2014 AVERAGE MONTHLY ANALYTICAL RESULTS

Petrolia W.P.C.P.
Operations Number: 110000579
Operating Authority: O.M.I. Canada Inc.
Municipality: Town of Petrolia

	FLOWS		RAW INFLUENT Monthly Average					FINAL EFFLUENT Monthly Average								Geomean Avg
Month	Influent Flow m3	Avg. Flows m3/Day	BOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	CBOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Nitrite NO2 mg/L	Nitrate NO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml
January	26,224	846	164	120	39.1	5.1	247	2.7	1.3	1.6	0.14	89	0.138	10.1	0.50	
February	28,978	1,035	238	850	37.5	-	252	3.8	1.8	5.9	-	76	0.262	7.8	0.85	3
March	50,836	1,640	112	99	28.1	3.6	258	4.5	3.5	2.8	0.41	98	0.331	2.2	3.08	2
April	55,049	1,835	168	216	28.2	3.7	242	9.0	6.8	5.4	0.28	140	0.442	4.7	3.81	10
May	61,831	1,995	151	115	39.3	5.0	266	5.5	3.0	3.4	0.30	117	0.176	5.5	3.08	8
June	50,085	1,670	206	195	39.1	4.9	239	2.3	3.8	1.0	0.40	25	0.105	12.2	0.19	17
July	51,668	1,667	196	192	36.8	4.9	230	4.0	6.0	5.4	0.45	22	0.052	14	4.06	6
August	51,348	1,656	148	213	26.2	4.8	230	4.0	0.6	3.8	0.39	26	0.037	13.7	3.23	4
September	63,089	2,103	188	220	29.9	6.5	247	2.0	0.0	16.6	0.79	77	0.055	11.7	0.12	5
October	47,631	1,536	206	184	36.2	7.4	256	2.4	5.0	1.1	0.32	30	0.069	21.8	0.66	3
November	42,648	1,422	159	129	33.6	5.7	249	2.3	2.2	2.2	0.62	72	0.017	16.4	0.14	2
December	39,944	1,289	131	81	35.2	5.1	247	3.6	5.0	1.3	0.93	48	0.040	17.3	0.16	2

Total Flow m3	569,331

Daily Average m3	1,559

PETROLIA WPCP EFFLUENT LOADINGS 2014

PARAMETER	AVERAGE MONTHLY LOADING (Kg/d) SUSPENDED SOLIDS	BOD	TOTAL "P"	AMMONIA	AVG Effluent Flow	AVERAGE MONTHLY CONCENTRATION (mg/L) SUSPENDED SOLIDS	BOD	TOTAL "P"	AMMONIA
MONTH									
JAN.	1.02	2.11	0.11	0.39	783	1.3	2.7	0.14	0.50
FEB.	1.60	3.39		0.76	891	1.8	3.8		0.85
MARCH	1.52	1.95	0.18	1.33	433	3.5	4.5	0.41	3.08
APRIL	4.91	6.50	0.20	2.75	722	6.8	9.0	0.28	3.81
MAY	1.87	3.43	0.19	1.92	623	3.0	5.5	0.30	3.08
JUNE	2.86	1.73	0.30	0.14	753	3.8	2.3	0.40	0.19
JULY	5.79	3.86	0.43	3.92	965	6.0	4.0	0.45	4.06
AUGUST	0.63	4.22	0.41	3.40	1055	0.6	4.0	0.39	3.22
SEPT.	0.00	2.82	1.11	0.17	1408	0.0	2.0	0.79	0.12
OCT.	4.24	2.03	0.27	0.56	847	5.0	2.4	0.32	0.66
NOV.	2.68	2.80	0.75	0.17	1216	2.2	2.3	0.62	0.14
DEC.	6.38	4.59	1.19	0.20	1276	5.0	3.6	0.93	0.16

Average monthly concentration X average monthly flow / 1000 = Average monthly loading

2014 WEEKLY ANALYTICAL and MONTHLY AVERAGE RESULTS

Petrolia W.P.C.P.
Operations Numb 110000579
Operating Authority: O.M.I. Canada Inc.
Municipality: Town of Petrolia

MONTH: January

YEAR: 2014

Analyst : James Wight

	Aeration	RAW INFLUENT					FINAL EFFLUENT										
	MLSS																
Test # Date	mg/L	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	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Nitrite NO2 mg/L	Nitrate NO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	Reactive P mg/L	pH
1 2-Jan	E- W- R-																
2 8-Jan	E- W-4360 R-7800	136	260	44.7	4.85	268											
3 15-Jan	E- W-4440 R-6400	93	20	26.6	2.07	201	2.0	0.0	1.0	0.23	109	0.025	17.4	0.08	<2	0.46	7.37
4 22-Jan	E- W-4280 R-5840	205	180	49.6	7.49	279	2.0	2.0	1.2	0.13	76	0.342	9.2	0.81	2	0.53	7.11
5 29-Jan	E- W-5560 R-5720	221	20	35.3	6.12	238	4.0	2.0	2.6	0.06	83	0.047	3.7	0.61	2	0.40	7.00
Number of Tests		4	4	4	4	4	3	3	3	3	3	3	3	3	3	3	3
Monthly Average:		164	120	39.1	5.1	247	2.7	1.3	1.6	0.14	89	0.138	10.1	0.50	2	0.46	7.16

Comments:
Jan 2, 8 - Final effluent missing due to filter off line for frozen alum line
Jan 2 - RAW data missing as no samples sent to SGS

2014 WEEKLY ANALYTICAL and MONTHLY AVERAGE RESULTS

MONTH: February

YEAR: 2014

Analyst : James Wight

Petrolia W.P.C.P.
Operations Numb 110000579
Operating Authority: O.M.I. Canada Inc.
Municipality: Town of Petrolia

	Aeration MLSS	RAW INFLUENT					FINAL EFFLUENT										
Test # Date	mg/L	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	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Nitrite NO2 mg/L	Nitrate NO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	Reactive P mg/L	pH
1 5-Feb	E-W-R-	286	220	34.9		241	2.0	5.0	13.6		74	0.106	6.6	0.11	6	0.09	7.01
2 12-Feb	E-W-5240 R-9440	>447	2900	39.1		247	4.0	2.0	2.0		67	0.301	8.1	0.52	2	0.23	6.74
3 19-Feb	E-W-3720 R-4680	229	220	37.8		234	5.0	0.0	4.2		61	0.492	10.9	1.88	4	0.33	6.90
4 26-Feb	E-W-6200 R-10200	199	60	38.1		286	4.0	0.0	3.6		100	0.147	5.5	0.89	2	0.44	8.01
5																	
Number of Tests		4	4	4	0	4	4	4	4	0	4	4	4	4	4	4	4
Monthly Average:		238	850	37.5	####	252	3.8	1.8	5.9	####	76	0.262	7.8	0.85	3	0.27	7.17

Comments:
Feb 12: RAW sample for BOD was outside of acceptable range for the dilutions used.
The analysis was repeated; however the recommended holding time of 4 days was exceeded (sample results 598 UAL)

Feb 5, 12, 19, 26 - No - "T Phos" analysis performed on "RAW" or "Final"

2014 WEEKLY ANALYTICAL and MONTHLY AVERAGE RESULTS

Petrolia W.P.C.P.
Operations Number: 110000579
Operating Authority: O.M.I. Canada Inc.
Municipality: Town of Petrolia

MONTH: March

YEAR: 2014

Analyst : James Wight

	Aeraton MLSS	RAW INFLUENT					FINAL EFFLUENT										
Test # Date	mg/L	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	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Nitrite NO2 mg/L	Nitrate NO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	Reactive P mg/L	pH
1 5-Mar	E-W-4480 R-7320	166	140	33.3	4.8	237	6.0	2.0	2.6	0.30	95	0.331	0.1	3.77	2	0.11	6.95
2 12-Mar	E-W-5080 R-4460	103	14	24.6	1.5	270	3.0	5.0	3.0	0.51	101	over	4.3	2.38		0.60	7.32
3 19-Mar	E-W-680 R-880	134	160	25.3	4.5	247											
4 26-Mar	E-W5000 R-7320	45	80	29.3	3.7	277											
5																	
Number of Tests		4	4	4	4	4	2	2	2	2	2	2	2	2	1	2	2
Monthly Ave.:		112	99	28.1	3.6	258	4.5	3.5	2.8	0.41	98	0.331	2.2	3.08	2	0.36	7.14

Comments:

March 12 Sample delivery via courier was delayed due to weather conditions in Southern Ontario
Samples were frozen
Final Effluent e-coli was not processed as per clients request

March 18 to March 28 Filter taken out of service for repair, flow directed to West lagoon - no Final samples

2014 WEEKLY ANALYTICAL and MONTHLY AVERAGE RESULTS

Petrolia W.P.C.P.
Operations Numb 110000579
Operating Authority: O.M.I. Canada Inc.
Municipality: Town of Petrolia

MONTH: April

YEAR: 2014

Analyst : James Wight

	Aeration	RAW INFLUENT					FINAL EFFLUENT										
	MLSS																
Test # Date	mg/L	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	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Nitrite NO2 mg/L	Nitrate NO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	Reactive P mg/L	pH
1 2-Apr	E-W-3520 R-6880	122	160	28.0	3.9	246	12.0	0.0	12.4	0.12	174	0.518	3.1	6.17	540	0.62	6.77
2 9-Apr	E-W-3680 R-8160	139	200	19.1	2.5	241	5.0	2.0	3.2	0.24	154	0.545	5.7	4.58	2	0.12	7.13
3 16-Apr	E-W-3800 R-7240	153	160	32.4	3.4	258	6.0	4.0	2.9	0.26	118	0.552	7.3	1.77	2	0.13	7.18
4 23-Apr	E-W-3840 R-6560	283	320	39.0	5.1	245	14.0	10.0	6.0	0.43	132	0.253	3.0	4.34	2	0.51	7.07
5 30-Apr	E-W-2160 R-13800	142	240	22.5	3.4	218	8.0	18.0	2.6	0.35	121	0.343	4.4	2.20	22	0.38	6.88
Number of Tests		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Monthly Average:		168	216	28.2	3.7	242	9.0	6.8	5.4	0.28	140	0.442	4.7	3.81	10	0.35	7.01

Comments:

2014 WEEKLY ANALYTICAL and MONTHLY AVERAGE RESULTS

Petrolia W.P.C.P.
Operations Numb 110000579
Operating Authority: O.M.I. Canada Inc.
Municipality: Town of Petrolia

MONTH: May

YEAR: 2014

Analyst : James Wight

	Aeration	RAW INFLUENT					FINAL EFFLUENT										
	MLSS																
Test # Date	mg/L	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	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Nitrite NO2 mg/L	Nitrate NO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	Reactive P mg/L	pH
1 7-May	E-3440 W- R-7289	138	160	42.4	6.0	282	10.0	5.0	3.7	0.54	108	0.560	7.7	2.90	20	0.26	6.95
2 14-May	E- W-4200 R-9040	259	120	33.2	6.8	248	3.0	2.0	5.1	0.38	137	0.113	2.0	2.61	2	0.98	7.10
3 21-May	E W-3680 R-11440	151	120	35.2	3.8	271	4.0	5.0	3.2	0.15	150	0.006	1.1	4.23	58	0.58	7.15
4 28-May	E-2120 W-2600 R-4000	57 CBOD	60	46.2	3.4	263	5.0	0.0	1.4	0.13	73	0.025	11.2	2.58	2	0.43	6.98
5																	
Number of Tests		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Monthly Average:		151	115	39.3	5.0	266	5.5	3.0	3.4	0.30	117	0.176	5.5	3.08	8	0.56	7.05

Comments:

2014 WEEKLY ANALYTICAL and MONTHLY AVERAGE RESULTS

MONTH: June

YEAR: 2014

Analyst : James Wight

Petrolia W.P.C.P.
Operations Numb 110000579
Operating Authority: O.M.I. Canada Inc.
Municipality: Town of Petrolia

	Aeration	RAW INFLUENT					FINAL EFFLUENT										
	MLSS																
Test # Date	mg/L	BOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	CBOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Nitrite NO2 mg/L	Nitrate NO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	Reactive P mg/L	pH
1 4-Jun	E-2400 W-2880 R-6840	191	120	37.5	5.11	250	2.0	2.5	1.4	0.21	33	0.080	14.8	0.14	2	0.74	6.74
2 9-Jun	E-4640 W-3960 R-4640		280					2.5		0.42		0.033	3.0	0.28	1200	1.29	6.98
3 16-Jun	E-4440 W-4080 R-7160		200				3.0	10.0	1.2	0.58	28	0.267	20.1	0.34		1.65	6.64
4 25-Jun	E-3640 W-3800 R-6560	221	180	40.7	4.78	228	2.0	0.0	0.5		13	0.039	10.8	0.00	2	0.59	6.64
5																	
Number of Tests		2	4	2	2	2	3	4	3	3	3	4	4	4	3	4	4
Monthly Average:		206	195	39.1	4.9	239	2.3	3.8	1.0	0.40	25	0.105	12.2	0.19	17	1.07	6.75

Comments:
June 9 - No CBOD, Alkalinity performed on Final Effluent sample
June 9 - No RAW analysis for BOD5, TKN, T Phos, Alkalinity
June 16 - No RAW analysis for BOD5, TKN, T Phos, Alkalinity
June 16 - No e-coli sample collected due to filter train Out Of Service
June 25 - No T Phos performed on Final Effluent

2014 WEEKLY ANALYTICAL and MONTHLY AVERAGE RESULTS

Petrolia W.P.C.P.
Operations Numbe 110000579
Operating Authority: O.M.I. Canada Inc.
Municipality: Town of Petrolia

MONTH: July

YEAR: 2014

Analyst : James Wight

	Aeration	RAW INFLUENT					FINAL EFFLUENT										
	MLSS																
Test # Date	mg/L	BOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	CBOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Nitrite NO2 mg/L	Nitrate NO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	Reactive P mg/L	pH
1 2-Jul	E-2160 W-2520 R-2600	249	220	36.8	5.50	229											
2 9-Jul	E-3240 W-3080 R-4280	129	200		4.00	221											
3 16-Jul	E-3720 W-4560 R-5920	209	180		5.50	241											
4 23-Jul	E-6840 W-7640 R-6480	169	160	36.0	4.70	226	<4	2.0	0.5	0.38	10	0.070	10.5	0.26	2	1.17	6.53
5 30-Jul	E-11440 W-11820 R-4840	198	200	35.7	7.50	234	4.0	10.0	10.3	0.52	34	0.033	17.4	7.85	16	0.62	6.62
Number of Tests		5	5	3	5	5	2	2	2	2	2	2	2	2	2	2	2
Monthly Average:		191	192	36.2	5.4	230	4.0	6.0	5.4	0.45	22	0.052	14.0	4.06	6	0.90	6.58

Comments:

July 2, 9, 16 - No final Effluent samples due to the filter train being repaired, flow directed to West lagoon

July 9 - No analysis of "TKN" done on "RAW" sample
July 16 - No analysis of "TKN" done on "RAW" sample

2014 WEEKLY ANALYTICAL and MONTHLY AVERAGE RESULTS

Petrolia W.P.C.P.
Operations Numb 110000579
Operating Authority: O.M.I. Canada Inc.
Municipality: Town of Petrolia

MONTH: September

YEAR: 2014

Analyst : James Wight

	Aeration	RAW INFLUENT					FINAL EFFLUENT										
Test # Date	MLSS mg/L	BOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	CBOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Nitrite NO2 mg/L	Nitrate NO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	Reactive P mg/L	pH
1 3-Sep	E-3880 W-4840 R-6440	174	320	30.7	6.80	226											
2 10-Sep	E-3720 W-4720 R-5760	200	220	33.5	4.70	252											
3 17-Sep	E-2480 W-2460 R-7880	203	100	23.2	10.00	249	2.0	0.0	1.2	0.21	76	0.015	15.0	0.21	14	0.66	6.77
4 24-Sep	E3600 W5800 R-8400	173	240	32.0	4.40	261	2.0	0.0	32.0	1.36	77	0.094	8.4	0.03	2	0.89	7.01
5																	
Number of Tests		4	4	4	4	4	2	2	2	2	2	2	2	2	2	2	2
Monthly Average:		188	220	29.9	6.5	247	2.0	0.0	16.6	0.79	77	0.055	11.7	0.12	5	0.78	6.89

Comments:
Aug-27 to Sept 10: Final effluent diverted to West Lagoon as Ammonia levels rising

2014 WEEKLY ANALYTICAL and MONTHLY AVERAGE RESULTS

Petrolia W.P.C.P.
Operations Numbe 110000579
Operating Authority: O.M.I. Canada Inc.
Municipality: Town of Petrolia

MONTH: October

YEAR: 2014

Analyst : James Wight

	Aeration	RAW INFLUENT					FINAL EFFLUENT										
	MLSS																
Test # Date	mg/L	BOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	CBOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Nitrite NO2 mg/L	Nitrate NO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	Reactive P mg/L	pH
1 1-Oct	E-4280 W-5200 R-6800	185	160	33.6	4.03	244	2.0	2.0	0.9	0.34	49	0.106	12.1	0.42	<2	0.90	6.65
2 8-Oct	E-4600 W-7320 R-7680	209	220	38.0	6.57	250	3.0	6.0	1.7	0.24	22			1.66	2	0.34	6.24
3 15-Oct	E-4840 W-3920 R-10760	283	300	38.3	15.70	253	2.0	4.0	1.8	0.27	34			0.88	2	0.62	6.62
4 22-Oct	E-4080 W-5200 R-7320	206	180	36.4	6.50	267	3.0	8.0	0.5	0.57	33	0.025	21.8	0.11	<2	0.82	6.56
5 29-Oct	E-3920 W-4240 R-7240	148	60	34.7	4.27	264	2.0	5.0	0.5	0.20	10	0.110	27.2	0.24	10	0.44	6.66
Number of Tests		5	5	5	5	5	5	5	5	5	5	3	3	5	5	5	5
Monthly Average:		206	184	36.2	7.4	256	2.4	5.0	1.1	0.32	30	0.080	20.4	0.66	3	0.62	6.55

Comments:
Oct 8 - No analysis performed on Final Effluent for "Nitite" & "Nitrate"
Oct 15 - No analysis performed on Final Effluent for "Nitrite" & "Nitrate"

2014 WEEKLY ANALYTICAL and MONTHLY AVERAGE RESULTS

Petrolia W.P.C.P.
Operations Numb 110000579
Operating Authority: O.M.I. Canada Inc.
Municipality: Town of Petrolia

MONTH: November

YEAR: 2014

Analyst : Doug Marsh

	Aeration MLSS	RAW INFLUENT					FINAL EFFLUENT									
Test # Date	mg/L	BOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	CBOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Nitrite NO2 mg/L	Nitrate NO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	Reactive P mg/L	pH
1 5-Nov	E-5140 W-4108 R-5528	138	44	37.3	3.30	258	2.0	2.0	1.4	0.38	72	0.012	17.7	0.14	2	0.26	7.33
2 12-Nov	E-3220 W-3820 R-6764	124	142	34.1	5.20	236	2.0	1.3	2.5	0.56	64	0.006	19.9	0.01	2	0.51	7.55
3 19-Nov	E-3288 W-3692 R-6056	280	174	40.3	7.50	240	2.6	2.0	2.6	0.94	68	0.014	17.9	0.24	2	0.82	7.36
4 26-Nov	E-1904 W-2064 R-4076	94	156	22.6	6.60	260	2.5	3.3	2.4	0.59	84	0.035	10.0	0.16	2	0.49	7.74
5																	
Number of Tests		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Monthly Average:		159	129	33.6	5.7	249	2.3	2.2	2.2	0.62	72	0.017	16.4	0.14	2	0.52	7.50

Comments:

2014 WEEKLY ANALYTICAL and MONTHLY AVERAGE RESULTS

Petrolia W.P.C.P.
Operations Numbe 110000579
Operating Authority: O.M.I. Canada Inc.
Municipality: Town of Petrolia

MONTH: December

YEAR: 2014

Analyst : Doug Marsh

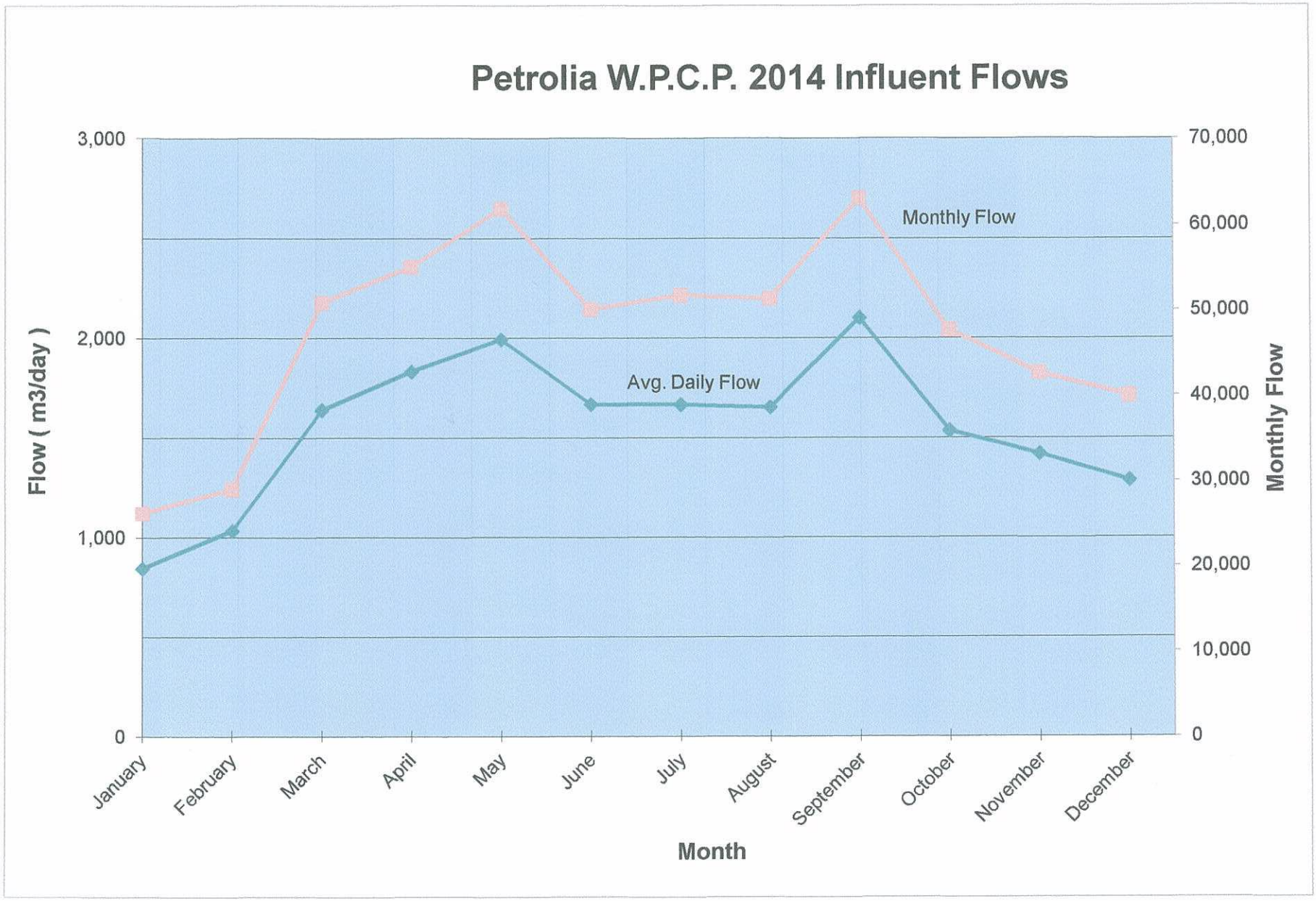
	Aeration	RAW INFLUENT					FINAL EFFLUENT										
Test # Date	MLSS mg/L	BOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	CBOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Nitrite NO2 mg/L	Nitrate NO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	Reactive P mg/L	pH
1 3-Dec	E-1648 W-2288 R-3060	159	140	28.4	4.9	232	2.9	4.0	1.6	0.57	54	0.049	17.7	0.12	2	0.36	7.18
2 10-Dec	E-2024 W-2856 R-3232	140	98	38.3	6.20	244	4.0	3.8	0.5	0.87	44	0.016	16.7	0.22	2.0	0.69	7.10
3 17-Dec	E-2572 W-3144 R-4124	130	98	36.0	4.9	242	4.0	8.0	0.8	1.06	40	0.023	19.6	0.08	2.0	0.79	7.20
4 22-Dec	E-2528 W-3298 R-4104	136	40	40.6	5.1	242	4.0	6.5	1.6	1.20	40	0.024	18.5	0.23	2.0	0.79	7.11
5 29-Dec	E-1744 W-1332 R-	89	28	32.7	4.3	274	3.0	2.8	2.0	0.96	62	0.087	14.1	0.15	2 UAL	0.76	7.64
Number of Tests		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Monthly Average:		131	81	35.2	5.1	247	3.6	5.0	1.3	0.93	48	0.040	17.3	0.16	2	0.68	7.25

Comments:

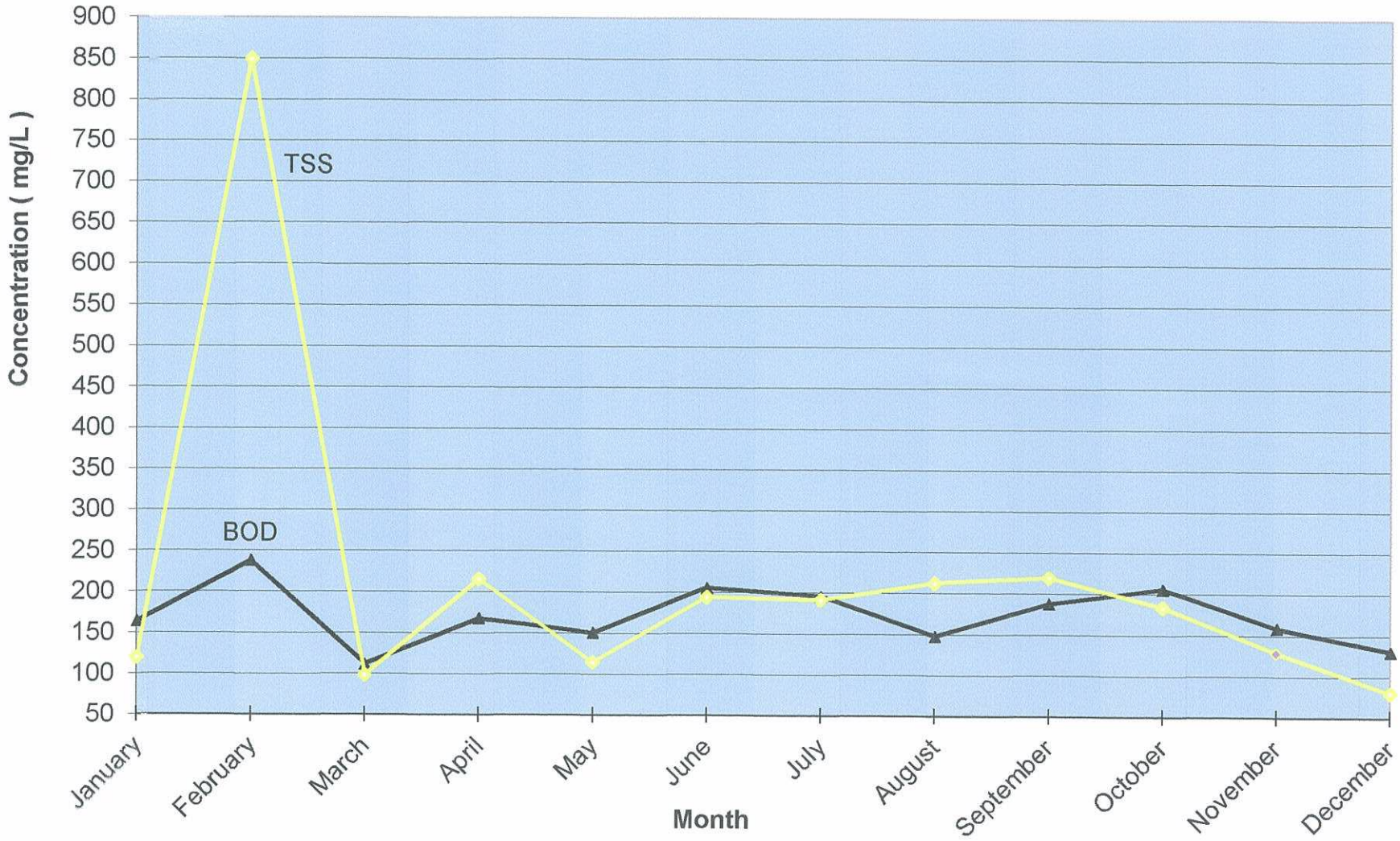
Petrolia WWTP Influent Flow Totals (m3) - 2014

Date	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	911	1140	1114	2295	2559	1842	2241	1634	2533	1645	1659	1215
2	777	1015	901	1961	1807	1804	1795	1529	2033	1676	1602	1205
3	844	825	739	1713	1924	1746	1459	1579	1741	1861	1453	1193
4	1077	771	854	2035	1737	1550	1439	1712	1773	1721	1438	1177
5	1089	819	951	1973	1598	1563	1457	2616	2520	1590	1437	1208
6	745	819	927	1901	1523	1657	1602	1651	3420	1513	1473	1310
7	643	774	1141	1843	1610	1597	2574	1529	1948	1548	1482	1210
8	804	877	1143	2586	1767	1500	2432	1464	1884	1476	1381	1213
9	953	985	1008	1981	1674	1535	1830	1502	1843	1406	1423	1240
10	1210	870	1437	1983	1678	1595	1591	1569	3927	1389	1556	1158
11	1626	868	1834	1836	1661	1731	1655	2670	2814	1413	1523	1128
12	1255	804	1418	1985	1997	1777	1664	2101	2062	1370	1253	1086
13	1491	958	1129	2213	2228	1542	1785	1651	2805	1714	1179	1237
14	1085	915	2038	1838	2038	1470	1684	1483	2018	1664	1099	1323
15	746	940	2444	1402	4878	1567	1582	1507	1818	1879	1137	1322
16	511	829	1745	1431	2451	1713	1503	1524	1985	1446	1212	1461
17	123	888	1917	1511	1923	1800	1542	1543	1719	1675	1060	1249
18	111	1046	1789	1591	1752	1910	1450	1509	1643	1637	930	1126
19	111	1188	2832	1543	1866	1722	1510	1788	1556	1536	958	1303
20	970	1296	2832	1597	1766	1593	1614	1661	2051	1498	894	1206
21	837	2600	2297	1658	2648	1668	1545	1644	2770	1523	1079	1148
22	787	1727	2472	1624	2182	1663	1647	1725	2026	1397	1319	1190
23	778	1341	1709	1396	1846	1759	1602	1669	1858	1360	1878	1284
24	746	1129	1553	1452	1908	1884	1470	1626	1738	1370	3669	2306
25	1084	1006	1372	1582	1945	1660	1401	1673	1726	1574	1816	1906
26	996	829	1292	1466	1871	1650	1566	1845	1711	1461	1437	1524
27	743	895	1531	1529	2033	1629	1647	1591	1828	1376	1317	1600
28	641	825	2393	1558	1789	1644	1682	1493	1794	1488	1018	1380
29	693		2054	2559	1679	1651	1602	1517	1723	1418	1387	1133
30	824		1894	3006	1709	1661	1462	1697	1822	1368	1582	956
31	1011		2075		1782		1634	1644		1641		946
Total	**26224**	**28978**	**50836**	**55049**	**61831**	**50085**	**51668**	**52348**	**63089**	**47631**	**42648**	**39944**
Min.	111	771	739	1396	1523	1470	1401	1464	1556	1360	894	946
Max	1626	2600	2832	3006	4878	1910	2574	2670	3927	1879	3669	2306
Avg.	846	1035	1640	1835	1995	1670	1667	1689	2103	1536	1422	1289

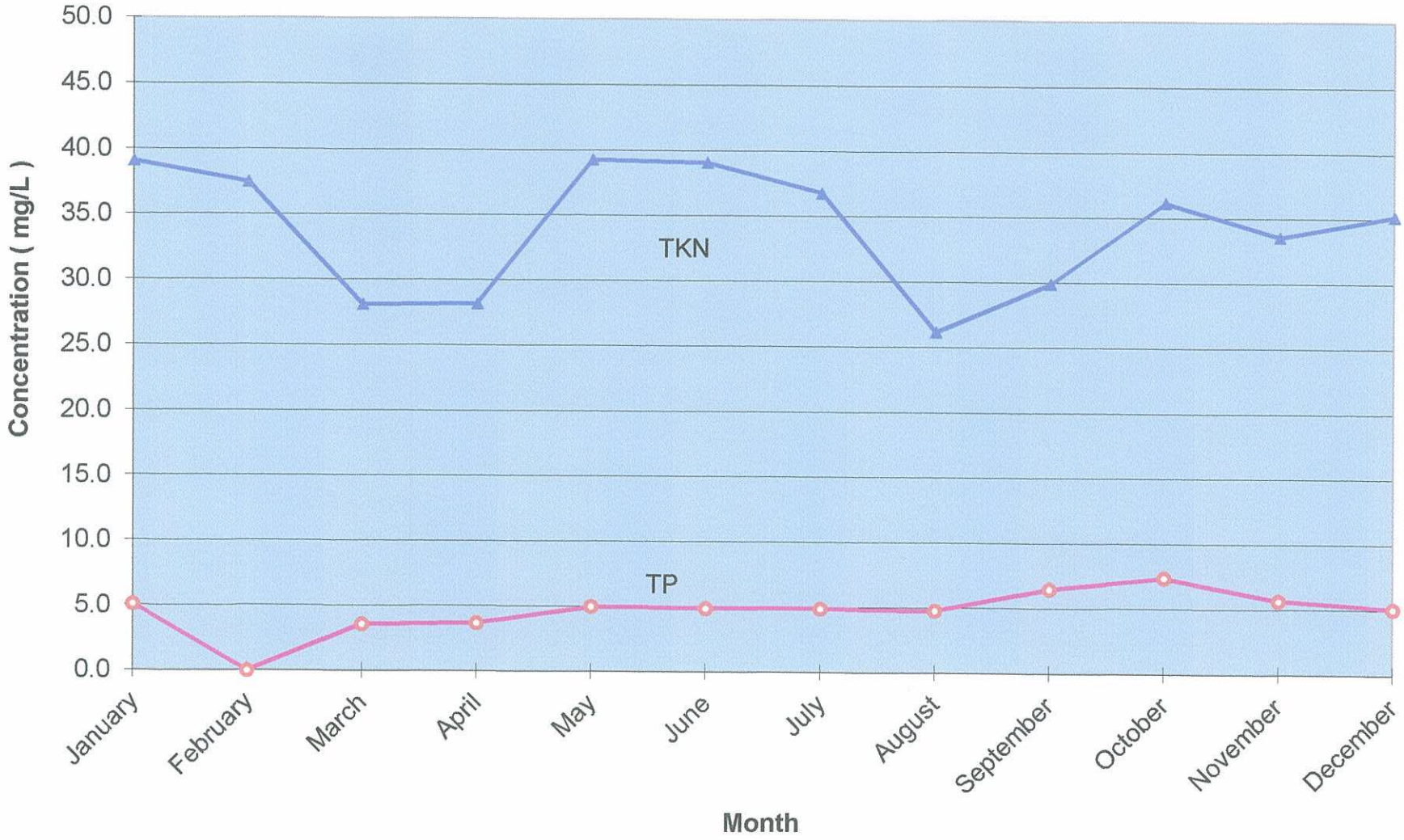
2014Yearly Flow	**570329 m3**
2014 Daily Average	**1563 m3**


Petrolia W.P.C.P. 2014 Influent Flows
Flow (m3/day)
Monthly Flow
3,000
2,000
1,000
0
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
Monthly Flow
Avg. Daily Flow
January
February
March
April
May
June
July
August
September
October
November
December
Month

Petrolia W.P.C.P. 2014 Influent BOD and T.S.S.



Petrolia W.P.C.P. 2014 Influent TKN and Total P

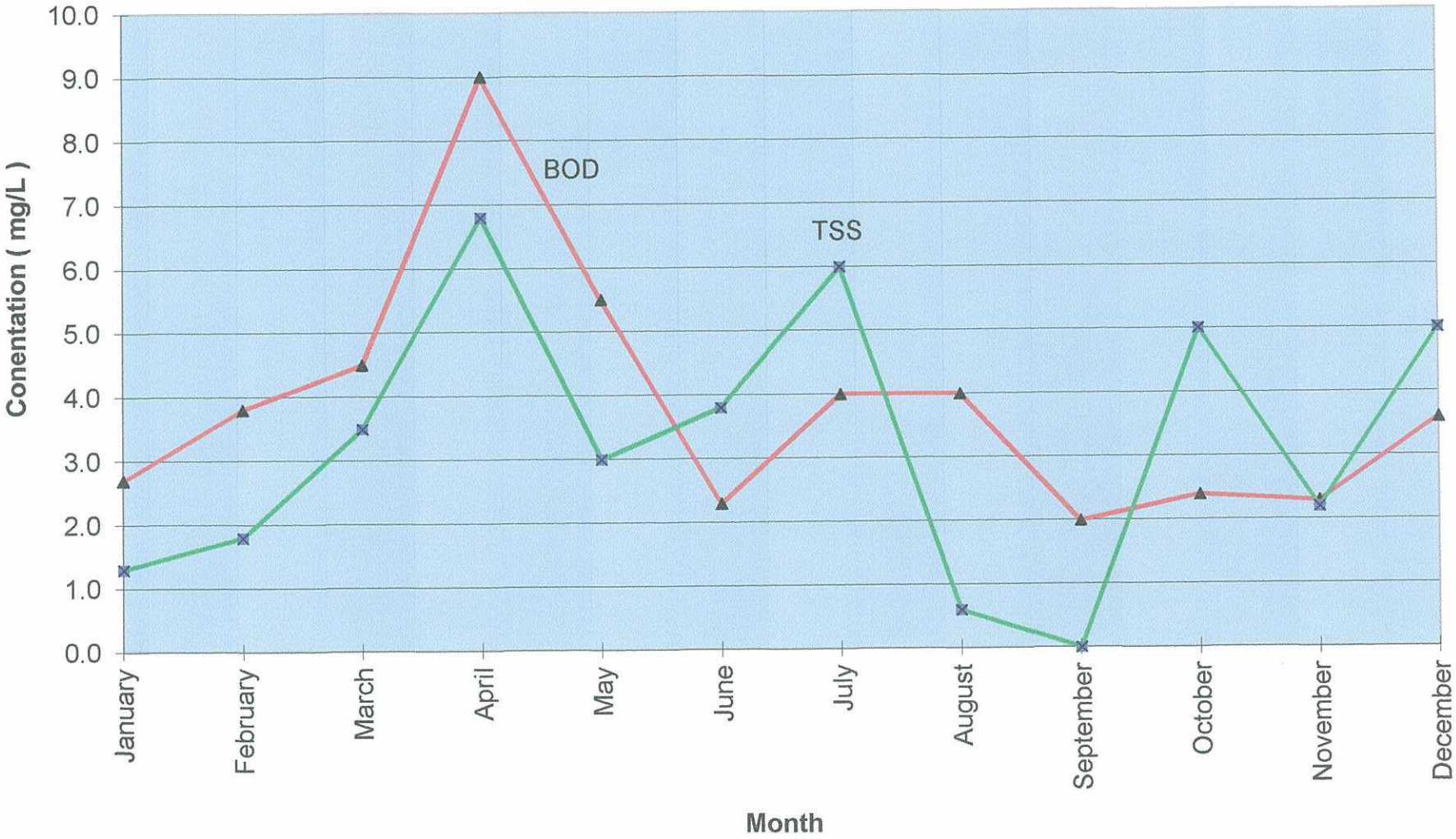


Petrolia WWTP Effluent Flow Totals (m3) - 2014

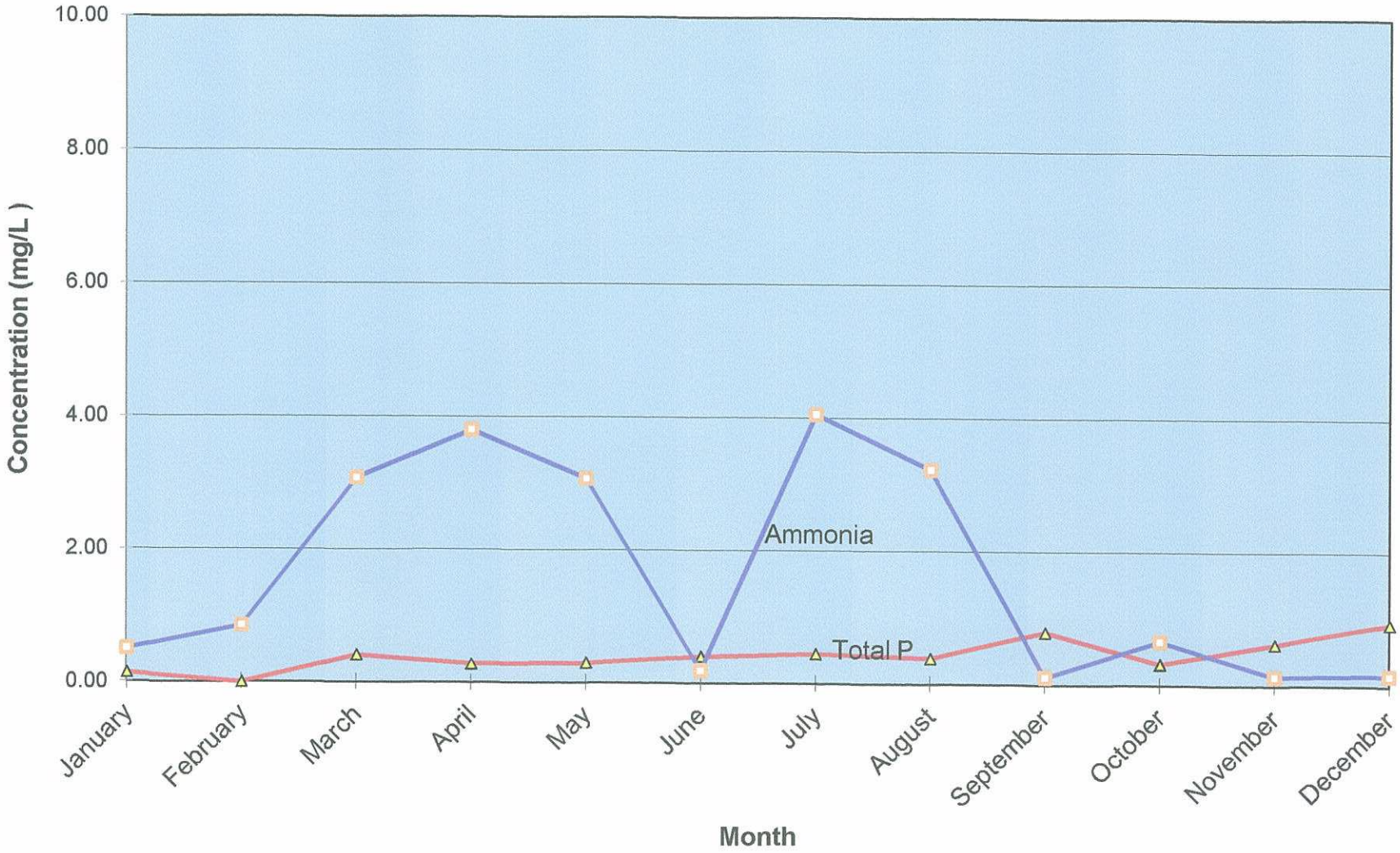
Date	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1		1084	773	898	887	418		1061		1234	1555	1137
2		1079	660	982	674	584		979		1099	1289	1205
3		999	447	1024	822	619		976		1266	1071	1067
4		974	362	1042	811	588		922		1428	837	1205
5		956	392	1024	724	639		1634		1329	421	1203
6		956	408	982	749	694		1066		1282	101	1336
7		899	457	1052	780	625		924		1323	783	1347
8		886	460	1041	737	613		868		1238	1324	1304
9		1026	417	999	669	721		859		1186	1279	1294
10	634	1044	131	938	673	687		892	735	1104	1390	1272
11	1557	977	309	922	669	722		1241	1912	748	1301	1215
12	775	1055	420	900	719	763		1872	1737	698	1191	1064
13	910	991	132	909	721	770		1049	1858	132	1186	1238
14	296	991	386	816	695	433		922	1908	290	1134	1266
15	101	1018	390	697	768	33		953	1588	672	1159	1271
16	104	988	290	401	772	475	480	971	1595	911	1205	1392
17	876	1036	199	354	768	1016	980	980	1310	898	1082	521
18	347	1087		609	700	1115	859	905	1314	991	996	1235
19	266	1055		629	721	1126	947	1122	1294	965	1027	1363
20	833	761		539	741	965	1023	1135	1381	924	1007	1313
21	904	1002		496	691	913	912	988	2057	771	1273	1234
22	592	292		420	471	890	978	1040	1927	684	1239	1135
23	744	119		410	373	994	1044	978	1468	131	1635	1294
24	1073	424		393	505	1078	965	981	1257	616	2423	1814
25	1154	857		461	402	1114	863	1009	1178	841	2087	2267
26	1186	776		467	419	979	949	1097	1022	604	1456	1491
27	1014	714		281	153		1052		1171	463	1330	1502
28	932		408	288	241		1210		920	386	1148	1347
29	969		660	801	393		1117		871	455	1270	1221
30	971		652	888	436		953		1066	948	1288	880
31	991		737		420		1113			627		1131
Total	17228	24047	9090	21661	19304	19573	15446	27424	29569	26244	36487	39563
Min.	101	119	131	281	153	33	480	859	735	131	101	521
Max	1557	1087	773	1052	887	1126	1210	1872	2057	1428	2423	2267
Avg.	783	891	433	722	623	753	965	1055	1408	847	1216	1276

2014 Yearly Flow	**285635 m3**
2014 Daily Average	**915 m3**

Petrolia W.P.C.P. 2014 Effluent BOD and TSS



Petrolia W.P.C.P. 2014 Effluent Total P & Ammonia



Petrolia WPCP Flow Diversion to Lagoons

Year: 2014 **Month:** January

CH2MHILL OMI

Date	East	West	Description of Flow
1		1366.33	Final flow going to lagoon - high Ammonia levels
2		1315.52	Final flow going to lagoon - high Ammonia levels
3		1599.44	Final flow going to lagoon - high Ammonia levels
4		1416.15	Final flow going to lagoon - high Ammonia levels
5		1326.43	Final flow going to lagoon - high Ammonia levels
6		1329.21	Final flow going to lagoon - high Ammonia levels
7		1331.46	Final flow going to lagoon - high Ammonia levels
8		1332.16	Final flow going to lagoon - high Ammonia levels
9		1354.04	Final flow going to lagoon - high Ammonia levels
10		811.38	Final flow going to lagoon - high Ammonia levels
11		2206.82	Final flow going to lagoon - high Ammonia levels
12		1192.5	Final flow going to lagoon - high Ammonia levels
13		938.66	Filter OOS
14	231.5	1551.62	Filter OOS
15		1369.86	Filter OOS
16		1404.95	Filter OOS
17		782.35	Filter back in service
18		1508.88	Filter stuck on railing / OOS
19		2343.24	Filter OOS
20		1053.73	Filter OOS
21		6371.28	Filter OOS & a Lg chunk of grease under transducer
22		592.03	Filter OOS
23		373.63	Filter in service
24		3962.5	Snow drifting under & around transducer (snow storm)
25		13869.79	Snow drifting under & around transducer (snow storm)
26		11416.53	Snow drifting under & around transducer (snow storm)
27		9935.55	Snow drifting under & around transducer (snow storm)
28		7767.41	Snow drifting under & around transducer (snow storm)
29		6639.03	Snow drifting under & around transducer (snow storm)
30	104.73	2541.44	Snow drifting under & around transducer (snow storm) cleared 5 ft drift off trandsucer
31		6454.23	Snow & ice on transducer - cleared
Total	336.23	97458.15	

Petrolia WPCP Flow Diversion to Lagoons

Year: 2014 **Month:** February

CH2MHILL OMI

Date	East	West	Description of Flow
1	2526.25		False reading
2	21.24		Filter flow / Infiltration
3	46.55		Filter flow / Infiltration
4	95.36		Filter flow / Infiltration
5	87.39		Filter flow / Infiltration
6	88.33		Filter flow / Infiltration
7	80.06		Filter flow / Infiltration
8	89.79		Filter flow / Infiltration
9	94.95		Filter flow / Infiltration
10	105.25		Filter flow / Infiltration
11	269.45		Wasting from digesters
12	69.37		
13	72.66		
14	72.15		
15	69.13		Overflow from digesters
16	92.07		Overflow from digesters
17	110.31		Overflow from digesters
18	111.9		Overflow from digesters
19	138.08		Snow under transducer
20		618.48	Final effluent By-pass
21		1548.66	
22		1349.34	
23		1260.19	
24		989.74	
25		386.95	
26		278.51	
27		283.91	
28		268.87	
29			
30			
31			
Total	4240.29	6984.65	

Petrolia WPCP Flow Diversion to Lagoons

Year: 2014 **Month:** March

CH2MHILL OMI

Date	East	West	Description of Flow
1		422.79	
2		409.46	
3		501.51	
4		619.03	
5		591.08	
6		589.06	
7	192.92	525.89	
8		593.09	
9		527.75	
10		1117.24	
11		1007.64	
12		1144.6	
13		960.17	
14		1139.14	
15		1783.98	
16		1532.29	
17		1672.82	Filter OOS
18		2209.22	
19		2794.57	
20		2663.23	
21		2368.29	
22		2558.29	
23		2092.7	
24		1881.89	
25		1750.43	
26		1679.93	
27		1781.26	
28	148.82	1379.73	Wasting from digesters
29		1303.33	
30		1016.99	
31			
Total	341.74	40617.40	

Petrolia WPCP Flow Diversion to Lagoons

Year: 2014 **Month:** April

CH2MHILL OMI

Date	East	West	Description of Flow
1		1039.79	Discharging WEST lagoon
2		823.5	
3	157.93	805.41	
4		653.58	
5		836.95	
6		609.55	
7		540.06	
8		1149.15	
9	946.95		
10	784.14		
11	557.71		
12	536.74		
13	767.92		
14	719.94		
15	909.21		Wasted from digesters 307.2 m3
16	1164.00		
17		903.37	
18		626.32	
19	624.42		
20	632.16		
21	614.59		
22	822.82		
23	720.26		
24	710.26		
25	729.51		
26	714.73		
27	1130.43		
28		926.03	
29	962.03		
30	1897.26		
31			
Total	16103.01	8913.71	

Petrolia WPCP Flow Diversion to Lagoons

Year: 2013 **Month:** May

CH2MHILL OMI

Date	East	West	Description of Flow
1	1217.98		
2	760.42		
3	689.11		
4	654.11		
5	628.24		
6	467.91		
7		520.4	
8		459.72	
9		408.18	
10		361.99	
11		357.82	
12		506.23	
13		749.41	
14		659.05	
15		3431.86	
16		2188.97	
17		1680.77	
18		1331.54	
19		1252.79	
20		1391.75	
21	123.26	2038.97	Pumped out sludge from digesters
22		1304.84	Dropped a portion of North clarifier
23		692.81	
24		720.72	
25		703.47	
26		666.67	
27		1014.97	
28		1115.39	
29		675.63	
30		578.17	
31		592.82	
Total	4541.03	25404.94	

Petrolia WPCP Flow Diversion to Lagoons

Year: 2014 **Month:** June

CH2MHILL OMI

Date	East	West	Description of Flow
1		550.84	
2		514.26	
3		395.76	
4	346.54		
5	345.21		
6			
7	288.24		
8	264.17		
9	252.92		
10	247.22		
11	321.28		
12	347.6		
13	215.47		
14	407.5		
15	1062.47		Filter coupling went
16	809.49		
17	14.83		
18	40.42		
19	38.52		
20	185.75		Dumping digester
21	14.21		
22	14.21		
23	21.2		
24	22.67		
25	16.95		
26	109.4		Dumping digester
27		718.21	Filter OOS for repairs
28		1212.41	Filter OOS for repairs
29		1232.34	Filter OOS for repairs
30		1277.02	Filter OOS for repairs
31			
Total	5386.27	5900.84	

Petrolia WPCP Flow Diversion to Lagoons

Year: 2014 **Month:** July

CH2MHILL OMI

Date	East	West	Description of Flow
1		1661.45	Filter OOS for repairs
2		1183.56	
3		1332.45	
4		1227.27	
5		1192.31	
6		1269.65	
7		2080.7	
8		2047.74	
9		1545.24	
10		1452.64	
11		1333.61	
12		1306.17	
13		1366.12	
14		1349.42	
15	48.15	766.69	Filter back in service / Dumping digester
16	218.00	596.84	
17		175.45	
18		22.09	
19		26.39	
20		15.09	
21		25.81	
22		22.78	
23		22.89	
24		16.19	
25		17.94	
26		18.51	
27		32.7	Digester overflow
28		32.47	
29		487.99	
30		40.77	
31		18.23	
Total	266.15	22687.16	

Petrolia WPCP Flow Diversion to Lagoons

Year: 2014 **Month:** August

CH2MHILL OMI

Date	East	West	Description of Flow
1	80	43.19	Wasting Digester to lagoon
2		27.73	
3		22.36	
4		106.91	
5		440.22	
6		9.89	
7		8.68	
8	201		Wasting Digester to lagoon
9		8.29	
10		9.06	
11		262.18	Rain
12		47.61	
13		9.97	
14		10.28	
15	90	3.87	Wasting Digester to lagoon
16		8.62	
17		6.55	
18		8.04	
19		8.77	
20		20.36	
21	301	10.02	
22		4.47	
23		22.86	Digester overflowed
24		77.28	Digester overflowed
25		14.52	
26		31.9	
27		980.76	Diverting flow - high Ammonia
28		1436.45	
29		1230.65	
30		1302.88	
31		1229.05	
Total	672.05	7403.42	

Petrolia WPCP Flow Diversion to Lagoons

Year: 2014 **Month:** September

CH2MHILL OMI

Date	East	West	Description of Flow
1		2104.14	Diverting flow to lagoon - high Ammonia
2		1709.48	
3		1415.34	
4		1393.54	
5		1786.79	
6		2932.41	
7		1737.06	
8		1568.21	
9		1525.63	
10		2126.83	Heavy rain, Filter back in service
11		951.96	Lower both aeration tanks to inspect RAW channel
12		22.79	
13		412.55	
14		21.42	
15		15.84	
16		12.97	
17		8.85	
18		9.54	
19		7.91	
20		13.15	
21		36.06	
22		29.36	
23		14.12	
24		10.41	
25		9.44	
26	102.1	358.44	Wasting from digester
27		7.46	
28		108.82	
29		305.37	
30		255.03	
31			
Total	102.10	20910.92	

Petrolia WPCP Flow Diversion to Lagoons

Year: 2014 **Month:** October

CH2MHILL OMI

Date	East	West	Description of Flow
1		7.56	
2	264.9	8.43	Wasting from digester, drained contact chamber
3		3578.28	Transducer giving false readings
4		13658.8	
5		10105.82	
6		2848.46	
7		4844.43	
8		16.48	
9		3241.64	
10		8.737	
11		12.82	
12		10.3	
13		3544.21	
14		7392.06	
15		6008.8	
16		12339.39	
17		1078.28	
18		389.99	
19		325.94	
20		344.81	
21		416.83	
22		395.68	
23		1153.81	
24		677.63	
25		352.46	
26		472.28	
27		539.73	
28		877.48	
29		1090.58	
30		1390.9	
31		875.11	clean clarifiers, contact chamber, surge tank
Total	264.85	78007.73	

Petrolia WPCP Flow Diversion to Lagoons

Year: 2014 **Month:** November

CH2MHILL OMI

Date	East	West	Description of Flow
1		30.24	Infiltration
2		40.89	Infiltration
3	140.60		clean clarifier influent channel
4	319.48		clean surge tank and filter bed top
5		651.23	Filter OOS
6		1143.38	Filter OOS
7		993.32	Filter OOS
8		24.46	Infiltration
9		24.36	Infiltration
10		85.35	Infiltration
11		62.35	Infiltration
12		44.55	Infiltration
13	284.58		Wasting from Digesters / Start Discharging "West" lagoon
14	22.03		Infiltration
15	18.95		Infiltration
16	19.13		Infiltration
17	105.97		Wasting from Digesters, clean clarifiers & weirs
18	17.46		Infiltration
19	649.61		Clean filter influent & clarifier influent channels, clean filter walls
20	23.03		Infiltration
21	53.56		Infiltration
22	9.18		Infiltration
23	31.80		Infiltration
24	728.20		Heavy rains, melting snow - Surge tank overflowing
25	42.13		Infiltration
26	20.76		Infiltration
27	463.68		Clean & drain "N" clarifier for repairs, cleaned clarifier weirs
28	310.88		Wasting from Digesters, clean "South" clarifier
29	114.32		Infiltration
30	81.65		Infiltration, "West" Lagoon finished discharging
31			
Total	3457.00	3100.13	

Petrolia WPCP Flow Diversion to Lagoons

Year: 2014 Month: December

CH2MHILL OMI

Date	East	West	Description of Flow
1		12.82	Infiltration
2		13.64	Infiltration
3		9.8	Infiltration
4		10.2	Infiltration
5		10.7	Infiltration
6		11.3	Infiltration
7		9.29	Infiltration
8		11.87	Infiltration
9		11.63	Infiltration
10		10.8	Infiltration
11		9.91	Infiltration
12		8.41	Infiltration
13		7.52	Infiltration
14		7.73	Infiltration
15		8.23	Infiltration
16		20.43	Filter off line to change oil
17	851.66		Drain "N" Clarifier to install gearbox, Drain filter & channels to install springs on filter
18	196.24		Badger hauling sludge from Water Plant
19	2045.15		Badger hauling sludge from Water Plant - plugged chamber & gave false flow readings - Cleaned Chamber
20		2.88	Infiltration
21		2.72	Infiltration
22		5.13	Infiltration
23	309.99		Waste from digesters - cleaned lagoon influent chamber
24	113.80		Waste from digesters - rains thru the day
25		35.74	Infiltration - rains thru night and Xmas morning
26		23.48	Infiltration
27		21.43	Infiltration
28		18.16	Infiltration
29	294.19		Waste from Digesters - clean filter influent channel
30	257.27		Clean clarifiers, weirs, contact chamber
31		9.86	Infiltration
Total	4068.30	293.68	

LAGOON DATA
LOCATION: Petrolia East
YEAR: 2014

	EAST LAGOON EFFLUENT										
Date	BOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Nitrite NO2 mg/L	Nitrate NO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	Reactive P mg/L	pH -log[H]+
Oct.29	4.0	2.3	11.5	1.74	239	0.015	0.4	6.65	4	1.58	7.87

Comments:
Oct 29 - Sample of lagoon collected to check for acceptable discharge parameters

LAGOON DATA
LOCATION: Petrolia West
YEAR: 2014

	WEST LAGOON EFFLUENT										
Date	BOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Nitrite NO2 mg/L	Nitrate NO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	Reactive P mg/L	pH -log[H]+
5-Feb valve broke	25.0		13.6		226				21200		
12-Feb	25		14.2		236				38000		
19-Feb	18.0		15.2		236				2560		
31-Mar		0.0		2.61		0.059	1.7	5.99		3.25	7.23
2-Apr	14.0	10.0	12.4	2.71	183	0.212	2.0	4.37	1260	1.53	7.41
8-Apr		40.0		2.25		0.097	0.9	4.50		0.75	8.29
14-Apr		25.0		2.15		0.104	0.9	3.75		0.68	7.87

Comments:
Feb 5/14 West lagoon discharge valve found to be broken and lagoon needs to be reduced for the repair
Moe was informed: File: SI-LA-PE-442

LAGOON DATA
LOCATION: Petrolia West
YEAR: 2014

	WEST LAGOON EFFLUENT										
Date	CBOD5 mg/L	S. S. mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Nitrite NO2 mg/L	Nitrate NO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	Reactive P mg/L	pH -log[H]+
29-Oct pre-discharge	4.0	2.0	3.6	0.68	158	0.162	1.1	0.90	10	0.65	7.95
13-Nov start discharge	4.0	2.0		0.38	143	0.170	2.4	1.70	6	0.41	7.59
17-Nov discharge	4.0	2.0	2.2	0.40	144	0.130	2.38	1.50	4	0.36	6.93
24-Nov discharge	4.0	2.0		0.38	142	0.080	1.9	1.20	16	0.32	6.75
27-Nov discharge	4.0	2.0		0.95	135	0.070	2.1	1.00	2	0.24	8.03
30-Nov end discharge	<2	7.0		0.21	134	0.070	2.3	0.70	24	0.26	8.11

Comments:
May- Discontinuing analysis of TKN on lagoon effluent as it is not a requirement of C of A

2014 Sludge Summary

Month	Sludge Wasted to Digesters m3	Sludge Storage to East Lagoon m3
Jan	387.65	625.61
Feb	361.96	446.47
Mar	322.35	341.74
Apr	1122.92	569.13
May	695.06	241.71
June	318.83	303.29
July	601.19	266.15
Aug	998.92	290.56
Sept	530.28	102.1
Oct	538.05	338.39
Nov	937.8	559.4
Dec	650.27	429.93
TOTAL m3	7465.28	4514.48

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Mailing Address:	**411 Greenfield St. Box 1270 Petrolia ON N0N 1R0**	Mailing Address:	**546 Maude St Box 329 Petrolia ON N0N 1R0**

File No.	Works Number	Data Period Month	Data Period Year	Days	Discharge Type	Update Code
46	11000057 9	01	14	31	2	R
(1–2)	(3–11)	(16–17)	(18–19)	(20–21)	(22)	(80)

C.P.		Parameter Code	Dec.	Monthly Results	# of Occurrences
01	**FLOWS**				
	Total Flow ($10^3 m^3$)	50010	3	262.23	
	Average Daily Flow ($10^3 m^3/d$)	50015	3	.845	
	Maximum Daily Flow ($10^3 m^3/d$)	50020	3	1.626	
26	**BYPASS**				0
	Plant Bypass Volume ($10^3 m^3$)	50026	3	.	
	Duration (hours)	80563	1	.	
	Secondary Bypass Volume ($10^3 m^3$)	50040	3	.	0
	Duration (hours)	80565	1	.	
03	**RAW SEWAGE**				# of Samples
	BOD_5 (mg/L)	00001	0	164.	04
	Suspended Solids (mg/L)	00006	0	120.	04
	TKN (mg/L)	00020	2	39.10	04
	Total Phosphorus (mg/L)	00033	1	5.1	04
04	**FINAL EFFLUENT**				
	BOD_5 (mg/L)	00001	1	2.7	03
	Suspended Solids (mg/L)	00006	1	1.3	03
	Ammonia + Ammonium (mg/L)	00019	2	0.50	03
	TKN (mg/L)	00020	2	1.60	03
	Total Phosphorus (mg/L)	00033	2	0.14	03
07	**DISINFECTION**				
	Chlorine Used - (kg as Cl2)	50100	1	.	
	Chlorine Dosage - (mg/L as Cl2)	80410	1	.	
	Chlorine Residual - (mg/L as Cl2)	80420	1	.	

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File No.	Works Number	Data Period Month	Data Period Year	Days	Discharge Type	Update Code
46	11000057 9	02	14	28	2	R
(1–2)	(3–11)	(16–19)		(20–21)	(22)	(80)

C.P.		Parameter Code	Dec.	Monthly Results	# of Occurrences
01	**FLOWS**				
	Total Flow ($10^3 m^3$)	50010	3	28.978	
	Average Daily Flow ($10^3 m^3/d$)	50015	3	1.034	
	Maximum Daily Flow ($10^3 m^3/d$)	50020	3	2.600	
		(30–34)	(35)	(38)	
26	**BYPASS**				
	Plant Bypass Volume ($10^3 m^3$)	50026	3	.	0
	Duration (hours)	80563	1	.	
	Secondary Bypass Volume ($10^3 m^3$)	50040	3	.	0
	Duration (hours)	80565	1	.	
		(30–34)	(35)	(38)	
03	**RAW SEWAGE**				# of Samples
	BOD_5 (mg/L)	00001	0	238.	0004
	Suspended Solids (mg/L)	00006	0	850.	0004
	TKN (mg/L)	00020	2	37.48	0004
	Total Phosphorus (mg/L)	00033	1	.	0
		(30–34)	(35)	(38)	
04	**FINAL EFFLUENT**				
	BOD_5 (mg/L)	00001	1	3.8	0004
	Suspended Solids (mg/L)	00006	1	1.8	0004
	Ammonia + Ammonium (mg/L)	00019	2	0.85	0004
	TKN (mg/L)	00020	2	5.90	0004
	Total Phosphorus (mg/L)	00033	2	.	0
		(30–34)	(35)	(38)	
07	**DISINFECTION**				
	Chlorine Used - (kg as Cl_2)	50100	1	.	
	Chlorine Dosage - (mg/L as Cl2)	80410	1	.	
	Chlorine Residual - (mg/L as Cl2)	80420	1	.	
		(30–34)	(35)	(38)	

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File No. (1–2)	Works Number (3–11)	Data Period Month (16–17)	Data Period Year (18–19)	Days (20–21)	Discharge Type (22)	Update Code (80)
46	11000057 9	03	14	31	2	R

C.P.		Parameter Code (30–34)	Dec. (35)	Monthly Results (38)	# of Occurrences / # of Samples
01	**FLOWS**				
	Total Flow ($10^3 m^3$)	50010	3	50.835	
	Average Daily Flow ($10^3 m^3/d$)	50015	3	1.639	
	Maximum Daily Flow ($10^3 m^3/d$)	50020	3	2.832	
26	**BYPASS**				
	Plant Bypass Volume ($10^3 m^3$)	50026	3	.	# of Occurrences:
	Duration (hours)	80563	1	.	
	Secondary Bypass Volume ($10^3 m^3$)	50040	3	.	
	Duration (hours)	80565	1	.	
03	**RAW SEWAGE**				# of Samples
	BOD_5 (mg/L)	00001	0	112.	04
	Suspended Solids (mg/L)	00006	0	99.	04
	TKN (mg/L)	00020	2	28.10	04
	Total Phosphorus (mg/L)	00033	1	3.6	04
04	**FINAL EFFLUENT**				
	BOD_5 (mg/L)	00001	1	4.5	02
	Suspended Solids (mg/L)	00006	1	3.5	02
	Ammonia + Ammonium (mg/L)	00019	2	3.08	02
	TKN (mg/L)	00020	2	2.8	02
	Total Phosphorus (mg/L)	00033	2	.41	02
07	**DISINFECTION**				
	Chlorine Used - (kg as Cl_2)	50100	1	.	
	Chlorine Dosage - (mg/L as Cl2)	80410	1	.	
	Chlorine Residual - (mg/L as Cl2)	80420	1	.	

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File No.	Works Number	Data Period Month	Data Period Year	Days	Discharge Type	Update Code
46	11000057 9	04	14	30	2	R
(1–2)	(3–11)	(16)	(19)	(20–21)	(22)	(80)

C.P. 01 **FLOWS**

		Parameter Code (30–34)	Dec. (35)	Monthly Results (38)
Total Flow	($10^3 m^3$)	50 10	3	55.048
Average Daily Flow	($10^3 m^3/d$)	50 15	3	1.834
Maximum Daily Flow	($10^3 m^3/d$)	50 20	3	3.006

26 **BYPASS**

		Parameter Code (30–34)	Dec. (35)	Monthly Results (38)	# of Occurrences
Plant Bypass Volume	($10^3 m^3$)	50 26	3	.	
Duration	(hours)	80 56 3	1	.	
Secondary Bypass Volume	($10^3 m^3$)	50 40	3	.	
Duration	(hours)	80 56 5	1	.	

03 **RAW SEWAGE**

		Parameter Code (30–34)	Dec. (35)	Monthly Results (38)	# of Samples
BOD_5	(mg/L)	00001	0	168.	05
Suspended Solids	(mg/L)	00006	0	216.	05
TKN	(mg/L)	00020	2	28.20	05
Total Phosphorus	(mg/L)	00033	1	3.7	05

04 **FINAL EFFLUENT**

		Parameter Code (30–34)	Dec. (35)	Monthly Results (38)	# of Samples
BOD_5	(mg/L)	00001	1	9.0	05
Suspended Solids	(mg/L)	00006	1	6.8	05
Ammonia + Ammonium	(mg/L)	00019	2	3.81	05
TKN	(mg/L)	00020	2	5.40	05
Total Phosphorus	(mg/L)	00033	2	0.28	05

07 **DISINFECTION**

		Parameter Code (30–34)	Dec. (35)	Monthly Results (38)
Chlorine Used -	(kg as Cl_2)	50100	1	.
Chlorine Dosage -	(mg/L as Cl2)	80410	1	.
Chlorine Residual -	(mg/L as Cl2)	80420	1	.

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File No. (1–2): **46**

Works Number (3–11): **110000579**

Data Period (16–19): Month **05**, Year **14**

Days (20–21): **31**

Discharge Type (22): **2**

Update Code (80): **R**

C.P.		Parameter Code (30–34)		Dec. (35)	Monthly Results (38)	# of Occurrences / # of Samples
01	**FLOWS**					
	Total Flow	($10^3 m^3$)	50010	3	60.048	
	Average Daily Flow	($10^3 m^3/d$)	50015	3	1.937	
	Maximum Daily Flow	($10^3 m^3/d$)	50020	3	4.878	
26	**BYPASS**					# of Occurrences
	Plant Bypass Volume	($10^3 m^3$)	50026	3	.	
	Duration	(hours)	80563	1	.	
	Secondary Bypass Volume	($10^3 m^3$)	50040	3	.	
	Duration	(hours)	80565	1	.	
03	**RAW SEWAGE**					# of Samples
	BOD_5	(mg/L)	00001	0	151.	04
	Suspended Solids	(mg/L)	00006	0	115.	04
	TKN	(mg/L)	00020	2	39.3	04
	Total Phosphorus	(mg/L)	00033	1	5.0	04
04	**FINAL EFFLUENT**					
	BOD_5	(mg/L)	00001	1	5.5	04
	Suspended Solids	(mg/L)	00006	1	3.0	04
	Ammonia + Ammonium	(mg/L)	00019	2	3.08	04
	TKN	(mg/L)	00020	2	3.40	04
	Total Phosphorus	(mg/L)	00033	2	0.30	04
07	**DISINFECTION**					
	Chlorine Used -	(kg as Cl_2)	50100	1	.	
	Chlorine Dosage -	(mg/L as Cl2)	80410	1	.	
	Chlorine Residual -	(mg/L as Cl2)	80420	1	.	

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File No. (1–2)	Works Number (3–11)	Data Period Month (16–17)	Data Period Year (18–19)	Days (20–21)	Discharge Type (22)	Update Code (80)
46	110000579	06	14	30	2	R

C.P.		Parameter Code (30–34)	Dec. (35)	Monthly Results (38)
01	**FLOWS**			
	Total Flow ($10^3 m^3$)	50010	3	50.085
	Average Daily Flow ($10^3 m^3/d$)	50015	3	1.669
	Maximum Daily Flow ($10^3 m^3/d$)	50020	3	1.910
26	**BYPASS**			# of Occurrences
	Plant Bypass Volume ($10^3 m^3$)	50026	3	.
	Duration (hours)	80563	1	.
	Secondary Bypass Volume ($10^3 m^3$)	50040	3	.
	Duration (hours)	80565	1	.
03	**RAW SEWAGE**			# of Samples
	BOD_5 (mg/L)	00001	0	206. 02
	Suspended Solids (mg/L)	00006	0	195. 04
	TKN (mg/L)	00020	2	39.10 02
	Total Phosphorus (mg/L)	00033	1	4.9 02
04	**FINAL EFFLUENT**			
	BOD_5 (mg/L)	00001	1	2.3 03
	Suspended Solids (mg/L)	00006	1	3.8 04
	Ammonia + Ammonium (mg/L)	00019	2	0.19 04
	TKN (mg/L)	00020	2	1.00 03
	Total Phosphorus (mg/L)	00033	2	0.40 03
07	**DISINFECTION**			
	Chlorine Used - (kg as Cl_2)	50100	1	.
	Chlorine Dosage - (mg/L as Cl2)	80410	1	.
	Chlorine Residual - (mg/L as Cl2)	80420	1	.

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File No. (1–2)	Works Number (3–11)	Data Period Month (16–17)	Data Period Year (18–19)	Days (20–21)	Discharge Type (22)	Update Code (80)
46	110000579	07	14	31	2	R

C.P. (12–13)

01 FLOWS

		Parameter Code (30–34)	Dec. (35)	Monthly Results (38)
Total Flow	($10^3 m^3$)	50010	3	51.667
Average Daily Flow	($10^3 m^3/d$)	50015	3	1.666
Maximum Daily Flow	($10^3 m^3/d$)	50020	3	2.574

26 BYPASS

		Parameter Code (30–34)	Dec. (35)	Monthly Results (38)	# of Occurrences
Plant Bypass Volume	($10^3 m^3$)	50026	3	.	0
Duration	(hours)	80563	1	.	
Secondary Bypass Volume	($10^3 m^3$)	50040	3	.	0
Duration	(hours)	80565	1	.	

03 RAW SEWAGE

		Parameter Code (30–34)	Dec. (35)	Monthly Results (38)	# of Samples
BOD_5	(mg/L)	00001	0	191.	05
Suspended Solids	(mg/L)	00006	0	192.	05
TKN	(mg/L)	00020	2	36.20	03
Total Phosphorus	(mg/L)	00033	1	5.4	05

04 FINAL EFFLUENT

		Parameter Code (30–34)	Dec. (35)	Monthly Results (38)	# of Samples
BOD_5	(mg/L)	00001	1	4.0	02
Suspended Solids	(mg/L)	00006	1	6.0	02
Ammonia + Ammonium	(mg/L)	00019	2	4.06	02
TKN	(mg/L)	00020	2	5.40	02
Total Phosphorus	(mg/L)	00033	2	0.45	02

07 DISINFECTION

		Parameter Code (30–34)	Dec. (35)	Monthly Results (38)
Chlorine Used -	(kg as Cl_2)	50100	1	.
Chlorine Dosage -	(mg/L as Cl2)	80410	1	.
Chlorine Residual -	(mg/L as Cl2)	80420	1	.

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File No. (1–2)	Works Number (3–11)	Data Period Month (16–17)	Data Period Year (18–19)	Days (20–21)	Discharge Type (22)	Update Code (80)
46	110000579	08	14	31	2	R

C.P. (12–13)

	Parameter Code (30–34)	Dec. (35)	Monthly Results (38)
01 FLOWS			
Total Flow ($10^3 m^3$)	50010	3	513.47
Average Daily Flow ($10^3 m^3/d$)	50015	3	1.656
Maximum Daily Flow ($10^3 m^3/d$)	50020	3	2.670
26 BYPASS			# of Occurrences
Plant Bypass Volume ($10^3 m^3$)	50026	3	. 0
Duration (hours)	80563	1	.
Secondary Bypass Volume ($10^3 m^3$)	50040	3	. 0
Duration (hours)	80565	1	.
03 RAW SEWAGE			# of Samples
BOD_5 (mg/L)	00001	0	148. 0 4
Suspended Solids (mg/L)	00006	0	213. 0 3
TKN (mg/L)	00020	2	26.20 0 4
Total Phosphorus (mg/L)	00033	1	4.8 0 3
04 FINAL EFFLUENT			
BOD_5 (mg/L)	00001	1	4.0 0 4
Suspended Solids (mg/L)	00006	1	0.6 0 4
Ammonia + Ammonium (mg/L)	00019	2	3.22 0 4
TKN (mg/L)	00020	2	3.8 0 4
Total Phosphorus (mg/L)	00033	2	0.39 0 4
07 DISINFECTION			
Chlorine Used - (kg as Cl_2)	50100	1	.
Chlorine Dosage - (mg/L as Cl2)	80410	1	.
Chlorine Residual - (mg/L as Cl2)	80420	1	.

James Wight 519-381-3211 e-mail address: James.Wight@ch2m.com

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Municipal Utility Monitoring Program Mechanical Plants R1

Municipality:	**Corporation of the Town of Petrolia**	Operating Authority:	**CH2M HILL**
Project Name:	**Petrolia WPCP**		
Mailing Address:	**411 Greenfield St. Box 1270 Petrolia ON N0N 1R0**	Mailing Address:	**546 Maude St Box 329 Petrolia ON N0N 1R0**

File No. (1–2): 4 6

Works Number (3–11): 1 1 0 0 0 0 5 7 9

Data Period (16–19): Month 0 9 | Year 1 4

Days (20–21): 3 0

Discharge Type (22): 2

Update Code (80): R

C.P. (12–13): 0 1

FLOWS

		Parameter Code (30–34)	Dec. (35)	Monthly Results (38)
Total Flow	($10^3 m^3$)	5 0 0 1 0	3	6 3 . 0 8 8
Average Daily Flow	($10^3 m^3/d$)	5 0 0 1 5	3	2 . 1 0 2
Maximum Daily Flow	($10^3 m^3/d$)	5 0 0 2 0	3	3 . 9 2 7

BYPASS (12–13: 2 6)

		Parameter Code (30–34)	Dec. (35)	Monthly Results (38)	# of Occurrences
Plant Bypass Volume	($10^3 m^3$)	5 0 0 2 6	3	.	
Duration	(hours)	8 0 5 6 3	1	.	
Secondary Bypass Volume	($10^3 m^3$)	5 0 0 4 0	3	.	
Duration	(hours)	8 0 5 6 5	1	.	

RAW SEWAGE (12–13: 0 3)

		Parameter Code (30–34)	Dec. (35)	Monthly Results (38)	# of Samples
BOD_5	(mg/L)	0 0 0 0 1	0	1 8 8 .	0 4
Suspended Solids	(mg/L)	0 0 0 0 6	0	2 2 0 .	0 4
TKN	(mg/L)	0 0 0 2 0	2	2 9 . 9 0	0 4
Total Phosphorus	(mg/L)	0 0 0 3 3	1	6 . 5	0 4

FINAL EFFLUENT (12–13: 0 4)

		Parameter Code (30–34)	Dec. (35)	Monthly Results (38)	# of Samples
BOD_5	(mg/L)	0 0 0 0 1	1	2 . 0	0 2
Suspended Solids	(mg/L)	0 0 0 0 6	1	0 . 0	0 2
Ammonia + Ammonium	(mg/L)	0 0 0 1 9	2	0 . 1 2	0 2
TKN	(mg/L)	0 0 0 2 0	2	1 6 . 6 0	0 2
Total Phosphorus	(mg/L)	0 0 0 3 3	2	0 . 7 9	0 2

DISINFECTION (12–13: 0 7)

	Parameter Code (30–34)	Dec. (35)	Monthly Results (38)	
Chlorine Used - (kg as Cl_2)	5 0 1 0 0	1	.	
Chlorine Dosage - (mg/L as Cl2)	8 0 4 1 0	1	.	
Chlorine Residual - (mg/L as Cl2)	8 0 4 2 0	1	.	

James Wight 519-381-3211 e-mail address: James.Wight@ch2m.com

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Municipal Utility Monitoring Program Mechanical Plants R1

Municipality:	**Corporation of the Town of Petrolia**	Operating Authority:	**CH2M HILL**
Project Name:	**Petrolia WPCP**		
Mailing Address:	**411 Greenfield St. Box 1270 Petrolia ON N0N 1R0**	Mailing Address:	**546 Maude St Box 329 Petrolia ON N0N 1R0**

File No. (1–2)	Works Number (3–11)	Data Period Month (16–17)	Data Period Year (18–19)	Days (20–21)	Discharge Type (22)	Update Code (80)
46	110000579	10	14	31	2	R

C.P. (12–13)

		Parameter Code (30–34)	Dec. (35)	Monthly Results (38)
01 FLOWS				
Total Flow	($10^3 m^3$)	50010	3	47.630
Average Daily Flow	($10^3 m^3/d$)	50015	3	1.536
Maximum Daily Flow	($10^3 m^3/d$)	50020	3	1.879
26 BYPASS				# of Occurrences
Plant Bypass Volume	($10^3 m^3$)	50026	3	.
Duration	(hours)	80563	1	.
Secondary Bypass Volume	($10^3 m^3$)	50040	3	.
Duration	(hours)	80565	1	.
03 RAW SEWAGE				# of Samples
BOD_5	(mg/L)	00001	0	206. 0005
Suspended Solids	(mg/L)	00006	0	184. 0005
TKN	(mg/L)	00020	2	36.20 0005
Total Phosphorus	(mg/L)	00033	1	7.4 0005
04 FINAL EFFLUENT				
BOD_5	(mg/L)	00001	1	2.4 0005
Suspended Solids	(mg/L)	00006	1	5.0 0005
Ammonia + Ammonium	(mg/L)	00019	2	0.66 0005
TKN	(mg/L)	00020	2	1.10 0005
Total Phosphorus	(mg/L)	00033	2	0.32 0005
07 DISINFECTION				
Chlorine Used -	(kg as Cl_2)	50100	1	.
Chlorine Dosage -	(mg/L as Cl2)	80410	1	.
Chlorine Residual -	(mg/L as Cl2)	80420	1	.

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Municipal Utility Monitoring Program Mechanical Plants R1

Municipality:	**Corporation of the Town of Petrolia**	Operating Authority:	**CH2M HILL**
Project Name:	**Petrolia WPCP**		
Mailing Address:	**411 Greenfield St. Box 1270 Petrolia ON N0N 1R0**	Mailing Address:	**546 Maude St Box 329 Petrolia ON N0N 1R0**

File No. (1–2)	Works Number (3–11)	Data Period Month (16–17)	Data Period Year (18–19)	Days (20–21)	Discharge Type (22)	Update Code (80)
46	110000579	11	14	30	2	R

C.P. (12–13)

	Parameter Code (30–34)	Dec. (35)	Monthly Results (38)
01 FLOWS			
Total Flow ($10^3 m^3$)	50010	3	42.647
Average Daily Flow ($10^3 m^3/d$)	50015	3	1.421
Maximum Daily Flow ($10^3 m^3/d$)	50020	3	3.669
26 BYPASS			# of Occurrences
Plant Bypass Volume ($10^3 m^3$)	50026	3	.
Duration (hours)	80563	1	.
Secondary Bypass Volume ($10^3 m^3$)	50040	3	.
Duration (hours)	80565	1	.
03 RAW SEWAGE			# of Samples
BOD_5 (mg/L)	00001	0	159. 04
Suspended Solids (mg/L)	00006	0	129. 04
TKN (mg/L)	00020	2	33.60 04
Total Phosphorus (mg/L)	00033	1	5.7 04
04 FINAL EFFLUENT			
BOD_5 (mg/L)	00001	1	2.3 04
Suspended Solids (mg/L)	00006	1	2.2 04
Ammonia + Ammonium (mg/L)	00019	2	0.14 04
TKN (mg/L)	00020	2	2.20 04
Total Phosphorus (mg/L)	00033	2	0.62 04
07 DISINFECTION			
Chlorine Used - (kg as Cl_2)	50100	1	.
Chlorine Dosage - (mg/L as Cl2)	80410	1	.
Chlorine Residual - (mg/L as Cl2)	80420	1	.

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Municipal Utility Monitoring Program Mechanical Plants R1

Municipality:	**Corporation of the Town of Petrolia**	Operating Authority:	**CH2M HILL**
Project Name:	**Petrolia WPCP**		
Mailing Address:	**411 Greenfield St. Box 1270 Petrolia ON N0N 1R0**	Mailing Address:	**546 Maude St Box 329 Petrolia ON N0N 1R0**

File No. (1–2)	Works Number (3–11)	Data Period Month (16–17)	Data Period Year (18–19)	Days (20–21)	Discharge Type (22)	Update Code (80)
46	110000579	12	14	31	2	R

C.P. (12–13)		Parameter Code (30–34)	Dec. (35)	Monthly Results (38)	# of Occurrences / # of Samples
FLOWS					
01	Total Flow	($10^3 m^3$) 50010	3	39.944	
	Average Daily Flow	($10^3 m^3/d$) 50015	3	1.289	
	Maximum Daily Flow	($10^3 m^3/d$) 50020	3	.	
BYPASS					# of Occurrences
26	Plant Bypass Volume	($10^3 m^3$) 50026	3	.	
	Duration	(hours) 80563	1	.	
	Secondary Bypass Volume	($10^3 m^3$) 50040	3	.	
	Duration	(hours) 80565	1	.	
RAW SEWAGE					# of Samples
03	BOD_5	(mg/L) 00001	0	89.	0005
	Suspended Solids	(mg/L) 00006	0	28.	0005
	TKN	(mg/L) 00020	2	32.7	0005
	Total Phosphorus	(mg/L) 00033	1	5.1	0005
FINAL EFFLUENT					
04	BOD_5	(mg/L) 00001	1	3.6	0005
	Suspended Solids	(mg/L) 00006	1	5.0	0005
	Ammonia + Ammonium	(mg/L) 00019	2	0.16	0005
	TKN	(mg/L) 00020	2	1.3	0005
	Total Phosphorus	(mg/L) 00033	2	.93	0005
DISINFECTION					
07	Chlorine Used - (kg as Cl2)	50100	1	.	
	Chlorine Dosage - (mg/L as Cl2)	80410	1	.	
	Chlorine Residual - (mg/L as Cl2)	80420	1	.	

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Municipal Utility Monitoring Program
Mechanical Plants **R2**

Municipality:	**Corporation of the Town of Petrolia**	Operating Authority:	**CH2M HILL**
Project Name:	**Petrolia WPCP**		
Mailing Address:	**411 Greenfield St Box 1270 Petrolia ON N0N 1R0**	Mailing Address:	**546 Maude St Box 329 Petrolia ON N0N 1R0**

File No.	Works Number	Data Period Month	Data Period Year	Days	Discharge Type	Update Code
4 6	1 1 0 0 0 0 5 7 9	0 1	1 4	3 1	2	R
1 2	3 11	16	19	20 21	22	80

C.P. 0 3 (12 13)

RAW SEWAGE

Parameter Code	Dec.	Monthly Average Results	# of Samples
Alkalinity CaCO3 mg/l 0 0 0 5 1	2	8 9 . 0 0	0 3

(30 34 35 38)

C.P. 0 4 (12 13)

FINAL EFFLUENT

Parameter Code	Dec.	Monthly Average Results	# of samples
Alkalinity CaCO3 mg/l 0 0 0 5 1	2	8 9 . 0 0	0 3
Nitrite mg/l 0 0 0 2 1	2	0 . 1 3	0 3
Nitrate mg/l 0 0 0 2 2	2	1 0 . 1 0	0 3
pH 8 0 7 7 0	2	7 . 1 6	0 3
Ecoli per 100 ml 8 3 0 5 2	0	2 . 0 0	0 3

(30 34 35 38)

James Wight Project Manager 519-381-3211, James.wight@ch2m.com

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Municipal Utility Monitoring Program
Mechanical Plants R2

Municipality:	**Corporation of the Town of Petrolia**	Operating Authority:	**CH2M HILL**
Project Name:	**Petrolia WPCP**		
Mailing Address:	**411 Greenfield St Box 1270 Petrolia ON N0N 1R0**	Mailing Address:	**546 Maude St Box 329 Petrolia ON N0N 1R0**

File No.	Works Number	Data Period Month	Data Period Year	Days	Discharge Type	Update Code
46	11000057 9	02	14	28	2	R
(1–2)	(3–11)	(16–17)	(18–19)	(20–21)	(22)	(80)

C.P. 03 **RAW SEWAGE**

Parameter	Parameter Code	Dec.	Monthly Average Results	# of Samples
Alkalinity CaCO3 mg/l	00051	2	252.00	04

C.P. 04 **FINAL EFFLUENT**

Parameter	Parameter Code	Dec.	Monthly Average Results	# of samples
Alkalinity CaCO3 mg/l	00051	2	76.00	04
Nitrite mg/l	00021	2	0.26	04
Nitrate mg/l	00022	2	7.80	04
pH	80770	2	7.17	04
Ecoli per 100 ml	83052	0	3.00	04

James Wight Project Manager 519-381-3211, James.wight@ch2m.com

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Municipal Utility Monitoring Program
Mechanical Plants **R2**

Municipality:	**Corporation of the Town of Petrolia**	Operating Authority:	**CH2M HILL**
Project Name:	**Petrolia WPCP**		
Mailing Address:	**411 Greenfield St Box 1270 Petrolia ON N0N 1R0**	Mailing Address:	**546 Maude St Box 329 Petrolia ON N0N 1R0**

File No. (1–2)	Works Number (3–11)	Data Period Month (16–17)	Data Period Year (18–19)	Days (20–21)	Discharge Type (22)	Update Code (80)
46	110000579	03	14	31	2	R

C.P. 03 (12–13)

RAW SEWAGE

Parameter	Parameter Code (30–34)	Dec. (35)	Monthly Average Results (38)	# of Samples
Alkalinity CaCO3 mg/l	00051	2	258.00	04

C.P. 04 (12–13)

FINAL EFFLUENT

Parameter	Parameter Code (30–34)	Dec. (35)	Monthly Average Results (38)	# of samples
Alkalinity CaCO3 mg/l	00051	2	98.00	02
Nitrite mg/l	00021	2	0.33	02
Nitrate mg/l	00022	2	2.20	02
pH	80770	2	7.14	02
Ecoli per 100 ml	83052	0	2.00	01

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Municipal Utility Monitoring Program
Mechanical Plants **R2**

Municipality:	**Corporation of the Town of Petrolia**	Operating Authority:	**CH2M HILL**
Project Name:	**Petrolia WPCP**		
Mailing Address:	**411 Greenfield St Box 1270 Petrolia ON N0N 1R0**	Mailing Address:	**546 Maude St Box 329 Petrolia ON N0N 1R0**

File No. (1–2)	Works Number (3–11)	Data Period Month (16–17)	Data Period Year (18–19)	Days (20–21)	Discharge Type (22)	Update Code (80)
46	110000579	04	14	30	2	R

C.P. 03 — RAW SEWAGE

Parameter	Parameter Code (30–34)	Dec. (35)	Monthly Average Results (38)	# of Samples
Alkalinity CaCO3 mg/l	00051	2	168.00	05

C.P. 04 — FINAL EFFLUENT

Parameter	Parameter Code (30–34)	Dec. (35)	Monthly Average Results (38)	# of samples
Alkalinity CaCO3 mg/l	00051	2	140.00	05
Nitrite mg/l	00021	2	0.44	05
Nitrate mg/l	00022	2	4.70	05
pH	80770	2	7.01	05
Ecoli per 100 ml	83052	0	100.00	05

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Municipal Utility Monitoring Program Mechanical Plants R2

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Project Name:	**Petrolia WPCP**		
Mailing Address:	**411 Greenfield St Box 1270 Petrolia ON N0N 1R0**	Mailing Address:	**546 Maude St Box 329 Petrolia ON N0N 1R0**

File No.	Works Number	Data Period Month	Data Period Year	Days	Discharge Type	Update Code
46	11000057 9	05	14	31	2	R
(1–2)	(3–11)	(16–19)		(20–21)	(22)	(80)

C.P. 03

RAW SEWAGE

	Parameter Code	Dec.	Monthly Average Results	# of Samples
Alkalinity CaCO3 mg/l	00051	2	266.00	04

FINAL EFFLUENT

	Parameter Code	Dec.	Monthly Average Results	# of samples
Alkalinity CaCO3 mg/l	00051	2	117.00	04
Nitrite mg/l	00021	2	0.17	04
Nitrate mg/l	00022	2	5.50	04
pH	80770	2	7.05	04
Ecoli per 100 ml	83052	0	8.00	04

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Municipal Utility Monitoring Program Mechanical Plants R2

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Project Name:	**Petrolia WPCP**		
Mailing Address:	**411 Greenfield St Box 1270 Petrolia ON N0N 1R0**	Mailing Address:	**546 Maude St Box 329 Petrolia ON N0N 1R0**

File No. (1–2)	Works Number (3–11)	Data Period Month (16–17)	Data Period Year (18–19)	Days (20–21)	Discharge Type (22)	Update Code (80)
46	11000057 9	06	14	30	2	R

C.P. 03 (12–13)

RAW SEWAGE

	Parameter Code (30–34)	Dec. (35)	Monthly Average Results (38)	# of Samples
Alkalinity CaCO3 mg/l	00051	2	239.00	02

FINAL EFFLUENT

	Parameter Code (30–34)	Dec. (35)	Monthly Average Results (38)	# of samples
Alkalinity CaCO3 mg/l	00051	2	25.00	03
Nitrite mg/l	00021	2	0.10	04
Nitrate mg/l	00022	2	12.20	04
pH	80770	2	6.75	04
Ecoli per 100 ml	83052	0	17.00	03

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Mechanical Plants R2

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Project Name:	**Petrolia WPCP**		
Mailing Address:	**411 Greenfield St Box 1270 Petrolia ON N0N 1R0**	Mailing Address:	**546 Maude St Box 329 Petrolia ON N0N 1R0**

File No. (1–2)	Works Number (3–11)	Data Period Month (16–17)	Data Period Year (18–19)	Days (20–21)	Discharge Type (22)	Update Code (80)
46	11000057 9	07	14	31	2	R

C.P. 03 (12–13) **RAW SEWAGE**

Parameter	Parameter Code	Dec.	Monthly Average Results	# of Samples
Alkalinity CaCO3 mg/l	00051	2	230.00	05

C.P. 04 (12–13) **FINAL EFFLUENT**

Parameter	Parameter Code	Dec.	Monthly Average Results	# of samples
Alkalinity CaCO3 mg/l	00051	2	22.00	02
Nitrite mg/l	00021	2	0.05	02
Nitrate mg/l	00022	2	14.00	02
pH	80770	2	6.58	02
Ecoli per 100 ml	83052	0	6.00	02

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Mailing Address:	**411 Greenfield St Box 1270 Petrolia ON N0N 1R0**	Mailing Address:	**546 Maude St Box 329 Petrolia ON N0N 1R0**

File No. (1–2)	Works Number (3–11)	Data Period Month (16–17)	Data Period Year (18–19)	Days (20–21)	Discharge Type (22)	Update Code (80)
46	110000579	08	14	31	2	R

C.P. 03 **RAW SEWAGE**

Parameter	Parameter Code (30–34)	Dec. (35)	Monthly Average Results (38)	# of Samples
Alkalinity CaCO3 mg/l	00051	2	230.00	04

C.P. 04 **FINAL EFFLUENT**

Parameter	Parameter Code (30–34)	Dec. (35)	Monthly Average Results (38)	# of samples
Alkalinity CaCO3 mg/l	00051	2	26.00	04
Nitrite mg/l	00021	2	0.03	02
Nitrate mg/l	00022	2	13.70	03
pH	80770	2	6.40	04
Ecoli per 100 ml	83052	0	6.38	04

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File No. (1–2)	Works Number (3–11)	Data Period Month (18–19)	Data Period Year	Days (20–21)	Discharge Type (22)	Update Code (80)
46	110000579	09	14	30	2	R

C.P. 03 (12–13) **RAW SEWAGE**

Parameter	Parameter Code (30–34)	Dec. (35)	Monthly Average Results (38)	# of Samples
Alkalinity CaCO3 mg/l	00051	2	247.00	04

C.P. 04 (12–13) **FINAL EFFLUENT**

Parameter	Parameter Code (30–34)	Dec. (35)	Monthly Average Results (38)	# of samples
Alkalinity CaCO3 mg/l	00051	2	77.00	02
Nitrite mg/l	00021	2	0.05	02
Nitrate mg/l	00022	2	11.70	02
pH	80770	2	6.89	02
Ecoli per 100 ml	83052	0	500	02

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Municipal Utility Monitoring Program Mechanical Plants R2

Municipality:	**Corporation of the Town of Petrolia**	Operating Authority:	**CH2M HILL**
Project Name:	**Petrolia WPCP**		
Mailing Address:	**411 Greenfield St Box 1270 Petrolia ON N0N 1R0**	Mailing Address:	**546 Maude St Box 329 Petrolia ON N0N 1R0**

File No. (1–2): 46

Works Number (3–11): 11000579

Data Period Month (16–17): 10 Year (18–19): 14

Days (20–21): 31

Discharge Type (22): 2

Update Code (80): R

C.P. (12–13): 03

RAW SEWAGE

Parameter Code	Dec.	Monthly Average Results	# of Samples
Alkalinity CaCO3 mg/l 00051	2	256.00	05

FINAL EFFLUENT

C.P. (12–13): 04

Parameter Code	Dec.	Monthly Average Results	# of samples
Alkalinity CaCO3 mg/l 00051	2	30.00	05
Nitrite mg/l 00021	2	0.08	05
Nitrate mg/l 00022	2	20.40	05
pH 77 00	2	6.55	05
Ecoli per 100 ml 83052	0	3.00	05

James Wight Project Manager 519-381-3211, James.wight@ch2m.com

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Municipal Utility Monitoring Program
Mechanical Plants **R2**

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Project Name:	**Petrolia WPCP**		
Mailing Address:	**411 Greenfield St Box 1270 Petrolia ON N0N 1R0**	Mailing Address:	**546 Maude St Box 329 Petrolia ON N0N 1R0**

File No. (1–2): **4 6**

Works Number (3–11): **1 1 0 0 0 0 5 7 9**

Data Period (16–19): Month **1 1** Year **1 4**

Days (20–21): **3 0**

Discharge Type (22): **2**

Update Code (80): **R**

C.P. (12–13): **0 3** **RAW SEWAGE**

Parameter	Parameter Code (30–34)	Dec. (35)	Monthly Average Results (38)	# of Samples
Alkalinity CaCO3 mg/l	0 0 0 5 1	2	2 4 9 . 0 0	0 4

C.P. (12–13): **0 4** **FINAL EFFLUENT**

Parameter	Parameter Code (30–34)	Dec. (35)	Monthly Average Results (38)	# of samples
Alkalinity CaCO3 mg/l	0 0 0 5 1	2	7 2 . 0 0	0 4
Nitrite mg/l	0 0 0 2 1	2	0 . 0 1	0 4
Nitrate mg/l	0 0 0 2 2	2	1 6 . 4 0	0 4
pH	8 0 7 7 0	2	7 . 5 0	0 4
Ecoli per 100 ml	8 3 0 5 2	0	2 . 0 0	0 4

Randy Clendenning 519-490-5592 or randy.clendenning@ch2m.com

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Municipal Utility Monitoring Program
Mechanical Plants **R2**

Municipality:	**Corporation of the Town of Petrolia**	Operating Authority:	**CH2M HILL**
Project Name:	**Petrolia WPCP**		
Mailing Address:	**411 Greenfield St Box 1270 Petrolia ON N0N 1R0**	Mailing Address:	**546 Maude St Box 329 Petrolia ON N0N 1R0**

File No. (1–2): **46**

Works Number (3–11): **110000579**

Data Period (16–19): Month **12** Year **14**

Days (20–21): **31**

Discharge Type (22): **2**

Update Code (80): **R**

C.P. **03** (12–13) **RAW SEWAGE**

Parameter	Parameter Code	Dec.	Monthly Average Results	# of Samples
Alkalinity CaCO3 mg/l	00051	2	247.00	05

C.P. **04** (12–13) **FINAL EFFLUENT**

Parameter	Parameter Code	Dec.	Monthly Average Results	# of samples
Alkalinity CaCO3 mg/l	00051	2	48.	05
Nitrite mg/l	00021	2	.04	05
Nitrate mg/l	00022	2	17.3	05
pH	80770	2	7.25	05
Ecoli per 100 ml	83052	0	2	05

Randy Clendenning 519-490-5592 randy.clendenning@ch2m.com

Return completed blue form to:

Pierce Services & Solutions Inc.

519.820.4853 Fax 519.824.9402

Instrument Verification Sheet

Client Name: CH2MHILL OMI

Date: December 10, 2014

Equipment Description: Effluent Flow Meter

Assigned Number: _____

Area Located: Petrolia WPCP

Drawing Number: _____

Instrument Data

Manufacturer: Siemens/Milltronics

Model Number: OCM III

Type: Ultrasonic Measument

Flume/Weir Type: 36" Non Contracted Suppression Weir

Range:0 - 53.5185 l/s

Accuracy: +/- 1%

Method Of Calibration: Standard Measurment

Application: Wastewater

Calibration Data

Input %	Input	As Found	Therorectical	Pass/Fail
0.0	0 "	0.00 l/s	0.00 l/s	Pass
25	1"	6.689812 l/s	6.77 l/s	Pass
50	2"	18.92164 l/s	19.15 l/s	Pass
75	3"	34.76128 l/s	35.18 l/s	Pass
100	4"	53.5185 l/s	54.16 l/s	Pass

Confirmed Run Mode: ✓

Placed back in service: ✓

Comments:

Measurements confirmed with ISCO open channel flow measurement handbook (sixth edition)

Checked By: Greg Pierce CCST

Signature: _____

Pierce Services & Solutions Inc.

Alphabetical Parameter Listing OCM III

Tag # Effluent Flow

Date: December 10, 2014

#	Parameter	Value
P0	Language	0
P1	Dimensional Units	1
P2	Temperature Units	0
P3	Primary Element	0
P4	Method of Calculation	1
P5	Flow Rate Units	0
P6	Flow at Maximum Head	71.55
P7	Height of Maximum Head	4
P8	Volts in at Zero Velocity	—
P9	Velocity at 5 Volts In	—
P10	Velocity at maximum flow	—
P13	Display Damping	0
P14	Display Lighting	0
P15	Relay 1 Assignment	0
P16	Relay 1 High Set Point	—
P17	Relay 1 Low Set Point	—
P18	Relay 2 Assignment	0
P19	Relay 2 High Set Point	—
P20	Relay 2 Low Set Point	—
P21	Relay 3 Assignment	0
P22	Relay 3 High Set Point	—
P23	Relay 3 Low Set Point	—
P24	mA assignment	0
P25	If Custom mA, 20 mA =?	—
P26	mA Span	0
P27	mA Damping	10
P28	mA Options	0
P29	Fail-safe Time	0
P30	Fail-safe Analog Mode	1
P31	Fail-safe Analog mA	4
P32	Totalizer Multiplier	4
P33	Flow Rate Display	2
P34	Printer Mode	0
P35	Printer Timing	—
P36	Measurement Interval	0
P37	Serial Data Rate	5
P38	Site Number	0
P39	Data Logging Rate	2
P40	Log Rapid Setpoint	—
P41	Log Normal Setpoint	—
P42	Head Determination	0
P43	Volts in For Zero Head	—
P44	Head at 5 Volts In	—
P45	Low Flow Cut-off Head	0
P46	Range at Zero Head	30.39487
P47	Blanking Distance	25
U0	Exponent	1.5

#	Parameter	Value
D0	Head	1.66
D1	Flow Rate	19.20517
D2	Short Total	409845.5
D3	Maximum Flow Rate	72.54365
D4	Minimum Flow Rate	0
D5	Temperature	8.33
D6	Maximum Temperature	29.01
D7	Minimum Temperature	-1.79
D8	Velocity	—
D9	Nominal Target Range	26
D10	Analog Milliamps	8.08
D11	Internal DC Volts	26.48
D12	Velocity Volts	—
D13	Auxiliary Input Volts	0.00
D14	Temperature Sensor Ohms	11227
D15	Self-test Checksum	0000H
D16	Restarts	549
D17	Exceptions	0
D18	Valid Echos per 100	100
F2	Run Mode l/s	
	Total X 1000	
F6	Software Identification Number	
F7	View Min/Max Data	
	Max Flow	72.54
	Time	00:01:58
	Date	02/03/13
	Min Flow	0.00
	Time	03:35:55
	Date	25/12/12
	Max Temperature	29.00
	Time	16:52:37
	Date	19/07/13
	Min Temperature	-1.78
	Time	08:47:26
	Date	23/01/13
F8	Reset Min/Max Data	√

Site Location: Petrolia STP

Pierce Services
& Solutions Inc.
519.820.4853 Fax 519.824.9402

Instrument Verification Sheet

Client Name: CH2MHILL OMI

Date: December 10, 2014

Equipment Description: RAS Flow Meter

Assigned Number: _____

Area Located: Petrolia WPCP

Drawing Number:_____

Instrument Data

Manufacturer: Grayline

Model Number: DFM-IV-A1A1A1B1A

Type: Doppler

Serial Number: 15938

Range:0 - 55.0 l/s

Accuracy: +/- 1%

Method Of Calibration: Standard Measurment

Application: Wastewater

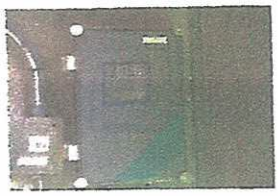
Calibration Data

Input %	Input	As Found	As Left	Pass/Fail
0.0	4.00 mA	0 l/s	0 l/s	Pass
25	8.00 mA	13.50 l/s	13.50 l/s	Pass
50	12.00 mA	27.50 l/s	27.50 l/s	Pass
75	16.00 mA	41.00 l/s	41.00 l/s	Pass
100	20.00 mA	55.00 l/s	55.00 l/s	Pass
	20.00 mA	55.0 l/s	55.0 l/s	

Confirmed Run Mode: ✓

Placed back in service: ✓

Comments:



Checked By: Greg Pierce CCST

Signature:

Pierce Services
& Solutions Inc.
519.820.4853 Fax 519.824.9402

Instrument Verification Sheet

Client Name: CH2MHILL OMI

Date: December 10, 2014

Equipment Description: Flow Meter Lagoon

Assigned Number: _____

Area Located: Petrolia WPCP

Drawing Number: _____

Instrument Data

Manufacturer: Pulsar

Model Number: Ultra 3

Type: Ultrasonic Measument

Flume/Weir Type: 60° V notch weir

Range:0 - 222.2 l/s

Accuracy: +/- 5%

Method Of Calibration: Standard Measurment

Application: Wastewater

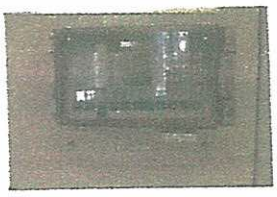
Calibration Data

Input %	Input	As Found	Therorectical	Pass/Fail
0.0	0 cm	0.00 l/s	0.00 l/s	Pass
25	15 cm	6.99 l/s	6.94 l/s	Pass
50	30 cm	39.33 l/s	39.27 l/s	Pass
75	45 cm	108.25 l/s	108.22 l/s	Pass
100	60 cm	222.2 l/s	222.16 l/s	Pass

Confirmed Run Mode: ✓

Placed back in service: ✓

Comments:



Measurements confirmed with ISCO open channel flow measurement handbook (sixth edition)

Checked By: Greg Pierce CCST

Signature: _____

Pierce Services
& Solutions Inc.

519.820.4853 Fax 519.824.9402

Instrument Verification Sheet

Client Name: CH2MHILL OMI

Date: December 10, 2014

Equipment Description: Influent Flow Meter

Assigned Number: _____

Area Located: Petrolia WPCP

Drawing Number: _____

Instrument Data

Manufacturer: Siemens/Milltronics

Model Number: OCM III

Type: Ultrasonic Measument

Flume/Weir Type: 9" Parshall Flume

Range:0 - 245 l/s

Accuracy: +/- 1%

Method Of Calibration: Standard Measurment

Application: Wastewater

Calibration Data

Input %	Input	As Found	Therorectical	Pass/Fail
0.0	0 cm	0.00 l/s	0.00 l/s	Pass
16	10 cm	15.7977 l/s	15.80 l/s	Pass
33	20 cm	45.6216 l/s	45.63 l/s	Pass
50	30.cm	84.8379 l/s	84.85 l/s	Pass
66	40 cm	131.7487 l/s	131.80 l/s	Pass
83	50 cm	185.3611 l/s	185.40 l/s	Pass
100	60 cm	245.00 l/s	245.00 l/s	Pass

Confirmed Run Mode: ✓

Placed back in service: ✓

Comments:

Measurements confirmed with ISCO open channel flow measurement handbook (sixth edition)

Checked By: Greg Pierce CCST

Signature: _____

Pierce Services & Solutions Inc.

Alphabetical Parameter Listing OCM III

Tag # Influent Flow

Date: December 10, 2014

#	Parameter	Value	#	Parameter	Value
P0	Language	0	D0	Head	8.63
P1	Dimensional Units	0	D1	Flow Rate	12.64663
P2	Temperature Units	0	D2	Short Total	721321.5
P3	Primary Element	0	D3	Maximum Flow Rate	192.2343
P4	Method of Calculation	1	D4	Minimum Flow Rate	0
P5	Flow Rate Units	0	D5	Temperature	54.37
P6	Flow at Maximum Head	245	D6	Maximum Temperature	57.52
P7	Height of Maximum Head	60	D7	Minimum Temperature	52.38
P8	Volts in at Zero Velocity	—	D8	Velocity	—
P9	Velocity at 5 Volts In	—	D9	Nominal Target Range	82
P10	Velocity at maximum flow	—	D10	Analog Milliamps	4.97
P13	Display Damping	0	D11	Internal DC Volts	29.99
P14	Display Lighting	0	D12	Velocity Volts	—
P15	Relay 1 Assignment	0	D13	Auxiliary Input Volts	0.00
P16	Relay 1 High Set Point	—	D14	Temperature Sensor Ohms	5334
P17	Relay 1 Low Set Point	—	D15	Self-test Checksum	0000H
P18	Relay 2 Assignment	0	D16	Restarts	4
P19	Relay 2 High Set Point	—	D17	Exceptions	0
P20	Relay 2 Low Set Point	—	D18	Valid Echos per 100	26
P21	Relay 3 Assignment	0			
P22	Relay 3 High Set Point	—			
P23	Relay 3 Low Set Point	—			
P24	mA assignment	0	F2	Run Mode l/s	
P25	If Custom mA, 20 mA =?	—		Total X 1000	
P26	mA Span	0	F6	Software Identification Number	
P27	mA Damping	10	F7	View Min/Max Data	
P28	mA Options	0		Max Flow	192.23
P29	Fail-safe Time	60		Time	09:20:25
P30	Fail-safe Analog Mode	0		Date	17/09/14
P31	Fail-safe Analog mA	4		Min Flow	0.00
P32	Totalizer Multiplier	6		Time	16:32:15
P33	Flow Rate Display	2		Date	17/12/13
P34	Printer Mode	0		Max Temperature	57.51
P35	Printer Timing	—		Time	15:08:33
P36	Measurement Interval	0		Date	28/06/14
P37	Serial Data Rate	5		Min Temperature	52.38
P38	Site Number	0		Time	03:35:12
P39	Data Logging Rate	2		Date	07/01/14
P40	Log Rapid Setpoint	—	F8	Reset Min/Max Data	√
P41	Log Normal Setpoint	—			
P42	Head Determination	0			
P43	Volts in For Zero Head	—			
P44	Head at 5 Volts In	—			
P45	Low Flow Cut-off Head	0			
P46	Range at Zero Head	93.75			
P47	Blanking Distance	30.48264			
U0	Exponent	1.53			

Site Location: Petrolia STP

CH2MHILL®

Michele Vandenheuvel

Water Inspector

Safe Drinking Water Branch

Ministry of the Environment

1094 London Road - Sarnia,

ON N7S 1P1

Dear Michelle:

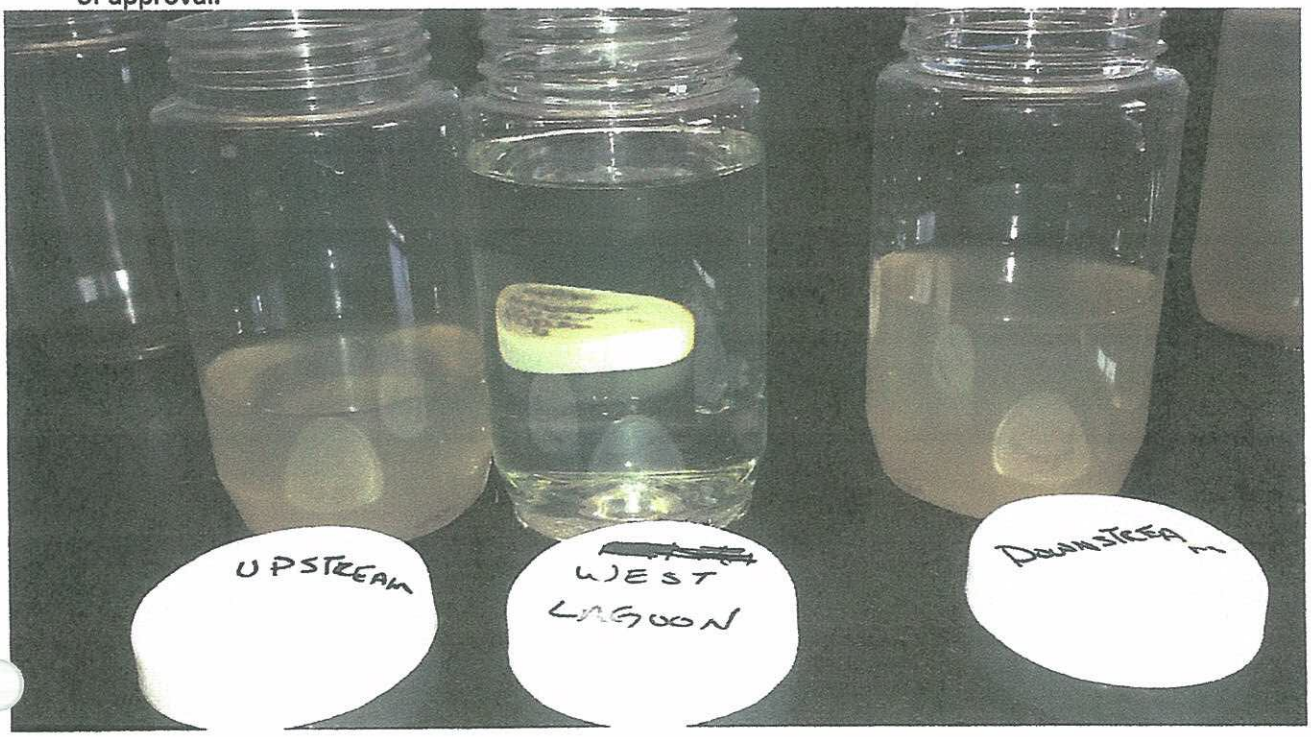
This letter is to request that the Petrolia Waste Water Treatment Plant discharge a portion of the West Lagoon in order to repair a section of the discharge pipe that was damaged due to the extreme cold past winter.

With the very cold winter the lagoon had completely frozen over (surface) and because the discharge pipe is exposed, the standing water in it froze and cracked the pipe. In order to repair the pipe the lagoon level needs to be dropped approximately 85 cm or 28,000 m^3 or 22% of the lagoon volume. Based on our previous discharge, we discharged approximately 8,000 m^3 in one week. Judging by this discharge rate it would take approximately 3½ weeks to drain if we opened the valve to the same position as previous. We could discharge quicker but we would want to be cautious not to discharge at a rate that would cause the creek bed to be disrupted. The discharge valve is a gate valve and is difficult to judge how open/closed it is as it is located approximately 15 feet in a chamber and is turned using a valve key from ground level. During this past discharge the valve was not fully open.

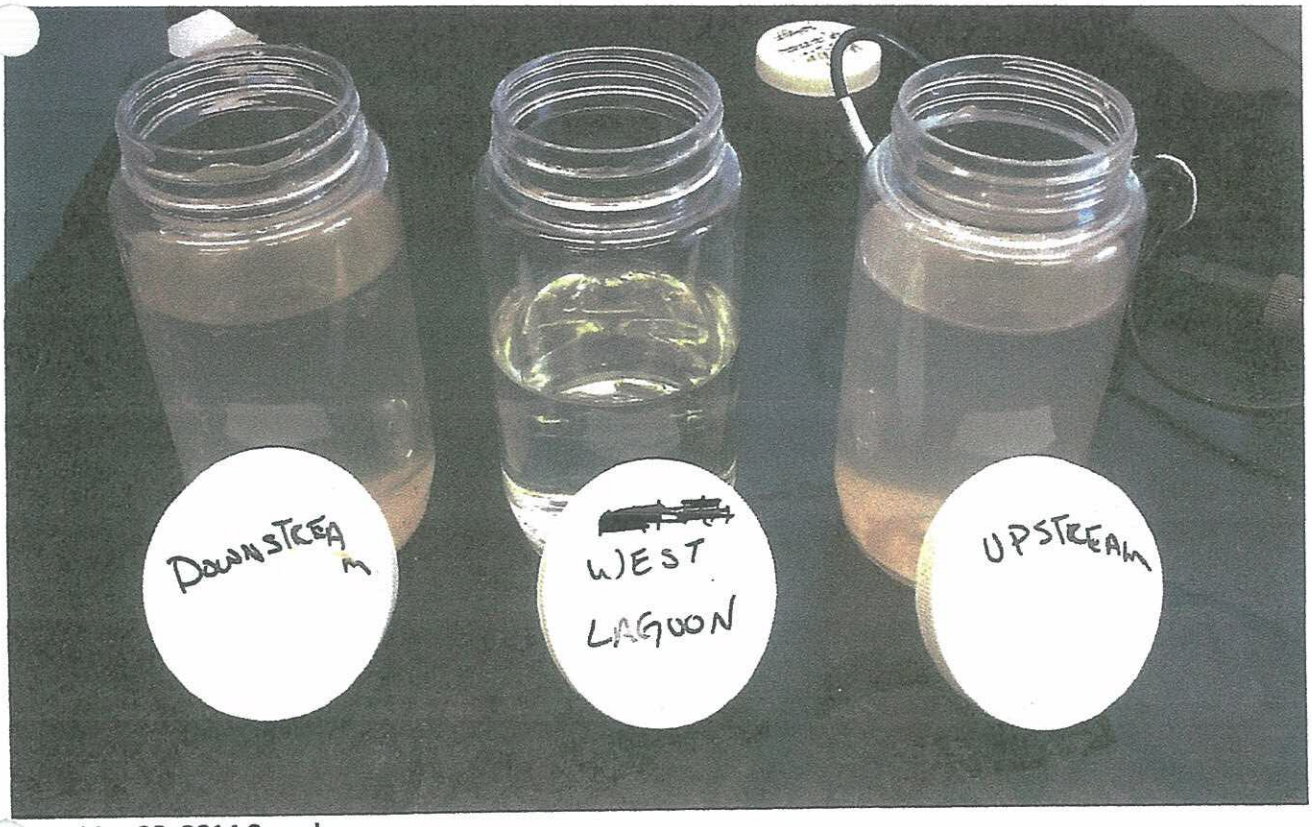
Once the lagoon was discharged to the desired level, the repair should only take 1-2 days.

	TSS	CBOD	TP	NH^3	E coli	pH	Temp
May 21, 2014							
Upstream	140	<4	.12	0.42	4000	7.86	17.7
Downstream	140	<4	.11	0.36	5300	7.99	17.1
W. Lagoon	40	<4	1.21	4.38	2	7.43	19.2
May 28, 2014							
Upstream	30	<4	.06	0.32	140	7.80	22.1
Downstream	10	<4	.12	0.6	98	7.79	21.8
W.Lagoon	0	<4	1.01	2.56	<2	7.70	22.1

If given the approval to discharge, we will continue to sample the lagoon and creek (upstream and downstream) twice/week during the duration of the discharge. As per our certificate of approval, the combined flow (lagoon + plant effluent) will be used to determine the average waste loading (kg/day) on Bear Creek and will be maintained below these limits. The effluent parameters include: $CBOD_5$,Total suspended solids, Total Phosphorus, Total Ammonia Nitrogen, E Coli and pH. If these limits are exceeded, discharging of the lagoon will stop and re-measured until the limits are under those stated in the certificate of approval.



May 21, 2014 Samples



May 28, 2014 Samples

Please don't hesitate me if you have any further concerns and/or questions.

Kind Regards,

James Wight, Project Manager

CH2MHILL

CH2MHILL®

Michele Vandenheuvel

Water Inspector

Safe Drinking Water Branch

Ministry of the Environment

1094 London Road - Sarnia,

ON N7S 1P1

Dear Michelle:

This letter is to confirm that as of Monday, June 23rd 2014, the Petrolia Waste Water Treatment Plant has finished discharging the portion of the West Lagoon, in order to complete the repairs needed, in accordance to your approval stated in the letter (File: SI-LA-PE-442).

The discharging period lasted from June 5-23, 2014 (18 days)and approximately 34096.23 m^3 was discharged into Bear Creek. Total final effluent (flow through the regular process) leaving the Petrolia Waste Water Treatment Plant during this period was 13199.59 m^3 and therefore the total effluent that entered Bear Creek during the period was 48099.69m^3. During the discharge period samples were taken twice per week from the West Lagoon discharge, the plant Final Effluent and both Upstream and Downstream of the lagoon discharge point in Bear Creek.

The following Table shows the analysis of all samples taken.

2014	Bear Creek Sampling										
Date	Up/Down	CBOD	S. S.	Total P	Alkalinity	Nitrate	Nitrite	NH3	E. Coli	Temp	pH
9-Jun	Up	5	40	0.05	241	<1	0.011	0.87	440	19.1	7.73
9-Jun	Down	<4	28.5	0.22	230	<1	0.012	0.89	390	18.3	7.86
11-Jun	Up	<4	200	0.15	245	<0	0.008	0.47	206	21.2	7.69
11-Jun	Down	<4	200	0.34	227	<0	0.01	1.17	138	21.3	7.77
16-Jun	Up	0	50	0.1	225	0.7	0.058	0.46	176	20.3	7.62
16-Jun	Down	<4	50	0.44	214	0.3		1.55	168	20.2	7.68
18-Jun	Up	<4	20	0.06	227	0.4	0.009	0.47	520	21.3	7.57
18-Jun	Down	<4	20	0.23	224	0	0.006	1.24	228	21.2	7.57
	Lagoon Discharge Sampling										
9-Jun		4	0	1.25	170	1.2	0.033	2.97	40	18.8	7.2
11-Jun		<4	0	1.6	173	1.4	0	3.46	4	21.5	7.28
16-Jun		<4	0	1.34	184	8.6	0.571	3.87	2	20.6	7.33
18-Jun		<4	0	1.34	204	1.4	0.087	4.56	118	21.4	7.35
	Final Effluent Sampling										
9-Jun		<2	2.5	0.42	17	2.97	0.033	0.28	1200	17.1	6.98
11-Jun		<2	0	0.56	14	17.3	0.021	0.1	<2	16.9	6.62
16-Jun		3	10	0.58	28	20.1	0.267	0.34	n/s	18.1	6.64
18-Jun		<2	0	0.51	13	8.6	0.018	0.36	<2	19.8	6.5

No E. coli sample was available on Jun 16th as the filter train had tripped out and so no effluent was flowing into the ultraviolet section of the plant where the E coli sample is taken. The final effluent E. Coli sample result (1200) on June 9 is questionable based on the other results from the same day and the subsequent results during the rest of the sampling period.

Effluent Limits as per Environmental Compliance Assessment		
Effluent Parameter	Concentration	Waste Loading
$CBOD_5$	10.0 mg/L	38.0 kg/day
Total Suspended Solids	10.0 mg/L	38.0 kg/day
Total Phosphorus	1.0 mg/L	3.8 kg/day
Total Ammonia Nitrogen (May 1 – Nov. 30)	3.0 mg/L	11.4 kg/day
Total Ammonia Nitrogen (Dec 1 – Apr 30)	7.0 mg/L	26.6 kg/day
E. Coli (Apr 1 – Nov 30)	200 organisms/100 mL	
pH of the effluent maintained between 6-9.5 at all times		

Daily Total flow			Waste Loading/day				
	Effluent	Lagoon Discharge	CBOD	TSS	TP	NH3	E. Coli
5-Jun	638.99	1837.17	8.62666	1.597475	2.564838	5.474287	620
6-Jun	693.83	1837.17	8.73634	1.734575	2.587871	5.475822	620
7-Jun	625.49	1837.17	8.59966	1.563725	2.559168	5.473909	620
[illegible]	[illegible]	1837.17	8.57524	1.5332	2.55404	5.473567	620
9-Jun	720.87	1837.17	8.79042	1.802175	2.599228	5.476579	620
10-Jun	686.62	1837.17	8.72192	1.71655	2.584843	5.47562	620
11-Jun	722.14	1837.17	8.79296	0	3.34387	6.36383	2
12-Jun	762.79	1837.17	8.87426	0	3.366634	6.364236	2
13-Jun	770.32	1837.17	8.88932	0	3.370851	6.364311	2
14-Jun	432.65	1837.17	8.21398	0	3.181756	6.360935	2
15-Jun	33.05	1837.17	7.41478	0	2.95798	6.356939	2
16-Jun	475.31	1837.17	8.77461	4.7531	2.737488	7.126008	2
17-Jun	1015.51	1837.17	10.39521	10.1551	3.050804	7.144375	2
18-Jun	115.34	1837.17	7.57936	0	2.520631	8.381647	60
19-Jun	1126.25	1837.17	9.60118	0	3.036195	8.41804	60
20-Jun	964.55	1837.17	9.27778	0	2.953728	8.412219	60
21-Jun	913.08	1837.17	9.17484	0	2.927479	8.410366	60
22-Jun	889.52	1837.17	9.12772	0	2.915463	8.409518	60
23-Jun	993.87	1837.17	9.33642	0	2.968682	8.413275	60
	13193.5	34906.23					
Grand Total		48099.69					

Please don't hesitate to contact me if you have any further concerns and/or questions.

Kind Regards,

James Wight, Project Manager

CH2MHILL

CH2MHILL

CERTIFIED MAIL- RETURN RECEIPT REQUESTED

Mark Smith
Provincial Officer
Ministry of the Environment and Climate Change
4510 Rhodes Drive
Windsor, ON N8W 5K5

December 18, 2014

Subject: The Corporation of the Town of Petrolia, Petrolia Water Pollution Control Plant – Certificate of Approval Number 5819-7EZNY7

Dear Mr. Smith

CH2M HILL Operations Management International, Inc. (OMI) is responsible for the operation of the Town of Petrolia's Water Pollution Control Plant as well as compliance with the Certificate of Approval requirements associated with the facility.

As the entity responsible for the operation of the Petrolia Water Pollution Control Plant, I wish to bring to your attention the following issues.

1. A recent internal review of Certificate of Approval-related documentation for the above-referenced facility indicated that on specific dates in 2014, the required monitoring and recording of selected parameters was not performed. A chronology of the affected parameters is presented as Table 1.

2. During the months of May, July and August 2014, the Total Ammonia Nitrogen effluent limit of 3.0 mg/L, which is in effect from May 1 through November 30, was exceeded. The specific average concentration values for each of the subject months is presented as Table 2.

Having identified the aforementioned issues, we have implemented corrective measures in order to ensure that all monitoring is performed as required by the Certificate of Approval for the Petrolia Water Pollution Control Plant and that the facility is operated in a manner that will ensure compliance with the effluent limits specified in the Certificate of Approval.

CH2M HILL is dedicated to meeting the regulatory requirements of the sites which we operate. If you have any questions or require additional information, please contact me at (519) 490-5592.

Randy Clendenning

Project Manager
CH2M HILL OMI

Date, 2014	Monitoring and Recording Incident
January 2	Influent samples were not sent to the laboratory
February 5, 12, 19, 26	Total Phosphorus analysis not performed on Influent and Effluent samples
March 12	*E. coli* samples not processed-sample delivery delay-inclement weather
June 9	Influent samples were not sent to the laboratory
June 11	Weekly Influent and Effluent samples not collected
June 25	Total Phosphorus analysis not performed on Influent and Effluent samples
July 9 and 16	Influent Total Kjeldahl Nitrogen analysis not performed
July 16	Effluent samples were not collected
August 6	Influent Total Suspended Solids and Total Phosphorus analysis not performed
August 6	Effluent Nitrite and Nitrate analysis not performed
August 27	Effluent Nitrite analysis not performed
October 15	Effluent Nitrite and Nitrate analysis not performed

Table 2
Total Ammonia Nitrogen Concentrations above the Certificate of Approval Effluent Limits

Date, 2014	Total Average Monthly Ammonia Nitrogen Concentration, mg/L
May	3.08
July	4.06
August	3.22

Ministry of the Environment
Safe Drinking Water Branch
Sarnia/Windsor District
1094 London Rd
Sarnia ON N7S 1P1

Ministère de l'Environnement
Direction du contrôle de la qualité de l'eau potable
District de Sarnia et de Windsor
1094, chemin London
Sarnia (Ontario) N7S 1P1

Ontario

Direct Line 519-383-3782

File: SI-LA-PE-442
Petrolia WPCP

June 5, 2014

Mr. Joe Adams
Director of Operations
The Corporation of the Town of Petrolia
411 Greenfield Street,
Petrolia, ON
N0N 1R0

Dear Mr. Adams

RE: Petrolia Water Pollution Control Plant (#110000579)
Request for late discharge of the West Lagoon to Bear Creek

This letter is to confirm receipt of a request dated June 4, 2014 from James Wight of CH2MHill to permit an emergency discharge of a portion of the West Lagoon. The purpose is to repair a valve/discharge pipe that was damaged over the past winter. In order to complete this 1-2 day repair, the West Lagoon level needs to be reduced. The request has been reviewed along with the water quality data for pre-discharge samples from the West Lagoon contents and Bear Creek water samples upstream and downstream of the lagoon outfall structure. The Ministry agrees with the proposed discharge of the West Lagoon to permit the necessary repair to be made.

Certificate of Approval Number 5819-7EZNY7, condition 4(1)(b) states that any by-pass of sewage from any portion of the *works* is prohibited, except where the *District Manager* (now Water Compliance Supervisor) agrees that it is necessary for the purpose of carrying out essential maintenance and the *District Manager* (now Water Compliance Supervisor) has given prior written acknowledgment of the *by-pass*.

Moreover, condition 7(7) specifies that effluent from the West Lagoon shall only be discharged in spring (April 1 to May 31) and fall (October 1 to November 30). In addition, Condition 7(9) requires the owner to control the volumes of the effluent discharged from West Lagoon during any discharge event such that the Works comply with the Monthly Average Loading limits stipulated in Table 2 of condition 6(1). *Works* as defined in the Certificate of Approval, includes the Water Pollution Control Plant, and the East and West Lagoons.

In accordance with Condition 4(1)(b) of the Certificate of Approval, this letter constitutes written acknowledgement by the District Manager (now Water Compliance Supervisor) that the controlled discharge/by-pass is necessary on a temporary basis. In granting this acknowledgment, the Corporation of the Town of Petrolia and CH2MHill shall adhere to the following:

1. The proposed West Lagoon discharge shall commence no later than June 5, 2014.
2. The proposed West Lagoon discharge shall terminate not later than July 4, 2014.
3. During the West Lagoon discharge event, effluent samples from the West Lagoon shall be collected from the outlet structure of lagoon twice per week and analysed for the parameters listed in Table 5 of condition 8 (4), and in accordance with the protocols outlined in condition 8(5).
4. During the West Lagoon discharge event, water samples of Bear Creek shall be collected both upstream and downstream of the lagoon outfall structure. The Bear Creek samples shall be collected twice per week, on the same day as the West Lagoon effluent samples, and shall be analysed for the same parameters as the lagoon effluent parameters.
5. pH and temperature shall be measured and recorded for all West Lagoon effluent and Bear Creek samples collected.
6. If monitoring results or visual observation indicate the potential for adverse impacts to Bear Creek, the owner and operating authority shall immediately notify the Ministry of the Environment SDWB Sarnia/Windsor District and shall cease the discharge of effluent.
7. Within 45 days of terminating the West Lagoon discharge, acknowledged under this letter, a report must be submitted to the Ministry of the Environment SDWB Sarnia/Windsor District summarizing the results of the monitoring program carried out during the temporary discharge period.

If you have any questions and/or concerns please contact Michele Vandenheuvel at (519) 383-3782.

Yours truly,

Gary Johnson
Water Compliance Supervisor,
Safe Drinking Water Branch
Sarnia/Windsor District

c: Manny Baron, CAO, Town of Petrolia
James Wight, CH2MHill
Scott Abernethy, Surface Water Group Leader, MOE London
Michele Vandenheuvel, MOE Sarnia

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