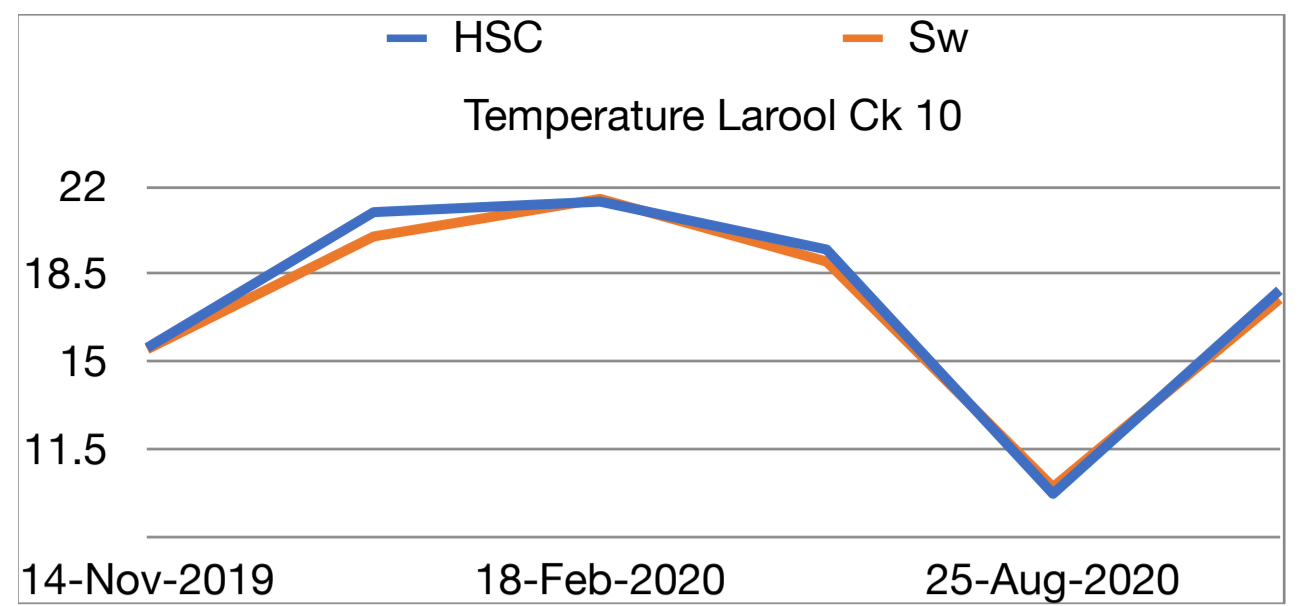


Summary & Conclusions

Overall	SW testing not able to replace HSC testing to the same accuracy, but useful to a lower standard, except for Phosphate
Temperature	Sw mostly consistent within the 0.5 measurement limit Median % variance was 3% and SD was 4% Variation was within 0.5C for 92% of tests HSC calibration pass rate based on 0.2C acceptance was 9% Glenorie variance was +1.8, but thermometers checked ok with Still Still all +0.5 but Larool and Sams closer Sw thermometers can read to 0.5C only explains most variation
Available Phosphate	Sw results are unreliable and show large unexplained variations Summary: 29/42 ok; 4/42 slight variance; 9/42 big variance Larool: 4/5 big variance; 1/5 slight variance Glenorie: 3/3 big variance Colah: 2/8 big variance Crosslands: 1/8 big variance; 1/8 slight variance Mansfield: 1/9 slight variance Comparison using 3 groups' colorimeters and materials showed similar results Sw results below 0.07 are unreliable due to colorimeter constraints
Dissolved Oxygen	Sw tended to follow the HSC trends but showed high variability Larool & Still showed a variance of up to 4 There was a difference between Glenorie and Still results for calibration solution and sample water HSC calibration pass rate based on 0.2C acceptance was 17% % variance for median and mean were 0% and SD was 25%
pH	Sw results were not accurate but often close and within the 0.5 Sw measurement limit Median and mean variance were all about 0.6 units, with 92% Sw reading lower All Sw results were within 1 pH unit and 79% were within 0.5 units Glenorie tended to be poorer than others HSC calibration pass rate based on 0.1 units acceptance was 8% Sw test strip were read to 0.5 units
Electrical Conductivity	Sw showed good comparative results, but the calibration solution is critical The early tests for all 3 Still sites showed large variations. This was traced to a faulty calibration solution subsequently replaced Removal of these reduced the % variance for median and mean to 0% A comparison of on-site and home testing showed close results except for one unexplained occasion HSC calibration pass rate based on 15 acceptance was 31% % variance for medians was -2%, mean was +3% and SD was 13%
Turbidity NTU	Sw results followed the trends but was limited by the equipment Sw also took FTU readings but HSC did not do FTU 93% of SW results matched the HSC results taking the above equipment constraints into account Variances of note were Still: HSC 63 Sw 30; HSC 9 Sw 15; HSC 6 Sw 15 HSC calibration pass rate based on 0.5 NTU acceptance was 2% Sw NTU turbidity tube was limited to the following values: 10, 15 20, 30, 60. For example, any result below 10 is read as 10
E. coli	Sw results are a useful guide to conditions Generally there was similarity in the results and trends followed, except for one instance 84% of results matched if the following 3 bands are used: 0/200; 201/1000; >1000 Variances were median 15, mean 210 and SD 992

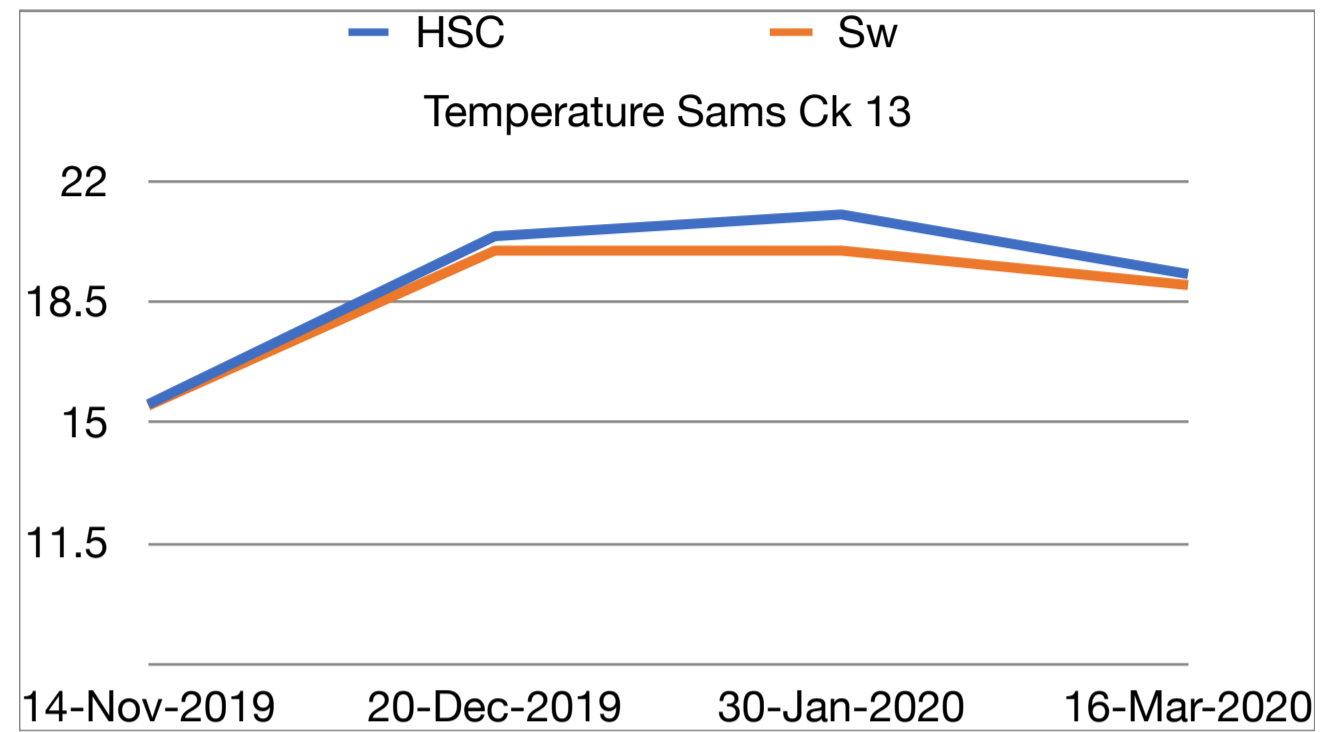
Temperature Larool Ck 10

Date	HSC	Sw	HSC - Sw	Within HSC Tolerant
14-Nov-2019	15.56	15.5	0.1	1
30-Jan-2020	20.97	20	1.0	0
18-Feb-2020	21.39	21.5	-0.1	1
16-Mar-2020	19.48	19	0.5	0
25-Aug-2020	9.73	10	-0.3	0
21-Sep-2020	17.85	17.5	0.4	0
Mean			0.2	



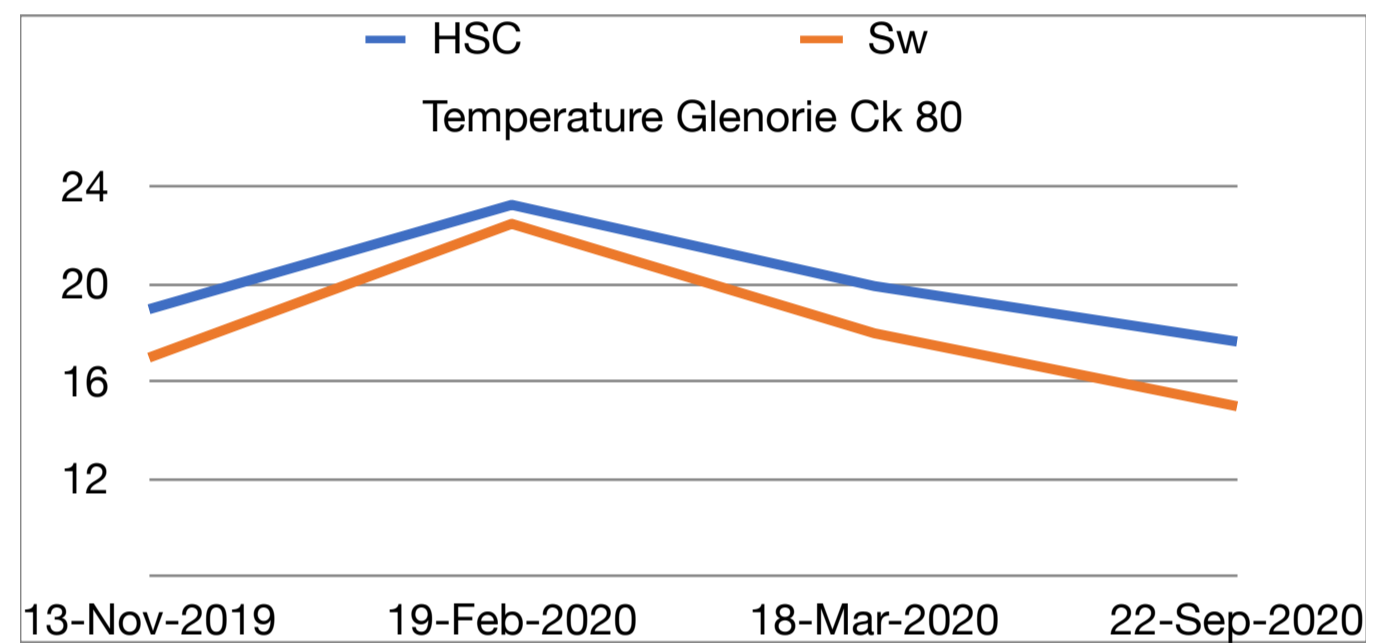
Temperature Sams Ck 13

Date	HSC	Sw	HSC - Sw	Within HSC Tolerant
14-Nov-2019	15.54	15.5	0.0	1
20-Dec-2019	20.42	20	0.4	0
30-Jan-2020	21.05	20	1.1	0
16-Mar-2020	19.32	19	0.3	0
03-Aug-2020	12.78	12	0.8	0
25-Aug-2020	10.22	11	-0.8	0
21-Sep-2020	16.67	17.5	-0.8	0
Mean			0.1	



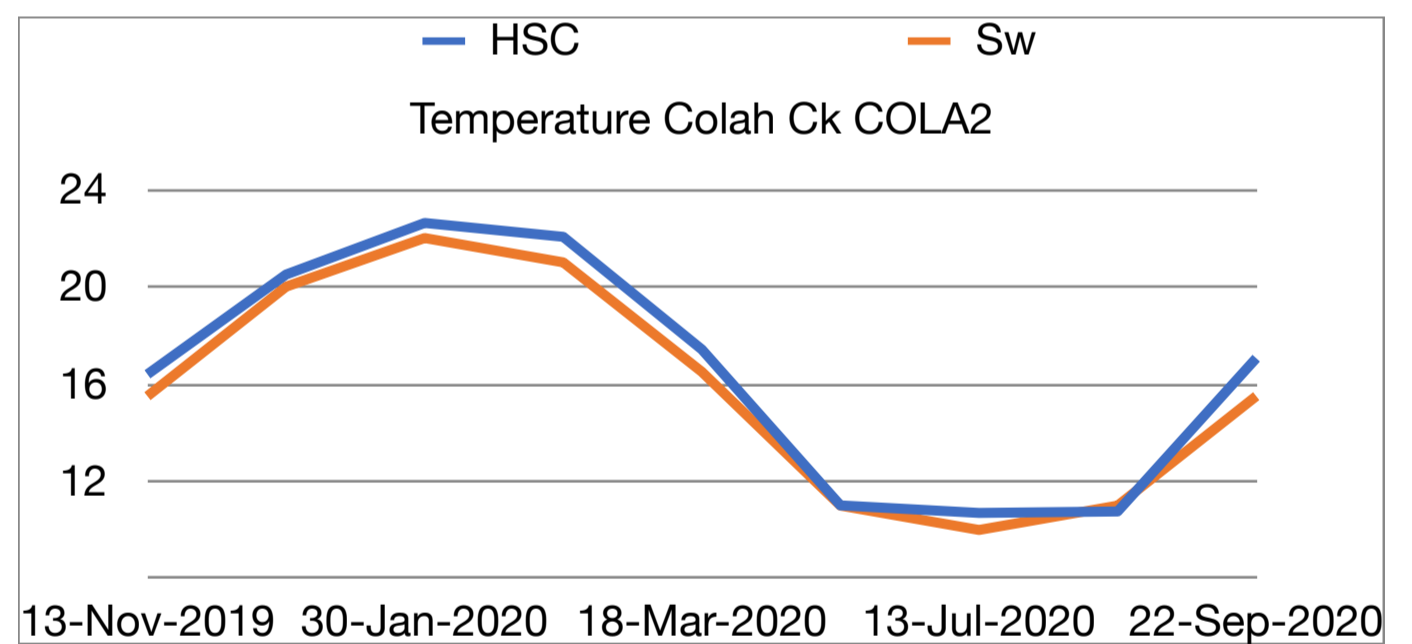
Temperature Glenorie Ck 80

Date	HSC	Sw	HSC - Sw	Within HSC Tolerant
13-Nov-2019	18.99	17	2.0	0
19-Feb-2020	23.28	22.5	0.8	0
18-Mar-2020	19.94	18.0	1.9	0
22-Sep-2020	17.66	15.0	2.7	0
Mean			1.8	



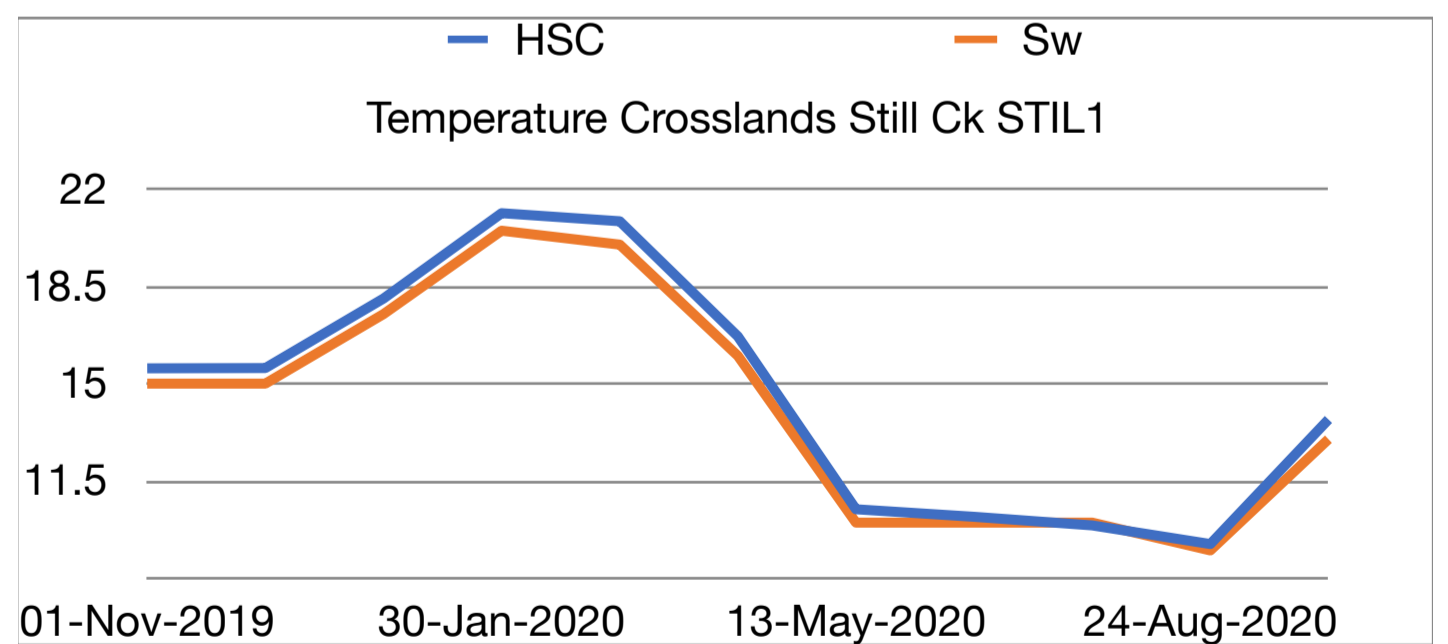
Temperature Colah Ck COLA2-1

Date	HSC	Sw	HSC - Sw	Within HSC Tolerant
13-Nov-2019	16.4	15.5	0.9	0
20-Dec-2019	20.5	20	0.5	0
30-Jan-2020	22.62	22	0.6	0
19-Feb-2020	22.05	21	1.1	0
18-Mar-2020	17.42	16.5	0.9	0
16-Jun-2020	11.01	11	0.0	1
13-Jul-2020	10.7	10	0.7	0
24-Aug-2020	10.76	11	-0.2	0
22-Sep-2020	17.06	15.5	1.6	0
Mean			0.7	



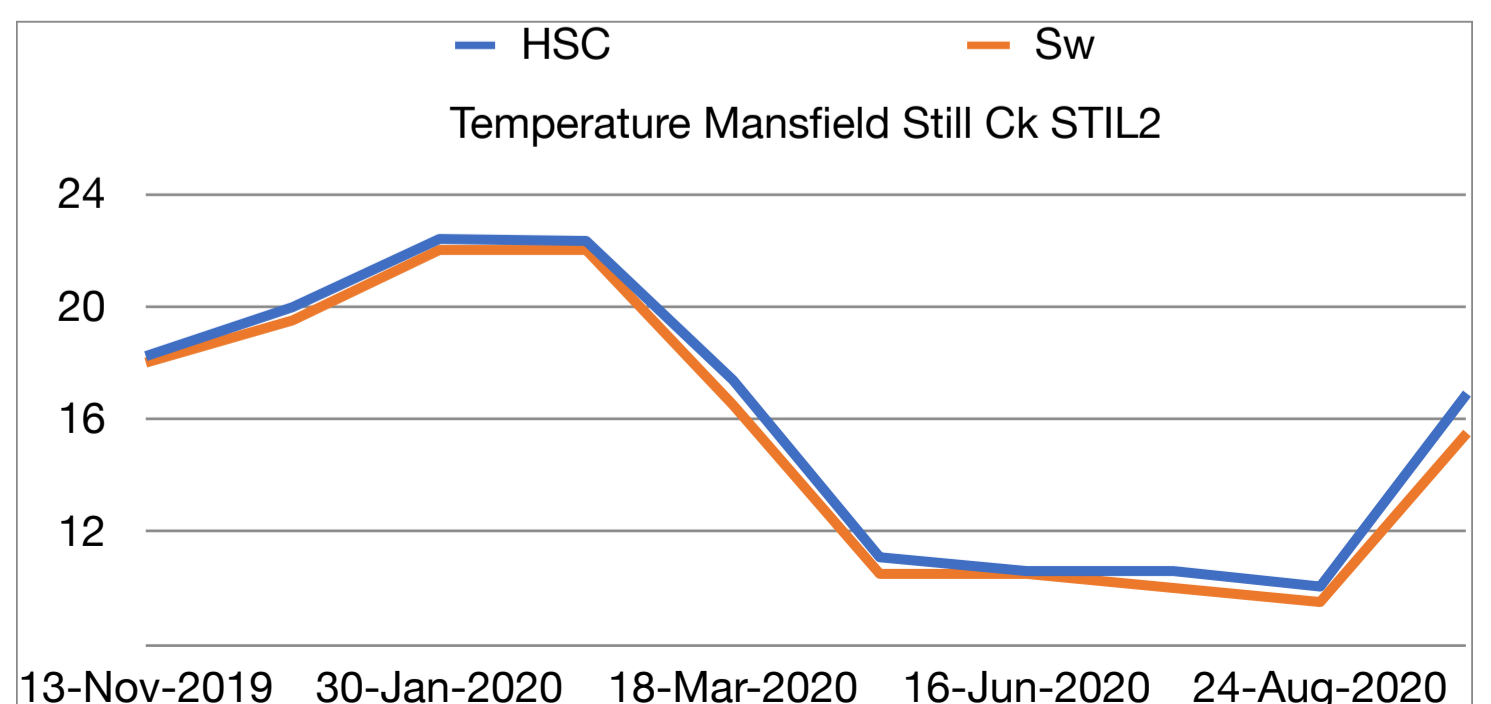
Temperature Crosslands Still Ck STIL1

Date	HSC	Sw	HSC - Sw	Within HSC Tolerant
01-Nov-2019	15.55	15	0.6	0
14-Nov-2019	15.56	15	0.6	0
20-Dec-2019	18.06	17.5	0.6	0
30-Jan-2020	21.13	20.5	0.6	0
19-Feb-2020	20.84	20	0.8	0
18-Mar-2020	16.70	16	0.7	0
13-May-2020	10.48	10	0.5	0
16-Jun-2020	10.21	10	0.2	0
13-Jul-2020	9.9	10	-0.1	1
24-Aug-2020	9.23	9	0.2	0
22-Sep-2020	13.71	13	0.7	0
Mean			0.5	



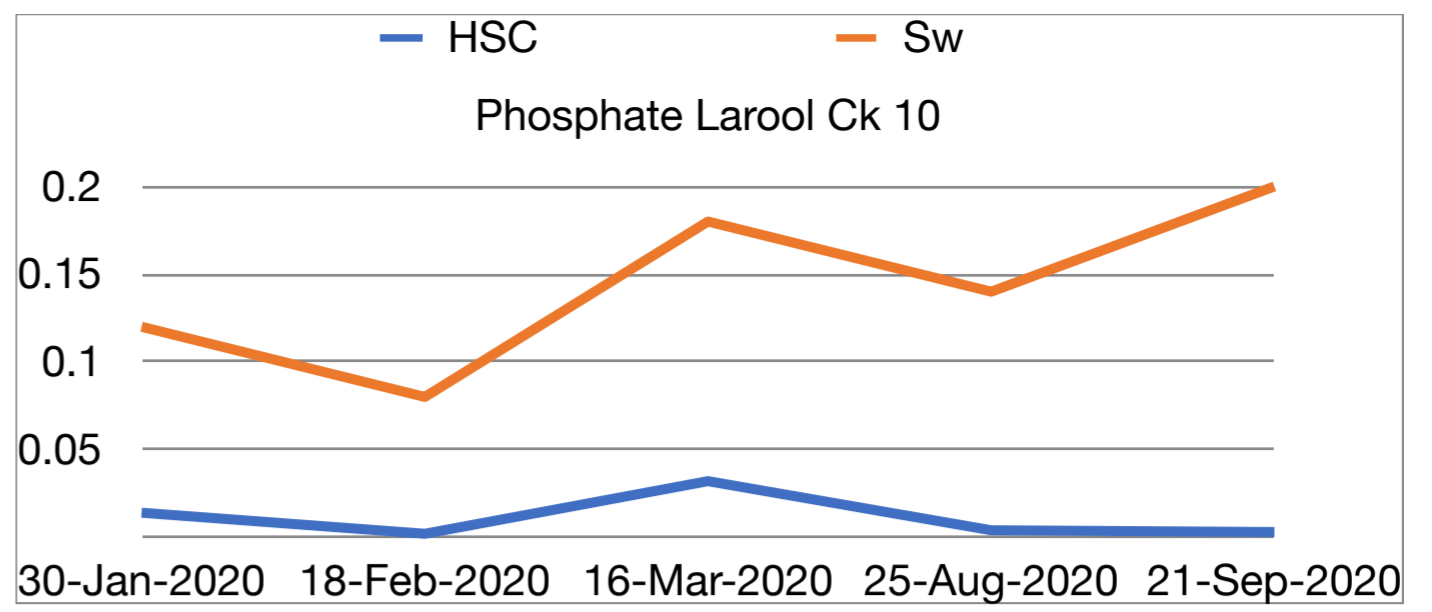
Temperature Mansfield Still Ck STIL2

Date	HSC	Sw	HSC - Sw	Within HSC Tolerant
13-Nov-2019	18.23	18	0.2	0
20-Dec-2019	19.97	19.5	0.5	0
30-Jan-2020	22.39	22	0.4	0
19-Feb-2020	22.32	22	0.3	0
18-Mar-2020	17.38	16.5	0.9	0
13-May-2020	11.09	10.5	0.6	0
16-Jun-2020	10.60	10.5	0.1	1
13-Jul-2020	10.60	10	0.6	0
24-Aug-2020	10.05	9.5	0.6	0
22-Sep-2020	16.90	15.5	1.4	0
Mean			0.6	



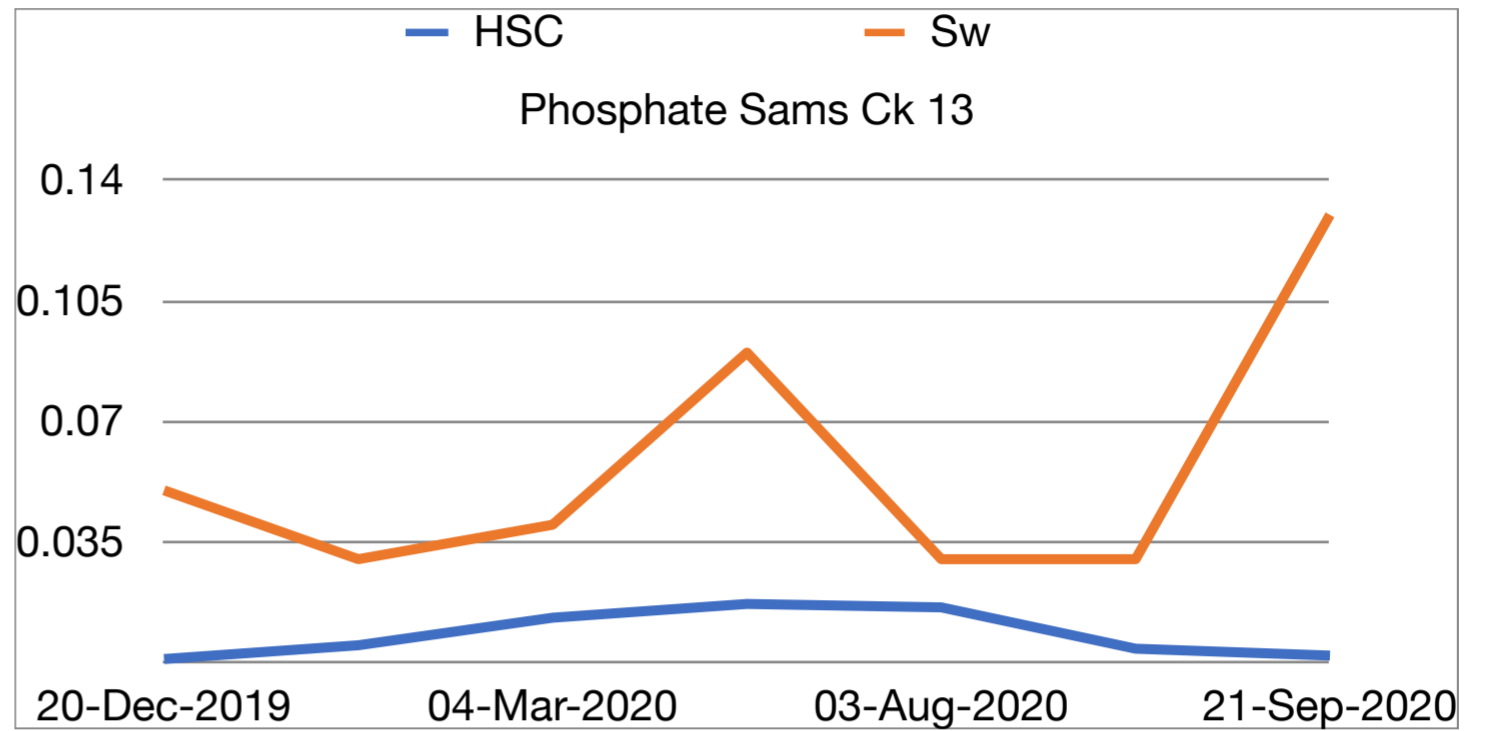
Phosphate Larool Ck 10

Date	HSC	Sw	HSC - Sw	Within HSC Toleranc
30-Jan-2020	0.014	0.12	-0.11	0
18-Feb-2020	0.002	0.08	-0.08	0
16-Mar-2020	0.032	0.18	-0.15	0
25-Aug-2020	0.004	0.14	-0.14	0
21-Sep-2020	0.003	0.2	-0.20	0
Mean			-0.13	



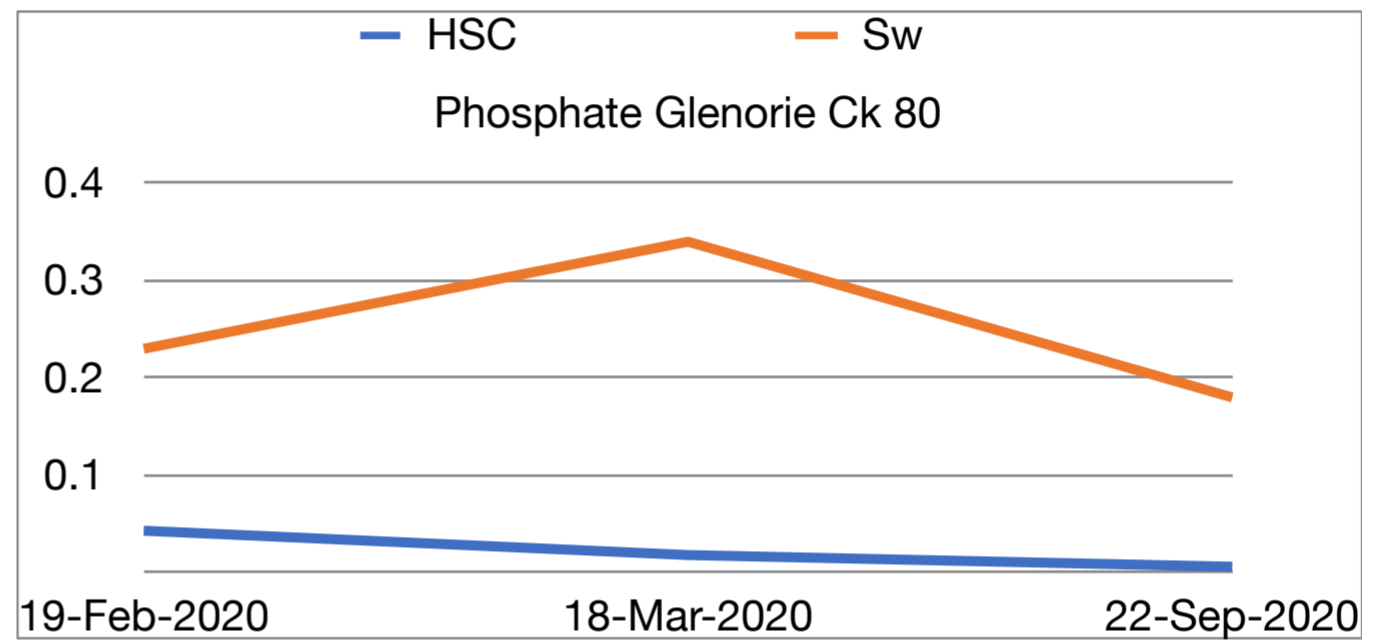
Phosphate Sams Ck 13

Date	HSC	Sw	HSC - Sw	Within HSC Toleranc
20-Dec-2019	0.001	0.05	-0.05	0
30-Jan-2020	0.005	0.03	-0.03	0
04-Mar-2020	0.013	0.04	-0.03	0
16-Mar-2020	0.017	0.09	-0.07	0
03-Aug-2020	0.016	0.03	-0.01	0
25-Aug-2020	0.004	0.03	-0.03	0
21-Sep-2020	0.002	0.13	-0.13	0
Mean			-0.05	



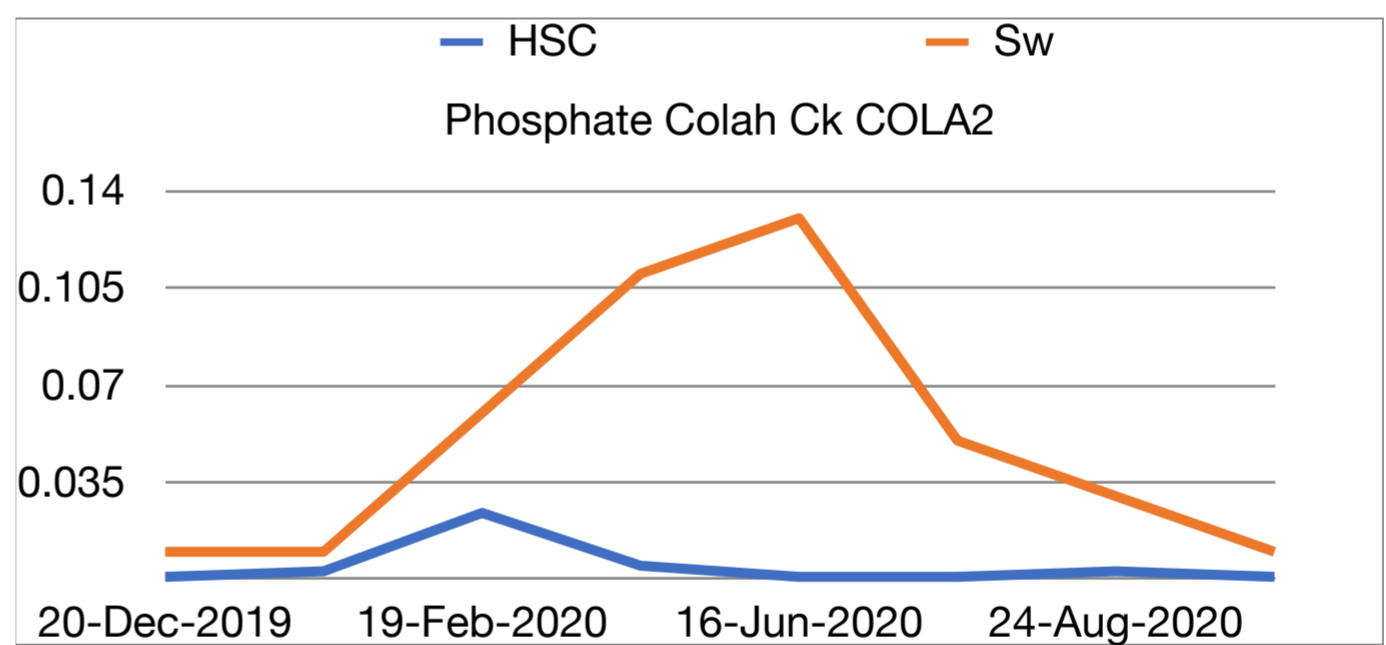
Phosphate Glenorie Ck 80

Date	HSC	Sw	HSC - Sw	Within HSC Toleranc
19-Feb-2020	0.043	0.23	-0.19	0
18-Mar-2020	0.018	0.34	-0.32	0
22-Sep-2020	0.006	0.18	-0.17	0
Mean			-0.23	



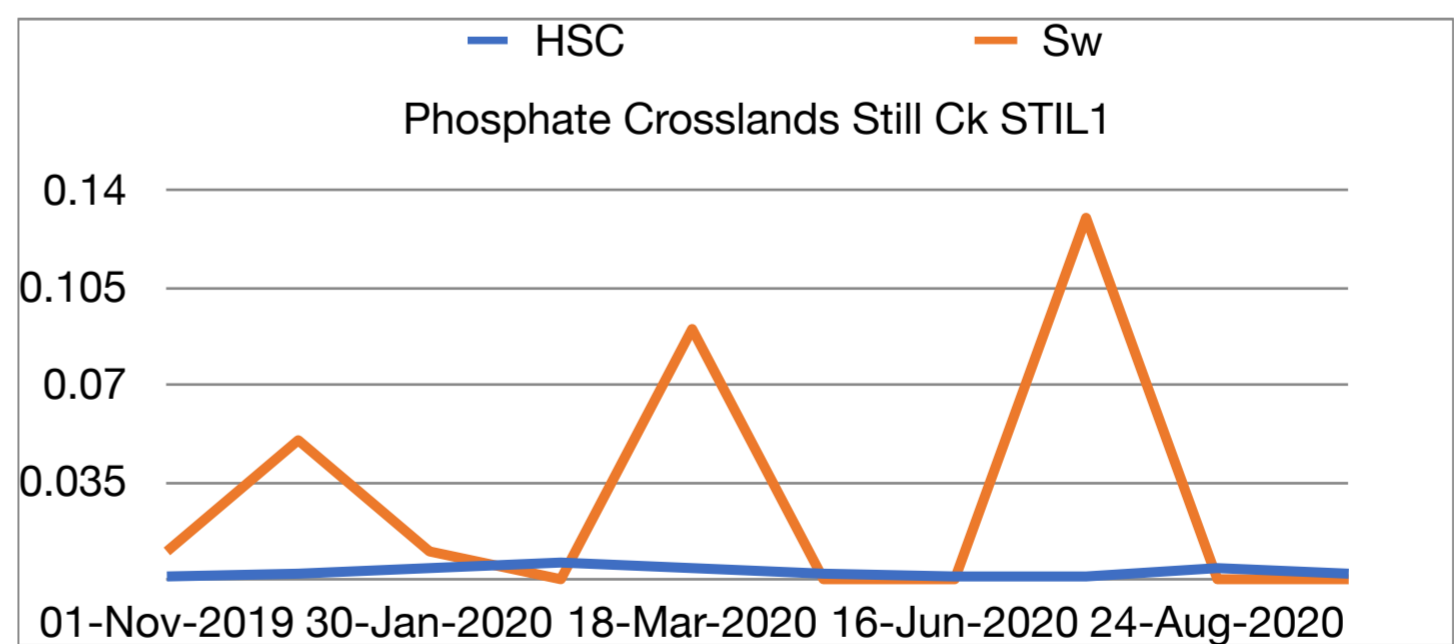
Phosphate Colah Ck COLA2-1

Date	HSC	Sw	HSC - Sw	Within HSC Toleranc
20-Dec-2019	0.001	0.01	-0.01	0
30-Jan-2020	0.003	0.01	-0.01	0
19-Feb-2020	0.024	0.06	-0.04	0
18-Mar-2020	0.005	0.11	-0.11	0
16-Jun-2020	0.001	0.13	-0.13	0
13-Jul-2020	0.001	0.05	-0.05	0
24-Aug-2020	0.003	0.03	-0.03	0
22-Sep-2020	0.001	0.01	-0.01	0
Mean			-0.05	



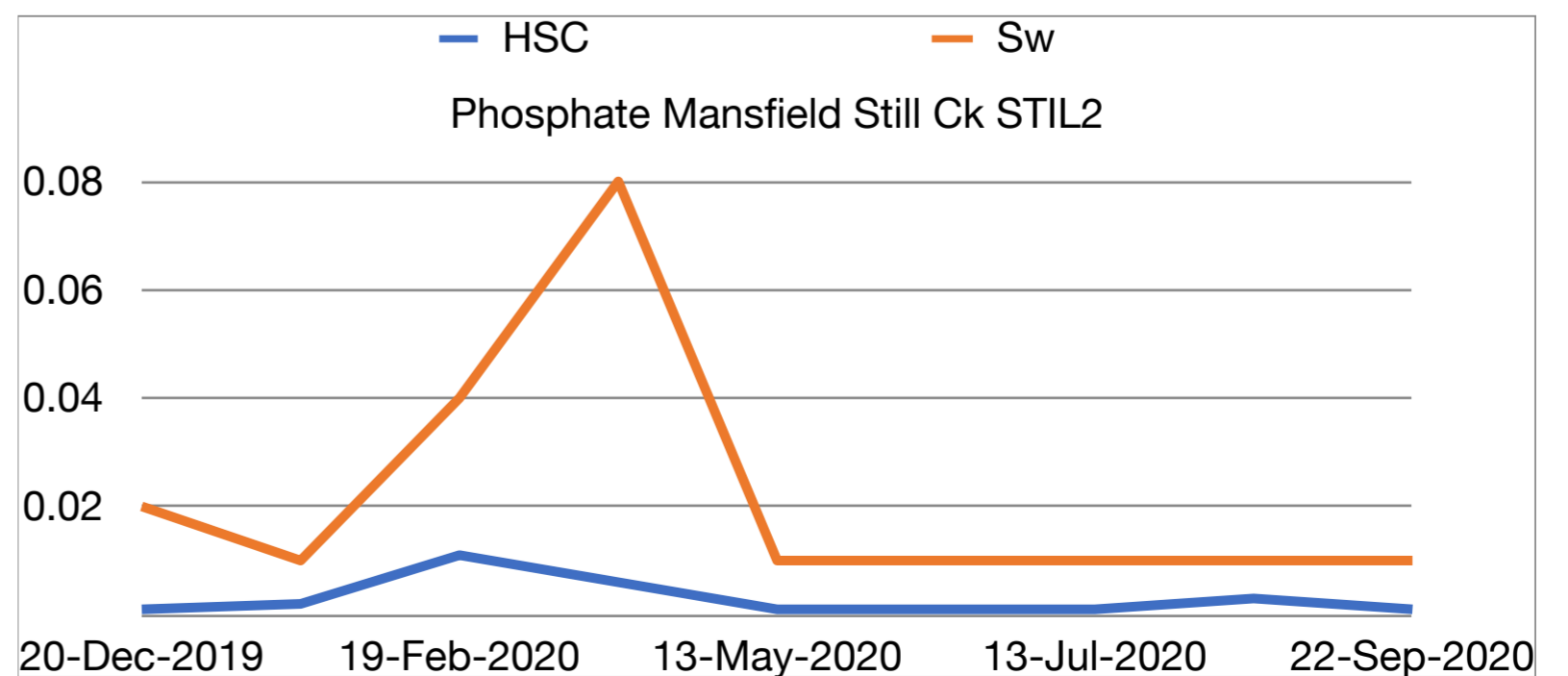
Phosphate Crosslands Still Ck STIL1

Date	HSC	Sw	HSC - Sw	Within HSC Toleranc
01-Nov-2019	0.001	0.01	-0.01	0
20-Dec-2019	0.002	0.05	-0.05	0
30-Jan-2020	0.004	0.01	-0.01	0
19-Feb-2020	0.006	0	0.01	0
18-Mar-2020	0.004	0.09	-0.09	0
13-May-2020	0.002	0	0.00	0
16-Jun-2020	0.001	0	0.00	0
13-Jul-2020	0.001	0.13	-0.13	0
24-Aug-2020	0.004	0	0.00	0
22-Sep-2020	0.002	0	0.00	0
Mean			-0.03	



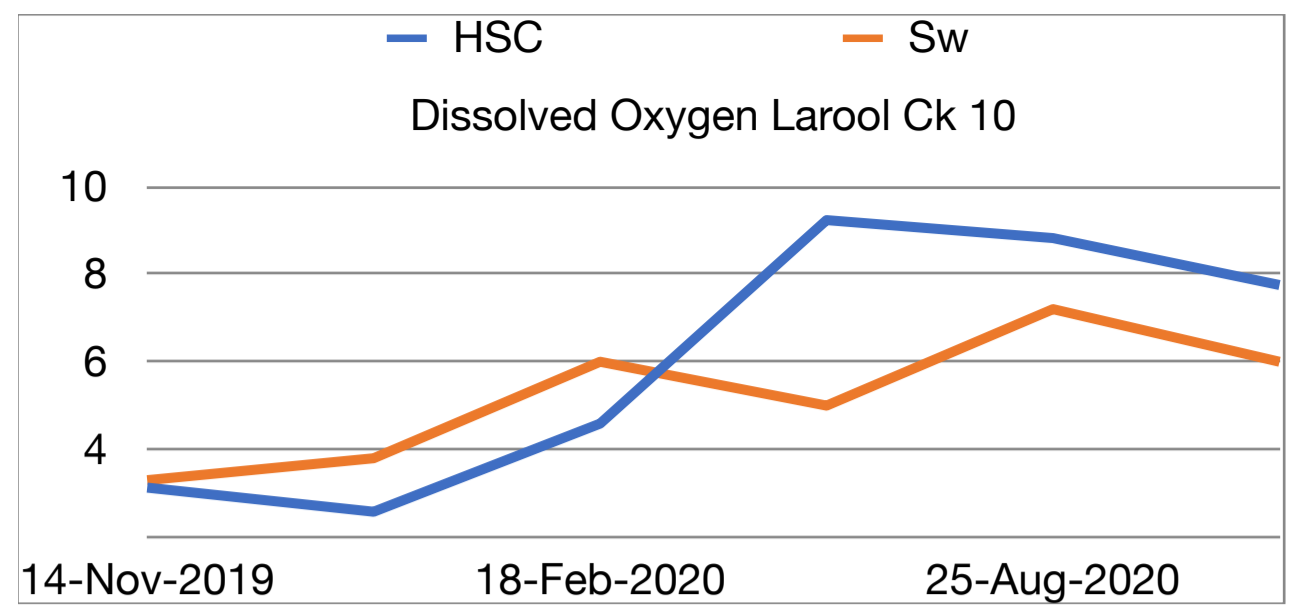
Phosphate Mansfield Still Ck STIL2

Date	HSC	Sw	HSC - Sw	Within HSC Toleranc
20-Dec-2019	0.001	0.02	-0.02	0
30-Jan-2020	0.002	0.01	-0.01	0
19-Feb-2020	0.011	0.04	-0.03	0
18-Mar-2020	0.006	0.08	-0.07	0
13-May-2020	0.001	0.01	-0.01	0
16-Jun-2020	0.001	0.01	-0.01	0
13-Jul-2020	0.001	0.01	-0.01	0
24-Aug-2020	0.003	0.01	-0.01	0
22-Sep-2020	0.001	0.01	-0.01	0
Mean			-0.02	



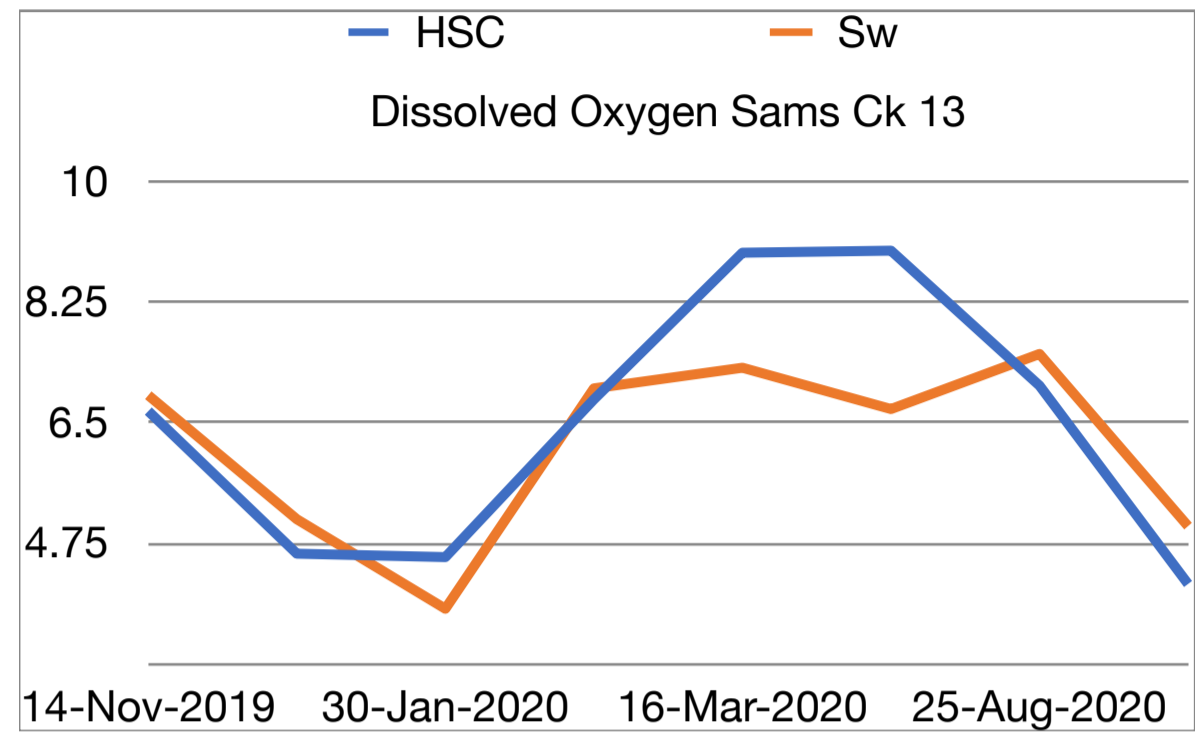
Dissolved Oxygen Larool Ck 10

Date	HSC	Sw	HSC - Sw	Within HSC Tolerant
14-Nov-2019	3.13	3.3	-0.2	0
30-Jan-2020	2.58	3.8	-1.2	0
18-Feb-2020	4.59	6	-1.4	0
16-Mar-2020	9.23	5	4.2	0
25-Aug-2020	8.82	7.2	1.6	0
21-Sep-2020	7.75	6	1.8	0
Mean			0.8	



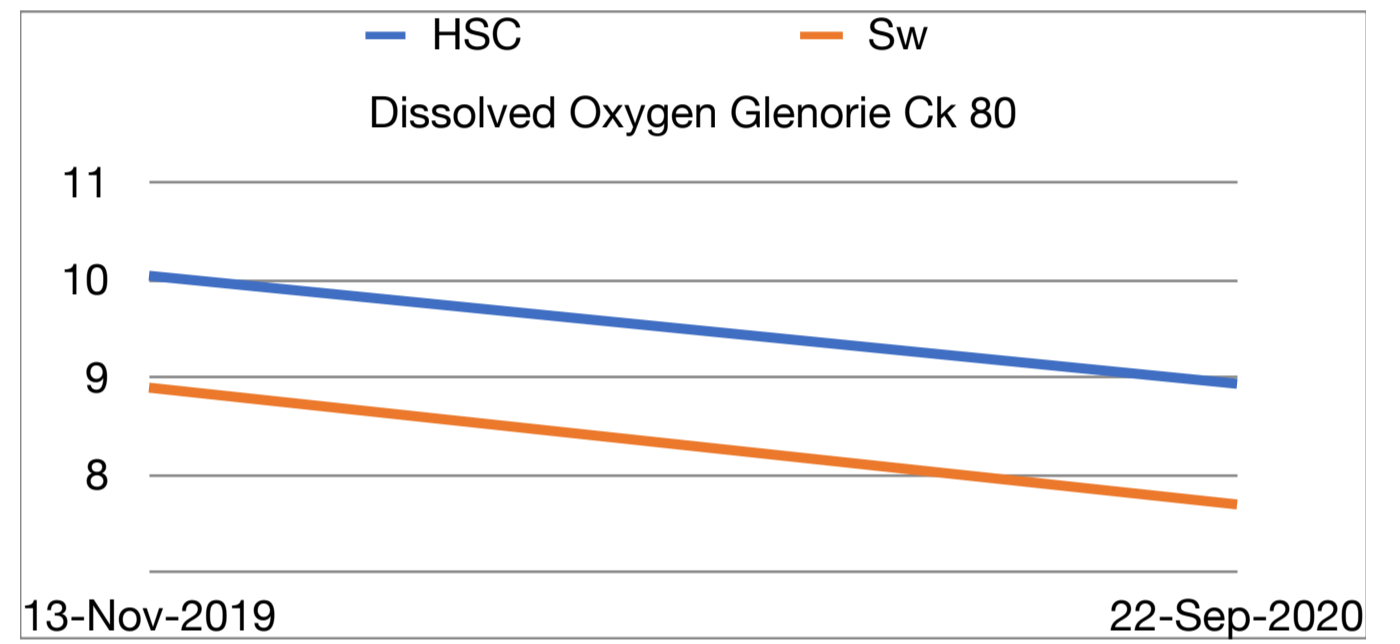
Dissolved Oxygen Sams Ck 13

Date	HSC	Sw	HSC - Sw	Within HSC Tolerant
14-Nov-2019	6.67	6.9	-0.2	1
20-Dec-2019	4.6	5.1	-0.5	0
30-Jan-2020	4.55	3.8	0.8	0
04-Mar-2020	6.84	7	-0.2	1
16-Mar-2020	8.97	7.3	1.7	0
03-Aug-2020	9.00	6.7	2.3	0
25-Aug-2020	7.04	7.5	-0.5	0
21-Sep-2020	4.16	5	-0.8	0
Mean			0.3	



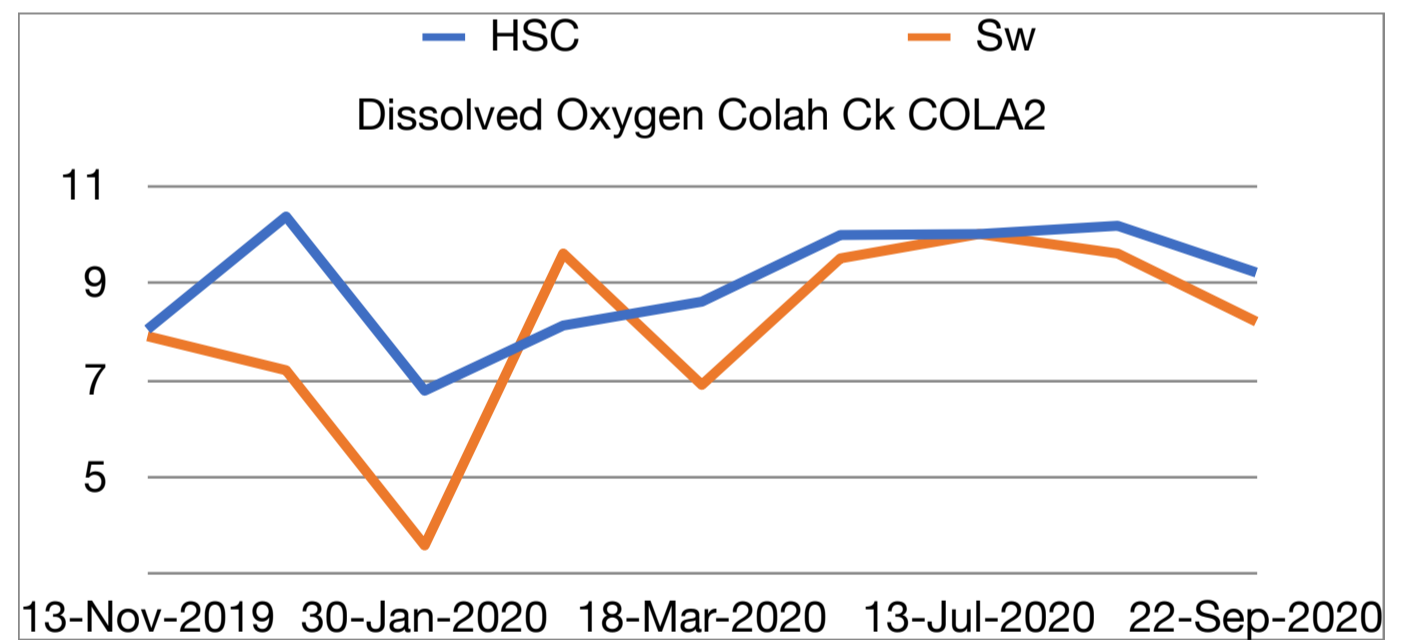
Dissolved Oxygen Glenorie Ck 80

Date	HSC	Sw	HSC - Sw	Within HSC Tolerant
13-Nov-2019	10.05	8.9	1.2	0
22-Sep-2020	8.94	7.70	1.2	0
Mean			1.2	



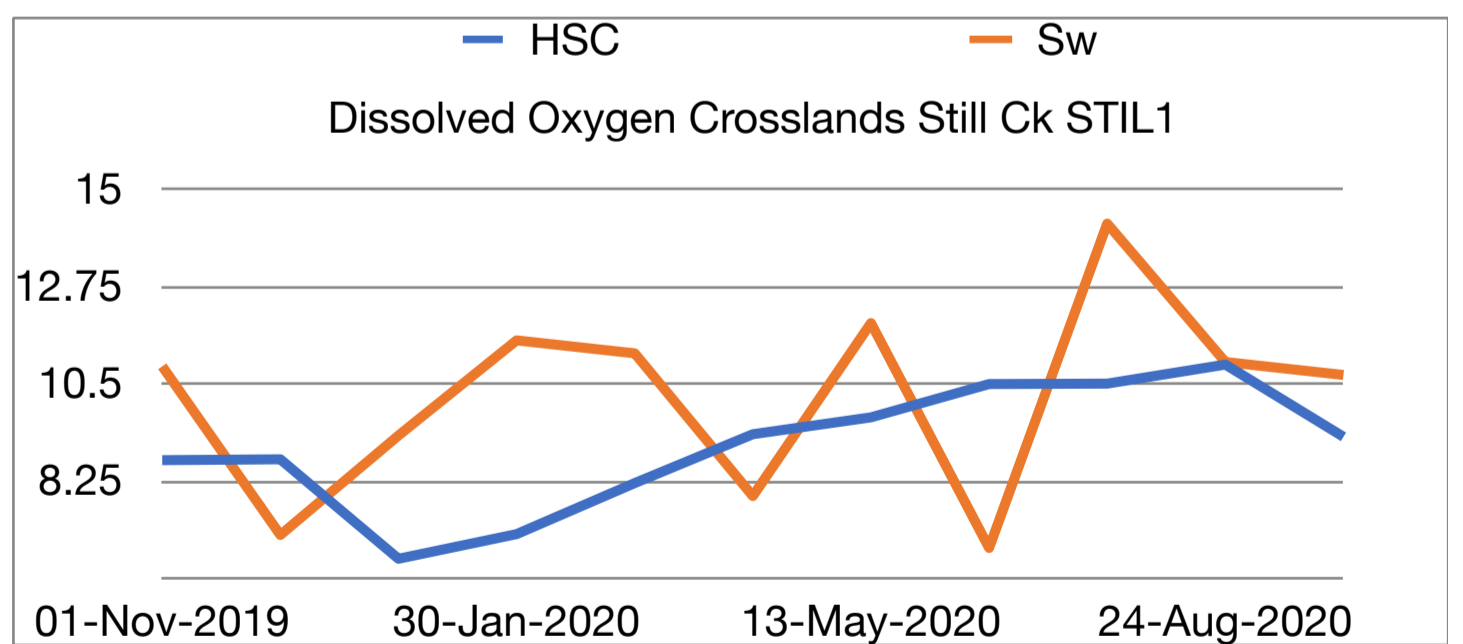
Dissolved Oxygen Colah Ck COLA2-1

Date	HSC	Sw	HSC - Sw	Within HSC Tolerant
13-Nov-2019	8.04	7.9	0.1	1
20-Dec-2019	10.36	7.2	3.2	0
30-Jan-2020	6.78	3.6	3.2	0
19-Feb-2020	8.12	9.6	-1.5	0
18-Mar-2020	8.61	6.9	1.7	0
16-Jun-2020	9.98	9.5	0.5	1
13-Jul-2020	10	10	0.0	1
24-Aug-2020	10.17	9.6	0.6	0
22-Sep-2020	9.21	8.2	1.0	0
Mean			1.0	



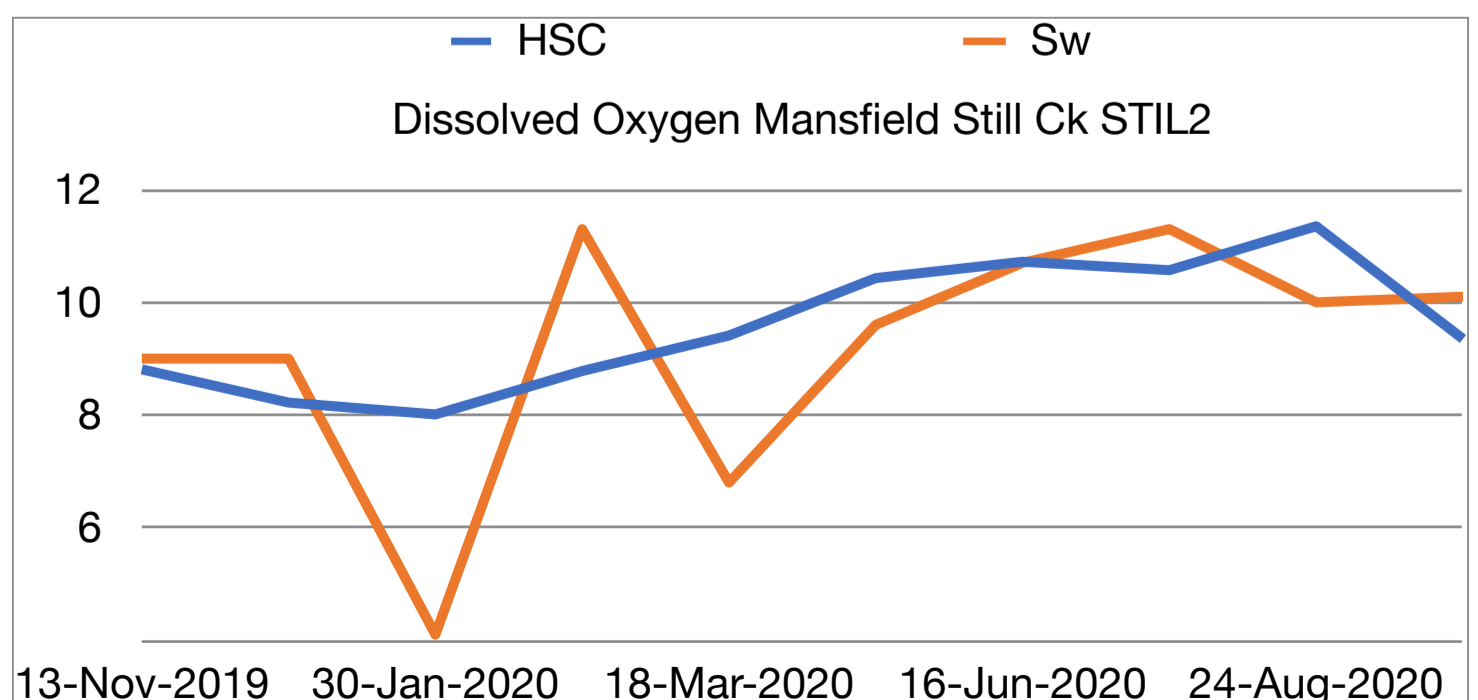
Dissolved Oxygen Crosslands Still Ck STIL1

Date	HSC	Sw	HSC - Sw	Within HSC Tolerant
01-Nov-2019	8.73	10.9	-2.2	0
14-Nov-2019	8.75	7	1.8	0
20-Dec-2019	6.45	9.3	-2.9	0
30-Jan-2020	7.02	11.5	-4.5	0
19-Feb-2020	8.2	11.2	-3.0	0
18-Mar-2020	9.33	7.9	1.4	0
13-May-2020	9.72	11.9	-2.2	0
16-Jun-2020	10.49	6.7	3.8	0
13-Jul-2020	10.5	14.2	-3.7	0
24-Aug-2020	10.94	11	-0.1	1
22-Sep-2020	9.27	10.7	-1.4	0
Mean			-1.2	



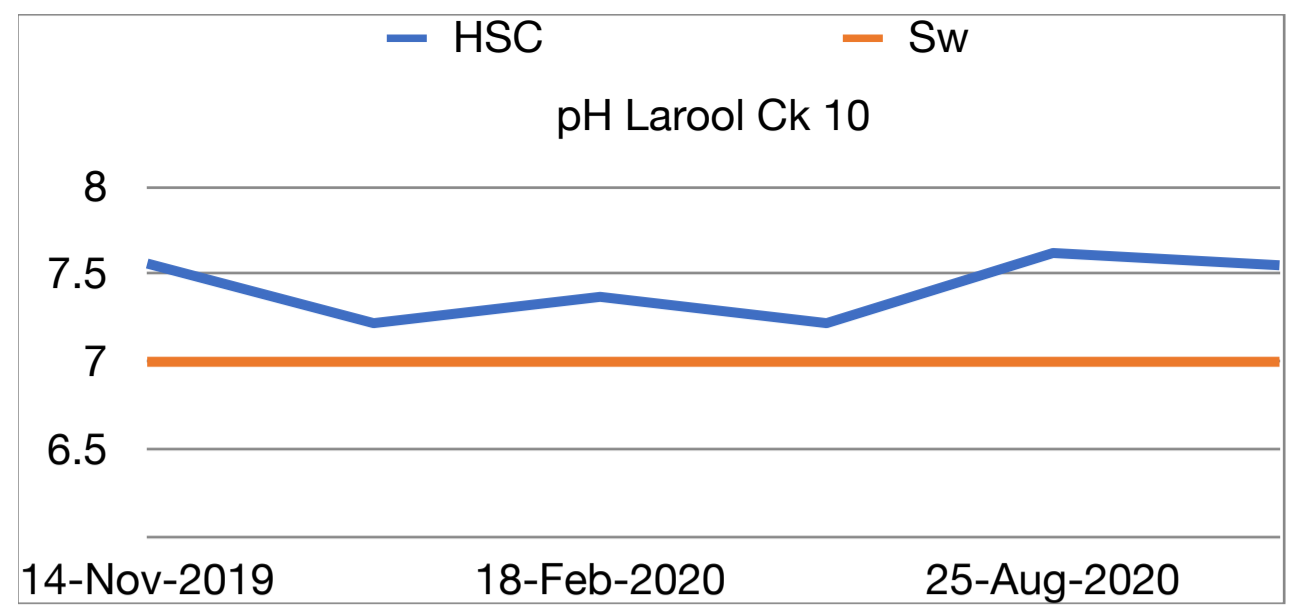
Dissolved Oxygen Mansfield Still Ck STIL2

Date	HSC	Sw	HSC - Sw	Within HSC Tolerant
13-Nov-2019	8.81	9	-0.2	1
20-Dec-2019	8.22	9	-0.8	0
30-Jan-2020	8.01	4.1	3.9	0
19-Feb-2020	8.78	11.3	-2.5	0
18-Mar-2020	9.41	6.8	2.6	0
13-May-2020	10.43	9.6	0.8	0
16-Jun-2020	10.72	10.7	0.0	1
13-Jul-2020	10.57	11.3	-0.7	0
24-Aug-2020	11.35	10	1.4	0
22-Sep-2020	9.35	10.1	-0.8	0
Mean			0.4	



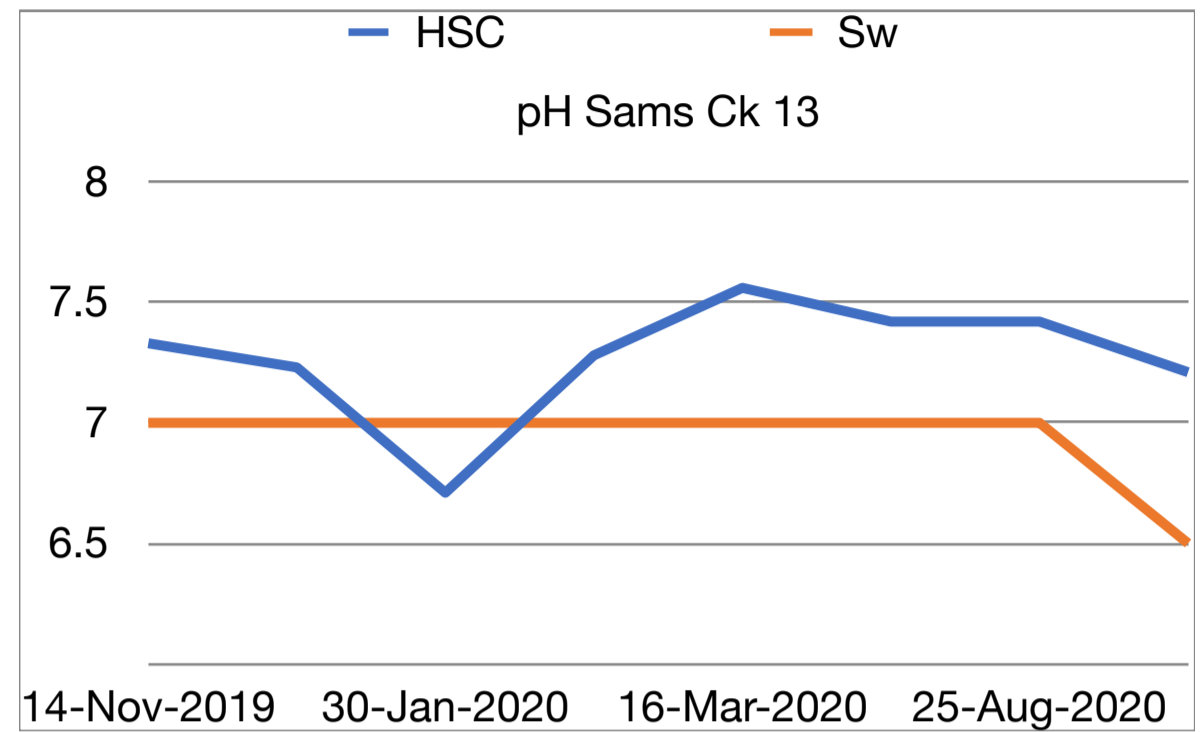
pH Larool Ck 10

Date	HSC	Sw	HSC - Sw	Within HSC Tolerant
14-Nov-2019	7.56	7.0	0.6	0
30-Jan-2020	7.22	7.0	0.2	0
18-Feb-2020	7.37	7.0	0.4	0
16-Mar-2020	7.22	7.0	0.2	0
25-Aug-2020	7.62	7.0	0.6	0
21-Sep-2020	7.55	7.0	0.6	0
Mean			0.4	



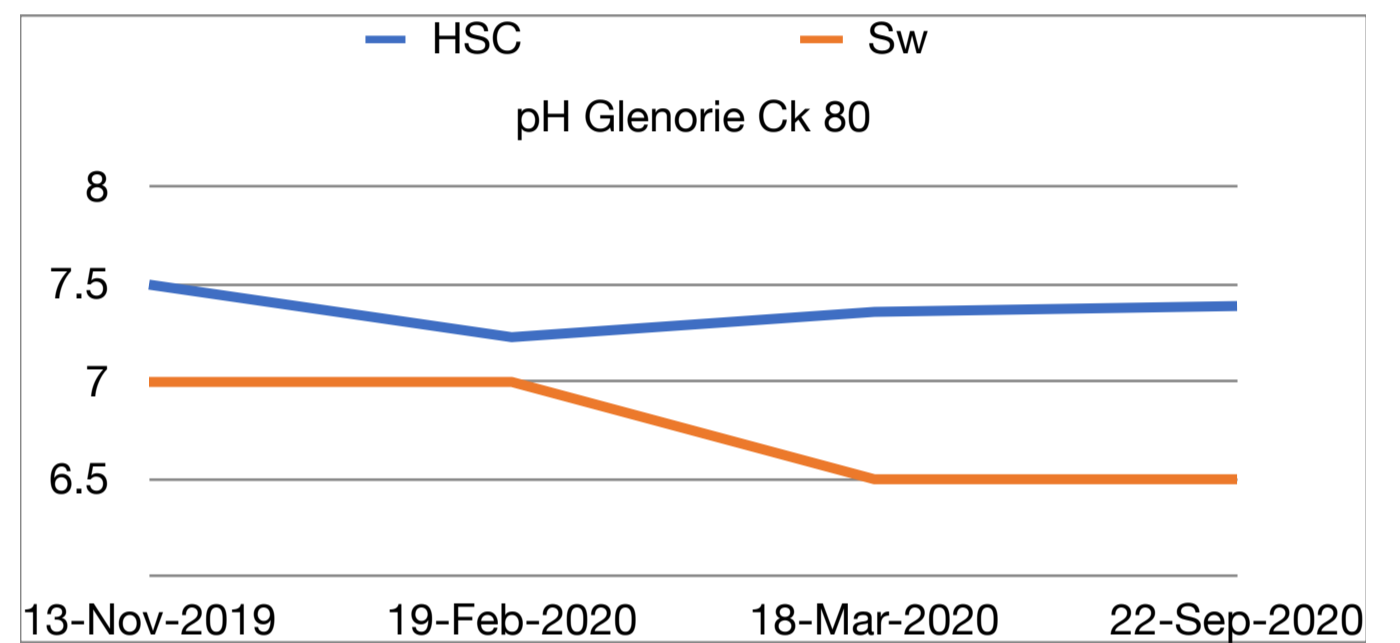
pH Sams Ck 13

Date	HSC	Sw	HSC - Sw	Within HSC Tolerant
14-Nov-2019	7.33	7.0	0.3	0
20-Dec-2019	7.23	7.0	0.2	0
30-Jan-2020	6.71	7.0	-0.3	0
04-Mar-2020	7.28	7.0	0.3	0
16-Mar-2020	7.56	7.0	0.6	0
03-Aug-2020	7.42	7.0	0.4	0
25-Aug-2020	7.42	7.0	0.4	0
21-Sep-2020	7.21	6.5	0.7	0
Mean			0.3	



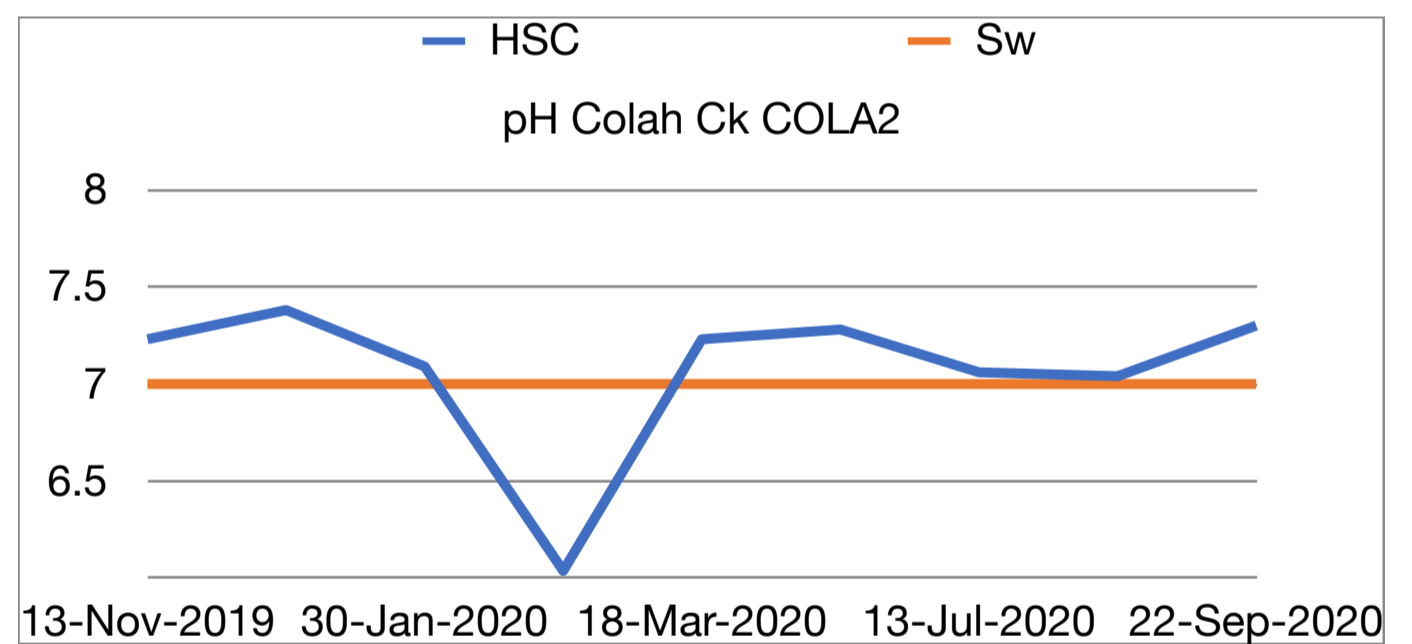
pH Glenorie Ck 80

Date	HSC	Sw	HSC - Sw	Within HSC Tolerant
13-Nov-2019	7.5	7.0	0.5	0
19-Feb-2020	7.23	7.0	0.2	0
18-Mar-2020	7.36	6.5	0.9	0
22-Sep-2020	7.39	6.5	0.9	0
Mean			0.6	



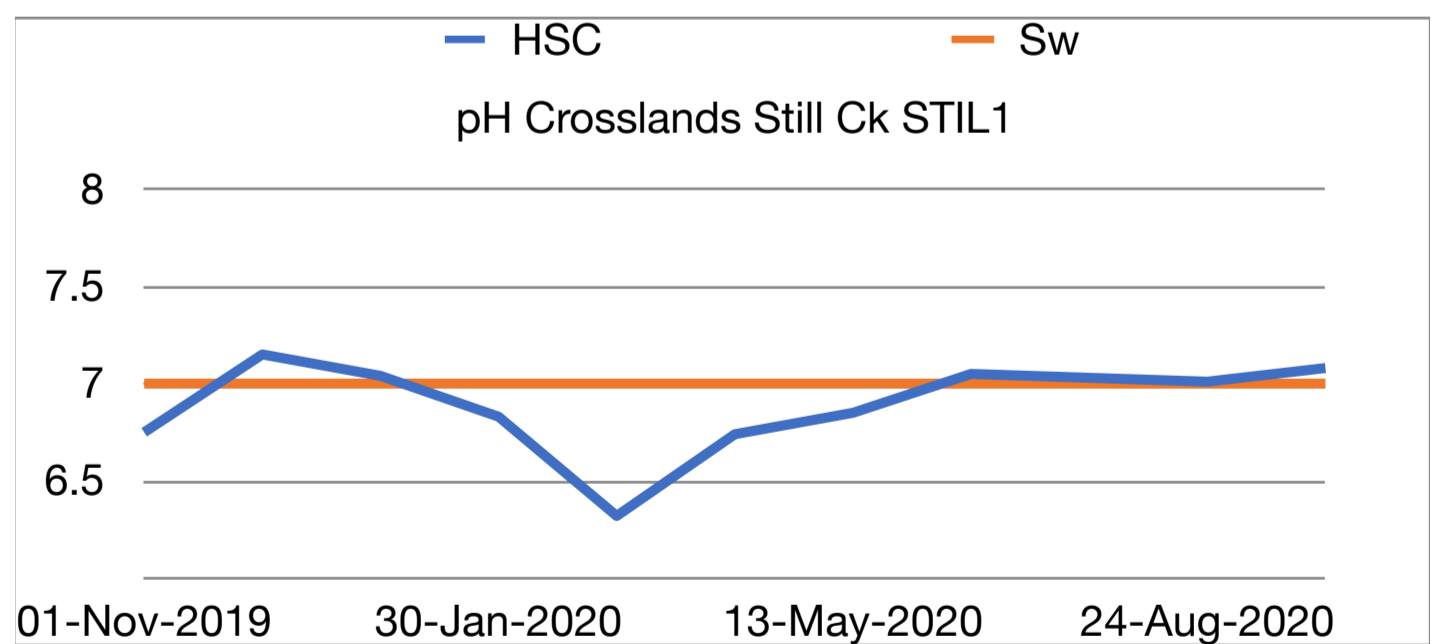
pH Colah Ck COLA2-1

Date	HSC	Sw	HSC - Sw	Within HSC Tolerant
13-Nov-2019	7.23	7.0	0.2	0
20-Dec-2019	7.38	7.0	0.4	0
30-Jan-2020	7.09	7.0	0.1	0
19-Feb-2020	6.04	7.0	-1.0	0
18-Mar-2020	7.23	7.0	0.2	0
16-Jun-2020	7.28	7.0	0.3	0
13-Jul-2020	7.06	7.0	0.1	0
24-Aug-2020	7.04	7.0	0.0	0
22-Sep-2020	7.3	7.0	0.3	0
Mean			0.1	



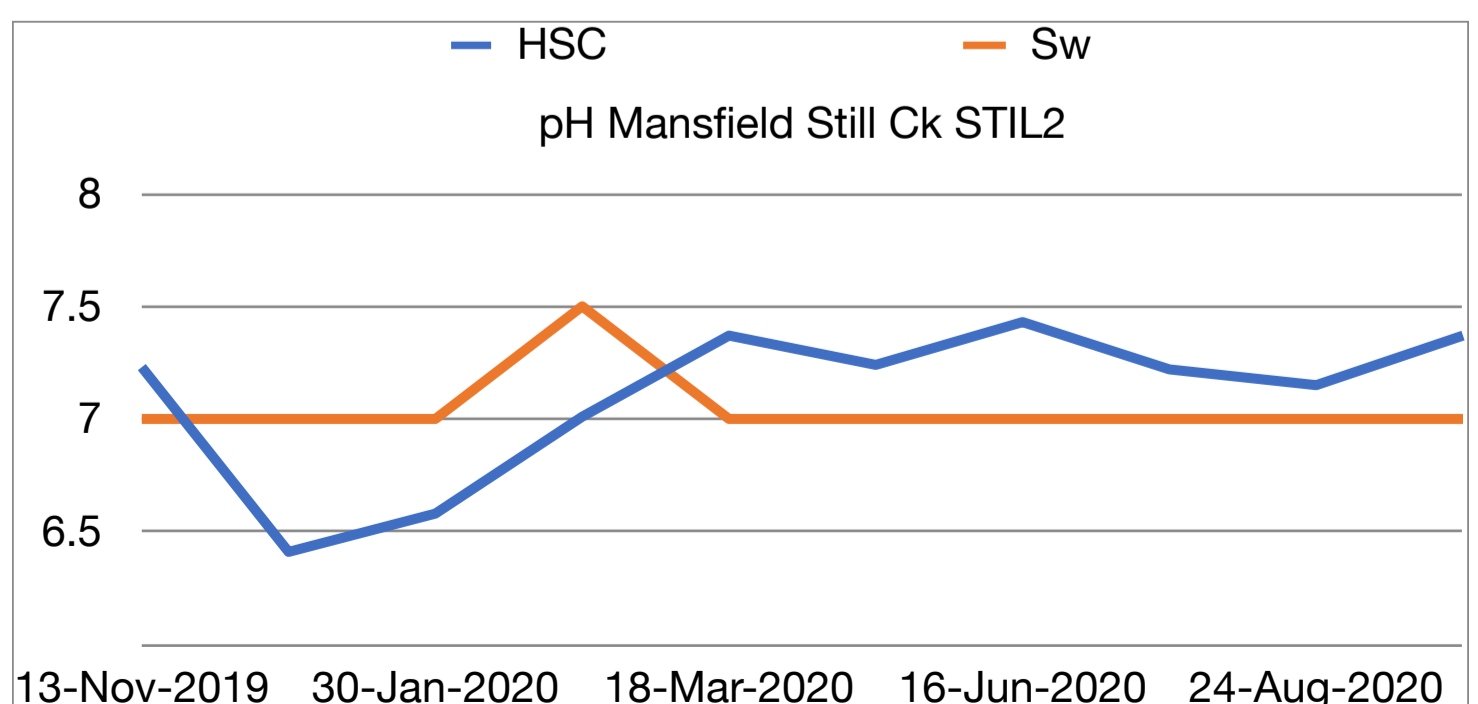
pH Crosslands Still Ck STIL1

Date	HSC	Sw	HSC - Sw	Within HSC Tolerant
01-Nov-2019	6.75	7.0	-0.3	0
14-Nov-2019	7.15	7.0	0.2	0
20-Dec-2019	7.04	7.0	0.0	1
30-Jan-2020	6.83	7.0	-0.2	0
19-Feb-2020	6.32	7.0	-0.7	0
18-Mar-2020	6.74	7.0	-0.3	0
13-May-2020	6.85	7.0	-0.2	0
16-Jun-2020	7.05	7.0	0.1	1
13-Jul-2020	7.03	7.0	0.0	1
24-Aug-2020	7.01	7.0	0.0	1
22-Sep-2020	7.08	7.0	0.1	1
Mean			-0.1	



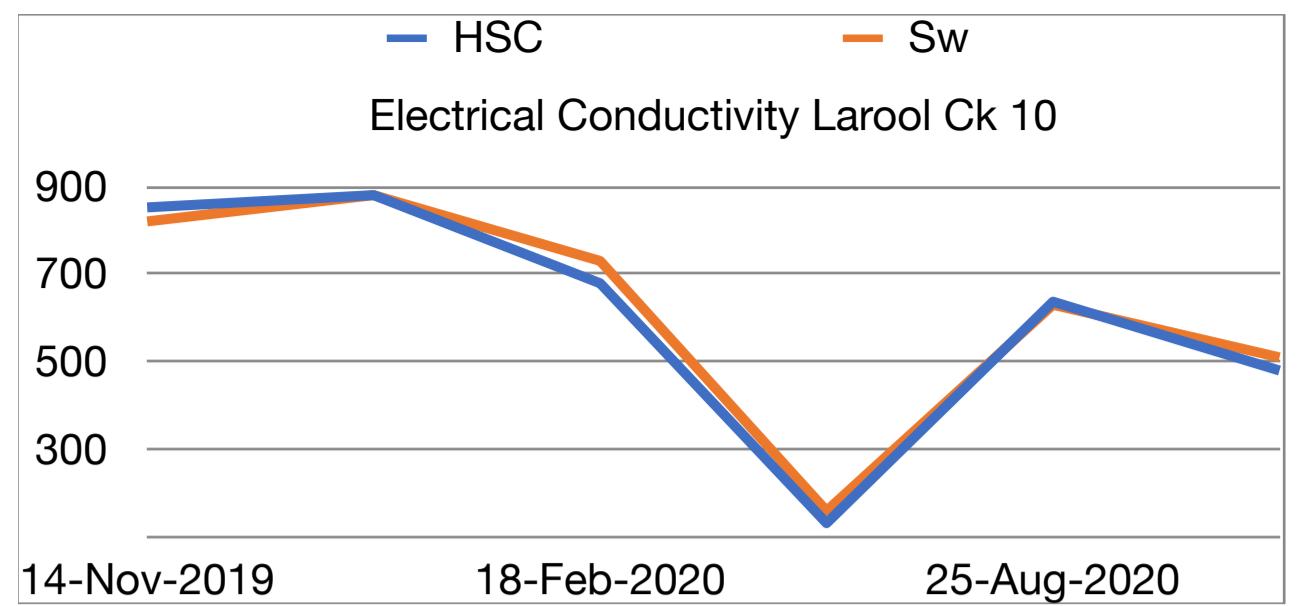
pH Mansfield Still Ck STIL2

Date	HSC	Sw	HSC - Sw	Within HSC Tolerant
13-Nov-2019	7.23	7.0	0.2	0
20-Dec-2019	6.41	7.0	-0.6	0
30-Jan-2020	6.58	7.0	-0.4	0
19-Feb-2020	7.01	7.5	-0.5	0
18-Mar-2020	7.37	7.0	0.4	0
13-May-2020	7.24	7.0	0.2	0
16-Jun-2020	7.43	7.0	0.4	0
13-Jul-2020	7.22	7.0	0.2	0
24-Aug-2020	7.15	7.0	0.2	0
22-Sep-2020	7.37	7.0	0.4	0
Mean			0.1	



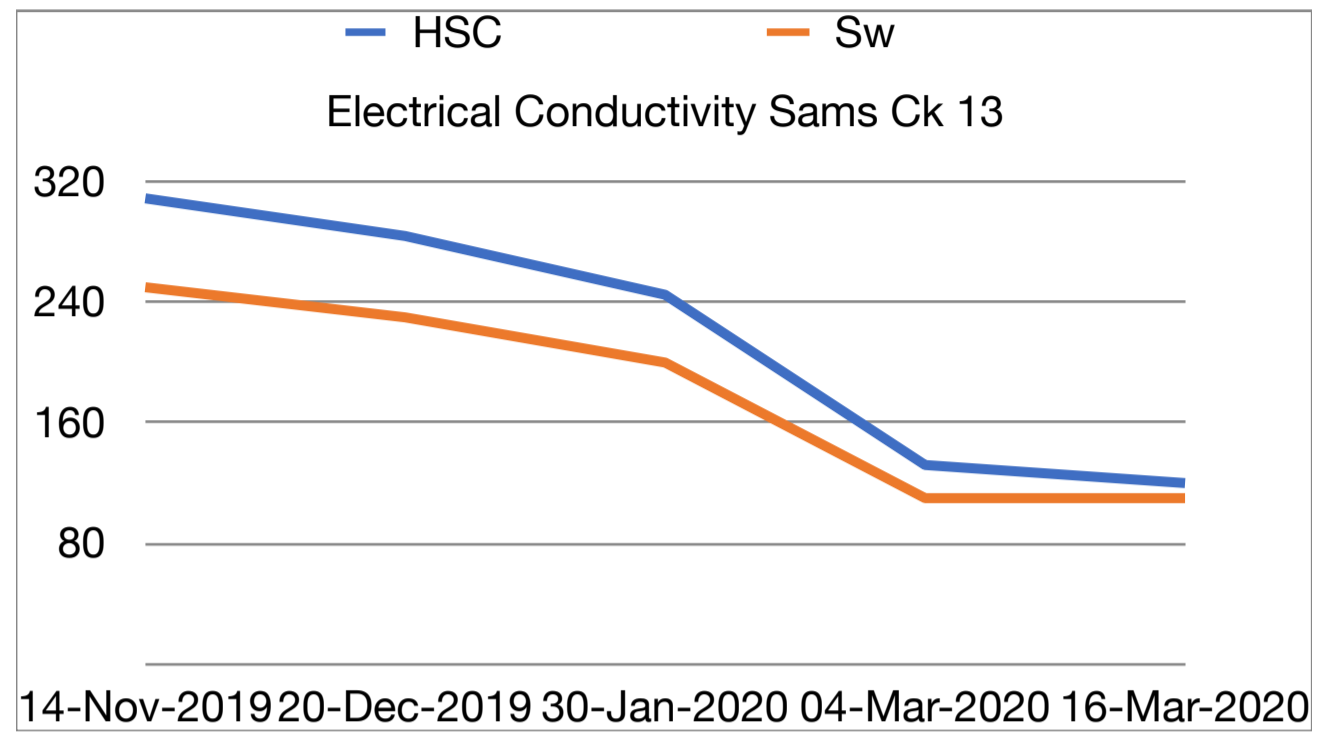
Electrical Conductivity Larool Ck 10

Date	HSC	Sw	HSC - Sw	Within HSC Toleranc
14-Nov-2019	852	820	32	0
30-Jan-2020	880	880	0	1
18-Feb-2020	679	730	-51	0
16-Mar-2020	132	160	-28	0
25-Aug-2020	637	630	7	1
21-Sep-2020	480	510	-30	0
Mean			-12	1



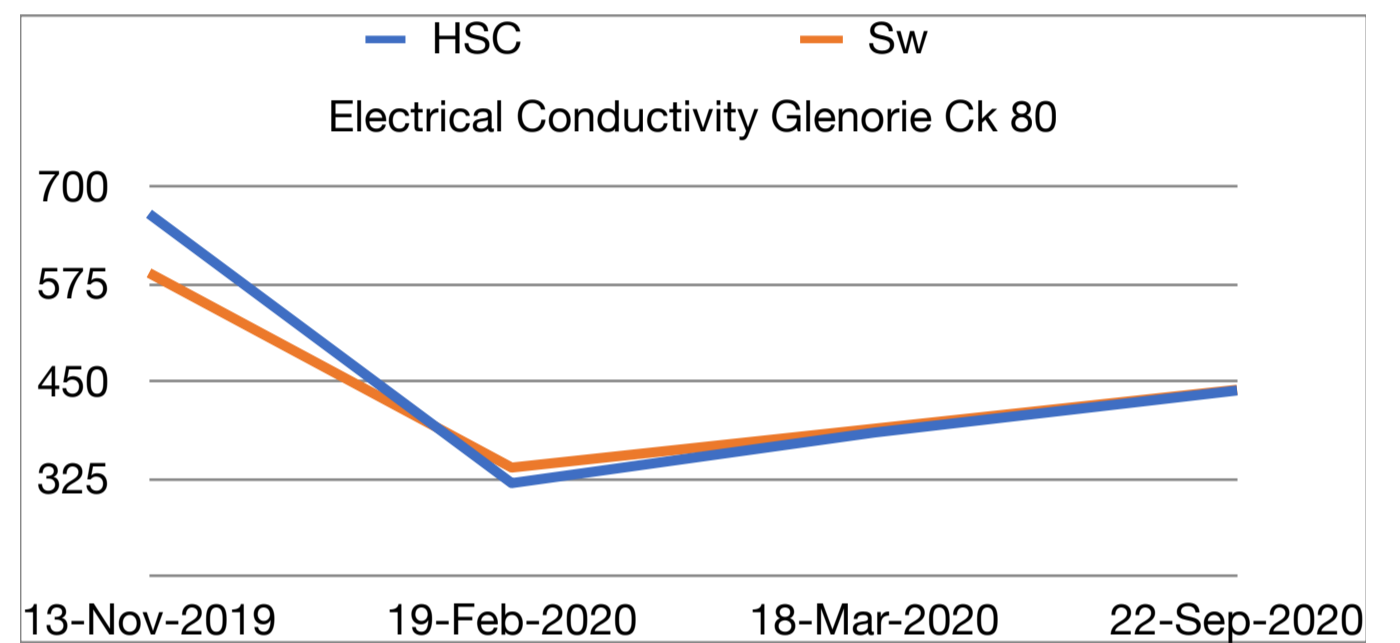
Electrical Conductivity Sams Ck 13

Date	HSC	Sw	HSC - Sw	Within HSC Toleranc
14-Nov-2019	309	250	59	0
20-Dec-2019	284	230	54	0
30-Jan-2020	245	200	45	0
04-Mar-2020	132	110	22	0
16-Mar-2020	120	110	10	1
03-Aug-2020	342	270	72	0
25-Aug-2020	351	280	71	0
21-Sep-2020	248	210	38	0
Mean			46	



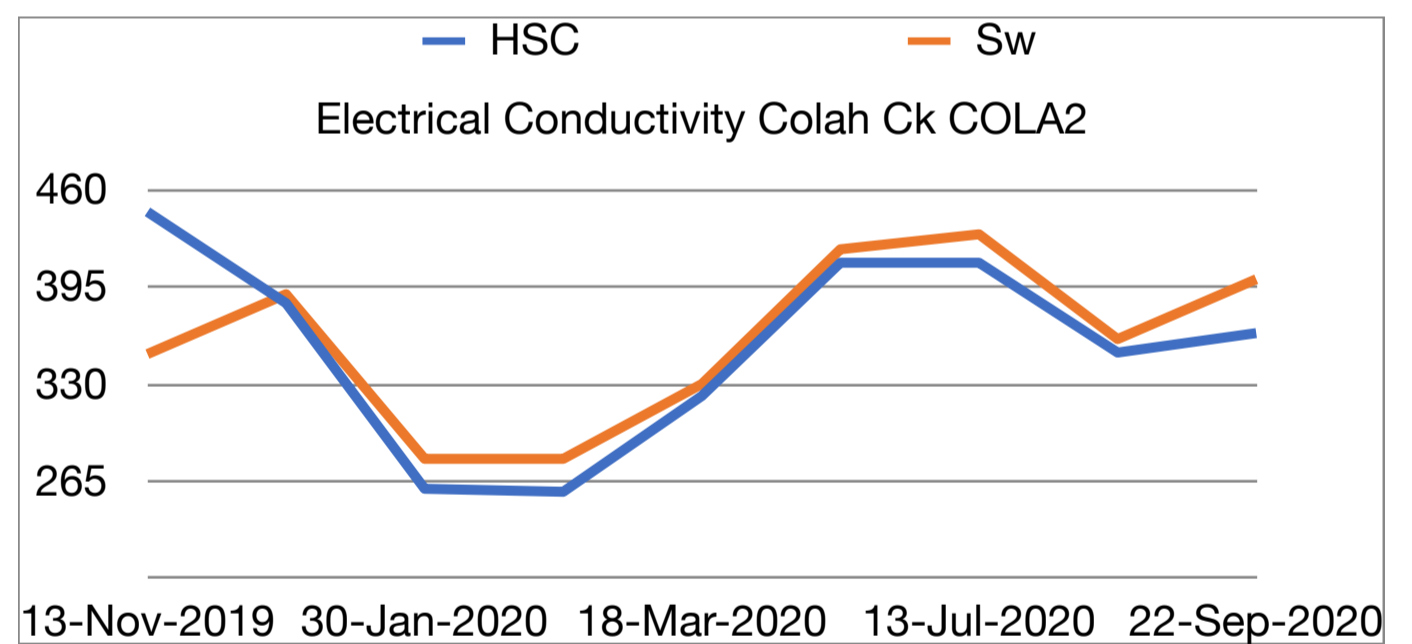
Electrical Conductivity Glenorie Ck 80

Date	HSC	Sw	HSC - Sw	Within HSC Toleranc
13-Nov-2019	666	590	76	0
19-Feb-2020	320	340	-20	0
18-Mar-2020	385	390	-5	1
22-Sep-2020	439	440	-1	1
Mean			13	



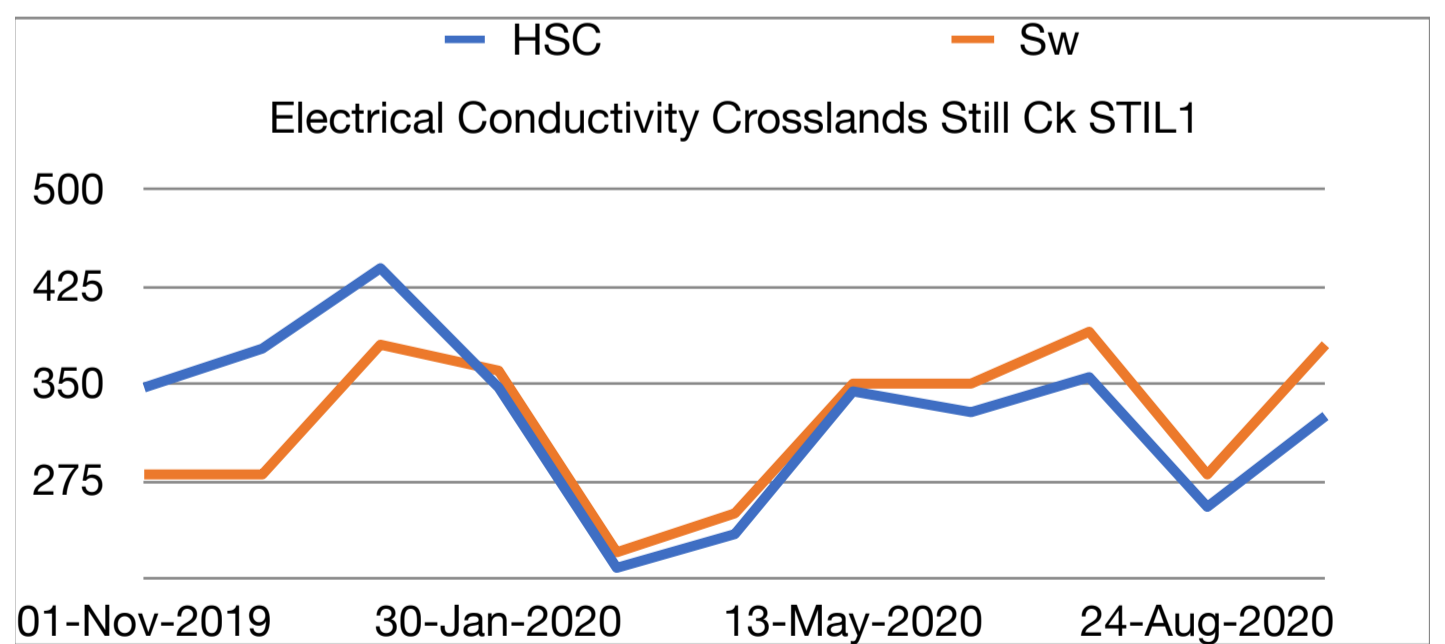
Electrical Conductivity Colah Ck COLA2-1

Date	HSC	Sw	HSC - Sw	Within HSC Toleranc
13-Nov-2019	445	350	95	0
20-Dec-2019	384	390	-6	1
30-Jan-2020	260	280	-20	0
19-Feb-2020	258	280	-22	0
18-Mar-2020	322	330	-8	1
16-Jun-2020	411	420	-9	1
13-Jul-2020	411	430	-19	0
24-Aug-2020	351	360	-9	1
22-Sep-2020	364	400	-36	0
Mean			-4	



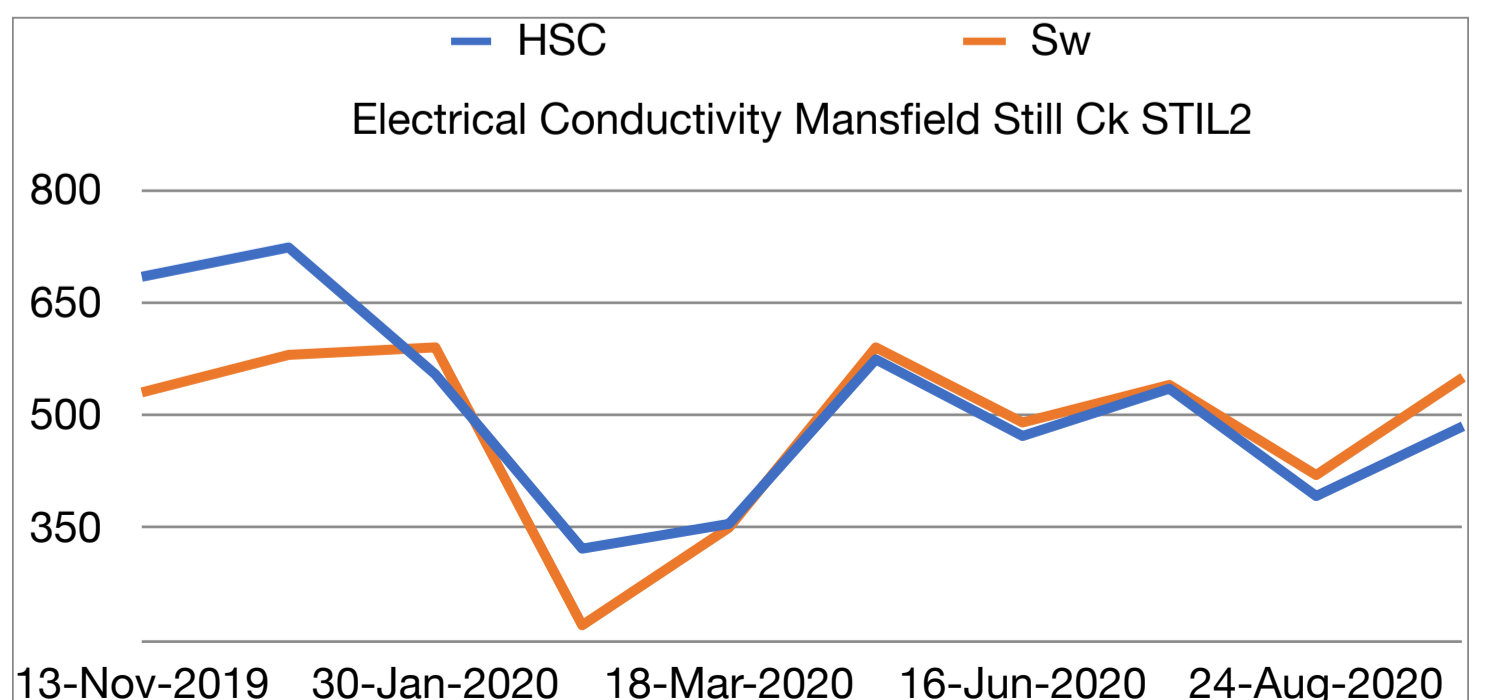
Electrical Conductivity Crosslands Still Ck STIL1

Date	HSC	Sw	HSC - Sw	Within HSC Toleranc
01-Nov-2019	347	280	67	0
14-Nov-2019	377	280	97	0
20-Dec-2019	439	380	59	0
30-Jan-2020	347	360	-13	1
19-Feb-2020	208	220	-12	1
18-Mar-2020	234	250	-16	0
13-May-2020	344	350	-6	1
16-Jun-2020	328	350	-22	0
13-Jul-2020	355	390	-35	0
24-Aug-2020	255	280	-25	0
22-Sep-2020	325	380	-55	0
Mean			3.55	



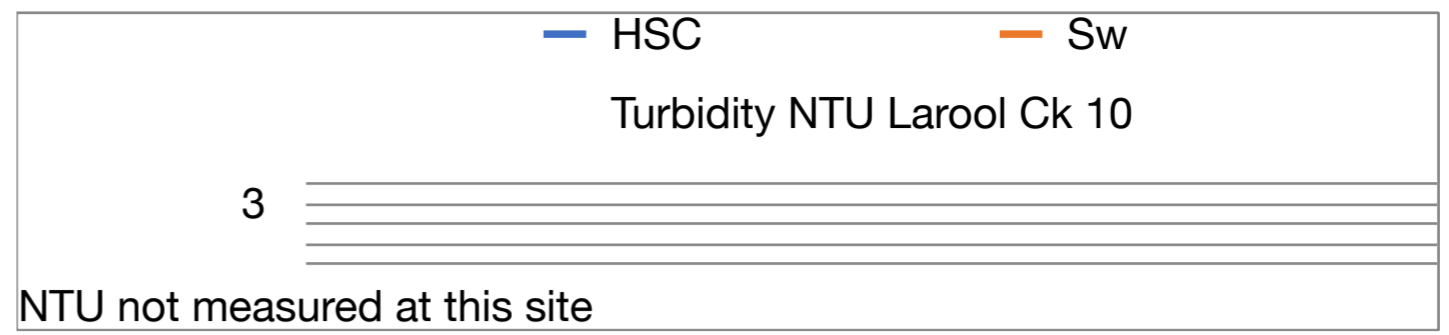
Electrical Conductivity Mansfield Still Ck STIL2

Date	HSC	Sw	HSC - Sw	Within HSC Toleranc
13-Nov-2019	684	530	154	0
20-Dec-2019	723	580	143	0
30-Jan-2020	554	590	-36	0
19-Feb-2020	322	220	102	0
18-Mar-2020	355	350	5	1
13-May-2020	574	590	-16	0
16-Jun-2020	472	490	-18	0
13-Jul-2020	535	540	-5	1
24-Aug-2020	392	420	-28	0
22-Sep-2020	485	550	-65	0
Mean			23.60	



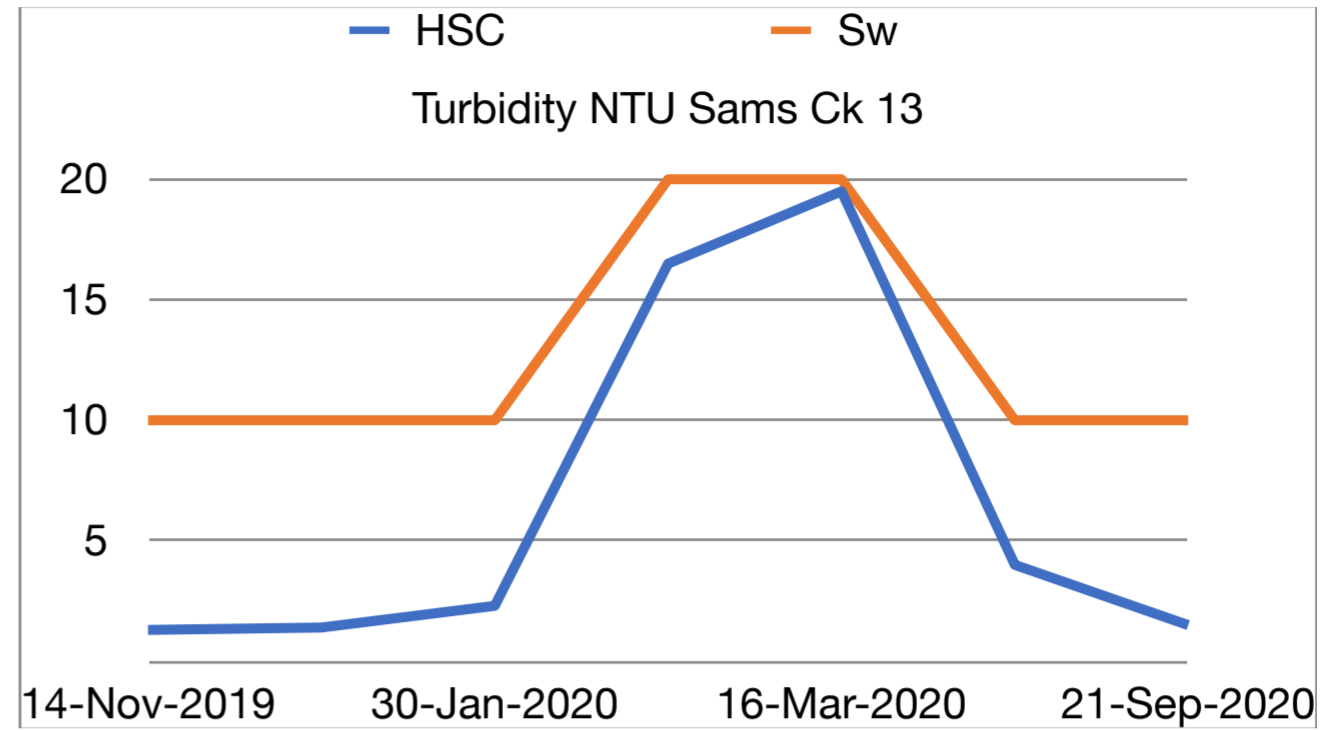
Turbidity NTU Larool Ck 10

Date	HSC	Sw	HSC - Sw	Within HSC Toleranc
NTU not measured at this site				



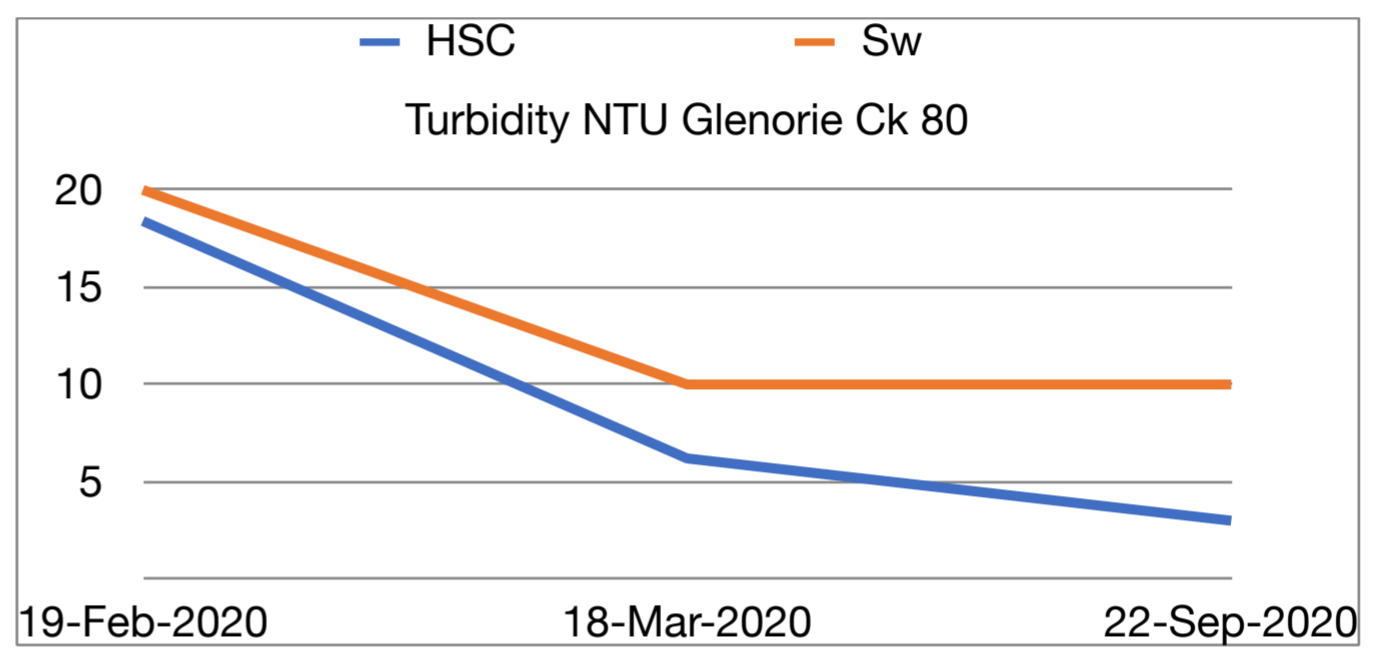
Turbidity NTU Sams Ck 13

Date	HSC	Sw	HSC - Sw	Within HSC Toleranc
14-Nov-2019	1.3	10	-8.7	0
20-Dec-2019	1.4	10	-8.6	0
30-Jan-2020	2.3	10	-7.7	0
04-Mar-2020	16.5	20	-3.5	0
16-Mar-2020	19.5	20	-0.5	1
25-Aug-2020	4	10	-6	0
21-Sep-2020	1.5	10	-8.5	0
Mean			-6.2	



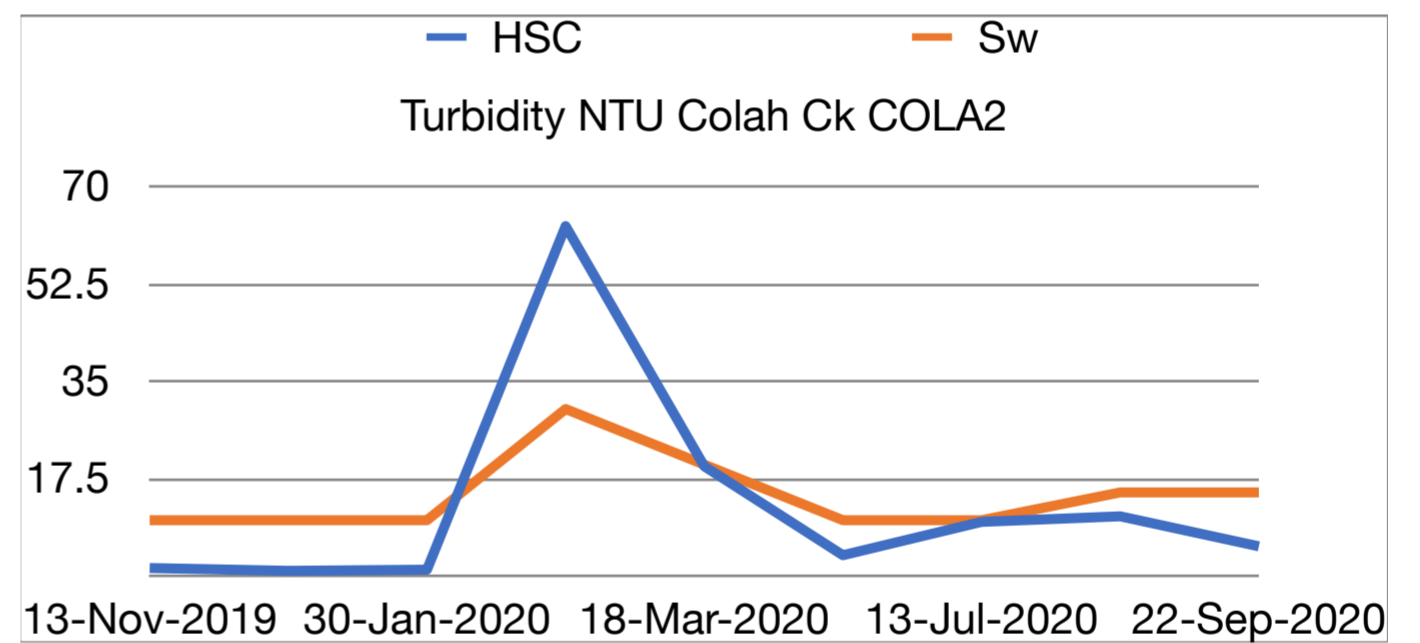
Turbidity NTU Glenorie Ck 80

Date	HSC	Sw	HSC - Sw	Within HSC Toleranc
19-Feb-2020	18.4	20	-1.6	0
18-Mar-2020	6.2	10.0	-3.8	0
22-Sep-2020	3	10.0	-7.0	0
Mean			-4.1	



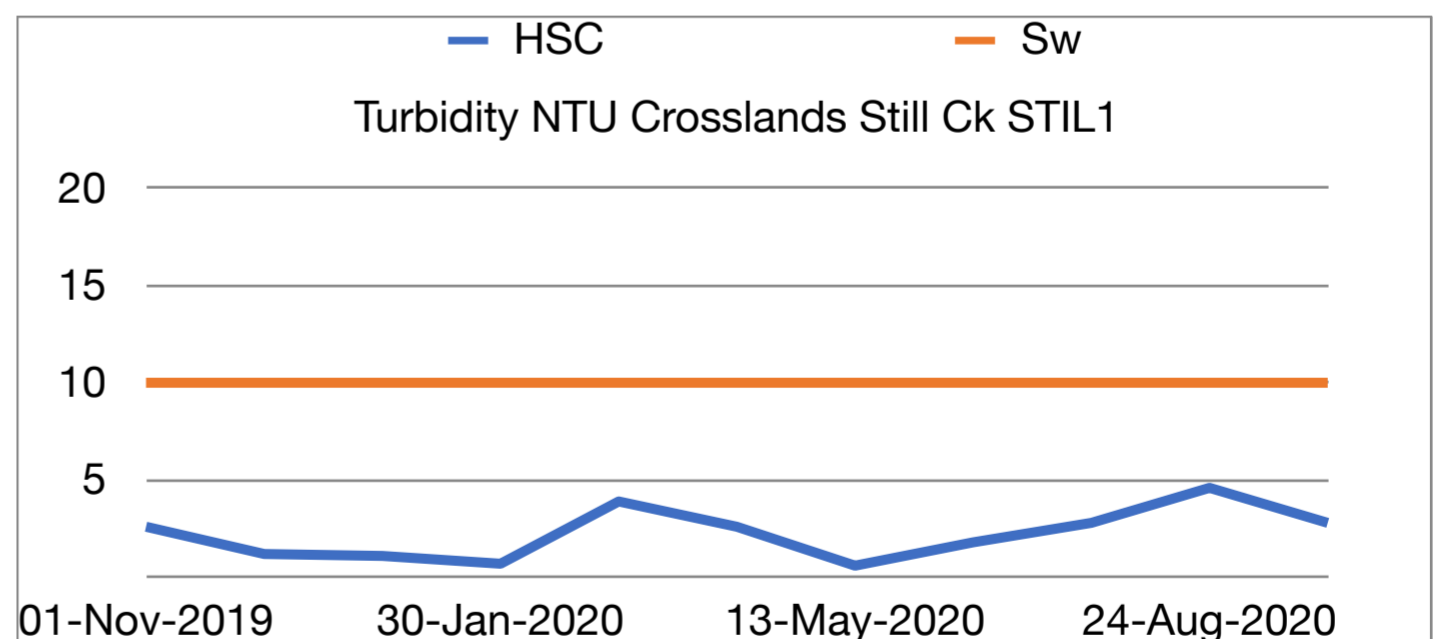
Turbidity NTU Colah Ck COLA2-1

Date	HSC	Sw	HSC - Sw	Within HSC Toleranc
13-Nov-2019	1.4	10	-8.6	0
20-Dec-2019	0.9	10	-9.1	0
30-Jan-2020	1.1	10	-8.9	0
19-Feb-2020	62.9	30	32.9	0
18-Mar-2020	19.7	20	-0.3	0
16-Jun-2020	3.7	10	-6.3	0
13-Jul-2020	9.7	10	-0.3	0
24-Aug-2020	10.7	15	-4.3	0
22-Sep-2020	5.3	15	-9.7	0
Mean			-1.6	



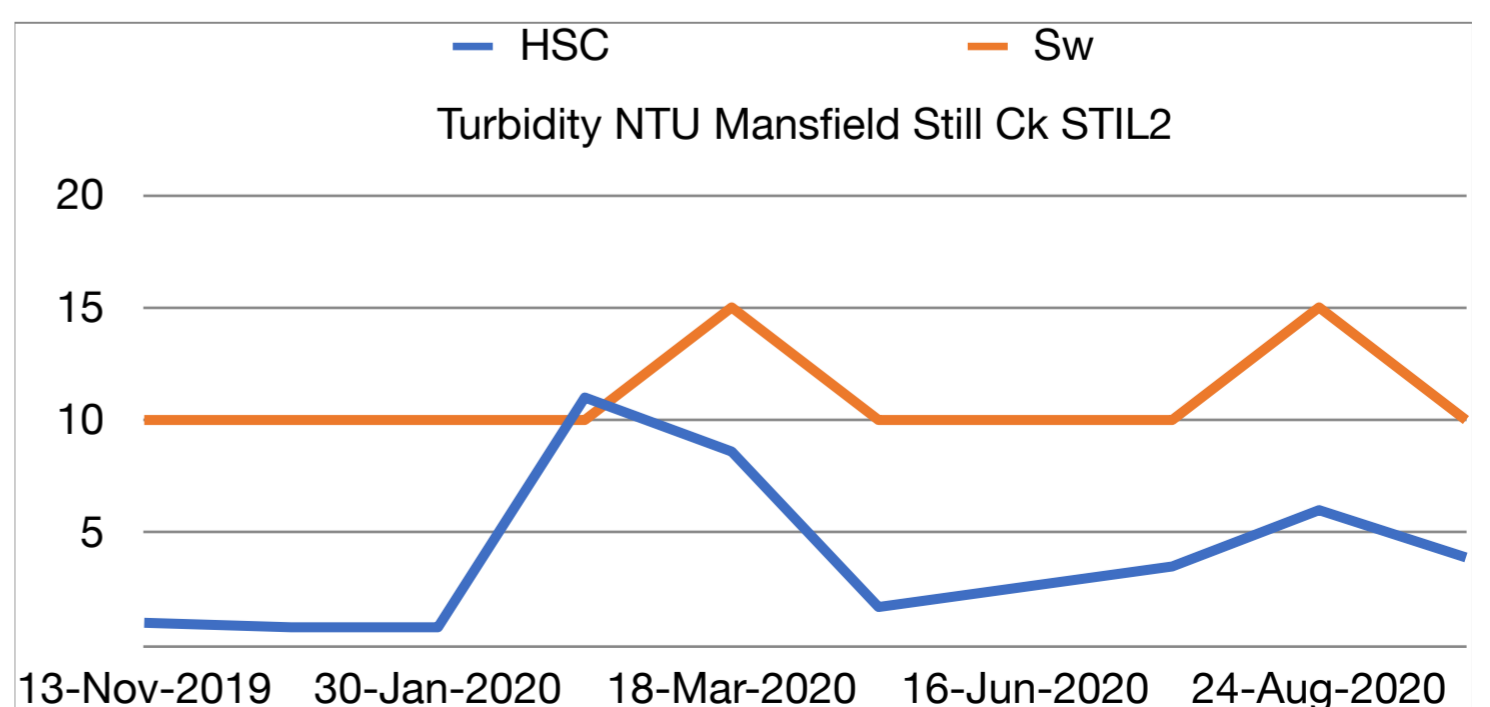
Turbidity NTU Crosslands Still Ck STIL1

Date	HSC	Sw	HSC - Sw	Within HSC Toleranc
01-Nov-2019	2.6	10	-7.4	0
14-Nov-2019	1.2	10	-8.8	0
20-Dec-2019	1.1	10	-8.9	0
30-Jan-2020	0.7	10	-9.3	0
19-Feb-2020	3.9	10	-6.1	0
18-Mar-2020	2.6	10	-7.4	0
13-May-2020	0.6	10	-9.4	0
16-Jun-2020	1.8	10	-8.2	0
13-Jul-2020	2.8	10	-7.2	0
24-Aug-2020	4.6	10	-5.4	0
22-Sep-2020	2.8	10	-7.2	0
Mean			-7.75	



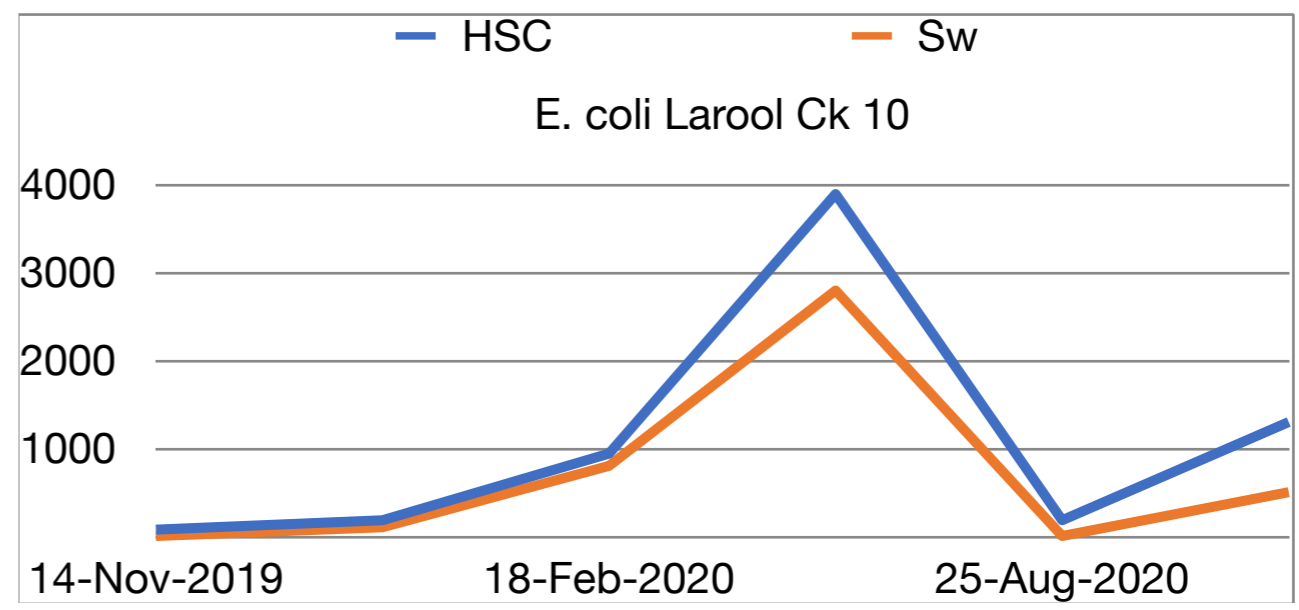
Turbidity NTU Mansfield Still Ck STIL2

Date	HSC	Sw	HSC - Sw	Within HSC Toleranc
13-Nov-2019	1	10	-9	0
20-Dec-2019	0.8	10	-9.2	0
30-Jan-2020	0.8	10	-9.2	0
19-Feb-2020	11	10	1	0
18-Mar-2020	8.6	15	-6.4	0
13-May-2020	1.7	10	-8.3	0
16-Jun-2020	2.6	10	-7.4	0
13-Jul-2020	3.5	10	-6.5	0
24-Aug-2020	6.0	15	-9.0	0
22-Sep-2020	3.9	10	-6.1	0
Mean			-7.01	



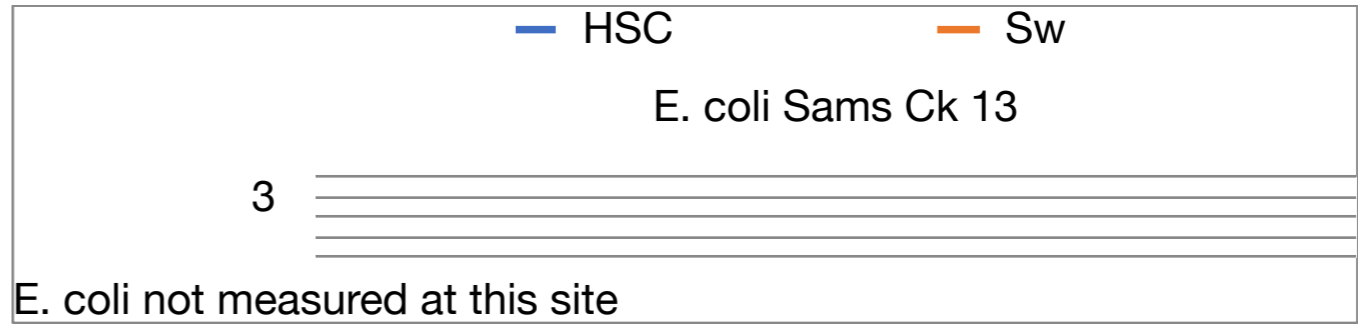
E. coli Larool Ck 10

Date	HSC	Sw	HSC - Sw	Within Band Tolerar
14-Nov-2019	73	0	73	1
30-Jan-2020	180	100	80	1
18-Feb-2020	940	800	140	1
16-Mar-2020	3900	2800	1100	1
25-Aug-2020	180	0	180	1
21-Sep-2020	1300	500	800	1
Mean			396	



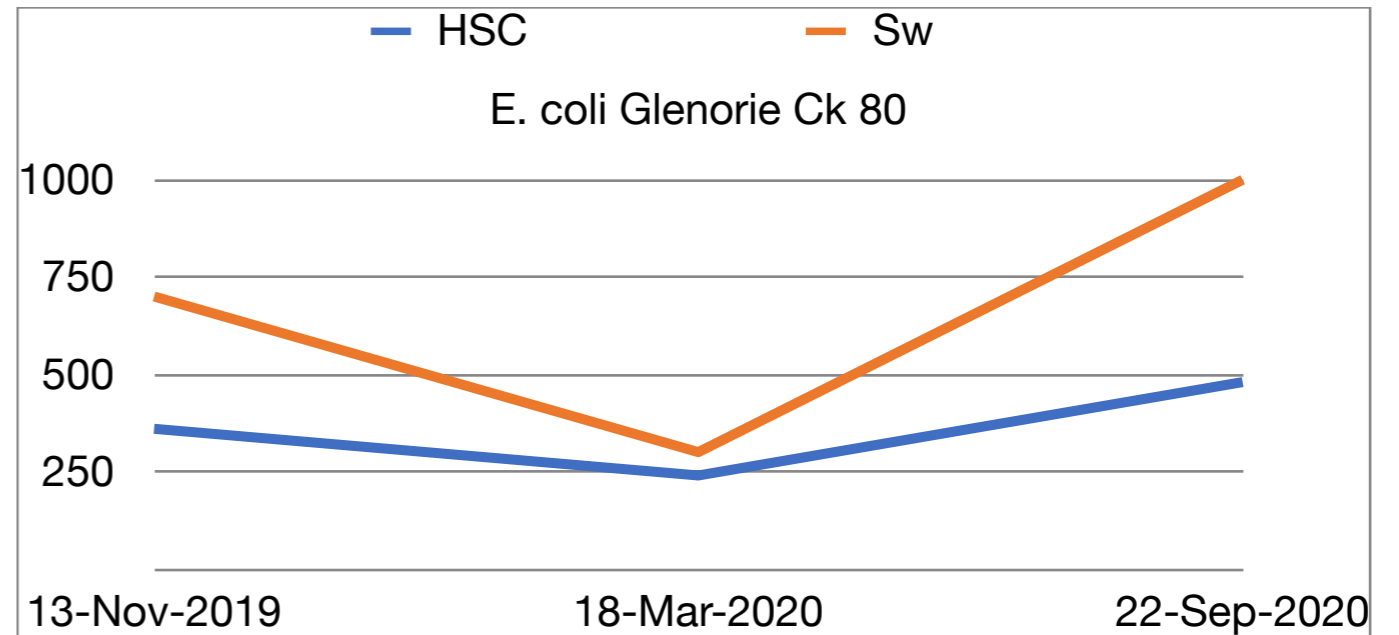
E. coli Sams Ck 13

Date	HSC	Sw	HSC - Sw	Within Band Tolerar
E. coli not measured at this site				



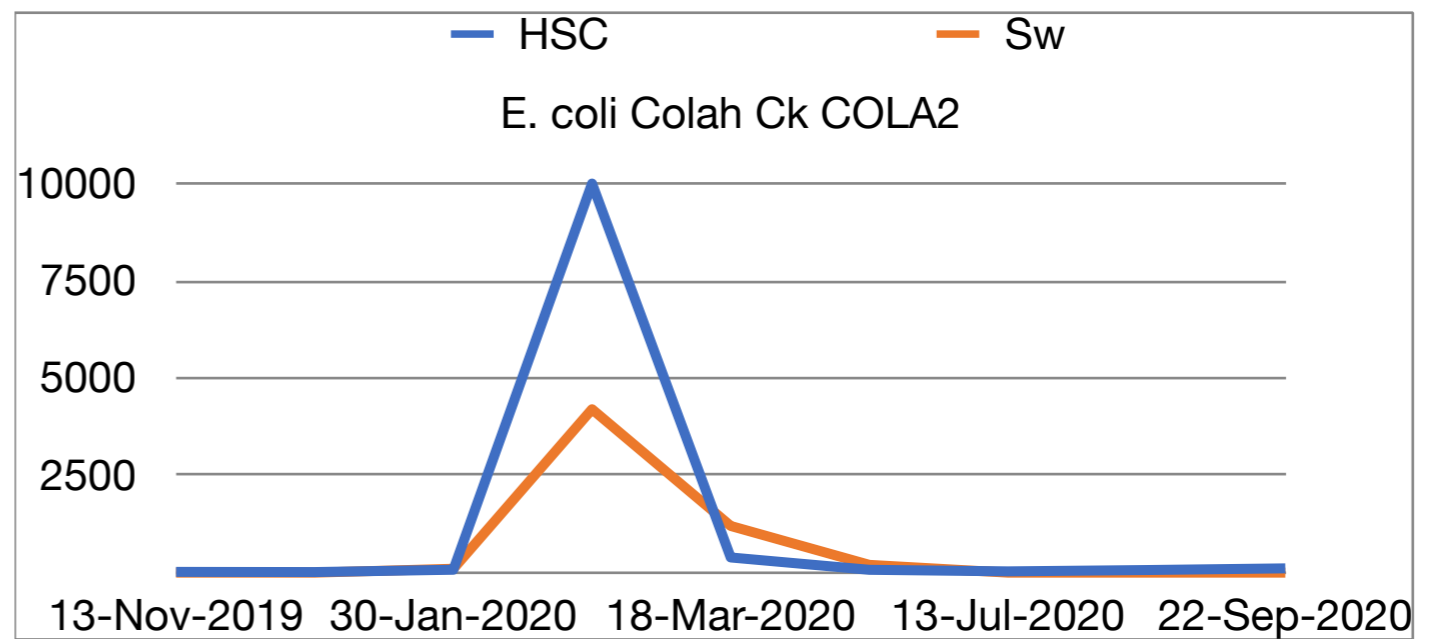
E. coli Glenorie Ck 80

Date	HSC	Sw	HSC - Sw	Within Band Tolerar
13-Nov-2019	360	700	-340	1
18-Mar-2020	240	300	-60	1
22-Sep-2020	480	1000	-520	0
Mean			-307	



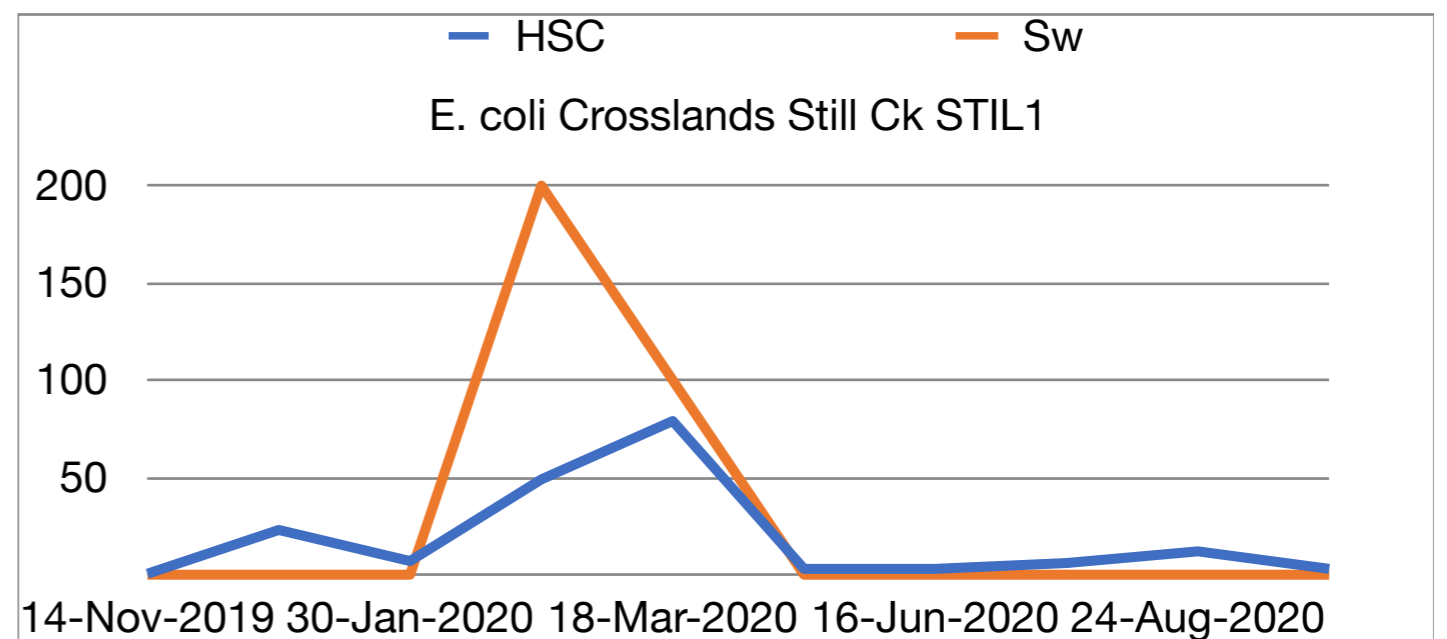
E. coli Colah Ck COLA2-1

Date	HSC	Sw	HSC - Sw	Within Band Tolerar
13-Nov-2019	20	0	20	1
20-Dec-2019	15	0	15	1
30-Jan-2020	75	100	-25	1
19-Feb-2020	10000	4200	5800	0
18-Mar-2020	390	1200	-810	0
16-Jun-2020	73	200	-127	1
13-Jul-2020	33	0	33	1
24-Aug-2020	67	0	67	1
22-Sep-2020	110	0	110	1
Mean			565	



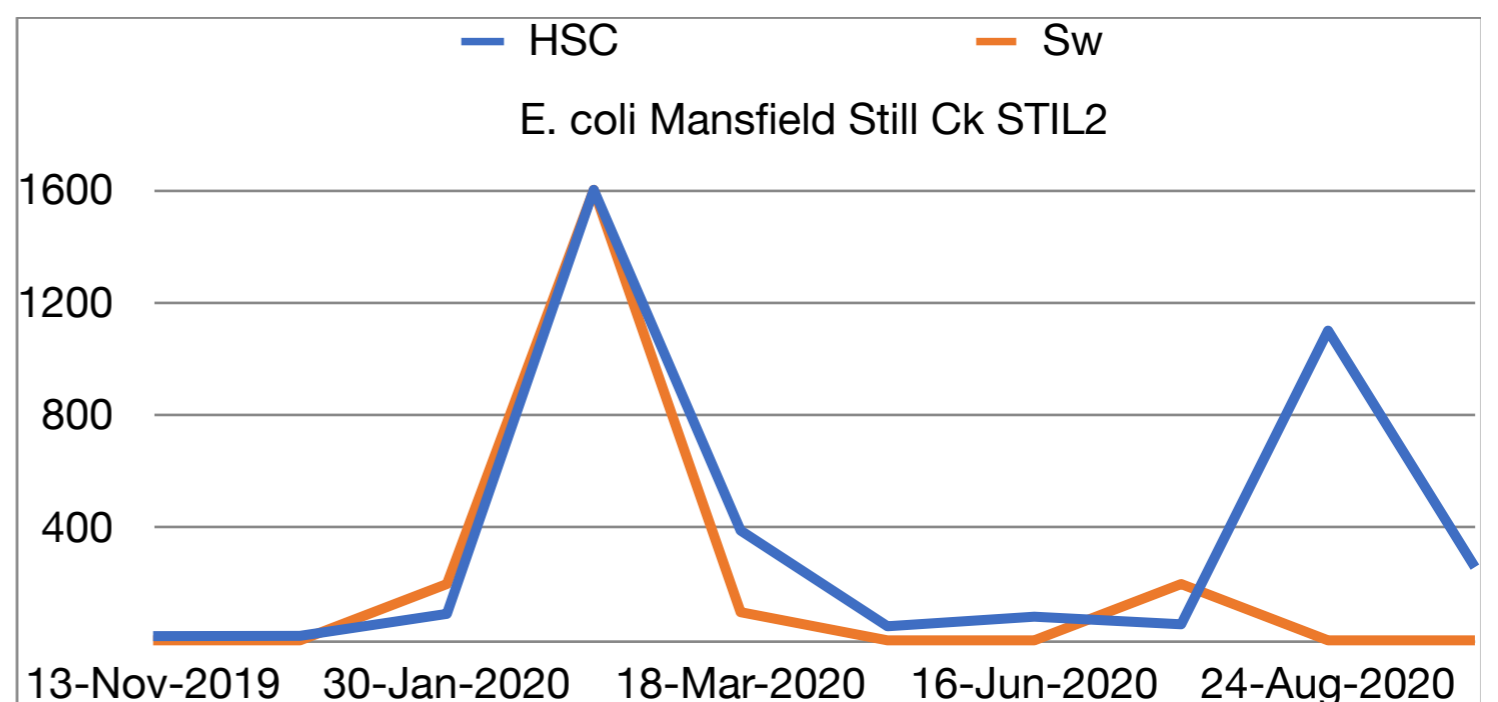
E. coli Crosslands Still Ck STIL1

Date	HSC	Sw	HSC - Sw	Within Band Tolerar
14-Nov-2019	0.5	0	0.5	1
20-Dec-2019	23	0	23	1
30-Jan-2020	7	0	7	1
19-Feb-2020	49	200	-151	1
18-Mar-2020	79	100	-21	1
13-May-2020	3	0	3	1
16-Jun-2020	3	0	3	1
13-Jul-2020	6	0	6	1
24-Aug-2020	12	0	12	1
22-Sep-2020	3	0	3	1
Mean			-11.45	



E. coli Mansfield Still Ck STIL2

Date	HSC	Sw	HSC - Sw	Within Band Tolerar
13-Nov-2019	15	0	15	1
20-Dec-2019	16	0	16	1
30-Jan-2020	94	200	-106	1
19-Feb-2020	1600	1600	0	1
18-Mar-2020	390	100	290	0
13-May-2020	50	0	50	1
16-Jun-2020	84	0	84	1
13-Jul-2020	57	200	-143	1
24-Aug-2020	1100	0	1100	0
22-Sep-2020	260	0	260	0
Mean			156.60	



HSC value minus Sw value

Streamwatch Site ID	HSC Site ID	Date Sampled	Time	Temp. (C)	Avail Phos	Disolved Oxyge	pH (pH units)	Electical Conduc	Turbidity (NT	E.coli (cfu
Larool Ck	010_S	14-Nov-2019	12:00	0.06		-0.17	0.56	32		73
Larool Ck	010_S	30-Jan-2020	10:30	0.97	-0.106	-1.22	0.22	0		80
Larool Ck	010_S	18-Feb-2020	09:30	-0.11	-0.078	-1.41	0.37	-51		140
Larool Ck	010_S	16-Mar-2020	11:30	0.48	-0.148	4.23	0.22	-28		1100
Larool Ck	010_S	25-Aug-2020	11:30	-0.27	-0.136	1.62	0.62	7		180
Larool Ck	010_S	21-Sep-2020	13:30	0.35	-0.197	1.75	0.55	-30		800
Sams Ck	013_S	14-Nov-2019	09:15	0.04		-0.23	0.33	59	-8.7	
Sams Ck	013_S	20-Dec-2019	14:00	0.42	-0.049	-0.5	0.23	54	-8.6	
Sams Ck	013_S	30-Jan-2020	09:15	1.05	-0.025	0.75	-0.29	45	-7.7	
Sams Ck	013_S	04-Mar-2020	11:15		-0.027	-0.16	0.28	22	-3.5	
Sams Ck	013_S	16-Mar-2020	10:30	0.32	-0.073	1.67	0.56	10	-0.5	
Sams Ck	013_S	03-Aug-2020	13:30	0.78	-0.014	2.30	0.42	72	4.4	
Sams Ck	013_S	25-Aug-2020	10:45	-0.78	-0.026	-0.46	0.42	71	-6	
Sams Ck	013_S	21-Sep-2020	10:30	-0.83	-0.128	-0.84	0.71	38	-8.5	
Glenorie Ck Duck P	80_S	13-Nov-2019	12:00	1.99		1.15	0.5	76		-340
Glenorie Ck Duck P	80_S	19-Feb-2020	12:00	0.78	-0.187		0.23	-20	-1.6	
Glenorie Ck Duck P	80_S	18-Mar-2020	12:40	1.94	-0.322		0.86	-5	-3.8	-60
Glenorie Ck Duck P	80_S	22-Sep-2020	12:15	2.7	-0.174	1.24	0.89	-1	-7.0	-520
Colah Ck Wyllds	COLA2_S	13-Nov-2019	10:38	0.9		0.14	0.23	95	-8.6	20
Colah Ck Wyllds	COLA2_S	20-Dec-2019	11:40	0.5	-0.009	3.16	0.38	-6	-9.1	15
Colah Ck Wyllds	COLA2_S	30-Jan-2020	11:20	0.62	-0.007	3.18	0.09	-20	-8.9	-25
Colah Ck Wyllds	COLA2_S	19-Feb-2020	11:30	1.05	-0.036	-1.48	-0.96	-22	32.9	5800
Colah Ck Wyllds	COLA2_S	18-Mar-2020	11:20	0.92	-0.105	1.71	0.23	-8	-0.3	-810
Colah Ck Wyllds	COLA2_S	16-Jun-2020	11:15	0.01	-0.129	0.48	0.28	-9	-6.3	-127
Colah Ck Wyllds	COLA2_S	13-Jul-2020	11:10	0.7	-0.049	0	0.06	-19	-0.3	33
Colah Ck Wyllds	COLA2_S	24-Aug-2020	11:33	-0.24	-0.027	0.57	0.04	-9	-4.3	67
Colah Ck Wyllds	COLA2_S	22-Sep-2020	10:59	1.56	-0.009	1.01	0.3	-36	-9.7	110
Crosslands	STIL1_S	01-Nov-2019	11:45	0.55	-0.009	-2.17	-0.25	67	-7.4	
Crosslands	STIL1_S	14-Nov-2019	13:58	0.56		1.75	0.15	97	-8.8	0.5
Crosslands	STIL1_S	20-Dec-2019	09:35	0.56	-0.048	-2.85	0.04	59	-8.9	23
Crosslands	STIL1_S	30-Jan-2020	09:32	0.63	-0.006	-4.48	-0.17	-13	-9.3	7
Crosslands	STIL1_S	19-Feb-2020	09:40	0.84	0.006	-3	-0.68	-12	-6.1	-151
Crosslands	STIL1_S	18-Mar-2020	09:35	0.70	-0.086	1.43	-0.26	-16	-7.4	-21
Crosslands	STIL1_S	13-May-2020	10:15	0.48	0.002	-2.18	-0.15	-6	-9.4	3
Crosslands	STIL1_S	16-Jun-2020	09:30	0.21	0.001	3.79	0.05	-22	-8.2	3
Crosslands	STIL1_S	13-Jul-2020	09:35	-0.1	-0.129	-3.7	0.03	-35	-7.2	6
Crosslands	STIL1_S	24-Aug-2020	09:55	0.23	0.004	-0.06	0.01	-25	-5.4	12
Crosslands	STIL1_S	22-Sep-2020	09:30	0.71		-1.43	0.08	-55	-7.2	3
Still Ck, Mansfield	STIL2_S	13-Nov-2019	09:45	0.23	-0.07	-0.19	0.23	154	-9	15
Still Ck, Mansfield	STIL2_S	20-Dec-2019	10:40	0.47	-0.019	-0.78	-0.59	143	-9.2	16
Still Ck, Mansfield	STIL2_S	30-Jan-2020	10:36	0.39	-0.008	3.91	-0.42	-36	-9.2	-106
Still Ck, Mansfield	STIL2_S	19-Feb-2020	10:45	0.32	-0.029	-2.52	-0.49	102	1	0
Still Ck, Mansfield	STIL2_S	18-Mar-2020	10:40	0.88	-0.074	2.61	0.37	5	-6.4	290
Still Ck, Mansfield	STIL2_S	13-May-2020	08:55	0.59	-0.009	0.83	0.24	-16	-8.3	50
Still Ck, Mansfield	STIL2_S	16-Jun-2020	10:30	0.10	-0.009	0.02	0.43	-18	-7.4	84
Still Ck, Mansfield	STIL2_S	13-Jul-2020	10:40	0.60	-0.009	-0.73	0.22	-5	-6.5	-143
Still Ck, Mansfield	STIL2_S	24-Aug-2020	10:55	0.55	-0.007	1.35	0.15	-28	-9.0	1100
Still Ck, Mansfield	STIL2_S	22-Sep-2020	10:28	1.40	-0.009	-0.75	0.37	-65	-6.1	260
Count				47	42	46	48	48	41	38
Maximum				2.7	0.01	4.23	0.89	154	33	5800
Median				0.55	-0.03	0.01	0.23	-6	-7.4	15
Mean				0.57	-0.06	0.20	0.16	12.33	-5.4	210
Minimum				-0.83	-0.32	-4.48	-0.96	-65	-9.7	-810
Std Dev				0.65	0.07	2.00	0.38	50.87	7.0	992
% positive				92	10	52	83	56	7	74

(HSC minus Sw) as a percentage of HSC

Streamwatch Site ID	HSC Site ID	Date Sampled	Time	Temp. (C)	Avail Phos	Disolved Oxyge	pH (pH units)	Electical Conduc	Turbidity (NT	E.coli (cfu
Larool Ck	010_S	14-Nov-2019	12:00	0%		-5%	7%	4%		100%
Larool Ck	010_S	30-Jan-2020	10:30	5%	-757%	-47%	3%	0%		44%
Larool Ck	010_S	18-Feb-2020	09:30	-1%	-3900%	-31%	5%	-8%		15%
Larool Ck	010_S	16-Mar-2020	11:30	2%	-463%	46%	3%	-21%		28%
Larool Ck	010_S	25-Aug-2020	11:30	-3%	-3400%	18%	8%	1%		100%
Larool Ck	010_S	21-Sep-2020	13:30	2%	-6567%	23%	7%	-6%		62%
Sams Ck	013_S	14-Nov-2019	09:15	0%		-3%	5%	19%	-669%	
Sams Ck	013_S	20-Dec-2019	14:00	2%	-4900%	-11%	3%	19%	-614%	
Sams Ck	013_S	30-Jan-2020	09:15	5%	-500%	16%	-4%	18%	-335%	
Sams Ck	013_S	04-Mar-2020	11:15		-208%	-2%	4%	17%	-21%	
Sams Ck	013_S	16-Mar-2020	10:30	2%	-429%	19%	7%	8%	-3%	
Sams Ck	013_S	03-Aug-2020	13:30	6%	-88%	26%	6%	21%	100%	
Sams Ck	013_S	25-Aug-2020	10:45	-8%	-650%	-7%	6%	20%	-150%	
Sams Ck	013_S	21-Sep-2020	10:30	-5%	-6400%	-20%	10%	15%	-567%	
Glenorie Ck Duck P	80_S	13-Nov-2019	12:00	10%		11%	7%	11%		-94%
Glenorie Ck Duck P	80_S	19-Feb-2020	12:00	3%	-435%		3%	-6%	-9%	
Glenorie Ck Duck P	80_S	18-Mar-2020	12:40	10%	-1789%		12%	-1%	-61%	-25%
Glenorie Ck Duck P	80_S	22-Sep-2020	12:15	15%	-2900%	14%	12%	-0%	-233%	-108%
Colah Ck Wyllds	COLA2_S	13-Nov-2019	10:38	5%		2%	3%	21%	-614%	100%
Colah Ck Wyllds	COLA2_S	20-Dec-2019	11:40	2%	-900%	31%	5%	-2%	-1011%	100%
Colah Ck Wyllds	COLA2_S	30-Jan-2020	11:20	3%	-233%	47%	1%	-8%	-809%	-33%
Colah Ck Wyllds	COLA2_S	19-Feb-2020	11:30	5%	-150%	-18%	-16%	-9%	52%	58%
Colah Ck Wyllds	COLA2_S	18-Mar-2020	11:20	5%	-2100%	20%	3%	-2%	-2%	-208%
Colah Ck Wyllds	COLA2_S	16-Jun-2020	11:15	0%	-12900%	5%	4%	-2%	-170%	-174%
Colah Ck Wyllds	COLA2_S	13-Jul-2020	11:10	7%	-4900%	0%	1%	-5%	-3%	100%
Colah Ck Wyllds	COLA2_S	24-Aug-2020	11:33	-2%	-900%	6%	1%	-3%	-40%	100%
Colah Ck Wyllds	COLA2_S	22-Sep-2020	10:59	9%	-900%	11%	4%	-10%	-183%	100%
Crosslands	STIL1_S	01-Nov-2019	11:45	4%	-900%	-25%	-4%	19%	-285%	
Crosslands	STIL1_S	14-Nov-2019	13:58	4%		20%	2%	26%	-733%	100%
Crosslands	STIL1_S	20-Dec-2019	09:35	3%	-2400%	-44%	1%	13%	-809%	100%
Crosslands	STIL1_S	30-Jan-2020	09:32	3%	-150%	-64%	-2%	-4%	-1329%	100%
Crosslands	STIL1_S	19-Feb-2020	09:40	4%	100%	-37%	-11%	-6%	-156%	-308%
Crosslands	STIL1_S	18-Mar-2020	09:35	4%	-2150%	15%	-4%	-7%	-285%	-27%
Crosslands	STIL1_S	13-May-2020	10:15	5%	100%	-22%	-2%	-2%	-1567%	100%
Crosslands	STIL1_S	16-Jun-2020	09:30	2%	100%	36%	1%	-7%	-456%	100%
Crosslands	STIL1_S	13-Jul-2020	09:35	-1%	-12900%	-35%	0%	-10%	-257%	100%
Crosslands	STIL1_S	24-Aug-2020	09:55	2%	100%	-1%	0%	-10%	-117%	100%
Crosslands	STIL1_S	22-Sep-2020	09:30	5%		-15%	1%	-17%	-257%	100%
Still Ck, Mansfield	STIL2_S	13-Nov-2019	09:45	1%	1000%	-2%	3%	23%	-900%	100%
Still Ck, Mansfield	STIL2_S	20-Dec-2019	10:40	2%	-1900%	-9%	-9%	20%	-1150%	100%
Still Ck, Mansfield	STIL2_S	30-Jan-2020	10:36	2%	-400%	49%	-6%	-6%	-1150%	-113%
Still Ck, Mansfield	STIL2_S	19-Feb-2020	10:45	1%	-264%	-29%	-7%	32%	9%	0%
Still Ck, Mansfield	STIL2_S	18-Mar-2020	10:40	5%	-1233%	28%	5%	1%	-74%	74%
Still Ck, Mansfield	STIL2_S	13-May-2020	08:55	5%	-900%	8%	3%	-3%	-488%	100%
Still Ck, Mansfield	STIL2_S	16-Jun-2020	10:30	1%	-900%	0%	6%	-4%	-285%	100%
Still Ck, Mansfield	STIL2_S	13-Jul-2020	10:40	6%	-900%	-7%	3%	-1%	-186%	-251%
Still Ck, Mansfield	STIL2_S	24-Aug-2020	10:55	5%	-233%	12%	2%	-7%	-150%	100%
Still Ck, Mansfield	STIL2_S	22-Sep-2020	10:28	8%	-900%	-8%	5%	-13%	-156%	100%
Count				47	42	46	48	48	41	38
Maximum				15%	1000%	49%	12%	32%	100%	100%
Median				3%	-900%	0%	3%	-2%	-257%	100%
Mean				3%	-1931%	0%	2%	3%	-393%	27%
Minimum				-8%	-12900%	-64%	-16%	-21%	-1567%	-308%
Std Dev				4%	3030%	25%	6%	13%	417%	112%
% positive				92	10	52	83	56	7	74

Absolute (HSC value minus Sw value)										
Streamwatch Site ID	HSC Site ID	Date Sampled	Time	Temp. (C)	Avail Phos	Disolved Oxyge	pH (pH units)	Electical Conduc	Turbidity (NT	E.coli (cfu
Larool Ck	010_S	14-Nov-2019	12:00	0.06		0.17	0.56	32		73
Larool Ck	010_S	30-Jan-2020	10:30	0.97	0.106	1.22	0.22	0		80
Larool Ck	010_S	18-Feb-2020	09:30	0.11	0.078	1.41	0.37	51		140
Larool Ck	010_S	16-Mar-2020	11:30	0.48	0.148	4.23	0.22	28		1100
Larool Ck	010_S	25-Aug-2020	11:30	0.27	0.136	1.62	0.62	7		180
Larool Ck	010_S	21-Sep-2020	13:30	0.35	0.197	1.75	0.55	30		800
Sams Ck	013_S	14-Nov-2019	09:15	0.04		0.23	0.33	59	8.7	
Sams Ck	013_S	20-Dec-2019	14:00	0.42	0.049	0.5	0.23	54	8.6	
Sams Ck	013_S	30-Jan-2020	09:15	1.05	0.025	0.75	0.29	45	7.7	
Sams Ck	013_S	04-Mar-2020	11:15		0.027	0.16	0.28	22	3.5	
Sams Ck	013_S	16-Mar-2020	10:30	0.32	0.073	1.67	0.56	10	0.5	
Sams Ck	013_S	03-Aug-2020	13:30	0.78	0.014	2.30	0.42	72	4.4	
Sams Ck	013_S	25-Aug-2020	10:45	0.78	0.026	0.46	0.42	71	6	
Sams Ck	013_S	21-Sep-2020	10:30	0.83	0.128	0.84	0.71	38	8.5	
Glenorie Ck Duck P	80_S	13-Nov-2019	12:00	1.99		1.15	0.5	76	0	340
Glenorie Ck Duck P	80_S	19-Feb-2020	12:00	0.78	0.187		0.23	20	1.6	
Glenorie Ck Duck P	80_S	18-Mar-2020	12:40	1.94	0.322		0.86	5	3.8	60
Glenorie Ck Duck P	80_S	22-Sep-2020	12:15	2.7	0.174	1.24	0.89	1	7.0	520
Colah Ck Wyllds	COLA2_S	13-Nov-2019	10:38	0.9		0.14	0.23	95	8.6	20
Colah Ck Wyllds	COLA2_S	20-Dec-2019	11:40	0.5	0.009	3.16	0.38	6	9.1	15
Colah Ck Wyllds	COLA2_S	30-Jan-2020	11:20	0.62	0.007	3.18	0.09	20	8.9	25
Colah Ck Wyllds	COLA2_S	19-Feb-2020	11:30	1.05	0.036	1.48	0.96	22	32.9	5800
Colah Ck Wyllds	COLA2_S	18-Mar-2020	11:20	0.92	0.105	1.71	0.23	8	0.3	810
Colah Ck Wyllds	COLA2_S	16-Jun-2020	11:15	0.01	0.129	0.48	0.28	9	6.3	127
Colah Ck Wyllds	COLA2_S	13-Jul-2020	11:10	0.7	0.049	0	0.06	19	0.3	33
Colah Ck Wyllds	COLA2_S	24-Aug-2020	11:33	0.24	0.027	0.57	0.04	9	4.3	67
Colah Ck Wyllds	COLA2_S	22-Sep-2020	10:59	1.56	0.009	1.01	0.3	36	9.7	110
Crosslands	STIL1_S	01-Nov-2019	11:45	0.55	0.009	2.17	0.25	67	7.4	
Crosslands	STIL1_S	14-Nov-2019	13:58	0.56		1.75	0.15	97	8.8	0.5
Crosslands	STIL1_S	20-Dec-2019	09:35	0.56	0.048	2.85	0.04	59	8.9	23
Crosslands	STIL1_S	30-Jan-2020	09:32	0.63	0.006	4.48	0.17	13	9.3	7
Crosslands	STIL1_S	19-Feb-2020	09:40	0.84	0.006	3	0.68	12	6.1	151
Crosslands	STIL1_S	18-Mar-2020	09:35	0.70	0.086	1.43	0.26	16	7.4	21
Crosslands	STIL1_S	13-May-2020	10:15	0.48	0.002	2.18	0.15	6	9.4	3
Crosslands	STIL1_S	16-Jun-2020	09:30	0.21	0.001	3.79	0.05	22	8.2	3
Crosslands	STIL1_S	13-Jul-2020	09:35	0.1	0.129	3.7	0.03	35	7.2	6
Crosslands	STIL1_S	24-Aug-2020	09:55	0.23	0.004	0.06	0.01	25	5.4	12
Crosslands	STIL1_S	22-Sep-2020	09:30	0.71		1.43	0.08	55	7.2	3
Still Ck, Mansfield	STIL2_S	13-Nov-2019	09:45	0.23	0.07	0.19	0.23	154	9	15
Still Ck, Mansfield	STIL2_S	20-Dec-2019	10:40	0.47	0.019	0.78	0.59	143	9.2	16
Still Ck, Mansfield	STIL2_S	30-Jan-2020	10:36	0.39	0.008	3.91	0.42	36	9.2	106
Still Ck, Mansfield	STIL2_S	19-Feb-2020	10:45	0.32	0.029	2.52	0.49	102	1	0
Still Ck, Mansfield	STIL2_S	18-Mar-2020	10:40	0.88	0.074	2.61	0.37	5	6.4	290
Still Ck, Mansfield	STIL2_S	13-May-2020	08:55	0.59	0.009	0.83	0.24	16	8.3	50
Still Ck, Mansfield	STIL2_S	16-Jun-2020	10:30	0.10	0.009	0.02	0.43	18	7.4	84
Still Ck, Mansfield	STIL2_S	13-Jul-2020	10:40	0.60	0.009	0.73	0.22	5	6.5	143
Still Ck, Mansfield	STIL2_S	24-Aug-2020	10:55	0.55	0.007	1.35	0.15	28	9.0	1100
Still Ck, Mansfield	STIL2_S	22-Sep-2020	10:28	1.40	0.009	0.75	0.37	65	6.1	260
Count				47	42	46	48	48	41	38
Maximum				2.7	0.32	4.48	0.96	154	33	5800
Median				0.56	0.03	1.38	0.28	26.5	7.4	70
Mean				0.67	0.06	1.56	0.34	38.00	7.3	331
Minimum				0.01	0.00	0	0.01	0	0.3	0
Std Dev				0.54	0.07	1.24	0.23	35.61	4.9	957

Collated Data HSC

Streamwatch Site ID	HSC Site ID	Date Sampled	Time	Temp. (C)	Avail Phos	Disolved O	pH (pH uni	Electical C	Turbidity (N	Turbidity (FT	E.coli (cfu
Larool Ck	10	14-Nov-2019	12:00	15.56		3.13	7.56	852	2.2		73
Larool Ck	10	30-Jan-2020	10:30	20.97	0.014	2.58	7.22	880	2.3		180
Larool Ck	10	18-Feb-2020	09:50	21.39	0.002	4.59	7.37	679	2.2		940
Larool Ck	10	16-Mar-2020	11:30	19.48	0.032	9.23	7.22	132	69.8		3900
Larool Ck	10	25-Aug-2020	12:00	9.73	0.004	8.82	7.62	637	6.5		180
Larool Ck	10	21-Sep-2020	13:10	17.85	0.003	7.75	7.55	480	15.8		1300
Sams Ck	13	14-Nov-2019	09:30	15.54		6.67	7.33	309	1.3		37
Sams Ck	13	20-Dec-2019	14:05	20.42	0.001	4.6	7.23	284	1.4		58
Sams Ck	13	30-Jan-2020	09:00	21.05	0.005	4.55	6.71	245	2.3		32
Sams Ck	13	04-Mar-2020	11:25	21.1	0.013	6.84	7.28	132	16.5		7200
Sams Ck	13	16-Mar-2020	10:35	19.32	0.017	8.97	7.56	120	19.5		22000
Sams Ck	13	03-Aug-2020	13:30	12.78	0.016	9.00	7.42	342	4.4		390
Sams Ck	13	25-Aug-2020	11:00	10.22	0.004	7.04	7.42	351	4		58
Sams Ck	13	21-Sep-2020	10:20	16.67	0.002	4.16	7.21	248	1.5		1600
Glenorie Ck Duck Po	80	13-Nov-2019	12:15	18.99		10.05	7.5	666	2.6		360
Glenorie Ck Duck Po	80	19-Feb-2020	12:25	23.28	0.043	8.37	7.23	320	18.4		2500
Glenorie Ck Duck Po	80	18-Mar-2020	12:40	19.94	0.018	9.26	7.36	385	6.2		240
Glenorie Ck Duck Po	80	22-Sep-2020	12:15	17.66	0.006	8.94	7.39	439	3		480
Colah Ck Wyls	COLA2	13-Nov-2019	10:50	16.4		8.04	7.23	445	1.4		20
Colah Ck Wyls	COLA2	20-Dec-2019	11:53	20.5	0.001	10.36	7.38	384	0.9		15
Colah Ck Wyls	COLA2	30-Jan-2020	11:30	22.62	0.003	6.78	7.09	260	1.1		75
Colah Ck Wyls	COLA2	19-Feb-2020	11:40	22.05	0.024	8.12	6.04	258	62.9		10000
Colah Ck Wyls	COLA2	18-Mar-2020	11:15	17.42	0.005	8.61	7.23	322	19.7		390
Colah Ck Wyls	COLA2	16-Jun-2020	11:20	11.01	0.001	9.98	7.28	411	3.7		73
Colah Ck Wyls	COLA2	13-Jul-2020	11:40	10.7	0.001	10	7.06	411	9.7		33
Colah Ck Wyls	COLA2	24-Aug-2020	11:40	10.76	0.003	10.17	7.04	351	10.7		67
Colah Ck Wyls	COLA2	22-Sep-2020	11:10	17.06	0.001	9.21	7.3	364	5.3		110
Crosslands	STIL1	01-Nov-2019	10:20	15.55	0.001	8.73	6.75	347	2.6		1
Crosslands	STIL1	14-Nov-2019	14:10	15.56		8.75	7.15	377	1.2		0.5
Crosslands	STIL1	20-Dec-2019	09:44	18.06	0.002	6.45	7.04	439	1.1		23
Crosslands	STIL1	30-Jan-2020	09:30	21.13	0.004	7.02	6.83	347	0.7		7
Crosslands	STIL1	19-Feb-2020	09:50	20.84	0.006	8.2	6.32	208	3.9		49
Crosslands	STIL1	18-Mar-2020	09:40	16.70	0.004	9.33	6.74	234	2.6		79
Crosslands	STIL1	13-May-2020	09:35	10.48	0.002	9.72	6.85	344	0.6		3
Crosslands	STIL1	16-Jun-2020	09:30	10.21	0.001	10.49	7.05	328	1.8		3
Crosslands	STIL1	13-Jul-2020	09:35	9.9	0.001	10.5	7.03	355	2.8		6
Crosslands	STIL1	24-Aug-2020	09:50	9.23	0.004	10.94	7.01	255	4.6		12
Crosslands	STIL1	22-Sep-2020	09:30	13.71	0.002	9.27	7.08	325	2.8		3
Still Ck, Mansfield	STIL2	13-Nov-2019	10:00	18.23		8.81	7.23	684	1		15
Still Ck, Mansfield	STIL2	20-Dec-2019	10:46	19.97	0.001	8.22	6.41	723	0.8		16
Still Ck, Mansfield	STIL2	30-Jan-2020	10:45	22.39	0.002	8.01	6.58	554	0.8		94
Still Ck, Mansfield	STIL2	19-Feb-2020	10:55	22.32	0.011	8.78	7.01	322	11		1600
Still Ck, Mansfield	STIL2	18-Mar-2020	10:45	17.38	0.006	9.41	7.37	355	8.6		390
Still Ck, Mansfield	STIL2	13-May-2020	10:30	11.09	0.001	10.43	7.24	574	1.7		50
Still Ck, Mansfield	STIL2	16-Jun-2020	10:35	10.60	0.001	10.72	7.43	472	2.6		84
Still Ck, Mansfield	STIL2	13-Jul-2020	10:45	10.60	0.001	10.57	7.22	535	3.5		57
Still Ck, Mansfield	STIL2	24-Aug-2020	11:00	10.05	0.003	11.35	7.15	392	6.0		1100
Still Ck, Mansfield	STIL2	22-Sep-2020	10:30	16.90	0.001	9.35	7.37	485	3.9		260

Collated Data Streamwatch

Streamwatch Site ID	HSC Site ID	Date Sampled	Time	Temp. (C)	Avail Phos	Dissolved O	pH (pH uni	Electical C	Turbidity (l	Turbidity (l	E.coli (cfu
Larool Ck	010_S	14-Nov-2019	12:00	15.5	0.18	3.3	7	820		6	0
Larool Ck	010_S	30-Jan-2020	10:30	20	0.12	3.8	7	880		7	100
Larool Ck	010_S	18-Feb-2020	09:30	21.5	0.08	6	7	730		8	800
Larool Ck	010_S	16-Mar-2020	11:30	19	0.18	5	7	160		35	2800
Larool Ck	010_S	25-Aug-2020	11:30	10	0.14	7.2	7	630		6.7	0
Larool Ck	010_S	21-Sep-2020	13:30	17.5	0.2	6	7	510		19	500
Sams Ck	013_S	14-Nov-2019	09:15	15.5	0.07	6.9	7	250	10		
Sams Ck	013_S	20-Dec-2019	14:00	20	0.05	5.1	7	230	10		
Sams Ck	013_S	30-Jan-2020	09:15	20	0.03	3.8	7	200	10		
Sams Ck	013_S	04-Mar-2020	11:15		0.04	7	7	110	20		
Sams Ck	013_S	16-Mar-2020	10:30	19	0.09	7.3	7	110	20		
Sams Ck	013_S	03-Aug-2020	13:30	12	0.03	6.7	7	270			
Sams Ck	013_S	25-Aug-2020	10:45	11	0.03	7.5	7	280	10		
Sams Ck	013_S	21-Sep-2020	10:30	17.5	0.13	5	6.5	210	10		
Glenorie Ck Duck Po	80_S	13-Nov-2019	12:00	17	0.19	8.9	7	590			700
Glenorie Ck Duck Po	80_S	19-Feb-2020	12:00	22.5	0.23		7	340	20		
Glenorie Ck Duck Po	80_S	18-Mar-2020	12:40	18.0	0.34		6.50	390	10.0		300
Glenorie Ck Duck Po	80_S	22-Sep-2020	12:15	15.0	0.18	7.70	6.50	440	10.0		1000
Colah Ck Wyllds	COLA2_S	13-Nov-2019	10:38	15.5	0.05	7.9	7	350	10	5	0
Colah Ck Wyllds	COLA2_S	20-Dec-2019	11:40	20	0.01	7.2	7	390	10	4	0
Colah Ck Wyllds	COLA2_S	30-Jan-2020	11:20	22	0.01	3.6	7	280	10	9	100
Colah Ck Wyllds	COLA2_S	19-Feb-2020	11:30	21	0.06	9.6	7	280	30	32	4200
Colah Ck Wyllds	COLA2_S	18-Mar-2020	11:20	16.5	0.11	6.9	7	330	20	17	1200
Colah Ck Wyllds	COLA2_S	16-Jun-2020	11:15	11	0.13	9.5	7	420	10	11	200
Colah Ck Wyllds	COLA2_S	13-Jul-2020	11:10	10	0.05	10	7	430	10	10	0
Colah Ck Wyllds	COLA2_S	24-Aug-2020	11:33	11	0.03	9.6	7	360	15	12	0
Colah Ck Wyllds	COLA2_S	22-Sep-2020	10:59	15.5	0.01	8.2	7	400	15	8	0
Crosslands	STIL1_S	01-Nov-2019	11:45	15	0.01	10.9	7	280	10	0	
Crosslands	STIL1_S	14-Nov-2019	13:58	15	0.06	7	7	280	10	4	0
Crosslands	STIL1_S	20-Dec-2019	09:35	17.5	0.05	9.3	7	380	10	5	0
Crosslands	STIL1_S	30-Jan-2020	09:32	20.5	0.01	11.5	7	360	10	1	0
Crosslands	STIL1_S	19-Feb-2020	09:40	20	0	11.2	7	220	10	7	200
Crosslands	STIL1_S	18-Mar-2020	09:35	16	0.09	7.9	7	250	10	4	100
Crosslands	STIL1_S	13-May-2020	10:15	10	0	11.9	7	350	10	0	0
Crosslands	STIL1_S	16-Jun-2020	09:30	10	0	6.7	7	350	10	3	0
Crosslands	STIL1_S	13-Jul-2020	09:35	10	0.13	14.2	7	390	10	1	0
Crosslands	STIL1_S	24-Aug-2020	09:55	9	0	11	7	280	10	2	0
Crosslands	STIL1_S	22-Sep-2020	09:30	13	0	10.7	7	380	10	0	0
Still Ck, Mansfield	STIL2_S	13-Nov-2019	09:45	18	0.07	9	7	530	10	1	0
Still Ck, Mansfield	STIL2_S	20-Dec-2019	10:40	19.5	0.02	9	7	580	10	1	0
Still Ck, Mansfield	STIL2_S	30-Jan-2020	10:36	22	0.01	4.1	7	590	10	4	200
Still Ck, Mansfield	STIL2_S	19-Feb-2020	10:45	22	0.04	11.3	7.5	220	10	12	1600
Still Ck, Mansfield	STIL2_S	18-Mar-2020	10:40	16.5	0.08	6.8	7	350	15	10	100
Still Ck, Mansfield	STIL2_S	13-May-2020	08:55	10.5	0.01	9.6	7	590	10	8	0
Still Ck, Mansfield	STIL2_S	16-Jun-2020	10:30	10.5	0.01	10.7	7	490	10	8	0
Still Ck, Mansfield	STIL2_S	13-Jul-2020	10:40	10	0.01	11.3	7	540	10	4	200
Still Ck, Mansfield	STIL2_S	24-Aug-2020	10:55	9.5	0.01	10	7	420	15	9	0
Still Ck, Mansfield	STIL2_S	22-Sep-2020	10:28	15.5	0.01	10.1	7	550	10	5	0

Streamwatch Site ID	HSC Site ID	Date Sampled	Time	Temp. (C)	Avail Phos (mg/L (PO4))	Disolved O	pH (pH uni	Electical C	Turbidity (l	Turbidity (l	E.coli (cfu	Rain Time	Rain Volun	Flow	Site Visit C
	10	14-Nov-2019	12:00	15.56		3.13	7.56	852	2.2		73				
	10	30-Jan-2020	10:30	20.97	0.014	2.58	7.22	880	2.3		180				
	10	18-Feb-2020	09:50	21.39	0.002	4.59	7.37	679	2.2		940				
	10	16-Mar-2020	11:30	19.48	0.032	9.23	7.22	132	69.8		3900				
	13	14-Nov-2019	09:30	15.54		6.67	7.33	309	1.3		37				
	13	20-Dec-2019	14:05	20.42	0.001	4.6	7.23	284	1.4		58				
	13	30-Jan-2020	09:00	21.05	0.005	4.55	6.71	245	2.3		32				
	13	04-Mar-2020	11:25	21.1	0.013	6.84	7.28	132	16.5		7200				
	13	16-Mar-2020	10:35	19.32	0.017	8.97	7.56	120	19.5		-22000				
	80	13-Nov-2019	12:15	18.99		10.05	7.5	666	2.6		360				
	80	20-Dec-2019	12:30											Dry	
	80	19-Feb-2020	12:25	23.28	0.043	8.37	7.23	320	18.4		2500				
	80	18-Mar-2020	12:40	19.94	0.018	9.26	7.36	385	6.2		240				
Larool Ck	010_S	14-Nov-2019	12:00	15.5	0.18	3.3	7	820		6	0			low flow	
Larool Ck	010_S	30-Jan-2020	10:30	20	0.12	3.8	7	880		7	100				59mm to d
Larool Ck	010_S	18-Feb-2020	09:30	21.5	0.08	6	7	730		8	800				390ml to d
Larool Ck	010_S	16-Mar-2020	11:30	19	0.18	5	7	160		35	2800	within 24 h	heavy	high flow	heavy rain
Sams Ck	013_S	14-Nov-2019	09:15	15.5	0.07	6.9	7	250	10			>7 days		low flow	clear, sligh
Sams Ck	013_S	20-Dec-2019	14:00	20	0.05	5.1	7	230	10			>7 days		low flow	
Sams Ck	013_S	30-Jan-2020	09:15	20	0.03	3.8	7	200	10			1-3 days	light	low flow	EC claibrat
Sams Ck	013_S	04-Mar-2020	11:15		0.04	7	7	110	20			within 24 h	heavy	high flow	forgot ther
Sams Ck	013_S	16-Mar-2020	10:30	19	0.09	7.3	7	110	20			within 24 h	light	medium	average wa
	COLA2	13-Nov-2019	10:50	16.4		8.04	7.23	445	1.4		20				
	COLA2	20-Dec-2019	11:53	20.5	0.001	10.36	7.38	384	0.9		15				
	COLA2	30-Jan-2020	11:30	22.62	0.003	6.78	7.09	260	1.1		75				
	COLA2	19-Feb-2020	11:40	22.05	0.024	8.12	6.04	258	62.9		10000				
	COLA2	18-Mar-2020	11:15	17.42	0.005	8.61	7.23	322	19.7		390				
Colah Ck Wylds	COLA2_S	13-Nov-2019	10:38	15.5	0.05	7.9	7	350	10	5	0	>7 days	light	low flow	Shaded, Jo
Colah Ck Wylds	COLA2_S	20-Dec-2019	11:40	20	0.01	7.2	7	390	10	4	0	>7 days	light	low flow	Sunny, no c
Colah Ck Wylds	COLA2_S	30-Jan-2020	11:20	22	0.01	3.6	7	280	10	9	100	4-7 days	light	low flow	Overcast 1
Colah Ck Wylds	COLA2_S	19-Feb-2020	11:30	21	0.06	9.6	7	280	30	32	4200	1-3 days	medium	high flow	Rain 7mm
Colah Ck Wylds	COLA2_S	18-Mar-2020	11:20	16.5	0.11	6.9	7	330	20	17	1200	within 24 h	light	high flow	Rain 13mm
	STIL1	01-Nov-2019	10:20	15.55	0.001	8.73	6.75	347	2.6		1				
	STIL1	14-Nov-2019	14:10	15.56		8.75	7.15	377	1.2		0.5				
	STIL1	20-Dec-2019	09:44	18.06	0.002	6.45	7.04	439	1.1		23				
	STIL1	30-Jan-2020	09:30	21.13	0.004	7.02	6.83	347	0.7		7				
	STIL1	19-Feb-2020	09:50	20.84	0.006	8.2	6.32	208	3.9		49				
	STIL1	18-Mar-2020	09:40	16.70	0.004	9.33	6.74	234	2.6		79				
Crosslands	STIL1_S	01-Nov-2019	11:45	15	0.01	10.9	7	280	10	0		>7 days	light	low flow	Partial sun
Crosslands	STIL1_S	14-Nov-2019	13:58	15	0.06	7	7	280	10	4	0	>7 days	light	low flow	Sunny but
Crosslands	STIL1_S	20-Dec-2019	09:35	17.5	0.05	9.3	7	380	10	5	0	>7 days	light	low flow	Sunny but
Crosslands	STIL1_S	30-Jan-2020	09:32	20.5	0.01	11.5	7	360	10	1	0	4-7 days	light	medium fl	Overcast 1
Crosslands	STIL1_S	19-Feb-2020	09:40	20	0	11.2	7	220	10	7	200	1-3 days	medium	high flow	Rain 7mm
Crosslands	STIL1_S	18-Mar-2020	09:35	16	0.09	7.9	7	250	10	4	100	within 24 h	light	high flow	Rain 13mm
	STIL2	13-Nov-2019	10:00	18.23		8.81	7.23	684	1		15				
	STIL2	20-Dec-2019	10:46	19.97	0.001	8.22	6.41	723	0.8		16				
	STIL2	30-Jan-2020	10:45	22.39	0.002	8.01	6.58	554	0.8		94				
	STIL2	19-Feb-2020	10:55	22.32	0.011	8.78	7.01	322	11		1600				
	STIL2	18-Mar-2020	10:45	17.38	0.006	9.41	7.37	355	8.6		390				
Still Ck, Mansfield	STIL2_S	13-Nov-2019	09:45	18	0.07	9	7	530	10	1	0	>7 days	light	low flow	Sunny, no c
Still Ck, Mansfield	STIL2_S	20-Dec-2019	10:40	19.5	0.02	9	7	580	10	1	0	>7 days	light	low flow	Sunny, but
Still Ck, Mansfield	STIL2_S	30-Jan-2020	10:36	22	0.01	4.1	7	590	10	4	200	4-7 days	light	low flow	Overcast.
Still Ck, Mansfield	STIL2_S	19-Feb-2020	10:45	22	0.04	11.3	7.5	220	10	12	1600	1-3 days	medium	high flow	Rain 7mm
Still Ck, Mansfield	STIL2_S	18-Mar-2020	10:40	16.5	0.08	6.8	7	350	15	10	100	within 24 h	light	high flow	13mm rain

Summary Still Glenorie Larool Comparison 20200618

Parameter	Reference Data Source	Comments	Conclusions
Temperature	Set 8	No variation in readings of 3 thermometers by 2 people independently, but can only be read to 0.5C	Ok
Available Phosphate	Set 2	Larool close to Still & Glenorie if assume all readings are the same <0.7	Larool looks ok
	Set 2	Very unusual to get all zero from Glenorie readings	?
	Set 1	Still & Glenorie similar	Ok
	Set 3	Variation at one site with same materials and colorimeter: 0.11 to 0.17 (same range for same tube location). A large range also occurs at lower Phos levels	Poor repeatability Poor repeatability
Dissolved Oxygen	Set 4	Calibration: exposed water: 9.8 (Still) and 8.7 (Glenorie), boiled and sealed: 3.7 and 3.2	Large difference
	Sets 1 & 4	Colorimeter comparison: Glenorie mean 0.7 less than Still mean, with up to 1.2 variation The 2 sampler and 2 tester combinations at Still Ck showed that large variances were not due to people	Large difference
pH	Set 5	No difference for 3 sites with 2 strip sources and 3 people (CN PS GD), but can only be read to 0.5	Ok
Electrical Conductivity	Set 6	Checked with HSC calibration solution at zero, Larool, 2xStill & Glenorie all gave Zero	Ok
	Set 6	Checked with HSC calibration solution at 1413, variation: Larool, 1.6%, Still 0.2% & 3%, Glenorie 0.2%	Fair
	Set 1	Still & Glenorie similar, Still Yellow & Green probes always close at typical readings 200 to 500	Ok
	Set 7	Large variation exists with Still calibration standard solutions: A 500; B 550; verified with Glenorie probe	Very poor
Turbidity	Set 1	Insufficient data	Nil
Devices	Glenorie	La Motte Smart 2 colorimeter, ECTestr low	
	Still	La Motte Smart 3 colorimeter, ECTestr low "Yellow" and ECO Test EC low "Green"	

3 Group Quality Check Still Glenorie Larool May June 2020												
Comparison Set	Site	Date Sampled	Materials Source	Colorimeter Source	Water Temp (°C)	Available Phosphate PO4 (mg/L)	Dissolved Oxygen (mg/L)	pH (pH units)	Electrical conductivity (µS/cm)	Turbidity (NTU)	Turbidity (FTU/FAU)	E.coli (CFU/100mL)
Set 1: Still and Glenorie comparison of materials and devices	Still Ck at Crosslands	16/06/2020 9:28 am	Still	Still	10	0	6.7	7	350	10	3	0
	Still Ck at Crosslands	16/06/2020 9:28 am	Still	Glenorie			5.8					
	Still Ck at Crosslands	16/06/2020 9:28 am	Glenorie	Still								
	Still Ck at Crosslands	16/06/2020 9:28 am	Glenorie	Glenorie		0.05		7	350		6	
	Still Ck at Mansfield	16/06/2020 10:30 am	Still	Still	10.5	0.01	10.7	7	490	10	8	0
	Still Ck at Mansfield	16/06/2020 10:30 am	Still	Glenorie		0.04	9.5					
	Still Ck at Mansfield	16/06/2020 10:30 am	Glenorie	Still		0.08						
	Still Ck at Mansfield	16/06/2020 10:30 am	Glenorie	Glenorie		0.08		7				
	Glenorie Ck Takapo Rd Duckpond	16.06.2020	Still	Still		0.21	8.5	7				
	Glenorie Ck Takapo Rd Duckpond	16.06.2020	Glenorie	Glenorie		0.22	7.6	7				
	Little Cattai Ck (not joint)	15.06.2020	Glenorie	Still			5.1					
	Little Cattai Ck (not joint)	15.06.2020	Glenorie	Glenorie			5.4					
Set 2: Larool Phosphate comparison across 4 materials and devices	Larool Ck Site 10	15.06.2020	Brown	Brown	12	0.06	8.5	7	570		1	
	Larool Ck Site 10	15.06.2020	Guise	Guise	12.02		9.21	7.73	559	8.2		
	Larool Ck Site 10 Brown sample refrig	15.06.2020	Still	Still		0.04, 0.01						
	Larool Ck Site 10 Brown sample refrig	15.06.2020	Still	Glenorie		0.00, 0.00						
	Larool Ck Site 10 Brown sample refrig	15.06.2020	Glenorie	Still		0.09, 0.05, 0.06, 0.05						
	Larool Ck Site 10 Brown sample refrig	15.06.2020	Glenorie	Glenorie		0.00, 0.00, 0.00, 0.00						
Set 3: showing range of results for 1 site with same materials and devices	Colah Ck at Wylds Rd	16.06.2020 11.15 am	Still	Still	11	0.13	9.5	7	420	10	11	200
	Colah Ck result range 1	16.06.2020 11.15 am	Still	Still		0.11	9.5		420 site yellow		8.07	
	Colah Ck result range 2	16.06.2020 11.15 am	Still	Still		0.12	9.5		410 home yellow		10.48	
	Colah Ck result range 3	16.06.2020 11.15 am	Still	Still		0.14	9.5		420 home green		10.04	
	Colah Ck result range 4	16.06.2020 11.15 am	Still	Still		0.11	9.6				12.23	
	Colah Ck result range 1	16.06.2020 11.15 am	Still	Still		0.17	9.5				12.07	
Set 4: DO calibration check at maximum and minimum	Tap water exposed 24 hours	16.06.2020	Still	Still			9.8					
	Tap water exposed 24 hours	16.06.2020	Glenorie	Glenorie			8.7					
	Boiled, sealed, cooled	16.06.2020	Still	Still			3.7					
	Boiled, sealed, cooled	16.06.2020	Glenorie	Glenorie			3.2					
Set 5: pH check by different people	pH: all 6 test strips inspected by 3 people: all gave 7.0 independently											
Set 6: EC calibration check against HSC calibration samples	HSC EC calibration zero			Brown					Zero			
	HSC EC calibration zero			Still Yellow					Zero			
	HSC EC calibration zero			Still Green					Zero			
	HSC EC calibration zero			Glenorie					Zero			
	HSC EC calibration 1413			Brown					1390			
	HSC EC calibration 1413			Still Yellow					1370			
	HSC EC calibration 1413			Still Green					1410			
	HSC EC calibration 1413			Glenorie					1410			
Set 7: EC calibration solutions at Still group: both supposed to be 500	Current EC calibration solution	16.06.2020		Still Yellow					500			
	Current EC calibration solution	16.06.2020		Still Green					500			
	Current EC calibration solution	16.06.2020		Glenorie					520			
	Rejected EC calibration solution	16.06.2020		Still Yellow					550			
	Rejected EC calibration solution	16.06.2020		Still Green					550			
	Rejected EC calibration solution	16.06.2020		Glenorie					570			
Set 8: Still Glenorie Temp check by different people	Temp at 20C: checked 3 thermometers by 2 people: all gave 20.0 independently											

Site codes	10	Larool Ck
	13	Sams Ck
	80	Glenorie Ck Duck Pond
	STIL1	Still Ck at Crosslands
	STIL2	Still Ck at Mansfield Rd
	COLA2	Colah Ck at Wyls Rd
Source codes	HSC	Hornsby Shire Council
	Sw	Streamwatch
General		
HSC E. coli 16 March value changed to positive		
No SRP/available Phosphate for HSC sites Nov19		
December data missing for some sites due to drought		
Turbidity HSC record only NTU		
Larool Ck Turbidity: Sw only had FTU, not NTU, so difference not calculated.		
Larool CK Turbidity Sw FTU was closely aligned to HSC NTU values		
Sams Ck E. Coli not tested by Sw		
3 June	Glenorie E coli 3.11.2019 added	
3 June	Corrected Glenorie E coli calculations	
HSC calibration tolerance:	Temp	0.2
	Phosphate	NA
	DO	0.2
	NTU	0.5 at zero
	EC	15
	pH	0.1
	E.coli	Bands 0/200; 201/1000; >1000
Parameter tested	HSC	Streamwatch
Temperature	Yoekal 615	Hand thermometer
Phosphate	NATA lab	Smart 3 colorimeter, except Smart 2 for Glenorie
Dissolved Oxygen	Yoekal 615	Smart 3 colorimeter, except Smart 2 for Glenorie
pH	Yoekal 615	Test strips
Electrical Conductivity	Yoekal 615	ECTestr low (and ECO Test EC low at Still)
Turbidity NTU	Yoekal 615	Smart 3 colorimeter, except Smart 2 for Glenorie
E. coli	NATA lab	3M Petrifilm 24 hrs at 44C
Turbidity FTU	NA	Smart 3 colorimeter, except Smart 2 for Glenorie