

Rhode Island Airport Corporation

Third Quarter 2019

Outfall Sampling

T.F. Green Airport

Prepared by:
Rhode Island Airport Corporation

October 2019

Background

The RIPDES permit identifies a total of 16 perimeter outfalls at PVD. Outfalls 001A, 002A, 003A, 004A and 013A discharge to tributaries of Warwick Pond. Outfalls, 006A, 006B, 006C, 006D, 007A, 007B, 008A and 009A discharge to tributaries of Buckeye Brook downstream of Warwick Pond. Outfalls 010A, 011A, and 012A discharge to Tuscatucket Brook. Major outfalls, 002A, 003A, 008A, and 010A, are those outfalls which receive or may receive drainage from areas where aircraft deicing fluid is applied. Sampling for these major outfalls is defined at Part I.A.1 of the permit. Minor outfalls drain taxiways, runways and other paved services. Outfall 005A was combined with Outfall 006A during construction of Runway 34 Safety Area Improvements. Sampling for these minor outfalls is defined at Part I.A.2. of the permit. Additional sampling requirements are defined at Part I.A.5. and Parts I.C. and I.D. Table 1 lists parameters sampled. Figure 1 identifies outfall and in-stream sampling locations.

Industrial activities at PVD with the potential to impact stormwater quality include the use of glycol-based Aircraft Deicing and Anti-icing Fluids (ADFs/AAFs) and pavement deicers. Only propylene glycol (PG)-based ADFs/AAFs are used at PVD. Pavement deicers used at PVD include solid sodium formate, and liquid potassium acetate. No deicing fluid was applied during this event.

Summary of Storm

Third Quarter (July 1 through September 30) sampling consists of the major outfalls (002A, 003A, 008A and 010A) hourly for twelve hours, The sampling began upon a precipitation event of sufficient magnitude as specified in the RIPDES permit.

Light rain began falling around 8:00 PM on September 23, 2018. Sampling commenced at 6:00 AM September 24, 2019 subsequent to measurable accumulation and continued until approximately 5:00 PM on September 24, 2019.

A total of 0.27 inches of precipitation (as water equivalent) was measured at PVD during this event. Precipitation data is summarized in Table 2.

Summary of Flow

Flow meters are installed at three of the major outfalls: OF-002A, OF-003A, and OF-008A. Continuous flow measurements during the 12 hours of sampling were made using these Isco 2150 area velocity meters programmed to measure level and velocity and produce flow rate (GPM) at 15 minute increments. No flow meter is installed at outfall 010A, as it is off airport property.

Estimated runoff volumes calculated using drainage area and depth of precipitation for all outfalls are presented in Table 3. A summary of measured flows for outfalls OF-002A, OF-003A, and OF-008A are presented in Table 4.

Sample Collection

The laboratory analytical parameters for each sample for this event are listed in Table 4. For the Third Quarter sampling event the major outfalls (002A, 003A, 008A, and 010A) were

sampled hourly for twelve hours. Flow was observed at Outfall 010A only during hours 5, 11, and 12.

Samples were collected and decanted into sample bottles based on the analysis necessary. The bottles were then placed in ice in a cooler for transport to RIAL. Because of the short sample holding time (six hours) for some of the analytical parameters, all samples collected in the first three hours were delivered to the laboratory immediately. Samples collected in hours four through 12 were delivered at the completion of sampling.

RIAC also collected and recorded field measurements at each outfall for temperature, pH, specific conductance, and dissolved oxygen (DO).

Sampling Results

Laboratory Analysis and field measurements for the major outfall sampling results are presented in Table 4. Table 5 presents a summary of pH measurements. In accordance with the RIPDES permit, measurements and analytical results are expressed as monthly average and maximum daily concentrations for most parameters. Temperature and Oil and Grease are expressed as maximum daily; pH is expressed as minimum daily and maximum daily.

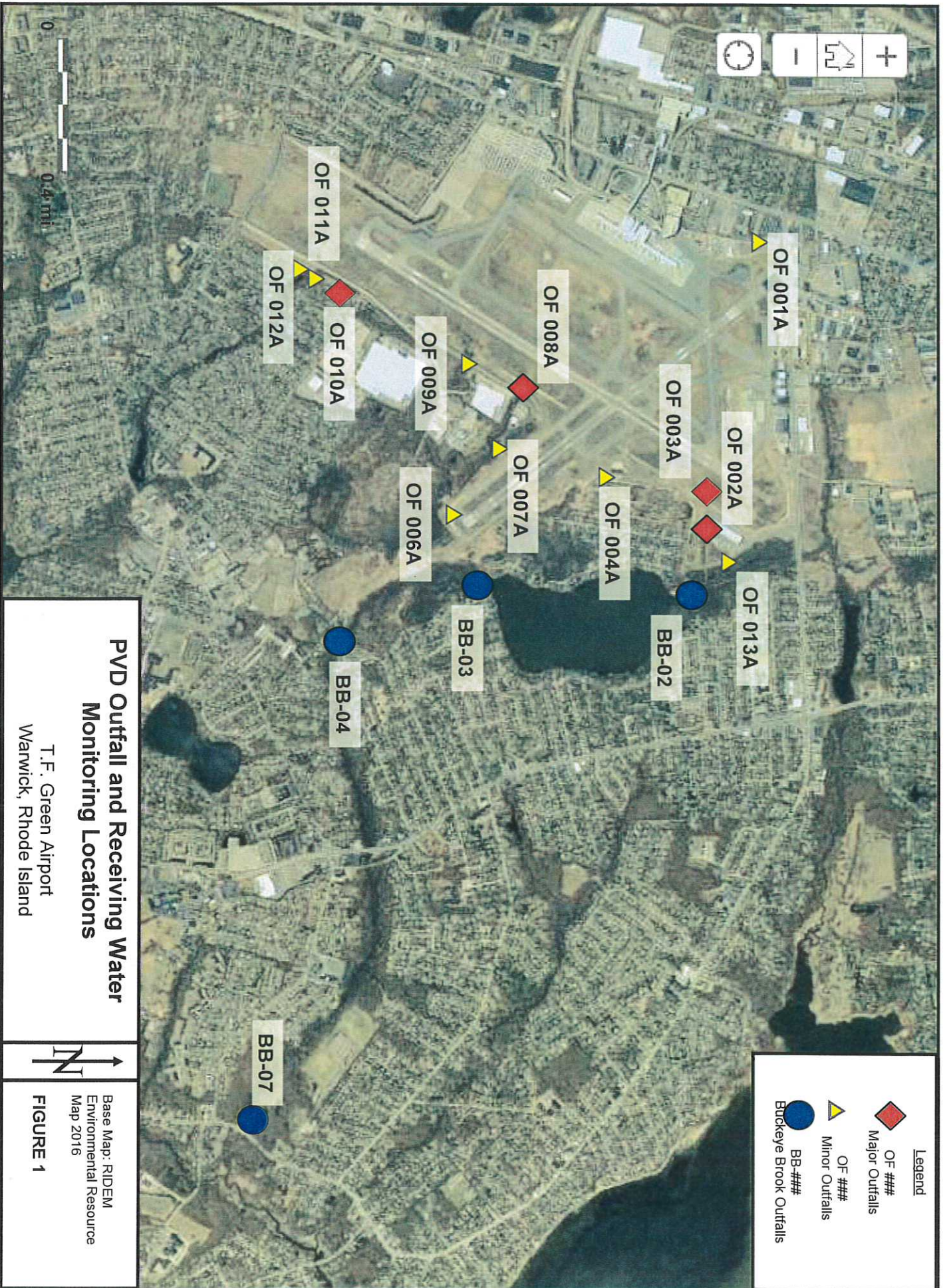


TABLE 1
PRECIPITATION AMOUNTS
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND
THIRD QUARTER 2019
September 24, 2019

Date	Total Precipitation (water equivalent, in inches)
September 20, 2019	0.00
September 21, 2019	0.00
September 22, 2019	0.00
September 23, 2019	0.03
September 24, 2019	0.24

Sampling commenced 6:00 AM 9/24/19
Sampling completed 5:12 PM 9/24/19

**TABLE 2
PVD RUNOFF VOLUME CALCULATION
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND
THIRD QUARTER 2019**

September 23-24, 2019

Precip (inches): 0.27

Drainage Basin ID	PVD Storm Water Discharge	Receiving Water	Drainage Area (ac)	cu ft precip	gal precip
1	Outfall 001A	Warwick Pond	5.9	5,782.6	43,254
2	Outfall 002A	Warwick Pond	93.4	91,541.3	684,729
3	Outfall 003A	Warwick Pond	119.8	117,416.0	878,272
4	Outfall 004A	Warwick Pond	30.1	29,501.0	220,668
4B	Outfall 004B	Buckeye Brook	2	1,960.2	14,662
4C	Outfall 004C	Buckeye Brook	3	2,940.3	21,993
6	Outfall 006A	Buckeye Brook	10.7	10,487.1	78,443
6B	Outfall 006B	Buckeye Brook	1.5	1,470.2	10,997
6C	Outfall 006C	Buckeye Brook	0.8	784.1	5,865
6D	Outfall 006D	Buckeye Brook	0.7	686.1	5,132
7	Outfall 007A	Buckeye Brook	9.6	9,409.0	70,379
7B	Outfall 007B	Buckeye Brook	1.2	1,176.1	8,797
8	Outfall 008A	Buckeye Brook	240.6	235,812.1	1,763,874
9	Outfall 009A	Buckeye Brook	38.4	37,635.8	281,516
10	Outfall 010A	I uscatucket Brook	26	25,482.6	190,610
11	Outfall 011A	I uscatucket Brook	14	13,721.4	102,636
12	Outfall 012A	I uscatucket Brook	46.4	45,476.6	340,165
13	Outfall 013A	Warwick Pond	28	27,442.8	205,272
TOTAL AREA			672.1	658,725.2	4,927,265

TABLE 3
 LABORATORY ANALYTICAL PARAMETERS
 T.F. GREEN AIRPORT
 WARWICK, RHODE ISLAND
 THIRD QUARTER 2019

Sample Identification	Hours 1-3	Hours 4-12
OF-002A, OF-003A, OF-008A, OF-010A	<ul style="list-style-type: none"> • Fecal coliform • BOD, Surfactants, Dissolved Oxygen • pH and Temperature • COD, TOC • Oil & grease -1664, TSS • Propylene glycol • Dissolved Potassium and Sodium • Total Metals (aluminum, chromium, copper, iron, lead, and zinc) 	<ul style="list-style-type: none"> • BOD, Surfactants, Dissolved Oxygen • pH and Temperature • COD, TOC • Propylene glycol • Dissolved Potassium and Sodium • Total Metals (aluminum, chromium, copper, iron, lead, and zinc)

BOD -Biological oxygen demand
 COD -Chemical oxygen demand
 TOC -Total organic carbon
 TSS -Total suspended solids

TABLE 4
ANALYTICAL RESULTS
MAJOR OUTFALLS
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND
THIRD QUARTER 2019

Parameter	Major Outfalls									
	Outfall 002A		Outfall 003A		Outfall 008A		Outfall 010A			
	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily
Flow (gpd) ^{1, 8}	116,308	129,037	151,201	167,749	768,561	1,030,537	NO FLOW	NO FLOW		
Oil & Grease (mg/l) ⁵		0.9		0		4.5				
TSS (mg/l) ^{4, 5}	2.9	4.7	2.4	5.0	0.8	2.5				
Fecal Coliform (MPN/100ml) ^{7, 5}	318	540	671	1,600	238	350				
BOD ₅ (mg/l) ^{2, 6}	0	0	0.2	3	1.1	4.4				
Propylene Glycol (mg/l) ^{2, 6}	0	0	0	0	0	0				
COD (mg/l) ^{2, 6}	7.4	17	3.5	19	2.2	16				
Dissolved Potassium (mg/l) ^{2, 6}	3085	6450	6257	7920	4540	6300				
Dissolved Sodium (mg/l) ^{2, 6}	3086	7090	7690	9320	23037	32400				
Surfactants (ug/l) ^{2, 6}	82.6	380	63.3	310	54.4	170				
Dissolved Oxygen (mg/l) ^{2, 3}	5.74	6.06	6.59	7.09	5.68	5.84				
TOC (mg/l) ^{2, 6}	3.6	6	3.2	8.1	2.2	7.9				
Total Aluminum (ug/l) ^{2, 6}	0	0	0.0	0	0	0				
Total Chromium (ug/l) ^{2, 6}	0	0	0.2	1.6	0.2	1.6				
Total Copper (ug/l) ^{2, 6}	0	0	0.0	0	0.0	0				
Total Iron (ug/l) ^{2, 6}	4,644	8,100	1,018	2,200	809	1,280				
Total Lead (ug/l) ^{2, 6}	0.1	1.1	0	0	0	0				
Total Zinc (ug/l) ^{2, 6}	0	0	0	0	0	0				

¹ Results reported as average monthly were determined using the arithmetic average of measurement made every 15 minutes during the 12 hours of sampling. Results reported as maximum daily was the maximum flow measurements over the 12 hours of sampling. Both reported values were converted from GPM to GPD reflecting a 24 hour day

- ² Results reported as maximum daily were the maximum of the 12 samples collected during the 12 hours of sampling.
 - ³ Results reported as average monthly were determined using the arithmetic average of the 12 samples collected during the 12 hours of sampling.
 - ⁴ Results reported as average monthly were determined using the arithmetic average of the 3 samples collected (when available) during the first 3 hours of sampling.
 - ⁵ Results reported as maximum daily were the maximum of the 3 samples collected (when available) during the first 3 hours of sampling
 - ⁶ Results reported as average monthly were determined by using a flow-weighted average of the 12 samples collected during the 12 hours of sampling.
 - ⁷ Results reported as average monthly were determined by using a geometric mean of the 3 samples collected (when available) during the 3 hours of sampling
 - ⁸ Outfall 010A: Results reported as average monthly were determined using the arithmetic average of rainfall amount during the entire storm for the outfall drainage area. Results reported as maximum daily was determined from maximum rainfall measurement for the duration of the storm for each outfall drainage area.
- BOD₅ - Biological oxygen demand 5-day test
COD - Chemical oxygen demand
gpd - Gallons per day
mg/l - Milligrams per liter
TOC - Total organic carbon
TSS - Total suspended solids
ug/l - Micrograms per liter

TABLE 5
 FIELD ANALYTICAL RESULTS
 MAJOR OUTFALLS
 T.F. GREEN AIRPORT
 WARWICK, RHODE ISLAND
 THIRD QUARTER 2019

Parameter	Outfall 002A		Outfall 003A		Outfall 008A		Outfall 010A	
	Minimum Daily ¹	Maximum Daily	Minimum Daily ¹	Maximum Daily	Minimum Daily	Maximum Daily	Minimum Daily	Maximum Daily ²
pH	6.3	6.8	6.0	7.1	6.5	6.7	No Flow	
Temperature (°F)		68.8		69		70.1		

Bold text indicates exceedance of permit standards

¹ Results reported as minimum daily were the minimum of the samples collected during the 12 hours of sampling.

² Results reported as maximum daily were the maximum of the samples collected during the 12 hours of sampling.

LABORATORY REPORT

Rhode Island Airport Corp.
Attn: Mr. Jay Brolin
2000 Post Road
Warwick, RI 02886

Date Received: 9/24/2019
Date Reported: 10/4/2019
P.O. Number 27599

Work Order #: 1909-17920

Project Name: T.F. GREEN RIPDES MONITORING

Enclosed are the analytical results and Chain of Custody for your project referenced above. The sample(s) were analyzed by our Warwick, RI laboratory unless noted otherwise. When applicable, indication of sample analysis at our Hudson, MA laboratory and/or subcontracted results are noted and subcontracted reports are enclosed in their entirety.

All samples were analyzed within the established guidelines of US EPA approved methods with all requirements met, unless otherwise noted at the end of a given sample's analytical results or in a case narrative.

The Detection Limit is defined as the lowest level that can be reliably achieved during routine laboratory conditions.

These results only pertain to the samples submitted for this Work Order # and this report shall not be reproduced except in its entirety.

We certify that the following results are true and accurate to the best of our knowledge. If you have questions or need further assistance, please contact our Customer Service Department.

Approved by:



Dawne E. Smart
Data Reporting Manager

Laboratory Certification Numbers (as applicable to sample's origin state):

Warwick RI * RI LAI00033, MA M-RI015, CT PH-0508 · Hudson MA * M-MA1117, RI LAO00319

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-17920

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 001
Sample Description: OUTFALL 002A-01
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 06:16

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.4		SU	SM4500H+B	9/24/2019 15:37	GAW
Fecal Coliform (MPN)	540	1.8	MPN/100 ml	SM9221E2 19-21ed	9/24/2019 10:45	SRF
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 14:16	EAM
Total Suspended Solids	4.0	2.0	mg/l	SM2540D 2011	9/27/2019 17:46	KMH
COD	17	10	mg/l	SM5220D 18-21ed	9/26/2019 9:00	SNI
Surfactants (MBAS)	<100	100	ug/l	SM5540C 18-21ed	9/24/2019 19:00	GAW
TOC	6.0	0.5	mg/l	SM5310C 21 ed.	9/27/2019 12:43	SAS
Oil & Grease Gravimetric	0.9	0.5	mg/l	EPA 1664A	9/26/2019 12:00	RMS
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 16:53	AJD
Lead	1.1	1.0	ug/l	EPA 200.8	10/1/2019 16:53	AJD
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/30/2019 14:21	DDP
Copper	<10	10	ug/l	EPA 200.7	9/30/2019 14:21	DDP
Iron	2070	100	ug/l	EPA 200.7	9/30/2019 14:21	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/30/2019 14:21	DDP
Dissolved Metals						
Potassium	2100	1000	ug/l	EPA 200.7	9/27/2019 15:56	DDP
Sodium	<3000	3000	ug/l	EPA 200.7	9/27/2019 15:56	DDP
ICPMS Digestion				EPA 200.8	9/26/2019 12:15	CEV
ICP Digestion				EPA 200.7	9/25/2019 16:44	CEV
ICP Digestion (Dissolved)				EPA 200.7	9/24/2019 16:38	RB
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/27/2019 17:05	KF

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-17920

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 002
Sample Description: OUTFALL 003A-01
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 06:02

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.7		SU	SM4500H+B	9/24/2019 15:37	GAW
Fecal Coliform (MPN)	>1600	1.8	MPN/100 ml	SM9221E2 19-21ed	9/24/2019 10:45	SRF
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 14:16	EAM
Total Suspended Solids	2.2	2.0	mg/l	SM2540D 2011	9/27/2019 17:46	KMH
COD	<10	10	mg/l	SM5220D 18-21ed	9/26/2019 9:00	SNI
Surfactants (MBAS)	140	100	ug/l	SM5540C 18-21ed	9/24/2019 19:00	GAW
TOC	3.5	0.5	mg/l	SM5310C 21 ed.	9/27/2019 12:43	SAS
Oil & Grease Gravimetric	<0.5	0.5	mg/l	EPA 1664A	9/26/2019 12:00	RMS
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 16:59	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 16:59	AJD
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/30/2019 14:08	DDP
Copper	<10	10	ug/l	EPA 200.7	9/30/2019 14:08	DDP
Iron	919	100	ug/l	EPA 200.7	9/30/2019 14:08	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/30/2019 14:08	DDP
Dissolved Metals						
Potassium	6260	1000	ug/l	EPA 200.7	9/27/2019 16:02	DDP
Sodium	6650	3000	ug/l	EPA 200.7	9/27/2019 16:02	DDP
ICPMS Digestion				EPA 200.8	9/26/2019 12:15	CEV
ICP Digestion				EPA 200.7	9/25/2019 16:44	CEV
ICP Digestion (Dissolved)				EPA 200.7	9/24/2019 16:38	RB
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/27/2019 17:36	KF

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-17920

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 003
Sample Description: OUTFALL 008A-01
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 06:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.5		SU	SM4500H+B	9/24/2019 15:37	GAW
Fecal Coliform (MPN)	350	1.8	MPN/100 ml	SM9221E2 19-21ed	9/24/2019 10:45	SRF
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 14:16	EAM
Total Suspended Solids	<2.0	2.0	mg/l	SM2540D 2011	9/27/2019 17:46	KMH
COD	<10	10	mg/l	SM5220D 18-21ed	9/26/2019 9:00	SNI
Surfactants (MBAS)	120	100	ug/l	SM5540C 18-21ed	9/24/2019 19:00	GAW
TOC	2.1	0.5	mg/l	SM5310C 21 ed.	9/27/2019 12:43	SAS
Oil & Grease Gravimetric	4.5	0.5	mg/l	EPA 1664A	9/26/2019 12:00	RMS
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 17:05	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 17:05	AJD
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/30/2019 14:05	DDP
Copper	<10	10	ug/l	EPA 200.7	9/30/2019 14:05	DDP
Iron	749	100	ug/l	EPA 200.7	9/30/2019 14:05	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/30/2019 14:05	DDP
Dissolved Metals						
Potassium	3610	1000	ug/l	EPA 200.7	9/27/2019 16:04	DDP
Sodium	17500	3000	ug/l	EPA 200.7	9/27/2019 16:04	DDP
ICPMS Digestion				EPA 200.8	9/26/2019 12:15	CEV
ICP Digestion				EPA 200.7	9/25/2019 16:44	CEV
ICP Digestion (Dissolved)				EPA 200.7	9/24/2019 16:38	RB
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/27/2019 18:06	KF

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

Sample Number: 004
Sample Description: OUTFALL 010A-01
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 06:30

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
Dry - no sample	NO FLOW				9/24/2019 6:30	KLP

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-17920

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 005
Sample Description: OUTFALL 002A-02
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 07:05

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.8		SU	SM4500H+B	9/24/2019 15:37	GAW
Fecal Coliform (MPN)	170	1.8	MPN/100 ml	SM9221E2 19-21ed	9/24/2019 10:45	SRF
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 14:19	EAM
Total Suspended Solids	<2.0	2.0	mg/l	SM2540D 2011	9/27/2019 17:46	KMH
COD	<10	10	mg/l	SM5220D 18-21ed	9/26/2019 9:00	SNI
Surfactants (MBAS)	180	100	ug/l	SM5540C 18-21ed	9/24/2019 19:00	GAW
TOC	2.6	0.5	mg/l	SM5310C 21 ed.	9/27/2019 12:43	SAS
Oil & Grease Gravimetric	<0.5	0.5	mg/l	EPA 1664A	9/26/2019 12:00	RMS
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 17:10	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 17:10	AJD
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/30/2019 14:24	DDP
Copper	<10	10	ug/l	EPA 200.7	9/30/2019 14:24	DDP
Iron	915	100	ug/l	EPA 200.7	9/30/2019 14:24	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/30/2019 14:24	DDP
Dissolved Metals						
Potassium	6450	1000	ug/l	EPA 200.7	9/27/2019 16:06	DDP
Sodium	7090	3000	ug/l	EPA 200.7	9/27/2019 16:06	DDP
ICPMS Digestion				EPA 200.8	9/26/2019 12:15	CEV
ICP Digestion				EPA 200.7	9/25/2019 16:44	CEV
ICP Digestion (Dissolved)				EPA 200.7	9/24/2019 16:38	RB
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/27/2019 18:37	KF

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-17920

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 006
Sample Description: OUTFALL 003A-02
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 07:13

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.0		SU	SM4500H+B	9/24/2019 15:37	GAW
Fecal Coliform (MPN)	350	1.8	MPN/100 ml	SM9221E2 19-21ed	9/24/2019 10:45	SRF
BOD 5	3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 14:19	EAM
Total Suspended Solids	5.0	2.0	mg/l	SM2540D 2011	9/27/2019 17:46	KMH
COD	13	10	mg/l	SM5220D 18-21ed	9/26/2019 9:00	SNI
Surfactants (MBAS)	160	100	ug/l	SM5540C 18-21ed	9/24/2019 19:00	GAW
TOC	5.0	0.5	mg/l	SM5310C 21 ed.	9/27/2019 12:43	SAS
Oil & Grease Gravimetric	<0.5	0.5	mg/l	EPA 1664A	9/26/2019 12:00	RMS
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 17:16	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 17:16	AJD
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/30/2019 14:32	DDP
Copper	<10	10	ug/l	EPA 200.7	9/30/2019 14:32	DDP
Iron	2200	100	ug/l	EPA 200.7	9/30/2019 14:32	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/30/2019 14:32	DDP
Dissolved Metals						
Potassium	2000	1000	ug/l	EPA 200.7	9/27/2019 16:07	DDP
Sodium	<3000	3000	ug/l	EPA 200.7	9/27/2019 16:07	DDP
ICPMS Digestion				EPA 200.8	9/26/2019 12:15	CEV
ICP Digestion				EPA 200.7	9/25/2019 16:44	CEV
ICP Digestion (Dissolved)				EPA 200.7	9/24/2019 16:38	RB
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/27/2019 19:08	KF

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-17920

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 007
Sample Description: OUTFALL 008A-02
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 07:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.5		SU	SM4500H+B	9/24/2019 15:37	GAW
Fecal Coliform (MPN)	110	1.8	MPN/100 ml	SM9221E2 19-21ed	9/24/2019 10:45	SRF
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 14:19	EAM
Total Suspended Solids	<2.0	2.0	mg/l	SM2540D 2011	9/27/2019 17:46	KMH
COD	<10	10	mg/l	SM5220D 18-21ed	9/26/2019 9:00	SNI
Surfactants (MBAS)	170	100	ug/l	SM5540C 18-21ed	9/24/2019 22:00	GAW
TOC	1.7	0.5	mg/l	SM5310C 21 ed.	9/27/2019 12:43	SAS
Oil & Grease Gravimetric	<0.5	0.5	mg/l	EPA 1664A	9/26/2019 12:00	RMS
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 17:21	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 17:21	AJD
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/30/2019 14:23	DDP
Copper	<10	10	ug/l	EPA 200.7	9/30/2019 14:23	DDP
Iron	722	100	ug/l	EPA 200.7	9/30/2019 14:23	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/30/2019 14:23	DDP
Dissolved Metals						
Potassium	3540	1000	ug/l	EPA 200.7	9/27/2019 16:09	DDP
Sodium	17200	3000	ug/l	EPA 200.7	9/27/2019 16:09	DDP
ICPMS Digestion				EPA 200.8	9/26/2019 12:15	CEV
ICP Digestion				EPA 200.7	9/25/2019 16:44	CEV
ICP Digestion (Dissolved)				EPA 200.7	9/24/2019 16:38	RB
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/27/2019 19:38	KF

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

Sample Number: 008
Sample Description: OUTFALL 010A-02
Sample Type : GRAB
Sample Date / Time : 9/24/2019

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
Dry - no sample	NO FLOW				9/24/2019 0:00	KLP

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-17920

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 009
Sample Description: OUTFALL 002A-03
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 08:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.3		SU	SM4500H+B	9/24/2019 15:37	GAW
Fecal Coliform (MPN)	350	1.8	MPN/100 ml	SM9221E2 19-21ed	9/24/2019 10:45	SRF
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 14:23	EAM
Total Suspended Solids	4.7	2.0	mg/l	SM2540D 2011	9/30/2019 12:00	SNI
COD	16	10	mg/l	SM5220D 18-21ed	9/26/2019 9:00	SNI
Surfactants (MBAS)	380	100	ug/l	SM5540C 18-21ed	9/24/2019 22:00	GAW
TOC	4.8	0.5	mg/l	SM5310C 21 ed.	9/27/2019 12:43	SAS
Oil & Grease Gravimetric	<0.5	0.5	mg/l	EPA 1664A	9/26/2019 12:00	RMS
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 17:27	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 17:27	AJD
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/30/2019 14:34	DDP
Copper	<10	10	ug/l	EPA 200.7	9/30/2019 14:34	DDP
Iron	2420	100	ug/l	EPA 200.7	9/30/2019 14:34	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/30/2019 14:34	DDP
Dissolved Metals						
Potassium	2070	1000	ug/l	EPA 200.7	9/27/2019 16:22	DDP
Sodium	<3000	3000	ug/l	EPA 200.7	9/27/2019 16:22	DDP
ICPMS Digestion				EPA 200.8	9/26/2019 12:15	CEV
ICP Digestion				EPA 200.7	9/25/2019 16:44	CEV
ICP Digestion (Dissolved)				EPA 200.7	9/24/2019 16:38	RB
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/27/2019 20:09	KF

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-17920

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 010
Sample Description: OUTFALL 003A-03
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 08:12

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.9		SU	SM4500H+B	9/24/2019 15:37	GAW
Fecal Coliform (MPN)	540	1.8	MPN/100 ml	SM9221E2 19-21ed	9/24/2019 10:45	SRF
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 14:23	EAM
Total Suspended Solids	<2.0	2.0	mg/l	SM2540D 2011	9/30/2019 12:00	SNI
COD	<10	10	mg/l	SM5220D 18-21ed	9/26/2019 9:00	SNI
Surfactants (MBAS)	310	100	ug/l	SM5540C 18-21ed	9/24/2019 22:00	GAW
TOC	2.3	0.5	mg/l	SM5310C 21 ed.	9/27/2019 12:43	SAS
Oil & Grease Gravimetric	<0.5	0.5	mg/l	EPA 1664A	9/26/2019 12:00	RMS
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 17:33	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 17:33	AJD
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/30/2019 14:37	DDP
Copper	<10	10	ug/l	EPA 200.7	9/30/2019 14:37	DDP
Iron	981	100	ug/l	EPA 200.7	9/30/2019 14:37	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/30/2019 14:37	DDP
Dissolved Metals						
Potassium	6690	1000	ug/l	EPA 200.7	9/27/2019 16:23	DDP
Sodium	7790	3000	ug/l	EPA 200.7	9/27/2019 16:23	DDP
ICPMS Digestion				EPA 200.8	9/26/2019 12:15	CEV
ICP Digestion				EPA 200.7	9/25/2019 16:44	CEV
ICP Digestion (Dissolved)				EPA 200.7	9/24/2019 16:38	RB
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/27/2019 20:40	KF

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-17920

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 011
Sample Description: OUTFALL 008A-03
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 08:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.5		SU	SM4500H+B	9/24/2019 15:37	GAW
Fecal Coliform (MPN)	350	1.8	MPN/100 ml	SM9221E2 19-21ed	9/24/2019 10:45	SRF
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 14:23	EAM
Total Suspended Solids	2.5	2.0	mg/l	SM2540D 2011	9/30/2019 12:00	SNI
COD	<10	10	mg/l	SM5220D 18-21ed	9/26/2019 9:00	SNI
Surfactants (MBAS)	140	100	ug/l	SM5540C 18-21ed	9/24/2019 23:00	GAW
TOC	1.4	0.5	mg/l	SM5310C 21 ed.	9/27/2019 12:43	SAS
Oil & Grease Gravimetric	<0.5	0.5	mg/l	EPA 1664A	9/26/2019 12:00	RMS
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 17:38	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 17:38	AJD
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/30/2019 14:35	DDP
Copper	<10	10	ug/l	EPA 200.7	9/30/2019 14:35	DDP
Iron	720	100	ug/l	EPA 200.7	9/30/2019 14:35	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/30/2019 14:35	DDP
Dissolved Metals						
Potassium	3790	1000	ug/l	EPA 200.7	9/27/2019 16:25	DDP
Sodium	17000	3000	ug/l	EPA 200.7	9/27/2019 16:25	DDP
ICPMS Digestion				EPA 200.8	9/26/2019 12:15	CEV
ICP Digestion				EPA 200.7	9/25/2019 16:44	CEV
ICP Digestion (Dissolved)				EPA 200.7	9/24/2019 16:38	RB
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/27/2019 21:11	KF

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

Sample Number: 012
Sample Description: OUTFALL 010A-03
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 08:30

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
Dry - no sample	NO FLOW				9/24/2019 8:30	KLP

CHAIN OF CUSTODY RECORD

R.I. Analytical Laboratories, Inc.

41 Illinois Avenue
Warwick, RI 02888
Tel: 800-937-2580
Fax: 401-738-1970

131 Coolidge St, Bldg. 2
Hudson, MA 01749
Tel: 888-228-3334
Fax: 978-568-0078

Date Collected	Time Collected	Field Sample Identification	Grab or Composite	# of Containers & Type ^T	Preservation Code ^P	Matrix Code ^M	Fecal Coliform [*]	BOD, TSS, Surfactants, pH	COD, TOC [*]	Oil & Grease 1664 [*]	Propylene Glycol	Total Metals [*]	Dissolved K & Na [*]
9/24	0614	Outfall 002A-01	G	*	*	O	✓	✓	✓	✓	✓	✓	✓
"	0602	Outfall 003A-01	G	*	*	O	✓	✓	✓	✓	✓	✓	✓
"	0600	Outfall 008A-01	G	*	*	O	✓	✓	✓	✓	✓	✓	✓
9/24	0630	Outfall 010A-01	G	*	*	O	NO Flow						
9/24	0705	Outfall 002A-02	G	*	*	O	✓	✓	✓	✓	✓	✓	✓
"	0713	Outfall 003A-02	G	*	*	O	✓	✓	✓	✓	✓	✓	✓
"	0700	Outfall 008A-02	G	*	*	O	✓	✓	✓	✓	✓	✓	✓
9/24	0730	Outfall 010A-02	G	*	*	O	NO Flow						
9/24	0800	Outfall 002A-03	G	*	*	O	✓	✓	✓	✓	✓	✓	✓
"	0812	Outfall 003A-03	G	*	*	O	✓	✓	✓	✓	✓	✓	✓
"	0800	Outfall 008A-03	G	*	*	O	✓	✓	✓	✓	✓	✓	✓
9/24	0830	Outfall 010A-03	G	*	*	O	NO Flow						

*Fecal Coliform - 1 Sterile Non Preserved
BOD, TSS, Surfactants, pH - 1 500mL Non Preserved
COD, TOC - 1 250mL Sulfuric Acid Preserved
Oil & Grease 1664 - 32 oz Amber Glass Sulfuric Preserved
Propylene Glycol - 2 40mL Non-Preserved VOA Vial
Metals - 250mL Nitric Preserved
Dissolved Metals - 250ml Non Preserved

Total Metals:
Aluminum - 200.7
Chromium - 200.8
Copper - 200.7
Iron - 200.7
Lead - 200.7
Zinc - 200.7

Client Information		Project Information		
Company	Rhode Island Airport Corp	ProjectName:	T.F. Green RIPDES Monitoring	
Address:	2000 Post Rd	P.O. Number:	Project Number:	
City / State /	Warwick, RI 02886	Sampled by:		
Telephone:	691-2490	Fax:	691-2560	Email :address: jbrolin@pvdairport.com
Contact Person:	Jay Brolin	Email :address:		

Relinquished By	Date	Time	Received By
<i>Jay Brolin</i>	9/24/15	0852	<i>L. Gae</i>

Turn Around Time	
<input checked="" type="checkbox"/> Normal	<input checked="" type="checkbox"/> EMAIL Report
5 Business days. Possible	
Rush _____ (business)	

Matrix Codes: GW=Groundwater, SW=Surface Water, WW=Wastewater, DW=Drinking Water, S=Soil, SI=Sludge, A=Air, B=Bulk/Solid, O= Storm Water

Lab Use Only	
Sample Pick Up Only	
RIAL sampled; attach field hours	
<input checked="" type="checkbox"/>	Shipped on ice 5.1°C
Workorder No: 1909-17900	

LABORATORY REPORT

Rhode Island Airport Corp.
Attn: Mr. Jay Brolin
2000 Post Road
Warwick, RI 02886

Date Received: 9/24/2019
Date Reported: 10/3/2019
Date Revised: 10/8/2019 REV A
P.O. Number 29603

Work Order #: 1909-18009
Project Name: T.F. GREEN RIPDES MONITORING

Enclosed are the analytical results and Chain of Custody for your project referenced above. The sample(s) were analyzed by our Warwick, RI laboratory unless noted otherwise. When applicable, indication of sample analysis at our Hudson, MA laboratory and/or subcontracted results are noted and subcontracted reports are enclosed in their entirety.

All samples were analyzed within the established guidelines of US EPA approved methods with all requirements met, unless otherwise noted at the end of a given sample's analytical results or in a case narrative.

The Detection Limit is defined as the lowest level that can be reliably achieved during routine laboratory conditions.

These results only pertain to the samples submitted for this Work Order # and this report shall not be reproduced except in its entirety.

We certify that the following results are true and accurate to the best of our knowledge. If you have questions or need further assistance, please contact our Customer Service Department.

Approved by:



Dawne E. Smart
Data Reporting Manager

Laboratory Certification Numbers (as applicable to sample's origin state):
Warwick RI * RI LAI00033, MA M-RI015, CT PH-0508 Hudson MA * M-MA1117, RI LAO00319

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 001
Sample Description: OUTFALL 002A-04
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 09:30

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.6		SU	SM4500H+B	9/24/2019 22:54	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 14:32	EAM
LAS Surfactants (MBAS)	0.15	0.12	mg/l	SM5540C 18-21ed	9/24/2019 23:00	GAW
COD	15	10	mg/l	SM5220D 18-21ed	9/30/2019 8:00	SNI
TOC	4.3	0.5	mg/l	SM5310C 21 ed.	9/27/2019 12:43	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/30/2019 12:29	CEV
ICP Digestion				EPA 200.7	9/26/2019 15:48	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/28/2019 12:42	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/27/2019 12:21	DDP
Copper	<10	10	ug/l	EPA 200.7	9/27/2019 12:21	DDP
Iron	3250	100	ug/l	EPA 200.7	9/27/2019 12:21	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/27/2019 12:21	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 21:49	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 21:49	AJD
Dissolved Metals						
Potassium	2540	1000	ug/l	EPA 200.7	9/27/2019 13:37	DDP
Sodium	<3000	3000	ug/l	EPA 200.7	9/27/2019 13:37	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 002
Sample Description: OUTFALL 003A-04
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 09:05

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.9		SU	SM4500H+B	9/24/2019 22:54	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 14:32	EAM
LAS Surfactants (MBAS)	<0.12	0.12	mg/l	SM5540C 18-21ed	9/24/2019 23:00	GAW
COD	10	10	mg/l	SM5220D 18-21ed	9/30/2019 8:00	SNI
TOC	1.9	0.5	mg/l	SM5310C 21 ed.	9/27/2019 12:43	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/30/2019 12:29	CEV
ICP Digestion				EPA 200.7	9/26/2019 15:48	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/28/2019 13:12	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/27/2019 12:23	DDP
Copper	<10	10	ug/l	EPA 200.7	9/27/2019 12:23	DDP
Iron	858	100	ug/l	EPA 200.7	9/27/2019 12:23	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/27/2019 12:23	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 22:00	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 22:00	AJD
Dissolved Metals						
Potassium	6720	1000	ug/l	EPA 200.7	9/27/2019 13:43	DDP
Sodium	8260	3000	ug/l	EPA 200.7	9/27/2019 13:43	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 003
Sample Description: OUTFALL 008A-04
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 09:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.5		SU	SM4500H+B	9/24/2019 22:54	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 14:39	EAM
LAS Surfactants (MBAS)	<0.12	0.12	mg/l	SM5540C 18-21ed	9/24/2019 23:00	GAW
COD	<10	10	mg/l	SM5220D 18-21ed	9/30/2019 8:00	SNI
TOC	1.1	0.5	mg/l	SM5310C 21 ed.	9/27/2019 12:43	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/30/2019 12:29	CEV
ICP Digestion				EPA 200.7	9/26/2019 15:48	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/28/2019 13:43	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/27/2019 12:25	DDP
Copper	<10	10	ug/l	EPA 200.7	9/27/2019 12:25	DDP
Iron	674	100	ug/l	EPA 200.7	9/27/2019 12:25	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/27/2019 12:25	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 22:05	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 22:05	AJD
Dissolved Metals						
Potassium	3950	1000	ug/l	EPA 200.7	9/27/2019 13:45	DDP
Sodium	18200	3000	ug/l	EPA 200.7	9/27/2019 13:45	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 004
Sample Description: OUTFALL 002A-05
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 10:12

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.5		SU	SM4500H+B	9/24/2019 22:54	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 14:40	EAM
LAS Surfactants (MBAS)	0.14	0.12	mg/l	SM5540C 18-21ed	9/24/2019 23:00	GAW
COD	14	10	mg/l	SM5220D 18-21ed	9/30/2019 8:00	SNI
TOC	3.9	0.5	mg/l	SM5310C 21 ed.	9/27/2019 12:43	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/30/2019 12:29	CEV
ICP Digestion				EPA 200.7	9/26/2019 15:48	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/28/2019 14:13	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/27/2019 12:26	DDP
Copper	<10	10	ug/l	EPA 200.7	9/27/2019 12:26	DDP
Iron	3850	100	ug/l	EPA 200.7	9/27/2019 12:26	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/27/2019 12:26	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 22:11	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 22:11	AJD
Dissolved Metals						
Potassium	2600	1000	ug/l	EPA 200.7	9/27/2019 13:47	DDP
Sodium	<3000	3000	ug/l	EPA 200.7	9/27/2019 13:47	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 005
Sample Description: OUTFALL 003A-05
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 10:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.9		SU	SM4500H+B	9/24/2019 22:54	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 14:40	EAM
LAS Surfactants (MBAS)	<0.12	0.12	mg/l	SM5540C 18-21ed	9/24/2019 23:00	GAW
COD	<10	10	mg/l	SM5220D 18-21ed	9/30/2019 8:00	SNI
TOC	1.9	0.5	mg/l	SM5310C 21 ed.	9/27/2019 12:43	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/30/2019 12:29	CEV
ICP Digestion				EPA 200.7	9/26/2019 15:48	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/28/2019 14:44	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/27/2019 12:38	DDP
Copper	<10	10	ug/l	EPA 200.7	9/27/2019 12:38	DDP
Iron	858	100	ug/l	EPA 200.7	9/27/2019 12:38	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/27/2019 12:38	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 22:17	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 22:17	AJD
Dissolved Metals						
Potassium	6580	1000	ug/l	EPA 200.7	9/27/2019 13:48	DDP
Sodium	8450	3000	ug/l	EPA 200.7	9/27/2019 13:48	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 006
Sample Description: OUTFALL 008A-05
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 10:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.6		SU	SM4500H+B	9/24/2019 22:54	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 14:46	EAM
LAS Surfactants (MBAS)	<0.12	0.12	mg/l	SM5540C 18-21ed	9/25/2019 0:10	GAW
COD	<10	10	mg/l	SM5220D 18-21ed	9/30/2019 8:00	SNI
TOC	1.1	0.5	mg/l	SM5310C 21 ed.	9/27/2019 12:43	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/30/2019 12:29	CEV
ICP Digestion				EPA 200.7	9/26/2019 15:48	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/28/2019 15:15	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/27/2019 12:40	DDP
Iron	684	100	ug/l	EPA 200.7	9/27/2019 12:40	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/27/2019 12:40	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 22:33	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 22:33	AJD
Dissolved Metals						
Potassium	4300	1000	ug/l	EPA 200.7	9/27/2019 13:50	DDP
Sodium	19600	3000	ug/l	EPA 200.7	9/27/2019 13:50	DDP
Total Metals						
Copper	<10	10	ug/l	EPA 200.7	9/27/2019 12:40	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 007
Sample Description: OUTFALL 002A-06
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 11:15

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.6		SU	SM4500H+B	9/24/2019 22:54	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 14:46	EAM
LAS Surfactants (MBAS)	<0.12	0.12	mg/l	SM5540C 18-21ed	9/25/2019 0:10	GAW
COD	11	10	mg/l	SM5220D 18-21ed	9/30/2019 8:00	SNI
TOC	2.1	0.5	mg/l	SM5310C 21 ed.	9/30/2019 9:40	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/30/2019 12:29	CEV
ICP Digestion				EPA 200.7	9/26/2019 15:48	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/28/2019 15:46	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/27/2019 12:41	DDP
Copper	<10	10	ug/l	EPA 200.7	9/27/2019 12:41	DDP
Iron	4500	100	ug/l	EPA 200.7	9/27/2019 12:41	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/27/2019 12:41	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 22:39	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 22:39	AJD
Dissolved Metals						
Potassium	2800	1000	ug/l	EPA 200.7	9/27/2019 13:52	DDP
Sodium	3480	3000	ug/l	EPA 200.7	9/27/2019 13:52	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 008
Sample Description: OUTFALL 003A-06
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 11:02

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	7.0		SU	SM4500H+B	9/24/2019 22:54	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 14:46	EAM
LAS Surfactants (MBAS)	<0.12	0.12	mg/l	SM5540C 18-21ed	9/25/2019 0:10	GAW
COD	<10	10	mg/l	SM5220D 18-21ed	9/30/2019 8:00	SNI
TOC	3.5	0.5	mg/l	SM5310C 21 ed.	9/30/2019 9:40	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/30/2019 12:29	CEV
ICP Digestion				EPA 200.7	9/26/2019 15:48	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/28/2019 16:16	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/27/2019 12:43	DDP
Copper	<10	10	ug/l	EPA 200.7	9/27/2019 12:43	DDP
Iron	877	100	ug/l	EPA 200.7	9/27/2019 12:43	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/27/2019 12:43	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 22:44	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 22:44	AJD
Dissolved Metals						
Potassium	6380	1000	ug/l	EPA 200.7	9/27/2019 14:03	DDP
Sodium	8470	3000	ug/l	EPA 200.7	9/27/2019 14:03	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 009
Sample Description: OUTFALL 008A-06
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 11:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.6		SU	SM4500H+B	9/24/2019 22:54	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 14:58	EAM
LAS Surfactants (MBAS)	<0.12	0.12	mg/l	SM5540C 18-21ed	9/25/2019 0:10	GAW
COD	<10	10	mg/l	SM5220D 18-21ed	9/30/2019 8:00	SNI
TOC	1.2	0.5	mg/l	SM5310C 21 ed.	9/30/2019 9:40	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/30/2019 12:29	CEV
ICP Digestion				EPA 200.7	9/26/2019 15:48	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/28/2019 16:47	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/27/2019 12:45	DDP
Copper	<10	10	ug/l	EPA 200.7	9/27/2019 12:45	DDP
Iron	766	100	ug/l	EPA 200.7	9/27/2019 12:45	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/27/2019 12:45	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 22:50	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 22:50	AJD
Dissolved Metals						
Potassium	4560	1000	ug/l	EPA 200.7	9/27/2019 14:05	DDP
Sodium	21600	3000	ug/l	EPA 200.7	9/27/2019 14:05	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 010
Sample Description: OUTFALL 002A-07
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 12:13

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.4		SU	SM4500H+B	9/24/2019 23:12	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 14:58	EAM
LAS Surfactants (MBAS)	<0.12	0.12	mg/l	SM5540C 18-21ed	9/25/2019 1:00	SFH
COD	<10	10	mg/l	SM5220D 18-21ed	9/30/2019 8:00	SNI
TOC	3.1	0.5	mg/l	SM5310C 21 ed.	9/30/2019 9:40	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/30/2019 12:29	CEV
ICP Digestion				EPA 200.7	9/26/2019 15:48	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/28/2019 17:17	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/27/2019 12:47	DDP
Copper	<10	10	ug/l	EPA 200.7	9/27/2019 12:47	DDP
Iron	5070	100	ug/l	EPA 200.7	9/27/2019 12:47	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/27/2019 12:47	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 23:01	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 23:01	AJD
Dissolved Metals						
Potassium	2940	1000	ug/l	EPA 200.7	9/27/2019 14:06	DDP
Sodium	3800	3000	ug/l	EPA 200.7	9/27/2019 14:06	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 011
Sample Description: OUTFALL 003A-07
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 12:03

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.9		SU	SM4500H+B	9/24/2019 23:12	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 14:58	EAM
LAS Surfactants (MBAS)	<0.12	0.12	mg/l	SM5540C 18-21ed	9/25/2019 1:58	SFH
COD	<10	10	mg/l	SM5220D 18-21ed	9/30/2019 8:00	SNI
TOC	1.7	0.5	mg/l	SM5310C 21 ed.	9/30/2019 9:40	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/30/2019 12:29	CEV
ICP Digestion				EPA 200.7	9/26/2019 15:48	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/28/2019 17:48	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/27/2019 12:48	DDP
Copper	<10	10	ug/l	EPA 200.7	9/27/2019 12:48	DDP
Iron	848	100	ug/l	EPA 200.7	9/27/2019 12:48	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/27/2019 12:48	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 23:07	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 23:07	AJD
Dissolved Metals						
Potassium	6240	1000	ug/l	EPA 200.7	9/27/2019 14:08	DDP
Sodium	8540	3000	ug/l	EPA 200.7	9/27/2019 14:08	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 012
Sample Description: OUTFALL 008A-07
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 12:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.5		SU	SM4500H+B	9/24/2019 23:12	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 15:00	EAM
LAS Surfactants (MBAS)	0.17	0.12	mg/l	SM5540C 18-21ed	9/25/2019 1:58	SFH
COD	<10	10	mg/l	SM5220D 18-21ed	9/30/2019 8:00	SNI
TOC	1.2	0.5	mg/l	SM5310C 21 ed.	9/30/2019 9:40	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/30/2019 12:29	CEV
ICP Digestion				EPA 200.7	9/26/2019 15:48	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/28/2019 18:18	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/27/2019 12:50	DDP
Copper	<10	10	ug/l	EPA 200.7	9/27/2019 12:50	DDP
Iron	771	100	ug/l	EPA 200.7	9/27/2019 12:50	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/27/2019 12:50	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 23:12	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 23:12	AJD
Dissolved Metals						
Potassium	4630	1000	ug/l	EPA 200.7	9/27/2019 14:10	DDP
Sodium	23600	3000	ug/l	EPA 200.7	9/27/2019 14:10	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 013
Sample Description: OUTFALL 002A-08
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 13:06

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.6		SU	SM4500H+B	9/24/2019 23:12	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 15:00	EAM
LAS Surfactants (MBAS)	0.13	0.12	mg/l	SM5540C 18-21ed	9/25/2019 1:58	SFH
COD	15	10	mg/l	SM5220D 18-21ed	9/30/2019 8:00	SNI
TOC	4.3	0.5	mg/l	SM5310C 21 ed.	9/30/2019 9:40	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/30/2019 12:29	CEV
ICP Digestion				EPA 200.7	9/26/2019 15:48	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/28/2019 18:49	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/27/2019 12:52	DDP
Copper	<10	10	ug/l	EPA 200.7	9/27/2019 12:52	DDP
Iron	5400	100	ug/l	EPA 200.7	9/27/2019 12:52	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/27/2019 12:52	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 23:18	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 23:18	AJD
Dissolved Metals						
Potassium	3290	1000	ug/l	EPA 200.7	9/27/2019 14:12	DDP
Sodium	3990	3000	ug/l	EPA 200.7	9/27/2019 14:12	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 014
Sample Description: OUTFALL 003A-08
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 13:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.9		SU	SM4500H+B	9/24/2019 23:12	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 15:00	EAM
LAS Surfactants (MBAS)	0.12	0.12	mg/l	SM5540C 18-21ed	9/25/2019 1:58	SFH
COD	19	10	mg/l	SM5220D 18-21ed	9/30/2019 8:00	SNI
TOC	8.1	0.5	mg/l	SM5310C 21 ed.	9/30/2019 9:40	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/30/2019 12:29	CEV
ICP Digestion				EPA 200.7	9/26/2019 15:48	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/28/2019 19:20	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/27/2019 12:53	DDP
Copper	<10	10	ug/l	EPA 200.7	9/27/2019 12:53	DDP
Iron	924	100	ug/l	EPA 200.7	9/27/2019 12:53	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/27/2019 12:53	DDP
Total Metals						
Chromium	1.6	1.0	ug/l	EPA 200.8	9/30/2019 23:40	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 23:40	AJD
Dissolved Metals						
Potassium	7920	1000	ug/l	EPA 200.7	9/27/2019 14:14	DDP
Sodium	9320	3000	ug/l	EPA 200.7	9/27/2019 14:14	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 015
Sample Description: OUTFALL 008A-08
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 13:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.6		SU	SM4500H+B	9/24/2019 23:12	GAW
BOD 5	3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 15:03	EAM
LAS Surfactants (MBAS)	<0.12	0.12	mg/l	SM5540C 18-21ed	9/25/2019 1:58	SFH
COD	<10	10	mg/l	SM5220D 18-21ed	9/30/2019 8:00	SNI
TOC	1.2	0.5	mg/l	SM5310C 21 ed.	9/30/2019 9:40	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/30/2019 12:29	CEV
ICP Digestion				EPA 200.7	9/26/2019 15:48	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/28/2019 19:50	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/27/2019 13:08	DDP
Copper	<10	10	ug/l	EPA 200.7	9/27/2019 13:08	DDP
Iron	759	100	ug/l	EPA 200.7	9/27/2019 13:08	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/27/2019 13:08	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 23:46	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 23:46	AJD
Dissolved Metals						
Potassium	4680	1000	ug/l	EPA 200.7	9/27/2019 14:15	DDP
Sodium	25300	3000	ug/l	EPA 200.7	9/27/2019 14:15	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 016
Sample Description: OUTFALL 002A-09
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 14:09

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.8		SU	SM4500H+B	9/24/2019 23:12	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 15:03	EAM
LAS Surfactants (MBAS)	<0.12	0.12	mg/l	SM5540C 18-21ed	9/25/2019 21:45	GAW
COD	<10	10	mg/l	SM5220D 18-21ed	10/1/2019 7:45	SNI
TOC	3.4	0.5	mg/l	SM5310C 21 ed.	9/30/2019 9:40	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/30/2019 12:29	CEV
ICP Digestion				EPA 200.7	9/26/2019 15:48	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/28/2019 20:21	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/27/2019 13:09	DDP
Copper	<10	10	ug/l	EPA 200.7	9/27/2019 13:09	DDP
Iron	5820	100	ug/l	EPA 200.7	9/27/2019 13:09	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/27/2019 13:09	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 23:51	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 23:51	AJD
Dissolved Metals						
Potassium	3430	1000	ug/l	EPA 200.7	9/27/2019 14:17	DDP
Sodium	4230	3000	ug/l	EPA 200.7	9/27/2019 14:17	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 017
Sample Description: OUTFALL 003A-09
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 14:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	7.1		SU	SM4500H+B	9/24/2019 23:12	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 15:03	EAM
LAS Surfactants (MBAS)	<0.12	0.12	mg/l	SM5540C 18-21ed	9/25/2019 22:30	GAW
COD	<10	10	mg/l	SM5220D 18-21ed	10/1/2019 7:45	SNI
TOC	3.9	0.5	mg/l	SM5310C 21 ed.	9/30/2019 9:40	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/30/2019 12:29	CEV
ICP Digestion				EPA 200.7	9/26/2019 15:48	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/28/2019 20:52	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/27/2019 13:14	DDP
Copper	<10	10	ug/l	EPA 200.7	9/27/2019 13:14	DDP
Iron	856	100	ug/l	EPA 200.7	9/27/2019 13:14	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/27/2019 13:14	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 23:57	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 23:57	AJD
Dissolved Metals						
Potassium	6990	1000	ug/l	EPA 200.7	9/27/2019 14:18	DDP
Sodium	8930	3000	ug/l	EPA 200.7	9/27/2019 14:18	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 018
Sample Description: OUTFALL 008A-09
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 14:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.7		SU	SM4500H+B	9/24/2019 23:41	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 15:06	EAM
LAS Surfactants (MBAS)	<0.12	0.12	mg/l	SM5540C 18-21ed	9/25/2019 22:30	GAW
COD	<10	10	mg/l	SM5220D 18-21ed	10/1/2019 7:45	SNI
TOC	1.1	0.5	mg/l	SM5310C 21 ed.	9/30/2019 9:40	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/30/2019 12:29	CEV
ICP Digestion				EPA 200.7	9/30/2019 9:42	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/28/2019 21:22	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/30/2019 15:47	DDP
Copper	<10	10	ug/l	EPA 200.7	9/30/2019 15:47	DDP
Iron	873	100	ug/l	EPA 200.7	9/30/2019 15:47	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/30/2019 15:47	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 0:03	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 0:03	AJD
Dissolved Metals						
Potassium	4880	1000	ug/l	EPA 200.7	9/27/2019 14:43	DDP
Sodium	27700	3000	ug/l	EPA 200.7	9/27/2019 14:43	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 019
Sample Description: OUTFALL 002A-10
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 15:11

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.6		SU	SM4500H+B	9/24/2019 23:45	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 15:06	EAM
LAS Surfactants (MBAS)	<0.12	0.12	mg/l	SM5540C 18-21ed	9/25/2019 22:30	GAW
COD	<10	10	mg/l	SM5220D 18-21ed	10/1/2019 7:45	SNI
TOC	3.7	0.5	mg/l	SM5310C 21 ed.	9/30/2019 9:40	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/30/2019 12:29	CEV
ICP Digestion				EPA 200.7	9/30/2019 9:41	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/28/2019 21:53	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/30/2019 15:49	DDP
Copper	<10	10	ug/l	EPA 200.7	9/30/2019 15:49	DDP
Iron	7170	100	ug/l	EPA 200.7	9/30/2019 15:49	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/30/2019 15:49	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 0:08	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 0:08	AJD
Dissolved Metals						
Potassium	3520	1000	ug/l	EPA 200.7	9/27/2019 14:45	DDP
Sodium	4590	3000	ug/l	EPA 200.7	9/27/2019 14:45	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 020
Sample Description: OUTFALL 003A-10
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 15:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	7.0		SU	SM4500H+B	9/24/2019 23:45	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 15:06	EAM
LAS Surfactants (MBAS)	<0.12	0.12	mg/l	SM5540C 18-21ed	9/25/2019 22:30	GAW
COD	<10	10	mg/l	SM5220D 18-21ed	10/1/2019 7:45	SNI
TOC	2.3	0.5	mg/l	SM5310C 21 ed.	9/30/2019 9:40	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/30/2019 12:29	CEV
ICP Digestion				EPA 200.7	9/30/2019 9:41	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/28/2019 22:24	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/30/2019 15:50	DDP
Copper	<10	10	ug/l	EPA 200.7	9/30/2019 15:50	DDP
Iron	965	100	ug/l	EPA 200.7	9/30/2019 15:50	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/30/2019 15:50	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 0:14	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	10/1/2019 0:14	AJD
Dissolved Metals						
Potassium	6590	1000	ug/l	EPA 200.7	9/27/2019 15:36	DDP
Sodium	8900	3000	ug/l	EPA 200.7	9/27/2019 15:36	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 021
Sample Description: OUTFALL 008A-10
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 15:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.7		SU	SM4500H+B	9/24/2019 23:45	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 15:09	EAM
LAS Surfactants (MBAS)	<0.12	0.12	mg/l	SM5540C 18-21ed	9/25/2019 23:15	GAW
COD	<10	10	mg/l	SM5220D 18-21ed	10/1/2019 7:45	SNI
TOC	1.1	0.5	mg/l	SM5310C 21 ed.	9/30/2019 9:40	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/27/2019 13:43	CEV
ICP Digestion				EPA 200.7	9/30/2019 9:41	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/30/2019 14:01	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/30/2019 15:52	DDP
Copper	<10	10	ug/l	EPA 200.7	9/30/2019 15:52	DDP
Iron	843	100	ug/l	EPA 200.7	9/30/2019 15:52	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/30/2019 15:52	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 18:38	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 18:38	AJD
Dissolved Metals						
Potassium	4950	1000	ug/l	EPA 200.7	9/27/2019 15:09	DDP
Sodium	29500	3000	ug/l	EPA 200.7	9/27/2019 15:09	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 022
Sample Description: OUTFALL 002A-11
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 16:13

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.7		SU	SM4500H+B	9/24/2019 23:45	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 15:09	EAM
LAS Surfactants (MBAS)	<0.12	0.12	mg/l	SM5540C 18-21ed	9/25/2019 23:15	GAW
COD	<10	10	mg/l	SM5220D 18-21ed	10/1/2019 7:45	SNI
TOC	3.1	0.5	mg/l	SM5310C 21 ed.	9/30/2019 9:40	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/27/2019 13:43	CEV
ICP Digestion				EPA 200.7	9/30/2019 9:41	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/30/2019 14:31	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/30/2019 15:54	DDP
Copper	<10	10	ug/l	EPA 200.7	9/30/2019 15:54	DDP
Iron	8100	100	ug/l	EPA 200.7	9/30/2019 15:54	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/30/2019 15:54	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 18:44	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 18:44	AJD
Dissolved Metals						
Potassium	3450	1000	ug/l	EPA 200.7	9/27/2019 15:15	DDP
Sodium	4740	3000	ug/l	EPA 200.7	9/27/2019 15:15	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 023
Sample Description: OUTFALL 003A-11
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 16:01

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	7.0		SU	SM4500H+B	9/24/2019 23:45	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 15:09	EAM
LAS Surfactants (MBAS)	<0.12	0.12	mg/l	SM5540C 18-21ed	9/25/2019 23:15	GAW
COD	<10	10	mg/l	SM5220D 18-21ed	10/1/2019 7:45	SNI
TOC	2.6	0.5	mg/l	SM5310C 21 ed.	9/30/2019 9:40	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/27/2019 13:43	CEV
ICP Digestion				EPA 200.7	9/30/2019 9:41	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/30/2019 15:02	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/30/2019 16:02	DDP
Copper	<10	10	ug/l	EPA 200.7	9/30/2019 16:02	DDP
Iron	936	100	ug/l	EPA 200.7	9/30/2019 16:02	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/30/2019 16:02	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 18:50	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 18:50	AJD
Dissolved Metals						
Potassium	6800	1000	ug/l	EPA 200.7	9/27/2019 15:27	DDP
Sodium	9020	3000	ug/l	EPA 200.7	9/27/2019 15:27	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 024
Sample Description: OUTFALL 008A-11
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 16:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.7		SU	SM4500H+B	9/24/2019 23:45	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 15:11	EAM
LAS Surfactants (MBAS)	<0.12	0.12	mg/l	SM5540C 18-21ed	9/25/2019 23:15	GAW
COD	16	10	mg/l	SM5220D 18-21ed	10/1/2019 7:45	SNI
TOC	7.9	0.5	mg/l	SM5310C 21 ed.	9/30/2019 9:40	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/27/2019 13:43	CEV
ICP Digestion				EPA 200.7	9/30/2019 9:41	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/30/2019 15:32	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/30/2019 16:04	DDP
Copper	<10	10	ug/l	EPA 200.7	9/30/2019 16:04	DDP
Iron	944	100	ug/l	EPA 200.7	9/30/2019 16:04	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/30/2019 16:04	DDP
Total Metals						
Chromium	1.6	1.0	ug/l	EPA 200.8	9/30/2019 18:55	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 18:55	AJD
Dissolved Metals						
Potassium	6300	1000	ug/l	EPA 200.7	9/27/2019 15:29	DDP
Sodium	31400	3000	ug/l	EPA 200.7	9/27/2019 15:29	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 025
Sample Description: OUTFALL 002A-12
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 17:12

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.7		SU	SM4500H+B	9/24/2019 23:45	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 15:11	EAM
LAS Surfactants (MBAS)	<0.12	0.12	mg/l	SM5540C 18-21ed	9/25/2019 23:15	GAW
COD	<10	10	mg/l	SM5220D 18-21ed	10/1/2019 7:45	SNI
TOC	1.9	0.5	mg/l	SM5310C 21 ed.	10/1/2019 10:25	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/27/2019 13:43	CEV
ICP Digestion				EPA 200.7	9/30/2019 9:41	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/30/2019 16:03	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/30/2019 16:06	DDP
Copper	<10	10	ug/l	EPA 200.7	9/30/2019 16:06	DDP
Iron	8040	100	ug/l	EPA 200.7	9/30/2019 16:06	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/30/2019 16:06	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 19:12	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 19:12	AJD
Dissolved Metals						
Potassium	3380	1000	ug/l	EPA 200.7	9/27/2019 15:30	DDP
Sodium	4720	3000	ug/l	EPA 200.7	9/27/2019 15:30	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 026
Sample Description: OUTFALL 003A-12
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 17:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	7.1		SU	SM4500H+B	9/24/2019 23:45	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 15:11	EAM
LAS Surfactants (MBAS)	<0.12	0.12	mg/l	SM5540C 18-21ed	9/26/2019 0:11	GAW
COD	<10	10	mg/l	SM5220D 18-21ed	10/1/2019 7:45	SNI
TOC	2.0	0.5	mg/l	SM5310C 21 ed.	9/30/2019 9:40	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/27/2019 13:43	CEV
ICP Digestion				EPA 200.7	9/30/2019 9:41	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/30/2019 16:33	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/30/2019 16:07	DDP
Copper	<10	10	ug/l	EPA 200.7	9/30/2019 16:07	DDP
Iron	888	100	ug/l	EPA 200.7	9/30/2019 16:07	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/30/2019 16:07	DDP
Total Metals						
Chromium	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 19:18	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 19:18	AJD
Dissolved Metals						
Potassium	6350	1000	ug/l	EPA 200.7	9/27/2019 15:32	DDP
Sodium	8920	3000	ug/l	EPA 200.7	9/27/2019 15:32	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 027
Sample Description: OUTFALL 008A-12
Sample Type : GRAB
Sample Date / Time : 9/24/2019 @ 17:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
pH	6.7		SU	SM4500H+B	9/24/2019 23:45	GAW
BOD 5	<3.0	3.0	mg/l	SM5210B 21ed	9/25/2019 15:14	EAM
LAS Surfactants (MBAS)	<0.12	0.12	mg/l	SM5540C 18-21ed	9/26/2019 0:11	GAW
COD	13	10	mg/l	SM5220D 18-21ed	10/1/2019 7:45	SNI
TOC	5.5	0.5	mg/l	SM5310C 21 ed.	9/30/2019 9:40	SAS
ICP Digestion (Dissolved)	Digested			EPA 200.7	9/26/2019 10:04	CEV
ICPMS Digestion				EPA 200.8	9/27/2019 13:43	CEV
ICP Digestion				EPA 200.7	9/30/2019 9:41	CEV
GC/FID						
Propylene Glycol	<10	10	mg/l	GC-FID	9/30/2019 17:04	KF
Total Metals						
Aluminum	<100	100	ug/l	EPA 200.7	9/30/2019 16:09	DDP
Copper	<10	10	ug/l	EPA 200.7	9/30/2019 16:09	DDP
Iron	1280	100	ug/l	EPA 200.7	9/30/2019 16:09	DDP
Zinc	<100	100	ug/l	EPA 200.7	9/30/2019 16:09	DDP
Total Metals						
Chromium	1.1	1.0	ug/l	EPA 200.8	9/30/2019 19:23	AJD
Lead	<1.0	1.0	ug/l	EPA 200.8	9/30/2019 19:23	AJD
Dissolved Metals						
Potassium	6040	1000	ug/l	EPA 200.7	9/27/2019 15:34	DDP
Sodium	32400	3000	ug/l	EPA 200.7	9/27/2019 15:34	DDP

The pH analysis ideally should be performed in the field. The pH analysis was performed by the laboratory as soon as possible after receipt.

Sample Number: 028
Sample Description: OUTFALL 010A-04
Sample Type : OTHER
Sample Date / Time : 9/24/2019 @ 09:15

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
Dry - no sample	NO FLOW				9/24/2019 9:15	KLP

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 029
Sample Description: OUTFALL 010A-05
Sample Type : OTHER
Sample Date / Time : 9/24/2019 @ 10:15

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
Dry - no sample	NO FLOW				9/24/2019 10:15	KLP

Sample Number: 030
Sample Description: OUTFALL 010A-06
Sample Type : OTHER
Sample Date / Time : 9/24/2019 @ 11:15

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
Dry - no sample	NO FLOW				9/24/2019 11:15	KLP

Sample Number: 031
Sample Description: OUTFALL 010A-07
Sample Type : OTHER
Sample Date / Time : 9/24/2019 @ 12:15

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
Dry - no sample	NO FLOW				9/24/2019 12:15	KLP

Sample Number: 032
Sample Description: OUTFALL 010A-08
Sample Type : OTHER
Sample Date / Time : 9/24/2019 @ 13:15

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
Dry - no sample	NO FLOW				9/24/2019 13:15	KLP

R.I. Analytical Laboratories, Inc.

Laboratory Report

Rhode Island Airport Corp.

Work Order #: 1909-18009

Project Name: T.F. GREEN RIPDES MONITORING

Sample Number: 033
Sample Description: OUTFALL 010A-09
Sample Type : OTHER
Sample Date / Time : 9/24/2019 @ 14:15

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
Dry - no sample	NO FLOW				9/24/2019 14:15	KLP

Sample Number: 034
Sample Description: OUTFALL 010A-10
Sample Type : OTHER
Sample Date / Time : 9/24/2019 @ 15:11

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
Dry - no sample	NO FLOW				9/24/2019 15:11	KLP

Sample Number: 035
Sample Description: OUTFALL 010A-11
Sample Type : OTHER
Sample Date / Time : 9/24/2019 @ 16:15

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
Dry - no sample	NO FLOW				9/24/2019 16:15	KLP

Sample Number: 036
Sample Description: OUTFALL 010A-12
Sample Type : OTHER
Sample Date / Time : 9/24/2019 @ 17:15

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
Dry - no sample	NO FLOW				9/24/2019 17:15	KLP

Report Revised (10/8/19): For sample 1909-18009-006, two Chromium results were reported originally and Copper was not reported; Copper analysis was added and duplicate Chromium result (200.7 method) was removed.

CHAIN OF CUSTODY RECORD

R.I. Analytical Laboratories, Inc.

41 Illinois Avenue
Warwick, RI 02888
Tel: 800-937-2580
Fax: 401-738-1970

131 Coolidge St, Bldg. 2
Hudson, MA 01749
Tel: 888-228-3334
Fax: 978-568-0078

Date Collected	Time Collected	Field Sample Identification	Grab or Composite	# of Containers & Type ^T	Preservation Code ^P	Matrix Code ^M	BOD, Surfactants, pH	COD, TOC	Propylene Glycol	Metals**	Dissolved K & Na						
9/24/19	1304	Outfall 002A-08	G	*	*	O	✓	✓	✓	✓	✓						
"	1300	Outfall 003A-08	G	*	*	O	✓	✓	✓	✓	✓						
"	1300	Outfall 008A-08	G	*	*	O	✓	✓	✓	✓	✓						
"	1315	Outfall 010A-08	G	*	*	O	NO Flow										
"	1409	Outfall 002A-09	G	*	*	O	✓	✓	✓	✓	✓						
"	1400	Outfall 003A-09	G	*	*	O	✓	✓	✓	✓	✓						
"	1400	Outfall 008A-09	G	*	*	O	✓	✓	✓	✓	✓						
"	1415	Outfall 010A-09	G	*	*	O	NO Flow										
"	1511	Outfall 002A-10	G	*	*	O	✓	✓	✓	✓	✓						
"	1500	Outfall 003A-10	G	*	*	O	✓	✓	✓	✓	✓						
"	1500	Outfall 008A-10	G	*	*	O	✓	✓	✓	✓	✓						
9/24/19	1515	Outfall 010A-10	G	*	*	O	NO Flow										

*BOD, Surfactants, pH - 1 1000mL Non Preserved
COD, TOC - 1 250mL Sulfuric Acid Preserved
Propylene Glycol - 2 40mL Non-Preserved VOA Vial
Metals - 250mL Nitric Preserved
Dissolved Metals - 250ml Non Preserved

Total Metals:
Aluminum - 200.7
Chromium - 200.8
Copper - 200.7
Iron - 200.7
Lead - 200.7
Zinc - 200.7

Client Information				Project Information			
Company	Rhode Island Airport Corp			ProjectName:	T.F. Green RIPDES Monitoring		
Address:	2000 Post Rd			P.O. Number:	29603	Project Number:	
City / State /	Warwick, RI 02886			Sampled by:			
Telephone:	691-2490	Fax:	691-2560	Email :address:	jbrolin@pvdairport.com		
Contact Person:	Jay Brolin			Email :address:			

Relinquished By	Date	Time	Received By
<i>Jay Brolin</i>	9/24/19	1735	<i>[Signature]</i>

Turn Around Time	
<input checked="" type="checkbox"/> Normal	<input checked="" type="checkbox"/> EMAIL Report
5 Business days. Possible	
Rush _____ (business)	

Matrix Codes: GW=Groundwater, SW=Surface Water, WW=Wastewater, DW=Drinking Water, S=Soil, SI=Sludge, A=Air, B=Bulk/Solid, O= Storm Water

Lab Use Only	
	Sample Pick Up Only
	RIAL sampled; attach field hours
	Shipped on ice
Workorder No: 1909-18009	

5.1

CHAIN OF CUSTODY RECORD

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Hudson, MA 01749
Tel: 888-228-3334
Fax: 978-568-0078

Date Collected	Time Collected	Field Sample Identification	Grab or Composite	# of Containers & Type ^T	Preservation Code ^P	Matrix Code ^M	BOD, Surfactants, pH	COD, TOC	Propylene Glycol	Metals**	Dissolved K & Na
9/24/19	1613	Outfall 002A-11	G	*	*	O	✓	✓	✓	✓	✓
"	1601	Outfall 003A-11	G	*	*	O	✓	✓	✓	✓	✓
"	1600	Outfall 008A-11	G	*	*	O	✓	✓	✓	✓	✓
"	1615	Outfall 010A-11	G	*	*	O	No Flow				
"	1712	Outfall 002A-12	G	*	*	O	✓	✓	✓	✓	✓
"	1700	Outfall 003A-12	G	*	*	O	✓	✓	✓	✓	✓
"	1700	Outfall 008A-12	G	*	*	O	✓	✓	✓	✓	✓
9/24/19	1715	Outfall 010A-12	G	*	*	O	No Flow				

*BOD, Surfactants, pH – 1 1000mL Non Preserved
COD, TOC – 1 250mL Sulfuric Acid Preserved
Propylene Glycol – 2 40mL Non-Preserved VOA Vial
Metals – 250mL Nitric Preserved
Dissolved Metals – 250ml Non Preserved

Total Metals:
Aluminum – 200.7
Chromium – 200.8
Copper – 200.7
Iron – 200.7
Lead – 200.7
Zinc – 200.7

Client Information		Project Information	
Company	Rhode Island Airport Corp	ProjectName:	T.F. Green RIPDES Monitoring
Address:	2000 Post Rd	P.O. Number:	29603
City / State /	Warwick, RI 02886	Project Number:	
Telephone:	691-2490	Fax:	691-2560
Contact Person:	Jay Brolin	Sampled by:	
		Email :address:	jbrolin@pvdairport.com
		Email :address:	

Relinquished By	Date	Time	Received By
<i>Jay Brolin</i>	9/24/19	1735	<i>[Signature]</i>

Turn Around Time	
<input checked="" type="checkbox"/> Normal	<input checked="" type="checkbox"/> EMAIL Report
5 Business days. Possible	
Rush _____ (business)	

Matrix Codes: GW=Groundwater, SW=Surface Water, WW=Wastewater, DW=Drinking Water, S=Soil, SI=Sludge, A=Air, B=Bulk/Solid, O= Storm Water

Lab Use Only
Sample Pick Up Only
RIAL sampled; attach field hours
Shipped on ice
Workorder No: 1909-18009

S.I

CHAIN OF CUSTODY RECORD

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Fax: 401-738-1970

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Hudson, MA 01749
Tel: 888-228-3334
Fax: 978-568-0078

Date Collected	Time Collected	Field Sample Identification	Grab or Composite	# of Containers & Type ^T	Preservation Code ^F	Matrix Code ^M	BOD, Surfactants, pH	COD, TOC	Propylene Glycol	Metals**	Dissolved K & Na
9/24/19	0930	Outfall 002A-04	G	*	*	O	✓	✓	✓	✓	✓
"	0905	Outfall 003A-04	G	*	*	O	✓	✓	✓	✓	✓
"	0900	Outfall 008A-04	G	*	*	O	✓	✓	✓	✓	✓
"	0915	Outfall 010A-04	G	*	*	O	NO FLOW				
"	1012	Outfall 002A-05	G	*	*	O	✓	✓	✓	✓	✓
"	1000	Outfall 003A-05	G	*	*	O	✓	✓	✓	✓	✓
"	1000	Outfall 008A-05	G	*	*	O	✓	✓	✓	✓	✓
"	1015	Outfall 010A-05	G	*	*	O	NO FLOW				
"	1115	Outfall 002A-06	G	*	*	O	✓	✓	✓	✓	✓
"	1102	Outfall 003A-06	G	*	*	O	✓	✓	✓	✓	✓
"	1100	Outfall 008A-06	G	*	*	O	✓	✓	✓	✓	✓
"	1115	Outfall 010A-06	G	*	*	O	NO FLOW				
"	1213	Outfall 002A-07	G	*	*	O	✓	✓	✓	✓	✓
"	1203	Outfall 003A-07	G	*	*	O	✓	✓	✓	✓	✓
"	1200	Outfall 008A-07	G	*	*	O	✓	✓	✓	✓	✓
9/24/19	1215	Outfall 010A-07	G	*	*	O	NO FLOW				

*BOD, Surfactants, pH – 1 1000mL Non Preserved
COD, TOC – 1 250mL Sulfuric Acid Preserved
Propylene Glycol – 2 40mL Non-Preserved VOA Vial
Metals – 250mL Nitric Preserved
Dissolved Metals – 250ml Non Preserved

Total Metals:
Aluminum – 200.7
Chromium – 200.8
Copper – 200.7
Iron – 200.7
Lead – 200.7
Zinc – 200.7

Client Information		Project Information	
Company	Rhode Island Airport Corp	ProjectName:	T.F. Green RIPDES Monitoring
Address:	2000 Post Rd	P.O. Number:	29603
City / State /	Warwick, RI 02886	Project Number:	
Telephone:	691-2490	Sampled by:	
Fax:	691-2560	Email :address:	jbrolin@pvdairport.com
Contact Person:	Jay Brolin	Email :address:	

Relinquished By	Date	Time	Received By
	9/24/19	1735	

Turn Around Time	
<input checked="" type="checkbox"/> Normal	<input checked="" type="checkbox"/> EMAIL Report
5 Business days. Possible	
<input type="checkbox"/> Rush	(business)

Matrix Codes: GW=Groundwater, SW=Surface Water, WW=Wastewater, DW=Drinking Water, S=Soil, SI=Sludge, A=Air, B=Bulk/Solid, O= Storm Water

5.1

Lab Use Only	
Sample Pick Up Only	
RIAL sampled; attach field hours	
Shipped on ice	
Workorder No:	909-17009