Stantec

Field Report

Project:	City of Wasilla WWTP Pilot Study	Field Crew:	Jake Alward, John Marshall, Ryan Cooper
File:	204700415	Date:	July 25-26, 31, 2018

Subsurface☐ Surface☒ Vegetation Plot☐ Lagoon ☒

Reference: July Water Sampling Event

1.1 BACKGROUND

The July sampling event was split into three days. Surface water was sampled as well as the lagoon water and sludge. There was nothing out of the ordinary as far as site conditions are concerned. The bugs were much more tolerable on this sampling event.

All surface water locations were sampled except for Mr. Shaw's property. The lagoon water was sampled in two areas per cell. Weather was average for all three days.

1.2 SAMPLING EVENT HIGHLIGHTS

SURFACE
All 18 surface water locations with a peristaltic pump. SW5 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.

Lagoon
All four cells were sampled two times each. Samples were collected using a bomb sampler dropped off the edge of a boat. One sample was taken from the main flow area of the cell and one sample was taken from a corner of the cell. Water was collected at all locations. Sludge was only able to be sampled from 7 of the 8 locations. Sludge was not able to be collected at the cell divider between cells 1 and 2. We believe there is enough flow in the area that the sludge is either pushed towards cell 2 or piled up on the sides. Intrinsic data was not collected for the lagoon water.

IMPROVEMENTS FOR FUTURE SAMPLING:

Mr. Shaw's property needs to be sampled monthly.

The YSI needs to be used to collect intrinsic data on all surface water samples, including the lagoon.

1.3 OTHER ACTIVITIES

WEIR 1 (SW17)

Not available, flow meter was not brought to sampling event.

WEIR 2 (SW18)

Not available, flow meter was not brought to sampling event.

Reference: July Water Sampling Event

1.4 SAMPLE RESULTS

The attached table summarize 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 June sampling event, SW5 and SW18. There are no alarming differences in the data to be investigated.

Site ID	Nitrate	Nitrite	TSS	TKN	Ammonia	Total P	BOD	FC	E. Coli
SW5	ND	ND	8.32	ND	0.217	0.0387	4.98	83	50
SW5.1	ND	ND	5.15	ND	ND	0.0408	4.26	148	66
% Diff	**0.0%**	**0.0%**	**-47.1%**	**0.0%**	**NA**	**5.3%**	**-15.6%**	**56.3%**	**27.6%**
SW18	6.08	ND	8.54	ND	0.289	0.76	3.75	29	29
SW18.1	6.89	0.1	8.61	ND	0.276	0.769	3.99	37	24
% Diff	**12.5%**	**NA**	**0.8%**	**0.0%**	**-4.6%**	**1.2%**	**6.2%**	**24.2%**	**-18.9%**

Attachment: Photo Log

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June Photo Log

Photo 1:
SW-5

Photo 4:
Bugs at SW-6

Photo 2:
SW-12

Photo 4:
Pond at SW10

Photo 3:
SW-8

Attachment: Results Summary Table

Detectable Results Summary Table

July-2018

Site ID	SW1	SW2	SW3	SW4	SW5	SW5.1	SW6	SW7	SW8	SW9	SW10	SW11	SW12	SW13
Date Collected	7/25/2018	7/25/2018	7/25/2018	7/26/2018	7/26/2018	7/26/2018	7/26/2018	7/26/2018	7/26/2018	7/26/2018	7/26/2018	7/31/2018	7/31/2018	7/31/2018
Time	11:36	12:03	12:31	11:14	11:45	11:45	10:53	10:25	13:37	13:03	12:53	11:26	11:08	10:40
Sample Type	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Water Temperature (°C)	11.4	11.62	13.94	14.1	10.47	10.47	14.98	13.62	12.27	15.23	14.59	11.71	14.2	13.59
Conductivity	198	148	280	343	349	349	384	189	245	354	230	367	366	227
pH	5.88	5.51	6.11	6.44	6.25	6.25	6.56	6.05	5.93	6.6	6.06	6.47	6.14	6.52
DO	1.48	2.81	0.46	0.65	0.59	0.59	2.64	0.85	0.94	2	0.57	1.33	0.72	1.35
TSS	5.2	6.4	3.38	1.39	8.32	5.15	5.8	3.6	3.25	3.66	5	6.27	10.9	2.97
TKN	ND(0.500)	1.04	ND(0.500)	ND(0.500)	ND(0.500)	ND(0.500)	ND(0.500)	ND(0.500)	ND(0.500)	ND(0.500)	ND(0.500)	ND(0.500)	ND(0.500)	ND(0.500)
Ammonia	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	0.217	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	0.0604	0.0495	0.0704	ND(0.0100)	0.0387	0.0408	ND(0.0100)	0.0482	0.0619	0.0267	0.102	0.315	0.248	0.0249
BOD	57.4	3.03	4.21	2.1	4.98	4.26	2.43	2.33	ND(2.00)	13.3	3.93	ND(2.00)	ND(2.00)	11.6
FC	36	40	24	9	83	148	30	6670	21	85	58	ND(1)	270	93
E. Coli	8	16	23	10	50	66	6	10460	36	80	54	ND(1)	488	29
TC	2421	2421	2421	3450	6870	8160	5790	2421	2421	6130	2190	579	2421	2421

Site ID	SW14	SW15	SW16	SW17	SW18	SW18.1
Date Collected	43312	43312	43312	43312	43312	43312
Time	0.548611111	0.538194444	0.524305556	0.579166667	0.595138889	0.59513889
Sample Type	Surface	Surface	Surface	Surface	Surface	Surface
Water Temperature (°C)	13.28	13.19	8.27	11.72	11.97	11.97
Conductivity	400	281	173	518	631	631
pH	6.71	6.25	6.03	7.01	7.07	7.07
DO	1.25	0.44	0.76	6.45	5.82	5.82
Nitrate	ND(0.0500)	ND(0.0500)	ND(0.0500)	1.48	6.08	6.89
Nitrite	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	ND(0.0500)	0.1
Total Nitrate/Nitrite	ND	ND	ND	1.48	6.08	6.99
TSS	4.71	3.9	24.8	5	8.54	8.61
Ammonia	ND(0.0500)	ND(0.0500)	ND(0.0500)	0.112	0.289	0.276
Total P	0.0794	0.0729	0.0735	0.245	0.76	0.769
BOD	ND(2.00)	2.07	2.81	ND(2.00)	3.75	3.99
FC	4	36	800	55	29	37
E. Coli	4	28	1300	82	29	24
TC	921	9800	2421	1046	2420	1330