

**MWRA Sewer Member Communities
and Co-permittees to NPDES Permit MA0103284
with individual permit number**

Permit Number	Co-permittee	Responsibilities
MAC013284	Town of Arlington Water and Sewer Department 51 Grove Street Arlington, MA 02476	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC023284	Town of Ashland Department of Public Works 20 Ponderosa Road Ashland, MA 01721	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC033284	Town of Bedford Department of Public Works 314 Great Road Bedford, MA 01730	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC043284	Town of Belmont Department of Public Works 19 Moore Street Belmont, MA 02478	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC063284	Town of Braintree Department of Public Works P.O. Box 850903 Braintree, MA 02185-0903	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC073284	Town of Brookline Department of Public Works 333 Washington Street Brookline, MA 02445	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC083284	Town of Burlington Department of Public Works 25 Center Street Burlington, MA 01803	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC103284	Town of Canton Department of Public Works 801 Washington Street Canton, MA 02021	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC123284	Town of Dedham Department of Public Works 55 River Street Dedham, MA 02026	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.

Permit Number	Co-permittee	Responsibilities
MAC133284	City of Everett Department of Public Works 19 Norman Street Everett, MA 02149	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC143284	City of Framingham Department of Public Works 110 Western Avenue Framingham, MA 01701	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC153284	Town of Hingham Department of Public Works 25 Bare Cove Park Drive Hingham, MA 02043	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC163284	Town of Holbrook Department of Public Works 50 N. Franklin Street Holbrook, MA 02343	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC173284	Town of Lexington Water & Sewer Department 201 Bedford Street Lexington, MA 02420	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC183284	City of Malden Department of Public Works 356 Commercial Street Malden, MA 02148	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC193284	City of Medford Department of Public Works 21 James Street Medford, MA 02155	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC203284	City of Melrose Department of Public Works 72 Tremont St. Melrose, MA 02176	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC213284	Town of Milton Department of Public Works 629 Randolph Avenue Milton, MA 02186	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC223284	Town of Natick Director of Public Works 75 West Street Natick, MA 01760	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.

Permit Number	Co-permittee	Responsibilities
MAC233284	Town of Needham Department of Public Works 500 Dedham Avenue Needham, MA 02492	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC243284	City of Newton Department of Public Works 1000 Commonwealth Avenue Newton, MA 02459	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC253284	Town of Norwood Department of Public Works 566 Washington Street Norwood, MA 02062	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC263284	City of Quincy Department of Public Works 55 Sea Street Quincy, MA 02169	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC273284	Town of Randolph Department of Public Works 41 South Main Street Randolph, MA 02368	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC283284	Town of Reading Department of Public Works 16 Lowell Street Reading, MA 01867	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC293284	City of Revere Department of Public Works 321 Rear Charger Street Revere, MA 02151	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC313284	Town of Stoneham Public Works Department 16 Pine Street Stoneham, MA 02180	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC323284	Town of Stoughton Department of Public Works 950 Central Street Stoughton, MA 02072	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC333284	Town of Wakefield Department of Public Works 1 Lafayette Street Wakefield, MA 01880	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.

Permit Number	Co-permittee	Responsibilities
MAC343284	Town of Walpole Department of Public Works 135 School Street Walpole, MA 02081	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC353284	City of Waltham Water & Sewer Division 165 Lexington Street Waltham, MA 02452	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC363284	Town of Watertown Department of Public Works 124 Orchard Street Watertown, MA 02472	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC373284	Town of Wellesley Department of Public Works 20 Municipal Way Wellesley, MA 02481	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC383284	Town of Westwood Department of Public Works 50 Carby Street Westwood, MA 02090	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC393284	Town of Weymouth Department of Public Works 120 Winter Street Weymouth, MA 02188	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC403284	Town of Wilmington Water & Sewer Division 121 Glen Road Wilmington, MA 01887	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC413284	Town of Winchester Department of Public Works 15 Lake Street Winchester, MA 01890	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC423284	Town of Winthrop Department of Public Works 100 Kennedy Drive Winthrop, MA 02152	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.
MAC433284	City of Woburn Public Works Sewer Division 50 North Warren Street Woburn, MA 01801	Draft Permit Part I.C., Part I.E., Part I.F., and Part I. J.

**MWRA Sewer Member Communities
and CSO-responsible Co-permittees
to NPDES Permit MA0103284
with individual permit number**

Permit Number	Co-permittee	Responsibilities
MAC053284	City of Boston Boston Water and Sewer Commission 980 Harrison Avenue Boston, MA 02119	Draft Permit Part I.B., Part I.C., Part I.D., Part I.E., Part I.F., and Part I.J.
MAC093284	City of Cambridge Department of Public Works 147 Hampshire Street Cambridge, MA 02139	Draft Permit Part I.B., Part I.C., Part I.D., Part I.E., Part I.F., and Part I.J.
MAC113284	City of Chelsea Department of Public Works 500 Broadway Chelsea, MA 02150	Draft Permit Part I.B., Part I.C., Part I.D., Part I.E., Part I.F., and Part I.J.
MAC303284	City of Somerville Department of Public Works 17 Franey Street Somerville, MA 02144	Draft Permit Part I.B., Part I.C., Part I.D., Part I.E., Part I.F., and Part I.J.

Outfall No.	Responsible Permittee or Co-permittee	Receiving Water	Latitude and Longitude
MWR003	Massachusetts Water Resources Authority	Alewife Brook	42° 22' 8" N, 71° 3' 39" W
MWR010	Massachusetts Water Resources Authority	Charles River	42° 21' 6" N, 71° 6' 22" W
MWR018	Massachusetts Water Resources Authority	Charles River	42° 21' 10" N, 71° 5' 15" W
MWR019	Massachusetts Water Resources Authority	Charles River	42° 21' 18" N, 71° 4' 51" W
MWR020	Massachusetts Water Resources Authority	Charles River	42° 21' 24" N, 71° 4' 34" W
MWR023	Massachusetts Water Resources Authority	Charles River	42° 21' 6" N, 71° 5' 33" W
BOS003	Boston Water and Sewer Commission	Boston Inner Harbor	42° 21' 28" N, 71° 1' 40" W
BOS004	Boston Water and Sewer Commission	Boston Inner Harbor	42° 21' 53" N, 71° 1' 37" W
BOS009	Boston Water and Sewer Commission	Boston Inner Harbor	42° 22' 13" N, 71° 2' 39" W
BOS010	Boston Water and Sewer Commission	Boston Inner Harbor	42° 22' 24" N, 71° 2' 32" W
BOS012	Boston Water and Sewer Commission	Boston Inner Harbor	42° 22' 40" N, 71° 2' 32" W
BOS013	Boston Water and Sewer Commission	Boston Inner Harbor (Chelsea River)	42° 23' 3" N, 71° 2' 22" W
BOS014	Boston Water and Sewer Commission	Boston Inner Harbor (Chelsea River)	42° 22' 58" N, 71° 1' 38" W
BOS017	Boston Water and Sewer Commission	Mystic River	42° 23' 8" N, 71° 4' 8" W
BOS019	Boston Water and Sewer Commission	Mystic River	42° 22' 48" N, 71° 3' 4" W
BOS046	Boston Water and Sewer Commission	Muddy River	42° 20' 30" N, 71° 5' 34" W
BOS057	Boston Water and Sewer Commission	Boston Inner Harbor	42° 21' 51" N, 71° 2' 58" W
BOS060	Boston Water and Sewer Commission	Boston Inner Harbor	42° 21' 34" N, 71° 2' 54" W
BOS062	Boston Water and Sewer Commission	Fort Point Channel	42° 21' 16" N, 71° 3' 4" W
BOS064	Boston Water and Sewer Commission	Fort Point Channel	42° 21' 5" N, 71° 3' 10" W
BOS065	Boston Water and Sewer Commission	Fort Point Channel	42° 20' 55" N, 71° 3' 16" W

Outfall No.	Responsible Permittee or Co-permittee	Receiving Water	Latitude and Longitude
BOS068	Boston Water and Sewer Commission	Fort Point Channel	42° 20' 42" N, 71° 3' 34" W
BOS070	Boston Water and Sewer Commission	Fort Point Channel	42° 20' 34" N, 71° 3' 40" W
BOS073	Boston Water and Sewer Commission	Fort Point Channel	42° 20' 52" N, 71° 3' 13" W
BOS076	Boston Water and Sewer Commission	Reserved Channel	42° 20' 23" N, 71° 2' 31" W
BOS078	Boston Water and Sewer Commission	Reserved Channel	42° 20' 19" N, 71° 2' 24" W
BOS079	Boston Water and Sewer Commission	Reserved Channel	42° 20' 31" N, 71° 2' 8" W
BOS080	Boston Water and Sewer Commission	Reserved Channel	42° 20' 30" N, 71° 1' 31" W
BOS081	Boston Water and Sewer Commission	North Dorchester Bay	42° 19' 57" N, 71° 1' 30" W
BOS082	Boston Water and Sewer Commission	North Dorchester Bay	42° 19' 47" N, 71° 1' 49" W
BOS084	Boston Water and Sewer Commission	North Dorchester Bay	42° 19' 43" N, 71° 2' 29" W
BOS085	Boston Water and Sewer Commission	North Dorchester Bay	42° 19' 40" N, 71° 2' 43" W
BOS086	Boston Water and Sewer Commission	North Dorchester Bay	42° 19' 36" N, 71° 2' 44" W
CAM001	City of Cambridge	Alewife Brook	42° 24' 7" N, 71° 8' 7" W
CAM002 • CAM002A • CAM002B (temporarily closed)	City of Cambridge	Alewife Brook	42° 24' 4" N, 71° 8' 10" W
CAM005	City of Cambridge	Charles River	42° 22' 25" N, 71° 7' 58" W
CAM007	City of Cambridge	Charles River	42° 22' 24" N, 71° 7' 37" W
CAM009 (temporarily closed)	City of Cambridge	Charles River	42° 22' 10" N, 71° 07' 24" W
CAM011 (temporarily closed)	City of Cambridge	Charles River	42° 22' 8" N, 71° 07' 4" W

Outfall No.	Responsible Permittee or Co-permittee	Receiving Water	Latitude and Longitude
CAM017	City of Cambridge	Charles River	42° 21' 53" N, 71° 4' 35" W
CAM401A	City of Cambridge	Alewife Brook	42° 23' 44" N, 71° 8' 38" W
CAM401B	City of Cambridge	Alewife Brook	42° 24' 4" N, 71° 8' 10" W
CHE003	City of Chelsea	Mystic River	42° 23' 13" N, 71° 2' 27" W
CHE004	City of Chelsea	Mystic River	42° 23' 12" N, 71° 2' 21" W
CHE008	City of Chelsea	Chelsea River	42° 23' 41" N, 71° 1' 9" W
SOM001A	City of Somerville	Alewife Brook	42° 24' 9" N, 71° 8' 6" W
SOM007A	City of Somerville	Mystic River	42° 23' 38" N, 71° 4' 34" W

Parameter	Flow	Flow	Flow	Flow	CBOD5/NH 3-N	CBOD5/NH 3-N	CBOD5/NH 3-N
	Monthly Ave	Daily Max	Monthly Ave	ANNL AVG	Monthly Ave	Weekly Ave	Daily Max
Units	MGD	MGD	MGD	MGD	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	436	25	40	Report
Minimum	201.7	235.7	195.4	246.5	3.5	4.6	7.5
Maximum	568.2	1002.8	483.9	319.6	10.9	13.9	39.4
Median	322.1	488.65	298.1	283.55	6.2	7.8	13.45
No. of Violations	N/A	N/A	N/A	0	0	0	N/A
1/31/2018	353.9	723.1	305.1	277.1	8.8	11.9	16.5
2/28/2018	378.1	521.8	365.6	279.8	8.2	9.6	14.2
3/31/2018	493.3	950.4	405.5	282.9	6.5	8.5	18.7
4/30/2018	425	808.4	370.2	279.9	6.6	8.5	22.3
5/31/2018	323.2	442.5	316	278.3	7.6	10.4	20.2
6/30/2018	266.7	424.3	250.6	272.7	6.1	6.2	8.1
7/31/2018	256.5	490.5	240.6	271.2	7.2	12.1	39.4
8/31/2018	273	432.6	248.8	274.2	4.7	5	9.6
9/30/2018	296.3	491.8	247.6	277.2	4.7	5.7	12.4
10/31/2018	321	564.9	291.6	284.2	4.9	7.4	23.3
11/30/2018	568.2	795.8	483.9	296	5.2	6.4	15.7
12/31/2018	382.9	617	359	307.9	6.3	8.4	11.3
1/31/2019	372.5	792.4	343.3	311.2	9.5	12.2	19.4
2/28/2019	368.7	488.5	329.8	309.5	10.9	10.4	19.6
3/31/2019	375.4	500	370.1	312	9.6	13.9	17.2
4/30/2019	420.3	754.7	346.5	309	5.7	7	12.2
5/31/2019	361.7	460.5	355.2	312.3	6.4	6.5	13.3
6/30/2019	303.7	401.1	284.2	316.4	6.7	8.1	10.6
7/31/2019	304.7	471.4	274.5	319.6	4.4	6	12.8
8/31/2019	271	477.8	250.9	318.8	5.5	7	13.3
9/30/2019	243.6	355.7	233.1	315	5.7	7	14.4
10/31/2019	276.3	512.1	244.4	310.8	5.5	6.4	13
11/30/2019	294.2	560.3	268.5	300.4	6.1	7.3	13
12/31/2019	420.8	724.6	415.9	294.5	5.6	6	14.3
1/31/2020	333.9	468.9	332.7	294	6.2	8.8	13.5
2/29/2020	320.9	416.3	300.3	292.8	6.9	8.8	11.8

Parameter	Flow	Flow	Flow	Flow	CBOD5/NH 3-N	CBOD5/NH 3-N	CBOD5/NH 3-N
	Monthly Ave	Daily Max	Monthly Ave	ANNL AVG	Monthly Ave	Weekly Ave	Daily Max
Units	MGD	MGD	MGD	MGD	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	436	25	40	Report
Minimum	201.7	235.7	195.4	246.5	3.5	4.6	7.5
Maximum	568.2	1002.8	483.9	319.6	10.9	13.9	39.4
Median	322.1	488.65	298.1	283.55	6.2	7.8	13.45
No. of Violations	N/A	N/A	N/A	0	0	0	N/A
3/31/2020	325.3	536.7	299.2	286.6	7.4	8.7	13.5
4/30/2020	432.2	638.9	401.3	290.5	6.3	7.3	11
5/31/2020	331.4	552.7	309.7	288	7.2	9.8	11.8
6/30/2020	251.9	382.6	236.3	282.9	6.8	9.3	12.7
7/31/2020	234.9	297.6	229.8	277.9	5.1	6.9	16.5
8/31/2020	213.3	298.7	206.8	273.2	5.4	6.8	18.8
9/30/2020	204.1	253.6	199.8	268.6	5	5.9	14.6
10/31/2020	237	412.2	202	264.8	5.5	6.8	13.4
11/30/2020	278.4	568.3	242.8	262.8	5.4	6.2	15.5
12/31/2020	428.2	908.7	387.2	267.3	5.9	10.2	29.9
1/31/2021	331.6	544.5	314.9	266.7	5.9	9.5	16.5
2/28/2021	329.4	438.6	289.3	265	7.3	9.5	13.1
3/31/2021	306.9	394.5	297.8	265	6.8	7.9	10.6
4/30/2021	346.2	677.4	309.6	260.4	6.4	8.2	18.3
5/31/2021	333	488.8	291.2	257.8	5.1	8.5	17.7
6/30/2021	290.9	411	280.2	262	4.8	5.6	10.5
7/31/2021	490.6	1002.8	378.7	269.9	4.7	7.4	15.6
8/31/2021	347.1	564.6	300.1	279.6	3.5	4.8	10.3
9/30/2021	404.4	969.1	344.6	294.7	3.9	4.6	9.5
10/31/2021	358.1	626.4	305.7	304.9	5.1	8.1	13.4
11/30/2021	340	498.9	328.5	313.6	5.1	5.9	9
12/31/2021	280.8	385	270.5	305	7.8	8.7	17.4
1/31/2022	292.8	466	282.9	302.4	8.3	10.5	19.5
2/28/2022	396.4	555	368.9	304.8	7.4	11.3	17.3
3/31/2022	359	456.1	339.8	308.3	8.5	9.5	13
4/30/2022	319.1	420.1	305.5	308	6.5	7.4	9.3

Parameter	Flow	Flow	Flow	Flow	CBOD5/NH 3-N	CBOD5/NH 3-N	CBOD5/NH 3-N
	Monthly Ave	Daily Max	Monthly Ave	ANNL AVG	Monthly Ave	Weekly Ave	Daily Max
Units	MGD	MGD	MGD	MGD	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	436	25	40	Report
Minimum	201.7	235.7	195.4	246.5	3.5	4.6	7.5
Maximum	568.2	1002.8	483.9	319.6	10.9	13.9	39.4
Median	322.1	488.65	298.1	283.55	6.2	7.8	13.45
No. of Violations	N/A	N/A	N/A	0	0	0	N/A
5/31/2022	256	303.6	253.6	302.5	6.4	7	10.2
6/30/2022	233.6	338.3	224.7	297	7.9	7.7	38.1
7/31/2022	205.6	235.7	202.2	282.7	6.2	11.4	8.7
8/31/2022	201.7	272	195.4	272	5.8	6.4	9.6
9/30/2022	223.3	324.9	208.9	262.8	5.3	5.7	7.5
10/31/2022	252.1	423.3	227.2	256.6	5.2	6.8	10.2
11/30/2022	241	358.7	224.5	246.5	8.9	9	16.1
12/31/2022	339.2	638.3	298.4	248.3	6.7	10	15.1

Parameter	CBOD5/NH3-N % Removal	TSS	TSS	TSS	TSS % Removal	Solids, settleable
	Monthly Ave	Monthly Ave	Weekly Ave	Daily Max	Monthly Ave	Weekly Ave
Units	%	mg/L	mg/L	mg/L	%	mL/L
Effluent Limit	Report	30	45	Report	Report	Report
Minimum	89.2	6.1	7	14.6	85.7	0
Maximum	97	20.7	24.8	66.3	97.3	0.1
Median	94.7	9.8	13.15	25.9	94.85	0.01
No. of Violations	N/A	0	0	N/A	N/A	N/A
1/31/2018	92.1	16.2	23	38.5	92.3	0.01
2/28/2018	91.9	15	18.3	23	91.8	0.01
3/31/2018	91.1	16	21.1	35.5	88.8	0
4/30/2018	93.1	17.1	24.8	54.4	91.3	0.01
5/31/2018	93.9	11.7	15.9	29.2	94.9	0.01
6/30/2018	95.9	8.9	9.9	19.2	96.7	0.04
7/31/2018	95.1	9.2	11.5	33.6	95.9	0
8/31/2018	97.0	7.9	9.4	18.3	97.1	0
9/30/2018	97.0	8.9	11	30.8	97.3	0.01
10/31/2018	96.1	8.6	12.2	38	96.8	0
11/30/2018	94.6	9.2	10.5	16.5	95.4	0.07
12/31/2018	95.0	10.7	14.3	18.8	94.7	0
1/31/2019	90.7	16.5	23.5	36.6	88.5	0
2/28/2019	89.2	20.7	24.2	39.2	85.7	0
3/31/2019	90.3	18.6	24.2	26.8	86	0.01
4/30/2019	94.3	11.4	15.6	28	92.7	0.01
5/31/2019	94.2	10.9	13	21.4	93.8	0
6/30/2019	95.0	11.2	13.8	22.8	94.2	0.01
7/31/2019	95.7	7.4	9	23.1	96	0.01
8/31/2019	95.8	9.6	12.5	34.4	95.5	0.04
9/30/2019	96.6	10.6	13.7	24.7	95.8	0.01
10/31/2019	96.0	8.5	11	28.5	96	0.01
11/30/2019	95.8	9.6	12.4	33.7	96.1	0
12/31/2019	94.9	9.3	10.8	24.1	94.8	0
1/31/2020	95.1	9.6	17.4	21.7	95	0
2/29/2020	95.1	14.4	15.9	24.4	94.7	0.01

Parameter	CBOD5/NH3-N % Removal	TSS	TSS	TSS	TSS % Removal	Solids, settleable
	Monthly Ave	Monthly Ave	Weekly Ave	Daily Max	Monthly Ave	Weekly Ave
Units	%	mg/L	mg/L	mg/L	%	mL/L
Effluent Limit	Report	30	45	Report	Report	Report
Minimum	89.2	6.1	7	14.6	85.7	0
Maximum	97	20.7	24.8	66.3	97.3	0.1
Median	94.7	9.8	13.15	25.9	94.85	0.01
No. of Violations	N/A	0	0	N/A	N/A	N/A
3/31/2020	94.0	14.5	17.3	33.2	92.8	0
4/30/2020	92.6	8.2	10.8	16.4	94	0.06
5/31/2020	93.1	9.4	12.2	18.2	94.1	0.01
6/30/2020	94.7	9.9	13.2	26.4	95.3	0.03
7/31/2020	96.0	6.1	8.9	14.8	97.1	0
8/31/2020	96.3	6.6	9.3	26.2	96.9	0
9/30/2020	96.9	7.1	7	24.2	96.1	0
10/31/2020	96.4	7.4	10.8	28.7	96.5	0.1
11/30/2020	95.7	7.6	9.2	27	96	0.03
12/31/2020	91.9	9.9	13.8	34.5	91.8	0.04
1/31/2021	94.2	6.4	7.9	17.8	96.1	0.03
2/28/2021	93.4	12.2	14.1	40	92.4	0
3/31/2021	93.4	10.4	11.7	16	94.2	0.01
4/30/2021	93.8	12.7	15.2	20.5	92.8	0.07
5/31/2021	95	9.5	15.4	28	95	0.01
6/30/2021	95.7	7.8	9.7	24.8	96.2	0.01
7/31/2021	93.6	8.5	14.2	30.8	93.6	0.01
8/31/2021	96.3	6.8	7.5	20	96.1	0.01
9/30/2021	95.3	6.7	10.7	22.6	95.3	0.1
10/31/2021	94.8	11.7	18.5	29	93.3	0.04
11/30/2021	94.6	7	7.8	14.6	95.4	0.01
12/31/2021	94.6	11.6	13.7	25.8	95.4	0.01
1/31/2022	92.6	13.9	19.3	28	92.6	0.07
2/28/2022	91.4	15	22.3	31	90	0
3/31/2022	91.2	16.6	19.7	24.4	90.9	0.01
4/30/2022	93.6	13.9	18.3	26	92.4	0.01

Parameter	CBOD5/NH3-N % Removal	TSS	TSS	TSS	TSS % Removal	Solids, settleable
	Monthly Ave	Monthly Ave	Weekly Ave	Daily Max	Monthly Ave	Weekly Ave
Units	%	mg/L	mg/L	mg/L	%	mL/L
Effluent Limit	Report	30	45	Report	Report	Report
Minimum	89.2	6.1	7	14.6	85.7	0
Maximum	97	20.7	24.8	66.3	97.3	0.1
Median	94.7	9.8	13.15	25.9	94.85	0.01
No. of Violations	N/A	0	0	N/A	N/A	N/A
5/31/2022	94.5	12.3	16.9	21.8	94.4	0.01
6/30/2022	94.1	12.7	13.1	66.3	94	0
7/31/2022	95.5	10.2	19.7	23.2	95.1	0
8/31/2022	96	8.9	11	15.4	96.1	0
9/30/2022	96.3	8.3	10.4	15.8	96.5	0
10/31/2022	96.3	7.9	12.1	26	96.5	0
11/30/2022	94.7	11	13.6	20.7	94.8	0
12/31/2022	93.9	9.7	11.7	26	94.5	0

Parameter	Solids, settleable	pH	pH	Fecal Coliform	Fecal Coliform	Coliform, fecal - % sample exceeds limit
	Daily Max	Minimum	Maximum	WKLY GEO	Daily Max	Maximum
Units	mL/L	SU	SU	#/100mL	#/100mL	%
Effluent Limit	Report	6	9	14000	14000	10
Minimum	0	6.2	6.8	5	8	0
Maximum	0.6	6.6	7.2	26	341	2.2
Median	0.1	6.5	6.9	8	27.5	0
No. of Violations	N/A	0	0	0	0	0
1/31/2018	0.1	6.5	7	8	44	0
2/28/2018	0.1	6.5	7	6	10	0
3/31/2018	0	6.5	7	9	23	0
4/30/2018	0.1	6.5	6.9	9	15	0
5/31/2018	0.1	6.3	6.9	7	11	0
6/30/2018	0.3	6.6	6.9	6	8	0
7/31/2018	0	6.6	7.1	6	11	0
8/31/2018	0.1	6.6	7	6	15	0
9/30/2018	0.1	6.6	7	7	29	0
10/31/2018	0	6.5	7	7	43	0
11/30/2018	0.5	6.5	7	16	63	0
12/31/2018	0	6.4	7.2	12	70	0
1/31/2019	0	6.4	7.1	13	103	0
2/28/2019	0	6.4	6.9	9	85	0
3/31/2019	0.1	6.3	6.9	9	36	0
4/30/2019	0.1	6.4	6.9	9	19	0
5/31/2019	0.1	6.5	6.9	7	18	0
6/30/2019	0.1	6.4	6.9	10	57	0
7/31/2019	0.1	6.4	6.9	8	25	0
8/31/2019	0.3	6.5	7	7	12	0
9/30/2019	0.1	6.5	7.1	6	10	0
10/31/2019	0.1	6.5	7.1	8	54	0
11/30/2019	0	6.6	7.1	9	23	0
12/31/2019	0	6.5	7	9	45	0
1/31/2020	0	6.5	7	9	54	1
2/29/2020	0.1	6.5	6.9	8	31	0

Parameter	Solids, settleable	pH	pH	Fecal Coliform	Fecal Coliform	Coliform, fecal - % sample exceeds limit
	Daily Max	Minimum	Maximum	WKLY GEO	Daily Max	Maximum
Units	mL/L	SU	SU	#/100mL	#/100mL	%
Effluent Limit	Report	6	9	14000	14000	10
Minimum	0	6.2	6.8	5	8	0
Maximum	0.6	6.6	7.2	26	341	2.2
Median	0.1	6.5	6.9	8	27.5	0
No. of Violations	N/A	0	0	0	0	0
3/31/2020	0	6.4	6.9	6	9	0
4/30/2020	0.2	6.3	6.9	7	20	0
5/31/2020	0	6.4	6.9	10	124	1
6/30/2020	0.1	6.3	6.9	7	28	0
7/31/2020	0	6.3	6.9	5	9	0
8/31/2020	0	6.4	6.9	5	9	0
9/30/2020	0.3	6.6	6.9	5	45	0
10/31/2020	0.1	6.4	7.1	8	102	1.1
11/30/2020	0.1	6.5	6.9	6	8	0
12/31/2020	0.3	6.4	6.9	7	18	0
1/31/2021	0.1	6.4	6.9	7	16	0
2/28/2021	0	6.5	7	7	46	0
3/31/2021	0.1	6.3	6.8	6	8	0
4/30/2021	0.5	6.4	6.9	7	13	0
5/31/2021	0	6.5	6.9	6	15	0
6/30/2021	0.1	6.5	7	7	41	0
7/31/2021	0.1	6.2	6.9	14	126	0
8/31/2021	0.1	6.5	6.9	26	320	2.2
9/30/2021	0.6	6.5	6.9	25	260	0
10/31/2021	0.1	6.5	6.9	14	29	0
11/30/2021	0.1	6.4	6.9	8	24	0
12/31/2021	0.5	6.4	7.1	6	9	0
1/31/2022	0	6.5	7	8	91	0
2/28/2022	0.1	6.5	7	10	84	0
3/31/2022	0	6.5	7	11	35	0
4/30/2022	0.1	6.5	6.9	8	22	0

Parameter	Solids, settleable	pH	pH	Fecal Coliform	Fecal Coliform	Coliform, fecal - % sample exceeds limit
	Daily Max	Minimum	Maximum	WKLY GEO	Daily Max	Maximum
Units	mL/L	SU	SU	#/100mL	#/100mL	%
Effluent Limit	Report	6	9	14000	14000	10
Minimum	0	6.2	6.8	5	8	0
Maximum	0.6	6.6	7.2	26	341	2.2
Median	0.1	6.5	6.9	8	27.5	0
No. of Violations	N/A	0	0	0	0	0
5/31/2022	0.1	6.6	6.9	8	11	0
6/30/2022	0	6.5	6.9	10	53	0
7/31/2022	0	6.5	7	7	13	0
8/31/2022	0	6.5	6.9	6	14	0
9/30/2022	0	6.5	6.9	8	33	0
10/31/2022	0	6.4	6.9	7	31	0
11/30/2022	0	6.4	6.9	7	27	0
12/31/2022	0	6.5	6.9	12	341	0

Parameter	TRC	TRC	Ammonia	Nitrate	Nitrite	TKN	Arsenic, total (as As)
	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Monthly Ave	Monthly Ave	Monthly Ave
Units	ug/L	ug/L	mg/L	mg/L	mg/L	mg/L	ug/L
Effluent Limit	456	631	Report	Report	Report	Report	Report
Minimum	0	0	12.82	0	0.03	13.68	0
Maximum	2.15	53.33	39.31	1.17	1.53	41.25	0.849
Median	0	0	24.89	0.155	0.44	26.3	0
No. of Violations	0	0	N/A	N/A	N/A	N/A	N/A
1/31/2018	0	0	28.08	0.12	0.2	28.7	0
2/28/2018	0	0	21.74	0.08	0.17	23.86	0
3/31/2018	0.86	13.33	16.9	0.43	0.68	18.36	0
4/30/2018	0	0	21.66	0.27	0.44	21.58	0
5/31/2018	0	0	25.29	0.15	0.35	25.42	0
6/30/2018	0	0	32.84	0.06	0.04	33.66	0
7/31/2018	0	0	29.6	0.11	0.22	28.22	0
8/31/2018	0	0	29.88	0.11	0.99	28.97	0
9/30/2018	0	0	28.59	0.05	0.17	26.28	0
10/31/2018	0	0	26.33	0.08	0.35	26.32	0
11/30/2018	0	0	12.91	0.27	1.47	13.68	0
12/31/2018	0	0	18.43	0.19	0.83	19.56	0
1/31/2019	0	0	22.55	0.16	0.95	26.5	0
2/28/2019	0	0	22.89	0.16	1.04	25.4	0
3/31/2019	0	0	24.27	0.11	0.57	25.32	0
4/30/2019	1.78	53.33	22.17	0.39	1.41	21.98	0
5/31/2019	0	0	21.91	0.26	1.08	23.73	0
6/30/2019	0	0	30.29	0.06	0.33	34.14	0
7/31/2019	0	0	25.66	0.13	0.75	25.55	0
8/31/2019	0.54	16.67	27.53	0.06	0.51	32.66	0
9/30/2019	0	0	33.93	0.07	0.44	37.46	0
10/31/2019	0	0	33.44	0.13	0.66	36.35	0
11/30/2019	0	0	26.59	0.1	0.17	27.82	0
12/31/2019	0.54	16.67	19.9	0.21	1.44	19.96	0.65
1/31/2020	2.15	43.33	22.56	0.17	1	24.58	0
2/29/2020	0	0	24.46	0.13	0.21	27.7	0

Parameter	TRC	TRC	Ammonia	Nitrate	Nitrite	TKN	Arsenic, total (as As)
	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Monthly Ave	Monthly Ave	Monthly Ave
Units	ug/L	ug/L	mg/L	mg/L	mg/L	mg/L	ug/L
Effluent Limit	456	631	Report	Report	Report	Report	Report
Minimum	0	0	12.82	0	0.03	13.68	0
Maximum	2.15	53.33	39.31	1.17	1.53	41.25	0.849
Median	0	0	24.89	0.155	0.44	26.3	0
No. of Violations	0	0	N/A	N/A	N/A	N/A	N/A
3/31/2020	0	0	24.97	0.15	0.44	26.54	0
4/30/2020	0	0	16.51	0.46	1.31	18.14	0
5/31/2020	0	0	22.69	0.21	0.44	26.56	0
6/30/2020	0	0	30.99	0.17	0.21	34.1	0
7/31/2020	0	0	31.04	0.03	0.12	31.42	0
8/31/2020	0	0	34.56	0.01	0.12	34.74	0
9/30/2020	0	0	34.7	0	0.03	38.72	0
10/31/2020	0	0	33.66	0	0.42	35.14	0
11/30/2020	0	0	28.45	0.03	0.17	34.34	0
12/31/2020	1.08	33.33	17.27	0.42	1.38	19.4	0.695
1/31/2021	0.54	16.67	22.47	1.17	0.78	22.74	0
2/28/2021	0	0	21.54	0.03	0.46	23.52	0
3/31/2021	0	0	25.03	0.02	0.43	24.83	0
4/30/2021	0	0	22.83	0.15	0.61	23.28	0
5/31/2021	0	0	20.46	1.1	0.61	23.42	0
6/30/2021	0	0	22.59	0.41	0.26	23.95	0
7/31/2021	0	0	12.82	0.53	1.53	15.43	0
8/31/2021	0	0	20.77	0.23	0.5	22.32	0
9/30/2021	0	0	19.61	0.23	0.4	22.23	0.403
10/31/2021	0	0	21.59	0.4	0.48	24.22	0.401
11/30/2021	0	0	19.04	0.83	0.33	20.52	0
12/31/2021	0	0	29.5	0.57	0.11	29.7	0
1/31/2022	0	0	26.89	0.27	0.35	29.06	0
2/28/2022	0	0	21.79	0.27	0.57	23.9	0
3/31/2022	0.43	13.33	23.16	0.62	0.64	26.02	0
4/30/2022	0	0	24.16	0.34	0.54	27	0

Parameter	TRC	TRC	Ammonia	Nitrate	Nitrite	TKN	Arsenic, total (as As)
	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Monthly Ave	Monthly Ave	Monthly Ave
Units	ug/L	ug/L	mg/L	mg/L	mg/L	mg/L	ug/L
Effluent Limit	456	631	Report	Report	Report	Report	Report
Minimum	0	0	12.82	0	0.03	13.68	0
Maximum	2.15	53.33	39.31	1.17	1.53	41.25	0.849
Median	0	0	24.89	0.155	0.44	26.3	0
No. of Violations	0	0	N/A	N/A	N/A	N/A	N/A
5/31/2022	0	0	28.59	0.86	0.36	31.78	0.473
6/30/2022	0	0	33.38	0.92	0.1	36.5	0.439
7/31/2022	0.43	13.33	34.77	0.05	0.16	41.25	0
8/31/2022	0	0	39.31	0.01	0.33	38.7	0.451
9/30/2022	0	0	31.13	0.14	1.5	36.6	0.849
10/31/2022	0	0	33.31	0.06	0.26	33.74	0
11/30/2022	0	0	35.63	0.12	0.58	32.32	0
12/31/2022	1.51	23.33	24.81	0.32	0.44	23.34	0

Parameter	Arsenic, total (as As)	Copper	Copper	Mercury, total (as Hg)	Mercury, total (as Hg)
	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report
Minimum	0	2.09	2.51	0.00205	0.00223
Maximum	1.39	13.15	36.2	0.01143	0.0317
Median	0	5.22	6.32	0.003595	0.004415
No. of Violations	N/A	N/A	N/A	N/A	N/A
1/31/2018	0	6.85	7.42	0.00381	0.00472
2/28/2018	0	6.96	8.72	0.00571	0.00952
3/31/2018	0	7.97	11.4	0.00534	0.00662
4/30/2018	0	6.83	8.02	0.00558	0.00617
5/31/2018	0	6.65	6.81	0.006	0.00717
6/30/2018	0	3.78	4.76	0.00346	0.00426
7/31/2018	0	4.05	9.18	0.00413	0.0111
8/31/2018	0	3.84	4.61	0.0027	0.00315
9/30/2018	0	4.57	6.24	0.00279	0.00309
10/31/2018	0	4.12	4.67	0.00301	0.00344
11/30/2018	0	4.86	6.25	0.00398	0.00527
12/31/2018	0	4.24	5.26	0.00377	0.00484
1/31/2019	0	7.35	9.58	0.00444	0.00492
2/28/2019	0	7.78	8.99	0.00555	0.00613
3/31/2019	0	7.69	8.38	0.00623	0.00638
4/30/2019	0	6.6	7.35	0.00512	0.00587
5/31/2019	0	5.2	5.63	0.0033	0.0035
6/30/2019	0	6.12	7.06	0.00639	0.00837
7/31/2019	0	3.55	3.91	0.00228	0.00246
8/31/2019	0	5	10.2	0.00754	0.013
9/30/2019	0	4.32	5.12	0.00281	0.0032
10/31/2019	0	5.24	6.51	0.0026	0.00279
11/30/2019	0	4.25	4.77	0.00293	0.00344
12/31/2019	1.3	4.48	5.33	0.00381	0.00617
1/31/2020	0	4.06	5.57	0.00286	0.00368
2/29/2020	0	5.93	8.83	0.00414	0.00489

Parameter	Arsenic, total (as As)	Copper	Copper	Mercury, total (as Hg)	Mercury, total (as Hg)
	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report
Minimum	0	2.09	2.51	0.00205	0.00223
Maximum	1.39	13.15	36.2	0.01143	0.0317
Median	0	5.22	6.32	0.003595	0.004415
No. of Violations	N/A	N/A	N/A	N/A	N/A
3/31/2020	0	6.82	7.94	0.00391	0.00439
4/30/2020	0	4.71	5.85	0.00341	0.00394
5/31/2020	0	5.75	6.94	0.00302	0.00326
6/30/2020	0	5.4	5.99	0.00464	0.00556
7/31/2020	0	2.09	2.51	0.00205	0.00223
8/31/2020	0	5.11	5.62	0.00305	0.00367
9/30/2020	0	4.56	4.84	0.00276	0.00322
10/31/2020	0	4.67	5.37	0.003	0.00392
11/30/2020	0	4.85	6.08	0.0035	0.00414
12/31/2020	1.39	13.15	36.2	0.01143	0.0317
1/31/2021	0	4.11	4.58	0.00256	0.00292
2/28/2021	0	6.05	7.43	0.00369	0.00434
3/31/2021	0	5.63	5.89	0.0042	0.00487
4/30/2021	0	5.64	6.8	0.00495	0.00616
5/31/2021	0	5.29	5.65	0.00379	0.00444
6/30/2021	0	2.99	3.44	0.00395	0.00534
7/31/2021	0	4.88	5.74	0.00349	0.00453
8/31/2021	0	3.99	5.02	0.00348	0.00397
9/30/2021	0.806	5.2	7.58	0.00299	0.00368
10/31/2021	0.802	4.67	5.3	0.00309	0.00378
11/30/2021	0	4.38	4.92	0.00259	0.00292
12/31/2021	0	6.08	7.66	0.00309	0.00337
1/31/2022	0	5.28	5.49	0.00336	0.00402
2/28/2022	0	6.21	7.01	0.0042	0.00496
3/31/2022	0	8	8.37	0.0087	0.0104
4/30/2022	0	7.09	7.88	0.00611	0.00683

Parameter	Arsenic, total (as As)	Copper	Copper	Mercury, total (as Hg)	Mercury, total (as Hg)
	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report
Minimum	0	2.09	2.51	0.00205	0.00223
Maximum	1.39	13.15	36.2	0.01143	0.0317
Median	0	5.22	6.32	0.003595	0.004415
No. of Violations	N/A	N/A	N/A	N/A	N/A
5/31/2022	0.946	7.64	8.13	0.00599	0.00738
6/30/2022	0.877	6.02	6.44	0.00302	0.00333
7/31/2022	0	6.32	7.84	0.00398	0.00546
8/31/2022	0.902	5.33	6.39	0.00399	0.00457
9/30/2022	0.874	4.87	6.77	0.00335	0.00431
10/31/2022	0	4.79	6.09	0.00299	0.00326
11/30/2022	0	4.65	5.51	0.00291	0.00349
12/31/2022	0	5.75	6.46	0.00339	0.0053

Parameter	Cyanide, total recoverable	Cyanide, total recoverable	.gamma.-Chlordane, whole water	.gamma.-Chlordane, whole water
	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report
Minimum	0	0	0	0
Maximum	37	37	0	0
Median	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A
1/31/2018	0	0	0	0
2/28/2018	13	26	0	0
3/31/2018	0	0	0	0
4/30/2018	0	0	0	0
5/31/2018	0	0	0	0
6/30/2018	0	0	0	0
7/31/2018	0	0	0	0
8/31/2018	0	0	0	0
9/30/2018	0	0	0	0
10/31/2018	0	0	0	0
11/30/2018	0	0	0	0
12/31/2018	0	0	0	0
1/31/2019	0	0	0	0
2/28/2019	0	0	0	0
3/31/2019	10	20	0	0
4/30/2019	0	0	0	0
5/31/2019	0	0	0	0
6/30/2019	0	0	0	0
7/31/2019	0	0	0	0
8/31/2019	0	0	0	0
9/30/2019	0	0	0	0
10/31/2019	0	0	0	0
11/30/2019	0	0	0	0
12/31/2019	0	0	0	0
1/31/2020	0	0	0	0
2/29/2020	0	0	0	0

Parameter	Cyanide, total recoverable	Cyanide, total recoverable	.gamma.-Chlordane, whole water	.gamma.-Chlordane, whole water
	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report
Minimum	0	0	0	0
Maximum	37	37	0	0
Median	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A
3/31/2020	0	0	0	0
4/30/2020	0	0	0	0
5/31/2020	0	0	0	0
6/30/2020	0	0	0	0
7/31/2020	0	0	0	0
8/31/2020	0	0	0	0
9/30/2020	0	0	0	0
10/31/2020	0	0	0	0
11/30/2020	0	0	0	0
12/31/2020	0	0	0	0
1/31/2021	0	0	0	0
2/28/2021	0	0	0	0
3/31/2021	0	0	0	0
4/30/2021	0	0	0	0
5/31/2021	0	0	0	0
6/30/2021	0	0	0	0
7/31/2021	0	0	0	0
8/31/2021	0	0	0	0
9/30/2021	0	0	0	0
10/31/2021	0	0	0	0
11/30/2021	0	0	0	0
12/31/2021	0	0	0	0
1/31/2022	37	37	0	0
2/28/2022	0	0	0	0
3/31/2022	0	0	0	0
4/30/2022	0	0	0	0

Parameter	Cyanide, total recoverable	Cyanide, total recoverable	.gamma.-Chlordane, whole water	.gamma.-Chlordane, whole water
	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report
Minimum	0	0	0	0
Maximum	37	37	0	0
Median	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A
5/31/2022	0	0	0	0
6/30/2022	0	0	0	0
7/31/2022	0	0	0	0
8/31/2022	0	0	0	0
9/30/2022	0	0	0	0
10/31/2022	0	0	0	0
11/30/2022	0	0	0	0
12/31/2022	0	0	0	0

Parameter	4,4'-DDT	4,4'-DDT	Aldrin	Aldrin	Chlordane (tech mix. and metabolites)
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave
Units	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0
Maximum	0	0	0	0	0
Median	0	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A
1/31/2018	0	0	0	0	0
2/28/2018	0	0	0	0	0
3/31/2018	0	0	0	0	0
4/30/2018	0	0	0	0	0
5/31/2018	0	0	0	0	0
6/30/2018	0	0	0	0	0
7/31/2018	0	0	0	0	0
8/31/2018	0	0	0	0	0
9/30/2018	0	0	0	0	0
10/31/2018	0	0	0	0	0
11/30/2018	0	0	0	0	0
12/31/2018	0	0	0	0	0
1/31/2019	0	0	0	0	0
2/28/2019	0	0	0	0	0
3/31/2019	0	0	0	0	0
4/30/2019	0	0	0	0	0
5/31/2019	0	0	0	0	0
6/30/2019	0	0	0	0	0
7/31/2019	0	0	0	0	0
8/31/2019	0	0	0	0	0
9/30/2019	0	0	0	0	0
10/31/2019	0	0	0	0	0
11/30/2019	0	0	0	0	0
12/31/2019	0	0	0	0	0
1/31/2020	0	0	0	0	0
2/29/2020	0	0	0	0	0

Parameter	4,4'-DDT	4,4'-DDT	Aldrin	Aldrin	Chlordane (tech mix. and metabolites)
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave
Units	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0
Maximum	0	0	0	0	0
Median	0	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A
3/31/2020	0	0	0	0	0
4/30/2020	0	0	0	0	0
5/31/2020	0	0	0	0	0
6/30/2020	0	0	0	0	0
7/31/2020	0	0	0	0	0
8/31/2020	0	0	0	0	0
9/30/2020	0	0	0	0	0
10/31/2020	0	0	0	0	0
11/30/2020	0	0	0	0	0
12/31/2020	0	0	0	0	0
1/31/2021	0	0	0	0	0
2/28/2021	0	0	0	0	0
3/31/2021	0	0	0	0	0
4/30/2021	0	0	0	0	0
5/31/2021	0	0	0	0	0
6/30/2021	0	0	0	0	0
7/31/2021	0	0	0	0	0
8/31/2021	0	0	0	0	0
9/30/2021	0	0	0	0	0
10/31/2021	0	0	0	0	0
11/30/2021	0	0	0	0	0
12/31/2021	0	0	0	0	0
1/31/2022	0	0	0	0	0
2/28/2022	0	0	0	0	0
3/31/2022	0	0	0	0	0
4/30/2022	0	0	0	0	0

Parameter	4,4'-DDT	4,4'-DDT	Aldrin	Aldrin	Chlordane (tech mix. and metabolites)
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave
Units	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0
Maximum	0	0	0	0	0
Median	0	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A
5/31/2022	0	0	0	0	0
6/30/2022	0	0	0	0	0
7/31/2022	0	0	0	0	0
8/31/2022	0	0	0	0	0
9/30/2022	0	0	0	0	0
10/31/2022	0	0	0	0	0
11/30/2022	0	0	0	0	0
12/31/2022	0	0	0	0	0

Parameter	Chlordane (tech mix. and metabolites)	Chlordane, .alpha.-, whole water	Chlordane, .alpha.-, whole water	Dieldrin	Dieldrin
	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0
Maximum	0	0	0	0	0
Median	0	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A
1/31/2018	0	0	0	0	0
2/28/2018	0	0	0	0	0
3/31/2018	0	0	0	0	0
4/30/2018	0	0	0	0	0
5/31/2018	0	0	0	0	0
6/30/2018	0	0	0	0	0
7/31/2018	0	0	0	0	0
8/31/2018	0	0	0	0	0
9/30/2018	0	0	0	0	0
10/31/2018	0	0	0	0	0
11/30/2018	0	0	0	0	0
12/31/2018	0	0	0	0	0
1/31/2019	0	0	0	0	0
2/28/2019	0	0	0	0	0
3/31/2019	0	0	0	0	0
4/30/2019	0	0	0	0	0
5/31/2019	0	0	0	0	0
6/30/2019	0	0	0	0	0
7/31/2019	0	0	0	0	0
8/31/2019	0	0	0	0	0
9/30/2019	0	0	0	0	0
10/31/2019	0	0	0	0	0
11/30/2019	0	0	0	0	0
12/31/2019	0	0	0	0	0
1/31/2020	0	0	0	0	0
2/29/2020	0	0	0	0	0

Parameter	Chlordane (tech mix. and metabolites)	Chlordane, .alpha.-, whole water	Chlordane, .alpha.-, whole water	Dieldrin	Dieldrin
	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0
Maximum	0	0	0	0	0
Median	0	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A
3/31/2020	0	0	0	0	0
4/30/2020	0	0	0	0	0
5/31/2020	0	0	0	0	0
6/30/2020	0	0	0	0	0
7/31/2020	0	0	0	0	0
8/31/2020	0	0	0	0	0
9/30/2020	0	0	0	0	0
10/31/2020	0	0	0	0	0
11/30/2020	0	0	0	0	0
12/31/2020	0	0	0	0	0
1/31/2021	0	0	0	0	0
2/28/2021	0	0	0	0	0
3/31/2021	0	0	0	0	0
4/30/2021	0	0	0	0	0
5/31/2021	0	0	0	0	0
6/30/2021	0	0	0	0	0
7/31/2021	0	0	0	0	0
8/31/2021	0	0	0	0	0
9/30/2021	0	0	0	0	0
10/31/2021	0	0	0	0	0
11/30/2021	0	0	0	0	0
12/31/2021	0	0	0	0	0
1/31/2022	0	0	0	0	0
2/28/2022	0	0	0	0	0
3/31/2022	0	0	0	0	0
4/30/2022	0	0	0	0	0

Parameter	Chlordane (tech mix. and metabolites)	Chlordane, .alpha.-, whole water	Chlordane, .alpha.-, whole water	Dieldrin	Dieldrin
	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0
Maximum	0	0	0	0	0
Median	0	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A
5/31/2022	0	0	0	0	0
6/30/2022	0	0	0	0	0
7/31/2022	0	0	0	0	0
8/31/2022	0	0	0	0	0
9/30/2022	0	0	0	0	0
10/31/2022	0	0	0	0	0
11/30/2022	0	0	0	0	0
12/31/2022	0	0	0	0	0

Parameter	Heptachlor	Heptachlor	Heptachlor epoxide	Heptachlor epoxide	Hexachloro benzene	Hexachloro benzene	PCB-1016
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	0.000045
Minimum	0	0	0	0	0	0	0
Maximum	0	0	0	0	0	0	0
Median	0	0	0	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	0
1/31/2018	0	0	0	0	0	0	0
2/28/2018	0	0	0	0	0	0	0
3/31/2018	0	0	0	0	0	0	0
4/30/2018	0	0	0	0	0	0	0
5/31/2018	0	0	0	0	0	0	0
6/30/2018	0	0	0	0	0	0	0
7/31/2018	0	0	0	0	0	0	0
8/31/2018	0	0	0	0	0	0	0
9/30/2018	0	0	0	0	0	0	0
10/31/2018	0	0	0	0	0	0	0
11/30/2018	0	0	0	0	0	0	0
12/31/2018	0	0	0	0	0	0	0
1/31/2019	0	0	0	0	0	0	0
2/28/2019	0	0	0	0	0	0	0
3/31/2019	0	0	0	0	0	0	0
4/30/2019	0	0	0	0	0	0	0
5/31/2019	0	0	0	0	0	0	0
6/30/2019	0	0	0	0	0	0	0
7/31/2019	0	0	0	0	0	0	0
8/31/2019	0	0	0	0	0	0	0
9/30/2019	0	0	0	0	0	0	0
10/31/2019	0	0	0	0	0	0	0
11/30/2019	0	0	0	0	0	0	0
12/31/2019	0	0	0	0	0	0	0
1/31/2020	0	0	0	0	0	0	0
2/29/2020	0	0	0	0	0	0	0

Parameter	Heptachlor	Heptachlor	Heptachlor epoxide	Heptachlor epoxide	Hexachloro benzene	Hexachloro benzene	PCB-1016
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	0.000045
Minimum	0	0	0	0	0	0	0
Maximum	0	0	0	0	0	0	0
Median	0	0	0	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	0
3/31/2020	0	0	0	0	0	0	0
4/30/2020	0	0	0	0	0	0	0
5/31/2020	0	0	0	0	0	0	0
6/30/2020	0	0	0	0	0	0	0
7/31/2020	0	0	0	0	0	0	0
8/31/2020	0	0	0	0	0	0	0
9/30/2020	0	0	0	0	0	0	0
10/31/2020	0	0	0	0	0	0	0
11/30/2020	0	0	0	0	0	0	0
12/31/2020	0	0	0	0	0	0	0
1/31/2021	0	0	0	0	0	0	0
2/28/2021	0	0	0	0	0	0	0
3/31/2021	0	0	0	0	0	0	0
4/30/2021	0	0	0	0	0	0	0
5/31/2021	0	0	0	0	0	0	0
6/30/2021	0	0	0	0	0	0	0
7/31/2021	0	0	0	0	0	0	0
8/31/2021	0	0	0	0	0	0	0
9/30/2021	0	0	0	0	0	0	0
10/31/2021	0	0	0	0	0	0	0
11/30/2021	0	0	0	0	0	0	0
12/31/2021	0	0	0	0	0	0	0
1/31/2022	0	0	0	0	0	0	0
2/28/2022	0	0	0	0	0	0	0
3/31/2022	0	0	0	0	0	0	0
4/30/2022	0	0	0	0	0	0	0

Parameter	Heptachlor	Heptachlor	Heptachlor epoxide	Heptachlor epoxide	Hexachloro benzene	Hexachloro benzene	PCB-1016
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	0.000045
Minimum	0	0	0	0	0	0	0
Maximum	0	0	0	0	0	0	0
Median	0	0	0	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	0
5/31/2022	0	0	0	0	0	0	0
6/30/2022	0	0	0	0	0	0	0
7/31/2022	0	0	0	0	0	0	0
8/31/2022	0	0	0	0	0	0	0
9/30/2022	0	0	0	0	0	0	0
10/31/2022	0	0	0	0	0	0	0
11/30/2022	0	0	0	0	0	0	0
12/31/2022	0	0	0	0	0	0	0

Parameter	PCB-1016	PCB-1221	PCB-1221	PCB-1232	PCB-1232	PCB-1242	PCB-1242
	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	0.000045	Report	0.000045	Report	0.000045	Report
Minimum	0	0	0	0	0	0	0
Maximum	0	0	0	0	0	0	0
Median	0	0	0	0	0	0	0
No. of Violations	N/A	0	N/A	0	N/A	0	N/A
1/31/2018	0	0	0	0	0	0	0
2/28/2018	0	0	0	0	0	0	0
3/31/2018	0	0	0	0	0	0	0
4/30/2018	0	0	0	0	0	0	0
5/31/2018	0	0	0	0	0	0	0
6/30/2018	0	0	0	0	0	0	0
7/31/2018	0	0	0	0	0	0	0
8/31/2018	0	0	0	0	0	0	0
9/30/2018	0	0	0	0	0	0	0
10/31/2018	0	0	0	0	0	0	0
11/30/2018	0	0	0	0	0	0	0
12/31/2018	0	0	0	0	0	0	0
1/31/2019	0	0	0	0	0	0	0
2/28/2019	0	0	0	0	0	0	0
3/31/2019	0	0	0	0	0	0	0
4/30/2019	0	0	0	0	0	0	0
5/31/2019	0	0	0	0	0	0	0
6/30/2019	0	0	0	0	0	0	0
7/31/2019	0	0	0	0	0	0	0
8/31/2019	0	0	0	0	0	0	0
9/30/2019	0	0	0	0	0	0	0
10/31/2019	0	0	0	0	0	0	0
11/30/2019	0	0	0	0	0	0	0
12/31/2019	0	0	0	0	0	0	0
1/31/2020	0	0	0	0	0	0	0
2/29/2020	0	0	0	0	0	0	0

Parameter	PCB-1016	PCB-1221	PCB-1221	PCB-1232	PCB-1232	PCB-1242	PCB-1242
	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	0.000045	Report	0.000045	Report	0.000045	Report
Minimum	0	0	0	0	0	0	0
Maximum	0	0	0	0	0	0	0
Median	0	0	0	0	0	0	0
No. of Violations	N/A	0	N/A	0	N/A	0	N/A
3/31/2020	0	0	0	0	0	0	0
4/30/2020	0	0	0	0	0	0	0
5/31/2020	0	0	0	0	0	0	0
6/30/2020	0	0	0	0	0	0	0
7/31/2020	0	0	0	0	0	0	0
8/31/2020	0	0	0	0	0	0	0
9/30/2020	0	0	0	0	0	0	0
10/31/2020	0	0	0	0	0	0	0
11/30/2020	0	0	0	0	0	0	0
12/31/2020	0	0	0	0	0	0	0
1/31/2021	0	0	0	0	0	0	0
2/28/2021	0	0	0	0	0	0	0
3/31/2021	0	0	0	0	0	0	0
4/30/2021	0	0	0	0	0	0	0
5/31/2021	0	0	0	0	0	0	0
6/30/2021	0	0	0	0	0	0	0
7/31/2021	0	0	0	0	0	0	0
8/31/2021	0	0	0	0	0	0	0
9/30/2021	0	0	0	0	0	0	0
10/31/2021	0	0	0	0	0	0	0
11/30/2021	0	0	0	0	0	0	0
12/31/2021	0	0	0	0	0	0	0
1/31/2022	0	0	0	0	0	0	0
2/28/2022	0	0	0	0	0	0	0
3/31/2022	0	0	0	0	0	0	0
4/30/2022	0	0	0	0	0	0	0

Parameter	PCB-1016	PCB-1221	PCB-1221	PCB-1232	PCB-1232	PCB-1242	PCB-1242
	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	0.000045	Report	0.000045	Report	0.000045	Report
Minimum	0	0	0	0	0	0	0
Maximum	0	0	0	0	0	0	0
Median	0	0	0	0	0	0	0
No. of Violations	N/A	0	N/A	0	N/A	0	N/A
5/31/2022	0	0	0	0	0	0	0
6/30/2022	0	0	0	0	0	0	0
7/31/2022	0	0	0	0	0	0	0
8/31/2022	0	0	0	0	0	0	0
9/30/2022	0	0	0	0	0	0	0
10/31/2022	0	0	0	0	0	0	0
11/30/2022	0	0	0	0	0	0	0
12/31/2022	0	0	0	0	0	0	0

Parameter	PCB-1248	PCB-1248	PCB-1254	PCB-1254	PCB-1260	PCB-1260	Polychlorinated biphenyls (PCBs)
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	0.000045	Report	0.000045	Report	0.000045	Report	Report
Minimum	0	0	0	0	0	0	0.00026
Maximum	0	0	0	0	0	0	0.0058
Median	0	0	0	0	0	0	0.000985
No. of Violations	0	N/A	0	N/A	0	N/A	N/A
1/31/2018	0	0	0	0	0	0	0.0003
2/28/2018	0	0	0	0	0	0	0.00041
3/31/2018	0	0	0	0	0	0	0.00029
4/30/2018	0	0	0	0	0	0	0.00074
5/31/2018	0	0	0	0	0	0	0.00097
6/30/2018	0	0	0	0	0	0	0.00122
7/31/2018	0	0	0	0	0	0	0.00084
8/31/2018	0	0	0	0	0	0	0.00052
9/30/2018	0	0	0	0	0	0	0.00074
10/31/2018	0	0	0	0	0	0	0.00076
11/30/2018	0	0	0	0	0	0	0.00045
12/31/2018	0	0	0	0	0	0	0.00026
1/31/2019	0	0	0	0	0	0	0.00035
2/28/2019	0	0	0	0	0	0	0.00068
3/31/2019	0	0	0	0	0	0	0.00038
4/30/2019	0	0	0	0	0	0	0.0003
5/31/2019	0	0	0	0	0	0	0.00032
6/30/2019	0	0	0	0	0	0	0.00103
7/31/2019	0	0	0	0	0	0	0.00107
8/31/2019	0	0	0	0	0	0	0.00147
9/30/2019	0	0	0	0	0	0	0.00101
10/31/2019	0	0	0	0	0	0	0.00078
11/30/2019	0	0	0	0	0	0	0.00087
12/31/2019	0	0	0	0	0	0	0.00082
1/31/2020	0	0	0	0	0	0	0.00086
2/29/2020	0	0	0	0	0	0	0.00099

Parameter	PCB-1248	PCB-1248	PCB-1254	PCB-1254	PCB-1260	PCB-1260	Polychlorinated biphenyls (PCBs)
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	0.000045	Report	0.000045	Report	0.000045	Report	Report
Minimum	0	0	0	0	0	0	0.00026
Maximum	0	0	0	0	0	0	0.0058
Median	0	0	0	0	0	0	0.000985
No. of Violations	0	N/A	0	N/A	0	N/A	N/A
3/31/2020	0	0	0	0	0	0	0.00449
4/30/2020	0	0	0	0	0	0	0.00337
5/31/2020	0	0	0	0	0	0	0.0016
6/30/2020	0	0	0	0	0	0	0.00097
7/31/2020	0	0	0	0	0	0	0.00081
8/31/2020	0	0	0	0	0	0	0.00079
9/30/2020	0	0	0	0	0	0	0.00093
10/31/2020	0	0	0	0	0	0	0.00079
11/30/2020	0	0	0	0	0	0	0.00082
12/31/2020	0	0	0	0	0	0	0.0011
1/31/2021	0	0	0	0	0	0	0.00047
2/28/2021	0	0	0	0	0	0	0.00146
3/31/2021	0	0	0	0	0	0	0.00141
4/30/2021	0	0	0	0	0	0	0.00111
5/31/2021	0	0	0	0	0	0	0.00057
6/30/2021	0	0	0	0	0	0	0.00101
7/31/2021	0	0	0	0	0	0	0.00132
8/31/2021	0	0	0	0	0	0	0.00116
9/30/2021	0	0	0	0	0	0	0.00145
10/31/2021	0	0	0	0	0	0	0.00125
11/30/2021	0	0	0	0	0	0	0.00118
12/31/2021	0	0	0	0	0	0	0.00199
1/31/2022	0	0	0	0	0	0	0.00194
2/28/2022	0	0	0	0	0	0	0.00352
3/31/2022	0	0	0	0	0	0	0.00571
4/30/2022	0	0	0	0	0	0	0.00441

Parameter	PCB-1248	PCB-1248	PCB-1254	PCB-1254	PCB-1260	PCB-1260	Polychlorinated biphenyls (PCBs)
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	0.000045	Report	0.000045	Report	0.000045	Report	Report
Minimum	0	0	0	0	0	0	0.00026
Maximum	0	0	0	0	0	0	0.0058
Median	0	0	0	0	0	0	0.000985
No. of Violations	0	N/A	0	N/A	0	N/A	N/A
5/31/2022	0	0	0	0	0	0	0.00107
6/30/2022	0	0	0	0	0	0	0.00098
7/31/2022	0	0	0	0	0	0	0.00148
8/31/2022	0	0	0	0	0	0	0.0015
9/30/2022	0	0	0	0	0	0	0.00129
10/31/2022	0	0	0	0	0	0	0.00084
11/30/2022	0	0	0	0	0	0	0.0058
12/31/2022	0	0	0	0	0	0	0.00159

Parameter	Polychlorinated biphenyls (PCBs)	Volatile fraction organics (EPA 624)	Volatile fraction organics (EPA 624)	LC50 Acute Menidia	LC50 Static 48Hr Acute Mysid. Bahia	Noael Statre 7Day Chronic Menidia
	Daily Max	Monthly Ave	Daily Max	Daily Min	Daily Min	Daily Min
Units	ug/L	ug/L	ug/L	%	%	%
Effluent Limit	Report	Report	Report	50	50	1.5
Minimum	0.00032	0	0	77.7	72.9	6.25
Maximum	0.00854	41.8	51.6	100	100	100
Median	0.001205	0	0	100	100	100
No. of Violations	N/A	N/A	N/A	0	0	0
1/31/2018	0.00039	0	0	100	100	100
2/28/2018	0.00071	0	0	100	100	100
3/31/2018	0.00059	0	0	100	100	100
4/30/2018	0.00089	0	0	100	100	100
5/31/2018	0.00106	6.6	13.2	100	100	100
6/30/2018	0.00164	0	0	100	100	50
7/31/2018	0.00292	0	0	100	100	50
8/31/2018	0.00084	0	0	100	100	100
9/30/2018	0.0008	0	0	100	100	50
10/31/2018	0.00089	0	0	100	100	100
11/30/2018	0.00058	0	0	100	100	100
12/31/2018	0.00032	0	0	100	100	100
1/31/2019	0.00045	5.25	10.5	100	100	100
2/28/2019	0.0009	41.8	51.6	100	100	50
3/31/2019	0.00043	0	0	100	100	50
4/30/2019	0.00039	0	0	100	100	100
5/31/2019	0.00044	0	0	100	100	100
6/30/2019	0.00183	6.7	13.4	100	100	25
7/31/2019	0.00115	0	0	100	100	100
8/31/2019	0.00268	0	0	100	85.4	100
9/30/2019	0.00115	0	0	100	92.6	100
10/31/2019	0.0009	0	0	100	100	100
11/30/2019	0.00101	0	0	100	100	100
12/31/2019	0.00114	0	0	100	100	100
1/31/2020	0.00115	0	0	100	100	100
2/29/2020	0.00118	0	0	100	100	100

Parameter	Polychlorinated biphenyls (PCBs)	Volatile fraction organics (EPA 624)	Volatile fraction organics (EPA 624)	LC50 Acute Menidia	LC50 Static 48Hr Acute Mysid. Bahia	Noel Statre 7Day Chronic Menidia
	Daily Max	Monthly Ave	Daily Max	Daily Min	Daily Min	Daily Min
Units	ug/L	ug/L	ug/L	%	%	%
Effluent Limit	Report	Report	Report	50	50	1.5
Minimum	0.00032	0	0	77.7	72.9	6.25
Maximum	0.00854	41.8	51.6	100	100	100
Median	0.001205	0	0	100	100	100
No. of Violations	N/A	N/A	N/A	0	0	0
3/31/2020	0.00514	0	0	100	100	100
4/30/2020	0.00365	0	0	100	100	100
5/31/2020	0.00325	0	0	100	100	100
6/30/2020	0.00129	0	0	100	100	50
7/31/2020	0.00089	0	0	100	100	50
8/31/2020	0.00116	0	0	100	100	50
9/30/2020	0.00104	0	0	100	100	50
10/31/2020	0.00097	0	0	100	73.3	50
11/30/2020	0.00094	0	0	100	100	6.25
12/31/2020	0.00193	5.4	10.8	100	100	100
1/31/2021	0.00053	0	0	100	100	100
2/28/2021	0.00308	17.47	29.6	100	100	100
3/31/2021	0.00154	0	0	100	100	100
4/30/2021	0.00142	0	0	100	100	100
5/31/2021	0.00075	3.89	7.77	100	100	100
6/30/2021	0.00123	0	0	100	100	100
7/31/2021	0.00153	13.5	27	100	100	100
8/31/2021	0.00152	0	0	100	100	100
9/30/2021	0.0017	0	0	100	100	100
10/31/2021	0.00315	0	0	100	100	100
11/30/2021	0.00156	0	0	100	100	50
12/31/2021	0.00243	0	0	100	100	50
1/31/2022	0.00224	0	0	100	100	100
2/28/2022	0.00404	0	0	100	100	50
3/31/2022	0.00601	0	0	100	100	50
4/30/2022	0.00469	0	0	100	100	50

Parameter	Polychlorinated biphenyls (PCBs)	Volatile fraction organics (EPA 624)	Volatile fraction organics (EPA 624)	LC50 Acute Menidia	LC50 Static 48Hr Acute Mysid. Bahia	Noael Statre 7Day Chronic Menidia
	Daily Max	Monthly Ave	Daily Max	Daily Min	Daily Min	Daily Min
Units	ug/L	ug/L	ug/L	%	%	%
Effluent Limit	Report	Report	Report	50	50	1.5
Minimum	0.00032	0	0	77.7	72.9	6.25
Maximum	0.00854	41.8	51.6	100	100	100
Median	0.001205	0	0	100	100	100
No. of Violations	N/A	N/A	N/A	0	0	0
5/31/2022	0.00233	0	0	100	100	100
6/30/2022	0.00172	0	0	100	100	50
7/31/2022	0.00173	5.05	10.1	100	100	50
8/31/2022	0.00181	0	0	100	100	25
9/30/2022	0.00162	0	0	100	100	50
10/31/2022	0.00094	0	0	77.7	72.9	25
11/30/2022	0.00854	0	0	92.6	91.4	25
12/31/2022	0.00202	5.25	10.5			

Parameter	Noel Static 1Hr Fert. Chronic Arbacia	TSS	TSS	TSS	CBOD5/N H3-N	CBOD5/N H3-N	CBOD5/N H3-N
	Daily Min	Monthly Ave	Weekly Ave	Daily Max	Monthly Ave	Weekly Ave	Daily Max
Units	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	1.5	Report	Report	Report	Report	Report	Report
Minimum	25	120.1	143.7	185.1	72.4	83.1	105.9
Maximum	100	331.6	368.2	624.7	169.1	205	252.3
Median	100	191.65	227	328.45	112.25	137.9	170.8
No. of Violations	0	N/A	N/A	N/A	N/A	N/A	N/A
1/31/2018	100	209.3	281.4	352.9	111.6	135.4	165.5
2/28/2018	100	182.1	227	277.8	100.9	110.2	143.4
3/31/2018	100	142.9	194	307.8	73.2	91.9	124.3
4/30/2018	100	197.5	223.2	286.7	95.9	108.5	132.8
5/31/2018	100	227.4	232.4	387.2	124.8	131.2	165.5
6/30/2018	100	267.2	291.4	360.3	147	163.9	194.2
7/31/2018	100	226.4	260.7	328.7	146.1	176.7	229.9
8/31/2018	100	270.6	273.3	433.3	154.8	162.6	234.3
9/30/2018	100	331.6	368.2	624.7	157.9	188.2	230.8
10/31/2018	100	268.8	302.8	453	125.8	141.5	174.5
11/30/2018	100	199	355.9	497.8	95.8	162	216.9
12/31/2018	100	202.9	221.2	308.1	127.1	137.6	216.9
1/31/2019	100	143.7	181.9	207.7	102.4	145.1	168
2/28/2019	100	144.6	165.7	227.7	101.2	119.1	134.2
3/31/2019	100	132.9	159.6	204.3	99.2	105.2	141.4
4/30/2019	100	155.8	207.1	471.7	99.2	131.6	199.6
5/31/2019	100	175.6	184.5	254.5	109.7	122.2	159.5
6/30/2019	100	191.6	205.2	283.3	133.4	138.5	171
7/31/2019	100	183.3	193.9	264.2	101.8	110.4	145.7
8/31/2019	100	212.4	252.3	390.4	129.7	144.3	190
9/30/2019	100	253.5	259.5	352.1	168.8	181	203
10/31/2019	100	212.8	268.9	392.6	136.2	173.2	188.6
11/30/2019	100	247.6	279	366.3	143.6	160.1	181.9
12/31/2019	100	179.3	231.1	344.3	109	148.7	196.6
1/31/2020	100	190.3	211.3	239.8	125.7	140.6	170.6
2/29/2020	100	270.4	357.2	599	139.8	151.2	187.5

Parameter	Noel Static 1Hr Fert. Chronic Arbacia	TSS	TSS	TSS	CBOD5/N H3-N	CBOD5/N H3-N	CBOD5/N H3-N
	Daily Min	Monthly Ave	Weekly Ave	Daily Max	Monthly Ave	Weekly Ave	Daily Max
Units	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	1.5	Report	Report	Report	Report	Report	Report
Minimum	25	120.1	143.7	185.1	72.4	83.1	105.9
Maximum	100	331.6	368.2	624.7	169.1	205	252.3
Median	100	191.65	227	328.45	112.25	137.9	170.8
No. of Violations	0	N/A	N/A	N/A	N/A	N/A	N/A
3/31/2020	100	201	245.6	331.6	123.1	141.5	171.9
4/30/2020	100	136.2	147.5	185.1	84.8	99	134.7
5/31/2020	100	158.4	178.8	220.2	103.9	129	161.7
6/30/2020	100	210.9	236	352.8	129.4	150.9	196.1
7/31/2020	100	207.8	227	450.6	128.8	138.2	184.4
8/31/2020	100	214.1	226	292.2	145.9	168.7	229
9/30/2020	100	180.6	194.8	290.5	160.3	174.4	202.8
10/31/2020	100	211.3	276.9	437.5	154.9	205	252.3
11/30/2020	100	191.7	236.2	357.6	126.9	146.1	220.4
12/31/2020	100	120.1	143.7	208	72.4	83.1	105.9
1/31/2021	100	164.9	196	328.2	101.6	113.2	159.7
2/28/2021	50	160.6	174.9	216.9	110.7	119.7	142.1
3/31/2021	100	178.4	193.2	309	103.6	116.5	142.3
4/30/2021	100	176	204.9	252.9	103.9	116.8	133.7
5/31/2021	100	190.2	319.4	493.3	103	117.7	140.6
6/30/2021	100	202.8	235.2	415.5	112	116.1	145.3
7/31/2021	100	133.1	209.9	232.3	73.8	100.4	127.9
8/31/2021	100	175.6	192.7	290	94.1	101	117.4
9/30/2021	100	143.6	169.6	239.7	82.3	96.7	123.9
10/31/2021	50	175.1	210.8	261.7	98.2	116.3	129.8
11/30/2021	100	151.6	162.1	246.8	94.1	95.5	132.8
12/31/2021	100	251.5	319.5	380.8	143.3	171.5	223
1/31/2022	100	187.7	214.3	321.6	112.5	121.2	141.3
2/28/2022	100	150.5	180.4	250.6	86.4	109.5	139.5
3/31/2022	100	182.5	189.9	365.9	96.9	99.3	118.3
4/30/2022	100	182.9	194.7	239.1	101.4	118.3	148.8

Parameter	Noel Static 1Hr Fert. Chronic Arbacia	TSS	TSS	TSS	CBOD5/N H3-N	CBOD5/N H3-N	CBOD5/N H3-N
	Daily Min	Monthly Ave	Weekly Ave	Daily Max	Monthly Ave	Weekly Ave	Daily Max
Units	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	1.5	Report	Report	Report	Report	Report	Report
Minimum	25	120.1	143.7	185.1	72.4	83.1	105.9
Maximum	100	331.6	368.2	624.7	169.1	205	252.3
Median	100	191.65	227	328.45	112.25	137.9	170.8
No. of Violations	0	N/A	N/A	N/A	N/A	N/A	N/A
5/31/2022	100	217.7	247.5	384	115.5	119.6	177.1
6/30/2022	100	210.5	265.3	378.6	134.9	139.1	188
7/31/2022	100	208.4	227.6	298.9	137.6	158.3	183.9
8/31/2022	100	229.6	239.7	371.6	144.5	166.3	192.7
9/30/2022	50	235	260.9	386.7	142.5	159.2	180.7
10/31/2022	25	227.6	292.5	396.7	141	190.4	228.6
11/30/2022	100	210.1	227.9	290.4	169.1	178.9	196.8
12/31/2022		177.4	260.5	338.5	110.2	162.3	164.7

Parameter	Chloride (as Cl)	Fecal Coliform	Fecal Coliform	Fecal Coliform
	Daily Max	Monthly Geometric Mean	Daily Max	MEDIAN
Units	mg/L	#/100mL	#/100mL	#/100mL
Effluent Limit	Report	200	400	200
Minimum	475	No Data	No Data	No Data
Maximum	2028	No Data	No Data	No Data
Median	853.5	No Data	No Data	No Data
No. of Violations	N/A	No Data	No Data	No Data
1/31/2018	2028			
2/28/2018	1427			
3/31/2018	1287			
4/30/2018	689			
5/31/2018	695			
6/30/2018	966			
7/31/2018	944			
8/31/2018	898			
9/30/2018	904			
10/31/2018	734			
11/30/2018	579			
12/31/2018	515			
1/31/2019	1628			
2/28/2019	1424			
3/31/2019	1316			
4/30/2019	730			
5/31/2019	770			
6/30/2019	728			
7/31/2019	822			
8/31/2019	901			
9/30/2019	932			
10/31/2019	982			
11/30/2019	817			
12/31/2019	1191			
1/31/2020	920			
2/29/2020	932			

Parameter	Chloride (as Cl)	Fecal Coliform	Fecal Coliform	Fecal Coliform
	Daily Max	Monthly Geometric Mean	Daily Max	MEDIAN
Units	mg/L	#/100mL	#/100mL	#/100mL
Effluent Limit	Report	200	400	200
Minimum	475	No Data	No Data	No Data
Maximum	2028	No Data	No Data	No Data
Median	853.5	No Data	No Data	No Data
No. of Violations	N/A	No Data	No Data	No Data
3/31/2020	838			
4/30/2020	760			
5/31/2020	775			
6/30/2020	894			
7/31/2020	944			
8/31/2020	944			
9/30/2020	1237			
10/31/2020	869			
11/30/2020	790			
12/31/2020	1097			
1/31/2021	782			
2/28/2021	1545			
3/31/2021	748			
4/30/2021	1057			
5/31/2021	495			
6/30/2021	593			
7/31/2021	475			
8/31/2021	695			
9/30/2021	565			
10/31/2021	639			
11/30/2021	510			
12/31/2021	557			
1/31/2022	1274			
2/28/2022	1340			
3/31/2022	834			
4/30/2022	541			

Parameter	Chloride (as Cl)	Fecal Coliform	Fecal Coliform	Fecal Coliform
	Daily Max	Monthly Geometric Mean	Daily Max	MEDIAN
Units	mg/L	#/100mL	#/100mL	#/100mL
Effluent Limit	Report	200	400	200
Minimum	475	No Data	No Data	No Data
Maximum	2028	No Data	No Data	No Data
Median	853.5	No Data	No Data	No Data
No. of Violations	N/A	No Data	No Data	No Data
5/31/2022	725			
6/30/2022	822			
7/31/2022	1022			
8/31/2022	903			
9/30/2022	1053			
10/31/2022	869			
11/30/2022	785			
12/31/2022	706			

EPA REGION 1 NPDES PERMITTING APPROACH FOR PUBLICLY OWNED TREATMENT WORKS THAT INCLUDE MUNICIPAL SATELLITE SEWAGE COLLECTION SYSTEMS

This regional interpretative statement provides notice to the public of EPA Region 1's interpretation of the Clean Water Act ("CWA" or "Act") and implementing regulations, and advises the public of relevant policy considerations, regarding the applicability of the National Pollutant Discharge Elimination System ("NPDES") program to publicly owned treatment works ("POTWs") that include municipal satellite sewage collection systems ("regionally integrated POTWs"). When issuing NPDES permits to these types of sanitary sewer systems, it is EPA Region 1's practice to include and regulate the owners/operators of the municipal satellite collection systems through a co-permitting structure. This interpretative statement is intended to explain, generally, the basis for this practice. EPA Region 1's decision in any particular case will be made by applying the law and regulations on the basis of specific facts when permits are issued.

EPA has set out a national policy goal for the nation's sanitary sewer systems to adhere to strict design and operational standards:

"Proper [operation and maintenance] of the nation's sewers is integral to ensuring that wastewater is collected, transported, and treated at POTWs; and to reducing the volume and frequency of ...[sanitary sewer overflow] discharges. Municipal owners and operators of sewer systems and wastewater treatment facilities need to manage their assets effectively and implement new controls, where necessary, as this infrastructure continues to age. Innovative responses from all levels of government and consumers are needed to close the gap."¹

Because ownership/operation of a regionally integrated POTW is divided among multiple parties, the owner/operator of the treatment plant many times lacks the means to implement comprehensive, system-wide operation and maintenance ("O&M") procedures. Failure to properly implement O&M measures in a POTW can cause, among other things, excessive extraneous flow (*i.e.*, inflow and infiltration) to enter, strain and occasionally overload treatment system capacity. This failure not only impedes EPA's national policy goal concerning preservation of the nation's wastewater infrastructure assets, but also frustrates achievement of the water quality- and technology-based requirements of CWA § 301 to the extent it results in sanitary sewer overflows and degraded treatment plant performance, with adverse impacts on human health and the environment.

In light of these policy objectives and legal requirements, it is EPA Region 1's permitting practice to subject all portions of the POTW to NPDES requirements in order to ensure that the treatment system as a whole is properly operated and maintained and that human health and water quality impacts resulting from excessive extraneous flow are minimized. The approach of addressing O&M concerns in a regionally integrated treatment works by adding municipal

¹ See *Report to Congress: Impacts and Control of CSOs and SSOs* (EPA 833-R-04-001) (2004), at p. 10-2. See also "1989 National CSO Control Strategy," 54 Fed. Reg. 37371 (September 8, 1989).

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satellite collection systems as co-permittees is consistent with the definition of “publicly owned treatment works,” which by definition includes sewage collection systems. Under this approach, the POTW in its entirety is subject to NPDES regulation as a point source discharger under the Act. This entails imposition of permitting requirements applicable to the POTW treatment plant along with a more limited set of conditions applicable to the connected municipal satellite collection systems.

The factual and legal basis for the Region’s position is set forth in greater detail in *Attachment A*.

Attachment A

**ANALYSIS SUPPORTING EPA REGION 1
NPDES PERMITTING APPROACH FOR PUBLICLY OWNED TREATMENT
WORKS THAT INCLUDE MUNICIPAL SATELLITE SEWAGE COLLECTION
SYSTEMS**

- Exhibit A* List of regional centralized POTW treatment plants and municipal satellite collection systems subject to the co-permittee policy
- Exhibit B* Analysis of extraneous flow trends for representative systems
- Exhibit C* Form of Regional Administrator’s waiver of permit application requirements for municipal satellite collection systems

Introduction

On May 28, 2010, the U.S. EPA Environmental Appeals Board (“Board”) issued a decision remanding to the Region certain NPDES permit provisions that included and regulated satellite collection systems as co-permittees. *See In re Upper Blackstone Water Pollution Abatement District*, NPDES Appeal Nos. 08-11 to 08-18 & 09-06, 14 E.A.D. __ (Order Denying Review in Part and Remanding in Part, EAB, May 28, 2010).² While the Board “did not pass judgment” on the Region’s position that its NPDES jurisdiction encompassed the entire POTW and not only the treatment plant, it held that “where the Region has abandoned its historical practice of limiting the permit only to the legal entity owning and operating the wastewater treatment plant, the Region had not sufficiently articulated in the record of this proceeding the statutory, regulatory, and factual bases for expanding the scope of NPDES authority beyond the treatment plant owner/operator to separately owned/operated collection systems that do not discharge directly to waters of the United States, but instead that discharge to the treatment plant.” *Id.*, slip op. at 2, 18. In the event the Region decided to include and regulate municipal satellite collection systems as co-permittees in a future permit, the Board posed several questions for the Region to address in the analysis supporting its decision:

- (1) Is the scope of NPDES authority limited to owners/operators of the treatment plant, or does the authority extend to owners/operators of the municipal satellite collection systems that comprise the wider POTW?

² The decision is available on the Board’s website via the following link:
http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/30b93f139d3788908525706c005185b4/34e841c87f346d94852577360068976f:OpenDocument.

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- (2) If the latter, how far up the collection system does NPDES jurisdiction reach, *i.e.*, where does the “collection system” end and the “user” begin?
- (3) Do municipal satellite collection systems “discharge [] a pollutant” within the meaning of the statute and regulations?
- (4) Are municipal satellite collection systems “indirect dischargers” and thus excluded from NPDES permitting requirements?
- (5) Is the Region’s rationale for regulating municipal satellite collection systems as co-permittees consistent with the references to “municipality” in the regulatory definition of POTW, and the definition’s statement that “[t]he term also means the municipality...which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works”?
- (6) Is the Region’s rationale consistent with the permit application and signatory requirements under NPDES regulations?

See *Blackstone, slip op.* at 18, 20, n. 17.

This regional interpretative statement is, in part, a response to the Board’s decision. It details the legal and policy bases for regulating as co-permittees publicly owned treatment works (“POTWs”) that include municipal satellite collection systems. Region 1’s analysis is divided into five sections. First, the Region provides context for the co-permitting approach by briefly describing the health and environmental impacts associated with poorly maintained sanitary sewer systems. Second, the Region outlines its evolving permitting practice regarding regionally integrated POTWs, particularly its attempts to ensure that such entity’s municipal satellite collection systems are properly maintained and operated. Third, the Region explains the legal authority to include municipal satellite collection systems as co-permittees when permitting regionally integrated POTWs. In this section, the Region answers the questions posed by the Board in the order presented above. Fourth, the Region sets forth the basis for the specific conditions to which the municipal satellite collection systems are subject as co-permittees. Finally, the Region discusses other considerations informing its decision to employ a co-permittee structure when permitting regionally integrated POTWs.

I. Background

A sanitary sewer system (SSS) is a wastewater collection system owned by a state or municipality that is designed to collect and convey only sanitary wastewater (domestic sewage from homes as well as industrial and commercial wastewater).³ The purpose of these systems is

³ A combined sewer, on the other hand, is a type of sewer system that collects and conveys sanitary sewage and stormwater runoff in a single-pipe system to a POTW treatment plant. *See generally* Report to Congress: Impacts and Control of CSOs and SSOs (EPA 833-R-04-001) (2004), from which EPA Region 1 has drawn this background material.

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to transport wastewater uninterrupted from its source to a treatment facility. Developed areas that are served by sanitary sewers often also have a separate storm sewer system (*e.g.*, storm drains) that collects and conveys runoff, street wash waters and drainage and discharges them directly to a receiving water (*i.e.*, without treatment at a POTW). While sanitary sewers are not designed to collect large amounts of runoff from precipitation events or provide widespread drainage, they typically are built with some allowance for higher flows that occur during periods of high groundwater and storm events. They are thus able to handle minor and controllable amounts of extraneous flow (*i.e.*, inflow and infiltration, or I/I) that enter the system. Inflow generally refers to water other than wastewater—typically precipitation like rain or snowmelt—that enters a sewer system through a direct connection to the sewer. Infiltration generally refers to other water that enters a sewer system from the ground, for example through defects in the sewer.

Municipal sanitary sewer collection systems can consist of a widespread network of pipes and associated components (*e.g.*, pump stations). These systems provide wastewater collection service to the community in which they are located. In some situations, the municipality that owns the collector sewers may not provide treatment of wastewater, but only conveys its wastewater to a collection system that is owned and operated by a different municipal entity (such as a regional sewer district). This is known as a satellite community. A “satellite” community is a sewage collection system owner/operator that does not have ownership of the treatment facility and a specific or identified point of discharge but rather the responsibility to collect and convey the community’s wastewater to a POTW treatment plant for treatment. *See* 75 Fed. Reg. 30395, 30400 (June 1, 2010).

Municipal sanitary sewer collection systems play a critical role in protecting human health and the environment. Proper operation and maintenance of sanitary sewer collection systems is integral to ensuring that wastewater is collected, transported, and treated at POTW treatment plants. Through effective operation and maintenance, collection system operators can maintain the capacity of the collection system; reduce the occurrence of temporary problem situations such as blockages; protect the structural integrity and capacity of the system; anticipate potential problems and take preventive measures; and indirectly improve treatment plant performance by minimizing deterioration due to I/I-related hydraulic overloading.

Despite their critical role in the nation’s infrastructure, many collection systems exhibit poor performance and are subjected to flows that exceed system capacity. Untreated or partially treated overflows from a sanitary sewer system are termed “sanitary sewer overflows” (SSOs). SSOs include releases from sanitary sewers that reach waters of the United States as well as those that back up into buildings and flow out of manholes into city streets.

There are many underlying reasons for the poor performance of collection systems. Much of the nation’s sanitary sewer infrastructure is old, and aging infrastructure has deteriorated with time. Communities also sometimes fail to provide capacity to accommodate increased sewage delivery and treatment demand from increasing populations. Furthermore, institutional arrangements relating to the operation of sewers can pose barriers to coordinated action, because many

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municipal sanitary sewer collection systems are not entirely owned or operated by a single municipal entity.

The performance and efficiency of municipal collection systems influence the performance of sewage treatment plants. When the structural integrity of a sanitary sewer collection system deteriorates, large quantities of infiltration (including rainfall-induced infiltration) and inflow can enter the collection system, causing it to overflow. These extraneous flows are among the most serious and widespread operational challenges confronting treatment works.⁴

Infiltration can be long-term seepage of water into a sewer system from the water table. In some systems, however, the flow characteristics of infiltration can resemble those of inflow, *i.e.*, there is a rapid increase in flow during and immediately after a rainfall event, due, for example, to rapidly rising groundwater. This phenomenon is sometimes referred to as rainfall-induced infiltration.

Sanitary sewer systems can also overflow during periods of normal dry weather flows. Many sewer system failures are attributable to natural aging processes or poor operation and maintenance. Examples include years of wear and tear on system equipment such as pumps, lift stations, check valves, and other moveable parts that can lead to mechanical or electrical failure; freeze/thaw cycles, groundwater flow, and subsurface seismic activity that can result in pipe movement, warping, brittleness, misalignment, and breakage; and deterioration of pipes and joints due to root intrusion or other blockages.

Inflow and infiltration impacts are often regional in nature. Satellite collection systems in the communities farthest from the POTW treatment plant can cause sanitary sewer overflows (“SSOs”) in communities between them and the treatment plant by using up capacity in the interceptors. This can cause SSOs in the interceptors themselves or in the municipal sanitary sewers that lead to them. The implication of this is that corrective solutions often must also be regional in scope to be effective.

The health and environmental risks attributed to SSOs vary depending on a number of factors including location and season (potential for public exposure), frequency, volume, the amount and type of pollutants present in the discharge, and the uses, conditions, and characteristics of the receiving waters. The most immediate health risks associated with SSOs to waters and other areas with a potential for human contact are associated with exposure to bacteria, viruses, and other pathogens.

Human health impacts occur when people become ill due to contact with water or ingestion of water or shellfish that have been contaminated by SSO discharges. In addition, sanitary sewer systems can back up into buildings, including private residences. These discharges provide a

⁴ In a 1989 Water Pollution Control Federation survey, 1,003 POTWs identified facility performance problems. Infiltration and inflow was the most frequently cited problem, with 85 percent of the facilities reporting I/I as a problem. I/I was cited as a major problem by 41 percent of the facilities (32 percent as a periodic problem).

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direct pathway for human contact with untreated wastewater. Exposure to land-based SSOs typically occurs through the skin via direct contact. The resulting diseases are often similar to those associated with exposure through drinking water and swimming (*e.g.*, gastroenteritis), but may also include illness caused by inhaling microbial pathogens. In addition to pathogens, raw sewage may contain metals, synthetic chemicals, nutrients, pesticides, and oils, which also can be detrimental to the health of humans and wildlife.

II. EPA Region 1 Past Practice of Permitting POTWs that Include Municipal Satellite Collection Systems

EPA Region 1's practice in permitting regionally integrated POTWs has developed in tandem with its increasing focus on addressing I/I in sewer collection systems, in response to the concerns outlined above. Up to the early 1990s, POTW permits issued by Region 1 generally did not include specific requirements for collection systems. When I/I and the related issue of SSOs became a focus of concern both nationally and within the region in the mid-1990s, Region 1 began adding general requirements to POTW permits that required the permittees to "eliminate excessive infiltration and inflow" and provide an annual "summary report" of activities to reduce I/I. As the Region gathered more information and gained more experience in assessing these reports and activities, it began to include more detailed requirements and reporting provisions in these permits.

MassDEP also engaged in a parallel effort to address I/I, culminating in 2001 with the issuance of MassDEP Policy No. BRP01-1, "Interim Infiltration and Inflow Policy." Among other provisions, this policy established a set of standard NPDES permit conditions for POTWs that included development of an I/I control plan (including funding sources, identification and prioritization of problem areas, and public education programs) and detailed annual reporting requirements (including mapping, reporting of expenditures and I/I flow calculations). Since September 2001, these requirements have been the basis for the standard operation and maintenance conditions related to I/I.

Regional treatment plants presented special issues as I/I requirements became more specific, as it is generally the member communities, rather than the regional sewer district, that own the collection systems that are the primary source of I/I. Before the focus on I/I, POTW permits did not contain specific requirements related to the collection system component of POTWs. Therefore, when issuing NPDES permits to authorize discharges from regionally integrated treatment POTWs, EPA Region 1 had generally only included the legal entity owning and/or operating the regionally centralized wastewater treatment plant. As the permit conditions were focused on the treatment plant itself, this was sufficient to ensure that EPA had authority to enforce the permit requirements.

In implementing the I/I conditions, Region 1 initially sought to maintain the same structure, placing the responsibility on the regional sewer district to require I/I activities by the contributing systems and to collect the necessary information from those systems for submittal to EPA. MassDEP's 2001 Interim I/I Policy reflected this approach, containing a condition for regional systems:

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((FOR REGIONAL FACILITIES ONLY)) The permittee shall require, through appropriate agreements, that all member communities develop and implement infiltration and inflow control plans sufficient to ensure that high flows do not cause or contribute to a violation of the permittees effluent limitations, or cause overflows from the permittees collection system.

As existing NPDES permittees, the POTW treatment plants were an obvious locus of regulation. The Region assumed the plants would be in a position to leverage preexisting legal and/or contractual relationships with the satellite collection systems they serve to perform a coordinating function, and that utilizing this existing structure would be more efficient than establishing a new system of direct reporting to EPA by the collection system owners. The Region also believed that the owner/operator of the POTW treatment plant would have an incentive to reduce flow from contributing satellite systems because doing so would improve treatment plant performance and reduce operation costs. While relying on this cooperative approach, however, EPA Region 1 also asserted that it had the authority to require that POTW collection systems be included as NPDES permittees and that it would do so if it proved necessary. Indeed, in 2001 Region 1 acceded to Massachusetts Water Resources Authority's ("MWRA") request that the contributing systems to the MWRA Clinton wastewater treatment plant ("WWTP") be included as co-permittees, based on evidence provided by MWRA that its specific relationship with those communities would not permit it to run an effective I/I reduction program for these collection systems. EPA Region 1 also put satellite collection systems on notice that they would be directly regulated through legally enforceable permit requirements if I/I reductions were not pursued or achieved.

In time, the Region realized that its failure to assert direct jurisdiction over municipal satellite dischargers was becoming untenable in the face of mounting evidence that cooperative (or in some cases non-existent) efforts on the part of the POTW treatment plant and associated satellites were failing to comprehensively address the problem of extraneous flow entering the POTW. The ability and/or willingness of regional sewer districts to attain meaningful I/I efforts in their member communities varied widely. The indirect structure of the requirements also tended to make it difficult for EPA to enforce the implementation of meaningful I/I reduction programs.

It became evident to EPA Region 1 that a POTW's ability to comply with CWA requirements depended on successful operation and maintenance of not only the treatment plant but also the collection system. For example, the absence of effective I/I reduction and operation/maintenance programs was impeding the Region's ability to prevent or mitigate the human health and water quality impacts associated with SSOs. Additionally, these excess flows stressed POTW treatment plants from a hydraulic capacity and performance standpoint, adversely impacting effluent quality. *See Exhibit B* (Analysis of extraneous flow trends for representative systems). Addressing these issues in regional systems was essential, as these include most of the largest systems in terms of flow, population served and area covered, and serve the largest population centers.

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The Region's practice of imposing NPDES permit conditions on the municipal collection systems in addition to the treatment plant owner/operator represents a necessary and logical progression in its continuing effort to effectively address the serious problem of I/I in sewer collection systems.⁵ In light of its past permitting experience and the need to effectively address the problem of extraneous flow on a system-wide basis, Region 1 decided that it was necessary to refashion permits issued to regionally integrated POTWs to encompass all owners/operators of the treatment works (*i.e.*, the regional centralized POTW treatment plant and the municipal satellite collection systems).⁶ Specifically, Region 1 determined that the satellite systems should be subject as co-permittees to a limited set of O&M-related conditions on permits issued for discharges from regionally integrated treatment works. These conditions pertain only to the portions of the POTW collection system that the satellites own. This ensures maintenance and pollution control programs are implemented with respect to all portions of the POTW. Accordingly, since 2005, Region 1 has generally included municipal satellite collection systems as co-permittees for limited purposes, in addition to the owner/operator of the treatment plant as the main permittee subject to the full array of NPDES requirements, including secondary treatment and water-quality based effluent limitations. The Region has identified 36 permits issued by the Region to POTWs in New Hampshire and Massachusetts that include municipal satellite collection systems as co-permittees. *See Exhibit A.* The 36 permits include a total of 81 satellite collection systems as co-permittees.

III. Legal Authority

The Region's prior and now superseded practice of limiting the permit only to the legal entity owning and/or operating the wastewater treatment plant had never been announced as a regional policy or interpretation. Similarly, the Region's practice of imposing NPDES permit conditions on the municipal collection systems in addition to the treatment plant owner/operator has also never been expressly announced as a uniform, region-wide policy or interpretation. Upon consideration of the Board's decision, described above, EPA Region 1 has decided to supply a clearer, more detailed explanation regarding its use of a co-permittee structure when issuing NPDES permits to regionally integrated POTWs. In this section, the Region addresses the questions posed by the Board in the *Upper Blackstone* decision referenced above.

⁵ Although EPA Region 1 has in the past issued NPDES permits only to the legal entities owning and operating the wastewater treatment plant (*i.e.*, only a portion of the "treatment works"), the Region's reframing of permits to include municipal satellite collection systems does not represent a break or reversal from its historical legal position. EPA Region 1 has never taken the legal position that the satellite collection systems are beyond the reach of the CWA and the NPDES permitting program. Rather, the Region as a matter of discretion had merely never determined it necessary to exercise its statutory authority to directly reach these facilities in order to carry out its NPDES permitting obligations under the Act.

⁶ EPA has "considerable flexibility in framing the permit to achieve a desired reduction in pollutant discharges." *Natural Resources Defense Council, Inc. v. Costle*, 568 F.2d 1369, 1380 (D.C.Cir.1977). ("[T]his ambitious statute is not hospitable to the concept that the appropriate response to a difficult pollution problem is not to try at all.")

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(1) Is the scope of NPDES authority limited to owners/operators of the treatment plant, or does the authority extend to owners/operators of the municipal satellite collection systems that comprise the wider POTW?

The scope of NPDES authority extends beyond the owners/operators of the treatment plant to include to owners/operators of portions of the wider POTW, for the reasons discussed below.

The CWA prohibits the “discharge of any pollutant by any person” from any point source to waters of the United States, except, *inter alia*, in compliance with an NPDES permit issued by EPA or an authorized state pursuant to Section 402 of the CWA. CWA § 301, 402(a)(1); 40 C.F.R. § 122.1(b). Where there is a discharge of pollutants, NPDES regulations require the “operator” of the discharging “facility or activity” to obtain a permit in circumstances where the operator is different from the owner. *Id.* § 122.21(b). “Owner or operator” is defined as “the owner or operator of any ‘facility or activity’ subject to regulation under the NPDES program,” and a “facility or activity” is “any NPDES ‘point source’ or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.” *Id.* § 122.2.

“Publicly owned treatment works” are facilities subject to the NPDES program. Statutorily, POTWs as a class must meet performance-based requirements based on available wastewater treatment technology. *See* CWA § 402(a)(1) (“[t]he Administrator may...issue a permit for the discharge of any pollutant...upon condition that such discharge will meet (A) all applicable requirements under [section 301]...”); § 301(b)(1)(B) (“In order to carry out the objective of this chapter there shall be achieved...for publicly owned treatment works in existence on July 1, 1977...effluent limitations based upon secondary treatment[.]”); *see also* 40 C.F.R. pt 133. In addition to secondary treatment requirements, POTWs are also subject to water quality-based effluent limits if necessary to achieve applicable state water quality standards. *See* CWA § 301(b)(1)(C). *See also* 40 C.F.R. § 122.44(a)(1) (“...each NPDES permit shall include...[t]echnology-based effluent limitations based on: effluent limitations and standards published under section 301 of the Act”) and (d)(1) (same for water quality standards and state requirements). NPDES regulations similarly identify the “POTW” as the entity subject to regulation. *See* 40 C.F.R. § 122.21(a), (requiring “new and existing POTWs” to submit information required in 122.21(j),” which in turn requires “all POTWs,” among others, to provide permit application information).

A municipal satellite collection system is part of a POTW under applicable law. The CWA and its implementing regulations broadly define “POTW” to include not only wastewater treatment plants but also the sewer systems and associated equipment that collect wastewater and convey it to the plants. Under NPDES regulations at 40 C.F.R. §§ 122.2 and 403.3(q), the term “Publicly Owned Treatment Works” or “POTW” means “a treatment works as defined by section 212 of the Act, which is owned by a State or municipality (as defined by section 502(4) of the Act).” Under section 212 of the Act,

“(2)(A) The term ‘treatment works’ means any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid

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nature to implement section 1281 of this title, or necessary to recycle or reuse water at the most economical cost over the estimated life of the works, including intercepting sewers, outfall sewers, *sewage collection systems* [emphasis added], pumping, power, and other equipment, and their appurtenances; extensions, improvements, remodeling, additions, and alterations thereof; elements essential to provide a reliable recycled supply such as standby treatment units and clear well facilities; and any works, including site acquisition of the land that will be an integral part of the treatment process (including land used for the storage of treated wastewater in land treatment systems prior to land application) or is used for ultimate disposal of residues resulting from such treatment.

(B) In addition to the definition contained in subparagraph (A) of this paragraph, ‘treatment works’ means any other method or system for preventing, abating, reducing, storing, treating, separating, or disposing of municipal waste, including storm water runoff, or industrial waste, including waste in combined storm water and *sanitary sewer systems* [emphasis added]. Any application for construction grants which includes wholly or in part such methods or systems shall, in accordance with guidelines published by the Administrator pursuant to subparagraph (C) of this paragraph, contain adequate data and analysis demonstrating such proposal to be, over the life of such works, the most cost efficient alternative to comply with sections 1311 or 1312 of this title, or the requirements of section 1281 of this title.”

Under the NPDES program regulations, this definition has been interpreted as follows:

“The term *Publicly Owned Treatment Works* or *POTW* [emphasis in original]...includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in section 502(4) of the Act, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.”

See 40 C.F.R. § 122.2, cross-referencing 403.3(q).

The statutory and regulatory definitions plainly encompass both the POTW treatment plant and municipal satellite collection systems. Municipal satellite collection systems are part of a POTW by definition (*i.e.*, they are “sewage collection systems” under section 212(A) and “sanitary sewer systems” under section 212(B)). They are also conveyances that send wastewater to a POTW treatment plant for treatment under 40 C.F.R. 403.3(q)). The preamble to the rule that created the regulatory definition of POTW supports the reading that the treatment plant comprises only a portion of the POTW. See 44 Fed. Reg. 62260, 62261 (Oct. 29, 1979).⁷

⁷ “A new provision...defining the term ‘POTW Treatment Plant’ has been added to avoid an ambiguity that now exists whenever a reference is made to a POTW (publicly owned treatment works). ...[T]he existing regulation defines a POTW to include both the treatment plant and the sewer pipes and other conveyances leading to it. As a result, it is unclear whether a particular reference is to the pipes, the treatment plant, or both. The term “POTW

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Consistent with EPA Region 1's interpretation, courts have similarly taken a broad reading of the terms treatment works and POTW.⁸

(2) If the latter, how far up the collection system does NPDES jurisdiction reach, i.e., where does the "collection system" end and the "user" begin?

NPDES jurisdiction extends beyond the treatment plant to the outer boundary of the municipally-owned sewage collection systems, which are defined as sewers whose purpose is to be a common carrier of wastewater for others to a POTW treatment plant for treatment, as explained below.

As discussed in response to Question 1 above, the term "treatment works" is defined to include "sewage collection systems." CWA § 212. In order to define the extent of the sewage collection system for purposes of co-permittee regulation—i.e., to identify the boundary between the portions of the collection system that are subject to NPDES requirements and those that are not—Region 1 is relying on EPA's regulatory interpretation of the term "sewage collection system." In relevant part, EPA regulations define "sewage collection system" at 40 C.F.R. § 35.905 as:

".... each, and all, of the common lateral sewers, within a publicly owned treatment system, which are primarily installed to receive waste waters directly from facilities which convey waste water from individual structures or from private property and which include service connection "Y" fittings designed for connection with those facilities. The facilities which convey waste water from individual structures, from private property to the public lateral sewer, or its equivalent, are specifically excluded from the definition...."

Put otherwise, a municipal satellite collection system is subject to NPDES jurisdiction under the Region's approach insofar as its purpose is to be a common carrier of wastewater for others to a POTW treatment plant for treatment. The use of this primary purpose test (i.e., common sewer installed as a recipient and carrier waste water from others) allows Region 1 to draw a principled, predictable and readily ascertainable boundary between the POTW's collection system and user. This test would exclude, for example, branch drainpipes that collect and transport wastewater from fixtures in a commercial building or public school to the common lateral sewer. This type

treatment plant" will be used to designate that portion of the municipal system which is actually designed to provide treatment to the wastes received by the municipal system."

⁸ See, e.g., *United States v. Borowski*, 977 F.2d 27, 30 n.5 (1st Cir. 1992) ("We read this language [POTW definition] to refer to such sewers, pipes and other conveyances that are publicly owned. Here, for example, the City of Burlington's sewer is included in the definition because it conveys waste water to the Massachusetts Water Resource Authority's treatment works."); *Shanty Town Assoc. v. Env'tl. Prot. Agency*, 843 F.2d 782, 785 (4th Cir. 1988) ("As defined in the statute, a 'treatment work' need not be a building or facility, but can be any device, system, or other method for treating, recycling, reclaiming, preventing, or reducing liquid municipal sewage and industrial waste, including storm water runoff.") (citation omitted); *Comm. for Consideration Jones Fall Sewage System v. Train*, 375 F. Supp. 1148, 1150-51 (D. Md. 1974) (holding that NPDES wastewater discharge permit coverage for a wastewater treatment plant also encompasses the associated sanitary sewer system and pump stations under § 1292 definition of "treatment work").

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of infrastructure would not be considered part of the collection system, because it is not designed to be a common recipient and carrier of wastewaters from other users. Rather, it is designed to transport its users' wastewater to such a common collection system at a point further down the sanitary sewer system.

EPA's reliance on the definition of "sewage collection system" from outside the NPDES regulations for interpretative guidance is reasonable as the construction grants regulations at 40 C.F.R. Part 35, subpart E pertain to grants for POTWs, the entity that is the subject of this NPDES policy. Additionally, the term "sewage collection systems" expressly appears in the definition of treatment works under section 212 of the Act as noted above. Finally, this approach is also consistent with EPA's interpretation in other contexts, such as the SSO listening session notice, published in the Federal Register on June 1, 2010, which describes wastewater collection systems as those that "collect domestic sewage and other wastewater from homes and other buildings and convey it to wastewater sewage treatment plants for proper treatment and disposal." See "Municipal Sanitary Sewer Collection Systems, Municipal Satellite Collection Systems, Sanitary Sewer Overflows, and Peak Wet Weather Discharges From Publicly Owned Treatment Works Treatment Plants Serving Separate Sanitary Sewer Collection Systems," 75 Fed. Reg. 30395.⁹

(3) Do municipal satellite collection systems "discharge [] a pollutant" within the meaning of the statute and regulations?

Yes, because they are a part of the POTW, municipal satellite collection systems discharge pollutants to waters of the United States through one or more outfalls (point sources).

The "discharge of a pollutant," triggers the need for a facility to obtain an NPDES permit. A POTW "discharges [] pollutant[s]" if it adds pollutants from a point source to waters of the U.S. (See 40 C.F.R. § 122.2, section (a) of the definition of "discharge of a pollutant.") As explained above, municipal satellite collection systems are part of the POTW. The entire POTW is the entity that discharges pollutants to waters of the U.S. through point source outfalls typically located at the treatment plant but also occasionally through other outfalls within the overall system. The fact that a collection system may be located in the upstream portions of the POTW and not necessarily near the ultimate discharge point at the treatment plant is not material to the question of whether it "discharges" a pollutant and consequently may be subject to conditions of an NPDES permit issued for discharges from the POTW.¹⁰

⁹ That EPA has in the past looked for guidance from Part 35 when construing the NPDES permitting program, for instance, in the context of storm water permitting, provides further support to the Region that its practice in this regard is sound. See, e.g., "National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges," 55 Fed. Reg. 47990, 47955 (looking to the definition of "storm sewer" at 40 C.F.R. § 35.2005(b)(47) when defining "storm water" under the NPDES program).

¹⁰ This position differs from that taken by the Region in the *Upper Blackstone* litigation. There, the Region argued that the treatment plant was the sole discharging entity for regulatory purposes. The Region has revised this view upon further consideration of the statute, regulations and case law and determined that the POTW as a whole is the discharging entity.

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“Discharge of a pollutant” at 40 C.F.R. § 122.2 is also defined to include “... discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person *which do not lead to a treatment works.*”(emphasis added). Some municipal collection systems have argued that this sentence means that only municipal discharges that do not lead to a “treatment plant” fall within the scope of “discharge of a pollutant.” They further argue that because discharges through satellite collection systems do lead to a treatment plant, such systems do not “discharge [] pollutant[s]” and therefore are not subject to the NPDES permit requirements. This argument is flawed in that it incorrectly equates “treatment works,” the term used in the definition above, with “treatment plant.” To interpret “treatment works” as it appears in the regulatory definition of “discharge of a pollutant” as consisting of only the POTW treatment plant would be inconsistent with the definition of “treatment works” at 40 C.F.R. § 403.3(q), which expressly includes the collection system. *See also* § 403.3(r) (defining “POTW Treatment Plant” as “*that portion* [emphasis added] of the POTW which is designed to provide treatment (including recycling and reclamation) of municipal sewage and industrial waste”).

(4) Are municipal satellite collection systems “indirect dischargers” and thus excluded from NPDES permitting requirements?

No, municipal satellite collection systems are part of the POTW, not “indirect dischargers” to the POTW.

Section 307(b) of the Act requires EPA to establish regulatory pretreatment requirements to prevent the “introduction of pollutants into treatment works” that interfere, pass through or are otherwise incompatible with such works. Section 307 is implemented through the General Pretreatment Regulations for Existing and New Sources of Pollution (40 C.F.R. Part 403) and categorical pretreatment standards (40 C.F.R. Parts 405-471). Section 403.3(i) defines “indirect discharger” as “any non-domestic” source that introduces pollutants into a POTW and is regulated under pretreatment standards pursuant to CWA § 307(b)-(d). The source of an indirect discharge is termed an “industrial user.” *Id.* at § 403.3(j). Under regulations governing the NPDES permitting program, the term “indirect discharger” is defined as “a non-domestic discharger introducing ‘pollutants’ to a ‘publicly owned treatment works.’” 40 C.F.R. § 122.2. Indirect dischargers are excluded from NPDES permit requirements by the indirect discharger rule at 40 C.F.R. § 122.3(c), which provides, “The following discharges do not require an NPDES permit: . . . The introduction of sewage, industrial wastes or other pollutants into publicly owned treatment works by indirect dischargers.”

Municipal satellite collection satellite systems are not indirect dischargers as that term is defined under part 122 or 403 regulations. Unlike indirect dischargers, municipal satellite collection systems are not “introducing pollutants” to POTWs under 40 C.F.R. § 122.2; they are, instead, part of the POTW by definition. Similarly, they are not a non-domestic *source* that introduces pollutants into a POTW within the meaning of § 403.3(j), but as part of the POTW collect and convey municipal sewage from industrial, commercial and domestic users of the POTW.

The Region’s determination that municipal satellite collection systems are not indirect dischargers is, additionally, consistent with the regulatory history of the term indirect discharger.

Appendix D: Permitting Approach for POTWs with Co-permittees

The 1979 revision of the part 122 regulations defined “indirect discharger” as “a non-municipal, non-domestic discharger introducing pollutants to a publicly owned treatment works, which introduction does not constitute a ‘discharge of pollutants’...” See National Pollutant Discharge Elimination System, 44 Fed. Reg. 32854, 32901 (June 7, 1979). The term “non-municipal” was removed in the Consolidated Permit Regulations, 45 Fed. Reg. 33290, 33421 (May 19, 1980) (defining “indirect discharger” as “a nondomestic discharger...”). Although the change was not explained in detail, the substantive intent behind this provision remained the same. EPA characterized the revision as “minor wording changes.” 45 Fed. Reg. at 33346 (Table VII: “Relationship of June 7[, 1979] Part 122 to Today’s Regulations”). The central point again is that under any past or present regulatory incarnation, municipal satellite collection systems, as POTWs, are not within the definition of “indirect discharger,” which is limited to dischargers that introduce pollutants to POTWs.

The position that municipal satellite collection systems are part of, rather than discharge to, the POTW also is consistent with EPA guidance. EPA’s 1994 Multijurisdictional Pretreatment Programs Guidance Manual, (EPA 833-B94-005) (June 1994), at p. 19, asserts that EPA has the authority to require municipal satellite collection systems to develop pretreatment programs by virtue of their being part of the POTW.

(5) How is the Region’s rationale consistent with the references to “municipality” in the regulatory definition of POTW found at 40 C.F.R. § 403.3(q), and the definition’s statement that “[t]he term also means the municipality....which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works?”

There is no inconsistency between the Region’s view that municipally-owned satellite collection systems are part of a POTW, and the references to municipality in 40 C.F.R. § 403.3(q), including the final sentence of the regulatory definition of POTW in the pretreatment regulations.

The Region’s co-permitting rationale is consistent with the first part of the pretreatment program’s regulatory definition of POTW, because the Region is only asserting NPDES jurisdiction over satellite collection systems that are owned by a “State or municipality (as defined by section 502(4) of the Act).” The term “municipality” as defined in CWA § 502(4) “means a city, town, borough, county, parish, district, association, or other public body created by or pursuant to State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes...” Thus, in order to qualify under this definition, a wastewater collection system need only be “owned by a State or municipality.” There is no requirement that the constituent components of a regionally integrated POTW, *i.e.*, the collection system and regional centralized POTW treatment plant, be owned by the same State or municipal entity.

Furthermore, there is no inconsistency between the Region’s view that a satellite collection system is part of a POTW, and the final sentence of the regulatory definition of POTW in the pretreatment regulations. As noted above, the sentence provides that “POTW” may “also” mean a municipality which has jurisdiction over indirect discharges to and discharges from the treatment works. This is not a limitation because of the use of the word “also” (contrast this with the “only if” language in the preceding sentence of the regulatory definition).

(6) How does the Region's rationale comport with the permit application and signatory requirements under NPDES regulations?

EPA's authority to require municipal satellite collection systems to separately comply with the permit application requirements, or to provide waivers from these requirements where appropriate, is consistent with NPDES regulations, which provide that all POTWs must submit permit application information set forth in 40 C.F.R. § 122.21(j) unless otherwise directed, and municipal satellite collection systems are part of the POTW.

EPA has the authority to require municipal satellite collection systems to submit permit applications. These entities are operators of parts of the POTW. NPDES regulations characterize the operator "of the POTW" (which by definition includes the sewage collection system) as opposed to the operator "of the POTW treatment plant" as an appropriate applicant. *Id.* § 122.21(a), (requiring applicants for "new and existing POTWs" to submit information required in 122.21(j)," which in turn requires "all POTWs," among others, to provide permit application information). This reading of the regulation is in keeping with the statutory text, which subjects the POTW writ large to the secondary treatment and water quality-based requirements. *See* CWA § 301(b)(1)(B), (C). In fact, the NPDES permit application for POTWs solicits information concerning portions of the POTW beyond the treatment plant itself, including the collection system used by the treatment works. *See* 40 C.F.R. 122.21(j)(1).

Notwithstanding that EPA could require applications for all the municipal satellite collection systems, requiring such applications may result in duplicative or immaterial information. The Regional Administrator ("RA") may waive any requirement of this paragraph if he or she has access to substantially identical information. 40 C.F.R. § 122.21(j). *See generally*, 64 Fed. Reg. 42440 (August 4, 1999). The RA may also waive any application requirement that is not of material concern for a specific permit. Region 1 believes that it will typically receive information sufficient for NPDES permitting purposes from the POTW treatment plant operator's application.

In most cases, EPA Region 1 believes that having a single permit application from the POTW treatment plant operator will be more efficient in carrying out the regulation's intent than multiple applications from the satellite systems. (The treatment plant operator would of course be required to coordinate as necessary with the constituent components of the POTW to ensure that the information provided to EPA is accurate and complete). EPA Region 1 therefore intends to issue waivers to exempt municipal satellite collection systems from permit application and signatory requirements in accordance with 40 C.F.R. § 122.21(j). To the extent the Region requires additional information, it intends to use its information collection authority under CWA § 308.

IV. Basis for the Specific Conditions to which the Municipal Satellite Collection Systems are Subject as Co-permittees

Appendix D: Permitting Approach for POTWs with Co-permittees

The legal authority for extending NPDES conditions to all portions of the municipally-owned treatment works to ensure proper operation and maintenance and to reduce the quantity of extraneous flow into the POTW is Section 402(a) of the CWA. This section of the Act authorizes EPA to issue a permit for the “discharge of pollutants” and to prescribe permit conditions as necessary to carry out the provisions of the CWA, including Section 301 of the Act. Among other things, Section 301 requires POTWs to meet performance-based requirements based on secondary treatment technology, as well as any more stringent requirements of State law or regulation, including water quality standards. *See* CWA § 301(b)(1)(B),(C).

The co-permittee requirements are required to assure continued achievement of secondary treatment requirements and water quality standards in accordance with sections 301 and 402 of the Act and to prevent unauthorized discharges of sewage from collection systems. With respect to secondary treatment, the inclusion of the satellite systems as co-permittees is necessary because high levels of I/I dilute the strength of influent wastewater and increase the hydraulic load on treatment plants, which can reduce treatment efficiency (*e.g.*, result in violations of technology-based percent removal limitations for BOD and TSS due to less concentrated influent, or violation of other technology effluent limitations due to reduction in treatment efficiency), lead to bypassing a portion of the treatment process, or in extreme situations make biological treatment facilities inoperable (*e.g.*, wash out the biological organisms that treat the waste).

As to water quality standards, the addition of the satellite systems as co-permittees is necessary to ensure collection system operation and maintenance, which will reduce extraneous flow entering the system and free up available capacity. This will facilitate compliance with water quality-based effluent limitations—made more difficult by reductions in treatment efficiency and also reduce water quality standard violations that result from the occurrence of SSOs. *See Exhibits B* (Municipal satellite collection systems with SSOs) and *C* (Analysis of extraneous flow trends for representative systems). SSOs that reach waters of the U.S. are discharges in violation of section 301(a) of the CWA to the extent not authorized by an NPDES permit.

Subjecting portions of an NPDES-regulated entity upstream of the ultimate discharge point is consistent with EPA’s interpretation of the CWA in other contexts. For example, it is well established that EPA has the ability to apply discharge limitations and monitoring requirements to internal process discharges, rather than to outfalls, on the grounds that compliance with permit limitations “may well involve controls applied at points other than the ultimate point of discharge.” *See Decision of the General Counsel No. 27 (In re Inland Steel Company)*, August 4, 1975 (“Limitations upon internal process discharges are proper, if such discharges would ultimately be discharged into waters of the United States, and if such limitations are necessary to carry out the principal regulatory provisions of the Act.”). In the case of regionally integrated POTWs, placing conditions on satellite collection systems—though located farther up the system than the point of discharge—is a logical implication of the regulations and serves to effectuate the statute.

Without imposing conditions on the satellite communities, standard permit conditions applicable to all NPDES permits by regulation cannot be given full effect. To illustrate, there is no dispute

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that the operator of the POTW treatment plant and outfall is discharging pollutants within the meaning the CWA and, accordingly, is subject to the NPDES permit program. NPDES permitting regulations require standard conditions that “apply to all NPDES permits,” pursuant to 40 C.F.R. § 122.41, including a duty to mitigate and to properly operate and maintain “all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit.” *Id.* at § 122.41(d), (e). EPA regulations also require additional conditions applicable to specified categories of NPDES permit, including “Publicly owned treatment works.” *See id.* at § 122.42(b). A municipal satellite collection system, as demonstrated above, falls within the regulatory definition of a POTW. In light of EPA’s authority to require appropriate operation and maintenance of collection systems necessary to achieve compliance with an NPDES permit, and because the operator of the POTW treatment plant may not own or operate a significant portion of the wider treatment works (*i.e.*, the collection systems that send flow to the POTW treatment plant), it is appropriate, and in some cases necessary, to extend pertinent, mandated standard conditions to all portions of the POTW, which is subject to regulation in its entirety. The alternative of allowing state and local jurisdictional boundaries to place significant portions of the POTW beyond the reach of the NPDES permitting program would not only be inconsistent with the broad statutory and regulatory definition of the term POTW but would impede Region 1 from carrying out the objectives of the CWA. It would also, illogically, preclude the Region from imposing on POTWs standard conditions EPA has by regulation mandated for those entities.

Other Considerations Informing EPA Region 1’s Decision to Use a Co-permittee Permitting Structure for Regionally Integrated POTWs

In addition to consulting the relevant statutes, regulations, and preambles, Region 1 also considered other EPA guidance in coming to its determination to employ a co-permittee structure for regionally integrated POTWs. EPA’s 1994 Multijurisdictional Pretreatment Programs Guidance Manual, p. 19, asserts that EPA has the authority to include municipal satellite collection systems as co-permittees by virtue of their being part of the POTW:

If the contributing jurisdiction owns or operates the collection system within its boundaries, then it is a co-owner or operator of the POTW. As such, it can be included on the POTW’s NPDES permit and be required to develop a pretreatment program. Contributing jurisdictions should be made co-permittees where circumstances or experience indicate that it is necessary to ensure adequate pretreatment program implementation.

The same logic that led EPA to conclude it had authority to require municipal satellite collection systems to develop a pretreatment program pursuant to an NPDES permit supports EPA Region 1’s decision to impose permit conditions on such facilities to undertake proper O & M and to reduce inflow and infiltration.

EPA Region 1 also took notice of federal listening session materials on the June 2010 proposed SSO rule and associated model permits and fact sheet. The position articulated by EPA in these

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model documents—specifically the application of standard NPDES conditions to municipal satellite collection systems—generally conform to Region 1’s co-permitting approach.

Finally, in addition to federal requirements, EPA Region 1 considered the co-permittee approach in light of state regulations and policy pertaining to wastewater treatment works. The Region found its approach to be consistent with such requirements. Under Massachusetts law, “Any person operating treatment works shall maintain the facilities in a manner that will ensure proper operation of the facilities or any part thereof,” where “treatment works” is defined as “any and all devices, processes and properties, real or personal, used in the collection, pumping, transmission, storage, treatment, disposal, recycling, reclamation or reuse of waterborne pollutants, but not including any works receiving a hazardous waste from off the site of the works for the purpose of treatment, storage or disposal, or industrial wastewater holding tanks regulated under 314 CMR 18.00” *See* 314 CMR 12.00 (“Operation and Maintenance and Pretreatment Standards for Wastewater Treatment Works and Indirect Dischargers”). MassDEP has also prioritized this area, issuing detailed operation and maintenance guidelines entitled “Optimizing Operation, Maintenance and Rehabilitation of Sanitary Sewer Collection Systems.”

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Exhibit A

Permit Number	Permittee	Co-permittees	Issue Date with Co-permittees
MA0100404	Massachusetts Water Resources Authority – Clinton	Town of Clinton Lancaster Sewer District	September 27, 2000
MA0101010	City of Brockton	Town of Abington Town of Whitman	May 11, 2005
MA0100412	Westborough Wastewater Treatment Plant	Town of Westborough Town of Shrewsbury Town of Hopkinton	May 20, 2005
MA0100480	City of Marlborough	Town of Northborough	May 26, 2005
MA0100447	Greater Lawrence Sanitary District	City of Lawrence, Town of Andover, Town of North Andover, Town of Methuen, Town of Salem, NH	August 11, 2005
MA0100633	Lowell Regional Wastewater Utilities	Town of Chelmsford, Town of Dracut Town of Tewksbury Town of Tyngsborough	September 1, 2005
MA0100064	Pepperell Wastewater Treatment Plant	Town of Groton	December 22, 2005
MA0100439	Town of Webster Sewer Department	Town of Dudley	March 24, 2006
MA0100455	Town of South Hadley, Board of Selectmen	Town of Granby, Town of Chicopee	June 12, 2006
MA0100617	City of Leominster (NPDES Permit No. MA0100617)	Town of Lunenburg Town of Lancaster	September 28, 2006
MA0100510	Hoosac Water Quality District	Town of Williamstown Town of North Adams Town of Clarksburg	September 28, 2006
MA0101036	Board of Public Works, North Attleborough	Town of Plainville	January 4, 2007
NH0100544	Town of Sunapee	New London Sewer Commission	February 21, 2007
MA0100552	Lynn Water and Sewer Commission (NPDES Permit No. MA0100552)	Town of Nahant Town of Swampscott Town of Saugus	March 3, 2007
NH0100331	City of Concord	Boscawen Board of Selectmen	June 29, 2007

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Permit Number	Permittee	Co-permittees	Issue Date with Co-permittees
NH0100790	City of Keene (NPDES Permit No. NH0100790)	Town of Marlborough, NH Swanzy Sewer Commission	August 24, 2007
NH0100625	Town of Hampton	Rye Sewer Commission	August 28, 2007
NH0100161	Town of Merrimack, NH	Town of Bedford	September 25, 2007
MA0101621	City of Haverhill	Town of Groveland	December 5, 2007
MA0101681	City of Pittsfield, Department of Public Works	Town of Dalton Town of Lenox Town of Hinsdale Town of Lanesborough Town of Richmond	August 22, 2008
NH0100447	City of Manchester	Town of Goffstown Town of Bedford Town of Londonderry	September 25, 2008
MA0100781	City of New Bedford	Town of Acushnet Town of Dartmouth	September 28, 2008
MA0101818	City of Northhampton	Town of Williamsburg	September 30, 2008
NH0100960	Winnepesaukee River Basin Program Wastewater Treatment Plant	Town of Belmont Town of Center Harbor City of Franklin Town of Gilford City of Laconia Town of Meredith Town of Northfield Town of Tilton	June 19, 2009
MA0101800	City of Westfield	Town of Southwick	September 30, 2009
MA0101231	Hull Permanent Sewer Commission	Cohasset Sewer Commission Hingham Sewer Commission	September 1, 2009
MA0100994	Gardner Department of Public Works	Town of Ashburnham	September 30, 2009
MA0102598	Charles River Pollution Control District	Town of Franklin Town of Medway Town of Millis Town of Bellingham	July 23, 2014
MA0101702	MFN Region Wastewater District	Town of Mansfield Town of Norton Town of Foxboro	September 11, 2014

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Permit Number	Permittee	Co-permittees	Issue Date with Co-permittees
MA0100897	Taunton Wastewater Treatment Plant	Town of Raynham	April 10, 2015
		Town of Dighton	
NH0100366	City of Lebanon, NH	Town of Enfield	September 30, 2015
NH0100099	Town of Hanover, NH	City of Lebanon	November 18, 2015
MA0100501	South Essex Sewerage District	City of Beverly, Town of Danvers Town of Marblehead City of Peabody City of Salem	May 5, 2016
NH0100471	Town of Milford, NH	Town of Wilton Sewer Commission	August 31, 2020
MA0101613	Springfield Regional Wastewater Treatment Facility	Town of Agawam Town of East Longmeadow Town of Longmeadow Town of Ludlow Town of West Springfield Town of Wilbraham	September 30, 2020
NH0101390	Town of Allenstown, NH	Town of Pembroke Sewer Commission	November 29, 2021
NH0100901	Town of Concord - Concord Hall Street Wastewater Treatment Facility	Town of Bow	July 1, 2022
MAG590000	2022 Medium Wastewater Treatment Facilities General Permit	(as authorized)	September 28, 2022

Exhibit B**I/I Flow Analysis for Sample Regional Publicly Owned Treatment Works****I. Representative POTWS**

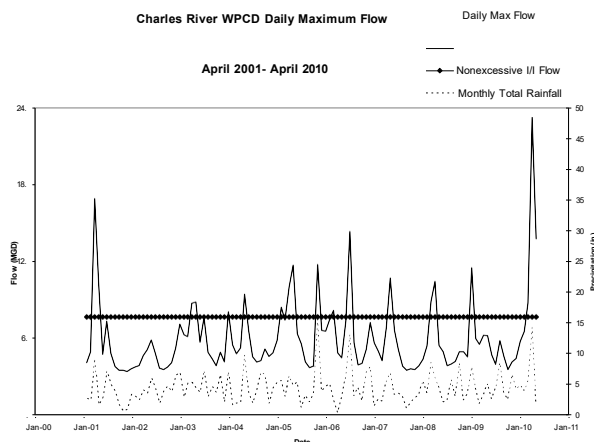
The **South Essex Sewer District (SESD)** is a regional POTW with a treatment plant in Salem, Massachusetts. The SESD serves a total population of 174,931 in six communities: Beverly, Danvers, Marblehead, Middleton, Peabody and Salem. The **Charles River Pollution Control District (CRPCD)** is a regional POTW with a treatment plant in Medway, Massachusetts. The CRPCD serves a total population of approximately 28,000 in four communities: Bellingham, Franklin, Medway and Millis. Both of these facilities have been operating since 2001 under permits that place requirements on the treatment plant to implement I/I reduction programs with the satellite collection systems, in contrast to Region 1's current practice of including the satellite collection systems as co-permittees.

II. Comparison of flows to standards for nonexcessive infiltration and I/I

Flow data from the facilities' discharge monitoring reports (DMRs) are shown in comparison to the EPA standard for nonexcessive infiltration/inflow (I/I) of 275 gpcd wet weather flow and the EPA standard for nonexcessive infiltration of 120 gallons per capita per day (gpcd) dry weather flow; the standards are multiplied by population served for comparison with total flow from the facility. See *I/I Analysis and Project Certification*, EPA Ecol. Pub. 97-03 (1985); 40 CFR 35.2005(b)(28) and (29).

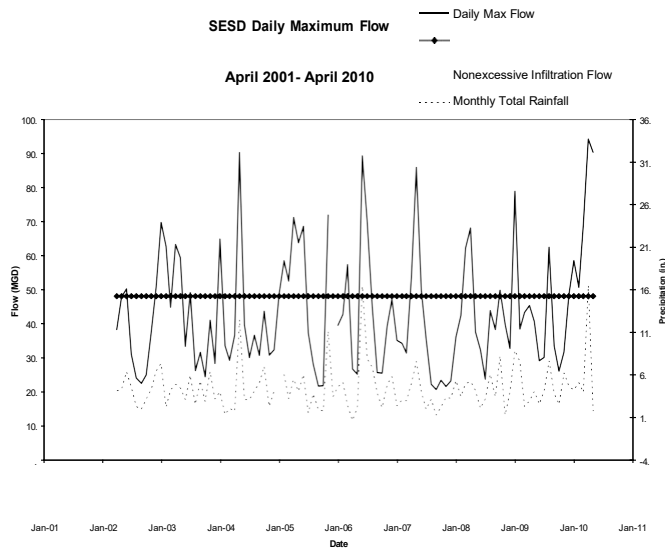
Figures 1 and 2 show the Daily Maximum Flows (the highest flow recorded in a particular month) for the CRPCD and SESD, respectively, along with monthly precipitation data from nearby weather stations. Both facilities experience wet weather flows far exceeding the standard for nonexcessive I/I, particularly in wet months, indicating that these facilities are receiving high levels of inflow and wet weather infiltration.

Figure 1. CRPCD Daily Maximum Flow Compared to Nonexcessive I/I Standard



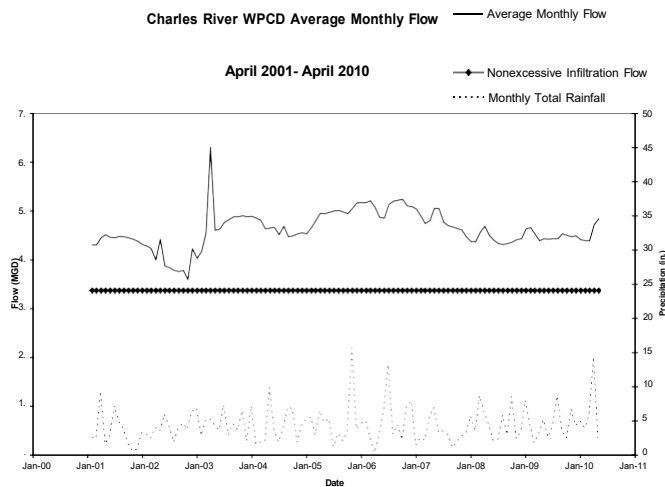
Appendix D: Permitting Approach for POTWs with Co-permittees

Figure 2. SESD Daily Maximum Flow Compared to Nonexcessive I/I Standard



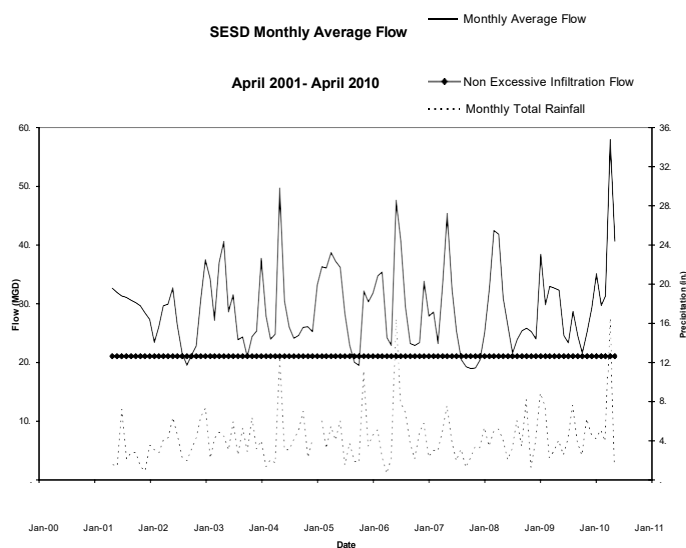
Figures 3 and 4 shows the Average Monthly Flows for the CRPCD and SESD, which exceed the nonexcessive infiltration standard for all but the driest months. This indicates that these systems experience high levels of groundwater infiltration into the system even during dry weather.

Figure 3. CRPCD Monthly Average Flow Compared to Nonexcessive Infiltration Standard



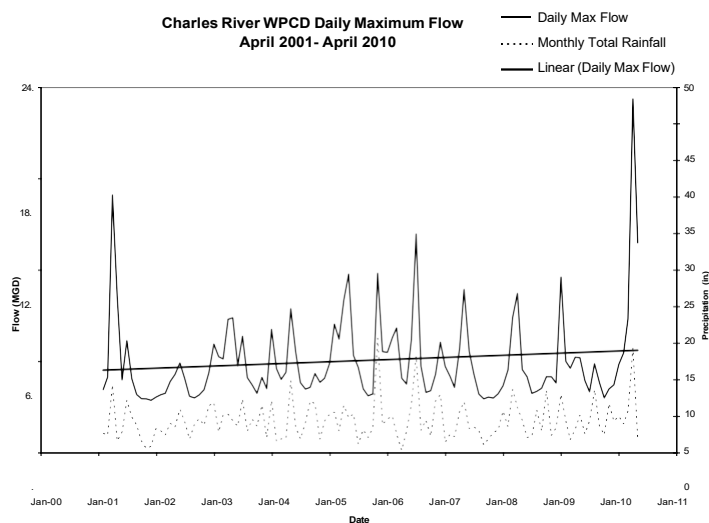
Appendix D: Permitting Approach for POTWs with Co-permittees

Figure 4. SESD Monthly Average Flow Compared to Nonexcessive Infiltration Standard

II. Flow Trends

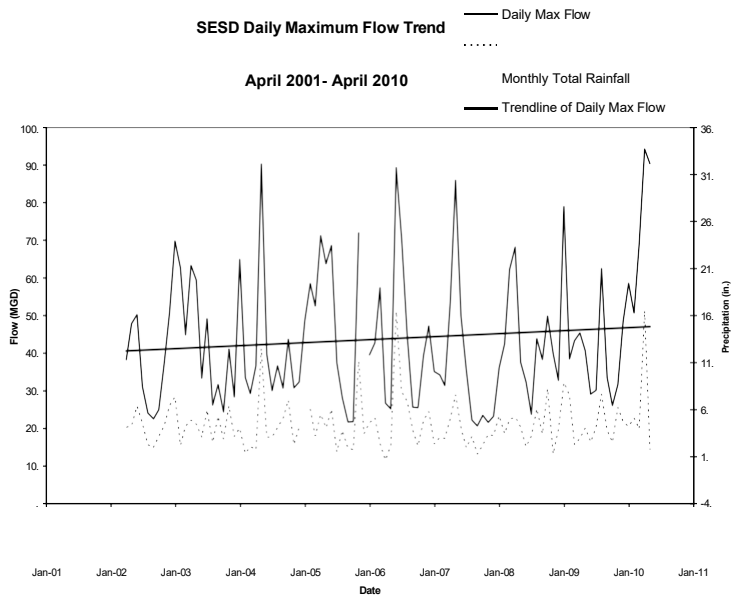
Figures 5 and 6 show the trend in Maximum Daily Flows over the period during which these regional facilities have been responsible for implementing cooperative I/I reduction programs with the satellite collection systems. The Maximum Daily Flow reflects the highest wet weather flow for each month. The trend over this time period has been of increasing Maximum Daily Flow, indicating that I/I has not been reduced in either system despite the permit requirements.

Figure 5. CRPCD Daily Maximum Flow Trend



Appendix D: Permitting Approach for POTWs with Co-permittees

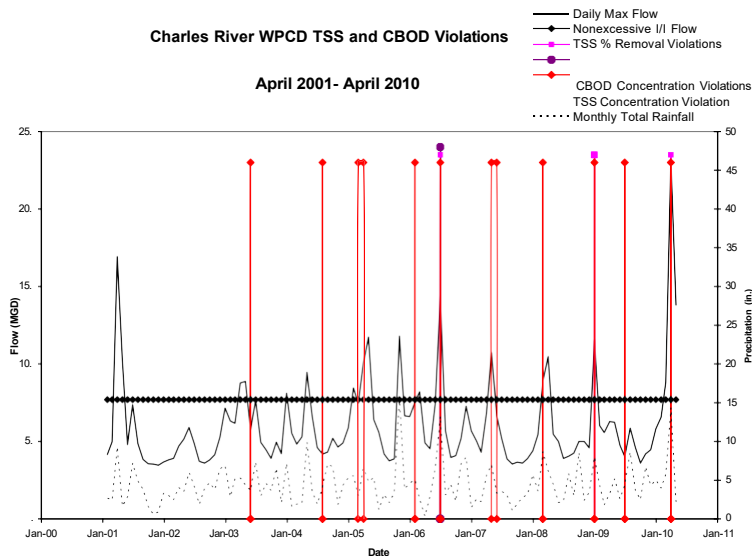
Figure 6. SESD Daily Maximum Flow Trend



III. Violations Associated with Wet Weather Flows

Both the CRPCD and SESD have experienced permit violations that appear to be related to I/I, based on their occurrence during wet weather months when excessive I/I standards are exceeded. Figure 7 shows violations of CRPCD's effluent limits for CBOD (concentration) and TSS (concentration and percent removal). Twelve of the sixteen violations occurred during months when daily maximum flows exceeded the EPA standard.

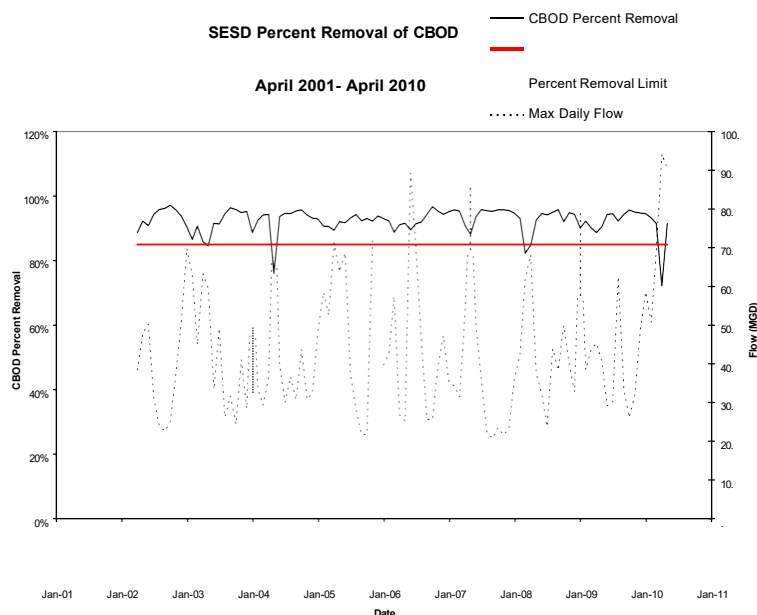
Figure 7. CRPCD CBOD and TSS Effluent Limit Violations



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Figure 8 shows SEDS's results for removal of CBOD, in percentage, as compared to maximum daily flow. SEDS had three permit violations where CBOD removal fell below 85%, all during months with high Maximum Daily Flows.

Figure 8. SEDS CBOD Percent Removal



In addition, both of these regional POTWs have experienced SSOs within the municipal satellite collection systems. In the SEDS system, Beverly, Danvers, Marblehead and Peabody have reported SSOs between 2006 and 2008, based on data provided by MassDEP. In the CRPCD system, both Franklin and Bellingham have reported SSOs between 2006 and 2009.

Exhibit C

Form of Regional Administrator's waiver of permit application requirements
for municipal satellite collection systems



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

Re: Waiver of Permit Application and Signatory Requirements for [Municipal Satellite Sewage Collection System]

Dear _____:

Under NPDES regulations, all POTWs must submit permit application information set forth in 40 C.F.R. § 122.21(j) unless otherwise directed. Where the Region has “access to substantially identical information,” the Regional Administrator may waive permit application requirements for new and existing POTWs. *Id.* Pursuant to my authority under this regulation, I am waiving NPDES permit application and signatory requirements applicable to the above-named municipal satellite collection systems.

Although EPA has the authority to require municipal satellite collection systems to submit individual permit applications, in this case I find that requiring a single permit application executed by the regional POTW treatment plant owner/operator will deliver “substantially identical information,” and will be more efficient, than requiring separate applications from each municipal satellite collection system owner/operator. Municipal satellite collection system owners/operators are expected to consult and coordinate with the regional POTW treatment plant operators to ensure that any information provided to EPA about their respective entities is accurate and complete. In the event that EPA requires additional information, it may use its information collection authority under CWA § 308. 33 U.S.C. § 1318.

This notice reflects my determination based on the specific facts and circumstances in this case. It is not intended to bind the agency in future determinations where a separate permit for municipal satellites would not be duplicative or immaterial.

If you have any questions or would like to discuss this decision, please contact [EPA Permit Contact] at <mailto:permit.writer@epa.gov> or 617-918-XXXX.

Sincerely,

Regional Administrator

Date	Sampling Station	Cadmium	Copper	Nickel	Lead
7/27/2021	N21A	0.32	4.0	0.78	0.86
7/27/2021	N21D	<4.0	5.6	< 8	<4.0
7/27/2021	N04A	<4.0	^a —	< 8	<4.0
7/27/2021	N04D	<4.0	1.6	< 8	<4.0
7/27/2021	F13A	0.80	3.5	0.93	1.50
7/27/2021	F13D	0.45	<12	0.71	0.95
7/29/2021	N21A	0.12	1.5	< 8.0	0.38
7/29/2021	N21D	<4.0	<12	<8.0	0.35
7/29/2021	N04A	<4.0	<12	<8.0	<4.0
7/29/2021	N04D	<4.0	<12	<8.0	<4.0
7/29/2021	F13A	<4.0	<12	<8.0	<4.0
7/29/2021	F13D	<4.0	<12	<8.0	<4.0
8/3/2021	N21A	0.15	^b —	^c —	<4.0
8/3/2021	N21D	<4.0	^b —	^c —	<4.0
8/3/2021	N04A	<4.0	^b —	^c —	<4.0
8/3/2021	N04D	<4.0	^b —	^c —	<4.0
8/3/2021	F13A	<4.0	^b —	^c —	<4.0
8/3/2021	F13D	<4.0	^b —	^c —	<4.0
8/4/2021	N21A	<4.0	^b —	3.0	<4.0
8/4/2021	N21D	<4.0	^b —	2.4	<4.0
8/4/2021	N04A	<4.0	^b —	2.8	<4.0
8/4/2021	N04D	<4.0	^b —	2.9	<4.0
8/4/2021	F13A	<4.0	^b —	2.6	<4.0
8/4/2021	F13D	<4.0	^b —	3.0	<4.0
8/25/2021	N21A	<4.0	^c —	^d —	<4.0
8/25/2021	N21D	<4.0	^c —	^d —	<4.0
8/25/2021	N04A	<4.0	^c —	^d —	<4.0
8/25/2021	N04D	<4.0	^c —	^d —	<4.0
8/25/2021	F13A	<4.0	^c —	^d —	<4.0
8/25/2021	F13D	<4.0	^c —	^d —	<4.0
Results by sampling date and sample location					
^a — Duplicate QC failure					
^b — Results are < PQL but are not usable because of high dilution of samples and high PQL					

^c — Field-QC blank contamination					
^d — Method blank contamination					
^e — Lab and field QC not within method control limit					
LOCATION	Location identifiers combine the area and station identifier with the depth code				
station identifiers:					
N21	Center of outfall diffuser (42.3878333, -70.785333)				
N04	Northeastern corner of nearfield (42.4438333, -70.7365)				
F13	ENE of Cohasset Harbor, Mass Bay south of outfall site (42.2683333, -70.735)				
depth codes:					
A	surface (within 2 m of the surface)				
D	subpycnocline				
	Note: On July 27 and August 25, the D-depth samples were collected approximately 10-15 m from the bottom. On July 29 and August 3 and 4, D-depth samples were approximately 2 m from the bottom.				

Date	Sampling Station	Zinc	TOC
7/27/2021	N21A	20	1.7
7/27/2021	N21D	33	1.3
7/27/2021	N04A	38	1.8
7/27/2021	N04D	<40	1.1
7/27/2021	F13A	35	1.7
7/27/2021	F13D	<40	1.3
7/29/2021	N21A	<40	1.7
7/29/2021	N21D	<40	1.3
7/29/2021	N04A	<40	1.7
7/29/2021	N04D	<40	1.2
7/29/2021	F13A	<40	1.8
7/29/2021	F13D	<40	1.2
8/3/2021	N21A	<40	1.8
8/3/2021	N21D	<40	1.3
8/3/2021	N04A	<40	1.8
8/3/2021	N04D	<40	1.1
8/3/2021	F13A	<40	1.8
8/3/2021	F13D	<40	1.2
8/4/2021	N21A	<40	1.7
8/4/2021	N21D	<40	1.3
8/4/2021	N04A	<40	1.7
8/4/2021	N04D	<40	1.1
8/4/2021	F13A	<40	1.6
8/4/2021	F13D	<40	1.3
8/25/2021	N21A	^e —	1.6
8/25/2021	N21D	^e —	1.2
8/25/2021	N04A	^e —	1.4
8/25/2021	N04D	^e —	1.2
8/25/2021	F13A	^e —	1.4
8/25/2021	F13D	^e —	1.3
Results by sampling date and sample location			
^a — Duplicate QC failure			
^b — Results are < PQL but are not usable because of high dilution of samples and high PQL			

^c — Field-QC blank contamination			
^d — Method blank contamination			
^e — Lab and field QC not within method control limit			
LOCATION	Location identifiers combine the area and station identifier with the depth code		
station identifiers:			
N21	Center of outfall diffuser (42.3878333, -70.785333)		
N04	Northeastern corner of nearfield (42.4438333, -70.7365)		
F13	ENE of Cohasset Harbor, Mass Bay south of outfall site (42.2683333, -70.735)		
depth codes:			
A	surface (within 2 m of the surface)		
D	subpycnocline		
	Note: On July 27 and August 25, the D-depth samples were collected approximately 10-15 m from the bottom. On July 29 and August 3 and 4, D-depth samples were approximately 2 m from the bottom.		

Parameter	Date	Depth	Chlorophyll	Ammonium	Nitrate	Nitrite
Units	EST	m	ug/L	uM	uM	uM
Minimum		1.16	0.21	0.0378	0	0.0134
Maximum		27.15	31.2	24.2	9.095	0.722
Median		12.24	2.02	1.82	1.6727	0.148
N18	12-Feb-16 13:35:41	2.04	3.41	1.55	8.018	0.172
N18	12-Feb-16 13:35:41	7.95		1.51	7.929	0.171
N18	12-Feb-16 13:35:41	12.88	3.5	1.72	7.899	0.171
N18	12-Feb-16 13:35:41	12.88	3.18	1.58	7.926	0.174
N18	12-Feb-16 13:35:41	18.48		1.51	7.911	0.169
N18	12-Feb-16 13:35:41	26.95	3	1.38	7.83	0.18
N18	23-Mar-16 10:02:44	1.88	1.14	1.51	5.275	0.125
N18	23-Mar-16 10:02:44	6.87		1.93	5.067	0.133
N18	23-Mar-16 10:02:44	11.56	0.96	2.87	5.33	0.14
N18	23-Mar-16 10:02:44	11.56	0.89	2.54	5.51	0.14
N18	23-Mar-16 10:02:44	17.59		3.99	5.638	0.152
N18	23-Mar-16 10:02:44	23.43	0.41	3.34	5.672	0.148
N18	18-Apr-16 09:48:26	2.12	3.53	0.55	3.087	0.173
N18	18-Apr-16 09:48:26	9.43	5.64	2.87	4.297	0.213
N18	18-Apr-16 09:48:26	9.43	5.74	2.95	4.256	0.224
N18	18-Apr-16 09:48:26	15.03		1.19	4.163	0.177
N18	18-Apr-16 09:48:26	21		1.19	4.576	0.194
N18	18-Apr-16 09:48:26	25.81	2.36	1.4	5.052	0.208
N18	18-May-16 09:33:20	1.7	2.13	0.0613	<0.025	0.0291
N18	18-May-16 09:33:20	7.06		0.111	<0.025	0.0444
N18	18-May-16 09:33:20	11.81	3.37	0.255	0.1285	0.0595
N18	18-May-16 09:33:20	11.81	3.44	0.379	0.0092	0.0529
N18	18-May-16 09:33:20	18.26		1.97	1.234	0.146
N18	18-May-16 09:33:20	23.08	0.47	3.87	3.325	0.275
N18	25-May-16 06:54:25	1.69	1.52	<0.028	<0.025	<0.013
N18	25-May-16 06:54:25	10.28	2.18	<0.028	0.204	<0.013
N18	25-May-16 06:54:25	10.28	2.18	<0.028	0.1414	0.0186
N18	25-May-16 06:54:25	20.14	0.48	5.58	4.004	0.316
N18	25-May-16 06:54:25	23.98	1	6.77	3.297	0.293
N18	01-Jun-16 06:43:29	1.61	1.04	<0.028	<0.025	<0.013
N18	01-Jun-16 06:43:29	9.95		<0.028	<0.025	<0.013
N18	01-Jun-16 06:43:29	9.95	1.23	<0.028	<0.025	<0.013
N18	01-Jun-16 06:43:29	19.02	1.79	1.81	0.3188	0.0532
N18	01-Jun-16 06:43:29	21.89	1.73	0.384	0.797	0.106
N18	21-Jun-16 10:03:23	2.08		0.342	<0.025	0.0134
N18	21-Jun-16 10:03:23	8.71		0.256	<0.025	<0.013

Parameter	Date	Depth	Chlorophyll	Ammonium	Nitrate	Nitrite
Units	EST	m	ug/L	uM	uM	uM
Minimum		1.16	0.21	0.0378	0	0.0134
Maximum		27.15	31.2	24.2	9.095	0.722
Median		12.24	2.02	1.82	1.6727	0.148
N18	21-Jun-16 10:03:23	15.41		0.657	<0.025	0.0313
N18	21-Jun-16 10:03:23	15.41		0.339	<0.025	<0.013
N18	21-Jun-16 10:03:23	18.52		3.65	0.4603	0.0937
N18	21-Jun-16 10:03:23	22.96		1.69	0.6727	0.0903
N18	26-Jul-16 09:15:58	1.34	1.42	0.961	0.0074	0.0264
N18	26-Jul-16 09:15:58	6.33		1.06	0.1869	0.0381
N18	26-Jul-16 09:15:58	12.24	4.74	1.88	0.5002	0.0418
N18	26-Jul-16 09:15:58	12.24	7	1.52	0.4685	0.0505
N18	26-Jul-16 09:15:58	15.22		11.1	5.231	0.289
N18	26-Jul-16 09:15:58	21.8	1.34	10.9	5.552	0.298
N18	23-Aug-16 09:58:12	1.75	1.81	1.08	<0.025	<0.013
N18	23-Aug-16 09:58:12	7.11		1.01	<0.025	<0.013
N18	23-Aug-16 09:58:12	12.16		1.24	1.305	0.115
N18	23-Aug-16 09:58:12	16.85	3.03	1.38	3.067	0.273
N18	23-Aug-16 09:58:12	16.85	2.89	1.62	3.16	0.27
N18	23-Aug-16 09:58:12	23	1.9	1.71	3.838	0.332
N18	03-Oct-16 10:55:43	1.39	2.4	5.85	0.398	0.12
N18	03-Oct-16 10:55:43	6.81		5.2	0.327	0.129
N18	03-Oct-16 10:55:43	14	2.05	1.36	0.3418	0.0922
N18	03-Oct-16 10:55:43	14	1.91	1.35	0.2815	0.0985
N18	03-Oct-16 10:55:43	21.18		1.03	0.43	0.116
N18	03-Oct-16 10:55:43	27.15	1.39	0.949	0.377	0.138
N18	01-Nov-16 10:55:09	2.06	2.17	0.323	3.293	0.277
N18	01-Nov-16 10:55:09	6.26		0.337	3.378	0.282
N18	01-Nov-16 10:55:09	12.72	2.76	0.592	3.277	0.283
N18	01-Nov-16 10:55:09	12.72	2.07	0.485	3.291	0.289
N18	01-Nov-16 10:55:09	19.29		0.449	3.398	0.272
N18	01-Nov-16 10:55:09	23.68	2.31	0.322	3.576	0.274
N18	18-Feb-17 11:08:11	1.76	3.6		7.323	0.217
N18	18-Feb-17 11:08:11	5.78			7.342	0.228
N18	18-Feb-17 11:08:11	9.74	3.27		7.639	0.231
N18	18-Feb-17 11:08:11	9.74	3.57		7.684	0.186
N18	18-Feb-17 11:08:11	14.98			7.582	0.188
N18	18-Feb-17 11:08:11	19.43	3.42		7.399	0.201
N18	25-Mar-17 09:19:31	1.16	1.3	11.3	6.358	0.152
N18	25-Mar-17 09:19:31	7.43		7.03	6.281	0.149

Parameter	Date	Depth	Chlorophyll	Ammonium	Nitrate	Nitrite
Units	EST	m	ug/L	uM	uM	uM
Minimum		1.16	0.21	0.0378	0	0.0134
Maximum		27.15	31.2	24.2	9.095	0.722
Median		12.24	2.02	1.82	1.6727	0.148
N18	25-Mar-17 09:19:31	12.98	1.42	4.94	6.197	0.153
N18	25-Mar-17 09:19:31	12.98	1.42	4.42	6.394	0.146
N18	25-Mar-17 09:19:31	19.56		2.02	6.422	0.148
N18	25-Mar-17 09:19:31	26.08	1	1.49	6.381	0.149
N18	24-Apr-17 10:38:53	1.7	2.01	0.262	0.1816	0.0204
N18	24-Apr-17 10:38:53	7.12		3.07	1.509	0.081
N18	24-Apr-17 10:38:53	14.37	3.74	7.81	4.24	0.18
N18	24-Apr-17 10:38:53	14.37	3.43	7.82	4.302	0.188
N18	24-Apr-17 10:38:53	20.83		7.93	6.206	0.224
N18	24-Apr-17 10:38:53	25.82	4.37	7.61	6.269	0.221
N18	16-May-17 10:14:36	1.52	1.95	0.201	0.3963	0.0367
N18	16-May-17 10:14:36	6.33		0.336	0.358	0.028
N18	16-May-17 10:14:36	12	1.71	0.654	0.6241	0.0429
N18	16-May-17 10:14:36	12	1.85	0.614	0.4742	0.0398
N18	16-May-17 10:14:36	17.84		0.96	0.8225	0.0625
N18	16-May-17 10:14:36	26.07	0.91	1.66	1.6727	0.0873
N18	13-Jun-17 09:41:19	1.52	1.21	0.281	<0.025	0.0231
N18	13-Jun-17 09:41:19	7.43		0.339	0.0329	0.0153
N18	13-Jun-17 09:41:19	13.4	1.51	1.56	1.821	0.109
N18	13-Jun-17 09:41:19	13.4	1.7	1.81	1.883	0.117
N18	13-Jun-17 09:41:19	20.1		2.54	3.008	0.202
N18	13-Jun-17 09:41:19	26.07	0.96	2.63	2.897	0.203
N18	21-Jun-17 12:38:37	1.82	2.11	0.165	0.109	<0.013
N18	21-Jun-17 12:38:37	10.29	1.92	2.47	2.798	0.212
N18	21-Jun-17 12:38:37	10.29	0.68	2.56	2.746	0.214
N18	21-Jun-17 12:38:37	19.98	2.02	4.19	3.736	0.274
N18	28-Jun-17 12:56:43	1.78	3.12	1.02	0.4817	0.0703
N18	28-Jun-17 12:56:43	9.94	4.83	11.2	2.816	0.354
N18	28-Jun-17 12:56:43	9.94	5.1	10.8	2.835	0.355
N18	28-Jun-17 12:56:43	19.87	1.97	10.7	3.849	0.411
N18	28-Jun-17 12:56:43	23.65	2.44	10.1	3.757	0.393
N18	08-Jul-17 12:45:27	1.94	3.51	0.255	0.1194	0.0516
N18	08-Jul-17 12:45:27	9.86	31.2	10.1	0.849	0.341
N18	08-Jul-17 12:45:27	9.86	29.2	11.2	0.979	0.361
N18	08-Jul-17 12:45:27	20.16	5.37	10.2	3.78	0.61
N18	08-Jul-17 12:45:27	24.85	6.3	9.59	3.984	0.576

Parameter	Date	Depth	Chlorophyll	Ammonium	Nitrate	Nitrite
Units	EST	m	ug/L	uM	uM	uM
Minimum		1.16	0.21	0.0378	0	0.0134
Maximum		27.15	31.2	24.2	9.095	0.722
Median		12.24	2.02	1.82	1.6727	0.148
N18	16-Jul-17 12:31:54	1.7	0.94	0.232	0.0963	0.0297
N18	16-Jul-17 12:31:54	9.86	3.44	5.79	0.593	0.208
N18	16-Jul-17 12:31:54	9.86	3.73	5.75	0.67	0.143
N18	16-Jul-17 12:31:54	21.14	4.87	5.1	1.731	0.279
N18	26-Jul-17 09:55:36	1.76	1.66	<0.028	0.1025	0.0235
N18	26-Jul-17 09:55:36	7.79		0.0749	0.0813	0.0173
N18	26-Jul-17 09:55:36	13.7		0.115	0.0884	0.0206
N18	26-Jul-17 09:55:36	19.61	9.3	2.58	0.2972	0.0808
N18	26-Jul-17 09:55:36	19.61	9.22	2.68	0.3264	0.0796
N18	26-Jul-17 09:55:36	26.8	2.11	5.32	1.021	0.239
N18	23-Aug-17 09:53:12	1.72	1.64	<0.028	0.136	<0.013
N18	23-Aug-17 09:53:12	6.23		2.44	0.8755	0.0845
N18	23-Aug-17 09:53:12	10.31	2.86	9.29	2.554	0.276
N18	23-Aug-17 09:53:12	10.31	3.02	9.23	2.557	0.253
N18	23-Aug-17 09:53:12	17.07		7.53	3.961	0.369
N18	23-Aug-17 09:53:12	23.77	0.87	4.74	4.07	0.37
N18	06-Sep-17 09:20:37	1.64	5.23	<0.028	0.1298	0.0302
N18	06-Sep-17 09:20:37	8.1		<0.028	0.2139	0.0361
N18	06-Sep-17 09:20:37	13.83	7.3	2.23	1.175	0.105
N18	06-Sep-17 09:20:37	13.83	7.38	2.23	1.194	0.126
N18	06-Sep-17 09:20:37	20.34		3.43	3.788	0.292
N18	06-Sep-17 09:20:37	24.49	1.75	2.6	4.595	0.325
N18	01-Nov-17 09:34:50	1.51	4.85	<0.028	4.775	0.205
N18	01-Nov-17 09:34:50	6.08	3.05	<0.028	5.795	0.155
N18	01-Nov-17 09:34:50	6.08	3.48	<0.028	5.725	0.175
N18	01-Nov-17 09:34:50	12.05		<0.028	6.6769	0.0931
N18	01-Nov-17 09:34:50	17.96		<0.028	7.206	0.144
N18	01-Nov-17 09:34:50	23.93	1.83	<0.028	7.24	0.12
N18	06-Feb-18 10:57:52	1.87	1.54	1.82	8.707	0.053
N18	06-Feb-18 10:57:52	7.23		1.79	8.5261	0.0539
N18	06-Feb-18 10:57:52	13.75	1.44	1.67	8.5247	0.0553
N18	06-Feb-18 10:57:52	13.75	1.46	1.75	8.6943	0.0557
N18	06-Feb-18 10:57:52	18.44		1.29	8.4349	0.0451
N18	06-Feb-18 10:57:52	23.93	1.1	0.816	8.1395	0.0405
N18	20-Mar-18 10:00:55	1.52	0.58	5.21	8.141	0.189
N18	20-Mar-18 10:00:55	7.73		3.92	8.176	0.174

Parameter	Date	Depth	Chlorophyll	Ammonium	Nitrate	Nitrite
Units	EST	m	ug/L	uM	uM	uM
Minimum		1.16	0.21	0.0378	0	0.0134
Maximum		27.15	31.2	24.2	9.095	0.722
Median		12.24	2.02	1.82	1.6727	0.148
N18	20-Mar-18 10:00:55	14.25	0.72	2.17	8.104	0.126
N18	20-Mar-18 10:00:55	14.25	0.7	2.22	8.501	0.129
N18	20-Mar-18 10:00:55	20.9		1.93	8.133	0.117
N18	20-Mar-18 10:00:55	27.11	0.72	1.81	8.309	0.121
N18	10-Apr-18 09:35:11	1.63	1.87	2.22	7.573	0.197
N18	10-Apr-18 09:35:11	5.83	1.97	2.25	7.739	0.201
N18	10-Apr-18 09:35:11	5.83	1.95	2.33	7.535	0.195
N18	10-Apr-18 09:35:11	12.11		1.85	7.482	0.198
N18	10-Apr-18 09:35:11	18.08		1.89	6.981	0.199
N18	10-Apr-18 09:35:11	24.11	0.77	1.42	6.801	0.199
N18	15-May-18 09:50:45	1.64	1.32	0.45	0.0533	<0.013
N18	15-May-18 09:50:45	8.16	4.95	6.51	0.4101	0.0619
N18	15-May-18 09:50:45	8.16	4.89	6.46	0.4062	0.0568
N18	15-May-18 09:50:45	12.55		12.1	0.735	0.129
N18	15-May-18 09:50:45	17.36		15	0.898	0.172
N18	15-May-18 09:50:45	22.97	0.71	12.9	1.266	0.174
N18	22-Jun-18 11:01:01	2	0.61	0.45	0.0602	<0.013
N18	22-Jun-18 11:01:01	7.3		1.14	0.227	<0.013
N18	22-Jun-18 11:01:01	13.88	4.66	6.68	0.813	0.116
N18	22-Jun-18 11:01:01	13.88	4.67	6.17	0.81	0.111
N18	22-Jun-18 11:01:01	18.7		12.9	2.274	0.246
N18	22-Jun-18 11:01:01	25.1	0.86	8.23	3.519	0.301
N18	24-Jul-18 10:33:31	2.73	2.02	<0.028	0.0865	0.0915
N18	24-Jul-18 10:33:31	6.2		<0.028	0	0.107
N18	24-Jul-18 10:33:31	12.48	5.71	<0.028	0.1515	0.0645
N18	24-Jul-18 10:33:31	12.48	4.92	<0.028	0.0592	0.0508
N18	24-Jul-18 10:33:31	19.91		9.64	1.035	0.215
N18	24-Jul-18 10:33:31	26.31	0.51	0.777	1.288	0.212
N18	21-Aug-18 10:11:45	2.25	2.83	<0.028	0.039	0.0174
N18	21-Aug-18 10:11:45	6.57		0.0621	0.0374	0.0181
N18	21-Aug-18 10:11:45	11.02	2.92	0.0705	0.0346	<0.013
N18	21-Aug-18 10:11:45	11.02	2.45	0.0625	0.0443	<0.013
N18	21-Aug-18 10:11:45	16.99		0.0646	0.0579	<0.013
N18	21-Aug-18 10:11:45	23.69	1.16	0.235	1.661	0.229
N18	05-Sep-18 10:26:44	1.95	2.28	0.354	<0.025	<0.013
N18	05-Sep-18 10:26:44	7.86	5.43	4.54	1.875	0.285

Parameter	Date	Depth	Chlorophyll	Ammonium	Nitrate	Nitrite
Units	EST	m	ug/L	uM	uM	uM
Minimum		1.16	0.21	0.0378	0	0.0134
Maximum		27.15	31.2	24.2	9.095	0.722
Median		12.24	2.02	1.82	1.6727	0.148
N18	05-Sep-18 10:26:44	7.86	5.04	4.43	1.902	0.288
N18	05-Sep-18 10:26:44	13.28		24.2	5.778	0.722
N18	05-Sep-18 10:26:44	18.03		10.7	6.377	0.713
N18	05-Sep-18 10:26:44	23.39	0.75	8.28	6.757	0.693
N18	23-Oct-18 10:55:43	2.03	5.53	0.515	1.062	0.128
N18	23-Oct-18 10:55:43	7.64		0.284	1.059	0.131
N18	23-Oct-18 10:55:43	12.82	5.14	0.471	1.164	0.136
N18	23-Oct-18 10:55:43	12.82	4.97	0.439	1.147	0.133
N18	23-Oct-18 10:55:43	17.63		0.341	1.159	0.131
N18	23-Oct-18 10:55:43	23.72	1.39	0.496	4.236	0.214
N18	05-Feb-19 10:42:07	1.38	2.26	2.04	5.56	0.22
N18	05-Feb-19 10:42:07	7.65	2.35	2.12	5.612	0.178
N18	05-Feb-19 10:42:07	7.65	3.03	2.01	5.453	0.187
N18	05-Feb-19 10:42:07	13.62		0.685	5.678	0.172
N18	05-Feb-19 10:42:07	19.41		0.408	5.807	0.173
N18	05-Feb-19 10:42:07	23.98	3.95	0.322	6.2	0.15
N18	20-Mar-19 09:51:03	1.41	0.32	7.14	6.731	0.219
N18	20-Mar-19 09:51:03	8.12		4.18	6.759	0.171
N18	20-Mar-19 09:51:03	13.48	0.34	1.47	6.717	0.123
N18	20-Mar-19 09:51:03	13.48	0.38	1.66	6.94	0.13
N18	20-Mar-19 09:51:03	18.72		0.308	6.752	0.118
N18	20-Mar-19 09:51:03	22.98	0.3	0.679	6.947	0.123
N18	11-Apr-19 12:30:25	1.58	4.24	0.651	0.7707	0.0823
N18	11-Apr-19 12:30:25	6.09		2.02	0.6203	0.0997
N18	11-Apr-19 12:30:25	9.56	6.82	3.61	0.668	0.162
N18	11-Apr-19 12:30:25	9.56	5.75	3.72	0.7	0.288
N18	11-Apr-19 12:30:25	17.12		3.06	0.46	0.122
N18	11-Apr-19 12:30:25	22.9	5.14	2.35	0.481	0.131
N18	16-May-19 10:48:21	1.89	2.37	0.437	0.2154	0.0166
N18	16-May-19 10:48:21	6.21		0.842	0.1335	0.0235
N18	16-May-19 10:48:21	9.2	3.51	0.519	0.1782	0.0218
N18	16-May-19 10:48:21	9.2	3.68	0.551	0.1244	0.0236
N18	16-May-19 10:48:21	16.87		10.8	1.978	0.182
N18	16-May-19 10:48:21	24.37	0.38	12.8	3.339	0.291
N18	22-May-19 08:08:45	2.07	0.55	0.626	0.09	0.11
N18	22-May-19 08:08:45	10.72	1.56	2.19	1.414	0.166

Parameter	Date	Depth	Chlorophyll	Ammonium	Nitrate	Nitrite
Units	EST	m	ug/L	uM	uM	uM
Minimum		1.16	0.21	0.0378	0	0.0134
Maximum		27.15	31.2	24.2	9.095	0.722
Median		12.24	2.02	1.82	1.6727	0.148
N18	22-May-19 08:08:45	10.72	0.76	2.14	1.408	0.122
N18	22-May-19 08:08:45	20.83	1.49	3.62	4.246	0.294
N18	22-May-19 08:08:45	26.74	0.81	3.11	4.82	0.29
N18	30-May-19 14:36:31	1.89	4.91	0.225	0.1427	0.0693
N18	30-May-19 14:36:31	10.6	8.19	3.16	0.948	0.122
N18	30-May-19 14:36:31	10.6	6.19	3.07	0.9548	0.0852
N18	30-May-19 14:36:31	20.29	5.66	19.8	4.6	0.31
N18	06-Jun-19 10:45:38	2.01	1.67	0.368	0.0498	<0.013
N18	06-Jun-19 10:45:38	5.84		0.47	0.054	<0.013
N18	06-Jun-19 10:45:38	9.8	1.56	1.09	0.218	<0.013
N18	06-Jun-19 10:45:38	9.8	1.17	0.599	0.185	<0.013
N18	06-Jun-19 10:45:38	17.54		2.95	2.17	0.1
N18	06-Jun-19 10:45:38	25.1	1.99	6.03	4.448	0.202
N18	12-Jun-19 06:45:37	1.77	1.28	0.785	0.0664	<0.013
N18	12-Jun-19 06:45:37	9.99	1.41	5.84	1.1028	0.0772
N18	12-Jun-19 06:45:37	9.99	0.75	5.93	1.1406	0.0794
N18	12-Jun-19 06:45:37	20.04	0.22	10.2	4.477	0.243
N18	12-Jun-19 06:45:37	23.64	0.49	10.2	4.67	0.23
N18	19-Jun-19 06:58:49	1.77	4.42	0.694	0.0871	0.0289
N18	19-Jun-19 06:58:49	9.93	7.08	2.34	0.9165	0.0675
N18	19-Jun-19 06:58:49	9.93	6.77	2.21	0.8768	0.0612
N18	19-Jun-19 06:58:49	19.62	0.39	10.3	4.568	0.242
N18	19-Jun-19 06:58:49	23.76	0.36	9.96	4.785	0.225
N18	27-Jun-19 06:56:28	2.19	1.25	0.661	0.1054	0.0196
N18	27-Jun-19 06:56:28	9.87	3.73	7.03	2.073	0.147
N18	27-Jun-19 06:56:28	9.87	2.88	6.81	2.131	0.139
N18	27-Jun-19 06:56:28	22.54	0.66	8.43	4.801	0.249
N18	10-Jul-19 06:48:12	1.83	3.25	0.164	<0.025	0.099
N18	10-Jul-19 06:48:12	10.11	3.53	1.8	0.84	0.139
N18	10-Jul-19 06:48:12	10.11	3.58	1.82	0.865	0.155
N18	10-Jul-19 06:48:12	20.17	0.69	4.19	2.631	0.229
N18	10-Jul-19 06:48:12	23.52	0.65	4.61	2.693	0.237
N18	17-Jul-19 10:11:44	1.78	1.23	<0.028	0.0556	0.0308
N18	17-Jul-19 10:11:44	6.1	5.29	<0.028	0.3567	0.0653
N18	17-Jul-19 10:11:44	6.1	7.1	<0.028	0.3708	0.0572
N18	17-Jul-19 10:11:44	12.81		6.48	3.728	0.262

Parameter	Date	Depth	Chlorophyll	Ammonium	Nitrate	Nitrite
Units	EST	m	ug/L	uM	uM	uM
Minimum		1.16	0.21	0.0378	0	0.0134
Maximum		27.15	31.2	24.2	9.095	0.722
Median		12.24	2.02	1.82	1.6727	0.148
N18	17-Jul-19 10:11:44	17.5		13.9	5.027	0.343
N18	17-Jul-19 10:11:44	22.19	0.51	8.05	4.839	0.301
N18	31-Jul-19 06:50:49	1.76	1.45	<0.028	0.1463	0.0387
N18	31-Jul-19 06:50:49	9.62	1.98	<0.028	0.2774	0.0476
N18	31-Jul-19 06:50:49	9.62	1.83	0.0378	0.2784	0.0526
N18	31-Jul-19 06:50:49	21.68	1.16	0.783	1.61	0.14
N18	21-Aug-19 09:52:57	1.62	2.52	<0.028	0.0664	0.0223
N18	21-Aug-19 09:52:57	6.5	4.27	<0.028	0.0817	0.0283
N18	21-Aug-19 09:52:57	6.5	4.63	<0.028	0.0791	0.0148
N18	21-Aug-19 09:52:57	11.43		7.65	1.552	0.238
N18	21-Aug-19 09:52:57	17.28		9.2	2.448	0.342
N18	21-Aug-19 09:52:57	22.22	0.74	7.62	2.178	0.322
N18	04-Sep-19 08:53:19	2.13	8.24	0.417	0.0394	<0.013
N18	04-Sep-19 08:53:19	7.06		0.426	0.0275	<0.013
N18	04-Sep-19 08:53:19	13.28	4.37	0.857	0.0947	<0.013
N18	04-Sep-19 08:53:19	13.28	4.39	0.605	0.0449	<0.013
N18	04-Sep-19 08:53:19	16.51		2.39	0.664	0.1
N18	04-Sep-19 08:53:19	21.32	9.24	0.767	0.2125	0.0245
N18	30-Oct-19 09:29:21	1.83	4.78	4.83	1.822	0.408
N18	30-Oct-19 09:29:21	5.67	3.35	3.83	1.792	0.368
N18	30-Oct-19 09:29:21	5.67	3.36	3.96	1.795	0.375
N18	30-Oct-19 09:29:21	12.86		2.4	1.884	0.366
N18	30-Oct-19 09:29:21	18.58		1.52	1.733	0.337
N18	30-Oct-19 09:29:21	22.54	2.01	1.36	1.82	0.34
N18	11-Feb-20 10:32:55	2.48	0.76	6.82	8.423	0.227
N18	11-Feb-20 10:32:55	8.81		5.12	8.929	0.221
N18	11-Feb-20 10:32:55	15.45	0.4	2.64	8.92	0.21
N18	11-Feb-20 10:32:55	15.45	0.48	2.78	8.708	0.202
N18	11-Feb-20 10:32:55	21.24		2.2	9.095	0.205
N18	11-Feb-20 10:32:55	26.97	0.39	2.17	8.891	0.209
N18	04-May-20 09:39:16	1.77	1.17	0.116	0.0371	<0.013
N18	04-May-20 09:39:16	7.61		<0.028	<0.025	<0.013
N18	04-May-20 09:39:16	13.52		<0.028	0.0828	<0.013
N18	04-May-20 09:39:16	19.19	2.27	0.32	0.4601	0.0399
N18	04-May-20 09:39:16	19.19	2.32	0.154	0.265	0.258
N18	04-May-20 09:39:16	24.55	3.45	0.147	0.6705	0.0455

Parameter	Date	Depth	Chlorophyll	Ammonium	Nitrate	Nitrite
Units	EST	m	ug/L	uM	uM	uM
Minimum		1.16	0.21	0.0378	0	0.0134
Maximum		27.15	31.2	24.2	9.095	0.722
Median		12.24	2.02	1.82	1.6727	0.148
N18	18-May-20 09:16:28	1.82	1.38	<0.028	0.0318	<0.013
N18	18-May-20 09:16:28	8.16		<0.028	<0.025	<0.013
N18	18-May-20 09:16:28	14.13	0.87	0.0753	0.0457	<0.013
N18	18-May-20 09:16:28	14.13	1.2	0.05	<0.025	<0.013
N18	18-May-20 09:16:28	19.3		<0.028	0.0547	<0.013
N18	18-May-20 09:16:28	25.46	0.32	0.452	0.7767	0.0793
N18	16-Jun-20 09:16:50	1.88	0.63	0.319	<0.025	<0.013
N18	16-Jun-20 09:16:50	9.56		0.389	0.0802	<0.013
N18	16-Jun-20 09:16:50	16.99	2.68	5.97	1.008	0.112
N18	16-Jun-20 09:16:50	16.99	3.33	5.85	1.149	0.111
N18	16-Jun-20 09:16:50	19.49		8.91	1.977	0.183
N18	16-Jun-20 09:16:50	24.91	1.46	7.31	3.181	0.259
N18	25-Jun-20 13:01:20	1.87	0.8	0.165	<0.025	0.0161
N18	25-Jun-20 13:01:20	10.16	1.31	10.2	1.999	0.201
N18	25-Jun-20 13:01:20	10.16	1.97	10.4	2.231	0.209
N18	25-Jun-20 13:01:20	19.66	0.24	5.52	2.473	0.177
N18	25-Jun-20 13:01:20	25.51	0.27	6.45	2.441	0.199
N18	09-Jul-20 13:16:54	1.62	0.98	0.422	<0.025	<0.013
N18	09-Jul-20 13:16:54	10.02	1.07	0.439	<0.025	<0.013
N18	09-Jul-20 13:16:54	10.02	1.09	0.394	0.0396	<0.013
N18	09-Jul-20 13:16:54	19.89	0.26	2.04	0.5949	0.0891
N18	09-Jul-20 13:16:54	25.99	0.48	1.85	0.6	0.114
N18	14-Jul-20 09:29:28	1.78	0.21	0.0975	0.0766	<0.013
N18	14-Jul-20 09:29:28	5.31		0.115	0.0759	<0.013
N18	14-Jul-20 09:29:28	9.27	0.57	1	0.712	0.112
N18	14-Jul-20 09:29:28	9.27	0.54	0.742	0.6681	0.0809
N18	14-Jul-20 09:29:28	15.79		1.27	2.122	0.188
N18	14-Jul-20 09:29:28	24.63	<0.1	1.23	2.268	0.192
N18	19-Aug-20 09:05:20	1.39	0.33	0.0525	0.0193	0.0206
N18	19-Aug-20 09:05:20	9.07		0.134	<0.025	0.0232
N18	19-Aug-20 09:05:20	13.94		<0.028	0.081	<0.013
N18	19-Aug-20 09:05:20	19.73	2.7	1.66	0.422	0.082
N18	19-Aug-20 09:05:20	19.73	2.41	1.71	0.392	0.117
N18	19-Aug-20 09:05:20	25.94	1.15	3.33	0.988	<0.013
N18	02-Sep-20 09:04:54	2.15	4.17	<0.028	0.0328	<0.013
N18	02-Sep-20 09:04:54	6.97		<0.028	0.0322	<0.013

Parameter	Date	Depth	Chlorophyll	Ammonium	Nitrate	Nitrite
Units	EST	m	ug/L	uM	uM	uM
Minimum		1.16	0.21	0.0378	0	0.0134
Maximum		27.15	31.2	24.2	9.095	0.722
Median		12.24	2.02	1.82	1.6727	0.148
N18	02-Sep-20 09:04:54	15.01	7.5	0.173	0.0715	0.0136
N18	02-Sep-20 09:04:54	15.01	4.41	0.278	0.0914	0.0136
N18	02-Sep-20 09:04:54	18.97		11	1.428	0.242
N18	02-Sep-20 09:04:54	23.6	3.17	9.47	1.203	0.207
N18	20-Oct-20 09:05:21	1.67	5.68	0.603	1.159	0.111
N18	20-Oct-20 09:05:21	7.77		0.56	0.3537	0.0343
N18	20-Oct-20 09:05:21	13.61	4.28	0.773	0.7032	0.0628
N18	20-Oct-20 09:05:21	13.61	5.36	0.807	0.7252	0.0628
N18	20-Oct-20 09:05:21	19.04		1.15	2.021	0.149
N18	20-Oct-20 09:05:21	24.46	2.72	1.42	3.143	0.217

Parameter	Date	Depth	Total Nitrogen	TKN
Units	EST	m	uM	uM
Minimum		1.16	7.26	7.151
Maximum		27.15	39.83	33.33
Median		12.24	15.6	11.44295
N18	12-Feb-16 13:35:41	2.04	18.18	9.99
N18	12-Feb-16 13:35:41	7.95	18.16	10.06
N18	12-Feb-16 13:35:41	12.88	18.33	10.26
N18	12-Feb-16 13:35:41	12.88	18.48	10.38
N18	12-Feb-16 13:35:41	18.48	19.15	11.07
N18	12-Feb-16 13:35:41	26.95	17.64	9.63
N18	23-Mar-16 10:02:44	1.88	14.17	8.77
N18	23-Mar-16 10:02:44	6.87	14.75	9.55
N18	23-Mar-16 10:02:44	11.56	15.67	10.2
N18	23-Mar-16 10:02:44	11.56	15.08	9.43
N18	23-Mar-16 10:02:44	17.59	20.23	14.44
N18	23-Mar-16 10:02:44	23.43	16.85	11.03
N18	18-Apr-16 09:48:26	2.12	14.5425	11.2825
N18	18-Apr-16 09:48:26	9.43	18.8325	14.3225
N18	18-Apr-16 09:48:26	9.43	19.7525	15.2725
N18	18-Apr-16 09:48:26	15.03	16.3625	12.0225
N18	18-Apr-16 09:48:26	21		
N18	18-Apr-16 09:48:26	25.81		
N18	18-May-16 09:33:20	1.7	11.52	11.4659
N18	18-May-16 09:33:20	7.06	12.09	12.0206
N18	18-May-16 09:33:20	11.81	11.18	10.992
N18	18-May-16 09:33:20	11.81	10.47	10.4079
N18	18-May-16 09:33:20	18.26	12.78	11.4
N18	18-May-16 09:33:20	23.08	16.61	13.01
N18	25-May-16 06:54:25	1.69		
N18	25-May-16 06:54:25	10.28		
N18	25-May-16 06:54:25	10.28		
N18	25-May-16 06:54:25	20.14		
N18	25-May-16 06:54:25	23.98		
N18	01-Jun-16 06:43:29	1.61		
N18	01-Jun-16 06:43:29	9.95		
N18	01-Jun-16 06:43:29	9.95		
N18	01-Jun-16 06:43:29	19.02		
N18	01-Jun-16 06:43:29	21.89		
N18	21-Jun-16 10:03:23	2.08	9.8	9.7616
N18	21-Jun-16 10:03:23	8.71	10.58	10.542

Parameter	Date	Depth	Total Nitrogen	TKN
Units	EST	m	uM	uM
Minimum		1.16	7.26	7.151
Maximum		27.15	39.83	33.33
Median		12.24	15.6	11.44295
N18	21-Jun-16 10:03:23	15.41	11.17	11.1137
N18	21-Jun-16 10:03:23	15.41	11.76	11.722
N18	21-Jun-16 10:03:23	18.52	11.09	10.536
N18	21-Jun-16 10:03:23	22.96	10.76	9.997
N18	26-Jul-16 09:15:58	1.34	9.7165	9.6827
N18	26-Jul-16 09:15:58	6.33	12.1765	11.9515
N18	26-Jul-16 09:15:58	12.24	15.5265	14.9845
N18	26-Jul-16 09:15:58	12.24	15.0465	14.5275
N18	26-Jul-16 09:15:58	15.22	25.4165	19.8965
N18	26-Jul-16 09:15:58	21.8	23.2875	17.4375
N18	23-Aug-16 09:58:12	1.75	9.73	9.692
N18	23-Aug-16 09:58:12	7.11	9.57	9.532
N18	23-Aug-16 09:58:12	12.16	11.87	10.45
N18	23-Aug-16 09:58:12	16.85	12.53	9.19
N18	23-Aug-16 09:58:12	16.85	13.45	10.02
N18	23-Aug-16 09:58:12	23	12.99	8.82
N18	03-Oct-16 10:55:43	1.39		
N18	03-Oct-16 10:55:43	6.81		
N18	03-Oct-16 10:55:43	14		
N18	03-Oct-16 10:55:43	14		
N18	03-Oct-16 10:55:43	21.18		
N18	03-Oct-16 10:55:43	27.15		
N18	01-Nov-16 10:55:09	2.06	17.5	13.93
N18	01-Nov-16 10:55:09	6.26		
N18	01-Nov-16 10:55:09	12.72		
N18	01-Nov-16 10:55:09	12.72	15.34	11.76
N18	01-Nov-16 10:55:09	19.29	18.5	14.83
N18	01-Nov-16 10:55:09	23.68	16.17	12.32
N18	18-Feb-17 11:08:11	1.76	22.9	15.36
N18	18-Feb-17 11:08:11	5.78	24.18	16.61
N18	18-Feb-17 11:08:11	9.74	18.7	10.83
N18	18-Feb-17 11:08:11	9.74	18.84	10.97
N18	18-Feb-17 11:08:11	14.98	17.6	9.83
N18	18-Feb-17 11:08:11	19.43	17.52	9.92
N18	25-Mar-17 09:19:31	1.16	24	17.49
N18	25-Mar-17 09:19:31	7.43	21.71	15.28

Parameter	Date	Depth	Total Nitrogen	TKN
Units	EST	m	uM	uM
Minimum		1.16	7.26	7.151
Maximum		27.15	39.83	33.33
Median		12.24	15.6	11.44295
N18	25-Mar-17 09:19:31	12.98	17.38	11.03
N18	25-Mar-17 09:19:31	12.98	16.534	9.994
N18	25-Mar-17 09:19:31	19.56	14.53	7.96
N18	25-Mar-17 09:19:31	26.08	13.9	7.37
N18	24-Apr-17 10:38:53	1.7	9.21	9.008
N18	24-Apr-17 10:38:53	7.12	13.44	11.85
N18	24-Apr-17 10:38:53	14.37	21.43	17.01
N18	24-Apr-17 10:38:53	14.37	20.99	16.5
N18	24-Apr-17 10:38:53	20.83	21.43	15
N18	24-Apr-17 10:38:53	25.82	21.17	14.68
N18	16-May-17 10:14:36	1.52	9.94	9.507
N18	16-May-17 10:14:36	6.33	11.14	10.754
N18	16-May-17 10:14:36	12	9.59	8.923
N18	16-May-17 10:14:36	12	11.13	10.616
N18	16-May-17 10:14:36	17.84	9.66	8.775
N18	16-May-17 10:14:36	26.07	10.42	8.66
N18	13-Jun-17 09:41:19	1.52	9.97	9.9219
N18	13-Jun-17 09:41:19	7.43	8.74	8.6918
N18	13-Jun-17 09:41:19	13.4	10.3	8.37
N18	13-Jun-17 09:41:19	13.4	10.74	8.74
N18	13-Jun-17 09:41:19	20.1	11.51	8.3
N18	13-Jun-17 09:41:19	26.07	11.98	8.88
N18	21-Jun-17 12:38:37	1.82		
N18	21-Jun-17 12:38:37	10.29		
N18	21-Jun-17 12:38:37	10.29		
N18	21-Jun-17 12:38:37	19.98		
N18	28-Jun-17 12:56:43	1.78		
N18	28-Jun-17 12:56:43	9.94		
N18	28-Jun-17 12:56:43	9.94		
N18	28-Jun-17 12:56:43	19.87		
N18	28-Jun-17 12:56:43	23.65		
N18	08-Jul-17 12:45:27	1.94		
N18	08-Jul-17 12:45:27	9.86		
N18	08-Jul-17 12:45:27	9.86		
N18	08-Jul-17 12:45:27	20.16		
N18	08-Jul-17 12:45:27	24.85		

Parameter	Date	Depth	Total Nitrogen	TKN
Units	EST	m	uM	uM
Minimum		1.16	7.26	7.151
Maximum		27.15	39.83	33.33
Median		12.24	15.6	11.44295
N18	16-Jul-17 12:31:54	1.7		
N18	16-Jul-17 12:31:54	9.86		
N18	16-Jul-17 12:31:54	9.86		
N18	16-Jul-17 12:31:54	21.14		
N18	26-Jul-17 09:55:36	1.76	10.12	9.994
N18	26-Jul-17 09:55:36	7.79	10.04	9.9414
N18	26-Jul-17 09:55:36	13.7	7.26	7.151
N18	26-Jul-17 09:55:36	19.61	17.59	17.212
N18	26-Jul-17 09:55:36	19.61	18.07	17.664
N18	26-Jul-17 09:55:36	26.8	18.02	16.76
N18	23-Aug-17 09:53:12	1.72	10.08	9.931
N18	23-Aug-17 09:53:12	6.23	14.85	13.89
N18	23-Aug-17 09:53:12	10.31	21.38	18.55
N18	23-Aug-17 09:53:12	10.31	22.34	19.53
N18	23-Aug-17 09:53:12	17.07	18.51	14.18
N18	23-Aug-17 09:53:12	23.77	16.83	12.39
N18	06-Sep-17 09:20:37	1.64	12.59	12.43
N18	06-Sep-17 09:20:37	8.1	12.01	11.76
N18	06-Sep-17 09:20:37	13.83	14.97	13.69
N18	06-Sep-17 09:20:37	13.83	16.15	14.83
N18	06-Sep-17 09:20:37	20.34	16.33	12.25
N18	06-Sep-17 09:20:37	24.49	15.53	10.61
N18	01-Nov-17 09:34:50	1.51	15.02	10.04
N18	01-Nov-17 09:34:50	6.08	14.44	8.49
N18	01-Nov-17 09:34:50	6.08	14.22	8.32
N18	01-Nov-17 09:34:50	12.05	15.19	8.42
N18	01-Nov-17 09:34:50	17.96	16.11	8.76
N18	01-Nov-17 09:34:50	23.93	16.3	8.94
N18	06-Feb-18 10:57:52	1.87	20.58	11.82
N18	06-Feb-18 10:57:52	7.23	17.54	8.96
N18	06-Feb-18 10:57:52	13.75	18.22	9.64
N18	06-Feb-18 10:57:52	13.75	19.22	10.47
N18	06-Feb-18 10:57:52	18.44	18.9	10.42
N18	06-Feb-18 10:57:52	23.93	16.98	8.8
N18	20-Mar-18 10:00:55	1.52	22.21	13.88
N18	20-Mar-18 10:00:55	7.73	20.41	12.06

Parameter	Date	Depth	Total Nitrogen	TKN
Units	EST	m	uM	uM
Minimum		1.16	7.26	7.151
Maximum		27.15	39.83	33.33
Median		12.24	15.6	11.44295
N18	20-Mar-18 10:00:55	14.25	18.96	10.73
N18	20-Mar-18 10:00:55	14.25	19.39	10.76
N18	20-Mar-18 10:00:55	20.9	18.46	10.21
N18	20-Mar-18 10:00:55	27.11	17.61	9.18
N18	10-Apr-18 09:35:11	1.63	19.44	11.67
N18	10-Apr-18 09:35:11	5.83	19.35	11.41
N18	10-Apr-18 09:35:11	5.83	18.99	11.26
N18	10-Apr-18 09:35:11	12.11	17.942	10.262
N18	10-Apr-18 09:35:11	18.08	16.842	9.662
N18	10-Apr-18 09:35:11	24.11	15.142	8.142
N18	15-May-18 09:50:45	1.64	10.56	10.4937
N18	15-May-18 09:50:45	8.16	21.13	20.658
N18	15-May-18 09:50:45	8.16	19.83	19.367
N18	15-May-18 09:50:45	12.55	24.67	23.806
N18	15-May-18 09:50:45	17.36	27.23	26.16
N18	15-May-18 09:50:45	22.97	24.64	23.2
N18	22-Jun-18 11:01:01	2	10.49	10.4168
N18	22-Jun-18 11:01:01	7.3	11.77	11.53
N18	22-Jun-18 11:01:01	13.88	21.86	20.931
N18	22-Jun-18 11:01:01	13.88		
N18	22-Jun-18 11:01:01	18.7	26.89	24.37
N18	22-Jun-18 11:01:01	25.1	22.74	18.92
N18	24-Jul-18 10:33:31	2.73	13.7405	13.5625
N18	24-Jul-18 10:33:31	6.2	14.5105	14.4035
N18	24-Jul-18 10:33:31	12.48	19.0205	18.8045
N18	24-Jul-18 10:33:31	12.48	20.3705	20.2605
N18	24-Jul-18 10:33:31	19.91	24.1405	22.8905
N18	24-Jul-18 10:33:31	26.31	13.4005	11.9005
N18	21-Aug-18 10:11:45	2.25	12.63	12.5736
N18	21-Aug-18 10:11:45	6.57	10.29	10.2345
N18	21-Aug-18 10:11:45	11.02	13.14	13.0924
N18	21-Aug-18 10:11:45	11.02	14.3	14.2427
N18	21-Aug-18 10:11:45	16.99	12.16	12.0891
N18	21-Aug-18 10:11:45	23.69	13.29	11.4
N18	05-Sep-18 10:26:44	1.95	12.95	12.912
N18	05-Sep-18 10:26:44	7.86	18.85	16.69

Parameter	Date	Depth	Total Nitrogen	TKN
Units	EST	m	uM	uM
Minimum		1.16	7.26	7.151
Maximum		27.15	39.83	33.33
Median		12.24	15.6	11.44295
N18	05-Sep-18 10:26:44	7.86	18.64	16.45
N18	05-Sep-18 10:26:44	13.28	39.83	33.33
N18	05-Sep-18 10:26:44	18.03	27.29	20.2
N18	05-Sep-18 10:26:44	23.39	24.76	17.31
N18	23-Oct-18 10:55:43	2.03	12.14	10.95
N18	23-Oct-18 10:55:43	7.64	12.61	11.42
N18	23-Oct-18 10:55:43	12.82	13.19	11.89
N18	23-Oct-18 10:55:43	12.82	13.74	12.46
N18	23-Oct-18 10:55:43	17.63	12.15	10.86
N18	23-Oct-18 10:55:43	23.72	12.88	8.43
N18	05-Feb-19 10:42:07	1.38		
N18	05-Feb-19 10:42:07	7.65		
N18	05-Feb-19 10:42:07	7.65		
N18	05-Feb-19 10:42:07	13.62		
N18	05-Feb-19 10:42:07	19.41		
N18	05-Feb-19 10:42:07	23.98		
N18	20-Mar-19 09:51:03	1.41	24.85	17.9
N18	20-Mar-19 09:51:03	8.12	21.12	14.19
N18	20-Mar-19 09:51:03	13.48	18.32	11.48
N18	20-Mar-19 09:51:03	13.48	18.01	10.94
N18	20-Mar-19 09:51:03	18.72	14.844	7.974
N18	20-Mar-19 09:51:03	22.98	17.425	10.355
N18	11-Apr-19 12:30:25	1.58	10.16	9.307
N18	11-Apr-19 12:30:25	6.09	11.85	11.13
N18	11-Apr-19 12:30:25	9.56	13.86	13.03
N18	11-Apr-19 12:30:25	9.56	15.53	14.542
N18	11-Apr-19 12:30:25	17.12	12.56	11.978
N18	11-Apr-19 12:30:25	22.9	12.85	12.238
N18	16-May-19 10:48:21	1.89	9.2	8.968
N18	16-May-19 10:48:21	6.21	11.49	11.333
N18	16-May-19 10:48:21	9.2	11.45	11.25
N18	16-May-19 10:48:21	9.2	11.56	11.412
N18	16-May-19 10:48:21	16.87	18.66	16.5
N18	16-May-19 10:48:21	24.37	24.81	21.18
N18	22-May-19 08:08:45	2.07		
N18	22-May-19 08:08:45	10.72		

Parameter	Date	Depth	Total Nitrogen	TKN
Units	EST	m	uM	uM
Minimum		1.16	7.26	7.151
Maximum		27.15	39.83	33.33
Median		12.24	15.6	11.44295
N18	22-May-19 08:08:45	10.72		
N18	22-May-19 08:08:45	20.83		
N18	22-May-19 08:08:45	26.74		
N18	30-May-19 14:36:31	1.89		
N18	30-May-19 14:36:31	10.6		
N18	30-May-19 14:36:31	10.6		
N18	30-May-19 14:36:31	20.29		
N18	06-Jun-19 10:45:38	2.01	10.55	10.4872
N18	06-Jun-19 10:45:38	5.84	10.55	10.483
N18	06-Jun-19 10:45:38	9.8	9.7	9.469
N18	06-Jun-19 10:45:38	9.8	9.96	9.762
N18	06-Jun-19 10:45:38	17.54	12.81	10.54
N18	06-Jun-19 10:45:38	25.1	18.37	13.72
N18	12-Jun-19 06:45:37	1.77		
N18	12-Jun-19 06:45:37	9.99		
N18	12-Jun-19 06:45:37	9.99		
N18	12-Jun-19 06:45:37	20.04		
N18	12-Jun-19 06:45:37	23.64		
N18	19-Jun-19 06:58:49	1.77		
N18	19-Jun-19 06:58:49	9.93		
N18	19-Jun-19 06:58:49	9.93		
N18	19-Jun-19 06:58:49	19.62		
N18	19-Jun-19 06:58:49	23.76		
N18	27-Jun-19 06:56:28	2.19		
N18	27-Jun-19 06:56:28	9.87		
N18	27-Jun-19 06:56:28	9.87		
N18	27-Jun-19 06:56:28	22.54		
N18	10-Jul-19 06:48:12	1.83		
N18	10-Jul-19 06:48:12	10.11		
N18	10-Jul-19 06:48:12	10.11		
N18	10-Jul-19 06:48:12	20.17		
N18	10-Jul-19 06:48:12	23.52		
N18	17-Jul-19 10:11:44	1.78	14.91	14.8236
N18	17-Jul-19 10:11:44	6.1	18.86	18.438
N18	17-Jul-19 10:11:44	6.1	20.8	20.372
N18	17-Jul-19 10:11:44	12.81	21.34	17.35

Parameter	Date	Depth	Total Nitrogen	TKN
Units	EST	m	uM	uM
Minimum		1.16	7.26	7.151
Maximum		27.15	39.83	33.33
Median		12.24	15.6	11.44295
N18	17-Jul-19 10:11:44	17.5	31.13	25.76
N18	17-Jul-19 10:11:44	22.19	25.68	20.54
N18	31-Jul-19 06:50:49	1.76		
N18	31-Jul-19 06:50:49	9.62		
N18	31-Jul-19 06:50:49	9.62		
N18	31-Jul-19 06:50:49	21.68		
N18	21-Aug-19 09:52:57	1.62	10.65	10.5613
N18	21-Aug-19 09:52:57	6.5	11.48	11.37
N18	21-Aug-19 09:52:57	6.5		
N18	21-Aug-19 09:52:57	11.43	22.34	20.55
N18	21-Aug-19 09:52:57	17.28	22.85	20.06
N18	21-Aug-19 09:52:57	22.22	21.91	19.41
N18	04-Sep-19 08:53:19	2.13	12.52	12.4676
N18	04-Sep-19 08:53:19	7.06	13.23	13.1895
N18	04-Sep-19 08:53:19	13.28	12.69	12.5823
N18	04-Sep-19 08:53:19	13.28	11	10.9421
N18	04-Sep-19 08:53:19	16.51	14.82	14.056
N18	04-Sep-19 08:53:19	21.32	13.5	13.263
N18	30-Oct-19 09:29:21	1.83	20.43	18.2
N18	30-Oct-19 09:29:21	5.67	17.97	15.81
N18	30-Oct-19 09:29:21	5.67	19.31	17.14
N18	30-Oct-19 09:29:21	12.86	15.74	13.49
N18	30-Oct-19 09:29:21	18.58	14.09	12.02
N18	30-Oct-19 09:29:21	22.54	13.68	11.52
N18	11-Feb-20 10:32:55	2.48	22.83	14.18
N18	11-Feb-20 10:32:55	8.81	23.09	13.94
N18	11-Feb-20 10:32:55	15.45	18.701	9.571
N18	11-Feb-20 10:32:55	15.45	18.606	9.696
N18	11-Feb-20 10:32:55	21.24	17.558	8.258
N18	11-Feb-20 10:32:55	26.97	18.464	9.364
N18	04-May-20 09:39:16	1.77		
N18	04-May-20 09:39:16	7.61		
N18	04-May-20 09:39:16	13.52		
N18	04-May-20 09:39:16	19.19		
N18	04-May-20 09:39:16	19.19		
N18	04-May-20 09:39:16	24.55		

Parameter	Date	Depth	Total Nitrogen	TKN
Units	EST	m	uM	uM
Minimum		1.16	7.26	7.151
Maximum		27.15	39.83	33.33
Median		12.24	15.6	11.44295
N18	18-May-20 09:16:28	1.82		
N18	18-May-20 09:16:28	8.16		
N18	18-May-20 09:16:28	14.13		
N18	18-May-20 09:16:28	14.13		
N18	18-May-20 09:16:28	19.3		
N18	18-May-20 09:16:28	25.46		
N18	16-Jun-20 09:16:50	1.88		
N18	16-Jun-20 09:16:50	9.56		
N18	16-Jun-20 09:16:50	16.99		
N18	16-Jun-20 09:16:50	16.99		
N18	16-Jun-20 09:16:50	19.49		
N18	16-Jun-20 09:16:50	24.91		
N18	25-Jun-20 13:01:20	1.87		
N18	25-Jun-20 13:01:20	10.16		
N18	25-Jun-20 13:01:20	10.16		
N18	25-Jun-20 13:01:20	19.66		
N18	25-Jun-20 13:01:20	25.51		
N18	09-Jul-20 13:16:54	1.62		
N18	09-Jul-20 13:16:54	10.02		
N18	09-Jul-20 13:16:54	10.02		
N18	09-Jul-20 13:16:54	19.89		
N18	09-Jul-20 13:16:54	25.99		
N18	14-Jul-20 09:29:28	1.78		
N18	14-Jul-20 09:29:28	5.31		
N18	14-Jul-20 09:29:28	9.27		
N18	14-Jul-20 09:29:28	9.27		
N18	14-Jul-20 09:29:28	15.79		
N18	14-Jul-20 09:29:28	24.63		
N18	19-Aug-20 09:05:20	1.39		
N18	19-Aug-20 09:05:20	9.07		
N18	19-Aug-20 09:05:20	13.94		
N18	19-Aug-20 09:05:20	19.73		
N18	19-Aug-20 09:05:20	19.73		
N18	19-Aug-20 09:05:20	25.94		
N18	02-Sep-20 09:04:54	2.15		
N18	02-Sep-20 09:04:54	6.97		

Parameter	Date	Depth	Total Nitrogen	TKN
Units	EST	m	uM	uM
Minimum		1.16	7.26	7.151
Maximum		27.15	39.83	33.33
Median		12.24	15.6	11.44295
N18	02-Sep-20 09:04:54	15.01		
N18	02-Sep-20 09:04:54	15.01		
N18	02-Sep-20 09:04:54	18.97		
N18	02-Sep-20 09:04:54	23.6		
N18	20-Oct-20 09:05:21	1.67		
N18	20-Oct-20 09:05:21	7.77		
N18	20-Oct-20 09:05:21	13.61		
N18	20-Oct-20 09:05:21	13.61		
N18	20-Oct-20 09:05:21	19.04		
N18	20-Oct-20 09:05:21	24.46		

Parameter	Date	Depth	Bottom DO
Units	EST	m	mg/L
Minimum			6.65
Maximum			11.47
Median			9.16
N18	12-Feb-16 13:35:41	26.79	10.00
N18	23-Mar-16 10:02:44	23.42	10.05
N18	18-Apr-16 09:48:26	25.74	9.92
N18	18-May-16 09:33:20	23.07	9.35
N18	25-May-16 06:54:25	23.98	9.19
N18	01-Jun-16 06:43:29	21.92	10.25
N18	21-Jun-16 10:03:23	23.02	9.71
N18	26-Jul-16 09:15:58	21.85	8.43
N18	23-Aug-16 09:58:12	23.06	7.92
N18	03-Oct-16 10:55:43	27.09	7.72
N18	01-Nov-16 10:55:09	23.77	8.01
N18	18-Feb-17 11:08:11	19.44	10.08
N18	25-Mar-17 09:19:31	26.03	10.51
N18	24-Apr-17 10:38:53	25.73	9.86
N18	16-May-17 10:14:36	25.85	9.78
N18	13-Jun-17 09:41:19	26.1	8.89
N18	21-Jun-17 12:38:37	20.11	9.16
N18	28-Jun-17 12:56:43	23.71	9.17
N18	08-Jul-17 12:45:27	24.76	9.19
N18	16-Jul-17 12:31:54	21.11	9.10
N18	26-Jul-17 09:55:36	26.66	9.37
N18	23-Aug-17 09:53:12	23.95	8.17
N18	06-Sep-17 09:20:37	24.29	7.68
N18	01-Nov-17 09:34:50	23.9	7.49
N18	06-Feb-18 10:57:52	23.85	10.37
N18	20-Mar-18 10:00:55	27.13	10.32
N18	10-Apr-18 09:35:11	24.15	10.29
N18	15-May-18 09:50:45	22.85	9.90
N18	22-Jun-18 11:01:01	25.31	9.04
N18	24-Jul-18 10:33:31	26.17	8.89
N18	21-Aug-18 10:11:45	23.81	8.00
N18	05-Sep-18 10:26:44	23.54	7.00
N18	23-Oct-18 10:55:43	23.74	7.42
N18	05-Feb-19 10:42:07	24.08	10.44
N18	20-Mar-19 09:51:03	22.92	10.63
N18	11-Apr-19 12:30:25	22.88	11.47

Parameter	Date	Depth	Bottom DO
Units	EST	m	mg/L
Minimum			6.65
Maximum			11.47
Median			9.16
N18	16-May-19 10:48:21	24.38	8.81
N18	22-May-19 08:08:45	26.59	9.20
N18	30-May-19 14:36:31	20.22	9.49
N18	06-Jun-19 10:45:38	25.1	9.15
N18	12-Jun-19 06:45:37	23.45	8.83
N18	19-Jun-19 06:58:49	23.75	9.14
N18	27-Jun-19 06:56:28	22.61	8.42
N18	10-Jul-19 06:48:12	23.63	9.08
N18	17-Jul-19 10:11:44	22.13	8.12
N18	31-Jul-19 06:50:49	21.67	9.20
N18	21-Aug-19 09:52:57	22.23	8.73
N18	04-Sep-19 08:53:19	21.25	7.98
N18	30-Oct-19 09:29:21	22.54	8.02
N18	11-Feb-20 10:32:55	27	10.19
N18	04-May-20 09:39:16	24.67	10.08
N18	18-May-20 09:16:28	25.33	9.48
N18	16-Jun-20 09:16:50	24.99	8.66
N18	25-Jun-20 13:01:20	25.55	9.40
N18	09-Jul-20 13:16:54	25.88	9.44
N18	14-Jul-20 09:29:28	24.64	9.06
N18	19-Aug-20 09:05:20	26.01	7.78
N18	02-Sep-20 09:04:54	23.62	6.65
N18	20-Oct-20 09:05:21	24.42	7.17

Parameter	Date	Depth	Chlorophyll	Ammonium	Nitrate	Nitrite
Units	EST	m	ug/L	uM	uM	uM
Min			0.12	0.0378	0	0.0134
Max			16.1	29.1	9.269	0.582
Median			2.13	4.46	3.261	0.2055
N21	12-Feb-16 14:11:31	2.28	3.72	9.29	8.432	0.208
N21	12-Feb-16 14:11:31	8.13		4.56	8.148	0.182
N21	12-Feb-16 14:11:31	16.11	3.53	0.371	8.494	0.156
N21	12-Feb-16 14:11:31	16.11	3.63			
N21	12-Feb-16 14:11:31	26.4		0.0584	8.404	0.156
N21	12-Feb-16 14:11:31	34.87	2.84	0.145	8.427	0.153
N21	23-Mar-16 10:32:41	1.94	0.92	4.47	5.67	0.13
N21	23-Mar-16 10:32:41	10.1		24.8	7.268	0.232
N21	23-Mar-16 10:32:41	18.93	0.38	23.8	7.227	0.243
N21	23-Mar-16 10:32:41	18.93	0.37			
N21	23-Mar-16 10:32:41	28		3.9	6.924	0.146
N21	23-Mar-16 10:32:41	35.31	0.29	3.74	8.092	0.128
N21	18-Apr-16 10:18:30	2	2.69	7.29	4.462	0.318
N21	18-Apr-16 10:18:30	11.62		5.95	4.68	0.3
N21	18-Apr-16 10:18:30	20.7	3.9	1.36	3.929	0.211
N21	18-Apr-16 10:18:30	20.7	3.63			
N21	18-Apr-16 10:18:30	28.19		3.01	4.67	0.21
N21	18-Apr-16 10:18:30	33.73	2.67	1.33	4.924	0.196
N21	18-May-16 10:02:14	1.7	2.2	0.121	<0.025	0.0455
N21	18-May-16 10:02:14	7.24		0.736	0.1335	0.0485
N21	18-May-16 10:02:14	11.44	5.77	3.93	0.74	0.136
N21	18-May-16 10:02:14	11.44	6.2			
N21	18-May-16 10:02:14	20.03		25.9	3.376	0.424
N21	18-May-16 10:02:14	32.09	0.25	3.37	4.113	0.287
N21	21-Jun-16 10:33:06	1.95	1.53	0.149	<0.025	<0.013
N21	21-Jun-16 10:33:06	8.9		0.162	<0.025	<0.013
N21	21-Jun-16 10:33:06	16.2	2.13	0.28	<0.025	<0.013
N21	21-Jun-16 10:33:06	16.2	2.08			
N21	21-Jun-16 10:33:06	25.28		23.4	2.773	0.377
N21	21-Jun-16 10:33:06	33.99	0.63	6.55	3.542	0.288
N21	26-Jul-16 09:44:50	1.21	1.01	0.797	0.0473	<0.013
N21	26-Jul-16 09:44:50	6.88		5.37	1.1594	0.0706
N21	26-Jul-16 09:44:50	10.47	1.49	22.1	3.839	0.321
N21	26-Jul-16 09:44:50	10.47	1.64			
N21	26-Jul-16 09:44:50	19.73		23.4	5.757	0.343
N21	26-Jul-16 09:44:50	31.79	0.51	7.28	5.85	0.28

Parameter	Date	Depth	Chlorophyll	Ammonium	Nitrate	Nitrite
Units	EST	m	ug/L	uM	uM	uM
Min			0.12	0.0378	0	0.0134
Max			16.1	29.1	9.269	0.582
Median			2.13	4.46	3.261	0.2055
N21	23-Aug-16 10:39:29	1.63	1.99	0.889	0.0402	<0.013
N21	23-Aug-16 10:39:29	7.6		2.37	0.525	0.024
N21	23-Aug-16 10:39:29	12.65	2.69	13.3	2.879	0.181
N21	23-Aug-16 10:39:29	12.65	2.8			
N21	23-Aug-16 10:39:29	22.82		7.01	3.392	0.278
N21	23-Aug-16 10:39:29	33.11	1.15	5.44	4.856	0.244
N21	03-Oct-16 11:26:31	1.63	2.08	6.18	0.086	0.101
N21	03-Oct-16 11:26:31	7.72		3.07	0.2557	0.0553
N21	03-Oct-16 11:26:31	16.62	2.46	0.497	0.1056	0.0644
N21	03-Oct-16 11:26:31	16.62	2.58			
N21	03-Oct-16 11:26:31	26.42		0.476	0.1282	0.0558
N21	03-Oct-16 11:26:31	34.16	1.58	0.365	0.1268	0.0722
N21	01-Nov-16 11:26:25	1.82	2.22	5.54	4.132	0.408
N21	01-Nov-16 11:26:25	10.89		5.05	3.974	0.396
N21	01-Nov-16 11:26:25	19.29	1.83	5.48	3.977	0.403
N21	01-Nov-16 11:26:25	19.29	1.96			
N21	01-Nov-16 11:26:25	28.06		1.79	3.888	0.332
N21	01-Nov-16 11:26:25	34.03	1.76	1.51	3.938	0.332
N21	18-Feb-17 11:39:32	1.58	3.24		7.195	0.255
N21	18-Feb-17 11:39:32	9.07	3.42		7.116	0.244
N21	18-Feb-17 11:39:32	16.81	3.41		7.238	0.232
N21	18-Feb-17 11:39:32	16.81	3.63			
N21	18-Feb-17 11:39:32	24.24			6.964	0.216
N21	18-Feb-17 11:39:32	31.98			7.026	0.304
N21	25-Mar-17 09:48:59	1.28	1.52	13.4	6.495	0.195
N21	25-Mar-17 09:48:59	10.42	1.54	10.6	6.592	0.168
N21	25-Mar-17 09:48:59	18.83	1.29	4.55	6.495	0.145
N21	25-Mar-17 09:48:59	18.83	1.23			
N21	25-Mar-17 09:48:59	27.11		2.59	6.483	0.147
N21	25-Mar-17 09:48:59	34.3		1.96	6.357	0.153
N21	24-Apr-17 11:14:18	1.7	2.82	0.33	0.2672	0.0268
N21	24-Apr-17 11:14:18	8.58	2.5	4.94	2.017	0.113
N21	24-Apr-17 11:14:18	16.62	2.87	16.8	6.572	0.328
N21	24-Apr-17 11:14:18	16.62	2.75			
N21	24-Apr-17 11:14:18	26.43		8.71	6.579	0.251
N21	24-Apr-17 11:14:18	33.38		3.73	6.982	0.188

Parameter	Date	Depth	Chlorophyll	Ammonium	Nitrate	Nitrite
Units	EST	m	ug/L	uM	uM	uM
Min			0.12	0.0378	0	0.0134
Max			16.1	29.1	9.269	0.582
Median			2.13	4.46	3.261	0.2055
N21	16-May-17 10:47:43	1.46	2.13	0.286	0.5971	0.0539
N21	16-May-17 10:47:43	8.71	2.39	0.282	0.3717	0.0283
N21	16-May-17 10:47:43	8.71	2.63			
N21	16-May-17 10:47:43	16.99	1.6	1.78	0.2311	0.0419
N21	16-May-17 10:47:43	25.16		10.6	0.925	0.155
N21	16-May-17 10:47:43	32.83		9.98	1.856	0.174
N21	13-Jun-17 10:13:20	1.88	1.77	0.147	<0.025	0.0243
N21	13-Jun-17 10:13:20	7.79	1.37	1.15	0.5731	0.0719
N21	13-Jun-17 10:13:20	13.7	1.25	21	3.336	0.444
N21	13-Jun-17 10:13:20	13.7	1.31			
N21	13-Jun-17 10:13:20	23.08		10.8	3.369	0.331
N21	13-Jun-17 10:13:20	32.83		4.77	3.621	0.249
N21	26-Jul-17 10:23:58	1.76	1.98	<0.028	0.0769	0.0301
N21	26-Jul-17 10:23:58	10.1	3.47	<0.028	0.0899	0.0181
N21	26-Jul-17 10:23:58	15.1		<0.028	0.0882	0.0158
N21	26-Jul-17 10:23:58	22.41	2.67	8.79	0.597	0.169
N21	26-Jul-17 10:23:58	22.41	1.9			
N21	26-Jul-17 10:23:58	32.71		11.8	1.356	0.284
N21	23-Aug-17 10:31:19	1.84	1.55	<0.028	0.162	<0.013
N21	23-Aug-17 10:31:19	8.42	1.89	0.187	0.3318	0.0412
N21	23-Aug-17 10:31:19	8.42	1.39			
N21	23-Aug-17 10:31:19	15.97	1.67	6.81	3.618	0.332
N21	23-Aug-17 10:31:19	24.5		2.83	4.214	0.356
N21	23-Aug-17 10:31:19	34.31		1.06	5.117	0.363
N21	06-Sep-17 09:51:13	1.64	6.48	<0.028	0.1713	0.0437
N21	06-Sep-17 09:51:13	6.88	4.48	0.317	0.5717	0.0933
N21	06-Sep-17 09:51:13	16.14	4.61	7.33	2.978	0.262
N21	06-Sep-17 09:51:13	16.14	5.07			
N21	06-Sep-17 09:51:13	25.46		9.57	6.864	0.306
N21	06-Sep-17 09:51:13	34.36		0.7	7.434	0.276
N21	01-Nov-17 10:05:29	1.51	3.84	<0.028	5.086	0.194
N21	01-Nov-17 10:05:29	8.03	4.06	<0.028	5.393	0.207
N21	01-Nov-17 10:05:29	8.03	3.96			
N21	01-Nov-17 10:05:29	15.95	3.4	<0.028	5.461	0.189
N21	01-Nov-17 10:05:29	24.96		<0.028	6.352	0.208
N21	01-Nov-17 10:05:29	33.25		<0.028	6.723	0.157

Parameter	Date	Depth	Chlorophyll	Ammonium	Nitrate	Nitrite
Units	EST	m	ug/L	uM	uM	uM
Min			0.12	0.0378	0	0.0134
Max			16.1	29.1	9.269	0.582
Median			2.13	4.46	3.261	0.2055
N21	06-Feb-18 11:31:16	2.12	1.5	5.63	7.899	0.111
N21	06-Feb-18 11:31:16	10.46	1.37	4.71	8.1606	0.0894
N21	06-Feb-18 11:31:16	18.02	1.41	2.6	7.971	0.109
N21	06-Feb-18 11:31:16	18.02	1.8			
N21	06-Feb-18 11:31:16	25.63		2.47	7.924	0.066
N21	06-Feb-18 11:31:16	33.13		1.74	7.9997	0.0503
N21	20-Mar-18 10:33:19	1.58	0.64	8.32	8.357	0.213
N21	20-Mar-18 10:33:19	9.08	0.66	7.06	8.257	0.203
N21	20-Mar-18 10:33:19	16.57	0.73	4.92	8.018	0.182
N21	20-Mar-18 10:33:19	16.57	0.76			
N21	20-Mar-18 10:33:19	25.95		2.28	8.088	0.132
N21	20-Mar-18 10:33:19	33.94		2.04	8.705	0.125
N21	02-Apr-18 09:40:00	0.1				
N21	02-Apr-18 09:40:00	33.1				
N21	10-Apr-18 10:03:20	1.51	1.08	9.92	6.207	0.303
N21	10-Apr-18 10:03:20	9.92	1.15	8.74	5.862	0.288
N21	10-Apr-18 10:03:20	18.08	1.18	4.94	6.237	0.243
N21	10-Apr-18 10:03:20	18.08	1.29			
N21	10-Apr-18 10:03:20	24.11		1.52	6.585	0.195
N21	10-Apr-18 10:03:20	31.85		1.34	6.262	0.198
N21	01-May-18 09:50:00	0.1				
N21	01-May-18 09:50:00	32.8				
N21	15-May-18 09:22:35	1.7	1.7	0.902	0.108	<0.013
N21	15-May-18 09:22:35	8.28	2.19	13.6	0.872	0.168
N21	15-May-18 09:22:35	8.28	2.15			
N21	15-May-18 09:22:35	14.8	1.6	16	1.124	0.196
N21	15-May-18 09:22:35	24.92		14.8	1.64	0.21
N21	15-May-18 09:22:35	33.63		6.17	1.747	0.123
N21	01-Jun-18 09:27:00	0.1				
N21	01-Jun-18 09:27:00	32.1				
N21	22-Jun-18 11:32:17	2.06	0.62	0.354	0.0518	<0.013
N21	22-Jun-18 11:32:17	7.55	1.09	0.745	0.31	<0.013
N21	22-Jun-18 11:32:17	15.29	2.66	11.2	1.519	0.141
N21	22-Jun-18 11:32:17	15.29	2.38			
N21	22-Jun-18 11:32:17	22.96		11.9	2.72	0.24
N21	22-Jun-18 11:32:17	32.35		2.1	3.597	0.213

Parameter	Date	Depth	Chlorophyll	Ammonium	Nitrate	Nitrite
Units	EST	m	ug/L	uM	uM	uM
Min			0.12	0.0378	0	0.0134
Max			16.1	29.1	9.269	0.582
Median			2.13	4.46	3.261	0.2055
N21	13-Jul-18 09:53:00	0.1				
N21	13-Jul-18 09:53:00	34.2				
N21	24-Jul-18 11:04:21	2.06	2.39	<0.028	0.0027	0.0516
N21	24-Jul-18 11:04:21	8.28	3.17	<0.028	0.023	0.148
N21	24-Jul-18 11:04:21	15.34	5.21	<0.028	0	0.0603
N21	24-Jul-18 11:04:21	15.34	5.69			
N21	24-Jul-18 11:04:21	24.48		18	1.91	0.34
N21	24-Jul-18 11:04:21	32.59		7.17	2.068	0.342
N21	10-Aug-18 09:45:00	0.1				
N21	10-Aug-18 09:45:00	41.7				
N21	21-Aug-18 10:44:48	2.19	3.19	0.144	0.0438	<0.013
N21	21-Aug-18 10:44:48	7.24	3.88	0.127	0.0299	0.0198
N21	21-Aug-18 10:44:48	7.24	4.06			
N21	21-Aug-18 10:44:48	16.26	3	0.186	0.0256	0.0134
N21	21-Aug-18 10:44:48	21.8		17.7	1.318	0.272
N21	21-Aug-18 10:44:48	32.89		4.26	2.528	0.332
N21	04-Sep-18 09:21:00	0.1				
N21	04-Sep-18 09:21:00	31.5				
N21	05-Sep-18 10:43:19	1.82	3.09	0.296	<0.025	<0.013
N21	05-Sep-18 10:43:19	7.8	3.35	9.75	3.83	0.4
N21	05-Sep-18 10:43:19	7.8	5.03			
N21	05-Sep-18 10:43:19	14.92	0.76	19.3	6.298	0.582
N21	05-Sep-18 10:43:19	23.33		7.06	6.131	0.579
N21	05-Sep-18 10:43:19	32.05		3.24	6.859	0.431
N21	19-Oct-18 08:32:00	0.1				
N21	23-Oct-18 12:15:21	2.28	6.11	0.129	0.1397	0.0473
N21	23-Oct-18 12:15:21	8.37	6.24	0.26	0.1313	0.0627
N21	23-Oct-18 12:15:21	14.22	4.47	0.51	0.3151	0.0659
N21	23-Oct-18 12:15:21	14.22	4.9			
N21	23-Oct-18 12:15:21	23.36		0.418	3.778	0.222
N21	23-Oct-18 12:15:21	31.58		0.492	7.935	0.225
N21	01-Nov-18 09:15:00	0.1				
N21	05-Dec-18 10:46:00	0.1				
N21	18-Jan-19 10:18:00	0.1				
N21	04-Feb-19 10:08:00	0.1				
N21	05-Feb-19 11:07:22	1.44	5.59	6.79	6.006	0.234

Parameter	Date	Depth	Chlorophyll	Ammonium	Nitrate	Nitrite
Units	EST	m	ug/L	uM	uM	uM
Min			0.12	0.0378	0	0.0134
Max			16.1	29.1	9.269	0.582
Median			2.13	4.46	3.261	0.2055
N21	05-Feb-19 11:07:22	10.46	3.94	5.51	6.023	0.227
N21	05-Feb-19 11:07:22	19.17	4.42	3.91	5.902	0.168
N21	05-Feb-19 11:07:22	19.17	4.74			
N21	05-Feb-19 11:07:22	26.78		0.804	6.395	0.125
N21	05-Feb-19 11:07:22	33.73		0.605	6.684	0.126
N21	01-Mar-19 10:59:00	0.1				
N21	20-Mar-19 10:24:25	1.35	0.12	10	7.008	0.232
N21	20-Mar-19 10:24:25	7.81	0.19	9.09	6.644	0.226
N21	20-Mar-19 10:24:25	16.77	0.64	3.52	6.538	0.192
N21	20-Mar-19 10:24:25	16.77	0.58			
N21	20-Mar-19 10:24:25	27.43		0.347	6.489	0.151
N21	20-Mar-19 10:24:25	34.93		0.109	6.521	0.179
N21	02-Apr-19 09:25:00	0.1				
N21	11-Apr-19 12:03:30	1.64	5.24	2.21	0.6312	0.0718
N21	11-Apr-19 12:03:30	7.31	3.42	11.7	0.95	0.15
N21	11-Apr-19 12:03:30	7.31	3.79			
N21	11-Apr-19 12:03:30	15.47	4.65	9.42	0.735	0.128
N21	11-Apr-19 12:03:30	24		3.12	0.7862	0.0718
N21	11-Apr-19 12:03:30	31.92		2.28	1.3303	0.0797
N21	01-May-19 10:02:05	0.1				
N21	01-May-19 10:02:05	33.1				
N21	16-May-19 11:20:47	1.52	2.84	0.253	<0.025	0.0162
N21	16-May-19 11:20:47	7.25	1.74	1.33	0.2789	0.0311
N21	16-May-19 11:20:47	7.25	2.62			
N21	16-May-19 11:20:47	14.62	1.32	12.6	1.783	0.207
N21	16-May-19 11:20:47	24.19		29.1	3.624	0.446
N21	16-May-19 11:20:47	32.6		8.8	3.886	0.234
N21	06-Jun-19 11:19:03	2.49	1.14	0.311	0.086	<0.013
N21	06-Jun-19 11:19:03	7.79	1.76	3.69	0.5609	0.0311
N21	06-Jun-19 11:19:03	13.46	1.25	21.6	3.518	0.202
N21	06-Jun-19 11:19:03	13.46	1.04			
N21	06-Jun-19 11:19:03	24.85		22	4.888	0.262
N21	06-Jun-19 11:19:03	34.42		4.45	5.296	0.194
N21	07-Jun-19 10:17:00	0.1				
N21	07-Jun-19 10:17:00	33.4				
N21	02-Jul-19 10:25:00	0.1				

Parameter	Date	Depth	Chlorophyll	Ammonium	Nitrate	Nitrite
Units	EST	m	ug/L	uM	uM	uM
Min			0.12	0.0378	0	0.0134
Max			16.1	29.1	9.269	0.582
Median			2.13	4.46	3.261	0.2055
N21	02-Jul-19 10:25:00	33.3				
N21	17-Jul-19 10:38:53	1.96	2.51	<0.028	0.3631	0.0519
N21	17-Jul-19 10:38:53	5.74	3.78	0.0957	0.4541	0.0659
N21	17-Jul-19 10:38:53	5.74	1.84			
N21	17-Jul-19 10:38:53	13.9	0.58	10.8	3.281	0.289
N21	17-Jul-19 10:38:53	24.26		5.96	5.611	0.319
N21	17-Jul-19 10:38:53	32.97		18.2	4.78	0.38
N21	02-Aug-19 10:11:00	0.1				
N21	02-Aug-19 10:11:00	33.5				
N21	21-Aug-19 10:22:48	1.87	2.19	<0.028	0.0333	0.028
N21	21-Aug-19 10:22:48	10.34	2.69	7.95	1.431	0.219
N21	21-Aug-19 10:22:48	10.34	0.94			
N21	21-Aug-19 10:22:48	17.65	0.42	18.5	3.403	0.457
N21	21-Aug-19 10:22:48	25.69		2.22	5.897	0.383
N21	21-Aug-19 10:22:48	32.15		4.44	3.881	0.379
N21	04-Sep-19 08:29:14	2.31	15.6	0.448	0.0276	<0.013
N21	04-Sep-19 08:29:14	7.61	3.86	0.606	0.0307	<0.013
N21	04-Sep-19 08:29:14	7.61	5.15			
N21	04-Sep-19 08:29:14	15.23	0.91	10.5	1.304	0.216
N21	04-Sep-19 08:29:14	23.58		12.9	2.156	0.284
N21	04-Sep-19 08:29:14	31.31		3.15	2.751	0.229
N21	09-Sep-19 10:25:00	0.1				
N21	09-Sep-19 10:25:00	34.5				
N21	08-Oct-19 10:17:00	0.1				
N21	08-Oct-19 10:17:00	32.7				
N21	30-Oct-19 09:56:32	1.52	3.06	10.1	2.414	0.466
N21	30-Oct-19 09:56:32	7.98	1.81	11.2	2.33	0.44
N21	30-Oct-19 09:56:32	15.6	1.86	7.33	2.287	0.413
N21	30-Oct-19 09:56:32	15.6	1.29			
N21	30-Oct-19 09:56:32	25.29		2.4	2.213	0.367
N21	30-Oct-19 09:56:32	33.21		1.59	2.606	0.364
N21	04-Nov-19 10:56:00	0.1				
N21	23-Dec-19 09:52:00	0.1				
N21	03-Jan-20 10:40:00	0.1				
N21	04-Feb-20 10:36:00	0.1				
N21	11-Feb-20 11:03:15	2.05	0.31	9.63	8.811	0.249

Parameter	Date	Depth	Chlorophyll	Ammonium	Nitrate	Nitrite
Units	EST	m	ug/L	uM	uM	uM
Min			0.12	0.0378	0	0.0134
Max			16.1	29.1	9.269	0.582
Median			2.13	4.46	3.261	0.2055
N21	11-Feb-20 11:03:15	7.53	0.43	8.93	8.673	0.247
N21	11-Feb-20 11:03:15	16.31	0.48	6.39	9.007	0.233
N21	11-Feb-20 11:03:15	16.31	0.37			
N21	11-Feb-20 11:03:15	24.53		3.85	9.121	0.219
N21	11-Feb-20 11:03:15	34.34		3.35	9.269	0.211
N21	06-Mar-20 10:32:00	0.1				
N21	07-Apr-20 09:29:00	0.1				
N21	04-May-20 10:08:00	1.83	1.72	5.02	0.475	0.168
N21	04-May-20 10:08:00	8.71	2.49	7.02	0.618	0.233
N21	04-May-20 10:08:00	15.17	2.56	0.264	0.7546	0.0524
N21	04-May-20 10:08:00	15.17	2.74			
N21	04-May-20 10:08:00	24.55		0.0378	0.3654	0.0326
N21	04-May-20 10:08:00	33.63		6.44	0.43	0.221
N21	06-May-20 10:14:00	0.1				
N21	18-May-20 09:39:45	1.88	1.95	0.0483	0.0611	<0.013
N21	18-May-20 09:39:45	9.31	0.85	3.22	0.3195	0.0665
N21	18-May-20 09:39:45	15.53	0.74	4.92	0.4695	0.0995
N21	18-May-20 09:39:45	15.53	0.77			
N21	18-May-20 09:39:45	24.73		0.0649	0.3264	0.0206
N21	18-May-20 09:39:45	32.83		0.513	0.7485	0.0625
N21	02-Jun-20 09:45:00	0.1				
N21	16-Jun-20 09:41:22	1.7	0.78	0.293	<0.025	<0.013
N21	16-Jun-20 09:41:22	8.09	0.4	0.338	0.03	<0.013
N21	16-Jun-20 09:41:22	15.4	1.25	7.65	1.044	0.106
N21	16-Jun-20 09:41:22	15.4	1.64			
N21	16-Jun-20 09:41:22	23.69		15.9	2.94	0.28
N21	16-Jun-20 09:41:22	31.49		6.22	3.261	0.249
N21	09-Jul-20 09:53:00	0.1				
N21	14-Jul-20 09:52:00	2.15	1.38	0.132	0.0598	<0.013
N21	14-Jul-20 09:52:00	4.76	0.96	1	0.2505	0.0235
N21	14-Jul-20 09:52:00	10.61		9.98	2.114	0.226
N21	14-Jul-20 09:52:00	10.61				
N21	14-Jul-20 09:52:00	20.24		11.5	3.111	0.289
N21	14-Jul-20 09:52:00	32.42		2.3	3.026	0.204
N21	06-Aug-20 09:30:00	0.1				
N21	19-Aug-20 09:36:50	1.64	0.42	0.0633	0.0296	<0.013

Parameter	Date	Depth	Chlorophyll	Ammonium	Nitrate	Nitrite
Units	EST	m	ug/L	uM	uM	uM
Min			0.12	0.0378	0	0.0134
Max			16.1	29.1	9.269	0.582
Median			2.13	4.46	3.261	0.2055
N21	19-Aug-20 09:36:50	9.62	0.88	0.163	<0.025	<0.013
N21	19-Aug-20 09:36:50	17.6	3.92	8.64	0.365	0.116
N21	19-Aug-20 09:36:50	17.6	5.05			
N21	19-Aug-20 09:36:50	25.15		18.2	1.6	0.27
N21	19-Aug-20 09:36:50	34.78		7.84	1.97	0.23
N21	01-Sep-20 10:16:00	0.1				
N21	02-Sep-20 09:26:35	2.09	16.1	<0.028	0.0276	<0.013
N21	02-Sep-20 09:26:35	8.24	5.12	<0.028	0.0311	<0.013
N21	02-Sep-20 09:26:35	15.98	5.75	<0.028	0.0412	<0.013
N21	02-Sep-20 09:26:35	15.98	4.1			
N21	02-Sep-20 09:26:35	24.88		<0.028	0.0638	<0.013
N21	02-Sep-20 09:26:35	32.68		4.37	1.932	0.268
N21	19-Oct-20 09:55:00	0.1				
N21	20-Oct-20 09:28:56	1.25	3.95	10.9	2.156	0.184
N21	20-Oct-20 09:28:56	4.84	3.2	13.9	2.923	0.247
N21	20-Oct-20 09:28:56	4.84	3.78			
N21	20-Oct-20 09:28:56	14.28	2.35	22	4.622	0.368
N21	20-Oct-20 09:28:56	23.18		19.2	5.782	0.428
N21	20-Oct-20 09:28:56	32.93		6.84	6.907	0.363
N21	06-Nov-20 10:28:00	0.1				
N21	09-Dec-20 10:26:00	0.1				

Parameter	Date	Depth	Total Nitrogen	TKN
Units	EST	m	uM	uM
Min			9.07	7.36
Max			43.26	39.19
Median			18.03	13.575
N21	12-Feb-16 14:11:31	2.28	27.72	19.08
N21	12-Feb-16 14:11:31	8.13	21.54	13.21
N21	12-Feb-16 14:11:31	16.11	16.92	8.27
N21	12-Feb-16 14:11:31	16.11		
N21	12-Feb-16 14:11:31	26.4	15.92	7.36
N21	12-Feb-16 14:11:31	34.87	16.91	8.33
N21	23-Mar-16 10:32:41	1.94	20.02	14.22
N21	23-Mar-16 10:32:41	10.1	38.94	31.44
N21	23-Mar-16 10:32:41	18.93	37.47	30
N21	23-Mar-16 10:32:41	18.93		
N21	23-Mar-16 10:32:41	28	16.971	9.901
N21	23-Mar-16 10:32:41	35.31	16.402	8.182
N21	18-Apr-16 10:18:30	2		
N21	18-Apr-16 10:18:30	11.62		
N21	18-Apr-16 10:18:30	20.7		
N21	18-Apr-16 10:18:30	20.7		
N21	18-Apr-16 10:18:30	28.19		
N21	18-Apr-16 10:18:30	33.73		
N21	18-May-16 10:02:14	1.7	12.53	12.4595
N21	18-May-16 10:02:14	7.24	14.4	14.218
N21	18-May-16 10:02:14	11.44	17.55	16.674
N21	18-May-16 10:02:14	11.44		
N21	18-May-16 10:02:14	20.03	37.99	34.19
N21	18-May-16 10:02:14	32.09	16.16	11.76
N21	21-Jun-16 10:33:06	1.95	10.7	10.662
N21	21-Jun-16 10:33:06	8.9	9.86	9.822
N21	21-Jun-16 10:33:06	16.2	9.07	9.032
N21	21-Jun-16 10:33:06	16.2		
N21	21-Jun-16 10:33:06	25.28	33.14	29.99
N21	21-Jun-16 10:33:06	33.99	15.17	11.34
N21	26-Jul-16 09:44:50	1.21	9.0965	9.0362
N21	26-Jul-16 09:44:50	6.88	17.4465	16.2165
N21	26-Jul-16 09:44:50	10.47	34.1465	29.9865
N21	26-Jul-16 09:44:50	10.47		
N21	26-Jul-16 09:44:50	19.73	35.0165	28.9165
N21	26-Jul-16 09:44:50	31.79	20.7665	14.6365

Parameter	Date	Depth	Total Nitrogen	TKN
Units	EST	m	uM	uM
Min			9.07	7.36
Max			43.26	39.19
Median			18.03	13.575
N21	23-Aug-16 10:39:29	1.63	9.52	9.4668
N21	23-Aug-16 10:39:29	7.6	12.79	12.241
N21	23-Aug-16 10:39:29	12.65	26.15	23.09
N21	23-Aug-16 10:39:29	12.65		
N21	23-Aug-16 10:39:29	22.82	17.44	13.77
N21	23-Aug-16 10:39:29	33.11	16.93	11.83
N21	03-Oct-16 11:26:31	1.63		
N21	03-Oct-16 11:26:31	7.72		
N21	03-Oct-16 11:26:31	16.62		
N21	03-Oct-16 11:26:31	16.62		
N21	03-Oct-16 11:26:31	26.42		
N21	03-Oct-16 11:26:31	34.16		
N21	01-Nov-16 11:26:25	1.82	26.75	22.21
N21	01-Nov-16 11:26:25	10.89	24.77	20.4
N21	01-Nov-16 11:26:25	19.29	25.75	21.37
N21	01-Nov-16 11:26:25	19.29		
N21	01-Nov-16 11:26:25	28.06	18.39	14.17
N21	01-Nov-16 11:26:25	34.03	18.03	13.76
N21	18-Feb-17 11:39:32	1.58	31.79	24.34
N21	18-Feb-17 11:39:32	9.07	30.13	22.77
N21	18-Feb-17 11:39:32	16.81	25.52	18.05
N21	18-Feb-17 11:39:32	16.81		
N21	18-Feb-17 11:39:32	24.24	21.22	14.04
N21	18-Feb-17 11:39:32	31.98	17.79	10.46
N21	25-Mar-17 09:48:59	1.28	25.29	18.6
N21	25-Mar-17 09:48:59	10.42	23.91	17.15
N21	25-Mar-17 09:48:59	18.83	18.11	11.47
N21	25-Mar-17 09:48:59	18.83		
N21	25-Mar-17 09:48:59	27.11	15.9	9.27
N21	25-Mar-17 09:48:59	34.3	15.06	8.55
N21	24-Apr-17 11:14:18	1.7	10.33	10.036
N21	24-Apr-17 11:14:18	8.58	14.62	12.49
N21	24-Apr-17 11:14:18	16.62	30.18	23.28
N21	24-Apr-17 11:14:18	16.62		
N21	24-Apr-17 11:14:18	26.43	22.79	15.96
N21	24-Apr-17 11:14:18	33.38	18.25	11.08

Parameter	Date	Depth	Total Nitrogen	TKN
Units	EST	m	uM	uM
Min			9.07	7.36
Max			43.26	39.19
Median			18.03	13.575
N21	16-May-17 10:47:43	1.46	10.94	10.289
N21	16-May-17 10:47:43	8.71	10.32	9.92
N21	16-May-17 10:47:43	8.71		
N21	16-May-17 10:47:43	16.99	11.09	10.817
N21	16-May-17 10:47:43	25.16	19.87	18.79
N21	16-May-17 10:47:43	32.83	19.97	17.94
N21	13-Jun-17 10:13:20	1.88	9.98	9.9307
N21	13-Jun-17 10:13:20	7.79	10.51	9.865
N21	13-Jun-17 10:13:20	13.7	30.26	26.48
N21	13-Jun-17 10:13:20	13.7		
N21	13-Jun-17 10:13:20	23.08	21.35	17.65
N21	13-Jun-17 10:13:20	32.83	15.72	11.85
N21	26-Jul-17 10:23:58	1.76	11.35	11.243
N21	26-Jul-17 10:23:58	10.1	12.25	12.142
N21	26-Jul-17 10:23:58	15.1	9.51	9.406
N21	26-Jul-17 10:23:58	22.41	25.32	24.554
N21	26-Jul-17 10:23:58	22.41		
N21	26-Jul-17 10:23:58	32.71	32.58	30.94
N21	23-Aug-17 10:31:19	1.84	10.4	10.225
N21	23-Aug-17 10:31:19	8.42	10.42	10.047
N21	23-Aug-17 10:31:19	8.42		
N21	23-Aug-17 10:31:19	15.97	15.71	11.76
N21	23-Aug-17 10:31:19	24.5	16.58	12.01
N21	23-Aug-17 10:31:19	34.31	13.33	7.85
N21	06-Sep-17 09:51:13	1.64	13.79	13.575
N21	06-Sep-17 09:51:13	6.88	13.57	12.905
N21	06-Sep-17 09:51:13	16.14	22.03	18.79
N21	06-Sep-17 09:51:13	16.14		
N21	06-Sep-17 09:51:13	25.46	27.82	20.65
N21	06-Sep-17 09:51:13	34.36	15.21	7.5
N21	01-Nov-17 10:05:29	1.51	14.13	8.85
N21	01-Nov-17 10:05:29	8.03	14.83	9.23
N21	01-Nov-17 10:05:29	8.03		
N21	01-Nov-17 10:05:29	15.95	15.46	9.81
N21	01-Nov-17 10:05:29	24.96	14	7.44
N21	01-Nov-17 10:05:29	33.25	14.71	7.83

Parameter	Date	Depth	Total Nitrogen	TKN
Units	EST	m	uM	uM
Min			9.07	7.36
Max			43.26	39.19
Median			18.03	13.575
N21	06-Feb-18 11:31:16	2.12	24.8	16.79
N21	06-Feb-18 11:31:16	10.46	22.32	14.07
N21	06-Feb-18 11:31:16	18.02	19.02	10.94
N21	06-Feb-18 11:31:16	18.02		
N21	06-Feb-18 11:31:16	25.63	20	12.01
N21	06-Feb-18 11:31:16	33.13	18	9.95
N21	20-Mar-18 10:33:19	1.58	26.33	17.76
N21	20-Mar-18 10:33:19	9.08	23.84	15.38
N21	20-Mar-18 10:33:19	16.57	21.87	13.67
N21	20-Mar-18 10:33:19	16.57		
N21	20-Mar-18 10:33:19	25.95	18.88	10.66
N21	20-Mar-18 10:33:19	33.94	17.42	8.59
N21	02-Apr-18 09:40:00	0.1		
N21	02-Apr-18 09:40:00	33.1		
N21	10-Apr-18 10:03:20	1.51	28.68	22.17
N21	10-Apr-18 10:03:20	9.92	26.66	20.51
N21	10-Apr-18 10:03:20	18.08	21.69	15.21
N21	10-Apr-18 10:03:20	18.08		
N21	10-Apr-18 10:03:20	24.11	17.018	10.238
N21	10-Apr-18 10:03:20	31.85	14.971	8.511
N21	01-May-18 09:50:00	0.1		
N21	01-May-18 09:50:00	32.8		
N21	15-May-18 09:22:35	1.7	12.72	12.599
N21	15-May-18 09:22:35	8.28	27.15	26.11
N21	15-May-18 09:22:35	8.28		
N21	15-May-18 09:22:35	14.8	30.89	29.57
N21	15-May-18 09:22:35	24.92	28.1	26.25
N21	15-May-18 09:22:35	33.63	16.27	14.4
N21	01-Jun-18 09:27:00	0.1		
N21	01-Jun-18 09:27:00	32.1		
N21	22-Jun-18 11:32:17	2.06	10.67	10.6052
N21	22-Jun-18 11:32:17	7.55	12.81	12.487
N21	22-Jun-18 11:32:17	15.29	26.67	25.01
N21	22-Jun-18 11:32:17	15.29		
N21	22-Jun-18 11:32:17	22.96	26.83	23.87
N21	22-Jun-18 11:32:17	32.35	14.09	10.28

Parameter	Date	Depth	Total Nitrogen	TKN
Units	EST	m	uM	uM
Min			9.07	7.36
Max			43.26	39.19
Median			18.03	13.575
N21	13-Jul-18 09:53:00	0.1		
N21	13-Jul-18 09:53:00	34.2		
N21	24-Jul-18 11:04:21	2.06	16.4505	16.3962
N21	24-Jul-18 11:04:21	8.28	13.5805	13.4095
N21	24-Jul-18 11:04:21	15.34	17.3705	17.3102
N21	24-Jul-18 11:04:21	15.34		
N21	24-Jul-18 11:04:21	24.48	33.9405	31.6905
N21	24-Jul-18 11:04:21	32.59	22.0705	19.6605
N21	10-Aug-18 09:45:00	0.1		
N21	10-Aug-18 09:45:00	41.7		
N21	21-Aug-18 10:44:48	2.19	13.46	13.4032
N21	21-Aug-18 10:44:48	7.24	13	12.9503
N21	21-Aug-18 10:44:48	7.24		
N21	21-Aug-18 10:44:48	16.26	12.04	12.001
N21	21-Aug-18 10:44:48	21.8	30.08	28.49
N21	21-Aug-18 10:44:48	32.89	18.94	16.08
N21	04-Sep-18 09:21:00	0.1		
N21	04-Sep-18 09:21:00	31.5		
N21	05-Sep-18 10:43:19	1.82	12.47	12.432
N21	05-Sep-18 10:43:19	7.8	26.75	22.52
N21	05-Sep-18 10:43:19	7.8		
N21	05-Sep-18 10:43:19	14.92	34.85	27.97
N21	05-Sep-18 10:43:19	23.33	24.4	17.69
N21	05-Sep-18 10:43:19	32.05	18.24	10.95
N21	19-Oct-18 08:32:00	0.1		
N21	23-Oct-18 12:15:21	2.28	11.53	11.343
N21	23-Oct-18 12:15:21	8.37	13.08	12.886
N21	23-Oct-18 12:15:21	14.22	11.33	10.949
N21	23-Oct-18 12:15:21	14.22		
N21	23-Oct-18 12:15:21	23.36	11.91	7.91
N21	23-Oct-18 12:15:21	31.58	17.84	9.68
N21	01-Nov-18 09:15:00	0.1		
N21	05-Dec-18 10:46:00	0.1		
N21	18-Jan-19 10:18:00	0.1		
N21	04-Feb-19 10:08:00	0.1		
N21	05-Feb-19 11:07:22	1.44		

Parameter	Date	Depth	Total Nitrogen	TKN
Units	EST	m	uM	uM
Min			9.07	7.36
Max			43.26	39.19
Median			18.03	13.575
N21	05-Feb-19 11:07:22	10.46		
N21	05-Feb-19 11:07:22	19.17		
N21	05-Feb-19 11:07:22	19.17		
N21	05-Feb-19 11:07:22	26.78		
N21	05-Feb-19 11:07:22	33.73		
N21	01-Mar-19 10:59:00	0.1		
N21	20-Mar-19 10:24:25	1.35	27.44	20.2
N21	20-Mar-19 10:24:25	7.81	26.3	19.43
N21	20-Mar-19 10:24:25	16.77	20.6	13.87
N21	20-Mar-19 10:24:25	16.77		
N21	20-Mar-19 10:24:25	27.43	14.777	8.137
N21	20-Mar-19 10:24:25	34.93	14.505	7.805
N21	02-Apr-19 09:25:00	0.1		
N21	11-Apr-19 12:03:30	1.64	12.51	11.807
N21	11-Apr-19 12:03:30	7.31	23.01	21.91
N21	11-Apr-19 12:03:30	7.31		
N21	11-Apr-19 12:03:30	15.47	20.72	19.857
N21	11-Apr-19 12:03:30	24	13.32	12.462
N21	11-Apr-19 12:03:30	31.92	12.92	11.51
N21	01-May-19 10:02:05	0.1		
N21	01-May-19 10:02:05	33.1		
N21	16-May-19 11:20:47	1.52	11.25	11.2088
N21	16-May-19 11:20:47	7.25	11.26	10.95
N21	16-May-19 11:20:47	7.25		
N21	16-May-19 11:20:47	14.62	20.04	18.05
N21	16-May-19 11:20:47	24.19	43.26	39.19
N21	16-May-19 11:20:47	32.6	20.05	15.93
N21	06-Jun-19 11:19:03	2.49	10.54	10.441
N21	06-Jun-19 11:19:03	7.79	13.86	13.268
N21	06-Jun-19 11:19:03	13.46	36.1	32.38
N21	06-Jun-19 11:19:03	13.46		
N21	06-Jun-19 11:19:03	24.85	39.53	34.38
N21	06-Jun-19 11:19:03	34.42	18.03	12.54
N21	07-Jun-19 10:17:00	0.1		
N21	07-Jun-19 10:17:00	33.4		
N21	02-Jul-19 10:25:00	0.1		

Parameter	Date	Depth	Total Nitrogen	TKN
Units	EST	m	uM	uM
Min			9.07	7.36
Max			43.26	39.19
Median			18.03	13.575
N21	02-Jul-19 10:25:00	33.3		
N21	17-Jul-19 10:38:53	1.96	17.2	16.785
N21	17-Jul-19 10:38:53	5.74	19.65	19.13
N21	17-Jul-19 10:38:53	5.74		
N21	17-Jul-19 10:38:53	13.9	27.43	23.86
N21	17-Jul-19 10:38:53	24.26	23.31	17.38
N21	17-Jul-19 10:38:53	32.97	33.88	28.72
N21	02-Aug-19 10:11:00	0.1		
N21	02-Aug-19 10:11:00	33.5		
N21	21-Aug-19 10:22:48	1.87	11.15	11.0887
N21	21-Aug-19 10:22:48	10.34	24.69	23.04
N21	21-Aug-19 10:22:48	10.34		
N21	21-Aug-19 10:22:48	17.65	37.19	33.33
N21	21-Aug-19 10:22:48	25.69	17.16	10.88
N21	21-Aug-19 10:22:48	32.15		
N21	04-Sep-19 08:29:14	2.31	17.14	17.0994
N21	04-Sep-19 08:29:14	7.61	12.73	12.6863
N21	04-Sep-19 08:29:14	7.61		
N21	04-Sep-19 08:29:14	15.23	23.1	21.58
N21	04-Sep-19 08:29:14	23.58	24.31	21.87
N21	04-Sep-19 08:29:14	31.31	15.37	12.39
N21	09-Sep-19 10:25:00	0.1		
N21	09-Sep-19 10:25:00	34.5		
N21	08-Oct-19 10:17:00	0.1		
N21	08-Oct-19 10:17:00	32.7		
N21	30-Oct-19 09:56:32	1.52	25.2	22.32
N21	30-Oct-19 09:56:32	7.98	26.76	23.99
N21	30-Oct-19 09:56:32	15.6	21.42	18.72
N21	30-Oct-19 09:56:32	15.6		
N21	30-Oct-19 09:56:32	25.29	15.15	12.57
N21	30-Oct-19 09:56:32	33.21	15.02	12.05
N21	04-Nov-19 10:56:00	0.1		
N21	23-Dec-19 09:52:00	0.1		
N21	03-Jan-20 10:40:00	0.1		
N21	04-Feb-20 10:36:00	0.1		
N21	11-Feb-20 11:03:15	2.05	26.64	17.58

Parameter	Date	Depth	Total Nitrogen	TKN
Units	EST	m	uM	uM
Min			9.07	7.36
Max			43.26	39.19
Median			18.03	13.575
N21	11-Feb-20 11:03:15	7.53	25.79	16.87
N21	11-Feb-20 11:03:15	16.31	24.14	14.9
N21	11-Feb-20 11:03:15	16.31		
N21	11-Feb-20 11:03:15	24.53	20.319	10.979
N21	11-Feb-20 11:03:15	34.34	19.867	10.387
N21	06-Mar-20 10:32:00	0.1		
N21	07-Apr-20 09:29:00	0.1		
N21	04-May-20 10:08:00	1.83		
N21	04-May-20 10:08:00	8.71		
N21	04-May-20 10:08:00	15.17		
N21	04-May-20 10:08:00	15.17		
N21	04-May-20 10:08:00	24.55		
N21	04-May-20 10:08:00	33.63		
N21	06-May-20 10:14:00	0.1		
N21	18-May-20 09:39:45	1.88		
N21	18-May-20 09:39:45	9.31		
N21	18-May-20 09:39:45	15.53		
N21	18-May-20 09:39:45	15.53		
N21	18-May-20 09:39:45	24.73		
N21	18-May-20 09:39:45	32.83		
N21	02-Jun-20 09:45:00	0.1		
N21	16-Jun-20 09:41:22	1.7		
N21	16-Jun-20 09:41:22	8.09		
N21	16-Jun-20 09:41:22	15.4		
N21	16-Jun-20 09:41:22	15.4		
N21	16-Jun-20 09:41:22	23.69		
N21	16-Jun-20 09:41:22	31.49		
N21	09-Jul-20 09:53:00	0.1		
N21	14-Jul-20 09:52:00	2.15		
N21	14-Jul-20 09:52:00	4.76		
N21	14-Jul-20 09:52:00	10.61		
N21	14-Jul-20 09:52:00	10.61		
N21	14-Jul-20 09:52:00	20.24		
N21	14-Jul-20 09:52:00	32.42		
N21	06-Aug-20 09:30:00	0.1		
N21	19-Aug-20 09:36:50	1.64		

Parameter	Date	Depth	Total Nitrogen	TKN
Units	EST	m	uM	uM
Min			9.07	7.36
Max			43.26	39.19
Median			18.03	13.575
N21	19-Aug-20 09:36:50	9.62		
N21	19-Aug-20 09:36:50	17.6		
N21	19-Aug-20 09:36:50	17.6		
N21	19-Aug-20 09:36:50	25.15		
N21	19-Aug-20 09:36:50	34.78		
N21	01-Sep-20 10:16:00	0.1		
N21	02-Sep-20 09:26:35	2.09		
N21	02-Sep-20 09:26:35	8.24		
N21	02-Sep-20 09:26:35	15.98		
N21	02-Sep-20 09:26:35	15.98		
N21	02-Sep-20 09:26:35	24.88		
N21	02-Sep-20 09:26:35	32.68		
N21	19-Oct-20 09:55:00	0.1		
N21	20-Oct-20 09:28:56	1.25		
N21	20-Oct-20 09:28:56	4.84		
N21	20-Oct-20 09:28:56	4.84		
N21	20-Oct-20 09:28:56	14.28		
N21	20-Oct-20 09:28:56	23.18		
N21	20-Oct-20 09:28:56	32.93		
N21	06-Nov-20 10:28:00	0.1		
N21	09-Dec-20 10:26:00	0.1		

Parameter	Date	Depth	Bottom DO
Minimum			6.65
Maximum			11.03
Median			8.91
N21	12-Feb-16 14:11:31	34.96	9.97
N21	23-Mar-16 10:32:41	35.13	9.59
N21	18-Apr-16 10:18:30	33.78	10.02
N21	18-May-16 10:02:14	32.25	9.35
N21	21-Jun-16 10:33:06	34.12	9.11
N21	26-Jul-16 09:44:50	31.83	8.3
N21	23-Aug-16 10:39:29	33.07	8.08
N21	03-Oct-16 11:26:31	34.18	7.8
N21	01-Nov-16 11:26:25	34.02	7.81
N21	18-Feb-17 11:39:32	31.98	10.1
N21	25-Mar-17 09:48:59	34.2	10.53
N21	24-Apr-17 11:14:18	33.25	9.77
N21	16-May-17 10:47:43	32.81	9.65
N21	13-Jun-17 10:13:20	32.81	8.83
N21	26-Jul-17 10:23:58	32.68	9.48
N21	23-Aug-17 10:31:19	34.41	8.37
N21	06-Sep-17 09:51:13	34.44	7.92
N21	01-Nov-17 10:05:29	33.3	7.62
N21	06-Feb-18 11:31:16	33.11	10.35
N21	20-Mar-18 10:33:19	33.97	10.31
N21	10-Apr-18 10:03:20	31.81	10.41
N21	15-May-18 09:22:35	33.71	9.68
N21	22-Jun-18 11:32:17	32.34	9.15
N21	24-Jul-18 11:04:21	32.47	8.73
N21	21-Aug-18 10:44:48	32.55	8.02
N21	05-Sep-18 10:43:19	32.01	7.35
N21	23-Oct-18 12:15:21	31.71	6.93
N21	05-Feb-19 11:07:22	33.89	10.18
N21	20-Mar-19 10:24:25	34.97	10.47
N21	11-Apr-19 12:03:30	31.96	11.03
N21	16-May-19 11:20:47	32.55	8.8
N21	06-Jun-19 11:19:03	34.54	8.75
N21	17-Jul-19 10:38:53	32.93	8.16
N21	21-Aug-19 10:22:48	32.15	8.61
N21	04-Sep-19 08:29:14	31.35	7.95
N21	30-Oct-19 09:56:32	32.93	7.62
N21	11-Feb-20 11:03:15	34.31	10.05
N21	04-May-20 10:08:00	33.67	10.19
N21	18-May-20 09:39:45	32.87	9.22
N21	16-Jun-20 09:41:22	31.77	8.42

Parameter	Date	Depth	Bottom DO
Minimum			6.65
Maximum			11.03
Median			8.91
N21	14-Jul-20 09:52:00	32.4	8.99
N21	19-Aug-20 09:36:50	34.72	7.86
N21	02-Sep-20 09:26:35	32.87	6.77
N21	20-Oct-20 09:28:56	32.77	6.65

Parameters	Date	Depth	Enterococcus	Fecal Coliform
Units	EST	m	MPN/100 mL	#/100 mL
Minimum		0.1	10	1
Maximum		41.7	446	1
Median		15.17	10	1
N21	2/12/2016 14:11	2.28		
N21	2/12/2016 14:11	8.13		
N21	2/12/2016 14:11	16.11		
N21	2/12/2016 14:11	16.11		
N21	2/12/2016 14:11	26.4		
N21	2/12/2016 14:11	34.87		
N21	3/23/2016 10:32	1.94		
N21	3/23/2016 10:32	10.1		
N21	3/23/2016 10:32	18.93		
N21	3/23/2016 10:32	18.93		
N21	3/23/2016 10:32	28		
N21	3/23/2016 10:32	35.31		
N21	4/18/2016 10:18	2		
N21	4/18/2016 10:18	11.62		
N21	4/18/2016 10:18	20.7		
N21	4/18/2016 10:18	20.7		
N21	4/18/2016 10:18	28.19		
N21	4/18/2016 10:18	33.73		
N21	5/18/2016 10:02	1.7		
N21	5/18/2016 10:02	7.24		
N21	5/18/2016 10:02	11.44		
N21	5/18/2016 10:02	11.44		
N21	5/18/2016 10:02	20.03		
N21	5/18/2016 10:02	32.09		
N21	6/21/2016 10:33	1.95		
N21	6/21/2016 10:33	8.9		
N21	6/21/2016 10:33	16.2		
N21	6/21/2016 10:33	16.2		
N21	6/21/2016 10:33	25.28		
N21	6/21/2016 10:33	33.99		
N21	7/26/2016 9:44	1.21		
N21	7/26/2016 9:44	6.88		
N21	7/26/2016 9:44	10.47		
N21	7/26/2016 9:44	10.47		
N21	7/26/2016 9:44	19.73		
N21	7/26/2016 9:44	31.79		

Parameters	Date	Depth	Enterococcus	Fecal Coliform
Units	EST	m	MPN/100 mL	#/100 mL
Minimum		0.1	10	1
Maximum		41.7	446	1
Median		15.17	10	1
N21	8/23/2016 10:39	1.63		
N21	8/23/2016 10:39	7.6		
N21	8/23/2016 10:39	12.65		
N21	8/23/2016 10:39	12.65		
N21	8/23/2016 10:39	22.82		
N21	8/23/2016 10:39	33.11		
N21	10/3/2016 11:26	1.63		
N21	10/3/2016 11:26	7.72		
N21	10/3/2016 11:26	16.62		
N21	10/3/2016 11:26	16.62		
N21	10/3/2016 11:26	26.42		
N21	10/3/2016 11:26	34.16		
N21	11/1/2016 11:26	1.82		
N21	11/1/2016 11:26	10.89		
N21	11/1/2016 11:26	19.29		
N21	11/1/2016 11:26	19.29		
N21	11/1/2016 11:26	28.06		
N21	11/1/2016 11:26	34.03		
N21	2/18/2017 11:39	1.58		
N21	2/18/2017 11:39	9.07		
N21	2/18/2017 11:39	16.81		
N21	2/18/2017 11:39	16.81		
N21	2/18/2017 11:39	24.24		
N21	2/18/2017 11:39	31.98		
N21	3/25/2017 9:48	1.28		
N21	3/25/2017 9:48	10.42		
N21	3/25/2017 9:48	18.83		
N21	3/25/2017 9:48	18.83		
N21	3/25/2017 9:48	27.11		
N21	3/25/2017 9:48	34.3		
N21	4/24/2017 11:14	1.7		
N21	4/24/2017 11:14	8.58		
N21	4/24/2017 11:14	16.62		
N21	4/24/2017 11:14	16.62		
N21	4/24/2017 11:14	26.43		
N21	4/24/2017 11:14	33.38		

Parameters	Date	Depth	Enterococcus	Fecal Coliform
Units	EST	m	MPN/100 mL	#/100 mL
Minimum		0.1	10	1
Maximum		41.7	446	1
Median		15.17	10	1
N21	5/16/2017 10:47	1.46		
N21	5/16/2017 10:47	8.71		
N21	5/16/2017 10:47	8.71		
N21	5/16/2017 10:47	16.99		
N21	5/16/2017 10:47	25.16		
N21	5/16/2017 10:47	32.83		
N21	6/13/2017 10:13	1.88		
N21	6/13/2017 10:13	7.79		
N21	6/13/2017 10:13	13.7		
N21	6/13/2017 10:13	13.7		
N21	6/13/2017 10:13	23.08		
N21	6/13/2017 10:13	32.83		
N21	7/26/2017 10:23	1.76		
N21	7/26/2017 10:23	10.1		
N21	7/26/2017 10:23	15.1		
N21	7/26/2017 10:23	22.41		
N21	7/26/2017 10:23	22.41		
N21	7/26/2017 10:23	32.71		
N21	8/23/2017 10:31	1.84		
N21	8/23/2017 10:31	8.42		
N21	8/23/2017 10:31	8.42		
N21	8/23/2017 10:31	15.97		
N21	8/23/2017 10:31	24.5		
N21	8/23/2017 10:31	34.31		
N21	9/6/2017 9:51	1.64		
N21	9/6/2017 9:51	6.88		
N21	9/6/2017 9:51	16.14		
N21	9/6/2017 9:51	16.14		
N21	9/6/2017 9:51	25.46		
N21	9/6/2017 9:51	34.36		
N21	11/1/2017 10:05	1.51		
N21	11/1/2017 10:05	8.03		
N21	11/1/2017 10:05	8.03		
N21	11/1/2017 10:05	15.95		
N21	11/1/2017 10:05	24.96		
N21	11/1/2017 10:05	33.25		

Parameters	Date	Depth	Enterococcus	Fecal Coliform
Units	EST	m	MPN/100 mL	#/100 mL
Minimum		0.1	10	1
Maximum		41.7	446	1
Median		15.17	10	1
N21	2/6/2018 11:31	2.12		
N21	2/6/2018 11:31	10.46		
N21	2/6/2018 11:31	18.02		
N21	2/6/2018 11:31	18.02		
N21	2/6/2018 11:31	25.63		
N21	2/6/2018 11:31	33.13		
N21	3/20/2018 10:33	1.58		
N21	3/20/2018 10:33	9.08		
N21	3/20/2018 10:33	16.57		
N21	3/20/2018 10:33	16.57		
N21	3/20/2018 10:33	25.95		
N21	3/20/2018 10:33	33.94		
N21	4/2/2018 9:40	0.1	<10	<1
N21	4/2/2018 9:40	33.1	<10	<1
N21	4/10/2018 10:03	1.51		
N21	4/10/2018 10:03	9.92		
N21	4/10/2018 10:03	18.08		
N21	4/10/2018 10:03	18.08		
N21	4/10/2018 10:03	24.11		
N21	4/10/2018 10:03	31.85		
N21	5/1/2018 9:50	0.1	<10	<1
N21	5/1/2018 9:50	32.8	<10	1
N21	5/15/2018 9:22	1.7		
N21	5/15/2018 9:22	8.28		
N21	5/15/2018 9:22	8.28		
N21	5/15/2018 9:22	14.8		
N21	5/15/2018 9:22	24.92		
N21	5/15/2018 9:22	33.63		
N21	6/1/2018 9:27	0.1	<10	<1
N21	6/1/2018 9:27	32.1	<10	<1
N21	6/22/2018 11:32	2.06		
N21	6/22/2018 11:32	7.55		
N21	6/22/2018 11:32	15.29		
N21	6/22/2018 11:32	15.29		
N21	6/22/2018 11:32	22.96		
N21	6/22/2018 11:32	32.35		

Parameters	Date	Depth	Enterococcus	Fecal Coliform
Units	EST	m	MPN/100 mL	#/100 mL
Minimum		0.1	10	1
Maximum		41.7	446	1
Median		15.17	10	1
N21	7/13/2018 9:53	0.1	<10	<1
N21	7/13/2018 9:53	34.2	<10	<1
N21	7/24/2018 11:04	2.06		
N21	7/24/2018 11:04	8.28		
N21	7/24/2018 11:04	15.34		
N21	7/24/2018 11:04	15.34		
N21	7/24/2018 11:04	24.48		
N21	7/24/2018 11:04	32.59		
N21	8/10/2018 9:45	0.1	<10	<1
N21	8/10/2018 9:45	41.7	<10	<1
N21	8/21/2018 10:44	2.19		
N21	8/21/2018 10:44	7.24		
N21	8/21/2018 10:44	7.24		
N21	8/21/2018 10:44	16.26		
N21	8/21/2018 10:44	21.8		
N21	8/21/2018 10:44	32.89		
N21	9/4/2018 9:21	0.1	<10	<1
N21	9/4/2018 9:21	31.5	<10	<1
N21	9/5/2018 10:43	1.82		
N21	9/5/2018 10:43	7.8		
N21	9/5/2018 10:43	7.8		
N21	9/5/2018 10:43	14.92		
N21	9/5/2018 10:43	23.33		
N21	9/5/2018 10:43	32.05		
N21	10/19/2018 8:32	0.1	<10	<1
N21	10/23/2018 12:15	2.28		
N21	10/23/2018 12:15	8.37		
N21	10/23/2018 12:15	14.22		
N21	10/23/2018 12:15	14.22		
N21	10/23/2018 12:15	23.36		
N21	10/23/2018 12:15	31.58		
N21	11/1/2018 9:15	0.1	<10	<1
N21	12/5/2018 10:46	0.1	<10	<1
N21	1/18/2019 10:18	0.1	10	1
N21	2/4/2019 10:08	0.1	<10	<1
N21	2/5/2019 11:07	1.44		

Parameters	Date	Depth	Enterococcus	Fecal Coliform
Units	EST	m	MPN/100 mL	#/100 mL
Minimum		0.1	10	1
Maximum		41.7	446	1
Median		15.17	10	1
N21	2/5/2019 11:07	10.46		
N21	2/5/2019 11:07	19.17		
N21	2/5/2019 11:07	19.17		
N21	2/5/2019 11:07	26.78		
N21	2/5/2019 11:07	33.73		
N21	3/1/2019 10:59	0.1	10	<1
N21	3/20/2019 10:24	1.35		
N21	3/20/2019 10:24	7.81		
N21	3/20/2019 10:24	16.77		
N21	3/20/2019 10:24	16.77		
N21	3/20/2019 10:24	27.43		
N21	3/20/2019 10:24	34.93		
N21	4/2/2019 9:25	0.1	<10	<1
N21	4/11/2019 12:03	1.64		
N21	4/11/2019 12:03	7.31		
N21	4/11/2019 12:03	7.31		
N21	4/11/2019 12:03	15.47		
N21	4/11/2019 12:03	24		
N21	4/11/2019 12:03	31.92		
N21	5/1/2019 10:02	0.1	10	<1
N21	5/1/2019 10:02	33.1	<10	<1
N21	5/16/2019 11:20	1.52		
N21	5/16/2019 11:20	7.25		
N21	5/16/2019 11:20	7.25		
N21	5/16/2019 11:20	14.62		
N21	5/16/2019 11:20	24.19		
N21	5/16/2019 11:20	32.6		
N21	6/6/2019 11:19	2.49		
N21	6/6/2019 11:19	7.79		
N21	6/6/2019 11:19	13.46		
N21	6/6/2019 11:19	13.46		
N21	6/6/2019 11:19	24.85		
N21	6/6/2019 11:19	34.42		
N21	6/7/2019 10:17	0.1	<10	<1
N21	6/7/2019 10:17	33.4	<10	<1
N21	7/2/2019 10:25	0.1	<10	<1

Parameters	Date	Depth	Enterococcus	Fecal Coliform
Units	EST	m	MPN/100 mL	#/100 mL
Minimum		0.1	10	1
Maximum		41.7	446	1
Median		15.17	10	1
N21	7/2/2019 10:25	33.3	<10	<1
N21	7/17/2019 10:38	1.96		
N21	7/17/2019 10:38	5.74		
N21	7/17/2019 10:38	5.74		
N21	7/17/2019 10:38	13.9		
N21	7/17/2019 10:38	24.26		
N21	7/17/2019 10:38	32.97		
N21	8/2/2019 10:11	0.1	<10	<1
N21	8/2/2019 10:11	33.5	<10	<1
N21	8/21/2019 10:22	1.87		
N21	8/21/2019 10:22	10.34		
N21	8/21/2019 10:22	10.34		
N21	8/21/2019 10:22	17.65		
N21	8/21/2019 10:22	25.69		
N21	8/21/2019 10:22	32.15		
N21	9/4/2019 8:29	2.31		
N21	9/4/2019 8:29	7.61		
N21	9/4/2019 8:29	7.61		
N21	9/4/2019 8:29	15.23		
N21	9/4/2019 8:29	23.58		
N21	9/4/2019 8:29	31.31		
N21	9/9/2019 10:25	0.1	<10	<1
N21	9/9/2019 10:25	34.5	<10	<1
N21	10/8/2019 10:17	0.1	<10	<1
N21	10/8/2019 10:17	32.7	<10	<1
N21	10/30/2019 9:56	1.52		
N21	10/30/2019 9:56	7.98		
N21	10/30/2019 9:56	15.6		
N21	10/30/2019 9:56	15.6		
N21	10/30/2019 9:56	25.29		
N21	10/30/2019 9:56	33.21		
N21	11/4/2019 10:56	0.1	<10	<1
N21	12/23/2019 9:52	0.1	<10	<1
N21	1/3/2020 10:40	0.1	<10	<1
N21	2/4/2020 10:36	0.1	<10	<1
N21	2/11/2020 11:03	2.05		

Parameters	Date	Depth	Enterococcus	Fecal Coliform
Units	EST	m	MPN/100 mL	#/100 mL
Minimum		0.1	10	1
Maximum		41.7	446	1
Median		15.17	10	1
N21	2/11/2020 11:03	7.53		
N21	2/11/2020 11:03	16.31		
N21	2/11/2020 11:03	16.31		
N21	2/11/2020 11:03	24.53		
N21	2/11/2020 11:03	34.34		
N21	3/6/2020 10:32	0.1	<10	<1
N21	4/7/2020 9:29	0.1	446	<1
N21	5/4/2020 10:08	1.83		
N21	5/4/2020 10:08	8.71		
N21	5/4/2020 10:08	15.17		
N21	5/4/2020 10:08	15.17		
N21	5/4/2020 10:08	24.55		
N21	5/4/2020 10:08	33.63		
N21	5/6/2020 10:14	0.1	<10	<1
N21	5/18/2020 9:39	1.88		
N21	5/18/2020 9:39	9.31		
N21	5/18/2020 9:39	15.53		
N21	5/18/2020 9:39	15.53		
N21	5/18/2020 9:39	24.73		
N21	5/18/2020 9:39	32.83		
N21	6/2/2020 9:45	0.1	<10	<1
N21	6/16/2020 9:41	1.7		
N21	6/16/2020 9:41	8.09		
N21	6/16/2020 9:41	15.4		
N21	6/16/2020 9:41	15.4		
N21	6/16/2020 9:41	23.69		
N21	6/16/2020 9:41	31.49		
N21	7/9/2020 9:53	0.1	<10	<1
N21	7/14/2020 9:52	2.15		
N21	7/14/2020 9:52	4.76		
N21	7/14/2020 9:52	10.61		
N21	7/14/2020 9:52	10.61		
N21	7/14/2020 9:52	20.24		
N21	7/14/2020 9:52	32.42		
N21	8/6/2020 9:30	0.1	<10	<1
N21	8/19/2020 9:36	1.64		

Parameters	Date	Depth	Enterococcus	Fecal Coliform
Units	EST	m	MPN/100 mL	#/100 mL
Minimum		0.1	10	1
Maximum		41.7	446	1
Median		15.17	10	1
N21	8/19/2020 9:36	9.62		
N21	8/19/2020 9:36	17.6		
N21	8/19/2020 9:36	17.6		
N21	8/19/2020 9:36	25.15		
N21	8/19/2020 9:36	34.78		
N21	9/1/2020 10:16	0.1	<10	<1
N21	9/2/2020 9:26	2.09		
N21	9/2/2020 9:26	8.24		
N21	9/2/2020 9:26	15.98		
N21	9/2/2020 9:26	15.98		
N21	9/2/2020 9:26	24.88		
N21	9/2/2020 9:26	32.68		
N21	10/19/2020 9:55	0.1	<10	<1
N21	10/20/2020 9:28	1.25		
N21	10/20/2020 9:28	4.84		
N21	10/20/2020 9:28	4.84		
N21	10/20/2020 9:28	14.28		
N21	10/20/2020 9:28	23.18		
N21	10/20/2020 9:28	32.93		
N21	11/6/2020 10:28	0.1	<10	<1
N21	12/9/2020 10:26	0.1	20	<1

Date Range		Pollutant	Max Daily		Avg Daily		No. of Samples
7/5/2016	6/9/2021	Antimony, total recoverable	0	ug/L	0	ug/L	120
7/5/2016	6/9/2021	Arsenic, total recoverable	1.49	ug/L	0.03483	ug/L	120
7/5/2016	6/9/2021	Beryllium, total recoverable	0	ug/L	0	ug/L	120
7/5/2016	6/9/2021	Cadmium, total recoverable	0.267	ug/L	0.02227	ug/L	247
7/5/2016	6/9/2021	Chromium, total recoverable	4.88	ug/L	0.43541	ug/L	246
7/5/2016	6/8/2021	Copper, total recoverable	36.2	ug/L	5.93765	ug/L	67
7/5/2016	6/8/2021	Lead, total recoverable	4.08	ug/L	0.592	ug/L	68
7/5/2016	6/16/2021	Mercury, total recoverable	0.0317	ug/L	0.00408	ug/L	243
7/5/2016	6/9/2021	Nickel, total recoverable	4.55	ug/L	2.04717	ug/L	247
7/5/2016	6/9/2021	Selenium, total recoverable	1.7	ug/L	0.02967	ug/L	120
7/5/2016	6/9/2021	Silver, total recoverable	0.174	ug/L	0.00389	ug/L	241
7/5/2016	6/9/2021	Thallium, total recoverable	0	ug/L	0	ug/L	120
7/5/2016	6/9/2021	Zinc, total recoverable	96.2	ug/L	20.42476	ug/L	247
7/6/2016	6/10/2021	Cyanide	26.2	ug/L	0.38908	ug/L	119
7/6/2020	3/12/2021	Hardness	320	mg/L	199	mg/L	6
7/5/2016	6/9/2021	Total Phenolic Compounds	0	ug/L	0	ug/L	121
7/11/2018	6/9/2021	2,4,6-trichlorophenol	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	2,4-dichlorophenol	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	2,4-dimethylphenol	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	2,4-dinitrophenol	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	2-chlorophenol	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	2-nitrophenol	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	4,6-dinitro-o-cresol	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	4-nitrophenol	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	Pentachlorophenol	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	Phenol	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	p-chloro-m-cresol	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	1,2,4-trichlorobenzene	0	ug/L	0	ug/L	72
7/11/2018	6/10/2021	1,2-dichlorobenzene	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	1,2-diphenylhydrazine	0	ug/L	0	ug/L	72
7/11/2018	6/10/2021	1,3-dichlorobenzene	0	ug/L	0	ug/L	72
7/11/2018	6/10/2021	1,4-dichlorobenzene	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	2,4-dinitrotoluene	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	2,6-dinitrotoluene	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	2-chloronaphthalene	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	3,3-dichlorobenzidine	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	3,4-benzofluoranthene	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	4-bromophenyl phenyl ether	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	4-chlorophenyl phenyl ether	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	Acenaphthene	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	Acenaphthylene	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	Anthracene	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	Benzidine	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	Benzo(a)anthracene	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	Benzo(a)pyrene	0	ug/L	0	ug/L	72
7/11/2018	6/9/2021	Benzo(ghi)perylene	0	ug/L	0	ug/L	72

Appendix F: Effluent Pollutant Data

Date Range		Pollutant	Max Daily		Avg Daily		No. of Samples
7/11/2018	6/9/2021	Benzo(k)fluoranthene	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	Bis (2-chloroethoxy) methane	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	Bis (2-chloroethyl) ether	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	Bis (2-chloroisopropyl) ether	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	Bis (2-ethylhexyl) phthalate	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	Butyl benzyl phthalate	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	Chrysene	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	Dibenzo(a,h)anthracene	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	Diethyl phthalate	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	Dimethyl phthalate	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	Fluoranthene	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	Fluorene	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	Hexachlorobenzene	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	Hexachlorobutadiene	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	Hexachlorocyclo-pentadiene	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	Hexachloroethane	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	Indeno(1,2,3-cd)pyrene	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	Isophorone	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	N-nitrosodi-n-propylamine	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	N-nitrosodimethylamine	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	N-nitrosodiphenylamine	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	Naphthalene	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	Nitrobenzene	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	Phenanthrene	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	Pyrene	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	di-n-butyl phthalate	0 ug/L		0 ug/L		72
7/11/2018	6/9/2021	di-n-octyl phthalate	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	1,1,1-trichloroethane	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	1,1,2,2-tetrachloroethane	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	1,1,2-trichloroethane	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	1,1-dichloroethane	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	1,1-dichloroethylene	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	1,2-dichloroethane	10.8 ug/L		0.15 ug/L		72
7/11/2018	6/10/2021	1,2-dichloropropane	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	1,3-dichloropropylene	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	2-chloroethylvinyl ether	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	Acrolein	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	Acrylonitrile	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	Benzene	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	Bromoform	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	Carbon tetrachloride	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	Chlorobenzene	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	Chlorodibromomethane	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	Chloroethane	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	Chloroform	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	Dichlorobromomethane	0 ug/L		0 ug/L		72

Date Range		Pollutant	Max Daily		Avg Daily		No. of Samples
7/11/2018	6/10/2021	Ethylbenzene	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	Methyl bromide	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	Methyl chloride	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	Methylene chloride	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	Tetrachloroethylene	29.6 ug/L		0.59306 ug/L		72
7/11/2018	6/10/2021	Toluene	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	Trichloroethylene	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	Vinyl chloride	0 ug/L		0 ug/L		72
7/11/2018	6/10/2021	trans-1,2-dichloroethylene	0 ug/L		0 ug/L		72
7/5/2016	6/6/2018	2,4,6-trichlorophenol	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	2,4-dichlorophenol	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	2,4-dimethylphenol	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	2,4-dinitrophenol	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	2-chlorophenol	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	2-nitrophenol	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	4,6-dinitro-o-cresol	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	4-nitrophenol	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Pentachlorophenol	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Phenol	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	p-chloro-m-cresol	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	1,2,4-trichlorobenzene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	1,2-dichlorobenzene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	1,2-diphenylhydrazine	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	1,3-dichlorobenzene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	1,4-dichlorobenzene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	2,4-dinitrotoluene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	2,6-dinitrotoluene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	2-chloronaphthalene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	3,3-dichlorobenzidine	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	3,4-benzofluoranthene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	4-bromophenyl phenyl ether	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	4-chlorophenyl phenyl ether	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Acenaphthene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Acenaphthylene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Anthracene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Benidine	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Benzo(a)anthracene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Benzo(a)pyrene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Benzo(ghi)perylene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Benzo(k)fluoranthene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Bis (2-chloroethoxy) methane	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Bis (2-chloroethyl) ether	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Bis (2-chloroisopropyl) ether	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Bis (2-ethylhexyl) phthalate	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Butyl benzyl phthalate	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Chrysene	0 ug/L		0 ug/L		49

Appendix F: Effluent Pollutant Data

Date Range		Pollutant	Max Daily		Avg Daily		No. of Samples
7/5/2016	6/6/2018	Dibenzo(a,h)anthracene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Diethyl phthalate	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Dimethyl phthalate	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Fluoranthene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Fluorene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Hexachlorobenzene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Hexachlorobutadiene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Hexachlorocyclo-pentadiene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Hexachloroethane	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Indeno(1,2,3-cd)pyrene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Isophorone	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	N-nitrosodi-n-propylamine	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	N-nitrosodimethylamine	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	N-nitrosodiphenylamine	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Naphthalene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Nitrobenzene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Phenanthrene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	Pyrene	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	di-n-butyl phthalate	0 ug/L		0 ug/L		49
7/5/2016	6/6/2018	di-n-octyl phthalate	0 ug/L		0 ug/L		49
7/6/2016	6/7/2018	1,1,1-trichloroethane	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	1,1,2,2-tetrachloroethane	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	1,1,2-trichloroethane	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	1,1-dichloroethane	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	1,1-dichloroethylene	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	1,2-dichloroethane	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	1,2-dichloropropane	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	1,3-dichloropropylene	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	2-chloroethylvinyl ether	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	Acrolein	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	Acrylonitrile	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	Benzene	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	Bromoform	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	Carbon tetrachloride	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	Chlorobenzene	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	Chlorodibromomethane	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	Chloroethane	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	Chloroform	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	Dichlorobromomethane	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	Ethylbenzene	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	Methyl bromide	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	Methyl chloride	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	Methylene chloride	0 ug/L		0 ug/L		48
7/6/2016	6/7/2018	Tetrachloroethylene	7.11 ug/L		0.14813 ug/L		48
7/6/2016	6/7/2018	Toluene	14.5 ug/L		0.4475 ug/L		48
7/6/2016	6/7/2018	Trichloroethylene	0 ug/L		0 ug/L		48

Appendix F: Effluent Pollutant Data

Date Range		Pollutant	Max Daily		Avg Daily		No. of Samples
7/6/2016	6/7/2018	Vinyl chloride	0	ug/L	0	ug/L	48
7/6/2016	6/7/2018	trans-1,2-dichloroethylene	0	ug/L	0	ug/L	48
7/6/2016	6/28/2021	Oil and Grease	39	mg/L	0.26625	mg/L	323

Appendix G: Reasonable Potential and Limits Calculations

A reasonable potential analysis is completed using a single set of critical conditions for flow and pollutant concentration that will ensure the protection of water quality standards. To determine the critical condition of the effluent, EPA projects an upper bound of the effluent concentration based on the observed monitoring data and a selected probability basis. EPA generally applies the quantitative approach found in Appendix E of EPA's *Technical Support Document for Water Quality-based Toxics Control* (TSD)¹ to determine the upper bound of the effluent data. This methodology accounts for effluent variability based on the size of the dataset and the occurrence of non-detects (i.e., samples results in which a parameter is not detected above laboratory detection limits). For datasets of 10 or more samples, EPA uses the upper bound effluent concentration at the 95th percentile of the dataset. For datasets of less than 10 samples, EPA uses the maximum value of the dataset.

EPA uses the calculated upper bound of the effluent data, along with a concentration representative of the parameter in the receiving water, the critical effluent flow, and the critical upstream flow to project the downstream concentration after complete mixing using the following simple mass-balance equation:

$$C_s Q_s + C_e Q_e = C_d Q_d$$

Where:

C_s = upstream concentration (median value of available ambient data)

Q_s = upstream flow (dilution factor)

C_e = effluent concentration (95th percentile or maximum of effluent concentration)

Q_e = effluent flow of the facility (design flow)

C_d = downstream concentration

Q_d = downstream flow ($Q_s + Q_e$)

Solving for the downstream concentration results in:

$$C_d = \frac{C_s Q_s + C_e Q_e}{Q_d}$$

When both the downstream concentration (C_d) and the effluent concentration (C_e) exceed the applicable criterion, there is reasonable potential for the discharge to cause, or contribute to an excursion above the water quality standard. *See* 40 C.F.R. § 122.44(d). When

Appendix G: Reasonable Potential and Limits Calculations

EPA determines that a discharge causes, has the reasonable potential to cause, or contribute to such an excursion, the permit must contain WQBELs for the parameter. *See* 40 C.F.R. § 122.44(d)(1)(iii). Limits are calculated by using the criterion as the downstream concentration (C_d) and rearranging the mass balance equation to solve for the effluent concentration (C_e).

For any pollutant(s) with an existing WQBEL, EPA notes that the analysis described in 40 CFR § 122.44(d)(1)(i) has already been conducted in a previous permitting action demonstrating that there is reasonable potential to cause or contribute to an excursion of WQS. Given that the permit already contains a WQBEL based on the prior analysis and the pollutant(s) continue to be discharged from the facility, EPA has determined that there is still reasonable potential for the discharge of this pollutant(s) to cause or contribute to an excursion of WQS. Therefore, the WQBEL will be carried forward unless it is determined that a more stringent WQBEL is necessary to continue to protect WQS or that a less stringent WQBEL is allowable based on anti-backsliding regulations at CWA §§ 402(o) and 303(d)(4) and 40 CFR § 122.44(l). For these pollutant(s), if any, the mass balance calculation is not used to determine whether there is reasonable potential to cause or contribute to an excursion of WQS, but rather is used to determine whether the existing limit needs to be more stringent in order to continue to protect WQS.

From a technical standpoint, when a pollutant is already being controlled as a result of a previously established WQBEL, EPA has determined that it is not appropriate to use new effluent data to reevaluate the need for the existing limit because the reasonable potential to cause or contribute to an excursion of WQS for the uncontrolled discharge was already established in a previous permit. If EPA were to conduct such an evaluation and find no reasonable potential for the controlled discharge to cause or contribute to an excursion of WQS, that finding could be interpreted to suggest that the effluent limit should be removed. However, the new permit without the effluent limit would imply that existing controls are unnecessary, that controls could be removed and then the pollutant concentration could rise to a level where there is, once again, reasonable potential for the discharge to cause or contribute to an excursion of WQS. This could result in an illogical cycle of applying and removing pollutant controls with each permit reissuance. EPA's technical approach on this issue is in keeping with the Act generally and the NPDES regulations specifically, which reflect a precautionary approach to controlling pollutant discharges.

The table below presents the reasonable potential calculations and, if applicable, the calculation of the limits required in the permit. Refer to the pollutant-specific section of the Fact Sheet for a discussion of these calculations, any assumptions that were made and the resulting permit requirements.

Appendix G: Reasonable Potential and Limits Calculations

Pollutant	Conc. Units	DF	C _s ¹	C _e ²		C _d ³		Criteria		Reasonable Potential		Limits	
				Acute	Chronic	Acute	Chronic	Acute	Chronic	C _d & C _e > Acute	C _d & C _e > Chronic	Acute	Chronic
Arsenic	ug/L	71	0	0.6	0.6	0.008	0.008	69	36	N/A	N/A	No Limit	No Limit
Cadmium	ug/L	71	0.32	0	0	0.32	0.32	33.2	7.9	N/A	N/A	No Limit	No Limit
Copper	ug/L	71	1.6	8.4	8.4	1.7	1.7	5.8	3.7	N/A	N/A	No Limit	No Limit
Cyanide	ug/L	71	0	16.9	16.9	0.23	0.23	1.0	1.0	N/A	N/A	No Limit	No Limit
Lead	ug/L	71	0	0.6	0.6	0.008	0.008	220.8	8.5	N/A	N/A	No Limit	No Limit
Mercury	ug/L	71	0	0	0	0.00009	0.00009	2	11	N/A	N/A	No Limit	No Limit
Nickel	ug/L	71	2.9	2.0	2.0	2.9	2.9	74.7	8.3	N/A	N/A	No Limit	No Limit
Selenium	ug/L	71	0	0	0	0.004	0.004	291	71.1	N/A	N/A	No Limit	No Limit
Silver	ug/L	71	0	0	0	0.0001	0.0001	2.2		N/A	N/A	No Limit	No Limit
TRC	ug/L	71	0	0.5	0.5	0.007	0.007	13	7.5	N/A	N/A	No Limit	No Limit
Zinc	ug/L	71	38	20.4	20.4	38	38	95.1	85.6	N/A	N/A	No Limit	No Limit
Tetrachloroethylene	ug/L	71	0	0.6	0.6	0.008	0.008	29	29	N/A	N/A	No Limit	No Limit
Toluene	ug/L	71	0	0.4	0.4	0.006	0.006	290	290	N/A	N/A	No Limit	No Limit
1,2 Dichloroethane	ug/L	71	0	0.2	0.2	0.002	0.002	650	650	N/A	N/A	No Limit	No Limit
4,4 DDT	ug/L	71	0	0	0	0	0	0.07	0.001	N/A	N/A	No Limit	No Limit
PCB, Total	ug/L	71	0	0	0	0.0000009	0.0000009		0.0003	N/A	N/A	No Limit	No Limit
Ammonia (cold)	ug/L	71	0	32.1	32.1	0.5	0.5	8.1	1.2	N/A	N/A	No Limit	No Limit
Ammonia (warm)	ug/L	71	0	39.8	39.8	0.6	0.6	4.7	0.7	N/A	N/A	No Limit	No Limit

¹Median concentration for the receiving water upstream of the zone of influence of the facility's discharge taken from the WET testing data during the review period (see Appendix A).

²Values represent the 95th percentile (for n ≥ 10) or maximum (for n < 10) concentrations from the DMR data and/or WET testing data during the review period (see Appendix A). If the pollutant already has a limit (for either acute or chronic conditions), the value represents the existing limit.

Definitions:

DF = dilution factor

C_s = upstream ambient concentration

Appendix G: Reasonable Potential and Limits Calculations

C_e = effluent concentration

C_d = downstream, mixed concentration: $((DF-1)*C_s+C_e)/DF$

Cottage Farm (C01)								
Parameter	Flow	Flow	BOD5	BOD5	TSS	TSS	pH	pH
	Monthly Ave	Daily Max	Monthly Ave Min	Maximum	Monthly Ave Min	Maximum	Minimum	Maximum
Units	MGD	MGD	mg/L	mg/L	mg/L	mg/L	SU	SU
Effluent Limit	Report	Report	Report	Report	Report	Report	6.5	8.3
Minimum	1.01	1.01	14	14	38.4	38.4	6.33	6.34
Maximum	43.91	43.91	74.9	74.9	110.6	110.6	6.91	6.91
Median	4.64	6.17	42.5	42.5	66.75	72.5	6.585	6.625
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	4	0
1/31/2018								
2/28/2018								
3/31/2018								
4/30/2018	8.5	8.5	52.8	52.8	110.6	110.6	6.5	6.5
5/31/2018								
6/30/2018								
7/31/2018	11.2	11.2	59.3	59.3	108.7	108.7	6.7	6.7
8/31/2018								
9/30/2018	4.3	4.3	44.5	44.5	104.5	104.5	6.47	6.47
10/31/2018								
11/30/2018	6.17	6.17			38.4	38.4	6.68	6.68
12/31/2018								
1/31/2019								
2/28/2019								
3/31/2019								
4/30/2019	4.2	5	42.5	42.5	50.7	50.7	6.91	6.91
5/31/2019								
6/30/2019								
7/31/2019	2.29	2.29	74.9	74.9	64	70	6.34	6.34
8/31/2019	19.27	19.27	41.6	41.6	75	75	6.5	6.5
9/30/2019	1.93	1.93	58.6	58.6	64.5	64.5	6.65	6.65
10/31/2019	9.57	9.57	28.4	28.4	77.53	77.53	6.57	6.57
11/30/2019								
12/31/2019								
1/31/2020								
2/29/2020								
3/31/2020								
4/30/2020								
5/31/2020								
6/30/2020	4.03	4.03						
7/31/2020								
8/31/2020								

Cottage Farm (C01)								
Parameter	Flow	Flow	BOD5	BOD5	TSS	TSS	pH	pH
	Monthly Ave	Daily Max	Monthly Ave Min	Maximum	Monthly Ave Min	Maximum	Minimum	Maximum
Units	MGD	MGD	mg/L	mg/L	mg/L	mg/L	SU	SU
Effluent Limit	Report	Report	Report	Report	Report	Report	6.5	8.3
Minimum	1.01	1.01	14	14	38.4	38.4	6.33	6.34
Maximum	43.91	43.91	74.9	74.9	110.6	110.6	6.91	6.91
Median	4.64	6.17	42.5	42.5	66.75	72.5	6.585	6.625
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	4	0
9/30/2020								
10/31/2020								
11/30/2020	1.01	1.01	48.4	48.4	47.5	47.5	6.44	6.44
12/31/2020	1.03	1.03	14	14	47.5	47.5	6.69	6.69
1/31/2021								
2/28/2021								
3/31/2021								
4/30/2021								
5/31/2021								
6/30/2021								
7/31/2021	17.46	21.16	35.3	42	93.7	99.57	6.6	6.6
8/31/2021	4.64	8	39.6	39.9	69	97.75	6.33	6.71
9/30/2021	43.91	43.91	19.4	19.4	40.06	40.06	6.7	6.7
10/31/2021								
11/30/2021								
12/31/2021								
1/31/2022								
2/28/2022								
3/31/2022								
4/30/2022								
5/31/2022								
6/30/2022								
7/31/2022								
8/31/2022								
9/30/2022								
10/31/2022								
11/30/2022								
12/31/2022								

Cottage Farm (C01)					
Parameter	Fecal Coliform	Fecal Coliform	TRC	TRC	Duration of discharge
	Monthly Ave Min	Maximum	Monthly Ave Min	MX HR RT	Maximum
Units	#/100mL	#/100mL	mg/L	mg/L	hr
Effluent Limit	Report	Report	0.1	0.25	Report
Minimum	1	1	0	0	0.76
Maximum	1579.1	1883	8.28	9.6	9.58
Median	79.05	114.55	0.01	0.01	2.2
No. of Violations	N/A	N/A	13	3	N/A
1/31/2018					
2/28/2018					
3/31/2018					
4/30/2018	220.9	220.9	0.01	0.01	3.5
5/31/2018					
6/30/2018					
7/31/2018	1579.1	1579.1	0.01	0.01	2.3
8/31/2018					
9/30/2018	7.9	7.9	0.01	0.01	1.9
10/31/2018					
11/30/2018	17	17	0.01	0.01	2.6
12/31/2018					
1/31/2019					
2/28/2019					
3/31/2019					
4/30/2019	1	1	8.28	9.6	2.2
5/31/2019					
6/30/2019					
7/31/2019	142.9	162	0.01	0.01	1.2
8/31/2019	68	68	0.01	0.01	3.8
9/30/2019	32.47	32.47	0.03	0.03	1.4
10/31/2019	342.01	342.01	0.01	0.01	2.13
11/30/2019					
12/31/2019					
1/31/2020					
2/29/2020					
3/31/2020					
4/30/2020					
5/31/2020					
6/30/2020					1.33
7/31/2020					
8/31/2020					

Cottage Farm (C01)					
Parameter	Fecal Coliform	Fecal Coliform	TRC	TRC	Duration of discharge
	Monthly Ave Min	Maximum	Monthly Ave Min	MX HR RT	Maximum
Units	#/100mL	#/100mL	mg/L	mg/L	hr
Effluent Limit	Report	Report	0.1	0.25	Report
Minimum	1	1	0	0	0.76
Maximum	1579.1	1883	8.28	9.6	9.58
Median	79.05	114.55	0.01	0.01	2.2
No. of Violations	N/A	N/A	13	3	N/A
9/30/2020					
10/31/2020					
11/30/2020	1	1	0.01	0.01	1.11
12/31/2020	72.1	72.1	0.01	0.01	0.76
1/31/2021					
2/28/2021					
3/31/2021					
4/30/2021					
5/31/2021					
6/30/2021					
7/31/2021	470	1883	0.03	0.37	4.71
8/31/2021	86	157	0	0	2.38
9/30/2021	281	281	0.02	0.4	9.58
10/31/2021					
11/30/2021					
12/31/2021					
1/31/2022					
2/28/2022					
3/31/2022					
4/30/2022					
5/31/2022					
6/30/2022					
7/31/2022					
8/31/2022					
9/30/2022					
10/31/2022					
11/30/2022					
12/31/2022					

Cottage Farm (C01)				
Parameter	Rainfall	Rainfall	LC50 Acute Menidia	LC50 Static 48Hr Acute Mysid. Bahia
	Maximum	MO TOTAL	Daily Min	Daily Min
Units	in	in	%	%
Effluent Limit	Report	Report	Report	Report
Minimum	1.11	2.16	1.01	1.01
Maximum	2.68	10.07	43.91	43.91
Median	1.69	5.12	4.64	6.17
No. of Violations	N/A	N/A	N/A	N/A
1/31/2018				
2/28/2018				
3/31/2018				
4/30/2018	1.57	4.62	100	100
5/31/2018				
6/30/2018				
7/31/2018	2.68	4.55		
8/31/2018				
9/30/2018	1.24	5.12	100	100
10/31/2018				
11/30/2018	1.39	9.26	100	100
12/31/2018				
1/31/2019				
2/28/2019				
3/31/2019				
4/30/2019	2.3	6.52		
5/31/2019				
6/30/2019				
7/31/2019	1.37	5.81		
8/31/2019	1.9	3.48		
9/30/2019	1.11	2.16	17.7	17.7
10/31/2019	1.43	4.45	100	100
11/30/2019				
12/31/2019				
1/31/2020				
2/29/2020				
3/31/2020				
4/30/2020				
5/31/2020				
6/30/2020	1.19	2.66		
7/31/2020				
8/31/2020				

Cottage Farm (C01)				
Parameter	Rainfall	Rainfall	LC50 Acute Menidia	LC50 Static 48Hr Acute Mysid. Bahia
	Maximum	MO TOTAL	Daily Min	Daily Min
Units	in	in	%	%
Effluent Limit	Report	Report	Report	Report
Minimum	1.11	2.16	1.01	1.01
Maximum	2.68	10.07	43.91	43.91
Median	1.69	5.12	4.64	6.17
No. of Violations	N/A	N/A	N/A	N/A
9/30/2020				
10/31/2020				
11/30/2020	1.81	4.2	70.7	67.8
12/31/2020	1.72	5.67	100	100
1/31/2021				
2/28/2021				
3/31/2021				
4/30/2021				
5/31/2021				
6/30/2021				
7/31/2021	2.04	10.07		
8/31/2021	1.69	7	100	93.9
9/30/2021	2.54	7.47		
10/31/2021				
11/30/2021				
12/31/2021				
1/31/2022				
2/28/2022				
3/31/2022				
4/30/2022				
5/31/2022				
6/30/2022				
7/31/2022				
8/31/2022				
9/30/2022				
10/31/2022				
11/30/2022				
12/31/2022				

Cottage Farm (C01)				
Parameter	LC50 Pass/Fail Static 24Hr Acute Menidia	LC50 Pass/Fail Static 24Hr Acute Mysid. Bahia	Duration of discharge	Bypass valve
	Minimum	Minimum	Maximum	EVNT TOT
Units	pass=0/fail=1	pass=0/fail=1	hr/d	occur/mo
Effluent Limit	Report	Report	Report	Report
Minimum	No Data	No Data	No Data	No Data
Maximum	No Data	No Data	No Data	No Data
Median	No Data	No Data	No Data	No Data
No. of Violations	N/A	N/A	N/A	N/A
1/31/2018				
2/28/2018				
3/31/2018				
4/30/2018				
5/31/2018				
6/30/2018				
7/31/2018				
8/31/2018				
9/30/2018				
10/31/2018				
11/30/2018				
12/31/2018				
1/31/2019				
2/28/2019				
3/31/2019				
4/30/2019				
5/31/2019				
6/30/2019				
7/31/2019				
8/31/2019				
9/30/2019				
10/31/2019				
11/30/2019				
12/31/2019				
1/31/2020				
2/29/2020				
3/31/2020				
4/30/2020				
5/31/2020				
6/30/2020				
7/31/2020				
8/31/2020				

Cottage Farm (C01)				
Parameter	LC50 Pass/Fail Static 24Hr Acute Menidia	LC50 Pass/Fail Static 24Hr Acute Mysid. Bahia	Duration of discharge	Bypass valve
	Minimum	Minimum	Maximum	EVNT TOT
Units	pass=0/fail=1	pass=0/fail=1	hr/d	occur/mo
Effluent Limit	Report	Report	Report	Report
Minimum	No Data	No Data	No Data	No Data
Maximum	No Data	No Data	No Data	No Data
Median	No Data	No Data	No Data	No Data
No. of Violations	N/A	N/A	N/A	N/A
9/30/2020				
10/31/2020				
11/30/2020				
12/31/2020				
1/31/2021				
2/28/2021				
3/31/2021				
4/30/2021				
5/31/2021				
6/30/2021				
7/31/2021				
8/31/2021				
9/30/2021				
10/31/2021				
11/30/2021				
12/31/2021				
1/31/2022				
2/28/2022				
3/31/2022				
4/30/2022				
5/31/2022				
6/30/2022				
7/31/2022				
8/31/2022				
9/30/2022				
10/31/2022				
11/30/2022				
12/31/2022				

Appendix H: CSO Treatment Facilities DMR Data

Prison Point (C03)						
Parameter	Flow	Flow	BOD5	BOD5	TSS	TSS
	Monthly Ave	Daily Max	Monthly Ave Min	Maximum	Monthly Ave Min	Maximum
Units	MGD	MGD	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report
Minimum	3.1	3.1	6.9	6.9	34	35
Maximum	51.36	95.42	82.6	82.6	227	227
Median	13.9	17	24.4	26.3	104.6	110.5
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A
1/31/2018	21.8	30	23.8	23.8	119.1	119.1
2/28/2018						
3/31/2018	27.7	27.7	24.4	24.4	62	62
4/30/2018	38.1	38.1				
5/31/2018	17.5	17.5				
6/30/2018	6.9	13.4				
7/31/2018	17.6	29.5				
8/31/2018	11.9	28.5				
9/30/2018	12	12.5	23	23	110.2	110.2
10/31/2018	11.4	17	26.3	26.3	104.6	104.6
11/30/2018	16.9	24.2	26.7	34.3	34	35
12/31/2018						
1/31/2019	23	23				
2/28/2019						
3/31/2019						
4/30/2019	23.1	41.2				
5/31/2019						
6/30/2019	8.7	11.7				
7/31/2019	13.9	19.1				
8/31/2019	16.7	22.3				
9/30/2019	13.48	13.48				
10/31/2019	22.19	26.58	13.8	13.8	46.08	46.08
11/30/2019	17.94	17.94	30.6	30.6	75.78	75.78
12/31/2019	7.68	7.68	22.1	22.1	137.2	137.2
1/31/2020						
2/29/2020						
3/31/2020	25.25	25.25				
4/30/2020						
5/31/2020	5.3	5.3	54	54	122	122
6/30/2020	9.32	13.16				
7/31/2020	4	4				
8/31/2020	8.54	8.54	28.3	28.3	144	144

Appendix H: CSO Treatment Facilities DMR Data

Prison Point (C03)						
Parameter	Flow	Flow	BOD5	BOD5	TSS	TSS
	Monthly Ave	Daily Max	Monthly Ave Min	Maximum	Monthly Ave Min	Maximum
Units	MGD	MGD	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report
Minimum	3.1	3.1	6.9	6.9	34	35
Maximum	51.36	95.42	82.6	82.6	227	227
Median	13.9	17	24.4	26.3	104.6	110.5
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2020						
10/31/2020	11.07	16.28	16.83	26.6	89.09	129.25
11/30/2020	18.84	21.12				
12/31/2020	15.14	15.56				
1/31/2021	15.31	15.31	10.7	10.7	189.9	189.9
2/28/2021						
3/31/2021						
4/30/2021	13.05	13.05				
5/31/2021	28.09	28.09				
6/30/2021	17.65	17.65				
7/31/2021	32.78	58.45				
8/31/2021	14.88	25.59	15.8	15.8	73.86	73.86
9/30/2021	51.36	95.42	6.9	6.9	132.83	132.83
10/31/2021	13.32	19.31	15	15	87.75	87.75
11/30/2021	3.92	3.92				
12/31/2021						
1/31/2022	7.6	7.6	82.6	82.6	227	227
2/28/2022	5.88	8.47				
3/31/2022						
4/30/2022	9.78	9.78				
5/31/2022						
6/30/2022	3.1	3.1				
7/31/2022						
8/31/2022						
9/30/2022						
10/31/2022	14.8	14.8	32.9	32.9	93.75	93.75
11/30/2022	6.07	6.07	42.4	42.4	110.5	110.5
12/31/2022	8.8	11.05	53.9	82.4	81.38	113.33

Appendix H: CSO Treatment Facilities DMR Data

Prison Point (C03)						
Parameter	pH	pH	Fecal Coliform	Fecal Coliform	TRC	TRC
	Minimum	Maximum	Monthly Ave Min	Maximum	AVERAGE	MX HR RT
Units	SU	SU	#/100mL	#/100mL	mg/L	mg/L
Effluent Limit	6.5	8.5	Report	Report	0.1	0.25
Minimum	5.82	5.82	13	13	0	0
Maximum	7.2	7.2	1170	1170	0.37	1.62
Median	6.56	6.59	202.32	202.32	0.01	0.01
No. of Violations	7	0	N/A	N/A	1	1
1/31/2018	7.2	7.2	67.4	67.4	0.03	0.2
2/28/2018						
3/31/2018	6.6	6.6	98.6	98.6	0.01	0.01
4/30/2018						
5/31/2018						
6/30/2018						
7/31/2018						
8/31/2018						
9/30/2018	6.5	6.5	1170	1170	0.03	0.09
10/31/2018	6.6	6.6	214.8	214.8	0.01	0.01
11/30/2018	6.2	6.6	306.8	390.3	0.01	0.03
12/31/2018						
1/31/2019						
2/28/2019						
3/31/2019						
4/30/2019						
5/31/2019						
6/30/2019						
7/31/2019						
8/31/2019						
9/30/2019						
10/31/2019	6.62	6.62	136.68	136.68	0.01	0.01
11/30/2019	6.81	6.81	202.32	202.32	0.01	0.01
12/31/2019	6.41	6.41	33.4	33.4	0.01	0.01
1/31/2020						
2/29/2020						
3/31/2020						
4/30/2020						
5/31/2020	6.55	6.55	287	287	0.01	0.01
6/30/2020						
7/31/2020						
8/31/2020	6.17	6.17	398	398	0.01	0.01

Appendix H: CSO Treatment Facilities DMR Data

Prison Point (C03)						
Parameter	pH	pH	Fecal Coliform	Fecal Coliform	TRC	TRC
	Minimum	Maximum	Monthly Ave Min	Maximum	AVERAGE	MX HR RT
Units	SU	SU	#/100mL	#/100mL	mg/L	mg/L
Effluent Limit	6.5	8.5	Report	Report	0.1	0.25
Minimum	5.82	5.82	13	13	0	0
Maximum	7.2	7.2	1170	1170	0.37	1.62
Median	6.56	6.59	202.32	202.32	0.01	0.01
No. of Violations	7	0	N/A	N/A	1	1
9/30/2020						
10/31/2020	6.29	6.42	214	220	0.01	0.07
11/30/2020						
12/31/2020						
1/31/2021	6.58	6.58	202	202	0	0
2/28/2021						
3/31/2021						
4/30/2021						
5/31/2021						
6/30/2021						
7/31/2021						
8/31/2021	7.08	7.08	13	13	0.37	1.62
9/30/2021	5.82	5.82	34	34	0	0
10/31/2021	6.61	6.61	352	352	0	0
11/30/2021						
12/31/2021						
1/31/2022	6.59	6.59	1164	1164	0	0
2/28/2022						
3/31/2022						
4/30/2022						
5/31/2022						
6/30/2022						
7/31/2022						
8/31/2022						
9/30/2022						
10/31/2022	5.9	5.9	130	130	0.01	0.08
11/30/2022	6.21	6.42	101	101	0	0
12/31/2022	6.56	6.62	283	417	0	0

Prison Point (C03)			
Parameter	Duration of discharge	Rainfall	Rainfall
	Maximum	Maximum	MO TOTAL
Units	hr	in	in
Effluent Limit	Report	Report	Report
Minimum	1.3	0.53	1.34
Maximum	14.2	3.6	10.07
Median	4.38	1.33	4.28
No. of Violations	N/A	N/A	N/A
1/31/2018	10.48	1.35	4.92
2/28/2018			
3/31/2018	7.2	2.3	5.07
4/30/2018	8.26	1.57	4.62
5/31/2018	4.06	1	1.9
6/30/2018	3.33	1.16	2.96
7/31/2018	5.75	2.68	4.55
8/31/2018	5.35	1.38	4.65
9/30/2018	3.23	1.24	5.12
10/31/2018	5.43	1.17	3.78
11/30/2018	6.05	1.39	9.26
12/31/2018			
1/31/2019	6.06	1.2	3.62
2/28/2019			
3/31/2019			
4/30/2019	9.65	2.3	6.52
5/31/2019			
6/30/2019	3.6	1.65	5.15
7/31/2019	5.82	1.37	5.81
8/31/2019	5.41	1.9	3.48
9/30/2019	2.56	1.11	2.16
10/31/2019	5.13	1.43	4.45
11/30/2019	4.63	1.51	3.37
12/31/2019	3.2	1.29	6.07
1/31/2020			
2/29/2020			
3/31/2020	5.73	3.6	1.38
4/30/2020			
5/31/2020	1.83	0.79	2.21
6/30/2020	3.93	1.19	2.66
7/31/2020	1.55	0.62	1.74
8/31/2020	2.93	1.33	2.28

Prison Point (C03)			
Parameter	Duration of discharge	Rainfall	Rainfall
	Maximum	Maximum	MO TOTAL
Units	hr	in	in
Effluent Limit	Report	Report	Report
Minimum	1.3	0.53	1.34
Maximum	14.2	3.6	10.07
Median	4.38	1.33	4.28
No. of Violations	N/A	N/A	N/A
9/30/2020			
10/31/2020	4.76	1.5	4.98
11/30/2020	4.63	1.81	4.2
12/31/2020	3.61	1.72	5.67
1/31/2021	3.98	1.03	2.02
2/28/2021			
3/31/2021			
4/30/2021	4.38	1.6	4.44
5/31/2021	7.05	1.08	4.92
6/30/2021	3.91	0.91	2.57
7/31/2021	8.66	2.04	10.07
8/31/2021	4.21	1.69	7
9/30/2021	14.2	2.54	7.47
10/31/2021	5.07	1.08	5.11
11/30/2021	1.43	0.53	1.34
12/31/2021			
1/31/2022	2.6	0.73	2.33
2/28/2022	2.31	1.87	4.61
3/31/2022			
4/30/2022	2.7	0.56	2.32
5/31/2022			
6/30/2022	1.3	0.85	2.33
7/31/2022			
8/31/2022			
9/30/2022			
10/31/2022	4.53	1.19	4.28
11/30/2022	2.1	0.79	2.69
12/31/2022	2.93	1.28	3.75

Somerville Marginal (C05)						
Parameter	Flow	Flow	BOD5	BOD5	TSS	TSS
	Monthly Ave	Daily Max	Monthly Ave Min	Maximum	Monthly Ave Min	Maximum
Units	MGD	MGD	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report
Minimum	0.01	0.01	5.4	5.4	26.88	26.88
Maximum	17.51	45.68	61.1	61.1	171.1	171.1
Median	3.07	4.7	12.8	12.8	59.34	76.8
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A
1/31/2018	5.2	6.9	10.6	10.6	88.2	88.2
2/28/2018						
3/31/2018	7.4	7.4				
4/30/2018	5.2	9.5	20.5	20.5	171.1	171.1
5/31/2018	5	5				
6/30/2018	1.6	3.3	9	9	47.3	47.3
7/31/2018	4.4	9				
8/31/2018	2.3	9.7				
9/30/2018	4.3	8.2	19.1	26.7	69.8	113
10/31/2018	2.9	4.7	61.1	61.1	70	70
11/30/2018	3.9	7.7	13.1	16.6	81.6	83.6
12/31/2018	0.8	0.8				
1/31/2019	3.8	6.8				
2/28/2019						
3/31/2019						
4/30/2019	5.7	9.8				
5/31/2019	0.9	0.9				
6/30/2019	1.5	4.1				
7/31/2019	3.2	5.8				
8/31/2019	8.23	12.56				
9/30/2019	3.38	5.59	24.9	24.9	96.75	96.75
10/31/2019	6.08	7.16	15.2	15.2	43.4	43.4
11/30/2019	2.35	4.32				
12/31/2019	2.66	4.69				
1/31/2020	0.31	0.31				
2/29/2020	2.12	2.12	12.8	12.8	91.25	91.25
3/31/2020	5.15	5.15				
4/30/2020	0.51	0.79	26.5	26.5	28.5	137.15
5/31/2020	1.58	2.07				
6/30/2020	2.33	3.94				
7/31/2020	0.69	1.2				

Somerville Marginal (C05)						
Parameter	Flow	Flow	BOD5	BOD5	TSS	TSS
	Monthly Ave	Daily Max	Monthly Ave Min	Maximum	Monthly Ave Min	Maximum
Units	MGD	MGD	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report
Minimum	0.01	0.01	5.4	5.4	26.88	26.88
Maximum	17.51	45.68	61.1	61.1	171.1	171.1
Median	3.07	4.7	12.8	12.8	59.34	76.8
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A
8/31/2020	3.09	3.09				
9/30/2020	0.9	0.9				
10/31/2020	4.33	6.96				
11/30/2020	6.5	9.76	15.9	15.9	48.88	48.88
12/31/2020	8.37	9.6			27.5	27.5
1/31/2021	5.53	5.53				
2/28/2021	0.45	0.45				
3/31/2021	1.22	1.22				
4/30/2021	2.76	5.87	11.4	11.8	36.93	44
5/31/2021	5.79	11.18	9.2	9.2	26.88	26.88
6/30/2021	4.67	4.67				
7/31/2021	11.42	24.81	5.76	8.51	72.22	87.05
8/31/2021	6.01	20.13	5.6	5.6	85.26	85.26
9/30/2021	17.51	45.68	7.8	9.6	29.35	35.5
10/31/2021	6.82	7.89	5.4	5.4	36.5	36.5
11/30/2021	1.95	1.95				
12/31/2021						
1/31/2022	3.07	3.07				
2/28/2022	3.07	4.37				
3/31/2022	0.6	0.6				
4/30/2022	6.07	6.07				
5/31/2022	0.14	0.14				
6/30/2022	1.73	2.43				
7/31/2022						
8/31/2022	0.01	0.01				
9/30/2022	0.19	0.19				
10/31/2022	1.41	2.63				
11/30/2022	1.46	2.85				
12/31/2022	2.57	5.06				

Somerville Marginal (C05)						
Parameter	pH	pH	Fecal Coliform	Fecal Coliform	TRC	TRC
	Minimum	Maximum	Monthly Ave Min	Maximum	AVERAGE	MX HR RT
Units	SU	SU	#/100mL	#/100mL	mg/L	mg/L
Effluent Limit	6.5	8.5	Report	Report	0.1	0.25
Minimum	6.7	6.7	1	1	0	0
Maximum	8.29	8.6	383	146765	7.5	15
Median	7.27	7.915	3.29	3.975	0.01	0.015
No. of Violations	0	2	N/A	N/A	6	6
1/31/2018	6.7	6.7	1	1	0	0
2/28/2018						
3/31/2018						
4/30/2018	7.2	7.2	3.2	3.2	0.01	0.02
5/31/2018						
6/30/2018	8	8	1	1	0.01	0.01
7/31/2018						
8/31/2018						
9/30/2018	6.7	8.6	6.6	42.9	3.72	12.4
10/31/2018	8.29	8.29	9	9	0.01	0.01
11/30/2018	6.76	7.99	2.3	5.1	0.01	0.04
12/31/2018						
1/31/2019						
2/28/2019						
3/31/2019						
4/30/2019						
5/31/2019						
6/30/2019						
7/31/2019						
8/31/2019						
9/30/2019	7.19	7.19	1	1	0.01	0.01
10/31/2019	6.89	6.89	2.29	2.29	0.32	0.32
11/30/2019						
12/31/2019						
1/31/2020						
2/29/2020	7.43	7.43	3.95	3.95	0.01	0.01
3/31/2020						
4/30/2020	7.23	8.13	59.24	389.49	0.01	0.01
5/31/2020						
6/30/2020						
7/31/2020						

Somerville Marginal (C05)						
Parameter	pH	pH	Fecal Coliform	Fecal Coliform	TRC	TRC
	Minimum	Maximum	Monthly Ave Min	Maximum	AVERAGE	MX HR RT
Units	SU	SU	#/100mL	#/100mL	mg/L	mg/L
Effluent Limit	6.5	8.5	Report	Report	0.1	0.25
Minimum	6.7	6.7	1	1	0	0
Maximum	8.29	8.6	383	146765	7.5	15
Median	7.27	7.915	3.29	3.975	0.01	0.015
No. of Violations	0	2	N/A	N/A	6	6
8/31/2020						
9/30/2020						
10/31/2020						
11/30/2020	7.52	7.52	4	4	2.28	9.1
12/31/2020	7.95	7.95	1	1	0.03	0.11
1/31/2021						
2/28/2021						
3/31/2021						
4/30/2021	7.19	7.88	1	1	7.5	15
5/31/2021	6.94	6.94	5	5	0	0
6/30/2021						
7/31/2021	7.31	8.59	3.38	4.41	0.42	6.3
8/31/2021	7.58	7.58	11	11	2.83	7.7
9/30/2021	7.6	8.36	383	146765	0	0
10/31/2021	8.21	8.21	1	1	0	0
11/30/2021						
12/31/2021						
1/31/2022						
2/28/2022						
3/31/2022						
4/30/2022						
5/31/2022						
6/30/2022						
7/31/2022						
8/31/2022						
9/30/2022						
10/31/2022						
11/30/2022						
12/31/2022						

Somerville Marginal (C05)					
Parameter	Duration of discharge	Rainfall	Rainfall	LC50 Acute Ceriodaphnia	LC50 Pass/Fail Static 24Hr Acute Pimphales
	Maximum	Maximum	MO TOTAL	Daily Min	Daily Min
Units	hr	in	in	%	pass=0/fail=1
Effluent Limit	Report	Report	Report	Report	Report
Minimum	0.3	0.44	0.97	0.01	No Data
Maximum	17.51	2.68	10.07	17.51	No Data
Median	3.68	1.19	3.6	3.07	No Data
No. of Violations	N/A	N/A	N/A	N/A	N/A
1/31/2018	6.6	1.35	4.92		
2/28/2018					
3/31/2018	11.2	2.3	5.07		
4/30/2018	7.6	1.57	4.62		
5/31/2018	3	1	1.9		
6/30/2018	3	1.16	2.96		
7/31/2018	6	2.68	4.55		
8/31/2018	4.83	1.38	4.65		
9/30/2018	5.4	1.24	5.12	100	
10/31/2018	6.9	1.17	3.78		
11/30/2018	11.1	1.39	9.26	100	
12/31/2018	2.3	0.75	2.72		
1/31/2019	7.6	1.2	3.62		
2/28/2019					
3/31/2019					
4/30/2019	11.7	2.3	6.52		
5/31/2019	1.5	0.82	3.28		
6/30/2019	2.4	1.65	5.15		
7/31/2019	5.6	1.37	5.81		
8/31/2019	4.58	1.9	3.48		
9/30/2019	2.51	1.11	2.16	100	
10/31/2019	4.13	1.43	4.45	100	
11/30/2019	4.16	1.51	3.37		
12/31/2019	8.55	1.29	6.07		
1/31/2020	2.1	0.7	1.39		
2/29/2020	3.45	0.75	3.3		
3/31/2020	6.1	1.38	3.6		
4/30/2020	2.83	0.83	4.33		
5/31/2020	2.6	0.79	2.21		
6/30/2020	3.36	1.19	2.66		
7/31/2020	1.26	0.62	1.74		

Somerville Marginal (C05)					
Parameter	Duration of discharge	Rainfall	Rainfall	LC50 Acute Ceriodaphnia	LC50 Pass/Fail Static 24Hr Acute Pimphales
	Maximum	Maximum	MO TOTAL	Daily Min	Daily Min
Units	hr	in	in	%	pass=0/fail=1
Effluent Limit	Report	Report	Report	Report	Report
Minimum	0.3	0.44	0.97	0.01	No Data
Maximum	17.51	2.68	10.07	17.51	No Data
Median	3.68	1.19	3.6	3.07	No Data
No. of Violations	N/A	N/A	N/A	N/A	N/A
8/31/2020	1.91	1.33	2.28		
9/30/2020	0.53	0.46	0.97		
10/31/2020	5.68	1.5	4.98		
11/30/2020	6.15	1.81	4.2	100	
12/31/2020	8.23	1.72	5.67		
1/31/2021	3.68	1.03	2.02		
2/28/2021	0.3	0.69	3.05		
3/31/2021	0.68	0.69	1.89		
4/30/2021	7.1	1.6	4.44	100	
5/31/2021	8.16	1.08	4.92		
6/30/2021	1.61	0.91	2.57		
7/31/2021	11.5	2.04	10.07		
8/31/2021	5.83	1.69	7	100	
9/30/2021	17.51	2.54	7.47	100	
10/31/2021	8.63	1.08	5.11		
11/30/2021	2.13	0.53	1.34		
12/31/2021					
1/31/2022	4.56	0.73	2.33		
2/28/2022	2.15	1.87	4.61		
3/31/2022	1.85	0.75	2.93		
4/30/2022	2.75	0.56	2.32		
5/31/2022	0.33	0.73	1.32		
6/30/2022	2.06	0.85	2.33		
7/31/2022					
8/31/2022	0.4	0.44	1.47		
9/30/2022	1.6	0.75	2.6		
10/31/2022	1.68	1.19	4.28		
11/30/2022	2.16	0.79	2.69		
12/31/2022	6.61	1.28	3.75		

Somerville Marginal (C05)			
Parameter	LC50 Static 48Hr Acute D. Pulex	LC50 Pass/Fail Static 24Hr Acute Ceriodaphnia	Duration of discharge
	Daily Min	Minimum	Maximum
Units	%	pass=0/fail=1	hr/d
Effluent Limit	Report	Report	Report
Minimum	5.4	No Data	No Data
Maximum	61.1	No Data	No Data
Median	12.8	No Data	No Data
No. of Violations	N/A	N/A	N/A
1/31/2018			
2/28/2018			
3/31/2018			
4/30/2018			
5/31/2018			
6/30/2018			
7/31/2018			
8/31/2018			
9/30/2018	100		
10/31/2018			
11/30/2018	100		
12/31/2018			
1/31/2019			
2/28/2019			
3/31/2019			
4/30/2019			
5/31/2019			
6/30/2019			
7/31/2019			
8/31/2019			
9/30/2019	100		
10/31/2019	100		
11/30/2019			
12/31/2019			
1/31/2020			
2/29/2020			
3/31/2020			
4/30/2020			
5/31/2020			
6/30/2020			
7/31/2020			

Somerville Marginal (C05)			
Parameter	LC50 Static 48Hr Acute D. Pulex	LC50 Pass/Fail Static 24Hr Acute Ceriodaphnia	Duration of discharge
	Daily Min	Minimum	Maximum
Units	%	pass=0/fail=1	hr/d
Effluent Limit	Report	Report	Report
Minimum	5.4	No Data	No Data
Maximum	61.1	No Data	No Data
Median	12.8	No Data	No Data
No. of Violations	N/A	N/A	N/A
8/31/2020			
9/30/2020			
10/31/2020			
11/30/2020	100		
12/31/2020			
1/31/2021			
2/28/2021			
3/31/2021			
4/30/2021	100		
5/31/2021			
6/30/2021			
7/31/2021			
8/31/2021	100		
9/30/2021	100		
10/31/2021			
11/30/2021			
12/31/2021			
1/31/2022			
2/28/2022			
3/31/2022			
4/30/2022			
5/31/2022			
6/30/2022			
7/31/2022			
8/31/2022			
9/30/2022			
10/31/2022			
11/30/2022			
12/31/2022			

Somerville Marginal (C05)	
Parameter	Bypass valve
	EVNT TOT
Units	occur/mo
Effluent Limit	Report
Minimum	No Data
Maximum	No Data
Median	No Data
No. of Violations	N/A
1/31/2018	
2/28/2018	
3/31/2018	
4/30/2018	
5/31/2018	
6/30/2018	
7/31/2018	
8/31/2018	
9/30/2018	
10/31/2018	
11/30/2018	
12/31/2018	
1/31/2019	
2/28/2019	
3/31/2019	
4/30/2019	
5/31/2019	
6/30/2019	
7/31/2019	
8/31/2019	
9/30/2019	
10/31/2019	
11/30/2019	
12/31/2019	
1/31/2020	
2/29/2020	
3/31/2020	
4/30/2020	
5/31/2020	
6/30/2020	
7/31/2020	

Somerville Marginal (C05)	
Parameter	Bypass valve
	EVNT TOT
Units	occur/mo
Effluent Limit	Report
Minimum	No Data
Maximum	No Data
Median	No Data
No. of Violations	N/A
8/31/2020	
9/30/2020	
10/31/2020	
11/30/2020	
12/31/2020	
1/31/2021	
2/28/2021	
3/31/2021	
4/30/2021	
5/31/2021	
6/30/2021	
7/31/2021	
8/31/2021	
9/30/2021	
10/31/2021	
11/30/2021	
12/31/2021	
1/31/2022	
2/28/2022	
3/31/2022	
4/30/2022	
5/31/2022	
6/30/2022	
7/31/2022	
8/31/2022	
9/30/2022	
10/31/2022	
11/30/2022	
12/31/2022	

Union Park (215 A)

Parameter	Flow	Flow	BOD5	BOD5	TSS	TSS
	Maximum	AVERAGE	Maximum	AVERAGE	Maximum	AVERAGE
Units	Mgal	Mgal	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report
Minimum	0.3	0.3	14	14	17	17
Maximum	22.37	22.37	64	42.5	91	91
Median	3.11	2.205	23.4	23	46	45
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A
1/31/2018	3.6	2.2				
2/28/2018						
3/31/2018	5.7	5.7				
4/30/2018	4.3	4.3				
5/31/2018						
6/30/2018						
7/31/2018	8.9	8.9	39	39	59	59
8/31/2018	1	0.97				
9/30/2018						
10/31/2018	1.98	1.98	23	23	46	46
11/30/2018	3.83	2.56	26	17	38	26.3
12/31/2018						
1/31/2019	1.71	1.71				
2/28/2019						
3/31/2019						
4/30/2019	6.52	3.79				
5/31/2019						
6/30/2019	0.74	0.74	23.4	23.4	73	73
7/31/2019	1.4	1.27	64	42.5	61	40.5
8/31/2019	5.26	5.26	20	20	51	51
9/30/2019						
10/31/2019	21.65	11.19	22	22	45	45
11/30/2019	1.67	1.67				
12/31/2019						
1/31/2020						
2/29/2020						
3/31/2020	3.2	3.2				
4/30/2020	0.3	0.3				
5/31/2020						
6/30/2020	0.44	0.44				
7/31/2020						
8/31/2020						
9/30/2020						

Union Park (215 A)

Parameter	Flow	Flow	BOD5	BOD5	TSS	TSS
	Maximum	AVERAGE	Maximum	AVERAGE	Maximum	AVERAGE
Units	Mgal	Mgal	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report
Minimum	0.3	0.3	14	14	17	17
Maximum	22.37	22.37	64	42.5	91	91
Median	3.11	2.205	23.4	23	46	45
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A
10/31/2020	1.64	1.64	14	14	17	17
11/30/2020	2.66	2.66	27	27	89	89
12/31/2020	2.46	2.03	32	25	32	28
1/31/2021	1.35	1.35				
2/28/2021						
3/31/2021						
4/30/2021	1.92	1.92				
5/31/2021	4.24	4.24	23	23	24	24
6/30/2021	3.94	3.94				
7/31/2021	12.1	6.81	17	15.5	36	33
8/31/2021	3.63	1.58	37	37	91	91
9/30/2021	22.37	22.37				
10/31/2021	3.02	2.21				
11/30/2021						
12/31/2021						
1/31/2022						
2/28/2022						
3/31/2022						
4/30/2022						
5/31/2022						
6/30/2022						
7/31/2022						
8/31/2022						
9/30/2022						
10/31/2022						
11/30/2022						
12/31/2022						

Union Park (215 A)

Parameter	pH	pH	E. coli	E. coli	Fecal Coliform	Fecal Coliform
	Minimum	Maximum	Maximum	AVERAGE	Maximum	AVERAGE
Units	SU	SU	CFU/100mL	CFU/100mL	CFU/100mL	CFU/100mL
Effluent Limit	6.5	8.5	Report	Report	400	200
Minimum	5.06	6	1	1	1	1
Maximum	6.7	8.09	47.7	47.7	39	31.1
Median	5.87	6.63	2.075	1.9	3.1	3.1
No. of Violations	12	0	N/A	N/A	0	0
1/31/2018						
2/28/2018						
3/31/2018						
4/30/2018						
5/31/2018						
6/30/2018						
7/31/2018	5.6	6			3.1	3.1
8/31/2018						
9/30/2018						
10/31/2018	5.93	6.48	1	1	1	1
11/30/2018	5.06	6.91	1.26	1.09	1.59	1.17
12/31/2018						
1/31/2019						
2/28/2019						
3/31/2019						
4/30/2019						
5/31/2019						
6/30/2019	6.7	6.72	1	1	20	20
7/31/2019	6.03	6.67	3.2	1.8	1	1
8/31/2019	5.82	6.19	4.5	4.5	4.5	4.5
9/30/2019						
10/31/2019	6.4	6.85	47.7	47.7	31.1	31.1
11/30/2019						
12/31/2019						
1/31/2020						
2/29/2020						
3/31/2020						
4/30/2020						
5/31/2020						
6/30/2020						
7/31/2020						
8/31/2020						
9/30/2020						

Union Park (215 A)

Parameter	pH	pH	E. coli	E. coli	Fecal Coliform	Fecal Coliform
	Minimum	Maximum	Maximum	AVERAGE	Maximum	AVERAGE
Units	SU	SU	CFU/100mL	CFU/100mL	CFU/100mL	CFU/100mL
Effluent Limit	6.5	8.5	Report	Report	400	200
Minimum	5.06	6	1	1	1	1
Maximum	6.7	8.09	47.7	47.7	39	31.1
Median	5.87	6.63	2.075	1.9	3.1	3.1
No. of Violations	12	0	N/A	N/A	0	0
10/31/2020	5.75	8.09	2.15	2.15	1	1
11/30/2020	6.09	6.25	1	1	1	1
12/31/2020	5.2	6.33	2	1	6	4
1/31/2021						
2/28/2021						
3/31/2021						
4/30/2021						
5/31/2021	5.44	6.04	2	2	2	2
6/30/2021						
7/31/2021	6.01	7.15	4	4	39	20
8/31/2021	5.87	6.63	3	3	4	4
9/30/2021						
10/31/2021						
11/30/2021						
12/31/2021						
1/31/2022						
2/28/2022						
3/31/2022						
4/30/2022						
5/31/2022						
6/30/2022						
7/31/2022						
8/31/2022						
9/30/2022						
10/31/2022						
11/30/2022						
12/31/2022						

Union Park (215 A)

Parameter	TRC	TRC	Rainfall	Rainfall	Rainfall events
	AVERAGE	HR AV MX	AV VALUE	MX VALUE	EVNT TOT
Units	mg/L	mg/L	in	in	occur/mo
Effluent Limit	0.1	0.25	Report	Report	Report
Minimum	0	0	0.07	0.83	1
Maximum	1.01	3	0.32	2.68	4
Median	0.01	0.01	0.15	1.465	1
No. of Violations	1	1	N/A	N/A	N/A
1/31/2018			0.16	1.35	2
2/28/2018					
3/31/2018			0.16	2.3	1
4/30/2018			0.15	1.57	1
5/31/2018					
6/30/2018					
7/31/2018	0	0	0.15	2.68	1
8/31/2018			0.15	1.38	1
9/30/2018					
10/31/2018	0.01	0.01	0.12	1.17	1
11/30/2018	0.01	0.02	0.31	1.39	3
12/31/2018					
1/31/2019			0.12	1.2	1
2/28/2019					
3/31/2019					
4/30/2019			0.22	2.3	2
5/31/2019					
6/30/2019	0.01	0.01	0.17	1.65	1
7/31/2019	0.01	0.01	0.19	1.37	2
8/31/2019	0.01	0.01	0.11	1.9	1
9/30/2019					
10/31/2019	0.01	0.01	0.14	1.43	2
11/30/2019			0.11	1.51	1
12/31/2019					
1/31/2020					
2/29/2020					
3/31/2020			0.12	1.38	1
4/30/2020			0.14	0.83	1
5/31/2020					
6/30/2020			0.09	1.19	1
7/31/2020					
8/31/2020					
9/30/2020					

Union Park (215 A)

Parameter	TRC	TRC	Rainfall	Rainfall	Rainfall events
	AVERAGE	HR AV MX	AV VALUE	MX VALUE	EVNT TOT
Units	mg/L	mg/L	in	in	occur/mo
Effluent Limit	0.1	0.25	Report	Report	Report
Minimum	0	0	0.07	0.83	1
Maximum	1.01	3	0.32	2.68	4
Median	0.01	0.01	0.15	1.465	1
No. of Violations	1	1	N/A	N/A	N/A
10/31/2020	1.01	3	0.16	1.5	1
11/30/2020	0.01	0.01	0.14	1.81	1
12/31/2020	0.01	0.01	0.18	1.72	3
1/31/2021			0.07	1.03	1
2/28/2021					
3/31/2021					
4/30/2021			0.15	1.6	1
5/31/2021	0	0	0.16	1.08	1
6/30/2021			0.09	0.91	1
7/31/2021	0	0	0.32	2.04	4
8/31/2021	0	0	0.23	1.69	4
9/30/2021			0.25	2.54	1
10/31/2021			0.16	1.08	2
11/30/2021					
12/31/2021					
1/31/2022					
2/28/2022					
3/31/2022					
4/30/2022					
5/31/2022					
6/30/2022					
7/31/2022					
8/31/2022					
9/30/2022					
10/31/2022					
11/30/2022					
12/31/2022					

Union Park (215 A)

Parameter	Parameter	LC50 Statre 48Hr Acute Menidia	LC50 Statre 48Hr Acute Mysid. Bahia
		Monthly Ave Min	Monthly Ave Min
Units	Units	%	%
Effluent Limit	Effluent Limit	Report	Report
Minimum	Minimum	0.3	0.3
Maximum	Maximum	22.37	22.37
Median	Median	3.11	2.205
No. of Violations	No. of Violations	N/A	N/A
1/31/2018	1/31/2018		
2/28/2018	2/28/2018		
3/31/2018	3/31/2018		
4/30/2018	4/30/2018		
5/31/2018	5/31/2018		
6/30/2018	6/30/2018		
7/31/2018	7/31/2018	100	100
8/31/2018	8/31/2018		
9/30/2018	9/30/2018		
10/31/2018	10/31/2018	100	100
11/30/2018	11/30/2018		
12/31/2018	12/31/2018		
1/31/2019	1/31/2019		
2/28/2019	2/28/2019		
3/31/2019	3/31/2019		
4/30/2019	4/30/2019		
5/31/2019	5/31/2019		
6/30/2019	6/30/2019		
7/31/2019	7/31/2019	100	100
8/31/2019	8/31/2019	100	100
9/30/2019	9/30/2019		
10/31/2019	10/31/2019		
11/30/2019	11/30/2019		
12/31/2019	12/31/2019		
1/31/2020	1/31/2020		
2/29/2020	2/29/2020		
3/31/2020	3/31/2020		
4/30/2020	4/30/2020		
5/31/2020	5/31/2020		
6/30/2020	6/30/2020		
7/31/2020	7/31/2020		
8/31/2020	8/31/2020		
9/30/2020	9/30/2020		

Union Park (215 A)

Parameter	Parameter	LC50 Statre 48Hr Acute Menidia	LC50 Statre 48Hr Acute Mysid. Bahia
		Monthly Ave Min	Monthly Ave Min
Units	Units	%	%
Effluent Limit	Effluent Limit	Report	Report
Minimum	Minimum	0.3	0.3
Maximum	Maximum	22.37	22.37
Median	Median	3.11	2.205
No. of Violations	No. of Violations	N/A	N/A
10/31/2020	10/31/2020	100	100
11/30/2020	11/30/2020		
12/31/2020	12/31/2020	100	100
1/31/2021	1/31/2021		
2/28/2021	2/28/2021		
3/31/2021	3/31/2021		
4/30/2021	4/30/2021		
5/31/2021	5/31/2021	100	100
6/30/2021	6/30/2021		
7/31/2021	7/31/2021	100	100
8/31/2021	8/31/2021		
9/30/2021	9/30/2021		
10/31/2021	10/31/2021		
11/30/2021	11/30/2021		
12/31/2021	12/31/2021		
1/31/2022	1/31/2022		
2/28/2022	2/28/2022		
3/31/2022	3/31/2022		
4/30/2022	4/30/2022		
5/31/2022	5/31/2022		
6/30/2022	6/30/2022		
7/31/2022	7/31/2022		
8/31/2022	8/31/2022		
9/30/2022	9/30/2022		
10/31/2022	10/31/2022		
11/30/2022	11/30/2022		
12/31/2022	12/31/2022		

Outfall ID	2022*		2021**		2020**		2019**		2018**	
	Activations	Volumes (MG)	Activations	Volumes (MG)	Activations	Volumes (MG)	Activations	Volumes (MG)	Activations	Volumes (MG)
Massachusetts Water Resources Authority										
MWR201	0	0	5	88.1	3	3.48	6	41.50	4	30.14
MWR203	9	70.7	19	444.14	12	157.55	17	276.63	21	343.13
MWR205	18	34.56	28	211.23	32	71.18	27	96.41	35	121.44
MWR205A/SOM007A	4	3.12	17	67.57	3	9.43	12	N/A	21	N/A
MWR207	Closed		Closed		Closed		Closed		Closed	
MWR215	0	0	15	71.77	8	19.95	10	41.88	10	34.09
MWR003	0	0	5	6.77	1	0.29	3	2.99	0	0.00
MWR010	0	0	0	0	0	0.00	0	0.00	0	0.00
MWR018	0	0	4	2.98	0	0.00	1	N/A	2	N/A
MWR019	0	0	4	1.26	0	0.00	0	0.00	2	N/A
MWR020	0	0	4	1.21	0	0.00	0	0.00	2	N/A
MWR021	Closed		Closed		Closed		Closed		Closed	
MWR022	Closed		Closed		Closed		Closed		Closed	
MWR023	1	0.01	4	1.75	1	0.03			-	
Boston Water and Sewer Commission										
BOS003	7	0.27	16	18.08	7	2.95	9	6.13	43	21.39
BOS004	0	0	6	0.26	5	0.01	2	0.06	6	0.10
BOS005	Closed		0	0	0	0.00	0	0.00	0	0.00
BOS006	Closed		Closed		Closed		Overflow Abandoned		Overflow Abandoned	
BOS007	Closed		Closed		Closed		Overflow Abandoned		Overflow Abandoned	
BOS009	8	0.06	21	2.45	26	0.35	10	0.70	14	0.40
BOS010	0	0	11	0.22	6	0.25	7	0.77	7	1.35
BOS012	0	0	7	0.19	7	0.32	13	1.34	12	1.15
BOS013	0	0	15	0.09	8	0.12	10	0.74	14	0.51
BOS014	1	0	15	0.17	16	0.53	8	1.45	11	2.25
BOS015	Closed		Closed		Closed		Closed		Closed	
BOS017	0	0	6	2.76	3	0.04	6	0.32	8	1.15
BOS019	1	0.06	5	2.6	0	0.00	1	0.09	5	N/A
BOS028	Closed		Closed		Closed		Closed		Closed	
BOS032	Closed		Closed		Closed		Closed		Closed	
BOS033	Closed		Closed		Closed		Closed		Closed	
BOS042	Closed		Closed		Closed		Closed		Closed	
BOS046	0	0	4	5.24	0	0.00	0	0.00	7	N/A
BOS049	Closed		Closed		Closed		Closed		Closed	
BOS050	Closed		Closed		Closed		Closed		Closed	
BOS052	Closed		Closed		Closed		Closed		Closed	
BOS057	0	0	7	15.51	3	0.03	2	1.37	4	2.98
BOS058	Closed		Closed		Closed		Closed		Closed	
BOS060	0	0	9	1.47	2	0.11	2	0.17	13	1.69
BOS062	0	0	6	0.47	8	0.12	4	0.97	11	1.67
BOS064	0	0	9	7.05	5	0.04	0	0.00	7	0.20
BOS065	1	0	3	2.84	5	0.11	3	0.71	10	N/A
BOS068	0	0	3	0.9	0	0.00	0	0.00	1	N/A
BOS070										
BOS070/DBC	6	1.09	11	39.99	26	2.19	7	6.21	60	6.51
MWR215 (Union Park)	0	0	15	71.77	8	19.95	10	41.88	10	34.09
BOS070/RCC	0	0	1	0.65	1	0.05	0	0.00	2	N/A

Oufall ID	2022*		2021**		2020**		2019**		2018**	
	Activations	Volumes (MG)	Activations	Volumes (MG)	Activations	Volumes (MG)	Activations	Volumes (MG)	Activations	Volumes (MG)
BOS072	Closed		Closed		Closed		Closed		Closed	
BOS073	0	0	2	0.37	0	0.00	0	0.00	1	0.04
BOS076	0	0	4	0.51	1	<0.01	2	0.22	1	0.12
BOS078	0	0	3	0.53	0	0.00	0	0.00	1	0.11
BOS079	0	0	0	0	0	0.00	0	0.00	0	0.00
BOS080	0	0	2	0.08	0	0.00	0	0.00	1	N/A
BOS081	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
BOS082	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
BOS083	Closed		Closed		Closed		Closed		Closed	
BOS084	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
BOS085	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
BOS086	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
BOS087	Closed		Closed		Closed		Closed in 2010		Closed in 2010	
BOS088/089 (Fox Point)	Closed		Closed		Closed		Closed in 2007		Closed in 2007	
BOS090 (Commercial Point)	Closed		Closed		Closed		Closed in 2007		Closed in 2007	
BOS093	Closed		Closed		Closed		Closed		Closed	
BOS095	Closed		Closed		Closed		Closed		Closed	
City of Cambridge										
CAM001	0	0	4	0.2	0	0.00	4	0.38	1	0.02
CAM002A	0	0	0	0	0	0.00	0	N/A	4	1.43
CAM002B	Temporarily Closed		Temporarily Closed		Temporarily Closed		Temporarily Closed		Temporarily Closed	
CAM004	Closed		Closed		Closed		Closed		Closed	
CAM005	4	0.16	8	3.34	5	1.21	4	N/A	8	1.98
CAM007	0	0	3	3.91	1	0.23	3	N/A	2	0.05
CAM009	Temporarily Closed		Temporarily Closed		Temporarily Closed		Temporarily Closed		Temporarily Closed	
CAM011	Temporarily Closed		Temporarily Closed		Temporarily Closed		Temporarily Closed		Temporarily Closed	
CAM017	0	0	6	13	1	0.30	4	N/A	3	2.72
CAM400	Closed		Closed		Closed		Closed		Closed	
CAM401A	10	0.47	18	21.7	7	0.97	14	N/A	15	5.01
CAM401B	0	0	5	1.59	0	0.00	3	N/A	3	0.18
City of Chelsea										
CHE002	Closed		Closed		Closed		Closed		Closed	
CHE003	0	0	0	0	0	0.00	1	0.28	0	0.00
CHE004	0	0	4	0.92	5	0.78	9	1.45	8	1.80
CHE008	3	19	16	5.41	7	1.20	16	3.34	19	3.54
City of Somerville										
SOM001A	1	0.03	8	97.98	3	0.85	9	7.98	22	19.58
SOM001	Closed		Closed		Closed		Closed		Closed	
SOM002A	Closed		Closed		Closed		Closed		Closed	
SOM003	Closed		Closed		Closed		Closed		Closed	
SOM004	Closed		Closed		Closed		Closed		Closed	
SOM007A	4	3.12	17	67.57	7	12.47	12	14.52	21	N/A
SOM007	Closed		Closed		Closed		Closed		Closed	
SOM010	Closed		Closed		Closed		Closed		Closed	
* Activations and volumes from metered data in MWRA 2022 CSO Annual Report.										
** Activations and volumes from metered data reported in MWRA and communities' CSO Annual Reports.										