



CMA ENGINEERS, INC.  
CIVIL | ENVIRONMENTAL | STRUCTURAL

35 Bow Street  
Portsmouth  
New Hampshire  
03801-3819

P: 603 | 431 | 6196

www.cmaengineers.com

January 3, 2018

REVISED January 8, 2018

Mr. Michael Magnant, Town Administrator  
Town of Rye  
10 Central Road  
Rye, NH 03870

**Re: Surface Water Quality Sampling Results**

Dear Mr. Magnant:

The purpose of this letter is to report on the analytical results for the surface water samples gathered from six sampling locations in Rye on November 20, 2017. Earlier in 2017, a state senator and a state representative made comments at public meetings in Rye that there was surface water quality contamination in Rye pertaining to perfluorinated compounds. There were, however, no specifics and no data was found in the public archives on the NHDES website. You authorized the sampling of various watersheds in Rye to provide information to be available to the public.

|                                   | PFBA                 | PFPeA | PFHxA | PFHpA | PFOA | PFOS |
|-----------------------------------|----------------------|-------|-------|-------|------|------|
| Sampling Station                  | Concentration (ng/l) |       |       |       |      |      |
| 1. Berry's Brook at Lang Road     | 4.75                 | BDL   | 4.85  | 7.64  | 12.5 | BDL  |
| 2. Berry's Brook at Sagamore Road | 5.18                 | 4.74  | 4.73  | 5.72  | 10.2 | BDL  |
| 3. Cedar Swamp Run at West Rd     | 4.99                 | BDL   | BDL   | BDL   | BDL  | BDL  |
| 4. Witch Creek at Sagamore Road   | BDL                  | BDL   | BDL   | BDL   | BDL  | BDL  |
| 5. Unnamed at Bracket/Clark       | BDL                  | BDL   | BDL   | BDL   | BDL  | BDL  |
| 6. Long John Marsh at Bracket     | BDL                  | BDL   | BDL   | BDL   | BDL  | BDL  |

BDL: Below Detection Level of 4.32-  
5.31 ng/l, parts per trillion.

The sampling locations were as follows, and as indicated on the attached map:

| <u>Location of Sampling Station</u>        | <u>Description</u>   |
|--|--|
| 1. Berry's Brook at Lang Road              | Upstream watershed in Rye, Portsmouth and Greenland, including residential and commercial development both sewered and on septic systems, and including the northern perimeter of the Coakley Landfill site. |
| 2. Berry's Brook at Sagamore Road          | Downstream of Sampling Station #1  |
| 3. Cedar Swamp Run at West Road            | Watershed includes residential development in Rye and North Hampton on septic systems, and the eastern perimeter of the Coakley Landfill   |
| 4. Witch Creek at Sagamore Road            | Watershed mostly undeveloped woods and wetlands, with some residences on septic systems.   |
| 5. Unnamed Brook at Bracket and Clark Rds. | Watershed mostly undeveloped woods and wetlands with some residences on septic systems.  |
| 6. "Long John Marsh" at Bracket Road       | Watershed includes extensive wetlands, and residences, some commercial uses and a school on septic systems.  |

The purpose of the sampling was to determine whether any of these locations indicate concentrations of perfluorinated compounds that may pose a threat to public health and safety. Perfluorinated compounds are known to be present from atmospheric sources in downwind locations from an industrial air emission source, in locations where certain firefighting foams have been used, downstream of municipal wastewater treatment plant discharges, downgradient of residential or commercial wastewater leachfields, and downgradient of certain types of landfills. Pertinent to Rye, elevated levels of perfluorinated compounds have been reported to be detected in surface waters of Berry's Brook in Greenland, upstream of sampling station #1.

Perfluorinated compounds are ubiquitous chemicals that have been used for decades for the manufacture of consumer and other products to create "slippery" surfaces.

New Hampshire has established a primary drinking water standard for PFOA and PFOS, two perfluorinated compounds, at 70 parts per trillion (ppt) for either or both combined. Surface water is not used for drinking water purposes, so these regulatory levels do not apply. There are no surface water quality criteria applicable to perfluorinated compounds.

## RESULTS

The laboratory results from Eastern Analytical, Inc. and from Vista Analytical Laboratory are attached, and are summarized in the table below.

The three sampling stations at watersheds with limited development and with varying low densities of residential septic systems (#4, 5 and 6) all indicated results below detection levels. From this one limited set of data, we would conclude that there is not an indication of a widespread atmospheric source of these contaminants impacting Rye.


The sample at West Road indicated one compound at only a few parts per quadrillion above the detection level. This data does not point to a significant source of perfluorinated compounds in this watershed.

The results from the two samples from Berry's Brook, taken about a mile apart, are very similar in terms of compounds and concentrations. This may be indicative of a specific and continuing source of perfluorinated compounds, perhaps from the northern perimeter of the Coakley Landfill. However, the concentrations are well below the established drinking water standards, which do not apply to surface waters. And there are currently no applicable surface water quality standards.

Based on this information, there is no indication of a threat to public health and safety from these concentration levels in Rye. We do not recommend that the Town consider additional sampling and analysis.

If you or the Board of Selectmen have any questions regarding the above, please don't hesitate to contact us.

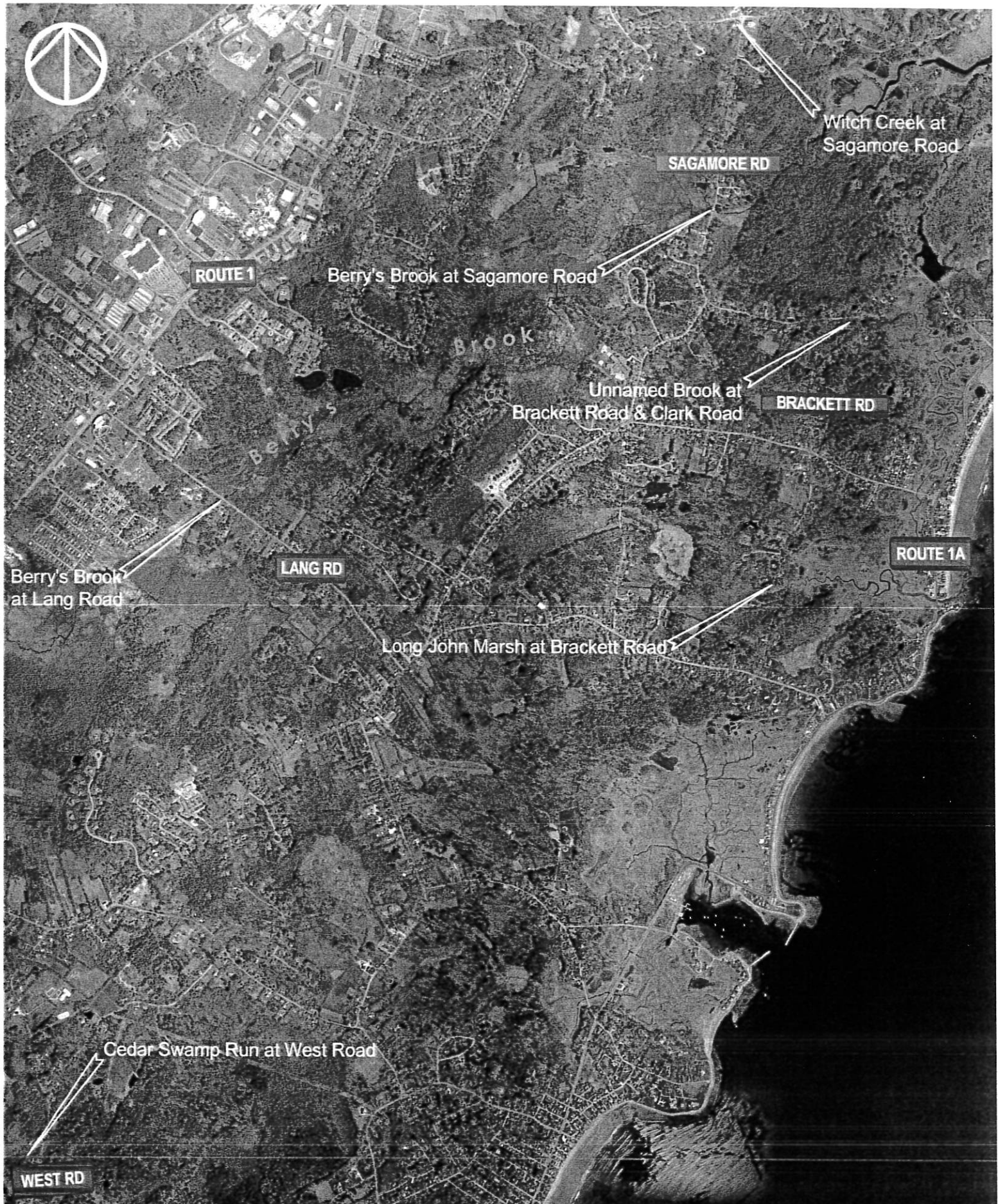
Very truly yours,  
CMA ENGINEERS, INC.



Craig N. Musselman P.E., BCEE  
President

CNM/kao

Enclosures



**RYE, NH**  
**SURFACE WATER SAMPLING LOCATIONS**

**CMA**  
ENGINEERS