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Project:	City of Wasilla WWTP Pilot Study	Field Crew:	Jake Alward, John Marshall, Roxanne Russell
File:	204700415	Date:	October 31, 2020 to Nov 1, 2019

Subsurface  Surface  Vegetation Plot

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**Reference: October Water Sampling Event**

## 1.1 BACKGROUND

The September sampling event was for surface water only. All sites were sampled. The weather was mild with little to no rain. The wetland was much drier than it was during the rainstorm that occurred during the September sampling event. Small rivulets could be observed in the southern half of the wetland.

## 1.2 SAMPLING EVENT HIGHLIGHTS

### SURFACE

Water was sampled at all 18 surface water locations on the city property with a duplicate of SW5 and SW17. Mr. Shaw's property was also sampled. Samples were collected with a peristaltic pump. Intrinsic data from the YSI was taken at all locations.

It was observed that the vegetation around the effluent discharge bed is still noticeably greener than surrounding areas, however it was apparent that the cold weather has killed much of the vegetation.

The water level in the stream at the south end of the wetland was back in its banks as opposed to September.

### WIER FLOW

#### **Weir 1 (SW17)**

Width: 2.21 -ft  
Water Depth: 0.72 -ft  
Velocity: 0.39 -ft/s  
Flow: 0.621 -cf/s

#### **Weir 2 (SW18)**

Width: 3.22 -ft  
Water Depth: 0.72 -ft  
Velocity: 0.36 -ft/s  
Flow: 0.869 -cf/s

**Reference: October Water Sampling Event**

**IMPROVEMENTS FOR FUTURE SAMPLING:**

October sampling went smoothly.

**1.3 SAMPLE RESULT**

Complete lab results can be found in the attachments. Results are from SGS

Detectable Results Summary Table

October-2019

Site ID	SW1	SW2	SW3	SW4	SW5	SW5.1	SW6	SW7	SW8	SW9	SW10
Date Collected	10/31/2019	10/31/2019	10/31/2019	10/31/2019	10/31/2019	10/31/2019	10/31/2019	10/31/2019	11/1/2019	11/1/2019	11/1/2019
Time	11:05	11:25	11:45	13:30	13:50	13:50	13:10	12:55	11:15	10:55	10:40
Sample Type	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Water Temperature (°C)	4.54	4.24	3.83	4.28	3.43	3.43	3.84	3.68	4.02	4.01	4.02
Conductivity	345	815	934	594	307	307	728	656	233	510	490
pH	5.12	5.53	5.97	6.81	6.04	6.04	5.96	5.56	5.81	5.97	5.62
DO	2.08	6.74	7.1	3.48	5.83	5.83	4.71	7.61	6.56	4.44	4.22
Nitrate	ND(0.100)	12.6	23.9	ND(0.100)	ND(0.100)	ND(0.100)	8.05	ND(0.100)	ND(0.100)	0.982	ND(0.100)
Total Nitrate/Nitrite	ND(0.100)	12.6	24.1	ND(0.100)	ND(0.100)	ND(0.100)	8.17	ND(0.100)	ND(0.100)	1.01	ND(0.100)
TSS	2	ND(0.500)	ND(0.510)	ND(0.490)	1.3	1.4	3.98	6.84	4.38	2.6	ND(0.500)
Ammonia	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	0.107	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)
Total P	ND(0.0100)	0.0598	2.97	ND(0.0100)	ND(0.0100)	0.0803	0.145	0.0244	ND(0.0100)	ND(0.0100)	ND(0.0100)
BOD	ND(2.00)	2.01	ND(2.00)	ND(2.00)	ND(2.00)	ND(2.00)	ND(2.00)	3.75	ND(2.00)	ND(2.00)	ND(2.00)
FC	ND(2)	6.7	4.9	1.7	ND(2)	ND(2)	5	38	ND(2)	ND(2)	ND(2)
E. Coli	ND(1)	ND(1)	4	ND(1)	ND(20)	ND(1)	3	180	ND(1)	ND(1)	1
TC	687	411	2420	365	760	365	210	3100	124	194	56

Site ID	SW11	SW12	SW13	SW14	SW15	SW16	SW17	SW17.1	SW18	Shaw
Date Collected	11/1/2019	11/1/2019	11/1/2019	11/1/2019	11/1/2019	11/1/2019	11/1/2019	11/1/2019	11/1/2019	11/1/2019
Time	13:05	13:15	13:25	14:30	14:15	14:00	15:00	15:00	15:28	12:00
Sample Type	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Water Temperature (°C)	3.87	3.88	3.98	4.19	5.23	4.2	4.46	4.46	4.72	3.87
Conductivity	359	359	437	454	331	286	510	510	653	361
pH	6.28	6.37	6.57	6.88	6.52	6.46	6.78	6.78	6.88	5.81
DO	3.01	7.11	4.56	5.72	7.7	8.67	7.98	7.98	6.86	8.21
Nitrate	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	3.07	3.11	5.8	ND(0.100)
Total Nitrate/Nitrite	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	3.08	3.12	5.82	ND(0.100)
TSS	ND(0.500)	8.96	ND(0.665)	2.19	2.69	3.37	1.58	1.3	3.54	11.4
TKN	ND(0.500)	ND(0.500)	ND(0.500)	ND(0.500)	ND(0.500)	ND(0.500)	ND(0.500)	ND(0.500)	1.42	ND(0.500)
Ammonia	ND(0.0500)	ND(0.0500)	ND(0.0500)	0.1	ND(0.0500)	ND(0.0500)	0.142	0.118	0.144	0.101
Total P	ND(0.0100)	ND(0.0100)	ND(0.0100)	ND(0.0100)	ND(0.0100)	ND(0.0100)	0.0696	0.0667	0.908	0.0212
BOD	ND(2.00)	ND(2.00)	ND(2.00)	ND(2.00)	ND(2.00)	ND(2.00)	ND(2.00)	ND(2.00)	2.69	ND(2.00)
FC	ND(2)	13	ND(2)	ND(2)	3.3	3.3	22	20	109	ND(2)
E. Coli	4	18	5	ND(1)	4	3	53	38	107	ND(20)
TC	14	435	365	80	1733	501	248	238	1120	4200

## October Photo Log



Photo 1:  
SW2



Photo 2:  
SW6