
RIDOT

IDDE Compliance Update Report No. 1

January 1 – June 30, 2016
Submitted August 1, 2016



INTRODUCTION.....	1
COMPLIANCE REPORTING.....	2
ILLICIT DISCHARGE REMEDIAL MEASURES	2
§ 60.k. Wet and Dry Weather Screening of Discharge Points.....	2
§ 60.m. Results of RIDOT IDDE and Discharge Point Screenings.....	2
§ 60.n. Description of IDDE Investigations	3
§ 60.o. Appendix 9 Interconnections	4
§ 60.p. List of IDDEs Investigations exceeding 180 Days	5
§ 60.q. IDDE Complaints	5
§ 60.r. IDDE Verified	5
APPENDICES.....	6



**Rhode Island
National Pollutant Discharge Elimination System
Municipal Separate Storm Sewer Systems**

**2016 IDDE Compliance Update Report No. 1
January 1 – June 30, 2016
Submitted August 1, 2016**

INTRODUCTION

The Rhode Island Department of Transportation (RIDOT) submits this Illicit Discharge Detection and Elimination (IDDE) Compliance Update Report as required by the United States of America vs Rhode Island Department of Transportation Civil Action (No. CV-15-433) Consent Decree. The Consent Decree became effective on December 22, 2015 and details remedial measures in relation to the Rhode Island Pollutant Discharge Elimination System (RIPDES) Storm Water Discharge from Small Municipal Separate Storm Sewer Systems (MS4) and from Industrial Activity at Eligible Facilities Operated by Regulated Small MS4s permit.

This report focuses on IDDE-related work performed by RIDOT between **January 1, 2016 and June 30, 2016** and is meant to provide a six-month update on IDDE work performed by RIDOT since the Annual Compliance Report submitted this March which summarized RIDOT's compliance work in 2015.

RIDOT has expended significant effort to develop and begin to implement a robust IDDE program which fully meets the Consent Decree schedules. These significant efforts have included:

- **IDDE Plan and SOP:** RIDOT submitted a draft of an IDDE Plan and Standard Operating Protocol (SOP) on December 31, 2015, received comments from EPA, and resubmitted the revised document on June 30, 2016. RIDOT is currently awaiting EPA comment and/or approval. The IDDE Plan provides details on the overall IDDE program and develops IDDE

survey protocols for staff and RIDOT consultants. Included in the Plan are all associated Standard Operating Procedures (SOPs) required to effectively locate, document and eliminate illicit discharges.

- **Priority Outfall Exemption Request:** RIDOT submitted a request for exempting non-bituminous ditch priority outfalls which had previously been sampled and did not exceed potential IDDE thresholds.
- **Outfall Screening:** RIDOT has completed the wet and dry weather screening of the highest priority (Appendix 8) outfalls and is moving ahead with further review of some of the outfalls. RIDOT crews have begun dry weather surveys of High Priority (Appendix 6) and Priority outfalls (§ IV.C.20.b) for potential illicit discharges.
- **Database:** RIDOT has continued to work diligently with its asset management consultant to develop an IDDE tracking program.

COMPLIANCE REPORTING

The Consent Decree establishes the prescribed reporting requirements expected of RIDOT on IDDE work. This report details RIDOT's accomplishments on IDDE during the reporting period as required in Consent Decree Paragraph 61. Each of the prescribed reporting requirements are outlined below:

ILLICIT DISCHARGE REMEDIAL MEASURES

§ 60.K. WET AND DRY WEATHER SCREENING OF DISCHARGE POINTS

Table 1 lists the total number of RIDOT MS4 discharge points screened in dry weather and wet weather during the reporting period. RIDOT completed screening surveys of the Appendix 8 – Highest Priority outfalls in both dry and wet weather conditions and have begun dry weather surveys of Appendix 6 - High Priority and § IV.C.20.b - Priority outfalls for potential illicit discharges.

Table 1. Count of Wet and Dry Weather Screenings

	Previous Reporting Period:		Current Reporting Period:	
	July 1 – December 31, 2015		January 1 – June 30, 2016	
	Dry Weather	Wet Weather	Dry Weather	Wet Weather
Number of Discharge Points	0	0	11	8
Total Number of IDDE Surveys	0		19	

§ 60.M. RESULTS OF RIDOT IDDE AND DISCHARGE POINT SCREENINGS

During the reporting period, RIDOT performed IDDE surveys at eleven outfalls. Table 2 provides a summary list of the RIDOT outfalls screened or sampled. Detailed results are included in **Attachment A**.

Table 2. Summary of IDDE Surveys

Waterbody Segment ID	Waterbody	Outfall ID	Follow-up Investigation?	Investigation Status
RI0002007R-10C	Woonasquatucket River	S4	Yes	To begin August 2016
		S5	Yes	To begin August 2016
RI0007033E-01A	Kickemuit River	5-12	No	-
		5-13	No	-
		5-18	No	-
		5-21	Yes	In review
RI0008038E-01A	Pawcatuck River	RI 129	Yes	In review
		RI 130	Yes	In review
RI0008039L-01	Chapman Pond	COAS059	No	-
RI0008039R-11	Mastuxet Brook	PAWC782	No	-
RI0010044E-01A	Pettaquamscutt River	NARR439	Yes	In review

§ 60.N. DESCRIPTION OF IDDE INVESTIGATIONS

This section provides an update on all on-going IDDE investigations and the activities conducted by RIDOT during the reporting period. Two potential illicit discharges were determined to need further investigation after review of the IDDE sampling results during this reporting period.

Table 3. On-going Investigation Summary

Outfall ID	Investigation Prompt	Date Investigation Prompt Rcvd by RIDOT	Date Investigation Completed by RIDOT	Outcome of IDDE Investigation
Outfall S4	IDDE Screening	6/10/2016	On-going	On-going
Outfall S5	IDDE Screening	6/10/2016	On-going	On-going

Attachment B includes a copy of the memorandums documenting the potential illicit connections and potential next steps for an investigation to be performed by RIDOT. A summary of each location is provided below.

Appendix 8 Outfall S4

Outfall S4 is a 72-inch diameter outfall located along Route 6 in Providence off of Buttonhole Drive along the Woonasquatucket River in Providence and receives flows from piped drainage that collects stormwater from Route 6 and other municipal roads such as Grimwood Drive. During an IDDE survey, field staff observed an oil sheen on the water at the outfall and lab results showed that the wet weather sample results exceeded enterococci thresholds. Since the sample exceeded thresholds for one of the bacteria parameters and there is other evidence of an illicit discharge (e.g. oil sheen), RIDOT will move forward with an investigation into the drainage system.

Appendix 8 Outfall S5

Outfall S5 is a 60-inch diameter outfall located off of Buttonhole Drive along the Woonasquatucket River in Providence and receives flows from a piped drainage trunkline located adjacent to Route 6. Outfall S5 is located directly adjacent to Outfall S4. Smaller stormwater pipes drain into the trunkline from Route 6 and municipal roads such as Mancini Drive and the trunkline also receives drainage from three water quality ponds that treat stormwater from the Route 6/ Route 128 interchange. During the wet weather IDDE survey, field staff observed discharge to be an opaque, light blue color with suds on the surface so RIDOT will move forward with an investigation into the drainage system. Additionally, the field kit results exceeded consent decree thresholds for surfactants with detectable levels of chlorine so even with no potential illicit discharge visual observations, the sampling results would have triggered further investigation.

In the Spring of 2016, RIDOT closed six of their previous on-going investigations. Table 4 lists the investigations that closed and the outcome of the investigation. The Annual Compliance Report No. 1 submitted in March 2016 provides a detailed explanation on each investigation. For 228 Putnam Pike in Johnston, a television inspection verified there is no connection to the property owner's septic system or house. For all remaining investigations, RIDOT confirmed no illicit discharges enter into RIDOT's drainage system. The connection will be documented in the Maintenance Management System (VueWorks) and may be removed in a future RIDOT construction project.

Table 4. Closed Investigation Summary

Outfall ID/ Area	Investigation Prompt	Date Investigation Prompt Rcvd by RIDOT	Date Investigation Completed by RIDOT	Outcome of IDDE Investigation
228 Putnam Pike, Johnston	Construction inspection	8/8/14	March 2016	No illicit discharge
230 Putnam Pike, Johnston	Construction inspection	8/8/14	March 2016	No illicit discharge
234 Putnam Pike, Johnston	Construction inspection	8/8/14	March 2016	No illicit discharge
164-170 Main Street – Pipe 1, Pascoag	Construction inspection	July 2012	March 2016	No illicit discharge
164-170 Main Street – Pipe 2, Pascoag	Construction inspection	July 2012	March 2016	No illicit discharge
485 Main Street, Pascoag	Construction inspection	Fall 2013	March 2016	No illicit discharge

§ 60.o. APPENDIX 9 INTERCONNECTIONS

RIDOT is currently reviewing the outfalls listed in Appendix 9 to identify interconnections between RIDOT and adjacent MS4s through desktop review of plans and coordination with the City/Town, in line with the Consent Decree schedule.

§ 60.P. LIST OF IDDE INVESTIGATIONS EXCEEDING 180 DAYS

This section provides a list of all IDDE investigations that were not completed within 180 days of initiation of the investigation, a schedule for completion, and an explanation as to why the schedule will ensure the investigation will be completed as expeditiously as possible.

As stated in the Annual Compliance Report, the Consent Decree was not effective until December 22, 2015, and some of the IDDE investigation currently in progress began before the effective date of the Consent Decree. The following IDDE investigation exceeded 180 days from the initiation of the investigation.

RIDEM SB02 (Scarborough Beach)

EPA Region 1 is currently working with RIDOT to sample and investigate RIDEM SB02. Field reconnaissance and IDDE sampling was conducted by EPA, with the assistance of RIDOT NRU & Maintenance on August 25 and 26, 2015. EPA received lab results in October 2015. RIDOT is currently awaiting results and comments from EPA Region 1.

RIDOT requested an update from EPA Region 1, but has not received comment back as of August 1st for this submission.

Once RIDOT obtains EPA comments, RIDOT will provide a full report to EPA/DOJ/DEM. At that time, RIDOT will also provide a schedule for any follow-up requirements and/or IDDE investigations tasks, if required.

§ 60.Q. IDDE COMPLAINTS

This section provides a description of all 1) citizen complaints of potential illicit discharges, 2) reports of potential illicit discharges from RIDEM, and 3) internal referrals for IDDE evaluations based on catch basin inspections or during other RIDOT construction or maintenance work.

No new potential illicit discharges were identified through complaints, reports, or referrals. RIDEM outfall SB02 (Scarborough Beach), as described above in Section 60.P, is the only IDDE investigation currently in progress that was identified through a complaint.

§ 60.R. IDDE VERIFIED

RIDOT did not identify any discharges that were verified as illicit during the reporting period. According to Paragraph 33 of the Consent Decree the “date of verification” of an illicit discharge shall be the date on which RIDOT has identified a point of entry from a specific location or address that contributes wastewater or other illicit flow to the RIDOT MS4. The current investigations are on-going and have not verified an illicit discharge.

APPENDICES

Appendix A: Results of RIDOT IDDE and Discharge Point Screenings

Results of RIDOT IDDE and Discharge Point Screenings

Waterbody Segment ID	Waterbody	RIDOT MS4 Discharge Point ID #	Survey Type	Consent Decree List	Date of IDDE Screening	Sufficient Flow for Sampling?	Temp. (°C)	Conductivity (µs)	pH	Salinity (ppt)	Ammonia (mg/l)	Surfactants (mg/l)	Chlorine (mg/l)	Coliphage (pfu/100 ml)	Enterococcus (cfu/100 ml)	Fecal coliform (MPN/ 100 ml)	Other Observations	Follow-up Investigation?
Consent Decree Threshold											=> 0.5	=>0.25	>0.02	=>50	Fresh waters: >61	>400		
RI0002007R-10C	Woonasquatucket River	S4	Dry	Appendix 8	4/21/2016	No	-	-	-	-	-	-	-	-	-	-	-	-
		S4	Wet	Appendix 8	4/13/2016	Yes	12.7	1,224	6.76	0.57	0.00	>0.0 & <0.25	0.07	<1	140	130	Oil Sheen	Yes
		S5	Dry	Appendix 8	4/20/2016	Yes	12.9	1,399	7.25	0.67	0.00	0.25	0.02	<1	19	30	Slight musty smell	Yes
		S5	Wet	Appendix 8	4/13/2016	Yes	13.3	1,460	7.25	0.65	0.00	0.25	0.09	<1	32	23	Discharge is a light blue color (Opaque with suds on surface)	Yes
RI0007033E-01A	Kickemuit River	5-12	Dry	Appendix 8	4/21/2016	Yes	12.2	821	7.94	0.38	0.25	>0.0 & <0.25	0.12	<1	61	<1	-	No
		5-12	Wet	Appendix 8	4/13/2016	Yes	10.9	1,051	7.73	0.48	0.00	>0.0 & <0.25	0.16	<1	14	2	-	No
		5-13	Dry	Appendix 8	4/21/2016	Yes	10.6	906	7.49	0.42	0.00	>0.0 & <0.25	0.20	<1	3	<1	-	No
		5-13	Wet	Appendix 8	42473	Yes	9.3	703	7.30	0.314	0.00	0.0	0.22	<1	79	4	-	No
		5-18	Dry	Appendix 8	42502	Yes	14.9	814	6.60	0.37	0.25	0.0	0.04	<1	4	2	Oil sheen	No
		5-18	Wet	Appendix 8	42494	Yes	12.5	823	6.48	0.35	0.00	0.0	0.02	9	98	4	-	No
		5-21	Dry	Appendix 8	4/21/2016	Yes	11.1	1,425	7.73	0.68	0.00	>0.0 & <0.25	0.06	<1	4	<1	-	No
		5-21	Wet	Appendix 8	5/4/2016	Yes	11.7	3,920	7.61	1.72	0.00	0.5	0.03	2	23	2	-	Yes
RI0008038E-01A	Pawcatuck River	RI129	Dry	Appendix 8	6/14/2016	No	--	--	--	--	--	--	--	--	--	--	Suspicious pipes	Yes
		RI129	Wet	Appendix 8	4/27/2016	No	--	--	--	--	--	--	--	--	--	--	Suspicious pipes	Yes
		RI130	Dry	Appendix 8	6/14/2016	Yes	16.4	515	7.17	0.23	0.25	0.25	0.14	2/4*	27/230*	80/130*	Slight sewage smell	Yes
		RI130	Wet	Appendix 8	4/27/2016	Yes	10.3	546	6.97	0.24	1.00	0.0	0.03	4	5,100	>1,600	Cloudy plume, sewage smell	Yes
RI0008039L-01	Chapman Pond	COAS059	Dry	Appendix 6 (High Priority)	6/14/2016	Yes	16.7	1,568	5.87	0.71	0.00	0.0	0.04	7	26	2	-	No
RI0008039R-11	Mastuxet Brook	PAWC782	Dry	Appendix 6 (High Priority)	6/14/2016	Yes	16.3	902	6.87	0.40	0.00	0.0	0.04	1	32	7	-	No
RI0010044E-01A	Pettaquamscutt River	NARR439	Dry	Priority	6/14/2016	Yes	19.9	1,873	8.00	0.87	0.00	0.25	0.00	1	580	50	-	Yes

Bold = threshold exceeded

*Results for a duplicate sample

Follow up investigation required based on at least one of the following scenarios:

- 1.) IDDE sampling results exceed the bacteria guidelines and any of the other guidelines (ammonia/surfactants/chlorine)
- 2.) IDDE sampling results exceed the bacteria guidelines and other evidence of an illicit discharge exists (e.g. color, odor, floatables)
- 3.) IDDE sampling results exceed the surfactant or ammonia guidelines and there are at least detectable levels of chlorine
- 4.) A report of an illicit discharge from RIDEM or EPA that is supported by IDDE sampling that is consistent with scenarios 1, 2, or 3
- 5.) A citizen complaint of the presence of an illicit discharge, as appropriate
- 6.) Indications of illicit discharges discovered by RIDOT staff or contractors during catch basin inspections, maintenance, or construction

Appendix B: IDDE Investigation Needed Memorandums



To: Allison Hamel
Stormwater Program Coordinator
RIDOT

Date: June 10, 2016

Memorandum

Project #: 72649.00

From: Lauren Caputo
Caroline Hampton

Re: IDDE Sampling
Investigation Memo - Outfall S4

Introduction

VHB has been performing sampling of the outfalls listed in Appendix 8 of the US vs RIDOT Consent Decree. The outfalls listed in the appendix must be reviewed under dry and wet weather conditions as outlined in the Consent Decree. RIDOT must investigate any field or sampling results indicating potential illicit discharges. This memo summarizes the findings for Outfall S4 located along Route 6 in Providence which drains to the Woonasquatucket River (RI0002007R-10C), as fresh water body, and identifies potential next steps for an investigation of the drainage system to the outfall.

Outfall S4 is a 72-inch diameter outfall located off of Buttonhole Drive along the Woonasquatucket River in Providence and receives flows from piped drainage that collects stormwater from Route 6 and other municipal roads such as Grimwood Drive. The outfall is located adjacent to Outfall S5 which is also included in the Appendix 8 outfalls under review. There is a junction box located in the Route 6 breakdown lane directly upstream of the outfall that receives drainage from three separate drainage systems. The drainage system to the west of the junction box is in series with an infiltration trench BMP that treats stormwater from Route 6, Grimwood Street, and potentially more municipal roads. The drainage system to the east of the junction box receives stormwater from Route 6, and the system to the south of the junction box receives stormwater from municipal roads. The landuse directly upstream of Outfall S4 in the vicinity of the junction box is mainly transportation and residential. See the attached figure for the location of Outfall S4.

Sampling Results of Outfall S4

The following section presents results from the dry and wet weather surveys for this discharge point with observations/ results potentially indicating illicit discharges indicated in bold. VHB performed wet weather sampling on April 13, 2016 and dry weather sampling on April 21, 2016 at the outfall.

1 Cedar Street, Suite 400
Providence, RI 02903
P 401.272.8100

Visual Results

Sampling Conditions / Observations	Wet Weather (4/13/16)	Dry Weather (4/21/16)
Rain in last 24 hours	0.27	0.00
Rain in last 48 hours	0.27	0.00
Source of rainfall data	Weather Station: College Hill KRIPROV18	
Field staff	L. Caputo and C. Glinka (VHB)	
Flowing?	Yes	No
Flow velocity	Drip	-
Odor	None	-
Color	None	-
Clarity/Floatables	Oil Sheen	-
Sedimentation	Yes	-
Scouring	None	-

Sampling Parameter Results

Sampling Parameters	Exceedance Thresholds	Wet Weather (4/13/16)	Dry Weather (4/21/16)
Temperature (°C)	-	12.7	-
Conductivity (µS)	-	1,224	-
pH	-	6.76	-
Salinity (ppt)	-	0.57	-
Ammonia (ppm)	≥ 0.5 mg/l	0.00	-
Surfactant (mg/L)	≥ 0.25 mg/l	Between 0 and 0.25	-
Chlorine (mg/L)	> 0.02 mg/l	0.07	-
Coliphage (PFU*)	≥50 PFU/100 mL	<1	-
Enterococci (CFU**)	Freshwater: >61 CFU/100 mL; Saltwater: >104 CFU/100 mL	140	-
Fecal Coliform (MPN***)	>400 MPN/ 100 mL	130	-

*PFU = plaque forming units
 **CFU = colony forming units
 ***MPN = most probable number

The field staff observed an oil sheen on the water at the outfall. Based on the drainage plans, stormwater from Route 6 flows into catch basins that drain through the junction box before discharging through the outfall. Field staff attempted to locate the junction box in the field but determined it was inaccessible without proper traffic control.

Lab results showed that the wet weather sample results exceeded thresholds set in the Consent Decree for enterococci. Because the sample exceeded thresholds for one of the bacteria parameters and there is other evidence of an illicit discharge (e.g. oil sheen), RIDOT will move forward with an investigation into the drainage system.

Potential Next Steps

The Consent Decree sets requirements for the schedule for follow up on potential illicit discharges. The schedule for this outfall are listed in the table below.

Milestones	CD Requirement	Date
RIDOT notified of potential illicit discharge		6/10/16
Deadline for starting investigation	60 days from identifying potential illicit discharge	8/9/16
Deadline for completing investigation	180 days from investigation start	2/5/17

The next recommended steps to initiate a potential illicit discharge investigation for Outfall S4 include the following:

- Locate and review plans of Route 6 drainage to fully identify the Route 6 drainage into the system and identify if adjacent municipal roads tie in. Use these plans to identify the necessary sampling/ investigation points to be able to pinpoint the source or sources of wet weather flow.
- RIDOT may want to perform an initial site reconnaissance after reviewing the plans in order to plan out investigation/ sampling sites and review site conditions since the sampling will need to occur during wet weather conditions and so may be more time sensitive.
- Identify equipment and tools necessary to open the manhole of the junction box based on the site visit. Plan out the necessary traffic control.
- Plan a field investigation with proper traffic control for performing wet weather sampling. Begin at the Route 6 breakdown lane at the junction box. Prepare to take samples at the outfall, each of the three drainage lines discharging into the junction box, at any upstream splits in the system, and at any interconnection points into the system.
- Make observations as necessary to identify the source of the oil sheen and/ or rule out that the source is from RIDOT roads. Also identify any potential off-site sources.
- Since the bacteria parameter requires lab testing, the field kit results may not aid in narrowing down the source of high bacteria counts while in the field. Once available, review lab results for bacteria samples.

Ref: 72649.00

June 10, 2016

Page 4

- Document all steps in VueWorks.
- If the source of the oil sheen or the high bacteria levels is from non-RIDOT entities connected to the stormwater system including private properties and municipalities, RIDOT Office of Storm Water Management will send notices to the appropriate private property owner and/or municipality, as well as RIDEM and EPA.



To: Allison Hamel
Stormwater Program Coordinator
RIDOT

Date: June 10, 2016

Memorandum

Project #: 72649.00

From: Lauren Caputo
Caroline Hampton

Re: IDDE Sampling
Investigation Memo - Outfall S5

Introduction

VHB has been performing sampling of the outfalls listed in Appendix 8 of the US vs RIDOT Consent Decree. The outfalls listed in the appendix must be reviewed under dry and wet weather conditions as outlined in the Consent Decree. RIDOT must investigate any field or sampling results indicating potential illicit discharges. This memo summarizes the findings for Outfall S5 located along Route 6 in Providence which drains to the Woonasquatucket River (RI0002007R-10C), a fresh water body, and identifies potential next steps for an investigation of the drainage system to the outfall.

Outfall S5 is a 60-inch diameter outfall located off of Buttonhole Drive along the Woonasquatucket River in Providence and receives flows from a piped drainage trunkline located adjacent to Route 6. Smaller stormwater pipes drain into the trunkline from Route 6 and municipal roads such as Mancini Drive. At the Route 6 exit to Killingly Street (Route 128), three water quality ponds treat stormwater from Route 6 before discharging into the main trunkline. The main trunkline also receives drainage from Killingly Street and potentially more municipal roads. The landuse directly upstream of Outfall S5 is mainly recreational and industrial, with Button Hole Golf Course located adjacent to the outfall. See the attached figure for the location of Outfall S5.

Sampling Results of Outfall S5

The following section presents results from the dry and wet weather surveys for this discharge point with observations/ results potentially indicating illicit discharges indicated in bold. VHB performed wet weather sampling on April 13, 2016 and dry weather sampling on April 21, 2016 at the outfall.

1 Cedar Street, Suite 400
Providence, RI 02903
P 401.272.8100

Visual Results

Sampling Conditions / Observations	Wet Weather (4/13/16)	Dry Weather (4/21/16)
Rain in last 24 hours	0.27	0.00
Rain in last 48 hours	0.27	0.00
Source of rainfall data	Weather Station: College Hill KRIPROV18	
Field staff	L. Caputo and C. Glinka (VHB)	
Flowing?	Yes	Yes
Flow velocity	Substantial	Substantial
Odor	None	Slight musty smell
Color	Light blue	None
Clarity/Floatables	Opaque with suds on surface	Clear
Sedimentation	No	No
Scouring	None	None

Sampling Parameter Results

Sampling Parameters	Exceedance Thresholds	Wet Weather (4/13/16)	Dry Weather (4/21/16)
Temperature (°C)	-	13.3	12.9
Conductivity (µS)	-	1,460	1,399
pH	-	7.25	7.25
Salinity (ppt)	-	0.65	0.67
Ammonia (ppm)	≥ 0.5 mg/l	0.0	0.0
Surfactant (mg/L)	≥ 0.25 mg/l	0.25	0.25
Chlorine (mg/L)	> 0.02 mg/l	0.09	0.02
Coliphage (PFU*)	≥50 PFU/100 mL	<1	<1
Enterococci (CFU**)	Freshwater: >61 CFU/100 mL; Saltwater: >104 CFU/100 mL	32	19
Fecal Coliform (MPN***)	>400 MPN/ 100 mL	23	30

*PFU = plaque forming units

**CFU = colony forming units

***MPN = most probable number

The field staff noted the light blue color of the water and suds during the wet weather survey but the field staff were not able to identify the source from the immediate area around the outfall, and access to the trunkline to

follow the flow upstream was not possible without traffic control. Because staff observed a light blue, opaque, and sudsy characteristic to the water, RIDOT will move forward with an investigation into the drainage system. Additionally, the wet weather sample results exceeded thresholds set in the Consent Decree (e.g. surfactants or ammonia exceed thresholds and have detectable levels of chlorine), so even with no potential illicit discharge visual observations, the sampling results would have triggered further investigation.

There were no visual signs of illicit discharge conditions during the dry weather survey. The sampling results from the dry weather day did not indicate a potential illicit discharge (surfactant threshold exceedance on its own is not enough).

Potential Next Steps

The Consent Decree sets requirements for the schedule for follow up on potential illicit discharges. The schedule for this outfall are listed in the table below.

Milestones	CD Requirement	Date
RIDOT notified of potential illicit discharge		6/10/16
Deadline for starting investigation	60 days from identifying potential illicit discharge	8/9/16
Deadline for completing investigation	180 days from investigation start	2/5/17

The next recommended steps to initiate a potential illicit discharge investigation for outfall S5 include the following:

- Determine if investigation should occur during both dry and wet weather or only during wet weather since that is when the blue sudsy water was observed.
- Gather RIDOT drainage plans to identify the entire drainage system to the outfall.
- Identify locations on the plans where drainage from RIDOT roadways contribute to the flow and/or where non-RIDOT road drainage enters the RIDOT drainage system.
- Perform an initial site reconnaissance once the plans have been reviewed to identify where samples would be taken during the survey. This step may not always be necessary but due to the extensiveness of the contributing system, it is likely helpful for this outfall review.
- Perform sampling and observation as necessary to identify the source and/ or rule out that the source is from RIDOT roads. A sample should be taken at the outlet to document the parameter values at the outfall on the day of sampling the overall system.
- Document all steps in VueWorks.
- RIDOT Office of Storm Water Management to send notices to non-RIDOT entities connected to the stormwater system including private properties and municipalities, RIDEM and EPA, as necessary.



Figure 1
Appendix 8 Outfall S5

- ★ Stormwater Outfall
- ~ Impaired Rivers
- RIDOT Stormwater BMP
- RIDOT Maintained Roads
- Stormwater Pipes
- Roads

