Section 5-3
Kennebunk River (Wells NERR)

Kennebunk River

Kennebunk River is 15 miles long and originates at Kennebunk Pond in Lyman. The East Outlet drains to Lords Brook, and the West Outlet drains to Sunken Branch Brook and then to Lords Brook. Carlisle Brook and Goff Mill Brook drain directly to Kennebunk River. The river continues flowing through Arundel and Kennebunk before discharging to the Gulf of Maine in Kennebunkport at Goochs Beach. Other major tributaries include Duck Brook and Ward Brook.

The statutory class of the Kennebunk River and tributaries is Class B. Below head of tide, the river is Class SB. The primary impacts to the river are from development, recreational use, and agriculture. Kennebunk River is listed by the Department of Environmental Protection (DEP) as impaired for bacteria.

Monitoring History

• The Maine DEP Biological Monitoring Program has been monitoring the river since 1995. Monitoring data has been collected on the mainstem as well as Carlisle Brook, Lords Brook and Ward Brook. This data is available on DEP's website.

• The Mousam and Kennebunk River Alliance (MKA) began in 2009 with assistance from the Wells National Estuarine Research Reserve (NERR) and Maine Rivers for the purpose of monitoring the Kennebunk and Mousam rivers. MKA joined the Volunteer River Monitoring Program (VRMP) in 2009.

• Maine DEP's Integrated Water Quality Report lists Kennebunk River (Kennebunk Landing to Goochs Beach) and Duck Brook and tributaries as impaired for Escherichia coli bacteria.

• In 2012, MKA partnered with the DEP TMDL Streams staff to monitor bacteria in Duck Brook. The report is available from DEP.

• In 2017, Wells NERR officially assumed coordination of the sampling group, as MKA focused on the dam issues. In 2017, Wells NERR added five new sampling stations further upstream (KB-11 to KB-15) to obtain additional bacteria data further up in the watershed.

Methods and Sampling Sites

Volunteers monitor the Kennebunk River at five sites on the mainstem and six tributaries. Two sites are below head of tide and nine are freshwater sites. All of the sites are VRMP approved sites.

Monitoring is conducted biweekly from June to September. Monitors take measurements of water temperature and dissolved oxygen using a YSI meter. Specific conductance is measured using either a

YSI meter or an Oakton EC 11+/11 Testr pen and salinity is measured at the tidal sites. Grab samples for *E. coli* are collected at the freshwater sites and Enterococci bacteria at the tidal sites.

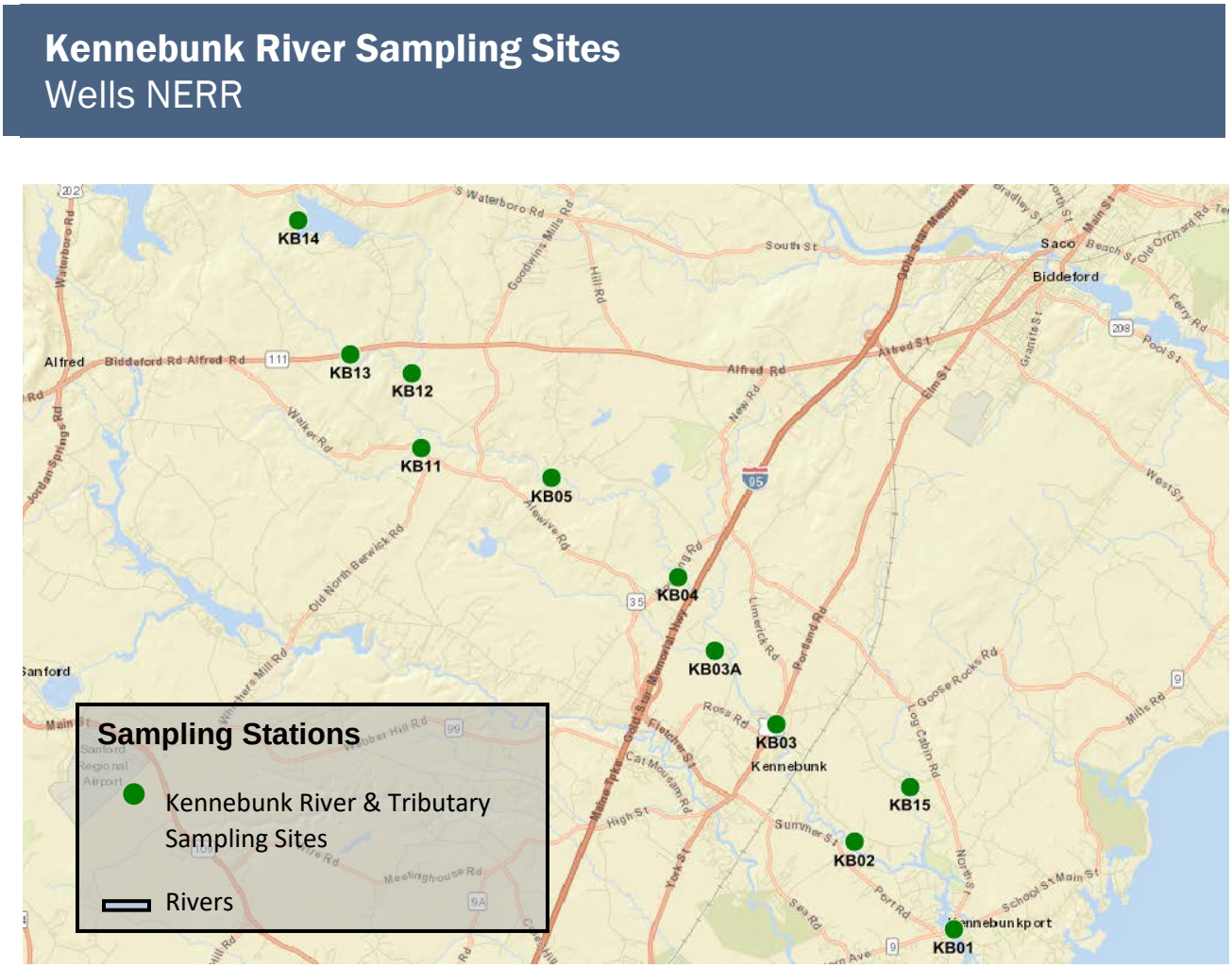

Figure 5-3-1: Map of Wells NERR sampling sites on the Kennebunk River.

Table 5-3-1: Wells NERR sampling sites on the Kennebunk River-listed from upstream to downstream and tributaries. **Sites sampled in 2018 are in bold.**

VRMP Site ID	Organization Site Code	Sample Location	Class
West Outlet-SKELDSNW010-VRMP	KB-14	West Outlet-Kennebunk Pond	B
Sunken Branch Brook-SKELDSN16-VRMP	KB-13	Route 111	B
Lords Brook-SKELD09-VRMP	KB-12	Day Road	B
Kennebunk River - SKE148 - VRMP	KB-05	Perkins Lane	B
Kennebunk River - SKE103 - VRMP	KB-04	Downing Road	B
Kennebunk River - SKE66 - VRMP	KB-03	Route 1 Bridge	B
Kennebunk River - SKE35 - VRMP	KB-02	Durrell's Bridge	SB
Kennebunk River - SKE11 - VRMP	KB-01	Route 9 Bridge	SB
Carlisle Brook-SKECA04-VRMP	KB-11	Walker Road	B
Goff Mill Brook-SKEGF15-VRMP	KB-15	Sinnott Road	B
Ward Brook - SKEWD04 - VRMP	KB-03A	Emmons Road	B

Parameters

Dissolved Oxygen

Dissolved oxygen levels are generally lowest early in the morning and then increase during the day, peaking mid to late afternoon. Monitors should try to collect some samples early in the morning. Dissolved oxygen is also affected by flow conditions and temperature. During high flow conditions, more oxygen is added to the river from the atmosphere as the water is more turbulent and there is more opportunity for mixing. If flow during the summer months is higher or lower than normal, this will affect the dissolved oxygen.

Class B criteria for dissolved oxygen are a minimum of 7 mg/l (milligrams/liter) or 75% saturation. To meet water quality criteria, both concentration and saturation criterion must be met. Class SB criterion for dissolved oxygen is 85% saturation.

Water Temperature

Maine's Regulations Relating to Temperature (06-096 CMR Chapter 582) require that discharge of pollutants not raise the temperature of any river and stream above the EPA criteria for indigenous species (23 °C maximum and 19 °C weekly average) or 0.3 °C (0.5 °F) above the temperature that would naturally occur outside a mixing zone established by the Board of Environmental Protection. Pollutant is defined in statute as many things including dirt and heat. For tidal waters, discharge of pollutants may not raise the temperature more than 4 °F (2.2 °C) or more than 1.5 °F (0.8 °C) from June 1 to September

1, and may not cause the temperature of any tidal waters to exceed 85 °F (29 °C) at any point outside a mixing zone established by the Board of Environmental Protection.

Specific Conductance

Specific conductance is related to the amount of dissolved materials in the water. While there are no numerical standards, a relationship exists between conductivity and chloride which has numerical criteria. In general, streams located in urban areas tend to have high specific conductance due to polluted urban stormwater runoff. This may also in large part be due to salt buildup in surface and groundwater from road maintenance practices.

Bacteria

Enterococci bacteria are used as the indicator organism for marine waters and *E. coli* bacteria are used for freshwaters. While these types of bacteria are not pathogens, their presence in the water may indicate the presence of other organisms including bacteria and viruses that can cause gastrointestinal illnesses. Monitoring should include at least six samples and include a mix of dry and storm event sampling.

Class B criteria (effective August 1, 2018) are as follows: "Between April 15th and October 31st, the number of Escherichia coli bacteria in these waters may not exceed a geometric mean of 64 CFU per 100 milliliters over a 90-day interval or 236 CFU per 100 milliliters in more than 10% of the samples in any 90-day interval." Class SB criteria (effective August 1, 2018) are as follows: "Between April 15th and October 31st, the number of enterococcus bacteria in these waters may not exceed a geometric mean of 8 CFU per 100 milliliters in any 90-day interval or 54 CFU per 100 milliliters in more than 10% of the samples in any 90-day interval." Geometric means are calculated instead of average because it is more appropriate to use this calculation for an indicator such as bacteria where there may be one or more very high or low values that can skew the mean.

Discussion and Recommendations

There are numerous sources of pollution and other stresses to the Kennebunk River sites monitored by the Mousam and Kennebunk Rivers Alliance that could potentially have an impact on water quality. Some of those sources of pollution and stresses may include:

- Non-point source pollution (e.g., septic systems, eroded soil, fertilizers, pesticides, heavy metals, petroleum residues, road salt, wildlife and pet feces) and polluted stormwater originating from urban impervious surfaces (e.g., streets, parking lots, driveways, roofs), agriculture, and forestry.
- Ponds and impoundments (which often create more pond-like aquatic habitat conditions that may have higher water temperatures and lower dissolved oxygen concentrations than free-flowing waters).
- Natural effects of wetlands (such as contributing waters to a stream or river that have low dissolved oxygen levels due to the decomposition of large amounts of organic matter, respiration of abundant plant matter, and low re-aeration rates that is characteristic of many wetlands).

The following are recommendations for future monitoring:

- The monitors should continue to include early morning measurements for dissolved oxygen. It is important to get some values early in the morning (before 8:00 am), particularly during the warmer summer months. Over a 24-hour period, the lowest readings occur in the early morning and highest readings in mid to late afternoon. This occurs because oxygen is used up during the night due to plant respiration and during the day, plant life is photosynthesizing, producing oxygen.
- The VRMP, Healthy Beaches Program staff, DEP monitoring staff, Wells NERR staff and volunteers should continue to work on bacteria monitoring. Efforts should also continue on tracking down potential bacteria sources. Healthy Beaches Program staff should perhaps continue with bacteria sampling at the sites below head of tide to provide some continuity at those locations.
- Bacteria sampling should include samples obtained during both baseflow and storm events.
- Continue monitoring at all stations to develop a long-term trend database.

Summary of Data by Site and Parameter (2009-2018)

A summary of mean, minimum and maximum dissolved oxygen concentration (mg/l) values at Wells NERR monitoring station: **KB-14-(West Outlet Kennebunk Pond)**

Year	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion
2017	B	8	6.5	3.9	9.1	7	5
2018	B	7	6.9	5.63	8.48	7	4

A summary of mean, minimum and maximum dissolved oxygen saturation (%) values at Wells NERR monitoring station: **KB-14-(West Outlet Kennebunk Pond)**

Year	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion
2017	B	8	75.1	42.2	107.9	75	3
2018	B	7	80.5	64.1	92.3	75	3

A summary of mean, minimum and maximum water temperature (°C) values at Wells NERR monitoring station: **KB-14-(West Outlet Kennebunk Pond)**

Year	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion
2017	B	8	22.0	19.9	24.4	n/a	n/a
2018	B	7	23.1	19.5	27.7	n/a	n/a

A summary of mean, minimum and maximum specific conductance (micro-ohms/cm, µS/cm) values at Wells NERR monitoring station: KB-14-(West Outlet Kennebunk Pond)							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2017	B	8	93	87	109	n/a	n/a
2018	B	7	89	55	96	n/a	n/a

A summary of geometric mean, minimum and maximum bacteria (MPN/100 ml) values at Wells NERR monitoring site: KB-14-(West Outlet Kennebunk Pond)								
Year	**Class**	**Bacteria Type**	**# Sample Points**	**Geo-Mean**	**Minimum**	**Maximum**	**Criterion (Insta/geo)**	**# Exceeding Criterion**
2017	B	E. Coli	6	10	1	345	236/64	1/0
2018	B	E. Coli	6	25.9	4	228	236/64	0/0

A summary of mean, minimum and maximum dissolved oxygen concentration (mg/l) values at Wells NERR monitoring station: KB-13 (Sunken Branch Brook)							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2017	B	8	4.2	2.6	6.5	7	8
2018	B	6	3.3	2.4	4.64	7	6

A summary of mean, minimum and maximum dissolved oxygen saturation (%) values at Wells NERR monitoring station: KB-13 (Sunken Branch Brook)							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2017	B	8	44.8	29.4	74.3	75	8
2018	B	6	35.5	27.4	46.8	75	6

A summary of mean, minimum and maximum water temperature (°C) values at Wells NERR monitoring station: KB-13 (Sunken Branch Brook)							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2017	B	7	19.5	17.4	22.0	n/a	n/a
2018	B	6	18.8	15.3	22.1	n/a	n/a

A summary of mean, minimum and maximum specific conductance (micro-ohms/cm, µS/cm) values at Wells NERR monitoring station: KB-13 (Sunken Branch Brook)							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2017	B	8	81	72	90	n/a	n/a
2018	B	6	87	70	93	n/a	n/a

A summary of geometric mean, minimum and maximum bacteria (MPN/100 ml) values at Wells NERR monitoring site: KB-13 (Sunken Branch Brook)								
Year	**Class**	**Bacteria Type**	**# Sample Points**	**Geo-Mean**	**Minimum**	**Maximum**	**Criterion (Insta/geo)**	**# Exceeding Criterion**
2017	B	E. Coli	6	71	29	276	236/64	1
2018	B	E. Coli	5	93	28	>2420	236/64	1/1

A summary of mean, minimum and maximum dissolved oxygen concentration (mg/l) values at Wells NERR monitoring station: **KB-12 (Lords Brook)**

Year	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion
2017	B	8	9.3	8.8	9.8	7	0
2018	B	7	8.7	7.0	9.5	7	0

A summary of mean, minimum and maximum dissolved oxygen saturation (%) values at Wells NERR monitoring station: **KB-12 (Lords Brook)**

Year	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion
2017	B	8	93.5	89.3	102.8	75	0
2018	B	7	84.8	69.5	94.6	75	1

A summary of mean, minimum and maximum water temperature (°C) values at Wells NERR monitoring station: **KB-12 (Lords Brook)**

Year	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion
2017	B	8	16.2	14.6	17.8	n/a	n/a
2018	B	7	15.5	11.8	18.3	n/a	n/a

A summary of mean, minimum and maximum specific conductance (micro-ohms/cm, µS/cm) values at Wells NERR monitoring station: **KB-12 (Lords Brook)**

Year	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion
2017	B	8	107	91	124	n/a	n/a
2018	B	7	114	93	123	n/a	n/a

A summary of geometric mean, minimum and maximum bacteria (MPN/100 ml) values at Wells NERR monitoring site: **KB-12 (Lords Brook)**

Year	Class	Bacteria Type	# Sample Points	Geo-Mean	Minimum	Maximum	Criterion (Insta/geo)	# Exceeding Criterion
2017	B	E. Coli	6	284	98	613	236/64	3/1
2018	B	E. Coli	6	337	101	2722	236/64	2/1

A summary of mean, minimum and maximum dissolved oxygen concentration (mg/l) values at Wells NERR monitoring station: **KB-05**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2009	B	5	10.4	8.6	12.2	7	0
2010	B	6	9.1	8.2	10.5	7	0
2011	B	8	8.9	7.8	10.0	7	0
2012	B	7	9.0	8.4	10.2	7	0
2013	B	8	9.7	8.6	12.0	7	0
2014	B	8	9.2	8.4	10.2	7	0
2015	B	7	8.4	6.0	9.4	7	1
2016	B	7	8.1	7.3	10.0	7	0
2017	B	7	9.1	8.3	10.5	7	0
2018	B	9	8.5	7.4	9.6	7	0

A summary of mean, minimum and maximum dissolved oxygen saturation (%) values at Wells NERR monitoring station: **KB-05**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2009	B	5	98.9	95.8	106.0	75	0
2010	B	6	95	91	98	75	0
2011	B	8	93.5	84.7	99.0	75	0
2012	B	7	92.3	86.0	97.6	75	0
2013	B	8	101.2	91.0	118.0	75	0
2014	B	8	96.1	89.5	104.1	75	0
2015	B	7	93.8	88.5	98.1	75	0
2016	B	7	87.6	80.7	98.1	75	0
2017	B	7	93.4	85.3	100.0	75	0
2018	B	9	90.7	81.0	98.2	75	0

A summary of mean, minimum and maximum water temperature (°C) at Wells NERR monitoring station: **KB-05**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2009	B	5	13.3	7.0	20.4	n/a	n/a
2010	B	6	16.5	11.4	19.6	n/a	n/a

2011	B	8	18.1	11.6	20.2	n/a	n/a
2012	B	7	16.8	10.3	19.5	n/a	n/a
2013	B	8	17.7	12.8	21.8	n/a	n/a
2014	B	8	17.4	12.1	21.6	n/a	n/a
2015	B	7	18.3	13.8	21.2	n/a	n/a
2016	B	7	19.2	13.9	21.3	n/a	n/a
2017	B	7	17.0	12.4	20.6	n/a	n/a
2018	B	9	18.6	14.0	23.3	n/a	n/a

A summary of mean, minimum and maximum specific conductance (micro-ohms/cm, µS/cm) at Wells NERR monitoring station: **KB-05**

Year	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion
2009	B	5	145	39	380	n/a	n/a
2010	B	6	323	112	594	n/a	n/a
2011	B	8	146	71	615	n/a	n/a
2012	B	7	87	59	137	n/a	n/a
2013	B	8	71	40	90	n/a	n/a
2014	B	8	84	60	100	n/a	n/a
2015	B	7	83	60	100	n/a	n/a
2016	B	7	105	68	120	n/a	n/a
2017	B	6	106	86	121	n/a	n/a
2018	B	8	123	106	137	n/a	n/a

A summary of geometric mean, minimum and maximum bacteria (MPN/100 ml) values at Wells NERR monitoring site: **KB-05**

Year	Class	Bacteria Type	# Sample Points	Geo-Mean	Minimum	Maximum	Criterion (Insta/geo)	# Exceeding Criterion
2010	B	E. Coli	7	103	8	411	236/64	2
2011	B	E. Coli	7	122	32	365	236/64	2
2012	B	E. Coli	8	56	4	228	236/64	0
2013	B	E. Coli	8	126	49	>2420	236/64	1
2014	B	E. Coli	8	58	17	140	236/64	0
2015	B	E. Coli	8	289	96	1733	236/64	3
2016	B	E. Coli	7	238	73	>2420	236/64	2
2017	B	E. Coli	6	207	102	1553	236/64	1
2018	B	E. Coli	9	269	93	1986	236/64	4/1

A summary of mean, minimum and maximum dissolved oxygen concentration (mg/l) values at Wells NERR monitoring station: **KB-04**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2009	B	5	10.1	8.0	12.1	7	0
2010	B	6	8.2	7.4	9.5	7	0
2011	B	8	7.8	6.6	9.2	7	2
2012	B	7	7.9	7.2	8.8	7	0
2013	B	8	8.6	7.9	11.0	7	0
2014	B	8	8.4	7.4	9.5	7	0
2015	B	7	7.0	5.4	8.9	7	4
2016	B	7	6.2	3.9	8.0	7	5
2017	B	7	7.8	6.8	10.2	7	1
2018	B	9	6.6	5.3	8.9	7	6

A summary of mean, minimum and maximum dissolved oxygen saturation (%) values at Wells NERR monitoring station: **KB-04**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2009	B	5	93.8	89.0	101.5	75	0
2010	B	6	87	80	93	75	0
2011	B	8	83.2	71.8	90.0	75	1
2012	B	7	82.5	77.3	87.6	75	0
2013	B	8	91.0	82.5	104.1	75	0
2014	B	8	87.6	80.9	95.5	75	0
2015	B	7	79.7	70.0	87.5	75	3
2016	B	7	68.3	55.8	86.7	75	5
2017	B	7	83.4	71.5	105.0	75	2
2018	B	9	71.8	55.2	86.3	75	6

A summary of mean, minimum and maximum water temperature (°C) values at Wells NERR monitoring station: **KB-04**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2009	B	5	13.2	6.9	20.7	n/a	n/a
2010	B	6	17.4	13.1	20.8	n/a	n/a
2011	B	8	18.7	11.6	21.1	n/a	n/a

2012	B	7	17.5	11.9	20.4	n/a	n/a
2013	B	8	17.9	12.7	22.5	n/a	n/a
2014	B	8	17.8	12.3	21.0	n/a	n/a
2015	B	7	19.1	13.6	22.5	n/a	n/a
2016	B	7	19.8	15.0	22.7	n/a	n/a
2017	B	7	17.8	12.7	21.2	n/a	n/a
2018	B	9	20.0	14.3	24.6	n/a	n/a

A summary of mean, minimum and maximum specific conductance (micro-ohms/cm, µS/cm) values at Wells NERR monitoring station: **KB-04**

Year	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion
2009	B	5	76	35	92	n/a	n/a
2010	B	6	270	65	1140	n/a	n/a
2011	B	8	121	92	270	n/a	n/a
2012	B	7	90	64	117	n/a	n/a
2013	B	8	80	50	100	n/a	n/a
2014	B	8	89	60	110	n/a	n/a
2015	B	7	163	80	540	n/a	n/a
2016	B	7	108	70	121	n/a	n/a
2017	B	6	116	93	131	n/a	n/a
2018	B	8	126	109	140	n/a	n/a

A summary of geometric mean, minimum and maximum bacteria (MPN/100 ml) values at Wells NERR monitoring site: **KB-04**

Year	Class	Bacteria Type	# Sample Points	Geo-Mean	Minimum	Maximum	Criterion (Insta/geo)	# Exceeding Criterion
2010	B	E. Coli	7	205	114	291	236/64	4
2011	B	E. Coli	7	201	102	387	236/64	3
2012	B	E. Coli	7	120	15	387	236/64	2
2013	B	E. Coli	8	211	93	>2420	236/64	1
2014	B	E. Coli	8	142	70	214	236/64	0
2015	B	E. Coli	8	295	179	770	236/64	5
2016	B	E. Coli	7	235	82	1046	236/64	2
2017	B	E. Coli	6	295	122	2420	236/64	3
2018	B	E. Coli	9	245	116	1046	236/64	5/1

A summary of mean, minimum and maximum dissolved oxygen concentration (mg/l) values at Wells NERR monitoring station: **KB-03**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2009	B	6	10.4	8.3	12.3	7	0
2010	B	6	9.8	9.2	11.2	7	0
2011	B	7	9.4	8.8	10.7	7	0
2012	B	7	9.3	8.6	10.9	7	0
2013	B	8	9.6	8.4	11.8	7	0
2014	B	7	9.4	8.4	10.4	7	0
2015	B	7	8.3	5.6	9.2	7	1
2016	B	7	8.4	7.5	9.8	7	0
2017	B	3	9.9	8.9	10.5	7	0
2018	B	9	8.4	7.3	9.9	7	0

A summary of mean, minimum and maximum dissolved oxygen saturation (%) values at Wells NERR monitoring station: **KB-03**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2009	B	5	101.7	94.2	113.7	75	0
2010	B	6	108	102	114	75	0
2011	B	7	103.7	95.0	115.0	75	0
2012	B	7	99.1	93.4	107.5	75	0
2013	B	8	102.4	90.1	120.0	75	0
2014	B	7	99.2	93.5	111.2	75	0
2015	B	7	94.3	89.9	99.0	75	0
2016	B	7	92.5	81.2	102.4	75	0
2017	B	3	106.5	100.0	118.0	75	0
2018	B	9	91.3	81.3	101.6	75	0

A summary of mean, minimum and maximum water temperature (°C) values at Wells NERR monitoring station: **KB-03**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2009	B	5	14.2	6.2	20.9	n/a	n/a
2010	B	6	18.9	15.1	22.8	n/a	n/a
2011	B	7	20.3	12.6	23.1	n/a	n/a
2012	B	7	18.6	11.7	23.0	n/a	n/a

2013	B	8	18.6	14.1	22.6	n/a	n/a
2014	B	7	18.7	13.5	22.3	n/a	n/a
2015	B	7	19.1	14.2	22.1	n/a	n/a
2016	B	7	20.8	15.1	26.9	n/a	n/a
2017	B	3	18.9	13.0	22.1	n/a	n/a
2018	B	9	19.5	14.8	24.5	n/a	n/a

A summary of mean, minimum and maximum specific conductance (micro-ohms/cm, µS/cm) values at Wells NERR monitoring station: **KB-03**

Year	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion
2009	B	5	91	56	136	n/a	n/a
2010	B	6	103	83	133	n/a	n/a
2011	B	7	250	96	392	n/a	n/a
2012	B	7	152	79	219	n/a	n/a
2013	B	8	169	70	480	n/a	n/a
2014	B	7	334	100	660	n/a	n/a
2015	B	7	339	180	820	n/a	n/a
2016	B	7	141	87	161	n/a	n/a
2017	B	1	117	117	117	n/a	n/a
2018	B	8	192	130	332	n/a	n/a

A summary of geometric mean, minimum and maximum bacteria (MPN/100 ml) values at Wells NERR monitoring site: **KB-03**

Year	Class	Bacteria Type	# Sample Points	Geo-Mean	Minimum	Maximum	Criterion (Insta/geo)	# Exceeding Criterion
2010	B	E. Coli	8	92	23	365	236/64	1
2011	B	E. Coli	7	161	96	261	236/64	1
2012	B	E. Coli	8	72	10	199	236/64	0
2013	B	E. Coli	8	163	54	>2420	236/64	2
2014	B	E. Coli	8	109	45	186	236/64	0
2015	B	E. Coli	8	190	75	488	236/64	4
2016	B	E. Coli	7	184	84	435	236/64	3
2017	B	E. Coli	4	291	115	1046	236/64	2
2018	B	E. Coli	9	423	148	>2420	236/64	6/1

A summary of mean, minimum and maximum dissolved oxygen concentration (mg/l) values at Wells NERR monitoring station: **KB-02**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2009	SB	5	9.6	8.2	11.6	n/a	n/a
2010	SB	5	8.0	7.2	9.4	n/a	n/a
2011	SB	8	7.8	6.7	8.7	n/a	n/a
2012	SB	7	7.7	6.8	8.5	n/a	n/a
2013	SB	8	8.5	7.3	11.0	n/a	n/a
2014	SB	8	8.2	7.2	9.0	n/a	n/a
2015	SB	7	7.4	6.6	9.1	n/a	n/a
2016	SB	7	6.3	5.4	8.1	n/a	n/a
2017	SB	7	7.8	6.6	10.2	n/a	n/a
2018	SB	9	6.6	5.5	8.1	n/a	n/a

A summary of mean, minimum and maximum dissolved oxygen saturation (%) values at Wells NERR monitoring station: **KB-02**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2009	SB	5	94.4	92.0	100.6	85	0
2010	SB	5	88	82	97	85	2
2011	SB	8	86.7	76.7	96.0	85	3
2012	SB	7	84.0	72.8	92.3	85	5
2013	SB	8	92.1	80.5	105.1	85	2
2014	SB	8	89.5	81.9	97.8	85	2
2015	SB	7	84.1	77.2	90.6	85	5
2016	SB	7	79.2	67.0	91.0	85	5
2017	SB	7	91.2	79.3	105.0	85	2
2018	SB	9	81.9	68.0	93.7	85	4

A summary of mean, minimum and maximum water temperature (°C) values at Wells NERR monitoring station: **KB-02**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2009	SB	5	15.4	7.7	24.0	n/a	n/a
2010	SB	5	19.1	15.5	23.0	n/a	n/a
2011	SB	8	20.6	15.7	23.3	n/a	n/a
2012	SB	7	19.4	15.0	22.4	n/a	n/a

2013	SB	8	19.1	12.9	24.0	n/a	n/a
2014	SB	8	19.6	15.6	22.6	n/a	n/a
2015	SB	7	20.2	14.4	23.3	n/a	n/a
2016	SB	7	20.0	15.3	23.2	n/a	n/a
2017	SB	7	18.3	13.2	21.1	n/a	n/a
2018	SB	9	20.6	15.9	25.4	n/a	n/a

A summary of geometric mean, minimum and maximum bacteria (MPN/100 ml) values at Wells NERR monitoring site: **KB-02**

Year	Class	Bacteria Type	# Sample Points	Geo-Mean	Minimum	Maximum	Criterion (Insta/geo)	# Exceeding Criterion
2010	SB	Entero	8	67	<10	269	54/8	6
2011	SB	Entero	7	81	10	414	54/8	4
2012	SB	Entero	8	122	<10	644	54/8	4
2013	SB	Entero	8	323	41	12997	54/8	7
2014	SB	Entero	7	100	10	285	54/8	2
2015	SB	Entero	8	209	20	3282	54/8	6
2016	SB	Entero	7	48	10	204	54/8	3
2017	SB	Entero	6	65	30	272	54/8	2
2018	SB	Entero	9	91	10	749	54/8	5/1

A summary of mean, minimum and maximum dissolved oxygen concentration (mg/l) values at Wells NERR monitoring station: **KB-01**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2009	SB	1	9.2	9.2	9.2	n/a	n/a
2010	SB	5	10.3	9.5	10.8	n/a	n/a
2011	SB	8	9.6	8.0	10.7	n/a	n/a
2012	SB	7	9.2	7.1	11.4	n/a	n/a
2013	SB	8	9.7	8.8	11.6	n/a	n/a
2014	SB	8	10.1	9.2	11.6	n/a	n/a
2015	SB	7	9.2	8.4	10.5	n/a	n/a
2016	SB	7	8.2	6.3	9.5	n/a	n/a
2017	SB	7	9.3	8.1	10.5	n/a	n/a
2018	SB	9	8.0	6.6	9.3	n/a	n/a

A summary of mean, minimum and maximum dissolved oxygen saturation (%) values at Wells NERR monitoring station: **KB-01**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2009	SB	1	95.5	95.5	95.5	85	0
2010	SB	5	108	96	117	85	0
2011	SB	8	99.8	84.0	112.0	85	1
2012	SB	7	94.1	78.4	115.4	85	1
2013	SB	8	99.8	88.5	127.0	85	0
2014	SB	8	103.4	91.1	117.6	85	0
2015	SB	7	98.0	85.6	105.9	85	0
2016	SB	7	99.7	81.9	119.0	85	1
2017	SB	7	107.3	96.6	115.0	85	0
2018	SB	9	96.9	85.6	117.1	85	0

A summary of mean, minimum and maximum water temperature (°C) values at Wells NERR monitoring station: **KB-01**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2009	SB	1	17.2	17.2	17.2	n/a	n/a
2010	SB	5	15.9	14.4	17.9	n/a	n/a
2011	SB	8	17.3	16.1	19.9	n/a	n/a

2012	SB	7	16.8	14.7	20.2	n/a	n/a
2013	SB	8	16.9	13.4	19.7	n/a	n/a
2014	SB	8	16.6	15.0	17.9	n/a	n/a
2015	SB	7	17.1	14.4	19.0	n/a	n/a
2016	SB	7	16.1	11.4	18.6	n/a	n/a
2017	SB	7	14.4	11.1	18.3	n/a	n/a
2018	SB	9	18.4	13.8	22.7	n/a	n/a

A summary of geometric mean, minimum and maximum bacteria (MPN/100 ml) values at Wells NERR monitoring site: **KB-01**

Year	Class	Bacteria Type	# Sample Points	Geo-Mean	Minimum	Maximum	Criterion (Insta/geo)	# Exceeding Criterion
2010	SB	Entero	8	15	<10	74	54/8	1
2011	SB	Entero	7	16	10	52	54/8	0
2012	SB	Entero	8	40	<10	146	54/8	2
2013	SB	Entero	8	68	10	9208	54/8	4
2014	SB	Entero	5	42	10	75	54/8	1
2015	SB	Entero	8	106	10	6867	54/8	4
2016	SB	Entero	7	12	<10	20	54/8	0
2017	SB	Entero	6	18	10	63	54/8	1
2018	SB	Entero	9	30	<10	1430	54/8	3/1

A summary of mean, minimum and maximum dissolved oxygen concentration (mg/l) values at Wells NERR monitoring station: **KB-11 (Carlisle Brook)**

Year	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion
2017	B	8	7.4	6.1	8.4	7	3
2018	B	7	6.7	4.9	8.2	7	5

A summary of mean, minimum and maximum dissolved oxygen saturation (%) values at Wells NERR monitoring station: **KB-11 (Carlisle Brook)**

Year	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion
2017	B	8	76.0	64.6	88.6	75	3
2018	B	7	70.1	54.8	81.8	75	5

A summary of mean, minimum and maximum water temperature (°C) values at Wells NERR monitoring station: **KB-11 (Carlisle Brook)**

Year	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion
2017	B	8	17.0	15.3	18.3	n/a	n/a
2018	B	7	17.1	13.8	21.5	n/a	n/a

A summary of mean, minimum and maximum specific conductance (micro-ohms/cm, µS/cm) values at Wells NERR monitoring station: **KB-11 (Carlisle Brook)**

Year	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion
2017	B	8	80	64	91	n/a	n/a
2018	B	7	97	77	107	n/a	n/a

A summary of geometric mean, minimum and maximum bacteria (MPN/100 ml) values at Wells NERR monitoring site: **KB-11 (Carlisle Brook)**

Year	Class	Bacteria Type	# Sample Points	Geo-Mean	Minimum	Maximum	Criterion (Insta/geo)	# Exceeding Criterion
2017	B	E. Coli	6	344	179	1300	236/64	3
2018	B	E. Coli	6	758	387	>2420	236/64	6/1

A summary of mean, minimum and maximum dissolved oxygen concentration (mg/l) values at Wells NERR monitoring station: **KB-15 (Goff Mill Brook)**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2017	B	8	6.4	3.9	9.0	7	6
2018	B	7	5.3	3.1	6.9	7	7

A summary of mean, minimum and maximum dissolved oxygen saturation (%) values at Wells NERR monitoring station: **KB-15 (Goff Mill Brook)**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2017	B	8	67.7	46.6	95.8	75	6
2018	B	7	56.3	35.5	69.2	75	7

A summary of mean, minimum and maximum water temperature (°C) values at Wells NERR monitoring station: **KB-15 (Goff Mill Brook)**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2017	B	8	18.0	16.5	19.2	n/a	n/a
2018	B	7	18.4	14.7	22.4	n/a	n/a

A summary of mean, minimum and maximum specific conductance (micro-ohms/cm, µS/cm) values at Wells NERR monitoring station: **KB-15 (Goff Mill Brook)**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2017	B	8	164	135	193	n/a	n/a
2018	B	7	189	148	217	n/a	n/a

A summary of geometric mean, minimum and maximum bacteria (MPN/100 ml) values at Wells NERR monitoring site: **KB-15 (Goff Mill Brook)**								
Year	**Class**	**Bacteria Type**	**# Sample Points**	**Geo-Mean**	**Minimum**	**Maximum**	**Criterion (Insta/geo)**	**# Exceeding Criterion**
2017	B	E. Coli	6	179	72	517	236/64	2
2018	B	E. Coli	6	332	91	>2420	236/64	4/1

A summary of mean, minimum and maximum dissolved oxygen concentration (mg/l) values at Wells NERR monitoring station: **KB-03A (Ward Brook)**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2012	B	6	8.5	7.8	9.6	7	0
2013	B	8	9.1	7.9	11.6	7	0
2014	B	8	8.5	7.7	9.6	7	0
2015	B	7	7.5	5.5	8.9	7	1
2016	B	7	6.5	5.7	7.6	7	5
2017	B	7	8.8	7.3	10.5	7	0
2018	B	9	7.1	5.4	8.8	7	5

A summary of mean, minimum and maximum dissolved oxygen saturation (%) values at Wells NERR monitoring station: **KB-03A (Ward Brook)**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2012	B	6	87.2	82.5	93.6	75	0
2013	B	8	94.8	85.7	109.5	75	0
2014	B	8	89.0	78.0	99.8	75	0
2015	B	7	83.9	75.0	90.2	75	0
2016	B	7	69.0	61.8	81.5	75	5
2017	B	7	89.4	73.5	105.0	75	1
2018	B	9	76.0	60.0	85.7	75	4

A summary of mean, minimum and maximum water temperature (°C) values at Wells NERR monitoring station: **KB-03A (Ward Brook)**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2012	B	6	16.9	10.1	20.4	n/a	n/a
2013	B	8	17.8	12.6	23.2	n/a	n/a
2014	B	8	17.9	11.8	23.0	n/a	n/a
2015	B	7	18.2	13.4	21.1	n/a	n/a
2016	B	7	19.1	14.9	21.2	n/a	n/a
2017	B	7	16.9	12.3	20.7	n/a	n/a
2018	B	9	18.7	13.0	23.6	n/a	n/a

A summary of mean, minimum and maximum specific conductance (micro-ohms/cm, µS/cm) values at Wells NERR monitoring station: **KB-03A (Ward Brook)**							
Year	**Class**	**# Sample Points**	**Mean**	**Minimum**	**Maximum**	**Criterion**	**# Not Meeting Criterion**
2012	B	6	90	62	103	n/a	n/a
2013	B	8	93	30	120	n/a	n/a
2014	B	8	138	80	320	n/a	n/a
2015	B	7	124	80	210	n/a	n/a
2016	B	7	121	78	175	n/a	n/a
2017	B	6	117	89	130	n/a	n/a
2018	B	8	123	98	141	n/a	n/a

A summary of geometric mean, minimum and maximum bacteria (MPN/100 ml) values at Wells NERR monitoring site: **KB-03A (Ward Brook)**								
Year	**Class**	**Bacteria Type**	**# Sample Points**	**Geo-Mean**	**Minimum**	**Maximum**	**Criterion (Insta/geo)**	**# Exceeding Criterion**
2012	B	E. Coli	7	60	3	326	236/64	1
2013	B	E. Coli	8	108	37	>2420	236/64	1
2014	B	E. Coli	8	183	22	921	236/64	1
2015	B	E. Coli	8	286	80	1553	236/64	4
2016	B	E. Coli	7	303	127	1203	236/64	3
2017	B	E. Coli	5	313	118	1414	236/64	1
2018	B	E. Coli	9	527	162	1733	236/64	8

Appendix A

* Sampling depths are only reported for Tier 1 VRMP sites.

** "N/A" = normal environmental sample ; "D" = field duplicate; "L" = lab duplicate.

*** D.O. = dissolved oxygen; "Spec. Cond" = specific conductance; "TDS" = Total disolved solids; "TSS" = total suspended solids."

Organization Site Code	VRMP Site ID	Date	Time	** Sample Type Qualifier	* Sample Depth	Depth Unit	Water Temp (DEG C)	*** D.O. (MG/L)	*** D.O. Sat. (%)	*** Spec. Cond. (US/CM)	Salinity (PPTH)	Turbidity (NTU)	*** TDS (MG/L)	*** TSS (MG/L)	E. coli Bacteria (MPN/ 100ML)	Entero-cocci (MPN/ 100ML)
Kennebunk River - Wells National Estuarine Research Reserve: Approved Sites																
KB-11	CARLISLE BROOK-SKECA04-VRMP	6/12/2018	6:05 AM	NA			13.8	8.2	80.2	93.7						
KB-11	CARLISLE BROOK-SKECA04-VRMP	6/12/2018	6:26 AM	NA											613	
KB-11	CARLISLE BROOK-SKECA04-VRMP	6/12/2018	6:26 AM	L											687	
KB-11	CARLISLE BROOK-SKECA04-VRMP	6/25/2018	8:07 AM	NA			15.8	8.1	81.8	76.7						
KB-11	CARLISLE BROOK-SKECA04-VRMP	6/25/2018	8:07 AM	D			15.8	8.1	80.8	98.2						
KB-11	CARLISLE BROOK-SKECA04-VRMP	7/9/2018	7:55 AM	NA			18.2	6.5	70.0	100.9					387	
KB-11	CARLISLE BROOK-SKECA04-VRMP	7/9/2018	7:55 AM	L											276	
KB-11	CARLISLE BROOK-SKECA04-VRMP	7/9/2018	7:55 AM	D			18.2	5.9	65.8	104.7						
KB-11	CARLISLE BROOK-SKECA04-VRMP	7/9/2018	8:26 AM	D											236	
KB-11	CARLISLE BROOK-SKECA04-VRMP	7/20/2018	6:56 AM	NA			17.8	6.3	66.0	102.6					488	
KB-11	CARLISLE BROOK-SKECA04-VRMP	7/20/2018	6:56 AM	L											461	
KB-11	CARLISLE BROOK-SKECA04-VRMP	7/27/2018	8:38 AM	NA			20.1	5.9	65.2	106.6						
KB-11	CARLISLE BROOK-SKECA04-VRMP	7/27/2018	8:41 AM	NA											1553	
KB-11	CARLISLE BROOK-SKECA04-VRMP	7/27/2018	8:41 AM	L											2420	
KB-11	CARLISLE BROOK-SKECA04-VRMP	8/10/2018	8:46 AM	NA			21.5	4.9	54.8	106.3						
KB-11	CARLISLE BROOK-SKECA04-VRMP	8/10/2018	8:48 AM	NA											435	
KB-11	CARLISLE BROOK-SKECA04-VRMP	8/10/2018	8:48 AM	L											345	
KB-11	CARLISLE BROOK-SKECA04-VRMP	9/11/2018	8:20 AM	NA			15.0	7.0	69.3	87.8					>2420	
KB-11	CARLISLE BROOK-SKECA04-VRMP	9/11/2018	8:20 AM	L											>2420	
KB-11	CARLISLE BROOK-SKECA04-VRMP	9/11/2018	8:20 AM	D			15.0	6.7	67.0	88.8						
KB-11	CARLISLE BROOK-SKECA04-VRMP	9/11/2018	8:30 AM	D											>2420	
KB-15	GOFF MILL BROOK-SKEGF15-VRMP	6/12/2018	8:00 AM	NA			14.7	6.7	65.6	208.9						
KB-15	GOFF MILL BROOK-SKEGF15-VRMP	6/12/2018	8:06 AM	NA											147	
KB-15	GOFF MILL BROOK-SKEGF15-VRMP	6/25/2018	10:03 AM	NA			16.9	5.9	61.1	175.3						
KB-15	GOFF MILL BROOK-SKEGF15-VRMP	7/9/2018	9:42 AM	NA			18.7	3.1	35.5	201					91	
KB-15	GOFF MILL BROOK-SKEGF15-VRMP	7/20/2018	8:08 AM	NA			17.8	4.4	45.9	204.6					276	
KB-15	GOFF MILL BROOK-SKEGF15-VRMP	7/27/2018	10:08 AM	NA											488	
KB-15	GOFF MILL BROOK-SKEGF15-VRMP	7/27/2018	10:10 AM	D											770	
KB-15	GOFF MILL BROOK-SKEGF15-VRMP	7/27/2018	10:21 AM	NA			20.3	5.7	63.2	180.1						
KB-15	GOFF MILL BROOK-SKEGF15-VRMP	7/27/2018	10:21 AM	D			20.3	5.9	64.7	179.6						
KB-15	GOFF MILL BROOK-SKEGF15-VRMP	8/10/2018	10:01 AM	NA			22.4	3.9	45.4	216.9						
KB-15	GOFF MILL BROOK-SKEGF15-VRMP	8/10/2018	10:02 AM	NA											308	
KB-15	GOFF MILL BROOK-SKEGF15-VRMP	9/11/2018	10:10 AM	NA			15.8	6.9	69.2	148.3					>2420	

Organization Site Code	VRMP Site ID	Date	Time	** Sample Type Qualifier	* Sample Depth	Depth Unit	Water Temp (DEG C)	*** D.O. (MG/L)	*** D.O. Sat. (%)	*** Spec. Cond. (US/CM)	Salinity (PPTH)	Turbidity (NTU)	*** TDS (MG/L)	*** TSS (MG/L)	E. coli Bacteria (MPN/ 100ML)	Entero-cocci (MPN/ 100ML)
KB-04	KENNEBUNK RIVER - SKE103 - VRMP	6/8/2018	8:00 AM	NA											172	
KB-04	KENNEBUNK RIVER - SKE103 - VRMP	6/8/2018	8:35 AM	NA			14.3	8.9	86.3							
KB-04	KENNEBUNK RIVER - SKE103 - VRMP	6/22/2018	8:50 AM	NA			17.7	7.0	73.0	125.8					120	
KB-04	KENNEBUNK RIVER - SKE103 - VRMP	6/29/2018	8:15 AM	NA			17.7	8.0	84.0	120.5					1046	
KB-04	KENNEBUNK RIVER - SKE103 - VRMP	7/6/2018	8:15 AM	NA			24.6	5.6	67.3	123					260	
KB-04	KENNEBUNK RIVER - SKE103 - VRMP	7/6/2018	8:15 AM	D			24.6	5.6	66.9	123.7						
KB-04	KENNEBUNK RIVER - SKE103 - VRMP	7/6/2018	8:20 AM	D											236	
KB-04	KENNEBUNK RIVER - SKE103 - VRMP	7/21/2018	7:55 AM	NA			18.7	7.3	78.2	132					225	
KB-04	KENNEBUNK RIVER - SKE103 - VRMP	8/6/2018	7:40 AM	NA											299	
KB-04	KENNEBUNK RIVER - SKE103 - VRMP	8/6/2018	8:00 AM	NA			21.9	6.5	74.3	109						
KB-04	KENNEBUNK RIVER - SKE103 - VRMP	8/20/2018	8:07 AM	NA			20.2	6.6	73.1	136					238	
KB-04	KENNEBUNK RIVER - SKE103 - VRMP	9/4/2018	8:10 AM	NA			20.7	5.3	59.6	139.6					116	
KB-04	KENNEBUNK RIVER - SKE103 - VRMP	9/18/2018	7:49 AM	NA			19.2	5.5	55.2	124.8					308	
KB-01	KENNEBUNK RIVER - SKE11 - VRMP	6/8/2018	7:00 AM	NA												1430
KB-01	KENNEBUNK RIVER - SKE11 - VRMP	6/8/2018	7:00 AM	L												1620
KB-01	KENNEBUNK RIVER - SKE11 - VRMP	6/8/2018	7:05 AM	NA			13.8	8.2	93.5		26					
KB-01	KENNEBUNK RIVER - SKE11 - VRMP	6/22/2018	7:26 AM	NA			14.3	8.7	102.6	45.82	29.3					U<10
KB-01	KENNEBUNK RIVER - SKE11 - VRMP	6/22/2018	7:26 AM	L												10
KB-01	KENNEBUNK RIVER - SKE11 - VRMP	6/29/2018	7:00 AM	NA			20.3	9.3	89.0		1.3					489
KB-01	KENNEBUNK RIVER - SKE11 - VRMP	6/29/2018	7:00 AM	L												545
KB-01	KENNEBUNK RIVER - SKE11 - VRMP	7/6/2018	7:20 AM	NA			20.4	9.0	117.1	44.8	29.1					U<10
KB-01	KENNEBUNK RIVER - SKE11 - VRMP	7/21/2018	7:08 AM	NA			17.6	8.2	102.5		30.4					20
KB-01	KENNEBUNK RIVER - SKE11 - VRMP	7/21/2018	7:08 AM	L												U<10
KB-01	KENNEBUNK RIVER - SKE11 - VRMP	8/6/2018	7:05 AM	NA			17.5	7.5	94.0		28.8					63
KB-01	KENNEBUNK RIVER - SKE11 - VRMP	8/6/2018	7:05 AM	L												78
KB-01	KENNEBUNK RIVER - SKE11 - VRMP	8/20/2018	7:08 AM	NA			19.9	7.8	99.5		30					10
KB-01	KENNEBUNK RIVER - SKE11 - VRMP	8/20/2018	7:08 AM	L												30
KB-01	KENNEBUNK RIVER - SKE11 - VRMP	9/4/2018	7:00 AM	NA			22.7	6.7	88.5		31					10
KB-01	KENNEBUNK RIVER - SKE11 - VRMP	9/4/2018	7:00 AM	L												10
KB-01	KENNEBUNK RIVER - SKE11 - VRMP	9/18/2018	7:00 AM	NA			19.2	6.6	85.6		30					10
KB-01	KENNEBUNK RIVER - SKE11 - VRMP	9/18/2018	7:00 AM	L												41
KB-05	KENNEBUNK RIVER - SKE148 - VRMP	6/8/2018	8:30 AM	NA											93	
KB-05	KENNEBUNK RIVER - SKE148 - VRMP	6/8/2018	8:52 AM	NA			14.0	9.6	92.5							
KB-05	KENNEBUNK RIVER - SKE148 - VRMP	6/22/2018	9:05 AM	NA			16.4	8.5	86.8	123.2					192	
KB-05	KENNEBUNK RIVER - SKE148 - VRMP	6/29/2018	8:25 AM	NA			17.2	8.9	92.6	113.7					1986	
KB-05	KENNEBUNK RIVER - SKE148 - VRMP	7/6/2018	8:35 AM	NA			23.3	8.4	97.7	120					517	
KB-05	KENNEBUNK RIVER - SKE148 - VRMP	7/21/2018	8:10 AM	NA			17.1	9.5	98.2	130.7					185	
KB-05	KENNEBUNK RIVER - SKE148 - VRMP	8/6/2018	8:00 AM	NA											285	
KB-05	KENNEBUNK RIVER - SKE148 - VRMP	8/6/2018	8:15 AM	NA			21.2	7.7	87.8	106						
KB-05	KENNEBUNK RIVER - SKE148 - VRMP	8/20/2018	8:21 AM	NA			18.6	8.7	92.6	131					93	
KB-05	KENNEBUNK RIVER - SKE148 - VRMP	9/4/2018	8:25 AM	NA											228	
KB-05	KENNEBUNK RIVER - SKE148 - VRMP	9/4/2018	8:30 AM	NA			20.6	7.4	81.0	137.4						
KB-05	KENNEBUNK RIVER - SKE148 - VRMP	9/18/2018	8:08 AM	NA			18.8	8.1	86.8	122					365	

Organization Site Code	VRMP Site ID	Date	Time	** Sample Type Qualifier	* Sample Depth	Depth Unit	Water Temp (DEG C)	*** D.O. (MG/L)	*** D.O. Sat. (%)	*** Spec. Cond. (US/CM)	Salinity (PPTH)	Turbidity (NTU)	*** TDS (MG/L)	*** TSS (MG/L)	E. coli Bacteria (MPN/ 100ML)	Entero-cocci (MPN/ 100ML)
KB-02	KENNEBUNK RIVER - SKE35 - VRMP	6/8/2018	7:15 AM	NA												645
KB-02	KENNEBUNK RIVER - SKE35 - VRMP	6/8/2018	7:25 AM	NA			15.9	7.7	93.7		12.2					
KB-02	KENNEBUNK RIVER - SKE35 - VRMP	6/22/2018	7:47 AM	NA			17.3	7.1	85.5	38.66	24.9					20
KB-02	KENNEBUNK RIVER - SKE35 - VRMP	6/29/2018	7:15 AM	NA			17.8	8.1	85.0		0.2					749
KB-02	KENNEBUNK RIVER - SKE35 - VRMP	7/6/2018	7:35 AM	NA			25.4	6.8	90.2		13.6					278
KB-02	KENNEBUNK RIVER - SKE35 - VRMP	7/21/2018	7:15 AM	NA			20.4	7.1	91.3		25.8					20
KB-02	KENNEBUNK RIVER - SKE35 - VRMP	8/6/2018	7:20 AM	NA			23.1	5.6	68.0		6.8					187
KB-02	KENNEBUNK RIVER - SKE35 - VRMP	8/20/2018	7:24 AM	NA			21.6	6.0	77.5		21.8					20
KB-02	KENNEBUNK RIVER - SKE35 - VRMP	9/4/2018	7:15 AM	NA			23.0	5.7	77.0		26					10
KB-02	KENNEBUNK RIVER - SKE35 - VRMP	9/18/2018	7:15 AM	NA			20.7	5.5	68.6		19.5					211
KB-03	KENNEBUNK RIVER - SKE66 - VRMP	6/8/2018	7:30 AM	NA											148	
KB-03	KENNEBUNK RIVER - SKE66 - VRMP	6/8/2018	7:30 AM	L											167	
KB-03	KENNEBUNK RIVER - SKE66 - VRMP	6/8/2018	7:42 AM	NA			14.8	9.9	97.8							
KB-03	KENNEBUNK RIVER - SKE66 - VRMP	6/22/2018	8:10 AM	NA			18.2	8.6	92.1	155.3					199	
KB-03	KENNEBUNK RIVER - SKE66 - VRMP	6/22/2018	8:10 AM	L											228	
KB-03	KENNEBUNK RIVER - SKE66 - VRMP	6/29/2018	7:32 AM	NA			17.5	8.1	84.6	332					>2420	
KB-03	KENNEBUNK RIVER - SKE66 - VRMP	6/29/2018	7:45 AM	L											1986	
KB-03	KENNEBUNK RIVER - SKE66 - VRMP	7/6/2018	7:50 AM	NA			24.5	8.5	101.6	136.8					770	
KB-03	KENNEBUNK RIVER - SKE66 - VRMP	7/21/2018	7:30 AM	NA			18.0	9.4	98.9	200					345	
KB-03	KENNEBUNK RIVER - SKE66 - VRMP	8/6/2018	7:30 AM	NA			21.7	7.5	85.0	190					308	
KB-03	KENNEBUNK RIVER - SKE66 - VRMP	8/6/2018	7:30 AM	L											345	
KB-03	KENNEBUNK RIVER - SKE66 - VRMP	8/20/2018	7:34 AM	NA			20.3	8.4	93.3	208					687	
KB-03	KENNEBUNK RIVER - SKE66 - VRMP	8/20/2018	7:34 AM	L											687	
KB-03	KENNEBUNK RIVER - SKE66 - VRMP	9/4/2018	7:32 AM	NA			20.9	7.3	81.3	186					178	
KB-03	KENNEBUNK RIVER - SKE66 - VRMP	9/18/2018	7:29 AM	NA			19.4	8.0	86.7	130					613	
KB-12	LORDS BROOK-SKELD09-VRMP	6/12/2018	6:10 AM	NA											116	
KB-12	LORDS BROOK-SKELD09-VRMP	6/12/2018	6:31 AM	NA			11.8	9.4	87.2	113.8						
KB-12	LORDS BROOK-SKELD09-VRMP	6/25/2018	8:28 AM	NA			14.8	9.5	92.8	116.8						
KB-12	LORDS BROOK-SKELD09-VRMP	7/9/2018	8:24 AM	NA			15.3	9.5	94.6	117.4					115	
KB-12	LORDS BROOK-SKELD09-VRMP	7/20/2018	7:09 AM	NA			14.6	9.0	80.8	116.6					166	
KB-12	LORDS BROOK-SKELD09-VRMP	7/27/2018	8:52 AM	NA			18.1	8.4	80.6	119.5						
KB-12	LORDS BROOK-SKELD09-VRMP	7/27/2018	8:53 AM	NA											2722.3	
KB-12	LORDS BROOK-SKELD09-VRMP	8/10/2018	8:59 AM	NA			18.3	8.3	87.9	123.3						
KB-12	LORDS BROOK-SKELD09-VRMP	8/10/2018	9:02 AM	NA											101	
KB-12	LORDS BROOK-SKELD09-VRMP	9/11/2018	8:55 AM	NA			15.4	7.0	69.5	93.3					2420	
KB-13	SUNKEN BRANCH BROOK-SKELDSN16-VRM	6/12/2018	6:45 AM	NA			16.1	4.3	45.8	91.8						
KB-13	SUNKEN BRANCH BROOK-SKELDSN16-VRM	6/12/2018	6:52 AM	NA											28	
KB-13	SUNKEN BRANCH BROOK-SKELDSN16-VRM	6/25/2018	8:55 AM	NA			18.3	3.1	33.5	89.6						
KB-13	SUNKEN BRANCH BROOK-SKELDSN16-VRM	7/20/2018	7:20 AM	NA			19.0	2.9	31.1	91.7					33	
KB-13	SUNKEN BRANCH BROOK-SKELDSN16-VRM	7/27/2018	9:02 AM	NA			21.7	2.4	27.4	88.7						
KB-13	SUNKEN BRANCH BROOK-SKELDSN16-VRM	7/27/2018	9:05 AM	NA											39.9	
KB-13	SUNKEN BRANCH BROOK-SKELDSN16-VRM	8/10/2018	9:11 AM	NA			22.1	2.8	28.4	93.3						
KB-13	SUNKEN BRANCH BROOK-SKELDSN16-VRM	8/10/2018	9:13 AM	NA											79	
KB-13	SUNKEN BRANCH BROOK-SKELDSN16-VRM	9/11/2018	9:10 AM	NA			15.3	4.6	46.8	69.5					>2420	

Organization Site Code	VRMP Site ID	Date	Time	** Sample Type Qualifier	* Sample Depth	Depth Unit	Water Temp (DEG C)	*** D.O. (MG/L)	*** D.O. Sat. (%)	*** Spec. Cond. (US/CM)	Salinity (PPTH)	Turbidity (NTU)	*** TDS (MG/L)	*** TSS (MG/L)	E. coli Bacteria (MPN/ 100ML)	Entero-cocci (MPN/ 100ML)
KB-03A	WARD BROOK-SKEWD04-VRMP	6/8/2018	7:40 AM	NA											313	
KB-03A	WARD BROOK-SKEWD04-VRMP	6/8/2018	7:40 AM	D											548	
KB-03A	WARD BROOK-SKEWD04-VRMP	6/8/2018	8:12 AM	NA			13.0	8.8	84.3							
KB-03A	WARD BROOK-SKEWD04-VRMP	6/22/2018	8:29 AM	NA			17.2	7.8	81.2	113.6					649	
KB-03A	WARD BROOK-SKEWD04-VRMP	6/29/2018	7:45 AM	NA			17.6	7.9	83.3	98.6					1733	
KB-03A	WARD BROOK-SKEWD04-VRMP	6/29/2018	7:45 AM	D			17.7	8.0	85.7	98.3						
KB-03A	WARD BROOK-SKEWD04-VRMP	6/29/2018	7:50 AM	D											1733	
KB-03A	WARD BROOK-SKEWD04-VRMP	7/6/2018	8:02 AM	NA			23.6	6.9	80.4	120					980	
KB-03A	WARD BROOK-SKEWD04-VRMP	7/21/2018	7:40 AM	NA			16.9	7.8	80.9	135					411	
KB-03A	WARD BROOK-SKEWD04-VRMP	7/21/2018	7:40 AM	L											411	
KB-03A	WARD BROOK-SKEWD04-VRMP	7/21/2018	7:40 AM	D			16.8	7.8	80.8	136						
KB-03A	WARD BROOK-SKEWD04-VRMP	7/21/2018	7:45 AM	D											345	
KB-03A	WARD BROOK-SKEWD04-VRMP	8/6/2018	7:40 AM	NA			21.2	6.4	72.4	110						
KB-03A	WARD BROOK-SKEWD04-VRMP	8/6/2018	7:40 AM	D			21.2	6.4	72.4	110					517	
KB-03A	WARD BROOK-SKEWD04-VRMP	8/6/2018	8:15 AM	NA											162	
KB-03A	WARD BROOK-SKEWD04-VRMP	8/20/2018	7:50 AM	NA			19.1	6.8	74.1	139					365	
KB-03A	WARD BROOK-SKEWD04-VRMP	8/20/2018	7:50 AM	D			19.0	6.8	74.0	138						
KB-03A	WARD BROOK-SKEWD04-VRMP	8/20/2018	7:55 AM	D											313	
KB-03A	WARD BROOK-SKEWD04-VRMP	9/4/2018	7:40 AM	NA			20.0	5.4	60.0	141					435	
KB-03A	WARD BROOK-SKEWD04-VRMP	9/18/2018	7:40 AM	NA			19.5	6.2	66.5	126					866	
KB-03A	WARD BROOK-SKEWD04-VRMP	9/18/2018	7:40 AM	D			19.4	6.2	67.5	129					214	
KB-14	WEST OUTLET-SKELDSNWO10-VRMP	6/12/2018	7:16 AM	NA			19.5	8.5	92.3	93.7					32	
KB-14	WEST OUTLET-SKELDSNWO10-VRMP	6/25/2018	9:12 AM	NA			21.4	7.9	90.2	94						
KB-14	WEST OUTLET-SKELDSNWO10-VRMP	7/9/2018	8:57 AM	NA			25.3	7.3	88.6	94.9					4	
KB-14	WEST OUTLET-SKELDSNWO10-VRMP	7/20/2018	7:35 AM	NA			22.4	5.8	67.0	95.6					108	
KB-14	WEST OUTLET-SKELDSNWO10-VRMP	7/27/2018	9:21 AM	NA			24.1	6.1	73.1	95.7						
KB-14	WEST OUTLET-SKELDSNWO10-VRMP	7/27/2018	9:22 AM	NA											9.5	
KB-14	WEST OUTLET-SKELDSNWO10-VRMP	8/10/2018	9:29 AM	NA			27.7	6.9	88.2	55.1						
KB-14	WEST OUTLET-SKELDSNWO10-VRMP	8/10/2018	9:31 AM	NA											10	
KB-14	WEST OUTLET-SKELDSNWO10-VRMP	9/11/2018	9:38 AM	NA			21.4	5.6	64.1	91.3					228	