
Project: City of Wasilla WWTP Pilot Study Field Crew: Jake Alward, John Marshall
File: 204700415 Date: May 22, 2018 and May 23, 2018

Subsurface Surface Vegetation Plot Lagoon

Reference: **May Water Sampling Event**

1.1 BACKGROUND

The May sampling was the first full surface water sampling event of 2018. All locations had enough water to sample. The wetland seemed to be majorly thawed, however there were still a few locations where the hummocks had frozen pieces. The leaves and grass were just starting to green up (see photo 3). It was noted that the areas between the toe of slope below the percolation beds and creek were greener than anywhere else on the site (see photo 6).

Surface water was sampled over two days. Weather was partially cloudy both days.

1.2 SAMPLING EVENT HIGHLIGHTS

SURFACE

All 18 surface water locations were sampled with a peristaltic pump (see photo 1). SW9 and SW18 were duplicated. Overall, the site was very wet. It was once again difficult to move around the site without falling into holes up to your waist. The two ponds were full and thawed (see photos 2 and 5). Although the wetland was very wet, there were still a few locations that were dry and had little water to sample, like SW8, SW11 (see photo 4) and SW13.

IMPROVEMENTS FOR FUTURE SAMPLING:

There were no items during this month's sampling event that could've gone better.

1.3 OTHER ACTIVITIES

WEIR 1 (SW17)

Width: 2.21 -ft
Water depth: 0.70 -ft
Velocity: 0.37-ft/sec
Calculated flow: 0.57 -CF/sec

WEIR 2 (SW18)

Width: 3.22 -ft
Water depth: 0.77 -ft
Velocity: 0.46 -ft/sec
Calculated flow: 1.14 -CF/sec

Design with community in mind

Reference: May Water Sampling Event

1.4 SAMPLE RESULTS

The attached table summaries detected analytes. All other were below detectable limits. Complete results can be found in the SGS reports.

1.5 DATA QUALITY

There were two duplicates taken during the May sampling event, SW9 and SW18. For SW9, the only major difference is the results for the total coliform. However, both numbers are very large. There are no alarming differences for SW18.

	Nitrate	Nitrite	TSS	TKN	Ammonia	Total P	BOD	FC	E. Coli	TC
SW9	ND	ND	1.28	ND	ND	ND	32.5	ND	1	1733
Duplicate	ND	ND	2.29	ND	ND	ND	19.4	1	1	3080
% Difference	0%	0%	56.6%	0%	0%	0%	-50.5%	NA	0.0%	56.0%
SW18	2.54	ND	1.25	ND	1.14	1.31	128	2	4	77
SW18.1	2.38	ND	1.41	ND	1.16	1.25	71	ND	ND	111
% Diff	-6.5%	0%	12.0%	0%	1.7%	-4.7%	-57.3%	NA	NA	36.2%

Attachment: Photo Log

May Photo Log



Photo 1:
Sampling Set-Up at SW1



Photo 4:
SW11



Photo 2:
Pond at SW5 Thawed



Photo 5:
Pong at SW15



Photo 3:
SW4



Photo 6:
Green vegetation at SW17

Attachment: Results Summary Table

Site ID	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW9	SW9.1	SW10	SW11	SW12	SW13
Date Collected	5/22/2018	5/22/2018	5/22/2018	5/22/2018	5/22/2018	5/22/2018	5/22/2018	5/22/2018	5/22/2018	5/22/2018	5/22/2018	5/23/2018	5/23/2018	5/23/2018
Time	10:00	10:26	10:50	12:12	12:36	12:02	11:36	14:22	14:04	14:04	13:33	9:45	10:04	10:19
Sample Type	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Water Temperature (°C)	2.58	5.52	4.78	4.62	7.02	5.98	5	3.66	5.38	5.38	7.12	1.48	1.84	2.27
Conductivity	367	225	295	408	348	388	272	287	349	349	222	381	241	243
pH	6	5.55	5.91	6.5	6.25	6.34	5.61	5.68	6.52	6.52	5.99	6.25	5.88	5.88
DO	2.27	3.62	1.75	3.03	5.04	9.35	1.75	1.71	3.38	3.38	2	3.91	1.77	3.45
Nitrate	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)
Total Nitrate/Nitrite	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS	7	4.8	2.04	ND(1.02)	ND(1.04)	1.33	7.2	1.15	1.28	2.29	2.92	10.9	4.59	1.7
Ammonia	0.146	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)
Total P	0.0919	0.0834	ND(0.0100)	ND(0.0100)	ND(0.0100)	ND(0.0100)	0.0549	0.0676	ND(0.0100)	ND(0.0100)	0.0233	0.0465	0.0322	ND(0.0100)
BOD	12.6	21.5	18.9	ND(2.00)	7.95	2.77	3.17	17.4	32.5	19.4	6.86	4.26	54.1	ND(2.00)
FC	7	1	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	1	ND(1)	ND(1)	3	ND(1)
E. Coli	4	4	ND(1)	ND(1)	2	ND(1)	ND(1)	3	1	1	ND(1)	ND(1)	ND(1)	ND(1)
TC	159	1650	1986	2420	411	980	5790	45	1733	3080	435	125	1733	21

Site ID	SW14	SW15	SW16	SW17	SW18	SW18.1
Date Collected	5/23/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018	5/23/2018
Time	11:28	11:02	10:49	12:37	13:06	13:06
Sample Type	Surface	Surface	Surface	Surface	Surface	Surface
Water Temperature (°C)	1.2	4.68	5.52	5.3	6.51	6.51
Conductivity	578	304	209	560	733	733
pH	6.2	5.85	5.26	6.51	6.66	6.66
DO	1.07	6.04	1.15	9.14	7.42	7.42
Nitrate	0.629	ND(0.0500)	ND(0.0500)	1.16	2.54	2.38
Total Nitrate/Nitrite	0.629	ND	ND	1.16	2.54	2.38
TSS	6.6	5.16	2.53	2.47	1.25	1.41
Ammonia	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	1.14	1.16
Total P	0.0372	ND(0.0100)	0.034	0.153	1.31	1.25
BOD	4.72	10.4	4.28	2.84	128	71
FC	1	ND(1)	ND(1)	ND(1)	2	ND(1)
E. Coli	ND(1)	ND(1)	ND(1)	2	4	ND(1)
TC	5	19	4	119	77	111