



Massachusetts Water Resources Authority

***Impacts to the Sewer System from
Disposal of Rags and Wipes***

**Presentation to the Wastewater Advisory Committee
Carolyn Fiore, MWRA Toxics Reduction and Control**

February 7, 2014



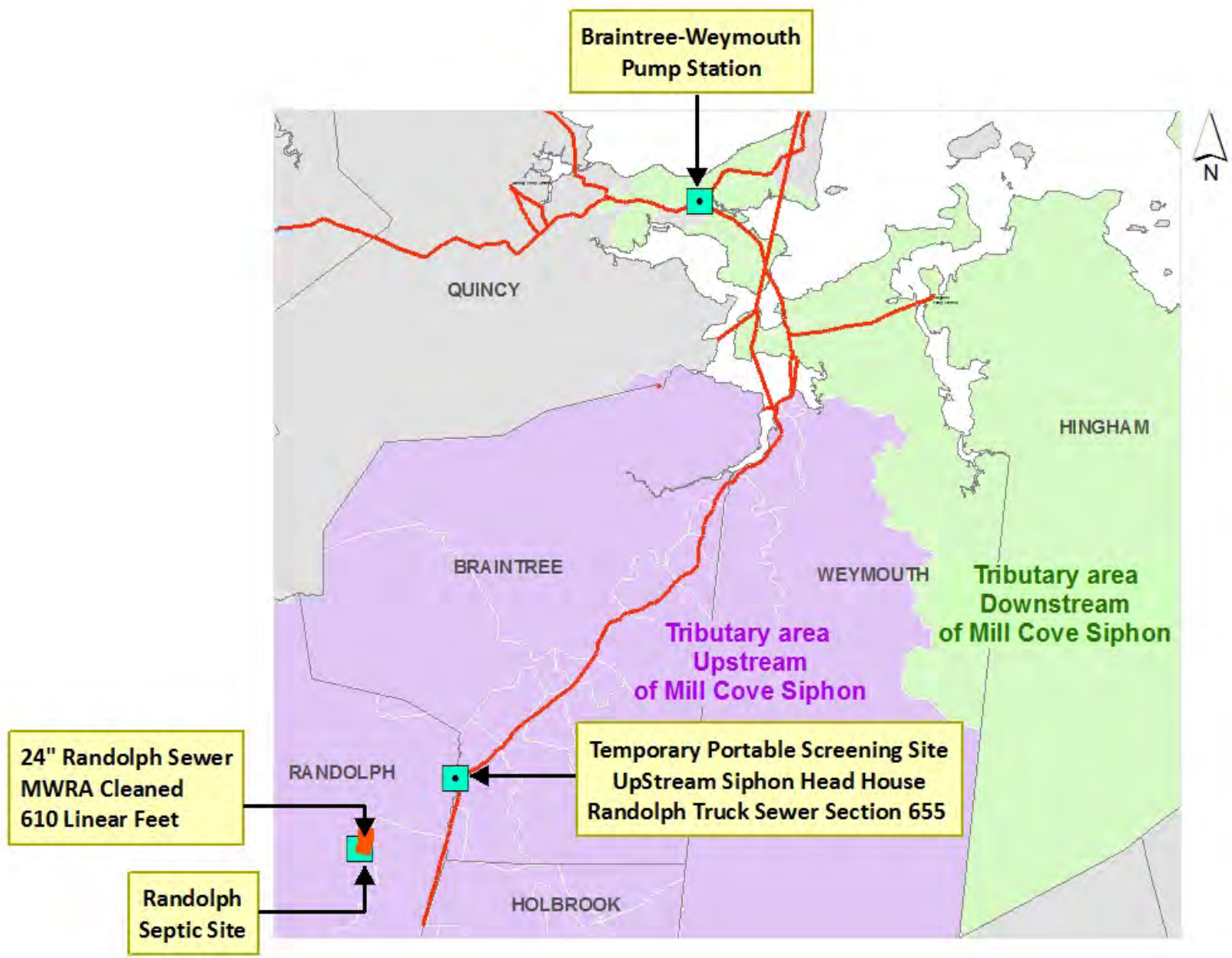
Braintree- Weymouth Pump Station





Braintree- Weymouth Pump Station







Storm Summary – February 27, 2013

- Rain Gauge @ Chelsea OCC: 1.79 inches
- Staff began choking BWPS at 6:20 pm on February 27 due to high flows entering the facility.
- Elevation in wet well reached a “high high” causing the facility to briefly isolate.
- South Main Pump Station - recorded maximum average hourly flow of 349 MG
- Smelt Brook overflowed from 9:22 pm until 1:30 am.
- Numerous rags were removed from the pump wet well and influent grinders.



Braintree-Weymouth Pump Station Impacts

- Excessive number of rags entering the system has been associated with clogging of grinders and pumps.





Short-Term Responses at BWPS

Short Term Response

- Cleaned wet well, pumps and screens





Short-Term Responses at BWPS

Short Term Response

- Installed temporary screens





Short-Term Reponses at BWPS

Short Term Response

- Installed new grinder





Short Term Response

- Installed quick disconnects





Short-Term Reponses at BWPS

Short Term Response

- Bypass pumping and buried lines





Long-Term Response

- Perform Hydraulic and Equipment Evaluations
- Alternative Evaluations include:
 - New pumps to reduce rag accumulation and clogging
 - Alternative Grinder Technologies
 - Potential to install mechanically cleaned bar screens
 - Including washer compacter
 - Conveyors to remove debris
 - Alternative Pumping Strategies
 - To reduce sediment and rag accumulation

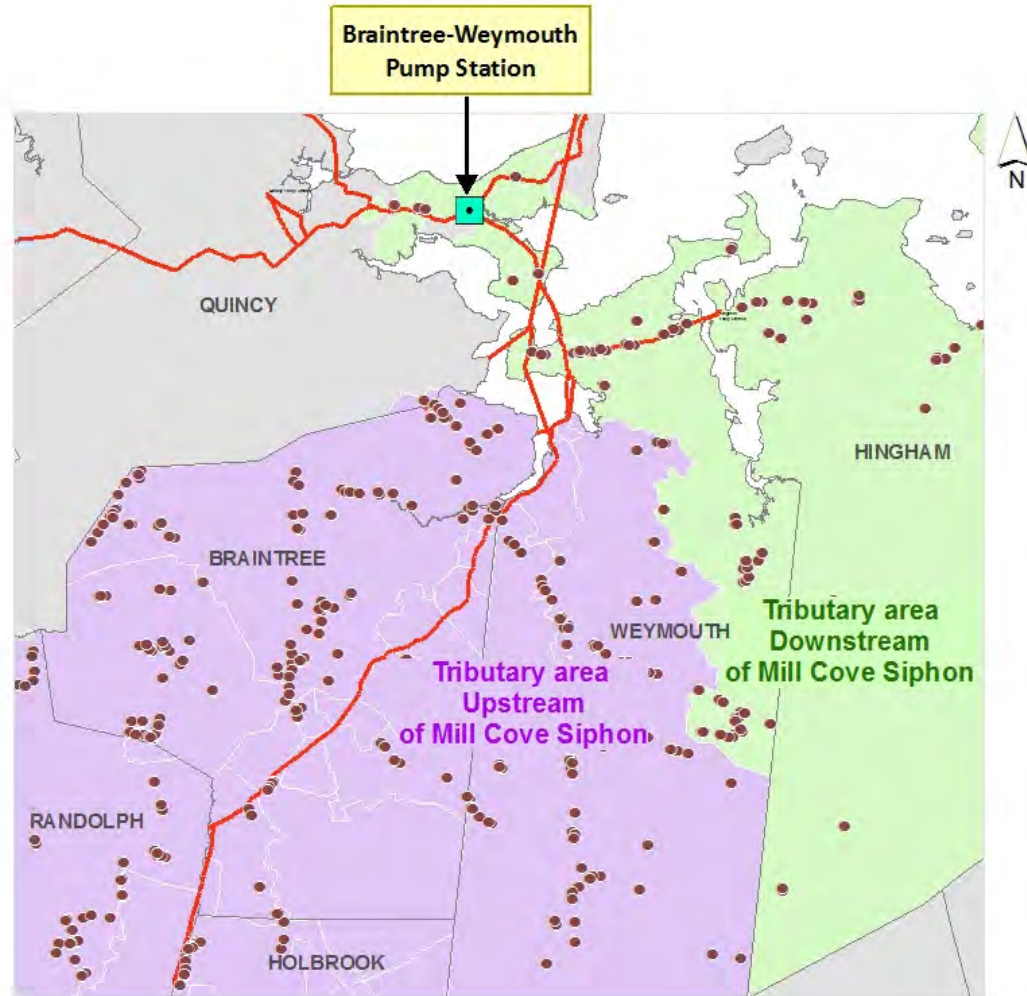


TRAC Responses

- Reviewed TRAC Database to develop a list of potential source sites
 - Developed a list of facilities to be inspected based on the nature of the rags indentified at the site.
 - Staff inspected numerous facilities throughout the target area.
- Contacted municipalities to determine which town may have performed sewer maintenance prior to the event.
- Inspected septage sites and reviewed manifests for the facilities
- Sent rag samples to laboratory (Altran) for forensic review



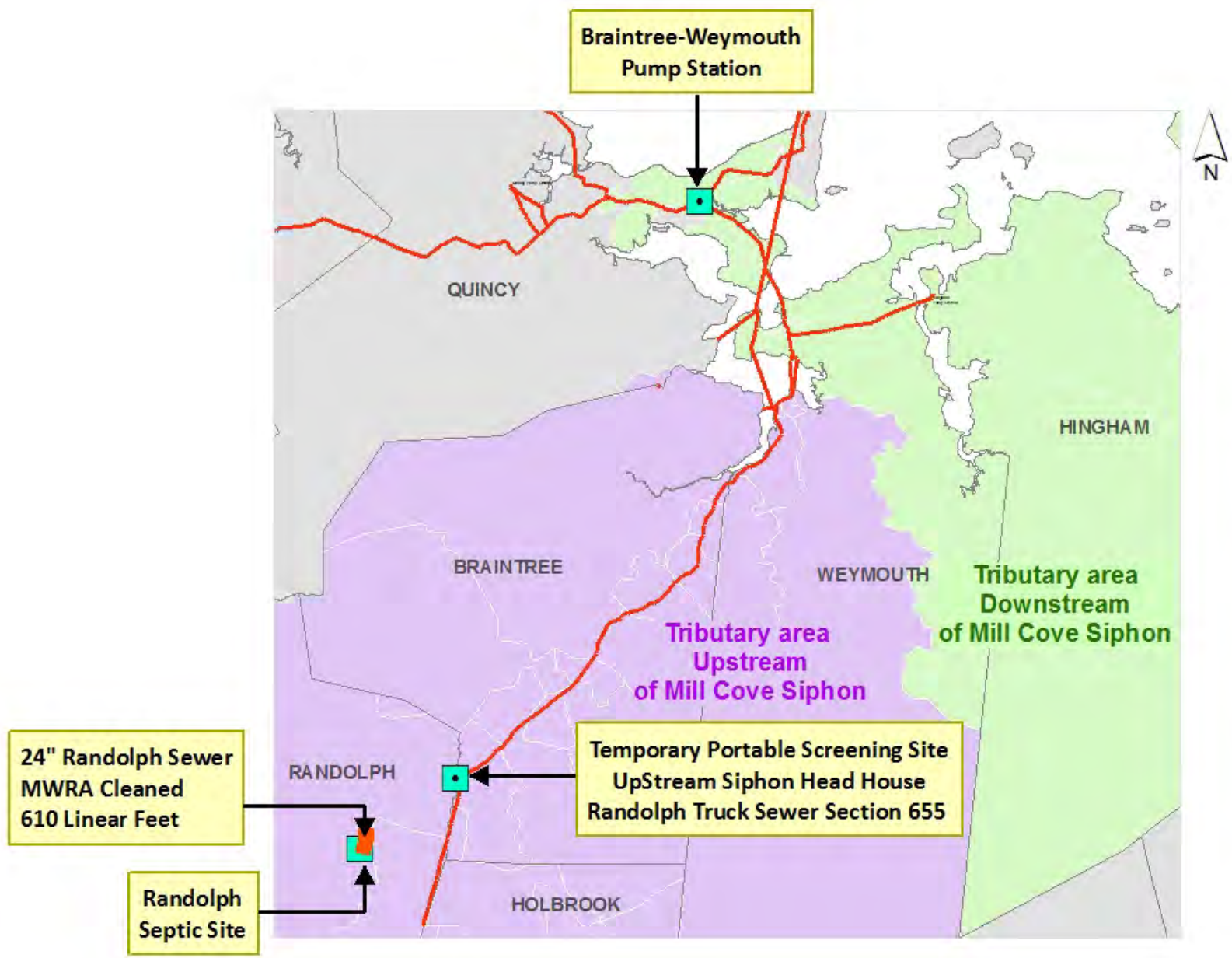
TRAC Permitted Sites





Septage Facility







ALTRAN Forensic Analysis of Six Rags

altran		RPT. NO. 13-0153-TR-001
		REV. NO.: 2
CLIENT/PROJECT	Massachusetts Water Resource Authority	PAGE 15 of 20
REPORT TITLE	MWRA Rag Identification	

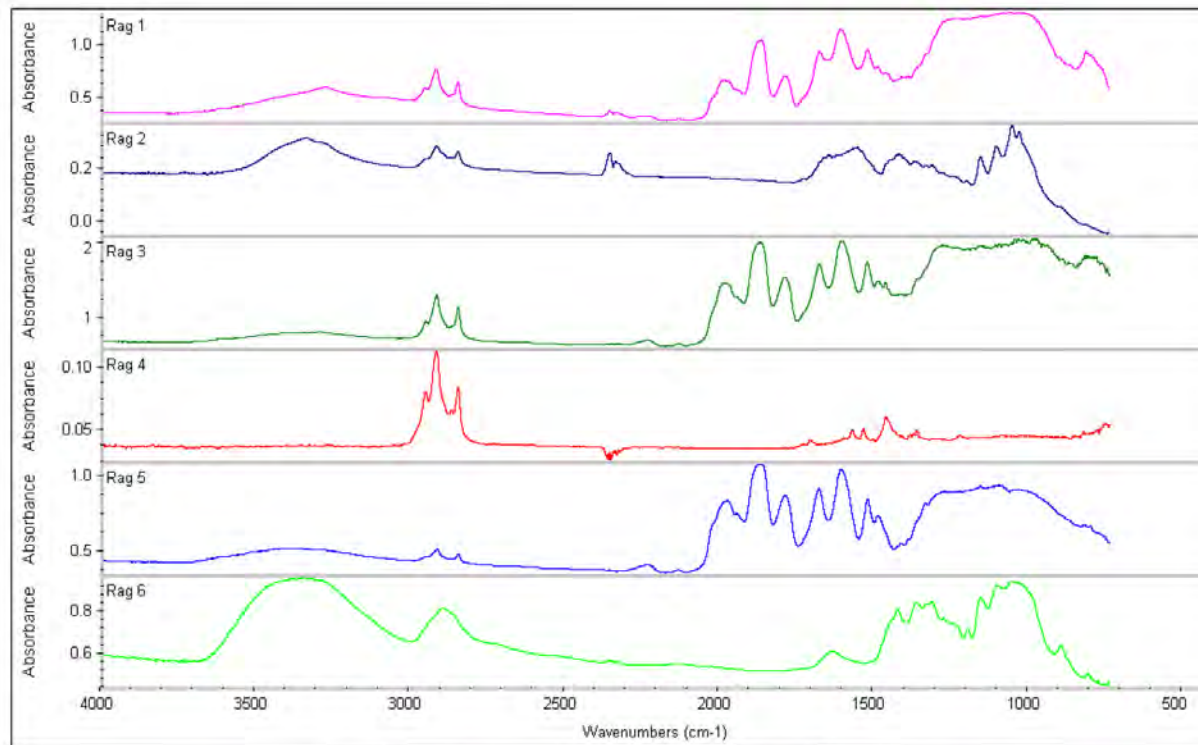


Figure 8. FTIR Spectra of Contaminants from Rags 1 through 6.



Summary of ALTRAN findings

- Rag samples collected from BWPS, a septage receiving site and 2 upstream manholes
- The common contaminant for these samples, excluding the expected sewage products, is a petroleum –based oil formulation resembling light machine oil.
- Rags appear to be consistent 18 inch multiples in length, polyester, and appear to have been torn off of a round roll of cloth.
- No specific manufacturer or distributor could be identified, but if we find a suspected source, we now have a contaminant fingerprint to match.



Ubiquitous Nature of the Problem

NACWA The Water Voice

PERSPECTIVES ON WATER POLICY FROM THE EXPERTS.

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From: Public Works October 2012 | Posted on: October 15, 2012

Strangled by disposables

Sewer “activists” are asking nonwoven fabrics manufacturers to help teach the public not to treat toilets like trash cans.

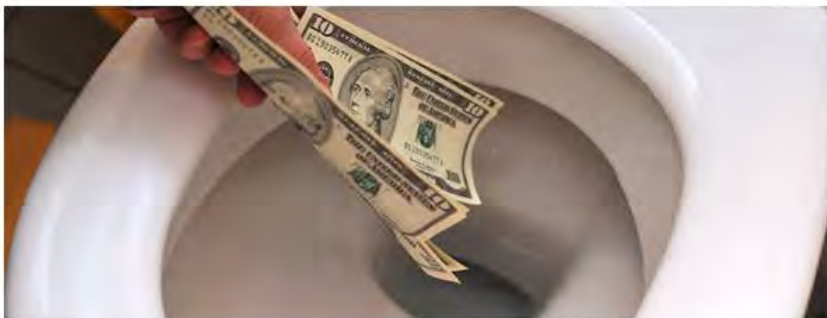
By Nick J. Arhontes PE

Be the first to comment



The Costs of Flushable Wipes Clogging Pipes

By [Cynthia Finley](#) / On [March 1, 2013 12:08 pm](#)





Outreach and Education

MWRA has begun outreach regarding proper disposal of wipes and other materials.

- MWRA school education program: 2014 Essay, Poster and Video Contest
- Web-site Update with What not to Flush page

MWRA is considering:

- Billboard Messages
- Outreach to Senior Community Centers/Developments
- Social Media such as YouTube, Industry Facebook pages and Twitter feeds



- Links to Town Web-sites
- Coordinate an information television news piece



MWRA.COM Website Updated

- <http://www.mwra.com/03sewer/html/toiletnottrashcan.html>

Verizon LTE 3:39 PM 99%

mwra.com

MWRA - Home

November 1, 2013

IT'S JUST A TOILET!
TOSCH GOES HERE

Poster, Writing and Video Contests

Spot Pond Covered Storage Tank

Info and Update
October 31, 2013

What Not to Flush

October 31, 2013

October 31, 2013

MWRA Lowering Level of the Chestnut Hill Reservoir to Combat Invasive Weeds
October 31, 2013

Update: Spot Pond Covered Storage Project
October 31, 2013

Artifacts from 19th Century Beacon Hill Reservoir Now On Display at the Waterworks Museum
October 25, 2013

New Stormwater Wetland in Cambridge Opens, Improving Water Quality and Providing New Public Recreation Facilities
October 15, 2013

MWRA REMINDS BICYCLISTS TO SHARE THE PATH: New Signs at Deer Island Remind Users of the Rules
October 9, 2013

MWRA Water Again Named "New England's Best"

Get the Facts.

How Much Water is in Our Reservoirs?

Detailed water supply info, historical data and running tallies of reservoir levels
updated monthly

Harbor and Bay Monitoring

Video of underwater life on an outfall diffuser
MORE Monitoring Results

Facts about Fluoride



Summary

- Equipment and operation changes at the BWPS
 - TRAC Inspection and Follow-up
- Outreach /Public Education Development