



Centre for Alternative Wastewater Treatment

2011 CFS Alert Constructed Wetland Assessment
Interim Report

9/29/2011



Brent Wootton, Ph.D.

Director & Senior Scientist,
Centre for Alternative Wastewater Treatment
t: 705.324.9144 ext 3226
f: 705.878.9312
e: bwootton@flemingc.on.ca

Mary Lou McLean

Manager, Office of Applied Research
t: 705.324.9144 ext 3038
f: 705.324.8805
e: marmclea@flemingc.on.ca

Stephanie Collins

Operations Manager,
Centre for Alternative Wastewater Treatment
t: 705.324.9144 ext 3460
f: 705.324.8805
e: stepcoll@flemingc.on.ca

Fleming College
200 Albert St., PO Box 8000
Lindsay, ON K9V 5E6

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Summary

The data presented in this report were collected by CAWT, Fleming College, under contract with the Department of National Defence summer of 2011. Testing was done at multiple laboratories according to standard methods. The aggregated data are summarized here.

A longer report containing methods and interpretation of results is under preparation.

Temperature °C

Sample Description	11B1-1	11B1-2	11B1-3	11B1-4	11B2-1	11B2-2	11B2-3	11B2-4	11B2-5	11B3-1	11B3-2	11B3-3	11B4-1
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Sample Date

July 21, 2011													
July 23, 2011	14.3		18.8		15.9	13.5				13.9			
July 24, 2011	13.2	17.2	17.0		13.1	12.7				13.2			
July 25, 2011	13.2	16.2	15.5		14.4	12.1				13.7			
July 26, 2011	14.0	20.3	19.5		17.9	11.3				15.9			
July 27, 2011	15.2	18.5	18.0		15.4					13.9			
July 28, 2011	15.2	16.7	16.3		16.4					15.3			
August 4, 2011	18.4	17.8	16.8		12.6		17.0			11.3			
August 8, 2011	14.3	16.2	15.9		15.2		15.1			14.2			
August 15, 2011							5.7	11.2	12.0		0.6	5.7	2.6
August 21, 2011	7.5	13.9		14.3				7.7	9.1		5.1	5.6	4.1
August 29, 2011	5.4	17.1		15.1				5.8	8.3		2.3	3.0	2.1

Average	13.07	17.10	17.23	14.70	15.11	12.40	12.60	8.23	9.80	13.93	2.67	4.77	2.93
Min	5.40	13.90	15.50	14.30	12.60	11.30	5.70	5.80	8.30	11.30	0.60	3.00	2.10
Max	18.40	20.30	19.50	15.10	17.90	13.50	17.00	11.20	12.00	15.90	5.10	5.70	4.10

Temperature ° C

Sample Description	11B5-1	11B5-2	11B5-3	11PL-1	11PL-2	11ExB-1	11SH-1	11SH-2	11SH-3	11SH-4	REFERENCE	BLANK
Sample Date												
July 21, 2011												
July 23, 2011									7.9	8.3		
July 24, 2011		7.8							7.5			
July 25, 2011	7.9	8.2		0.2			5.1	10.5	9.8			
July 26, 2011	5.5	8.7		0.6		0.2	5.3	10.7	10.4	9.5		
July 27, 2011	6.5	7.3		0.7		0.0	4.7	9.8	9.2	9.2		
July 28, 2011	9.1	9.6		1.4		0.1	6.0	11.1	10.7	9.9		
August 4, 2011	12.1	9.3		13.0		10.5	12.5	12.6	16.4	16.1	12.6	11.6
August 8, 2011	5.8	5.9			8.6			6.6	6.7	5.2		
August 15, 2011	4.1	5.6			2.9				7.0	5.1	3.0	5.2
August 21, 2011	3.9	4.2	1.5		0.4				5.3	3.4	23.4	3.3
August 29, 2011	1.3	1.3	1.0		0.0				0.8	0.0	0.0	18.0
Average	6.24	6.79	1.25	3.18	2.98	2.70	6.72	10.22	8.34	7.41	9.75	9.53
Min	1.30	1.30	1.00	0.20	0.00	0.00	4.70	6.60	0.80	0.00	0.00	3.30
Max	12.10	9.60	1.50	13.00	8.60	10.50	12.50	12.60	16.40	16.10	23.40	18.00

Dissolved Oxygen (DO) mg/L

Sample Description	11B1-1	11B1-2	11B1-3	11B1-4	11B2-1	11B2-2	11B2-3	11B2-4	11B2-5	11B3-1	11B3-2	11B3-3	11B4-1
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Sample Date

July 21, 2011	0.55												
July 23, 2011	7.30		7.33		5.73	14.88				7.20			
July 24, 2011	7.00	8.46	8.01		7.86	18.10				8.97			
July 25, 2011	8.46	8.59	8.52		7.67	18.45				8.58			
July 26, 2011	6.97	7.15	6.94		6.25	20.03				7.86			
July 27, 2011	6.36	7.94	7.54		6.75					7.66			
July 28, 2011	6.50	8.82	8.74		7.14					7.83			
August 4, 2011	6.13	8.24	6.48		6.53		7.23			6.01			
August 8, 2011	2.51	8.71	9.03		7.78		8.39			8.34			
August 15, 2011							11.96	8.00	8.33		10.36	11.20	13.58
August 21, 2011	11.40	9.85		8.24				9.37	9.00		11.13	10.61	11.92
August 29, 2011	9.47	7.22		6.61				8.43	7.18		12.08	11.33	12.78

Average	6.60	8.33	7.82	7.43	6.96	17.87	9.19	8.60	8.17	7.81	11.19	11.05	12.76
Min	0.55	7.15	6.48	6.61	5.73	14.88	7.23	8.00	7.18	6.01	10.36	10.61	11.92
Max	11.40	9.85	9.03	8.24	7.86	20.03	11.96	9.37	9.00	8.97	12.08	11.33	13.58

Dissolved Oxygen (DO) mg/L

Sample Description	11B5-1	11B5-2	11B5-3	11PL-1	11PL-2	11ExB-1	11SH-1	11SH-2	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

July 21, 2011								7.35		7.83		
July 23, 2011									10.68	10.57		
July 24, 2011		10.70							11.50			
July 25, 2011	10.86	10.92		14.60			12.71	10.92	10.68			
July 26, 2011	12.12	10.59		14.35		14.59	12.95	10.83	10.62	10.99		
July 27, 2011	11.48	10.92		11.85		14.71	12.99	10.73	10.84	11.32		
July 28, 2011	10.46	10.42		14.09		14.17	12.37	10.45	10.38	10.89		
August 4, 2011	8.53	9.36		6.74		11.13	9.57	9.35	8.84	10.58	11.24	7.97
August 8, 2011	12.30	12.29			10.66			12.79	12.77	10.93		
August 15, 2011	13.12	12.82			12.76				12.49	13.43	14.02	8.45
August 21, 2011	12.62	12.91	13.78		13.84				12.89	13.60	7.96	15.16
August 29, 2011	13	13.2	13.84		13.98				14.08	14.1	14.35	8.46

Average	11.61	11.41	13.81	12.33	12.81	13.65	12.12	10.35	11.43	11.42	11.89	10.01
Min	8.53	9.36	13.78	6.74	10.66	11.13	9.57	7.35	8.84	7.83	7.96	7.97
Max	13.12	13.20	13.84	14.60	13.98	14.71	12.99	12.79	14.08	14.10	14.35	15.16

Conductivity μS

Sample Description	11B1-1	11B1-2	11B1-3	11B1-4	11B2-1	11B2-2	11B2-3	11B2-4	11B2-5	11B3-1	11B3-2	11B3-3	11B4-1
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Sample Date

July 21, 2011	845												
July 23, 2011	292		600		457	304				481			
July 24, 2011	328	575	426		291	293				270			
July 25, 2011	261	239	294		290	300				281			
July 26, 2011	280	375	397		756	311				680			
July 27, 2011	318	255	274		388					485			
July 28, 2011	276	197	207		382					353			
August 4, 2011	350	375	622		408		432			470			
August 8, 2011	475	429	250		367		469			607			
August 15, 2011							1667	515	320		1315	1748	1940
August 21, 2011	345	297		261				419	303		505	529	704
August 29, 2011	311	296		261				445	307		413	421	526

Average	371	338	384	261	417	302	856	460	310	453	744	899	1057
Min	261	197	207	261	290	293	432	419	303	270	413	421	526
Max	845	575	622	261	756	311	1667	515	320	680	1315	1748	1940

Conductivity μS

Sample Description	11B5-1	11B5-2	11B5-3	11PL-1	11PL-2	11ExB-1	11SH-1	11SH-2	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

July 21, 2011								556		936		
July 23, 2011									607	889		
July 24, 2011		386							589			
July 25, 2011	386	375		1103			398	384	364			
July 26, 2011	459	438		1142		222	343	419	520	1121		
July 27, 2011	366	514		1260		272	390	485	555	1239		
July 28, 2011	437	438		1136		215	374	415	420	1259		
August 4, 2011	1184	944		2668		679	746	805	933	1735	2066	13
August 8, 2011	1950	1780			7004			1804	1807	1750		
August 15, 2011	3146	2625			1496				2597	1507	1328	11
August 21, 2011	824	1013	1809		1590				1018	1830	21	1107
August 29, 2011	581	563	582		1856				587	2497	909	4

Average	1037	908	1196	1462	2987	347	450	695	909	1476	1081	284
Min	366	375	582	1103	1496	215	343	384	364	889	21	4
Max	3146	2625	1809	2668	7004	679	746	1804	2597	2497	2066	1107

pH

Sample Description	11B1-1	11B1-2	11B1-3	11B1-4	11B2-1	11B2-3	11B2-4	11B2-5	11B3-1	11B3-2	11B3-3	11B4-1
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Sample Date

July 21, 2011	6.52											
July 23, 2011												
July 24, 2011												
July 25, 2011												
July 26, 2011												
July 27, 2011												
July 28, 2011												
August 4, 2011	7.03	8.28	8.19		7.68	7.80			7.72			
August 8, 2011	6.77	7.87	7.81		7.66	7.79			7.91			
August 15, 2011						8.21	7.84	7.91		7.95	7.87	7.83
August 21, 2011	7.37	7.82		7.65			7.39	7.27		7.50	7.56	7.66
August 29, 2011	7.38	7.62		7.91			7.68	7.43		7.62	7.78	8.08

Average	7.01	7.90	8.00	7.78	7.67	7.93	7.64	7.54	7.82	7.69	7.74	7.86
Min	6.52	7.62	7.81	7.65	7.66	7.79	7.39	7.27	7.72	7.50	7.56	7.66
Max	7.38	8.28	8.19	7.91	7.68	8.21	7.84	7.91	7.91	7.95	7.87	8.08

pH

Sample Description	11B5-1	11B5-2	11B5-3	11PL-1	11PL-2	11ExB-1	11SH-1	11SH-2	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

July 21, 2011								7.81		7.86		
July 23, 2011												
July 24, 2011												
July 25, 2011												
July 26, 2011												
July 27, 2011												
July 28, 2011												
August 4, 2011	7.98	7.91		7.73		8.10	8.23	8.05	8.15	8.25	8.12	6.17
August 8, 2011	8.09	8.10			7.85			8.24	8.24	8.22		
August 15, 2011	8.11	8.12			8.18				8.24	8.25	8.06	6.30
August 21, 2011	7.88	7.94	8.18		8.15				8.02	8.32	5.32	7.96
August 29, 2011	8.00	8.00	8.15		8.10				8.16	8.40	7.95	5.45

Average	8.01	8.01	8.17	7.73	8.07	8.10	8.23	8.03	8.16	8.22	7.36	6.47
Min	7.88	7.91	8.15	7.73	7.85	8.10	8.23	7.81	8.02	7.86	5.32	5.45
Max	8.11	8.12	8.18	7.73	8.18	8.10	8.23	8.24	8.24	8.40	8.12	7.96

Dissolved Organic Carbon (DOC) mg/L

Detection Limits for CAWT:

Detection Limits for Agat: 0.5 mg/L

Detection Limits for Test Mark: 0.4 mg/L

For values listed as <, 0.25 mg/L was used to calculate mean

For values listed as <, 0.2 mg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-3	11B1-4	11B2-1	11B2-3	11B2-4	11B2-5	11B3-1	11B3-2	11B3-3	11B4-1
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Sample Date

August 1, 2011	40.9	8.6	7.2		6.2		42.0		6.4			
August 7, 2011	194.0	5.5	7.0		4.1	9.0						
August 10, 2011	8.2	7.0		10.1		6.0	6.2	5.5		6.6	5.8	3.9
August 14, 2011	11.9	3.9		6.8			9.7	11.7		9.6	4.9	6.7
August 17, 2011	22.4	7.2		9.7			6.0	13.0		7.7	13.5	8.1
August 21, 2011	28.0	3.6		3.2			5.7	4.1		6.6	7.2	7.0
August 24, 2011	26.3	11.6		30.8			15.6	17.2		13.0	19.0	8.5
August 28, 2011	16.8	5.2		4.8			11.7	7.6		6.6	14.4	25.2
August 31, 2011	12.8	21.5		59.1			12.0	16.0		10.6	16.1	15.8

Average	40.1	8.2	7.1	17.8	5.2	7.5	13.6	10.7	6.4	8.7	11.5	10.8
Min	8.2	3.6	7.0	3.2	4.1	6.0	5.7	4.1	6.4	6.6	4.9	3.9
Max	194.0	21.5	7.2	59.1	6.2	9.0	42.0	17.2	6.4	13.0	19.0	25.2

Dissolved Organic Carbon (DOC) mg/L

Detection Limits for CAWT:

Detection Limits for Agat:

Detection Limits for Test Mark:

For values listed as <, 0.25 mg/L was used to calculate mean

For values listed as <, 0.2 mg/L was used to calculate mean

Sample Description	11B5-1	11B5-2	11B5-3	11PL-2	11PL-3	11ExB-1	11SH-1	11SH-2	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 1, 2011	5.5	7.3		5.3		4.9	3.9	7.4	9.7	7.9	1.0	<0.5
August 7, 2011	6.0	4.5		11.9		4.2	4.7	6.0	5.0	6.4	2.3	0.6
August 10, 2011	4.3	4.7		4.7					5.2	4.1		
August 14, 2011	3.5	3.3		3.6	8.0				4.0	12.4	4.4	<0.4
August 17, 2011	7.6	7.7		12.3	14.7				8.0	11.6		
August 21, 2011	7.7	8.6	3.2	2.9					11.9	2.6	2.4	<0.4
August 24, 2011	11.7	10.3	8.8	4.0					6.8	2.8		
August 28, 2011	26.0	35.0	62.1	3.3					75.4	1.8	1.8	0.5
August 31, 2011	8.9	7.4	7.6						8.7			

Average	9.0	9.9	20.4	6.0	11.3	4.6	4.3	6.7	15.0	6.2	2.4	0.4
Min	3.5	3.3	3.2	2.9	8.0	4.2	3.9	6.0	4.0	1.8	1.0	<0.4
Max	26.0	35.0	62.1	12.3	14.7	4.9	4.7	7.4	75.4	12.4	4.4	0.6

Chemical Oxygen Demand (COD) mg/L

Detection Limits for CAWT: 3 mg/L

For values listed as <, 1.5 mg/L was used to calculate mean

Detection Limits for Agat: 5 mg/L

For values listed as <, 2.5 mg/L was used to calculate mean

Detection Limits for Test Mark: 5 mg/L

For values listed as <, 2.5 mg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-3	11B1-4	11B2-1	11B2-3	11B2-4	11B2-5	11B3-1	11B3-2	11B3-3	11B4-1
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Sample Date

August 1, 2011	122	19	9		13		143		13			
August 7, 2011	854	98	134		55	154						
August 10, 2011	125	38		62		62	34	34		42	26	26
August 14, 2011	141	85		148			80	220		135	42	59
August 17, 2011	162	380		74			77	77		85	98	45
August 21, 2011	165	<5		22			34	30		52	74	88
August 24, 2011	180	98		132			139	130		135	150	77
August 28, 2011	126	38		42			59	49		52	77	113
August 31, 2011	132	171		619			123	98		<500	1300	130

Average	223	103	72	157	34	108	86	91	13	84	253	77
Min	122	<5	9	22	13	62	34	30	13	42	26	26
Max	854	380	134	619	55	154	143	220	13	135	1300	130

Chemical Oxygen Demand (COD) mg/L

Detection Limits for CAWT: 3 mg/L

For values listed as <, 1.5 mg/L was used to calculate mean

Detection Limits for Agat: 5 mg/L

For values listed as <, 2.5 mg/L was used to calculate mean

Detection Limits for Test Mark: 5 mg/L

For values listed as <, 2.5 mg/L was used to calculate mean

Sample Description	11B5-1	11B5-2	11B5-3	11PL-2	11PL-3	11ExB-1	11SH-1	11SH-2	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 1, 2011	27	30		16		6	8	66	41	30	<5	<5
August 7, 2011	42	38		340		42	22	68	59	300	<5	9
August 10, 2011	45	45		30					30	42		
August 14, 2011	22	18		22	52				26	65	9	<5
August 17, 2011	34	34		65	71				49	49		
August 21, 2011	91	139	<5	<5					148	<5	13	<5
August 24, 2011	80	113	91	30					74	13		
August 28, 2011	135	154	2200	18					300	22	9	<5
August 31, 2011	71	65	59						60			

Average	61	71	588	65	62	24	15	67	87	74	6	4
Min	22	18	59	16	52	6	8	66	26	13	9	9
Max	135	154	2200	340	71	42	22	68	300	300	13	9

Carbonaceous Biological Oxygen Demand -5 Day (cBOD5) mg/L

Detection Limits for CAWT:	1	mg/L	For values listed as <, 0.5	mg/L was used to calculate mean
Detection Limits for Agat:	5	mg/L	For values listed as <, 2.5	mg/L was used to calculate mean
Detection Limits for Test Mark:	3	mg/L	For values listed as <, 1.5	mg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-3	11B1-4	11B2-1	11B2-3	11B2-4	11B2-5	11B3-1	11B3-2	11B3-3	11B4-1
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Sample Date

July 21, 2011	608											
August 1, 2011												
August 4, 2011	238	101	115		114	85			76			
August 11, 2011	226	149		121		21	136	19		44	30	25
August 12, 2011		136										
August 18, 2011	65	18		61			80	53		43	51	17
August 19, 2011		18										
August 25, 2011	120	84		422			54	60		35	35	25
August 26, 2011		83										
September 1, 2011		91										

Average	251	85	115	202	114	53	90	44	76	41	39	22
Min	65	18	115	61	114	21	54	19	76	35	30	17
Max	608	149	115	422	114	85	136	60	76	44	51	25

Carbonaceous Biological Oxygen Demand -5 Day (cBOD5) mg/L

Detection Limits for CAWT:	1	mg/L	For values listed as <, 0.5	mg/L was used to calculate mean
Detection Limits for Agat:	5	mg/L	For values listed as <, 2.5	mg/L was used to calculate mean
Detection Limits for Test Mark:	3	mg/L	For values listed as <, 1.5	mg/L was used to calculate mean

Sample Description	11B5-1	11B5-2	11B5-3	11PL-2	11PL-3	11ExB-1	11SH-1	11SH-2	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

July 21, 2011								17		12		
August 1, 2011												
August 4, 2011	70	72		148		12	5	63	68	65	<1	<1
August 11, 2011	21	18			24				15	17	<1	1
August 12, 2011									16			
August 18, 2011	14	12		5	6				10	5	<1	<1
August 19, 2011									12			
August 25, 2011	20	22	21	3					18	2	<1	<1
August 26, 2011									18			
September 1, 2011									20			

Average	31	31	21	52	15	12	5	40	22	20	below detect	below detect
Min	14	12	21	3	6	12	5	17	10	2	<1	<1
Max	70	72	21	148	24	12	5	63	68	65	<1	<1

Biological Oxygen Demand -5 Day (BOD5) mg/L

Detection Limits for CAWT: **1** *mg/L*

Detection Limits for Agat: **5** *mg/L*

Detection Limits for Test Mark: **3** *mg/L*

Sample Description	11B1-1	11B1-2	11SH-2	11SH-3	11SH-4
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Sample Date

July 21, 2011	471		25		13
August 1, 2011		528	34		
August 12, 2011		116		10	
August 18, 2011		28		12	
August 19, 2011		13		11	
August 26, 2011		112		21	
September 1, 2011		100		23	

Average		150	30	15	
Min	471	13	25	10	13
Max	471	528	34	23	13

Total Coliforms (TC) cfu/100mls*Detection Limits for CAWT:* **3** *mg/L**For values listed as <, 1.5 mg/L was used to calculate mean**Detection Limits for Agat:**Detection Limits for Test Mark:* **1** *mg/L**For values listed as <, 0.5 mg/L was used to calculate mean*

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2	11B5-3	11PL-2	11SH-2	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

July 21, 2011	211500												559000		144500		
August 18, 2011		INT												INT			
August 21, 2011	242400	4848000	4848000	>2424000	2424000	1370000	654000	484800	>484800	207600	3900	1300		169600	2200	5	<3.75
August 22, 2011		1020000	970000	1588000	>2424000	1370000								209000			<3
August 25, 2011		2740000												587000			
August 26, 2011	>242400	3390000	12120000	776000	858000	587000	469000	350000	53400	>484800	339000	280		327000	470	<3	<3
August 30, 2011		5870000	2076000	1174000	>4848000	>808000	1370000	1696000	794000		740000			>1212000			
September 1, 2011		480000												45000			

Average		3058000	5003500				831000	843600			360967	790			49057	3	below detect
Min	211500	480000	970000	776000	858000	587000	469000	350000	53400	207600	3900	280	559000	45000	470	<3	<3
Max	>242400	5870000	12120000	>2424000	>4848000	>808000	1370000	1696000	>484800	>484800	740000	1300	559000	>1212000	144500	5	<3.75

E.coli (EC) cfu/100mls

Detection Limits for CAWT: 3 mg/L For values listed as <, 1.5 mg/L was used to calculate mean
 Detection Limits for Agat:
 Detection Limits for Test Mark: 1 mg/L For values listed as <, 0.5 mg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2	11B5-3	11PL-2	11SH-2	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

July 21, 2011	30500												43800		11008		
August 18, 2011		INT												INT			
August 21, 2011	22600	1068000	2740000	1695000	619000	130800	339200	93800	40300	9100	1100	500		19500	150	<3	<3.75
August 22, 2011		438000	260000	174000		>484800								22550			<3
August 25, 2011		438000												2600			
August 26, 2011	46900	92000	215000	150000	182000	339000	484800	240000	300	>484800	68500	<30		46900	55	<3	<3
August 30, 2011		166000	282000	559000	2424000	286000	434000	510000	587000		>484800			587000			
September 1, 2011		10000												INT			

Average	33333	368667	874250	644500	1075000		419333	281267	209200			251		135710	3738	2	below detect
Min	22600	10000	215000	150000	182000	130800	339200	93800	300	9100	1100	<30	43800	2600	55	<3	<3
Max	46900	1068000	2740000	1695000	2424000	>484800	484800	510000	587000	>484800	>484800	500	43800	587000	11008	0	<3.75

Ammonia as N (NH₃-N) mg/L**Detection Limits for CAWT:** 0.2 mg/L*For values listed as <, 0.1 mg/L was used to calculate mean***Detection Limits for Agat:** 0.2 mg/L*For values listed as <, 0.1 mg/L was used to calculate mean***Detection Limits for Test Mark:** 0.1 mg/L*For values listed as <, 0.05 mg/L was used to calculate mean*

Sample Description	11B1-1	11B1-2	11B1-3	11B1-4	11B2-1	11B2-3	11B2-4	11B2-5	11B3-1	11B3-2	11B3-3	11B4-1
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Sample Date

July 21, 2011	50.00											
August 1, 2011	3.90	0.29	0.48		0.37		0.88		0.39			
August 7, 2011	45.80	1.78	1.78		1.65	2.73						
August 10, 2011	3.26	1.25		1.44		2.70	3.58	2.33		3.26	2.81	3.34
August 14, 2011	3.98	3.13		2.47			3.87	2.23		1.62	3.09	3.10
August 17, 2011	4.29	1.38		1.31			1.46	1.84		2.36	2.89	3.98
August 21, 2011	3.75	1.89		2.49			2.13	2.60		2.98	2.80	2.84
August 24, 2011	3.51	1.47		2.27			2.65	2.25		3.27	3.24	2.79
August 28, 2011	3.82	0.92		1.29			4.65	4.64		2.38	2.61	3.72
August 31, 2011	4.53	0.96		1.61			3.47	3.94		4.36	5.85	7.17

Average	12.68	1.45	1.13	1.84	1.01	2.72	2.84	2.83	0.39	2.89	3.33	3.85
Min	3.26	0.29	0.48	1.29	0.37	2.70	0.88	1.84	0.39	1.62	2.61	2.79
Max	50.00	3.13	1.78	2.49	1.65	2.73	4.65	4.64	0.39	4.36	5.85	7.17

Ammonia as N (NH₃-N) mg/L**Detection Limits for CAWT:** 0.2 mg/L*For values listed as <, 0.1 mg/L was used to calculate mean***Detection Limits for Agat:** 0.2 mg/L*For values listed as <, 0.1 mg/L was used to calculate mean***Detection Limits for Test Mark:** 0.1 mg/L*For values listed as <, 0.05 mg/L was used to calculate mean*

Sample Description	11B5-1	11B5-2	11B5-3	11PL-2	11PL-3	11ExB-1	11SH-1	11SH-2	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

July 21, 2011								3.30		3.08		
August 1, 2011	0.68	0.81		0.76		0.34	0.22	0.55	0.80	1.27	<0.02	<0.02
August 7, 2011	2.40	2.41		0.98		1.37	1.21	2.52	2.66	0.98	0.04	0.06
August 10, 2011	3.51	3.65		2.14					3.62	2.04		
August 14, 2011	3.29	3.78		3.74	1.92				3.51	1.79	<0.01	0.03
August 17, 2011	4.47	4.57		1.63	1.58				4.50	1.61		
August 21, 2011	2.80	2.87	1.75	1.64					2.84	1.19	<0.01	0.03
August 24, 2011	3.48	3.71	3.58	2.32					3.52	2.27		
August 28, 2011	4.17	3.96	4.05	2.97					4.11	2.77	<0.01	0.03
August 31, 2011	6.95	6.93	7.06						6.89			

Average	3.53	3.63	4.11	2.02	1.75	0.86	0.72	2.12	3.61	1.89	0.05	0.05
Min	0.68	0.81	1.75	0.76	1.58	0.34	0.22	0.55	0.80	0.98	<0.01	<0.02
Max	6.95	6.93	7.06	3.74	1.92	1.37	1.21	3.30	6.89	3.08	0.04	0.06

Nitrite as N (NO₂-N) mg/L

Detection Limits for CAWT: 0.02 mg/L For values listed as <, 0.1 mg/L was used to calculate mean
Detection Limits for Agat: 0.05 mg/L For values listed as <, 0.025 mg/L was used to calculate mean
Detection Limits for Test Mark: 0.03 mg/L For values listed as <, 0.015 mg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-3	11B1-4	11B2-1	11B2-3	11B2-4	11B2-5	11B3-1	11B3-2	11B3-3	11B4-1
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Sample Date												
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July 21, 2011	0.02											
August 1, 2011	<0.05	<0.05	<0.05		<0.05		<0.05		<0.05			
August 7, 2011	0.12	<0.03	<0.03		<0.03	<0.03						
August 10, 2011	<0.03	<0.03		<0.03		<0.03	<0.03	<0.03		<0.03	<0.03	<0.3
August 14, 2011	<0.03	<0.03		<0.03			<0.3	<0.03		<0.03	<0.03	<0.03
August 17, 2011	<0.03	<0.03		0.06			<0.03	<0.03		<0.03	<0.03	<0.3
August 21, 2011	<0.03	<0.03		<0.03			<0.03	<0.03		<0.03	<0.03	<0.03
August 24, 2011	<0.06	<0.03		<0.03			<0.03	<0.03		<0.03	<0.03	<0.03
August 28, 2011	<0.03	<0.03		<0.03			<0.03	<0.03		<0.03	<0.03	<0.03
August 31, 2011	<0.03	<0.03		<0.03			<0.03	<0.03		<0.03	<0.03	<0.03

Average	below detect	below detect	below detect	below detect	below detect	below detect	below detect	below detect	below detect	below detect	below detect	below detect
Min	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Max	0.12	<0.05	<0.05	0.06	<0.05	<0.03	<0.3	<0.05	<0.05	<0.03	<0.05	<0.3

Nitrite as N (NO₂-N) mg/L**Detection Limits for CAWT:** 0.02 mg/L*For values listed as <, 0.1 mg/L was used to calculate mean***Detection Limits for Agat:** 0.05 mg/L*For values listed as <, 0.025 mg/L was used to calculate mean***Detection Limits for Test Mark:** 0.03 mg/L*For values listed as <, 0.015 mg/L was used to calculate mean*

Sample Description	11B5-1	11B5-2	11B5-3	11PL-2	11PL-3	11ExB-1	11SH-1	11SH-2	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

July 21, 2011								<0.02		0.14		
August 1, 2011	<0.05	<0.05		<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
August 7, 2011	<0.3	<0.3		<0.03		<0.03	<0.03	<0.3	<0.3	<0.03	<0.03	<0.03
August 10, 2011	<0.3	<0.3		<0.3					<0.3	<0.3		
August 14, 2011	<0.3	<0.3		<0.3	<0.03				<0.3	<0.03	<0.03	<0.03
August 17, 2011	<0.3	<0.3		<0.03	<0.03				<0.3	<0.03		
August 21, 2011	<0.03	<0.03	<0.03	<0.03					<0.03	<0.3	<0.03	<0.03
August 24, 2011	<0.03	<0.03	<0.03	<0.3					<0.03	<0.3		
August 28, 2011	<0.03	<0.03	<0.03	<0.3					<0.03	<0.3	<0.03	<0.03
August 31, 2011	<0.03	<0.03	<0.03						<0.03			

Average	below detect	below detect	below detect	below detect	below detect	below detect	below detect	below detect	below detect	below detect	below detect	below detect
Min	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.02	<0.03	<0.03	<0.03	<0.03
Max	<0.3	<0.3	<0.03	<0.3	<0.03	<0.05	<0.05	<0.05	<0.3	<0.3	<0.05	<0.05

Nitrate as N (NO₃-N) mg/L*Detection Limits for CAWT:* 0.05 mg/L*For values listed as <, 0.025 mg/L was used to calculate mean**Detection Limits for Agat:* 0.05 mg/L*For values listed as <, 0.025 mg/L was used to calculate mean**Detection Limits for Test Mark:* 0.1 mg/L*For values listed as <, 0.05 mg/L was used to calculate mean*

Sample Description	11B1-1	11B1-2	11B1-3	11B1-4	11B2-1	11B2-3	11B2-4	11B2-5	11B3-1	11B3-2	11B3-3	11B4-1
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Sample Date

July 21, 2011	0.40											
August 1, 2011	<0.05	<0.05	<0.05		0.08		<0.05		<0.05			
August 7, 2011	0.12	<0.1	<0.1		<0.1	<0.1						
August 10, 2011	<0.1	0.12		<0.1		3.75	3.11	3.88		4.21	5.46	5.45
August 14, 2011	<0.1	<0.1		<0.1			4.90	<0.1		<0.1	2.13	5.13
August 17, 2011	<0.1	<0.1		0.15			<0.1	<0.1		0.16	0.94	1.30
August 21, 2011	<0.1	<0.1		<0.1			<0.1	<0.1		<0.1	<0.1	<0.1
August 24, 2011	0.14	0.12		0.12			<0.1	0.13		0.12	<0.1	<0.1
August 28, 2011	<0.1	<0.1		<0.1			<0.1	0.12		0.11	0.13	<0.1
August 31, 2011	0.13	0.13		0.13			<0.1	<0.1		0.12	0.12	0.15

Average	0.11	0.07	below detect	0.09	0.07	1.90	1.04	0.62	below detect	0.69	1.27	1.74
Min	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.05	<0.1	<0.1	<0.1
Max	0.40	0.13	<0.1	0.15	0.08	3.75	4.90	3.88	0.00	4.21	5.46	5.45

Nitrate as N (NO₃-N) mg/L**Detection Limits for CAWT:** 0.05 mg/L*For values listed as <, 0.025 mg/L was used to calculate mean***Detection Limits for Agat:** 0.05 mg/L*For values listed as <, 0.025 mg/L was used to calculate mean***Detection Limits for Test Mark:** 0.1 mg/L*For values listed as <, 0.05 mg/L was used to calculate mean*

Sample Description	11B5-1	11B5-2	11B5-3	11PL-2	11PL-3	11ExB-1	11SH-1	11SH-2	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

July 21, 2011								1.86		4.03		
August 1, 2011	0.79	<0.05		0.44		1.08	1.35	<0.05	<0.05	<0.05	3.93	<0.05
August 7, 2011	3.26	2.93		<0.1		0.40	0.97	2.56	2.92	0.13	10.60	<0.1
August 10, 2011	6.35	6.80		26.70					6.53	24.90		
August 14, 2011	3.40	4.10		5.20	5.73				5.00	5.64	47.90	<0.1
August 17, 2011	3.80	3.80		3.24	1.57				3.00	3.40		
August 21, 2011	<0.1	<0.1	5.16	3.85					<0.1	3.50	25.00	<0.1
August 24, 2011	<0.1	0.13	<0.1	6.30					<0.1	7.10		
August 28, 2011	0.12	0.13	<0.1	4.40					<0.1	5.20	30.40	<0.1
August 31, 2011	0.40	0.13	0.38						0.27			

Average	2.02	2.01	1.41	6.27	3.65	0.74	1.16	1.48	1.99	5.99	23.57	below detect
Min	<0.1	<0.05	<0.1	<0.1	1.57	0.40	0.97	<0.05	<0.05	<0.05	3.93	<0.05
Max	6.35	6.80	5.16	26.70	5.73	1.08	1.35	2.56	6.53	24.90	47.90	<0.1

Total Kjeldahl Nitrogen as N (TKN-N) mg/L

Detection Limits for CAWT:

Detection Limits for Agat: 0.10 mg/L

Detection Limits for Test Mark: 0.10 mg/L

For values listed as <, 0.05 mg/L was used to calculate mean

For values listed as <, 0.05 mg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-3	11B1-4	11B2-1	11B2-3	11B2-4	11B2-5	11B3-1	11B3-2	11B3-3	11B4-1
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Sample Date

July 21, 2011												
August 1, 2011	13.10	9.32	8.98		9.92		22.40		7.62			
August 7, 2011	52.7	5.15	6.29		2.95	5.25						
August 10, 2011	6.66	3.23		5.28		3.57	4.01	3.39		4.06	3.57	3.43
August 14, 2011	7.50	11.70		8.73			5.53	5.41		3.67	4.45	4.67
August 17, 2011	8.79	6.60		4.34			3.04	3.72		4.06	5.22	4.90
August 21, 2011	8.81	4.47		8.31			4.79	5.75		7.46	6.56	6.55
August 24, 2011	9.05	5.37		9.62			8.62	9.39		7.75	8.15	5.12
August 28, 2011	8.93	2.37		3.24			9.67	9.27		4.26	5.35	7.20
August 31, 2011	10.60	7.07		15.50			5.87	7.38		6.37	8.42	9.94

Average	14.02	6.14	7.64	7.86	6.44	4.41	7.99	6.33	7.62	5.38	5.96	5.97
Min	6.66	2.37	6.29	3.24	2.95	3.57	3.04	3.39	7.62	3.67	3.57	3.43
Max	52.70	11.70	8.98	15.50	9.92	5.25	22.40	9.39	7.62	7.75	8.42	9.94

Total Kjeldahl Nitrogen as N (TKN-N) mg/L

Detection Limits for CAWT:

Detection Limits for Agat: 0.10 mg/L

Detection Limits for Test Mark: 0.10 mg/L

For values listed as <, 0.05 mg/L was used to calculate mean

For values listed as <, 0.05 mg/L was used to calculate mean

Sample Description	11B5-1	11B5-2	11B5-3	11PL-2	11PL-3	11ExB-1	11SH-1	11SH-2	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

July 21, 2011												
August 1, 2011	6.63	9.81		8.86		2.99	2.12	7.96	9.10	11.80	0.11	<0.10
August 7, 2011	3.14	2.93		2.55		2.20	1.89	3.30	2.93	2.14	0.71	0.61
August 10, 2011	3.61	3.68		2.28					3.86	2.13		
August 14, 2011	3.70	4.17		4.16	4.15				3.78	4.07	0.26	0.66
August 17, 2011	5.02	5.05		3.52	3.45				5.02	3.28		
August 21, 2011	6.33	6.58	2.86	2.63					7.04	2.24	0.90	0.82
August 24, 2011	5.75	6.03	5.94	3.06					5.98	3.06		
August 28, 2011	7.79	7.95	9.36	2.84					9.99	2.97	0.63	0.74
August 31, 2011	9.96	10.90	11.50						10.50			

Average	5.77	6.34	7.42	3.74	3.80	2.60	2.01	5.63	6.47	3.96	0.52	0.58
Min	3.14	2.93	2.86	2.28	3.45	2.20	1.89	3.30	2.93	2.13	0.11	<0.10
Max	9.96	10.90	11.50	8.86	4.15	2.99	2.12	7.96	10.50	11.80	0.90	0.82

Total Phosphorus as P (TP) mg/L**Detection Limits for CAWT:** 0.06 mg/L*For values listed as <, 0.03 mg/L was used to calculate mean***Detection Limits for Agat:** 0.05 mg/L*For values listed as <, 0.025 mg/L was used to calculate mean***Detection Limits for Test Mark:** 0.002 mg/L*For values listed as <, 0.001 mg/L was used to calculate mean*

Sample Description	11B1-1	11B1-2	11B1-3	11B1-4	11B2-1	11B2-3	11B2-4	11B2-5	11B3-1	11B3-2	11B3-3	11B4-1
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Sample Date

July 21, 2011	3.78											
August 1, 2011	0.92	1.02	0.82		0.80		1.40		0.58			
August 7, 2011	1.520	0.635	0.765		0.652	0.913						
August 10, 2011	1.160	1.120		1.660		0.422	0.614	0.447		0.119	0.162	0.052
August 14, 2011	0.561	0.973		0.789			0.460	0.628		0.397	0.352	0.307
August 17, 2011	0.662	6.340		0.464			0.263	0.400		0.549	0.289	0.101
August 21, 2011	0.732	0.450		0.690			0.499	0.542		0.875	0.724	0.954
August 24, 2011	0.660	0.675		1.130			1.490	1.530		1.730	0.842	0.595
August 28, 2011	1.020	0.275		0.282			0.946	0.956		0.555	1.090	0.984
August 31, 2011	1.330	2.000		3.830			0.978	1.560		1.000	1.330	1.440

Average	1.235	1.499	0.793	1.264	0.726	0.668	0.831	0.866	0.580	0.746	0.684	0.633
Min	0.561	0.275	0.765	0.282	0.652	0.422	0.263	0.400	0.580	0.119	0.162	0.052
Max	3.780	6.340	0.820	3.830	0.800	0.913	1.490	1.560	0.580	1.730	1.330	1.440

Total Phosphorus as P (TP) mg/L

Detection Limits for CAWT: 0.06 mg/L

For values listed as <, 0.03 mg/L was used to calculate mean

Detection Limits for Agat: 0.05 mg/L

For values listed as <, 0.025 mg/L was used to calculate mean

Detection Limits for Test Mark: 0.002 mg/L

For values listed as <, 0.001 mg/L was used to calculate mean

Sample Description	11B5-1	11B5-2	11B5-3	11PL-2	11PL-3	11ExB-1	11SH-1	11SH-2	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

July 21, 2011								2.19		7.93		
August 1, 2011	0.64	1.03		1.20		0.17	<0.05	0.90	1.03	1.51	<0.05	<0.05
August 7, 2011	0.220	0.149		3.080		0.097	0.037	0.270	0.159	3.340	0.006	0.008
August 10, 2011	0.067	0.038		0.119					0.031	0.082		
August 14, 2011	0.033	0.038		0.042	0.264				0.038	0.385	0.004	0.003
August 17, 2011	0.062	0.042		0.262	0.105				0.039	0.091		
August 21, 2011	0.982	1.070	0.251	0.125					1.230	0.292	0.006	0.006
August 24, 2011	0.647	0.895	0.790	0.042					0.481	0.158		
August 28, 2011	0.914	1.140	1.630	0.057					1.700	0.056	0.004	0.002
August 31, 2011	1.150	1.190	1.220						1.070			

Average	0.524	0.621	0.973	0.616	0.185	0.134	0.037	1.120	0.642	1.538	0.009	0.005
Min	0.033	0.038	0.251	0.042	0.105	0.097	0.037	0.270	0.031	0.056	<0.05	<0.05
Max	1.150	1.190	1.630	3.080	0.264	0.170	0.037	2.190	1.700	7.930	0.006	0.008

Dissolved Phosphate as P (PO₄-P) mg/L

Detection Limits for CAWT: 0.01 mg/L

Detection Limits for Agat: 0.10 mg/L

Detection Limits for Test Mark: 0.100 mg/L

For values listed as <, 0.005 mg/L was used to calculate mean

For values listed as <, 0.05 mg/L was used to calculate mean

For values listed as <, 0.05 mg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-3	11B1-4	11B2-1	11B2-3	11B2-4	11B2-5	11B3-1	11B3-2	11B3-3	11B4-1
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Sample Date

July 21, 2011	0.71											
August 1, 2011	0.35	1.04	0.94		0.74		1.06		1.34			
August 7, 2011	<0.1	<0.1	<0.1		<0.1	<0.1						
August 10, 2011	<0.1	0.6		0.4		<0.1	<0.1	<0.1		<0.1	<0.1	<0.1
August 14, 2011	<0.1	<0.1		<0.1			<0.1	<0.1		<0.1	<0.1	<0.1
August 17, 2011	<0.1	0.39		<0.1			<0.1	<0.1		<0.1	<0.1	<0.1
August 21, 2011	<0.1	<0.1		<0.1			<0.1	<0.1		<0.1	<0.1	<0.1
August 24, 2011	<0.1	<0.1		<0.1			0.4	<0.1		<0.1	<0.1	<0.1
August 28, 2011	<0.1	<0.1		<0.1			<0.1	0.5		<0.1	<0.1	<0.1
August 31, 2011	<0.1	0.5		1.3			<0.1	<0.1		<0.1	<0.1	<0.1

Average	0.15	0.30	0.50	0.28	0.40	below detect	0.22	0.10		below detect	below detect	below detect
Min	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.46	1.34	<0.1	<0.1	<0.1
Max	0.71	1.04	0.94	1.31	0.74	<0.1	1.06	0.46	1.34	<0.1	<0.1	<0.1

Dissolved Phosphate as P (PO₄-P) mg/L

Detection Limits for CAWT: 0.01 mg/L

Detection Limits for Agat: 0.10 mg/L

Detection Limits for Test Mark: 0.100 mg/L

For values listed as <, 0.005 mg/L was used to calculate mean

For values listed as <, 0.05 mg/L was used to calculate mean

For values listed as <, 0.05 mg/L was used to calculate mean

Sample Description	11B5-1	11B5-2	11B5-3	11PL-2	11PL-3	11ExB-1	11SH-1	11SH-2	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

July 21, 2011								0.13		0.07		
August 1, 2011	0.40	0.21		0.38		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
August 7, 2011	<0.1	<0.1		0.4		<0.1	<0.1	<0.1	<0.1	0.7	<0.1	<0.1
August 10, 2011	<0.1	<0.1		<0.1					<0.1	<0.1		
August 14, 2011	<0.1	<0.1		<0.1	<0.1				<0.1	<0.1	<0.1	<0.1
August 17, 2011	<0.1	<0.1		<0.1	<0.1				<0.1	<0.1		
August 21, 2011	<0.1	<0.1	<0.1	<0.1					<0.1	<0.1	<0.1	<0.1
August 24, 2011	<0.1	<0.1	<0.1	<0.1					<0.1	<0.1		
August 28, 2011	<0.1	<0.1	<0.1	<0.1					<0.1	<0.1	<0.1	<0.1
August 31, 2011	<0.1	<0.1	<0.1						<0.1			

Average	0.40	0.21	below detect	0.13	below detect	below detect	below detect	0.08	below detect	0.12	below detect	below detect
Min	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Max	0.40	0.21	<0.1	0.38	<0.1	<0.1	<0.1	0.13	<0.1	0.65	<0.1	<0.1

Total Suspended Solids (TSS) mg/L**Detection Limits for CAWT:** 3*For values listed as <, 1.5 mg/L was used to calculate mean***Detection Limits for Agat:** 10 mg/L*For values listed as <, 5 mg/L was used to calculate mean***Detection Limits for Test Mark:** 0.67-4 mg/L*For values listed as <, 2 mg/L was used to calculate mean*

Sample Description	11B1-1	11B1-2	11B1-3	11B1-4	11B2-1	11B2-3	11B2-4	11B2-5	11B3-1	11B3-2	11B3-3	11B4-1
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Sample Date

July 21, 2011	153											
August 1, 2011	26	<10	10		12		74		30			
August 7, 2011	45	36	36		38	124						
August 10, 2011	28	65		104		2930	1600	1240		343	413	126
August 14, 2011	51	22		38			70	469		122	609	211
August 17, 2011	26	61		24			38	93		830	134	68
August 21, 2011	55	5		10			110	51		868	320	686
August 24, 2011	27	43		37			128	154		120	105	23
August 28, 2011	29	15		12			124	66		104	290	235
August 31, 2011	51	90		132			75	141		93	93	76

Average	49	38	23	51	25	1527	277	316		354	281	204
Min	26	<10	10	10	12	124	38	51	30	93	93	23
Max	153	90	36	132	38	2930	1600	1240	30	868	609	686

Total Suspended Solids (TSS) mg/L**Detection Limits for CAWT:** 3*For values listed as <, 1.5 mg/L was used to calculate mean***Detection Limits for Agat:** 10 mg/L*For values listed as <, 5 mg/L was used to calculate mean***Detection Limits for Test Mark:** 0.67-4 mg/L*For values listed as <, 2 mg/L was used to calculate mean*

Sample Description	11B5-1	11B5-2	11B5-3	11PL-2	11PL-3	11ExB-1	11SH-1	11SH-2	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

July 21, 2011								1548		2487		
August 1, 2011	604	746		866		84	10	570	742	1980	<10	<10
August 7, 2011	322	384		2250		199	46	462	438	2130	<4	<2
August 10, 2011	186	73		328					67	332		
August 14, 2011	40	42		110	584				59	674	<2	<2
August 17, 2011	43	32		647	321				12	207		
August 21, 2011	768	532	566	278					533	470	7	<0.44
August 24, 2011	10	45	54	39					28	14		
August 28, 2011	90	188	229	89					267	41	1	<0.77
August 31, 2011	20	41	26						22			

Average	231	231	219	576	453	142	28	860	241	926	3	below detect
Min	10	32	26	39	321	84	10	462	12	14	1	<0.44
Max	768	746	566	2250	584	199	46	1548	742	2487	7	<10

Volatile Suspended Solids (VSS) mg/L*Detection Limits for CAWT:* 3 mg/L*For values listed as <, 1.5 mg/L was used to calculate mean**Detection Limits for Agat:* 10 mg/L*For values listed as <, 5 mg/L was used to calculate mean**Detection Limits for Test Mark:* 0.67-4 mg/L*For values listed as <, 2 mg/L was used to calculate mean*

Sample Description	11B1-1	11B1-2	11B1-3	11B1-4	11B2-1	11B2-3	11B2-4	11B2-5	11B3-1	11B3-2	11B3-3	11B4-1
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Sample Date

July 21, 2011	25											
August 1, 2011	16	<10	<10		10		48		18			
August 7, 2011	49	35	47		28	79						
August 10, 2011	25	57		44		379	<2	157		49	53	13
August 14, 2011	39	19		27			15	104		36	25	18
August 17, 2011	30	44		21			14	44		47	14	7
August 21, 2011	63	<1		11			24	22		76	18	66
August 24, 2011	28	41		30			38	37		39	29	19
August 28, 2011	34	12		12			45	29		52	30	51
August 31, 2011	55	99		133			84	123		85	71	74

Average	36	35	26	40	19	229	34	74	18	55	34	35
Min	16	<10	<10	11	10	79	14	22	18	36	14	7
Max	63	99	47	133	28	379	84	157	18	85	71	74

Volatile Suspended Solids (VSS) mg/L

Detection Limits for CAWT: 3 mg/L

For values listed as <, 1.5 mg/L was used to calculate mean

Detection Limits for Agat: 10 mg/L

For values listed as <, 5 mg/L was used to calculate mean

Detection Limits for Test Mark: 0.67-4 mg/L

For values listed as <, 2 mg/L was used to calculate mean

Sample Description	11B5-1	11B5-2	11B5-3	11PL-2	11PL-3	11ExB-1	11SH-1	11SH-2	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

July 21, 2011								1467		2392		
August 1, 2011	38	50		34		<10	<10	44	52	132	<10	<10
August 7, 2011	34	46		178		14	22	44	32	134	16	6
August 10, 2011	20	20		32					13	30		
August 14, 2011	7	6		9	27				11	38	6	8
August 17, 2011	14	13		42	17				8	21		
August 21, 2011	76	64	17	10					71	19	4	<0.44
August 24, 2011	12	21	18	10					8	7		
August 28, 2011	37	56	94	21					121	14	<0.87	<0.77
August 31, 2011	24	31	33						31			

Average	29	34	40	42	22	10	14	518	39	310	6.54	4.60
Min	7	6	17	9	17	<10	<10	44	8	7	<0.87	<0.44
Max	76	64	94	178	27	14	22	1467	121	2392	16.00	8.00

Fats Oils and Grease (FOG) mg/L

Detection Limits for Test Mark: 1 mg/L

For values listed as <, 0.5 mg/L was used to calculate mean

Sample Description	Influent	Effluent
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Sample Date

August 14, 2011	5.1	<1
August 21, 2011	3.1	7.4

Average	4.1	3.7
Min	3.1	<1
Max	5.1	7.4

Aluminum (Al) µg/L**Detection Limits for Test Mark:** 1 µg/L

For values listed as <, 0.5 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	44.8	<1	12.1	182	1110	164	69	93.9	23.2	73.8
August 31, 2011	<1	<1	<1	<1	73.5	33.7	8.3	2.4	10.6	20.6

Average	22.7	<1	6.3	91.3	591.8	98.9	38.7	48.2	16.9	47.2
Min	<1	<1	<1	<1	73.5	33.7	8.3	2.4	10.6	20.6
Max	44.8	<1	12.1	182.0	1110.0	164.0	69.0	93.9	23.2	73.8

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		78.1	181	26.8	778	<1	
August 31, 2011	<1	23.9		<1	<1	<1	<1

Average		51.0		13.7	389.3	<1	
Min	<1	23.9	181.0	<1	<1	<1	<1
Max	<1	78.1	181.0	26.8	778.0	<1	<1

Antimony (Sb) µg/L**Detection Limits for Test Mark:** 0.5 µg/L

For values listed as <, 0.25 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	2.1	0.8
August 31, 2011	1.8	0.6	1.2	<0.5	1.0	<0.5	<0.5	<0.5	<0.5	<0.5

Average	1.0	0.4	0.7	<0.5	0.9	<0.5	<0.5	<0.5	1.2	0.5
Min	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5
Max	1.8	0.6	1.2	<0.5	1.0	<0.5	<0.5	<0.5	2.1	0.8

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		<0.5	<0.5	<0.5	1.5	<0.5	
August 31, 2011	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5

Average		<0.5	<0.5	<0.5	0.9	<0.5	
Min	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Max	<0.5	<0.5	<0.5	<0.5	1.5	<0.5	<0.5

Arsenic (As) µg/L**Detection Limits for Test Mark:** 1 µg/L

For values listed as <, 0.5 µg/L was used to calculate means

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	<1	<1	<1	5	6.6	2.6	3.1	3.3	2.2	1.9
August 31, 2011	<1	<1	<1	1.9	<1	2.5	2.5	2	2.3	2.6

Average	<1	<1	<1	2.5	3.6	2.6	2.8	2.7	2.3	2.3
Min	<1	<1	<1	1.9	<1	2.5	2.5	2.0	2.2	1.9
Max	<1	<1	<1	5.0	6.6	2.6	3.1	3.3	2.3	2.6

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		2.4	4	2.1	4.2	<1	
August 31, 2011	2.3	1.8		2.6	1.2	<1	<1

Average		2.1		2.4	2.7	<1	
Min	2.3	1.8	4.0	2.1	1.2	<1	<1
Max	2.3	2.4	4.0	2.6	4.2	<1	<1

Barium (Ba) µg/L**Detection Limits for Test Mark:** 1 µg/L

For values listed as <, 0.5 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	3.8	3.5	2.7	16.8	11.9	7.7	13.2	14.6	11.4	18.8
August 31, 2011	2.5	3.3	2.9	5.8	6.1	6.5	7.2	7.7	8.5	9.2

Average	3.2	3.4	2.8	11.3	9.0	7.1	10.2	11.2	10.0	14.0
Min	2.5	3.3	2.7	5.8	6.1	6.5	7.2	7.7	8.5	9.2
Max	3.8	3.5	2.9	16.8	11.9	7.7	13.2	14.6	11.4	18.8

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		19	10.4	17	13.3	12.3	
August 31, 2011	8.5	21.3		8.1	20.7	9.5	<1

Average		20.2		12.6	17.0	10.9	
Min	8.5	19.0	10.4	8.1	13.3	9.5	<1
Max	8.5	21.3	10.4	17.0	20.7	12.3	<1

Beryllium (Be) µg/L**Detection Limits for Test Mark:** 0.5 µg/L

For values listed as <, 0.25 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
August 31, 2011	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Average	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Min	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Max	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		<0.5	<0.5	<0.5	<0.5	<0.5	
August 31, 2011	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5

Average		<0.5		<0.5	<0.5	<0.5	
Min	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Max	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Cadmium (Cd) µg/L**Detection Limits for Test Mark:** 0.1 µg/L

For values listed as <, 0.05 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1
August 31, 2011	0.2	0.2	0.4	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1

Average	0.1	0.1	0.2	<0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1
Min	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Max	0.2	0.2	0.4	<0.1	0.2	0.1	<0.1	<0.1	<0.1	<0.1

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		<0.1	<0.1	<0.1	<0.1	<0.1	
August 31, 2011	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1

Average		<0.1		<0.1	<0.1	<0.1	
Min	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Max	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Calcium (Ca) µg/L**Detection Limits for Test Mark:** 50 µg/L

For values listed as <, 25 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	31300	25800	25500	67500	56200	45500	50600	60300	55700	92400
August 31, 2011	29800	31300	32700	33000	38000	35300	38800	37600	42300	40400

Average	30550	28550	29100	50250	47100	40400	44700	48950	49000	66400
Min	29800	25800	25500	33000	38000	35300	38800	37600	42300	40400
Max	31300	31300	32700	67500	56200	45500	50600	60300	55700	92400

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		92200	61900	71200	67200	154000	
August 31, 2011	39500	68000		41700	73500	114000	<50

Average		80100		56450	70350	134000	
Min	39500	68000	61900	41700	67200	114000	<50
Max	39500	92200	61900	71200	73500	154000	<50

Cesium (Cs) µg/L**Detection Limits for Test Mark:** 1 µg/L

For values listed as <, 0.5 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
August 31, 2011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Average	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Min	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Max	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		<1	<1	<1	<1	<1	
August 31, 2011	<1	<1		<1	<1	<1	<1

Average		<1		<1	<1	<1	
Min	<1	<1	<1	<1	<1	<1	<1
Max	<1	<1	<1	<1	<1	<1	<1

Chromium (Cr) µg/L**Detection Limits for Test Mark:** 1 µg/L

For values listed as <, 0.5 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	<1	1.6	<1	<1	1.2	3.1	2	1.6	1.5	<1
August 31, 2011	<1	<1	1.8	<1	2.1	1.1	1.6	1.7	1	1.1

Average	<1	1.1	1.2	<1	1.7	2.1	1.8	1.7	1.3	0.8
Min	<1	<1	<1	<1	1.2	1.1	1.6	1.6	1.0	<1
Max	<1	1.6	1.8	<1	2.1	3.1	2.0	1.7	1.5	1.1

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		1.4	1.9	1.7	1.3	<1	
August 31, 2011	<1	3.2		<1	1.5	<1	<1

Average		2.3		1.1	1.4	<1	
Min	<1	1.4	1.9	<1	1.3	<1	<1
Max	<1	3.2	1.9	1.7	1.5	<1	<1

Cobalt (Co) µg/L**Detection Limits for Test Mark:** 0.1 µg/L

For values listed as <, 0.05 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	0.45	0.30	0.36	7.80	7.96	2.81	6.69	5.97	3.49	4.41
August 31, 2011	0.15	0.15	0.21	2.99	0.70	3.64	3.77	3.43	4.13	4.05

Average	0.30	0.23	0.29	5.40	4.33	3.23	5.23	4.70	3.81	4.23
Min	0.15	0.15	0.21	2.99	0.70	2.81	3.77	3.43	3.49	4.05
Max	0.45	0.30	0.36	7.80	7.96	3.64	6.69	5.97	4.13	4.41

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		5.51	5.51	4.44	6.14	0.36	
August 31, 2011	4.04	1.62		3.95	1.60	0.17	<0.1

Average		3.57		4.20	3.87	0.27	
Min	4.04	1.62	5.51	3.95	1.60	0.17	<0.1
Max	4.04	5.51	5.51	4.44	6.14	0.36	<0.1

Copper (Cu) µg/L**Detection Limits for Test Mark:** 1 µg/L

For values listed as <, 0.5 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	45.2	66.2	52.4	14.1	69.1	67.3	12.1	14.6	8.2	7.2
August 31, 2011	52.7	58.9	105	34.4	73.6	68.4	58.9	38.5	44.6	55.1

Average	49.0	62.6	78.7	24.3	71.4	67.9	35.5	26.6	26.4	31.2
Min	45.2	58.9	52.4	14.1	69.1	67.3	12.1	14.6	8.2	7.2
Max	52.7	66.2	105.0	34.4	73.6	68.4	58.9	38.5	44.6	55.1

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		9	23.2	4	23.8	<1	
August 31, 2011	42.6	11.1		39.3	13.9	<1	<1

Average		10.1		21.7	18.9	<1	
Min	42.6	9.0	23.2	4.0	13.9	<1	<1
Max	42.6	11.1	23.2	39.3	23.8	<1	<1

Iron (Fe) µg/L**Detection Limits for Test Mark:** 20 µg/L

For values listed as <, 10 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	180	<20	<20	691	1200	312	479	258	67	343
August 31, 2011	38	<20	140	170	286	350	293	251	279	379

Average	109	<20	75	431	743	331	386	255	173	361
Min	38	<20	<20	170	286	312	293	251	67	343
Max	180	<20	140	691	1200	350	479	258	279	379

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		496	812	130	1600	<20	
August 31, 2011	289	79		212	<20	<20	<20

Average		288		171	805	<20	
Min	289	79	812	130	<20	<20	<20
Max	289	496	812	212	1600	<20	<20

Lead (Pb) µg/L**Detection Limits for Test Mark:** 1 µg/L

For values listed as <, 0.5 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	1.1	2.1	1.4	2.2	5.6	5.3	3.6	1.1	<1	6.2
August 31, 2011	<1	1.2	2.1	<1	3.5	3.8	1.7	<1	1.2	1.1

Average	0.8	1.7	1.8	1.4	4.6	4.6	2.7	0.8	0.9	3.7
Min	<1	1.2	1.4	<1	3.5	3.8	1.7	<1	<1	1.1
Max	1.1	2.1	2.1	2.2	5.6	5.3	3.6	1.1	1.2	6.2

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		3.3	3.9	<1	5.4	<1	
August 31, 2011	<1	<1		<1	<1	<1	<1

Average		1.9		<1	3.0	<1	
Min	<1	<1	3.9	<1	<1	<1	<1
Max	<1	3.3	3.9	<1	5.4	<1	<1

Lithium (Li) µg/L**Detection Limits for Test Mark:** 5 µg/L

For values listed as <, 2.5 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	<5	<5	<5	9.4	<5	<5	5.3	7.8	8.3	10
August 31, 2011	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

Average	<5	<5	<5	6.0	<5	<5	3.9	5.2	5.4	6.3
Min	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Max	<5	<5	<5	9.4	<5	<5	5.3	7.8	8.3	10.0

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		11	5.8	9.5	7.1	<5	
August 31, 2011	<5	14		<5	14	<5	<5

Average		12.5		6.0	10.6	<5	
Min	<5	11.0	5.8	<5	7.1	<5	<5
Max	<5	14.0	5.8	9.5	14.0	<5	<5

Magnesium (Mg) µg/L**Detection Limits for Test Mark:** 4 µg/L

For values listed as <, 2 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	5280	4000	4000	36500	10200	5520	24500	32500	39000	54800
August 31, 2011	4290	4550	4840	5380	5270	5610	6310	8110	12300	9630

Average	4785	4275	4420	20940	7735	5565	15405	20305	25650	32215
Min	4290	4000	4000	5380	5270	5520	6310	8110	12300	9630
Max	5280	4550	4840	36500	10200	5610	24500	32500	39000	54800

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		57300	33900	51200	34100	51400	
August 31, 2011	9430	50100		10900	51800	38000	12

Average		53700		31050	42950	44700	
Min	9430	50100	33900	10900	34100	38000	12
Max	9430	57300	33900	51200	51800	51400	12

Manganese (Mn) µg/L**Detection Limits for Test Mark:** 1 µg/L

For values listed as <, 0.5 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	16.4	4.3	9.3	323	195	92.6	213	211	148	259
August 31, 2011	8.5	7.8	14.1	62.1	42.2	86.3	121	124	145	157

Average	12	6	12	193	119	89	167	168	147	208
Min	9	4	9	62	42	86	121	124	145	157
Max	16	8	14	323	195	93	213	211	148	259

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		316	131	242	162	<1	
August 31, 2011	150	47.8		153	51.5	<1	<1

Average		182		198	107	<1	
Min	150	48	131	153	52	<1	<1
Max	150	316	131	242	162	<1	<1

Mercury (Hg) µg/L**Detection Limits for Test Mark:** 0.1 µg/L

For values listed as <, 0.05 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
August 31, 2011	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Average	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Min	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Max	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		<0.1	<0.1	<0.1	<0.1	<0.1	
August 31, 2011	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1

Average		<0.1		<0.1	<0.1	<0.1	
Min	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Max	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Molybdenum (Mo) µg/L**Detection Limits for Test Mark:** 1 µg/L

For values listed as <, 0.5 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	<0.5	<0.5	<0.5	4	2	<0.5	3.2	3.7	5.1	3.8
August 31, 2011	1	<0.5	1	<0.5	1	0.6	0.6	1.1	1.4	1.3

Average	0.6	<0.5	0.7	2.4	1.2	0.6	1.9	2.4	3.2	2.6
Min	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	0.6	1.1	1.4	1.3
Max	0.6	<0.5	0.9	4.2	1.7	0.6	3.2	3.7	5.1	3.8

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		3.9	3.5	3.2	3.0	<0.5	
August 31, 2011	1.2	8.24		1.3	7.6	<0.5	<0.5

Average		6.1		2.3	5.3	<0.5	
Min	1.2	3.9	3.5	1.3	3.0	<0.5	<0.5
Max	1.2	8.2	3.5	3.2	7.6	<0.5	<0.5

Nickel (Ni) µg/L**Detection Limits for Test Mark:** 1 µg/L

For values listed as <, 0.5 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	2.7	1.5	1.5	18.3	12.1	4.4	26	20.5	17.5	20.3
August 31, 2011	1.3	1.8	2.8	4.2	3.3	5	8.4	6.5	7.7	8.5

Average	2.0	1.7	2.2	11.3	7.7	4.7	17.2	13.5	12.6	14.4
Min	1.3	1.5	1.5	4.2	3.3	4.4	8.4	6.5	7.7	8.5
Max	2.7	1.8	2.8	18.3	12.1	5.0	26.0	20.5	17.5	20.3

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		20.5	20.4	17.6	20.7	5.8	
August 31, 2011	7.2	23.9		8.3	22.7	3.6	<1

Average		22.2		13.0	21.7	4.7	
Min	7.2	20.5	20.4	8.3	20.7	3.6	<1
Max	7.2	23.9	20.4	17.6	22.7	5.8	<1

Potassium (K) µg/L**Detection Limits for Test Mark:** 100 µg/L

For values listed as <, 50 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	3520	4990	3330	17100	7310	3330	13700	15200	19100	22100
August 31, 2011	3410	3960	6910	3880	4500	4200	4590	6360	6620	6560

Average	3465	4475	5120	10490	5905	3765	9145	10780	12860	14330
Min	3410	3960	3330	3880	4500	3330	4590	6360	6620	6560
Max	3520	4990	6910	17100	7310	4200	13700	15200	19100	22100

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		23200	14800	19100	13700	350	
August 31, 2011	6530	27800		6620	26400	310	<100

Average		25500		12860	20050	330	
Min	6530	23200	14800	6620	13700	310	<100
Max	6530	27800	14800	19100	26400	350	<100

Selenium (Se) µg/L**Detection Limits for Test Mark:** 1 µg/L

For values listed as <, 0.5 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	<1	<1	<1	6.4	1.3	1.5	4	5.5	7.7	9.4
August 31, 2011	<1	<1	1	<1	<1	<1	<1	<1	2.6	1.3

Average	<1	<1	0.8	3.5	0.9	1.0	2.3	3.0	5.2	5.4
Min	<1	<1	<1	<1	<1	<1	<1	<1	2.6	1.3
Max	<1	<1	1.0	6.4	1.3	1.5	4.0	5.5	7.7	9.4

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		9.8	4.8	9.8	5.6	6.5	
August 31, 2011	1.9	10.9		1.7	7.8	3.6	<1

Average		10.4		5.8	6.7	5.1	
Min	1.9	9.8	4.8	1.7	5.6	3.6	<1
Max	1.9	10.9	4.8	9.8	7.8	6.5	<1

Silver (Ag) µg/L**Detection Limits for Test Mark:** 0.1 µg/L

For values listed as <, 0.05 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
August 31, 2011	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Average	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Min	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Max	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		<0.1	<0.1	<0.1	<0.1	<0.1	
August 31, 2011	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1

Average		<0.1		<0.1	<0.1	<0.1	
Min	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Max	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Sodium (Na) µg/L**Detection Limits for Test Mark:** 100 µg/L

For values listed as <, 50 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	19200	60500	35600	246000	71900	74400	147000	195000	255000	303000
August 31, 2011	19400	22600	75800	17900	60600	20900	37500	56100	65900	58900

Average	19300	41550	55700	131950	66250	47650	92250	125550	160450	180950
Min	19200	22600	35600	17900	60600	20900	37500	56100	65900	58900
Max	19400	60500	75800	246000	71900	74400	147000	195000	255000	303000

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		319000	164000	254000	174000	6420	
August 31, 2011	58900	380000		67800	396000	4410	<100

Average		349500		160900	285000	5415	
Min	58900	319000	164000	67800	174000	4410	<100
Max	58900	380000	164000	254000	396000	6420	<100

Strontium (Sr) µg/L**Detection Limits for Test Mark:** 1 µg/L

For values listed as <, 0.5 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	51.2	41.4	38.4	229	96.9	62.9	156	201	240	354
August 31, 2011	49.8	50	49.9	62	60.3	61.7	74.6	90.3	115	102

Average	50.5	45.7	44.2	145.5	78.6	62.3	115.3	145.7	177.5	228.0
Min	49.8	41.4	38.4	62.0	60.3	61.7	74.6	90.3	115.0	102.0
Max	51.2	50.0	49.9	229.0	96.9	62.9	156.0	201.0	240.0	354.0

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		357	208	291	197	228	
August 31, 2011	99	338		107	347	193	<1

Average		347.5		199.0	272.0	210.5	
Min	99.0	338.0	208.0	107.0	197.0	193.0	<1
Max	99.0	357.0	208.0	291.0	347.0	228.0	<1

Thallium (Tl) µg/L**Detection Limits for Test Mark:** 0.1 µg/L

For values listed as <, 0.05 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
August 31, 2011	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Average	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Min	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Max	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		<0.1	<0.1	<0.1	<0.1	<0.1	
August 31, 2011	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1

Average		<0.1		<0.1	<0.1	<0.1	
Min	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Max	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Titanium (Ti) µg/L**Detection Limits for Test Mark:** 1 µg/L

For values listed as <, 0.5 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	5.9	3.3	1.8	3.1	3.5	3.3	3.3	2.1	1.2	3.4
August 31, 2011	4.4	7.1	17.8	1.9	6.6	3.3	4.1	3	3.3	4

Average	5.2	5.2	9.8	2.5	5.1	3.3	3.7	2.6	2.3	3.7
Min	4.4	3.3	1.8	1.9	3.5	3.3	3.3	2.1	1.2	3.4
Max	5.9	7.1	17.8	3.1	6.6	3.3	4.1	3.0	3.3	4.0

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		1.8	3.2	1.4	4	<1	
August 31, 2011	4.1	3.3		3.7	3	<1	<1

Average		2.6		2.6	3.5	<1	
Min	4.1	1.8	3.2	1.4	3.0	<1	<1
Max	4.1	3.3	3.2	3.7	4.0	<1	<1

Uranium (U) µg/L**Detection Limits for Test Mark:** 1 µg/L

For values listed as <, 0.5 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	<1	<1	<1	1.9	<1	<1	1.4	1.5	1.5	1.7
August 31, 2011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Average	<1	<1	<1	1.2	<1	<1	1.0	1.0	1.0	1.1
Min	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Max	<1	<1	<1	1.9	<1	<1	1.4	1.5	1.5	1.7

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		1.6	1.3	1.6	1.4	1.9	
August 31, 2011	<1	2.4		<1	2.2	1.3	<1

Average		2.0		1.1	1.8	1.6	
Min	<1	1.6	1.3	<1	1.4	1.3	<1
Max	<1	2.4	1.3	1.6	2.2	1.9	<1

Vanadium (V) µg/L**Detection Limits for Test Mark:** 0.5 µg/L

For values listed as <, 0.25 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	<0.5	<0.5	<0.5	2.1	1.2	0.84	1.4	2	2.3	2.8
August 31, 2011	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	0.51	0.61	0.76

Average	<0.5	<0.5	<0.5	1.2	0.9	0.5	0.8	1.3	1.5	1.8
Min	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	0.5	0.6	0.8
Max	<0.5	<0.5	<0.5	2.1	1.2	0.8	1.4	2.0	2.3	2.8

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		3.2	2.7	3	2.6	1.3	
August 31, 2011	0.7	3.6		0.56	4.8	0.51	<0.5

Average		3.4		1.8	3.7	0.9	
Min	0.7	3.2	2.7	0.6	2.6	0.5	<0.5
Max	0.7	3.6	2.7	3.0	4.8	1.3	<0.5

Zinc (Zn) µg/L**Detection Limits for Test Mark:** 1 µg/L

For values listed as <, 0.5 µg/L was used to calculate mean

Sample Description	11B1-1	11B1-2	11B1-4	11B2-4	11B2-5	11B3-2	11B3-3	11B4-1	11B5-1	11B5-2
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Sample Date

August 14, 2011	15.7	16.2	14.6	5.9	33.1	27.4	4.6	5.7	2.4	8.2
August 31, 2011	21.4	39.1	59.2	21.8	50.2	23.1	22.8	19.8	19.4	18.5

Average	18.6	27.7	36.9	13.9	41.7	25.3	13.7	12.8	10.9	13.4
Min	15.7	16.2	14.6	5.9	33.1	23.1	4.6	5.7	2.4	8.2
Max	21.4	39.1	59.2	21.8	50.2	27.4	22.8	19.8	19.4	18.5

Sample Description	11B5-3	11PL-2	11PL-3	11SH-3	11SH-4	REFERENCE	BLANK
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Sample Date

August 14, 2011		6.7	8.4	3	13	<1	
August 31, 2011	13.5	5.3		11.4	5	4	2.8

Average		6.0		7.2	9.0	2.3	
Min	13.5	5.3	8.4	3.0	5.0	<1	<1
Max	13.5	6.7	8.4	11.4	13.0	4.0	<1

TREATMENT WETLAND PERFORMANCE AND PHYSICAL CHARACTERIZATION

CFS ALERT, NUNAVUT

JULY 2011

Sampling Protocol

From location of preferential flow pathways and estimation of the effective treatment area determined from initial site walk through, a series of transects were established; commencing near the point of influence and completed near the point of effluence. Transects expand the latitudinal width of the expected effective treatment area. Data collected using a TopCon3105W reflectorless Total Station, and GPS tied to sea level July 18, 2011.

