



PARSONS CREEK | MEMORANDUM



TO: Kim Reed, Town of Rye
FROM: Laura Diemer, FB Environmental
SUBJECT: Parsons Creek (Rye, NH) – 2015 Water Quality Results
DATE: December 11, 2015
CC: Michael Magnant, Town of Rye; Forrest Bell, FB Environmental

This memo summarizes water quality results for Parsons Creek in Rye, New Hampshire for the 2015 sampling season. Sampling locations and 2015 geometric mean results are shown in the included maps. A more formal historical analysis will be summarized in a final report before the end of the year.

BEACH SEEP SAMPLING

High bacteria counts were only observed during the beach seep overnight sampling when the Parsons Creek outlet spiked at night, while two beach seeps near the outlet spiked around mid-day. This is in contrast to 2014 overnight beach seep sampling when beach seeps near the outlet spiked at night. Higher bacteria concentrations at night may be from increased human activity (i.e., toilet flushing) as residents return from work, as well as better environmental conditions for bacteria to thrive (e.g., less intense sunlight exposure, cooler water temperatures, etc.) Canine investigations of the beach showed multiple hits for human waste, despite low levels of measured bacteria.

TASK 1/2: Weekly beach seeps and Parsons Creek outlet sampling results (April 6 – July 27, 2015).

Sample ID	Geomean	n
RB-1	6.2	17
RB-2	6.3	17
RB-3	7.6	17

TASK 3: Overnight beach seeps and Parsons Creek outlet sampling results.

Sample ID	Date	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30
PC-out	8/24/2015	31	63	63	41	75	20	20	30	41
RB-1	8/24/2015	5	243	228	5	5	5	5	20	5
RB-2	8/24/2015	5	197	8,164	5	20	5	5	10	10
RB-3	8/24/2015	5	5	5	5	5	10	5	5	5
Sample ID	Date	0:00	0:30	1:00	1:30	2:00	2:30	3:00	3:30	Standard
PC-out	8/25/2015	226	262	292	479	504	355	216	504	<406
RB-1	8/25/2015	5	5	5	5	5	10	5	20	<104
RB-2	8/25/2015	5	10	5	5	10	5	5	5	<104
RB-3	8/25/2015	5	10	41	30	8	10	5	5	<104



2015 Beach Seep Investigation Results - Parsons Creek, Rye, New Hampshire
Positive for Human ● <20 col/100mL

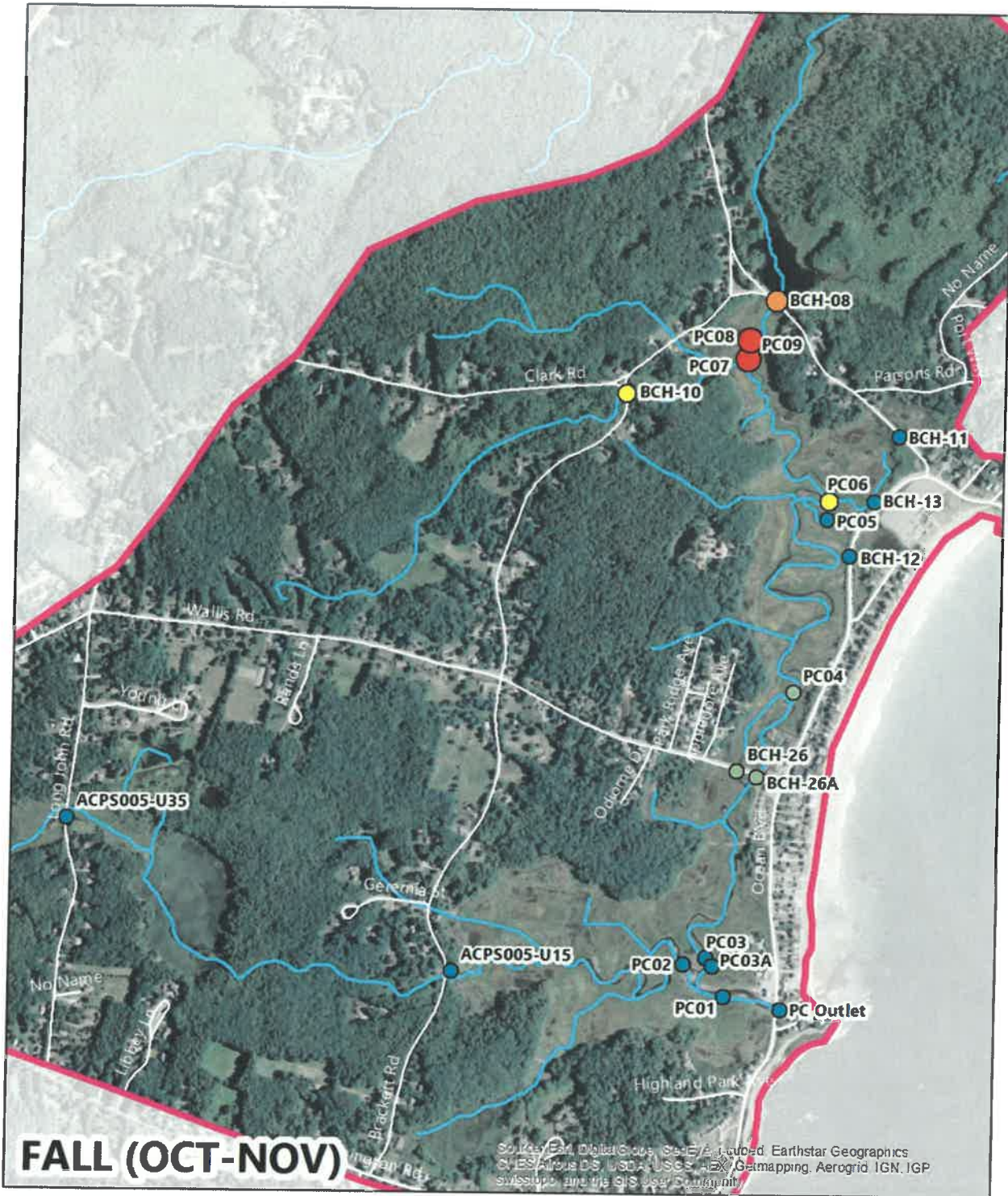
- No
- Yes

Roads

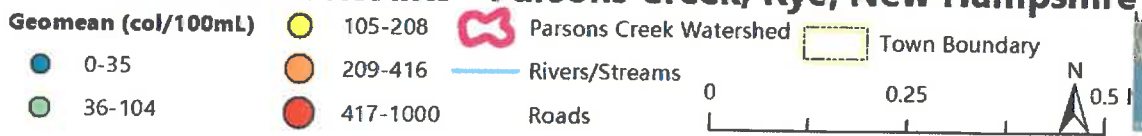


The above map shows beach seep investigation results on 8/25-26/15 along with canine detection results on 11/19/15.

Sample ID	11/3/2015 (DRY)	11/5/2015 (DRY)	11/9/2015 (DRY)	11/13/2015 (WET)	11/16/2015 (DRY)	11/19/2015 (DRY)
BCH26A	52	31	31	10	10	52
PCOUT	41	5	5	199	173	10
ACPS005-U15	52	20	10	84	52	10
ACPS005-U35	5	5	10	5	5	5
BCH12	107	41	41	109	5	5
BCH08	754	122	439	331	85	52
BCH10	5,172	145	75	109	31	41



2015 Enterococci Results - Parsons Creek, Rye, New Hampshire





TO: Sally Soule, NHDES
FROM: Laura Diemer, FB Environmental
SUBJECT: Parsons Creek (Rye, NH) – Preliminary Water Quality Results
DATE: September 10, 2015
CC: Michael Magnant & Kim Reed, Town of Rye, Jodi Federle & Forrest Bell, FB Environmental

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This memo summarizes preliminary water quality results for Parsons Creek in Rye, New Hampshire for the 2015 sampling season. Sampling locations and 2014 geometric mean results are shown in the included map on page 2. From these results, it seems the major source is coming from BCH11 on Marsh Rd, which is diluting downstream as it flows through the marsh. The beach seep overnight sampling showed high counts at the outlet at night, while two beach seeps spiked around mid-day.

Watershed sampling results for Parsons Creek.

Site	7/28/2015 (DRY)	9/3/2015 (DRY)	Description	Routing
BCH11	4,884	18,963	East Branch	Upstream
BCH13	3,873	2,909	East Branch	
BCH26A	85	959	East Branch	
BCH26	20	686	Side ditch behind Petey's Market	
Geremia	No flow	No flow	West Branch	
ACPS005-U15	84	464	West Branch	V
PC-OUT	20	504	Outlet to Ocean	Downstream

Overnight beach seep and Parsons Creek outlet sampling results.

Sample ID	Date	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30
PC-out	8/24/2015	31	63	63	41	75	20	20	30	41
RB-1	8/24/2015	5	243	228	5	5	5	5	20	5
RB-2	8/24/2015	5	197	8164	5	20	5	5	10	10
RB-3	8/24/2015	5	5	5	5	5	10	5	5	5
Sample ID	Date	0:00	0:30	1:00	1:30	2:00	2:30	3:00	3:30	Standard
PC-out	8/25/2015	226	262	292	479	504	355	216	504	<406
RB-1	8/25/2015	5	5	5	5	5	10	5	20	<104
RB-2	8/25/2015	5	10	5	5	10	5	5	5	<104
RB-3	8/25/2015	5	10	41	30	8	10	5	5	<104

PARSONS CREEK | MEMORANDUM



TO: Sally Soule, NHDES
FROM: Laura Diemer, FB Environmental
SUBJECT: Parsons Creek (Rye, NH) – Preliminary Water Quality Results
DATE: September 10, 2015
CC: Michael Magnant & Kim Reed, Town of Rye, Jodi Federle & Forrest Bell, FB Environmental

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Watershed sampling results for Parsons Creek.

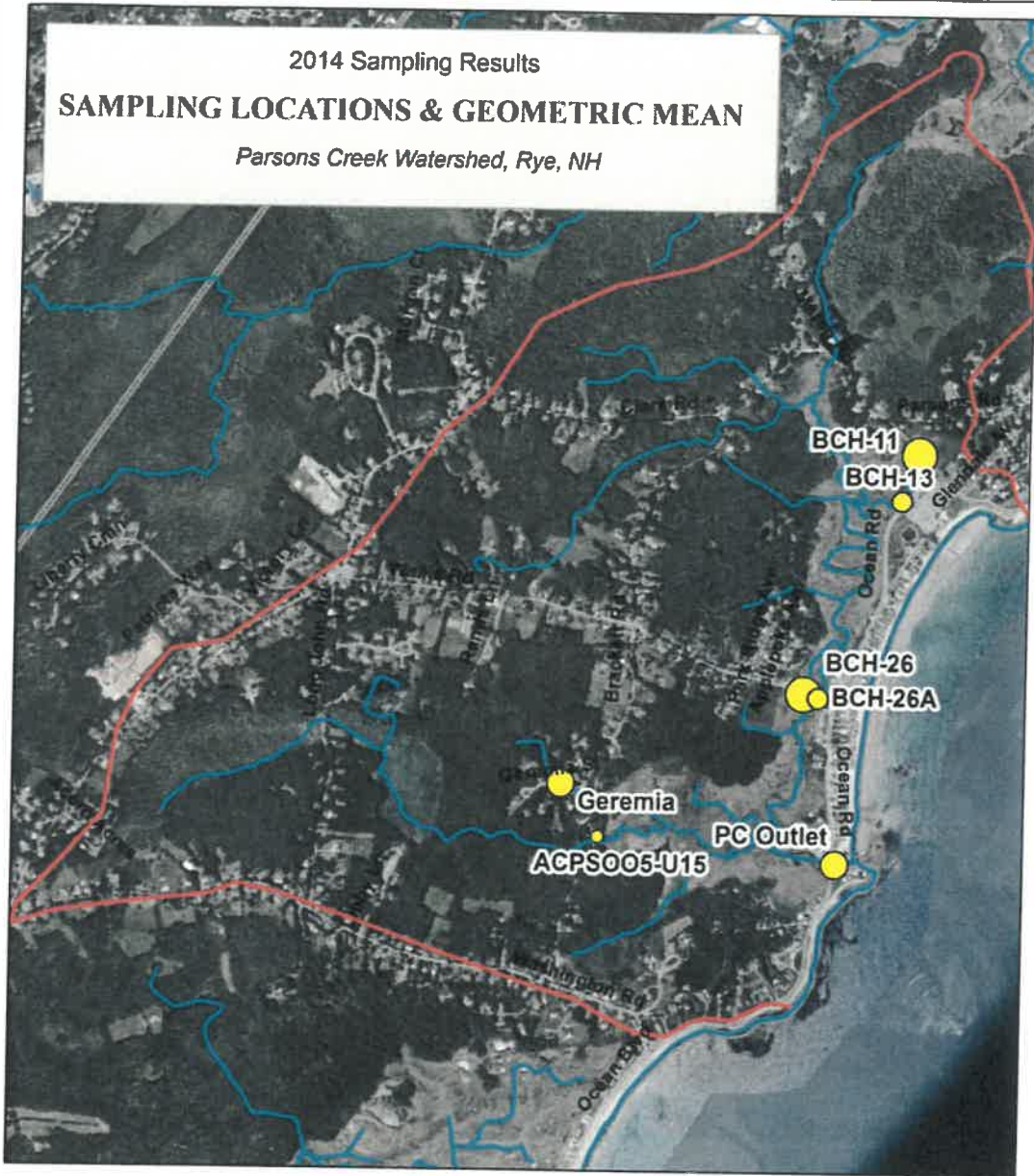
Site	7/28/2015 (DRY)	9/3/2015 (DRY)	Description	Routing
BCH11	4,884	18,963	East Branch	Upstream
BCH13	3,873	2,909	East Branch	
BCH26A	85	959	East Branch	
BCH26	20	686	Side ditch behind Petey's Market	
Geremia	No flow	No flow	West Branch	
ACPS005-U15	84	464	West Branch	V
PC-OUT	20	504	Outlet to Ocean	Downstream

Overnight beach seep and Parsons Creek outlet sampling results.




Sample ID	Date	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30
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RB-1	8/24/2015	5	243	228	5	5	5	5	20	5
RB-2	8/24/2015	5	197	8164	5	20	5	5	10	10
RB-3	8/24/2015	5	5	5	5	5	10	5	5	5
Sample ID	Date	0:00	0:30	1:00	1:30	2:00	2:30	3:00	3:30	Standard
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RB-1	8/25/2015	5	5	5	5	5	10	5	20	<104
RB-2	8/25/2015	5	10	5	5	10	5	5	5	<104
RB-3	8/25/2015	5	10	41	30	8	10	5	5	<104

2014 Sampling Results
SAMPLING LOCATIONS & GEOMETRIC MEAN





Parsons Creek Watershed, Rye, NH



Legend

-  streams
-  roads
-  Parsons Creek Watershed

Geometric Mean Range

-  83
-  84 - 93
-  94 - 120
-  121 - 211

0 0.15 0.3 0.6 Miles



GIS Data Source: NH GRANIT
 Coordinate System: NAD 1983
 Created by: FB Environmental
 September 2014





2015 BEACH SAMPLING



TO: Michael Magnant, Town of Rye
FROM: Laura Diemer, FB Environmental Associates
SUBJECT: Results from Rye Beach Sampling on July 14, 2015
DATE: July 16, 2015
CC: Forrest Bell, FB Environmental Associates

BACKGROUND

Since 2008, FB Environmental Associates (FBE) has worked with the Town of Rye to identify potential “hotspots” of bacteria in Rye’s waterways. High bacteria concentrations and dense algal mats were found near the outlet of Parsons Creek on Wallis Beach. Canines detected human-derived sources of bacteria at this location, which may indicate malfunctioning septic systems. In 2014, FBE began weekly monitoring of beach seeps to determine if bacteria counts were safe for human contact. FBE is currently contracted by the Town of Rye to continue weekly bacteria monitoring at three seeps on Wallis Beach near the outlet of Parsons Creek. This summer sampling (Phase II) will provide good comparison to the baseline established from the spring sampling (Phase I).

RESULTS FROM July 14, 2015

- Three beach seeps were sampled on Tuesday, July 14, 2015 at low tide on Wallis Beach near the outlet of Parsons Creek and public access point;
- Sampled seeps were located slightly north of the public access point (see photos below); and
- Enterococci were within acceptable limits for NHDES single sample standard (<104 col/100mL), and therefore, the beach does not require an advisory sign at this location.

Table 1: Bacteria sampling results from July 14, 2015

Site	Time of Sample	Enterococci* (col/100mL)	Geometric Mean* (col/100mL)
RB-1	5:30 AM	<10	6.4
RB-2	5:35 AM	<10	6.5
RB-3	5:40 AM	<10	7.8

**NHDES standard for Enterococci = 104 colonies/100 mL (single sample) and 35 colonies/100mL (geometric mean over 60-days)*

The pictures below show beach seeps that were sampled for presence of Enterococci.





2015 BEACH SAMPLING



TO: Michael Magnant, Town of Rye
FROM: Laura Diemer, FB Environmental Associates
SUBJECT: Results from Rye Beach Sampling on June 30, 2015
DATE: July 2, 2015
CC: Forrest Bell, FB Environmental Associates

BACKGROUND

Since 2008, FB Environmental Associates (FBE) has worked with the Town of Rye to identify potential “hotspots” of bacteria in Rye’s waterways. High bacteria concentrations and dense algal mats were found near the outlet of Parsons Creek on Wallis Beach. Canines detected human-derived sources of bacteria at this location, which may indicate malfunctioning septic systems. In 2014, FBE began weekly monitoring of beach seeps to determine if bacteria counts were safe for human contact. FBE is currently contracted by the Town of Rye to continue weekly bacteria monitoring at three seeps on Wallis Beach near the outlet of Parsons Creek. This summer sampling (Phase II) will provide good comparison to the baseline established from the spring sampling (Phase I).

RESULTS FROM JUNE 30, 2015

- Three beach seeps were sampled on Tuesday, June 30, 2015 at low tide on Wallis Beach near the outlet of Parsons Creek and public access point;
- Sampled seeps were located slightly north of the public access point (see photos below); and
- Enterococci were within acceptable limits for NHDES single sample standard (<104 col/100mL), and therefore, the beach does not require an advisory sign at this location.

Table 1: Bacteria sampling results from June 30, 2015

Site	Time of Sample	Enterococci* (col/100mL)	Geometric Mean* (col/100mL)
RB-1	5:10 AM	10	6.6
RB-2	5:15 AM	<10	6.4
RB-3	5:20 AM	<10	6.8

**NHDES standard for Enterococci = 104 colonies/100 mL (single sample) and 35 colonies/100mL (geometric mean over 60-days)*

The pictures below show beach seeps that were sampled for presence of Enterococci.





2015 BEACH SAMPLING



TO: Michael Magnant, Town of Rye
 FROM: Laura Diemer, FB Environmental Associates
 SUBJECT: Results from Rye Beach Sampling on June 16, 2015
 DATE: June 17, 2015
 CC: Forrest Bell, FB Environmental Associates

BACKGROUND

Since 2008, FB Environmental Associates (FBE) has worked with the Town of Rye to identify potential “hotspots” of bacteria in Rye’s waterways. High bacteria concentrations and dense algal mats were found near the outlet of Parsons Creek on Wallis Beach. Canines detected human-derived sources of bacteria at this location, which may indicate malfunctioning septic systems. In 2014, FBE began weekly monitoring of beach seeps to determine if bacteria counts were safe for human contact. FBE is currently contracted by the Town of Rye to continue weekly bacteria monitoring at three seeps on Wallis Beach near the outlet of Parsons Creek. This summer sampling (Phase II) will provide good comparison to the baseline established from the spring sampling (Phase I).

RESULTS FROM JUNE 16, 2015

- Three beach seeps were sampled on Tuesday, June 16, 2015 at low tide on Wallis Beach near the outlet of Parsons Creek and public access point;
- Sampled seeps were located slightly north of the public access point (see photos below); and
- Enterococci were within acceptable limits for NHDES single sample standard (<104 col/100mL), and therefore, the beach does not require an advisory sign at this location.

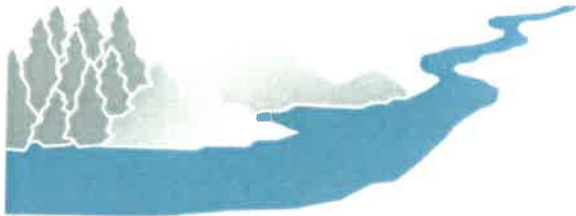
Table 1: Bacteria sampling results from June 16, 2015

Site	Time of Sample	Enterococci* (col/100mL)	Geometric Mean* (col/100mL)
RB-1	11:47 AM	<10	5.9
RB-2	11:55 AM	31	6.7
RB-3	12:01 AM	<10	7.3

**NHDES standard for Enterococci = 104 colonies/100 mL (single sample) and 35 colonies/100mL (geometric mean over 60-days)*

The pictures below show Parson’s Creek and beach seeps that were sampled for presence of Enterococci.





2015 BEACH SAMPLING



TO: Michael Magnant, Town of Rye
 FROM: Laura Diemer, FB Environmental Associates
 SUBJECT: Results from Rye Beach Sampling on June 2, 2015
 DATE: June 4, 2015
 CC: Forrest Bell, FB Environmental Associates

BACKGROUND

Since 2008, FB Environmental Associates (FBE) has worked with the Town of Rye to identify potential “hotspots” of bacteria in Rye’s waterways. High bacteria concentrations and dense algal mats were found near the outlet of Parsons Creek on Wallis Beach. Canines detected human-derived sources of bacteria at this location, which may indicate malfunctioning septic systems. In 2014, FBE began weekly monitoring of beach seeps to determine if bacteria counts were safe for human contact. FBE is currently contracted by the Town of Rye to continue weekly bacteria monitoring at three seeps on Wallis Beach near the outlet of Parsons Creek. This summer sampling (Phase II) will provide good comparison to the baseline established from the spring sampling (Phase I).

RESULTS FROM JUNE 2, 2015

- Three beach seeps were sampled on Tuesday, June 2, 2015 at low tide on Wallis Beach near the outlet of Parsons Creek and public access point;
- Sampled seeps were located slightly north of the public access point (see photos below); and
- Enterococci were within acceptable limits for NHDES single sample standard (<104 col/100mL), and therefore, the beach does not require an advisory sign at this location.

Table 1: Bacteria sampling results from June 2, 2015

Site	Time of Sample	Enterococci* (col/100mL)	Geometric Mean* (col/100mL)
RB-1	6:30 AM	<10	5.4
RB-2	6:45 AM	<10	5.8
RB-3	7:00 AM	<10	9.1

**NHDES standard for Enterococci = 104 colonies/100 mL (single sample) and 35 colonies/100mL (geometric mean over 60-days)*

The pictures below show Parson’s Creek and beach seeps that were sampled for presence of Enterococci.





2015 BEACH SAMPLING



TO: Michael Magnant, Town of Rye
 FROM: Laura Diemer, FB Environmental Associates
 SUBJECT: Results from Rye Beach Sampling on May 18, 2015
 DATE: May 20, 2015
 CC: Forrest Bell, FB Environmental Associates

BACKGROUND

Since 2008, FB Environmental Associates (FBE) has worked with the Town of Rye to identify potential “hotspots” of bacteria in Rye’s waterways. High bacteria concentrations and dense algal mats were found near the outlet of Parsons Creek on Wallis Beach. Canines detected human-derived sources of bacteria at this location, which may indicate malfunctioning septic systems. In 2014, FBE began weekly monitoring of beach seeps to determine if bacteria counts were safe for human contact. FBE is currently contracted by the Town of Rye to continue weekly bacteria monitoring at three seeps on Wallis Beach near the outlet of Parsons Creek. This spring sampling (Phase I) will provide a good baseline before summer sampling.

RESULTS FROM MAY 18, 2015

- Three beach seeps were sampled on Monday, May 18, 2015 at low tide on Wallis Beach near the outlet of Parsons Creek and public access point;
- Sampled seeps were located slightly north of the public access point. Seeps south of the public access point that were sampled in 2014 were not present during this sample event (see photos below); and
- Enterococci were within acceptable limits for NHDES single sample standard (<104 col/100mL), and therefore, the beach does not require an advisory sign at this location.

Table 1: Bacteria sampling results from May 18, 2015

Site	Time of Sample	Enterococci* (col/100mL)	Geometric Mean* (col/100mL)
RB-1	6:17 AM	<10	5.6
RB-2	6:35 AM	<10	6.0
RB-3	6:45 AM	10	10.0

**NHDES standard for Enterococci = 104 colonies/100 mL (single sample) and 35 colonies/100mL (geometric mean over 60-days)*

The pictures below show beach seeps that were sampled for presence of Enterococci.





2015 BEACH SAMPLING



TO: Michael Magnant, Town of Rye
FROM: Laura Diemer, FB Environmental Associates
SUBJECT: Results from Rye Beach Sampling on May 4, 2015
DATE: May 7, 2015
CC: Forrest Bell, FB Environmental Associates

BACKGROUND

Since 2008, FB Environmental Associates (FBE) has worked with the Town of Rye to identify potential “hotspots” of bacteria in Rye’s waterways. High bacteria concentrations and dense algal mats were found near the outlet of Parsons Creek on Wallis Beach. Canines detected human-derived sources of bacteria at this location, which may indicate malfunctioning septic systems. In 2014, FBE began weekly monitoring of beach seeps to determine if bacteria counts were safe for human contact. FBE is currently contracted by the Town of Rye to continue weekly bacteria monitoring at three seeps on Wallis Beach near the outlet of Parsons Creek. This spring sampling (Phase I) will provide a good baseline before summer sampling.

RESULTS FROM May 4, 2015

- Three beach seeps were sampled on Monday, May 4, 2015 at low tide on Wallis Beach near the outlet of Parsons Creek and public access point;
- Sampled seeps were located slightly north of the public access point. Seeps south of the public access point that were sampled in 2014 were not present during this sample event (see photos below); and
- Enterococci were within acceptable limits for NHDES single sample standard (<104 col/100mL), and therefore, the beach does not require an advisory sign at this location.

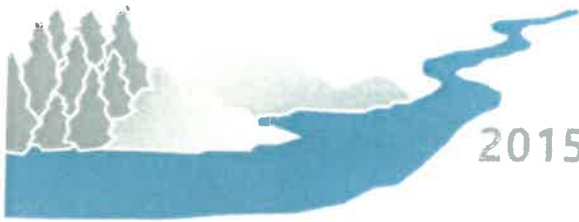
Table 1: Bacteria sampling results from May 4, 2015

Site	Time of Sample	Enterococci* (col/100mL)	Geometric Mean* (col/100mL)
RB-1	7:50 AM	<10	5.7
RB-2	7:56 AM	<10	6.6
RB-3	7:58 AM	42	7.6

**NHDES standard for Enterococci = 104 colonies/100 mL (single sample) and 35 colonies/100mL (geometric mean over a 60-days)*

The pictures below show beach seeps that were sampled for presence of Enterococci.





2015 BEACH SAMPLING | MEMORANDUM



TO: Michael Magnant, Town of Rye
FROM: Laura Diemer, FB Environmental Associates
SUBJECT: Results from Rye Beach Sampling on April 20, 2015
DATE: April 20, 2015
CC: Forrest Bell, FB Environmental Associates

BACKGROUND

Since 2008, FB Environmental Associates (FBE) has worked with the Town of Rye to identify potential “hotspots” of bacteria in Rye’s waterways. High bacteria concentrations and dense algal mats were found near the outlet of Parsons Creek on Wallis Beach. Canines detected human-derived sources of bacteria at this location, which may indicate malfunctioning septic systems. In 2014, FBE began weekly monitoring of beach seeps to determine if bacteria counts were safe for human contact. FBE is currently contracted by the Town of Rye to continue weekly bacteria monitoring at three seeps on Wallis Beach near the outlet of Parsons Creek. This spring sampling (Phase I) will provide a good baseline before summer sampling.

RESULTS FROM APRIL 20, 2015

- Three beach seeps were sampled on Monday, April 20, 2015 at low tide on Wallis Beach near the outlet of Parsons Creek and public access point;
- Sampled seeps were located slightly north of the public access point. Seeps south of the public access point that were sampled in 2014 were not present during this sample event (see photos below); and
- Enterococci were within acceptable limits for NHDES single sample standard (<104 col/100mL), and therefore, the beach does not require an advisory sign at this location.

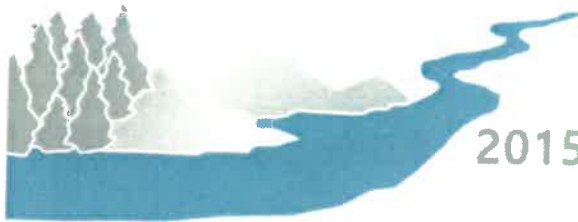
Table 1: Bacteria sampling results from April 20, 2015

Site	Time of Sample	Enterococci* (col/100mL)	Geometric Mean* (col/100mL)
RB-1	7:08 AM	10	10.0
RB-2	7:15 AM	<10	12.6
RB-3	7:21 AM	<10	10.0

**NHDES standard for Enterococci = 104 colonies/100 mL (single sample) and 35 colonies/100mL (geometric mean over a 60-days)*

The pictures below show beach seeps that were sampled for presence of Enterococci.





2015 BEACH SAMPLING | MEMORANDUM



TO: Michael Magnant, Town of Rye
FROM: Laura Diemer, FB Environmental Associates
SUBJECT: Results from Rye Beach Sampling on April 6, 2015
DATE: April 8, 2015
CC:

BACKGROUND

Since 2008, FB Environmental Associates (FBE) has worked with the Town of Rye to identify potential “hotspots” of bacteria in Rye’s waterways. High bacteria concentrations and dense algal mats were found near the outlet of Parsons Creek on Wallis Beach. Canines detected human-derived sources of bacteria at this location, which may indicate malfunctioning septic systems. In 2014, FBE began weekly monitoring of beach seeps to determine if bacteria counts were safe for human contact. FBE is currently contracted by the Town of Rye to continue weekly bacteria monitoring at three seeps on Wallis Beach near the outlet of Parsons Creek. This spring sampling (Phase I) will provide a good baseline before summer sampling.

RESULTS FROM APRIL 6, 2015

- Three beach seeps were sampled on Monday, April 6, 2015 at low tide on Wallis Beach near the outlet of Parsons Creek and public access point;
- Sampled seeps were located slightly north of the public access point. Seeps south of the public access point that were sampled in 2014 were not present during this sample event (see photos below); and
- Enterococci were within acceptable limits for NHDES single sample standard (<104 col/100mL), and therefore, the beach does not require an advisory sign at this location.

Table 1: Bacteria sampling results from April 6, 2015

Site	Time of Sample	Enterococci* (col/100mL)	Geometric Mean* (col/100mL)
RB-1	7:44 AM	<10	n/a
RB-2	7:49 AM	20	n/a
RB-3	7:52 AM	<10	n/a

**NHDES standard for Enterococci = 104 colonies/100 mL (single sample) and 35 colonies/100mL (geometric mean over a 60-days)*

The pictures below show beach seeps that were sampled for presence of Enterococci.

