Stantec

Field Report

Project:	City of Wasilla WWTP Pilot Study	Field Crew:	Jake Alward, John Marshall
File:	204700415	Date:	April 22 to 23, 2020

Subsurface☐ Surface☒ Vegetation Plot☐

Reference: April Water Sampling Event

1.1 BACKGROUND

April sampling events took place on the 22nd and 23rd and were for surface water. All 18 surface sites were sampled. Shaw's property was not sample due to access issues. The weather was in the 40's and slightly rainy. The site was covered in approximately 4 inches of water sitting on top of ice and frozen ground. There were limited areas that groundwater upwelling had melted all ice and frozen ground. These areas were mostly between SW12 and SW15. Being that ground was frozen, running water was observed throughout the site. Precipitation and melted ice would channelize into small streams with relatively high velocities. The stream at SW17 and SW18 was open. The berm had recently been rebuilt and was still standing tall. There were a few locations that it appeared it may be sinking slowly.

Onsite testing for ammonia was only conducted at two locations near the berm, one on the west and one on the east. Both samples had resulted of less than 1.0 mg/L ammonia.

Effluent discharge to the wetland is still not occurring at this time. Two additional wetland outfalls were being constructed during the sampling event by a contractor.

1.2 SAMPLING EVENT HIGHLIGHTS

SURFACE

On the first day of sampling, site SW1-SW10 were collected. The remaining sites were collected on the second day apart from the Shaw sample. All samples were collected with a peristaltic pump apart from SW17 and SW18. At those locations the bottles were dunked. Intrinsic data was collected at all sites where sufficient ice had melted to submerge the sensor.

The site had a significant amount of running water throughout, due to precipitation and ice/snow melt. This provided a rare insight on how water moves throughout the site due to topography. It was evident that the majority of the flow is centered in the valley.

BERM

The berm had recently been rebuilt. There were a few locations that it appears the berm is beginning to settle, however not at an alarming rate. The status of the berm will be monitored as the ground below the newly placed gravel begins to thaw.

Reference: April Water Sampling Event

IMPROVEMENTS FOR FUTURE SAMPLING:

Continued monitoring to evaluate potential elevated levels of ammonia.

1.3 SAMPLE RESULT

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

Site ID	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW9	SW9.1	SW10	SW11
Date Collected	4/23/2020	4/23/2020	4/23/2020	4/23/2020	4/23/2020	4/23/2020	4/23/2020	4/23/2020	4/23/2020	4/23/2020	4/23/2020	4/23/2020
Time	10:42	11:05	11:30	12:14	12:27	12:00	11:48	14:30	14:01	14:01	13:45	10:16
Sample Type	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Water Temperature (°C)			0.71	3.39	1.53	0.12		4.91	2.31	2.31	1.94	0.47
Conductivity			809	276	153	301		134	443	443	250	331
pH			5.79	5.54	5.43	5.06		5.8	6.54	6.54	5.51	6.27
TKN	10.5	7.66	5.71	ND(0.500)	1.17	1.64	1.83	1.06	3.14	3.11	2.35	ND(0.500)
Ammonia	6.78	3.9	3.67	ND(0.0500)	0.166	0.317	0.82	ND(0.0500)	1.92	1.83	0.485	0.148
Total P	1.97	1.97	1.9	0.085	0.124	0.246	0.31	0.294	0.37	0.374	0.42	0.126
BOD	19.8	26.4	16.7	9.33	15.4	8.4	9.24	8.4	13	15.3	12.1	5.49
FC	3	1	4	710	298	1370	19	276	2520	1130	378	ND(7)
E. Coli	1	3	1	930	184	530	4	320	153	4980	8	50
TC	1986	326	205	1450	770	1986	321	640	649	6160	24	219

Site ID	SW12	SW13	SW14	SW15	SW16	SW17	SW18
Date Collected	4/23/2020	4/23/2020	4/23/2020	4/23/2020	4/23/2020	4/23/2020	4/23/2020
Time	10:32	10:50	11:52	11:40	11:20	12:53	13:10
Sample Type	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Water Temperature (°C)	0.04	0.08	1/3/1900	6:57		2.53	2.78
Conductivity	303	368	9/22/1900	0:00		522	606
pH	6.07	6.43	6.64	6.23		5.9	5.85
Nitrate	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	1.06	1.84
Nitrite	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Total Nitrate/Nitrite	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	1.09	1.87
TKN	ND(0.500)	1.12	1.59	ND(0.500)	1.22	ND(0.500)	1.32
Ammonia	0.109	0.2	ND(0.0500)	ND(0.0500)	0.458	0.304	0.528
Total P	0.124	0.138	0.421	0.0882	0.0626	0.0958	0.468
BOD	4.33	5.98	18.7	3.44	7.71	ND(2.00)	3.14
FC	440	900	ND(7)	444	4	104	14
E. Coli	411	659	20	291	13	67	44
TC	816	1414	1200	461	236	138	179

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April Photo Log

Photo 1:
SW1

Photo 2:
SW2

Photo 3:
SW3

Photo 4:
SW11

Photo 5:
SW15

Photo 6:
SW17