5	5
Monthly Averages mg/l			273	151	18.4	1.8	312	4.2	9.4	0.1	232	1.37	2	8.08	9.52
Monthly Averages kg/d								13.3	29.7	0.14		1.861			
Monthly Objectives								10.0/19	10.0/19	0.8/1.5		2.0/3.8	0		
Monthly Limits mg/l/kg/d								15.0/28.5	15.0/28.5	1.0/1.9		4.0/7.6	150		

Comments: See C of A for singal cell concentration, pH is to be maintained in the range of 6.5 to 9.5 inclusive at all times

Hydrogen Sulfide (if odour is present) weelky grab

2013

Seaforth S.T.P.
 Operating Number 110001177
 Operating Authority: CH2MHILL
 Municipality of Huron East

MONTH: May

YEAR 2013

ANALYST Maxxam

Test # Date	MLSS		RAW INFLUENT					FINAL EFFLUENT							
	East Aeration S.S.	West Aeration S.S.	BOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 6-May	3627	3342	120	160	40.0	3.7	350	2.0	2.0	0.05	200	0.88	1	7.94	5.4
2 13-May	2781	2921	110	120	35.0	3.1	360	2.0	1.0	0.02	180	0.92	1	7.60	7.3
3 21-May	2846	3090	78	110	30.0	3.1	360	2.0	1.0	0.04	150	0.34	1	7.70	6.7
4 27-May	3319	3247	110	130	35.0	3.8	360	2.0	3.0	0.07	250	0.15	120	8.03	8.7
5															
/															
Number of tests			4	4	4	4	4	4	4	4	4	4	4	4	4
Monthly Averages mg/l			105	130	35.0	3.4	358	2.0	1.8	0.04	195	0.57	3	7.82	7.03
Monthly Averages kg/d								5.3	4.8	0.11		1.517			
Monthly Objectives								10.0/19	10.0/19	0.8/1.5		2.0/3.8	0		
Monthly Limits mg/l/kg/d								15.0/28.5	15.0/28.5	1.0/1.9		4.0/7.6	150		

Comments: See C of A for singal cell concentration, pH is to be maintained in the range of 6.5 to 9.5 inclusive at all times
 Hydrogen Sulfide (if odour is present) weelky grab

2013

Seaforth S.T.P.
 Operating Number 110001177
 Operating Authority: CH2MHILL
 Municipality of Huron East

MONTH: Jun

YEAR 2013

ANALYST Maxxam

Test # Date	MLSS		RAW INFLUENT					FINAL EFFLUENT							
	East Aeration S.S.	West Aeration S.S.	BOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 3-Jun	2796	2575	200	140	22.0	2.1	340	2.0	5.0	0.09	260	0.28	90	7.86	7.2
2 10-Jun	3113	3289	800	800	28.0	3.4	260	2.0	3.0	0.06	260	0.35	4	7.92	7.4
3 17-Jun	3045	2837	590	250	19.0	1.7	250	2.0	4.0	0.05	250	0.11	85	7.76	7.68
4 24-Jun	3496	3372	340	110	30.0	2.8	360	3.0	7.0	0.11	240	0.14	560	7.8	6.42
5															
Number of tests			4	4	4	4	4	4	4	4	4	4	4	4	4
Monthly Averages mg/l			483	325	24.8	2.5	303	2.3	4.8	0.08	253	0.22	64	7.84	7.17
Monthly Averages kg/d								5.1	10.7	0.18		0.49			
Monthly Objectives								10.0/19	10.0/19	0.8/1.5		2.0/3.8	0		
Monthly Limits mg/l/kg/d								15.0/28.5	15.0/28.5	1.0/1.9		4.0/7.6	150		

Comments: See C of A for singal cell concentration, pH is to be maintained in the range of 6.5 to 9.5 inclusive at all times
 Hydrogen Sulfide (if odour is present) weelky grab

2013

Seaforth S.T.P.
 Operating Number 110001177
 Operating Authority: CH2MHILL
 Municipality of Huron East

MONTH: Jul

YEAR 2013

ANALYST Maxxam

Test # Date	MLSS		RAW INFLUENT					FINAL EFFLUENT							
	East Aeration S.S.	West Aeration S.S.	BOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 2-Jul	3014	3094	75	86	15.0	2.2	370	3.0	4.0	0.10	230	0.08	1600	7.99	7.6
2 8-Jul	2983	2720	36	69	13.0	1.8	360	2.0	4.0	0.40	230	0.05	960	7.89	6.7
3 15-Jul	2877	2643	84	100	21.0	2.6	370	2.0	5.0	0.72	230	0.09	4600	7.89	7.0
4 22-Jul	2654	2771	60	110	31.0	2.9	370	2.0	3.0	0.75	230	0.10	14	8.06	9.1
5 24-Jul													4		
5 25-Jul													3		
6 29-Jul	1989	1900	42	61	23.0	2.5	360	4.0	4.0	0.88	210	0.12	1	8.01	8.6
6 30-Jul													2		
7 31-Jul													1		
Number of tests			5	5	5	5	5	5	5	5	5	5	9	5	5
Monthly Averages mg/l			64	91	20.0	2.4	368	2.6	4.0	0.57	230	0.09	24	7.96	7.59
Monthly Averages kg/d								5.6	8.6	1.22		0.19			
Monthly Objectives								10.0/19	10.0/19	0.8/1.5		2.0/3.8	0		
Monthly Limits mg/l/kg/d								15.0/28.5	15.0/28.5	1.0/1.9		4.0/7.6	150		

Comments: See C of A for singal cell concentration, pH is to be maintained in the range of 6.5 to 9.5 inclusive at all times

Hydrogen Sulfide (if odour is present) weelky grab

2013

MONTH: Aug

Seaforth S.T.P.
 Operating Number 110001177
 Operating Authority: CH2MHILL
 Municipality of Huron East

YEAR 2013

ANALYST Maxxam

Test # Date	MLSS		RAW INFLUENT					FINAL EFFLUENT							
	East Aeration S.S.	West Aeration S.S.	BOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 6-Aug	0	2272	150	180	29.0	3.8	370	2.0	3.0	0.59	240	0.05	1	8.02	9.58
2 12-Aug	1028	1240	70	96	28.0	2.7	350	2.0	4.0	0.66	240	0.11	1	7.99	8.60
3 19-Aug	1850	1805	260	350	27.0	3.7	390	5.0	12.0	0.30	250	0.20	210	7.95	7.89
4 26-Aug	2101	2027	150	250	42.0	5.0	400	2.0	4.0	0.14	180	0.18	19	8.03	5.8
5															
6 /															
Number of tests			4	4	4	4	4	4	4	4	4	4	4	4	4
Monthly Averages mg/l			158	219	31.5	3.8	378	2.8	5.8	0.42	228	0.14	8	8.00	7.97
Monthly Averages kg/d								4.9	10.1	0.73		0.24			
Monthly Objectives								10.0/19	10.0/19	0.8/1.5		2.0/3.8	0		
Monthly Limits mg/l/kg/d								15.0/28.5	15.0/28.5	1.0/1.9		4.0/7.6	150		

Comments: See C of A for singal cell concentration, pH is to be maintained in the range of 6.5 to 9.5 inclusive at all times
 Hydrogen Sulfide (if odour is present) weelky grab

2013

Seaforth S.T.P.
 Operating Number 110001177
 Operating Authority: CH2MHILL
 Municipality of Huron East

MONTH: Sep

YEAR 2013

ANALYST Maxxam

Test # Date	MLSS		RAW INFLUENT					FINAL EFFLUENT							
	East Aeration S.S.	West Aeration S.S.	BOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 3-Sep	2656	2535	120	130	32.0	3.1	350	2.0	2.0	0.12	240	0.20	3	7.90	7.07
2 9-Sep	2826	2578	88	73	29.0	3.1	370	2.0	2.0	0.10	240	0.15	2	7.86	8.3
3 16-Sep	2748	2639	170	88	19.0	2.0	330	2.0	3.0	0.11	230	0.05	4	7.71	8.6
4 23-Sep	2468	2232	59	75	30.0	2.1	370	2.0	3.0	0.06	250	0.05	3	7.89	8.68
5 30-Sep	3557	2896	110	140	38.0	3.5	370	2.0	1.0	0.03	260	0.15	1	7.96	8.41
6															
Number of tests			5	5	5	5	5	5	5	5	5	5	5	5	5
Monthly Averages mg/l			109	101	29.6	2.8	358	2.0	2.2	0.08	244	0.12	2	7.86	8.20
Monthly Averages kg/d								3.2	3.5	0.13		0.19			
Monthly Objectives								10.0/19	10.0/19	0.8/1.5		2.0/3.8	0		
Monthly Limits mg/l/kg/d								15.0/28.5	15.0/28.5	1.0/1.9		4.0/7.6	150		

Comments: See C of A for singal cell concentration, pH is to be maintained in the range of 6.5 to 9.5 inclusive at all times
 Hydrogen Sulfide (if odour is present) weelky grab

2013

MONTH: Oct

Seaforth S.T.P.
 Operating Number 110001177
 Operating Authority: CH2MHILL
 Municipality of Huron East

YEAR 2013

ANALYST Maxxam

Test # Date	MLSS		RAW INFLUENT					FINAL EFFLUENT							
	East Aeration S.S.	West Aeration S.S.	BOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 7-Oct	1955	1688	62	79	13.0	1.1	300	2.0	3.0	0.05	240	0.09	16	7.71	8.29
2 15-Oct	3837	3591	91	110	24.0	2.5	360	2.0	3.0	0.06	230	0.05	4	8.08	10.38
3 21-Oct	1992	2424	120	180	21.0	2.2	380	2.0	3.0	0.07	250	0.18	9	8.05	9.93
4 28-Oct	2105	1842	430	260	8.5	0.8	360	2.0	4.0	0.04	320	0.07	14	8.01	7.77
5															
6 /															
Number of tests			4	4	4	4	4	4	4	4	4	4	4	4	4
Monthly Averages mg/l			176	157	16.6	1.7	350	2.0	3.3	0.05	260	0.10	9	7.96	9.09
Monthly Averages kg/d								4.5	7.3	0.11		0.23			
Monthly Objectives								10.0/19	10.0/19	0.8/1.5		2.0/3.8	0		
Monthly Limits mg/l/kg/d								15.0/28.5	15.0/28.5	1.0/1.9		4.0/7.6	150		

Comments: See C of A for singal cell concentration, pH is to be maintained in the range of 6.5 to 9.5 inclusive at all times
 Hydrogen Sulfide (if odour is present) weelky grab

2013

Seaforth S.T.P.
 Operating Number 110001177
 Operating Authority: CH2MHILL
 Municipality of Huron East

MONTH: Nov

YEAR 2013

ANALYST Maxxam

Test # Date	MLSS		RAW INFLUENT					FINAL EFFLUENT							
	East Aeration S.S.	West Aeration S.S.	BOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 4-Nov	1481	1567	47	63	11.0	0.1	370	2.0	1.0	0.07	230	0.29	22	8.03	11.8
2 12-Nov	1921	1715	72	87	22.0	2.2	370	2.0	2.0	0.05	250	0.30	54	7.94	12.4
3 18-Nov	2075	2234	35	43	7.8	0.9	330	2.0	3.0	0.05	240	0.21	7	7.97	11.11
4 25-Nov	3289	3275	45	82	18.0	2.2	380	2.0	3.0	0.04	280	0.05	14	7.86	13.0
5															
6 /															
Number of tests			4	4	4	4	4	4	4	4	4	4	4	4	4
Monthly Averages mg/l			50	69	14.7	1.3	363	2.0	2.3	0.05	250	0.21	18	7.95	12.08
Monthly Averages kg/d								7.6	8.7	0.19		0.797			
Monthly Objectives								10.0/19	10.0/19	0.8/1.5		2.0/3.8	0		
Monthly Limits mg/l/kg/d								15.0/28.5	15.0/28.5	1.0/1.9		4.0/7.6	150		

Comments: See C of A for singal cell concentration, pH is to be maintained in the range of 6.5 to 9.5 inclusive at all times
 Hydrogen Sulfide (if odour is present) weelky grab

2013

Seaforth S.T.P.
 Operating Number 110001177
 Operating Authority: CH2MHILL
 Municipality of Huron East

Dec MONTH: Dec

YEAR 2013

ANALYST Maxxam

Test # Date	MLSS		RAW INFLUENT					FINAL EFFLUENT							
	East Aeration S.S.	West Aeration S.S.	BOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 2-Dec	2839	2748	670	590	24.0	3.0	360	2.0	3.0	0.03	240	0.21	15	8.03	14.32
2 9-Dec	3715	3346	140	120	22.0	2.5	380	2.0	6.0	0.06	300	0.44	70	7.98	14.5
3 16-Dec	3326	3296	100	130	22.0	2.9	370	3.0	4.0	0.03	260	1.70	61	7.88	10.16
4 23-Dec	2979	2755	46	60	13.0	1.6	330	2.0	2.0	0.07	240	1.80	130	7.78	11.4
5 30-Dec	2480	2268	70	76	17.0	1.9	370	2.0	2.0	0.05	230	1.20	10	7.69	13.0
6 /															
Number of tests															
Monthly Averages mg/l			205	195	19.6	2.4	362	2.2	3.4	0.05	254	1.07	38	7.87	12.67
Monthly Averages kg/d								7.0	10.8	0.15		3.4			
Monthly Objectives								10.0/19	10.0/19	0.8/1.5		2.0/3.8	0		
Monthly Limits mg/l/kg/d								15.0/28.5	15.0/28.5	1.0/1.9		4.0/7.6	150		

Comments: See C of A for singal cell concentration, pH is to be maintained in the range of 6.5 to 9.5 inclusive at all times
 Hydrogen Sulfide (if odour is present) weelky grab

2013

BYPASS STP Bypass Events

Seaforth Seaforth Treatment Plant
Operating Number 110001177
Operating Authority: CH2MHILL
Municipality of Huron East

YEAR 2013

ANALYST Maxxam

Date	Time/Volume of Event				Notification		Sampled		Results of Analyst						
	Day Month	Start	Finish	Duration Hrs	Volume M3	Yes	No	Yes	No	BOD5 mg/L	S. S. mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml
1 18-Apr	16:20	18:00	1.66	235	X		X		5.0	10.0	0.08	220	1.40	0	8.13
2 20-May	21:30	22:00	0.50	50	X		X		4.0	10.0	0.07	150	0.31	2	8.11
3 19-Jul	17:15	20:45	3.50	350	X		X		3.0	17.0	1.10	190	0.12	7000	8.27
4															
5															
6															
7															
8															

Comments: Events in 2013

2013

BYPASS SPS Bypass Events

Seaforth Sewage Pump Station
 Operating Number 110001177
 Operating Authority: CH2MHILL
 Municipality of Huron East

YEAR 2013

ANALYST Maxxam

Date	Time/Volume of Event				Notification		Sampled		Results of Analyst							
	Day Month	Start	Finish	Duration Hrs	Volume M3	Yes	No	Yes	No	BOD5 mg/L	S. S. mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH
1 30-Jan	5:45	14:45	6.75	485	x		x			21.0	84.0	0.96	200	1.70	100000	7.71
2 11-Mar	21:30	22:30	1.00	72	x		x			30.0	16.0	0.44	240	0.85	34000	7.49
3 26-Oct	18:40	19:00	0.33	24	x		x			21.0	31.0	0.53	310	0.70	130000	8.03
4 31-Oct	17:00	5:45	12.75	2152	x		x			47.0	33.0	0.50	260	0.66	140000	7.56
5																
6																
7																
8																

Comments: events in 2013

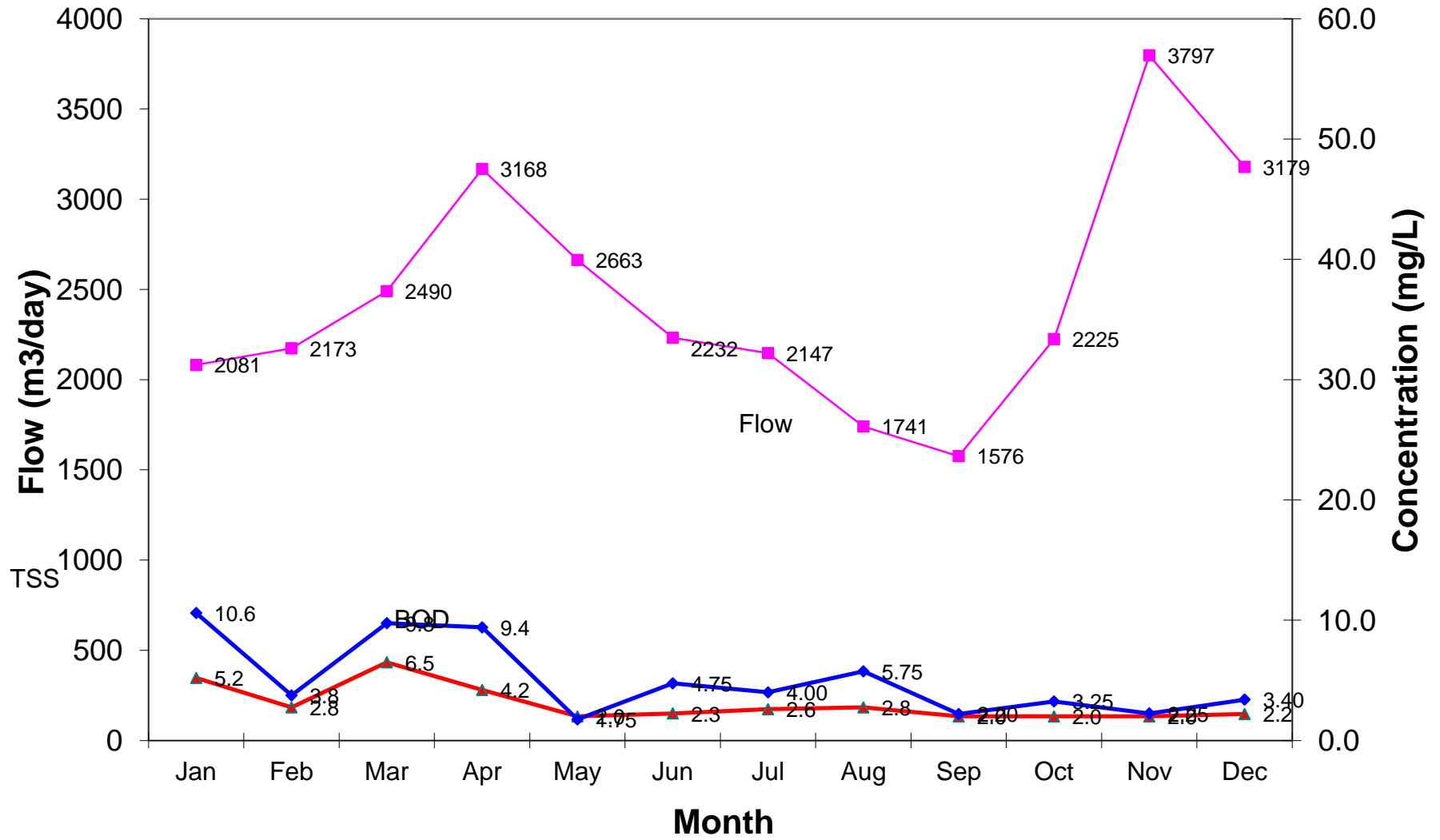
CH2MHILL Flow Reports Seaforth STP 2013

Date	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1690	2366	2383	3313	3422	2690	2324	2450	1942	1550	4131	4392
2	1633	2330	2481	3275	3416	2547	2333	2207	2184	1775	3131	4640
3	2233	2332	2476	3383	3373	2366	2263	2010	2213	1693	3614	4853
4	2148	2273	2426	2463	3271	2152	2594	1860	1774	1811	3822	4435
5	2095	2311	2207	2465	3173	2236	2473	1835	1761	2094	3653	4278
6	2364	1805	2346	3339	3350	2259	2478	1926	1190	2354	3396	4513
7	2219	2238	2208	3387	3339	2137	2407	1912	1327	2256	3539	4409
8	2092	1903	2169	3230	3310	2154	2385	1745	1424	2310	3696	4377
9	1955	1797	2271	3346	3463	1871	2367	1642	1414	2316	3592	4196
10	2034	1842	2298	3511	3489	2056	2335	1630	1385	2422	3528	3991
11	705	1743	2297	3466	3294	2231	2394	1188	1522	1878	3542	4123
12	1977	1808	2410	2433	3467	2396	2274	1693	1254	2011	3386	4043
13	2181	1849	2330	2192	3217	2388	2196	1663	1251	1975	3390	4460
14	2365	1823	2441	2204	3130	2354	2210	1666	1279	1915	3595	1723
15	2375	2041	2434	2562	2912	2189	2076	1707	1136	2074	3501	2154
16	2299	2260	2392	3410	2033	2305	2077	1683	1197	2442	3937	2176
17	2387	2166	2416	3391	2311	2458	2389	1583	1121	2222	4062	2052
18	1934	2232	2396	3448	2230	2412	2332	1491	1342	2324	4089	2245
19	2034	2352	2379	3469	2202	2201	2376	1703	1497	2313	3989	1739
20	2018	2305	2489	3454	2177	2198	2122	2021	1737	2416	3883	2764
21	2204	2361	2358	3421	2167	2115	1869	1774	1956	2456	5118	2381
22	2249	2391	2378	3422	2234	2253	1726	1760	2080	2388	2891	2347
23	2176	2327	2383	3379	2237	2138	1762	1673	2089	2361	3839	2486
24	2216	2448	2318	3362	1668	2105	1932	1602	1793	2387	3763	2402
25	2179	2321	2349	3436	1629	1964	1674	1579	1526	2419	3587	2640
26	2203	2405	2356	3394	1617	1871	1950	1659	1495	2437	4207	2658
27	2054	2358	2306	3473	1602	2028	1803	1642	1620	2509	4101	2881
28	1964	2470	3443	2463	1746	2154	1857	1657	1617	2633	3914	2513
29	2047		3408	3493	2341	2321	1773	1697	1549	3092	4601	2289
30	2191		3320	3447	2412	2415	1977	1582	1609	1722	4417	2176
31	2296		3328		2322		1827	1718		2408		2208
Total	64517	60857	77196	95031	82554	66964	66555	53958	47284	68963	113914	98544
Min.	705	1743	2169	2192	1602	1871	1674	1188	1121	1550	2891	1723
Max	2387	2470	3443	3511	3489	2690	2594	2450	2213	3092	5118	4853
Avg.	2081	2173	2490	3168	2663	2232	2147	1741	1576	2225	3797	3179

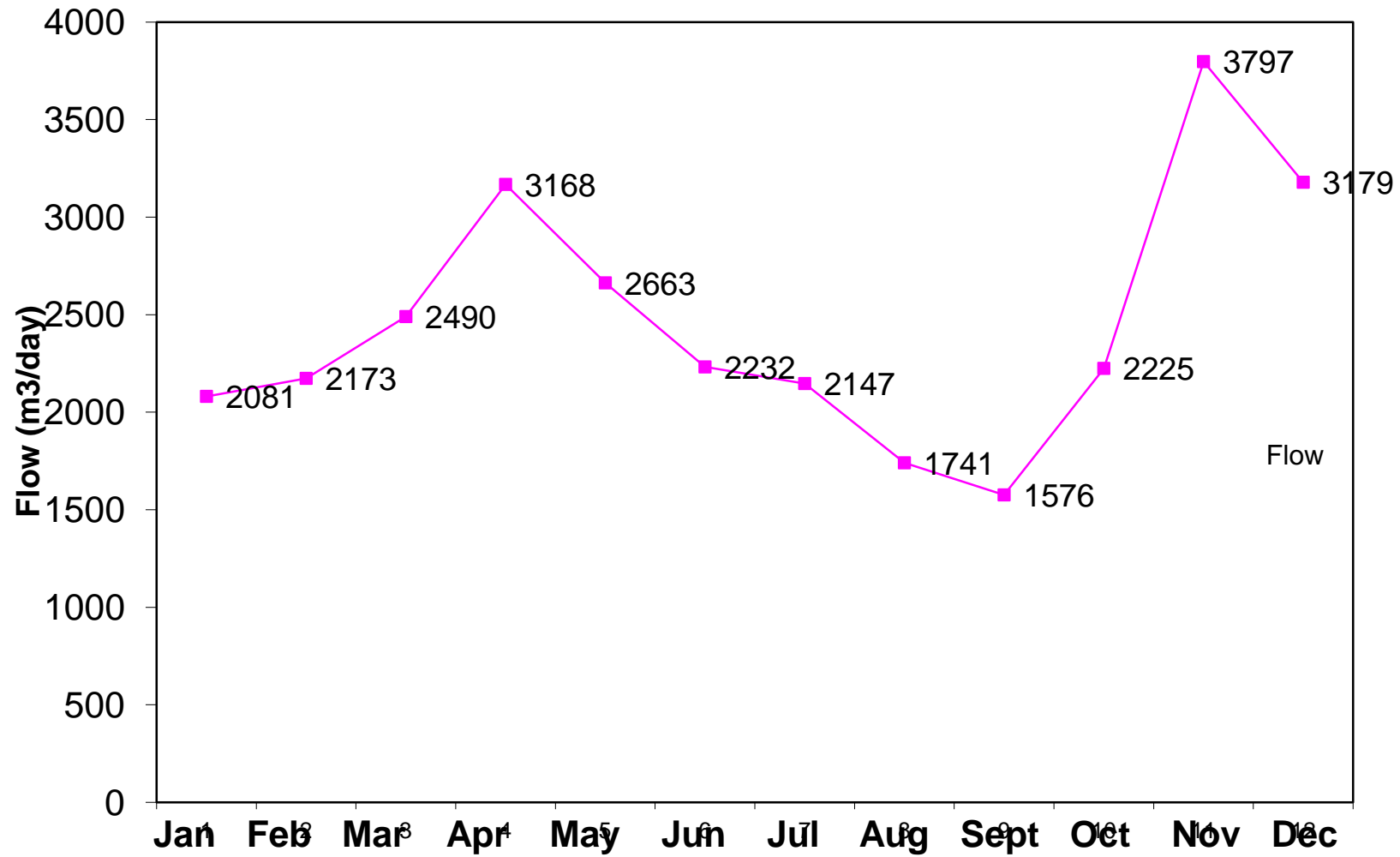
CH2MHILL Flow Reports Seaforth SPS 2013

Date	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1		6107	3464		2903			2611		1574	9482	
2	3337			5165	2734		15267	2648		1566		6817
3	1805			2872	3071	11744	2650		7593	1660		2540
4	1722	11321	9032	2543		2898	3105		1869	1738	16490	2587
5		3140	2361	2463		2868	3259				3735	3328
6		3095	2756		7183	2933		9070			3117	3425
7	5430	2940	2429		2321	2406		1901		7650	3913	
8	1891	2898	2267	6680	2077		8770	2235		4973	3459	
9	1635			2762	2101		3330	1885	4215	3585		8160
10	1857			3692	2016	6832	3258		696	2927		2435
11	1925	7173	9621	6595		2757	2964		1466	2507		2194
12		2783	9560	7396		3120	2406	5345	1320		12077	2178
13		2280	5716		6332	3216		1879	1247		2887	2361
14	12592	2388	5010		2370	3811		1775			2968	
15	3996	2335	4079	19263	1928		6724	1737		8338	2895	
16	3701			3992	1992		2314	1630	3635	2239		5303
17	3122			3606	1764	9842	1686		1233	2097		1748
18	2945		10327	5207		3408	2070		1333	2443	11052	1831
19		9482	3082			2767	1946	4542	1428		4937	1660
20		4272	3046			2718		1661	1606		3896	1698
21	7621	3695	2896	14774	7076	2237		1463		8178	3323	
22	2203	3280	2989	3827	3416		5440	1607		3949	3407	
23	2155			3279	3149		1748	1395	8325	3378		9226
24	2016			4574	2440	7387	1631		2183	3631		3301
25	2088	8417	6913	3383		2076	1764		1960	6328	8311	
26		2406	2326			1812	1458	3777	2049		2643	5655
27		2782	2465		7021	1967		1489	1603		2618	2762
28	5774	3342	3016		1766	3994		1357		5025	2425	
29	2417			9666	2811		4785	1441		5284	2290	
30	6579			3279	4272		1552	1539	4686	3012		6617
31	10119		8931		3186		1588			3448		2129
Total	86930	84136	102286	115018	73929	80793	79715	52987	48447	85530	105925	77955
Min.	1635	2280	2267	2463	1764	1812	1458	1357	696	1566	2290	1660
Max	12592	11321	10327	19263	7183	11744	15267	9070	8325	8338	16490	9226
Avg.	3951	4428	4871	5751	3360	4040	3623	2523	2692	3888	5296	3712

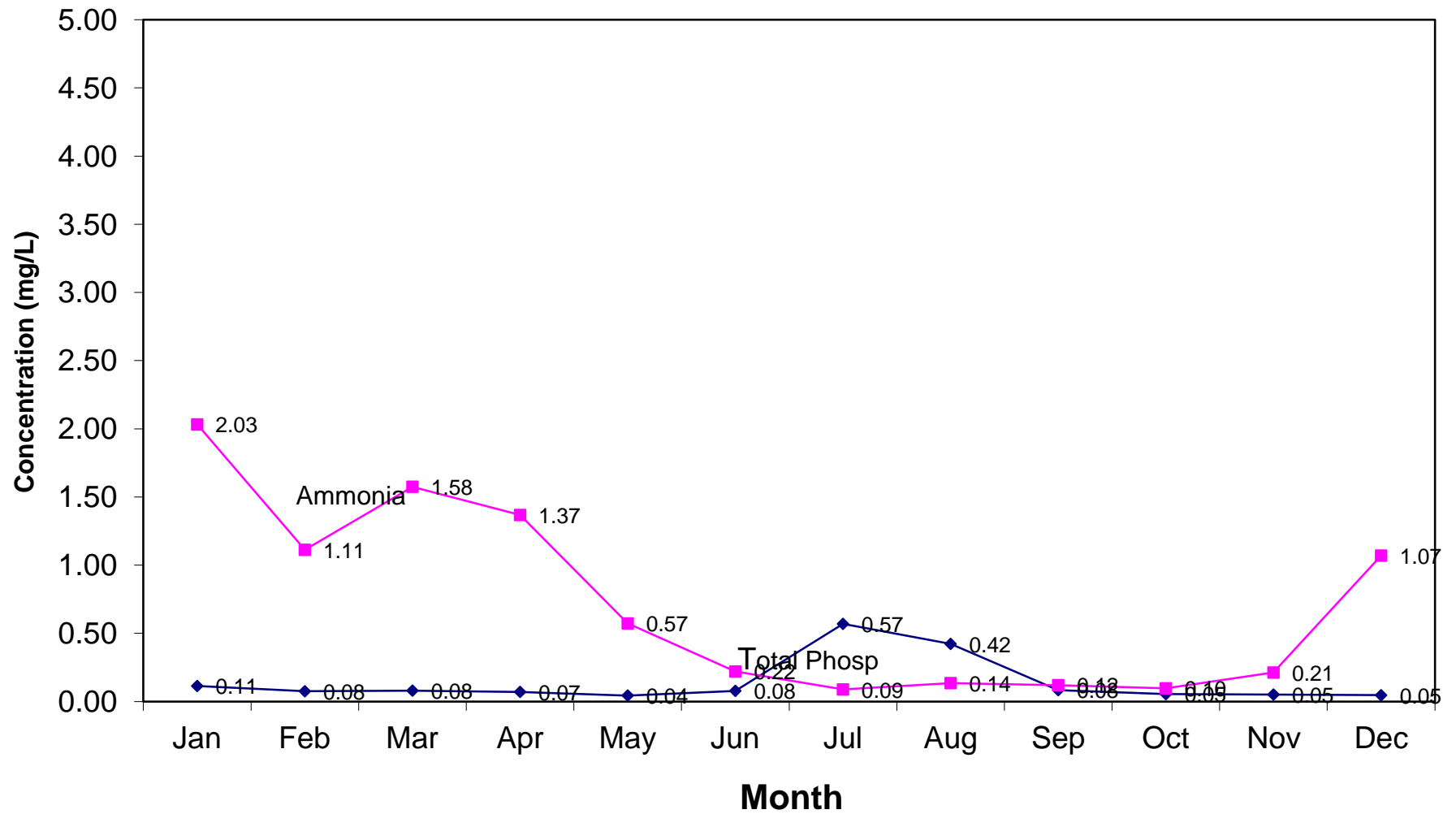
SEAFORTH STP BOD and TSS vs Flow



Seaforth STP. Average Monthly Flows



Seaforth STP Monthly Total Phosphorus and Ammonia



2013 Municipality of Huron East Seaforth STP Monthly Average Lab Results

RAW SEWAGE						Effluent Concentration mg/l								Effluent Loading kg/d				
Test Date	BOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	CaCO3 mg/L	NH3 mg/L	Per 100ml	pH	D.O	BOD5 kg/d	S.S. kg/d	Total P kg/d	NH3 kg/d	Avg Monthly Flow
Monthly																		
Jan	208	121	21.0	2.2	320	5.2	10.6	0.11	214	2.03	7	7.8	10.5	1.1	2.2	0.0	0.4	2081
Feb	90	102	19.5	2.3	315	2.8	3.8	0.08	178	1.11	2	7.9	11.3	0.6	0.8	0.0	0.2	2173
Mar	90	84	20.0	2.4	325	6.5	9.8	0.08	258	1.58	1	7.8	10.9	1.6	2.4	0.0	0.4	2490
Apr	273	151	18	1.8	312	4.2	9.4	0.07	232	1.37	2	8.1	9.5	13.3	29.7	0.1	1.9	3168
May	105	130	35	3.4	358	2.0	1.75	0.04	195	0.57	3	7.8	7.0	5.3	4.8	0.1	1.5	2663
Jun	483	325	25	2.5	303	2.3	4.75	0.08	253	0.22	64	7.8	7.2	5.1	10.7	0.2	0.5	2232
Jul	64	91	20	2.4	368	2.6	4.00	0.57	230	0.09	24	8.0	7.6	5.6	8.6	1.2	0.2	2147
Aug	158	219	32	3.8	378	2.8	5.75	0.42	228	0.14	8	8.0	8.0	4.9	10.1	0.7	0.2	1741
Sep	109	101	30	2.8	358	2.0	2.20	0.08	244	0.12	2	7.9	8.2	3.2	3.5	0.1	0.2	1576
Oct	176	157	17	1.7	350	2.0	3.25	0.05	260	0.10	9	8.0	9.1	4.5	7.3	0.1	0.2	2225
Nov	50	69	15	1.3	363	2.0	2.25	0.05	250	0.21	18	8.0	12.1	7.6	8.7	0.2	0.8	3797
Dec	205	195	20	2.4	362	2.2	3.40	0.05	254	1.07	38	7.9	12.7	7.0	10.8	0.2	3.4	3179
Monthly Objectives						10.0	10.0	0.80		2.00	0			19.0	19.0	1.5	3.8	
Monthly Limits						15.0	15.0	1.00		4.00	150			28.5	28.5	1.9	7.6	
Yearly Averages/Min/Max																		
Average	167	146	22.6	2.4	342	3.0	5.1	0.14	232.9	0.72	7	7.90	9.50	5.0	8.3	0.3	0.8	2456
Minimum	50	69	14.7	1.3	303	2.0	1.8	0.04	177.8	0.09	1	7.82	7.03	0.6	0.8	0.0	0.2	1576
Maximum	483	325	35.0	3.8	378	6.5	10.6	0.57	260.0	2.03	64	8.08	12.67	13.3	29.7	1.2	3.4	3797

Comments: See C of A for singal cell concentration, pH is to be maintained in the range of 6.5 to 9.5 inclusive at all times
Hydrogen Sulfide (if odour is present) weelky grab