

# LEWES WASTEWATER TREATMENT PLANT

## Influent Flow Report

### Influent Flow

Time	Flow	
8/1/2020	791600	
8/2/2020	799700	
8/3/2020	749000	
8/4/2020	813500	
8/5/2020	747100	
8/6/2020	765000	
8/7/2020	800300	
8/8/2020	823400	
8/9/2020	790800	
8/10/2020	782000	
8/11/2020	804500	
8/12/2020	769700	
8/13/2020	771000	
8/14/2020	808300	
8/15/2020	786800	
8/16/2020	842100	
8/17/2020	782300	
8/18/2020	760700	
8/19/2020	784900	
8/20/2020	285700	
8/21/2020	494300	
8/22/2020	828000	
8/23/2020	811700	
8/24/2020	787900	
8/25/2020	744400	
8/26/2020	730600	
8/27/2020	758600	
8/28/2020	777800	
8/29/2020	870200	Peak Day-Rain Event
8/30/2020	780600	
8/31/2020	657400	
Total Flow :	23499900	

# LEWES WASTEWATER TREATMENT PLANT

## Effluent Flow Report

### Effluent Flow

Time	Flow
8/1/2020	795800
8/2/2020	779800
8/3/2020	827900
8/4/2020	743900
8/5/2020	758500
8/6/2020	776800
8/7/2020	777800
8/8/2020	819900
8/9/2020	799600
8/10/2020	795700
8/11/2020	803800
8/12/2020	784100
8/13/2020	768800
8/14/2020	802100
8/15/2020	790700
8/16/2020	831700
8/17/2020	789400
8/18/2020	485200
8/19/2020	0
8/20/2020	0
8/21/2020	433500
8/22/2020	831600
8/23/2020	819600
8/24/2020	786100
8/25/2020	748400
8/26/2020	730000
8/27/2020	763600
8/28/2020	778800
8/29/2020	866300
8/30/2020	790600
8/31/2020	747600
Total Flow :	22227600

Communications  
offline.

Peak Day-Rain Event

# TRANSMEMBRANE PRESSURE

Cursor Time: 08/31/2020 08:24:20.023



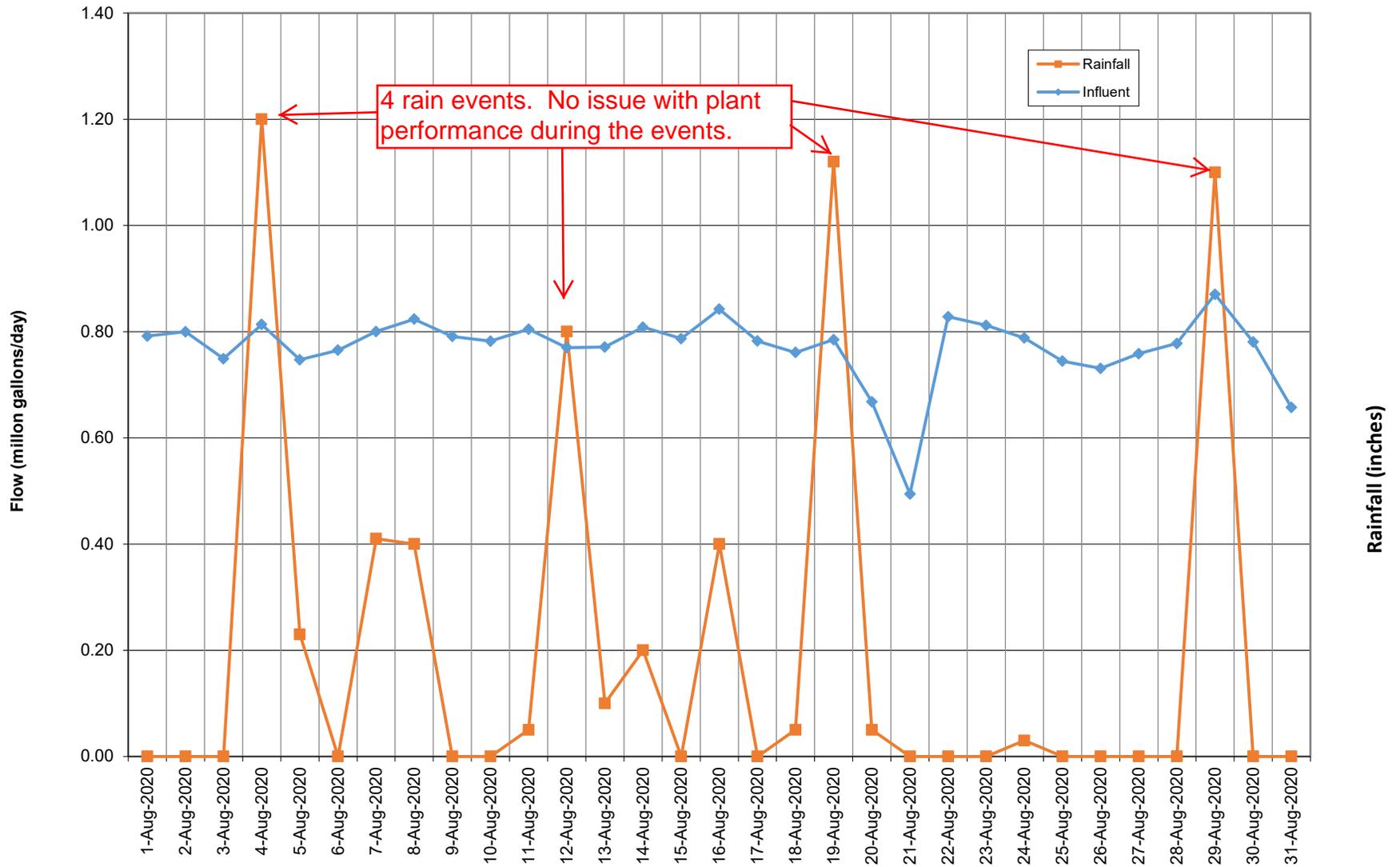
08/01/2020 07:50:55	Duration: 728.000000	08/31/2020 15:50:55
Label	Current	Cursor
Transmembrane PSI	-2.00	-2.00

Open Previous    Reset Zoom

Main Menu    Print Trend

**15:50:54**  
Thursday, September 3, 2020  
User: Guest  
Group: Guest  
008 Acknowledged Alarms  
001 Unacknowledged Alarms  
009 Total Alarms

### Influent Flow Vs. Rainfall



# LEWES BPW WWTP Biweekly InSight Report

**Date:** 8/12/2020

From: Erin Horocholyn - Suez Water Technologies & Solutions  
 To: Dave Weed, Darrin Gordon  
 cc: Matt Stapleford - Suez Water Technologies & Solutions

## System Equipment

4 × ZW trains, each train consists of 4 - 500D cassettes, 120 modules x 370 sq. ft. per train (surface area 44,400 sq. ft. per train)

Replacement membranes installed Q1 2020 on all 4 trains

## Cleaning Strategy

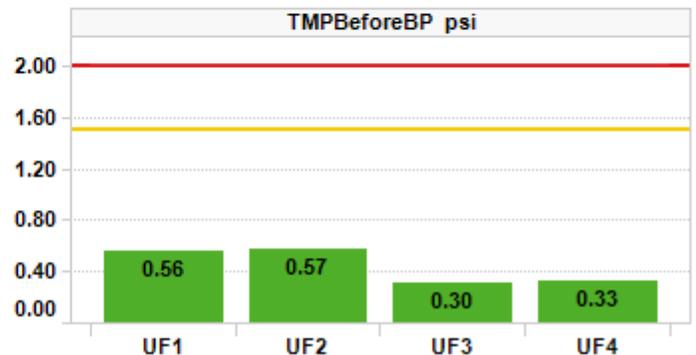
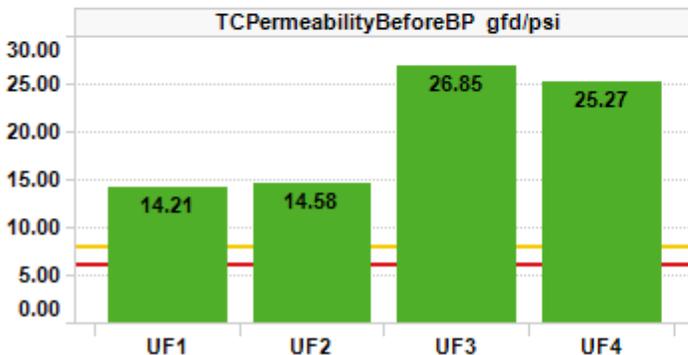
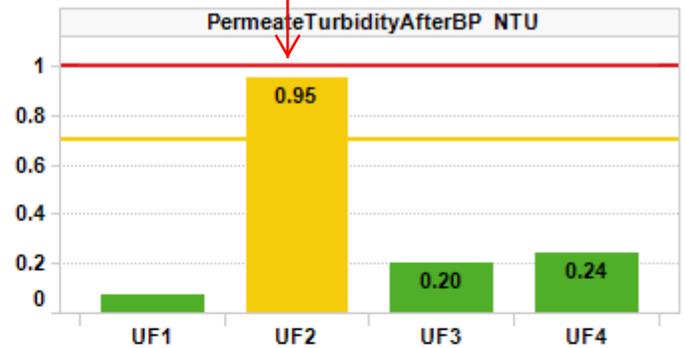
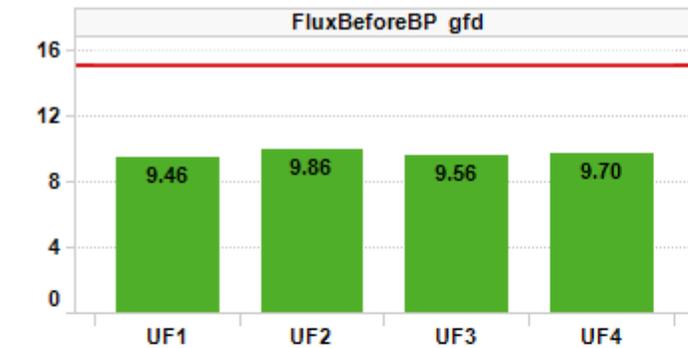
Recovery cleaning - 2 NaOCl @ 2000 ppm dose/1000 ppm soak per year, 1 Citric acid @ 2000 ppm per year

Maintenance cleaning - 1 NaOCl per week @ 200 ppm, 1 Citric acid per week @ 2000 ppm

**KPI Dashboard – Avg values through reporting period**

Investigating cause of higher levels. Level is under alarm set points.

■ Action Required  
■ Caution  
■ No Limits  
■ Normal





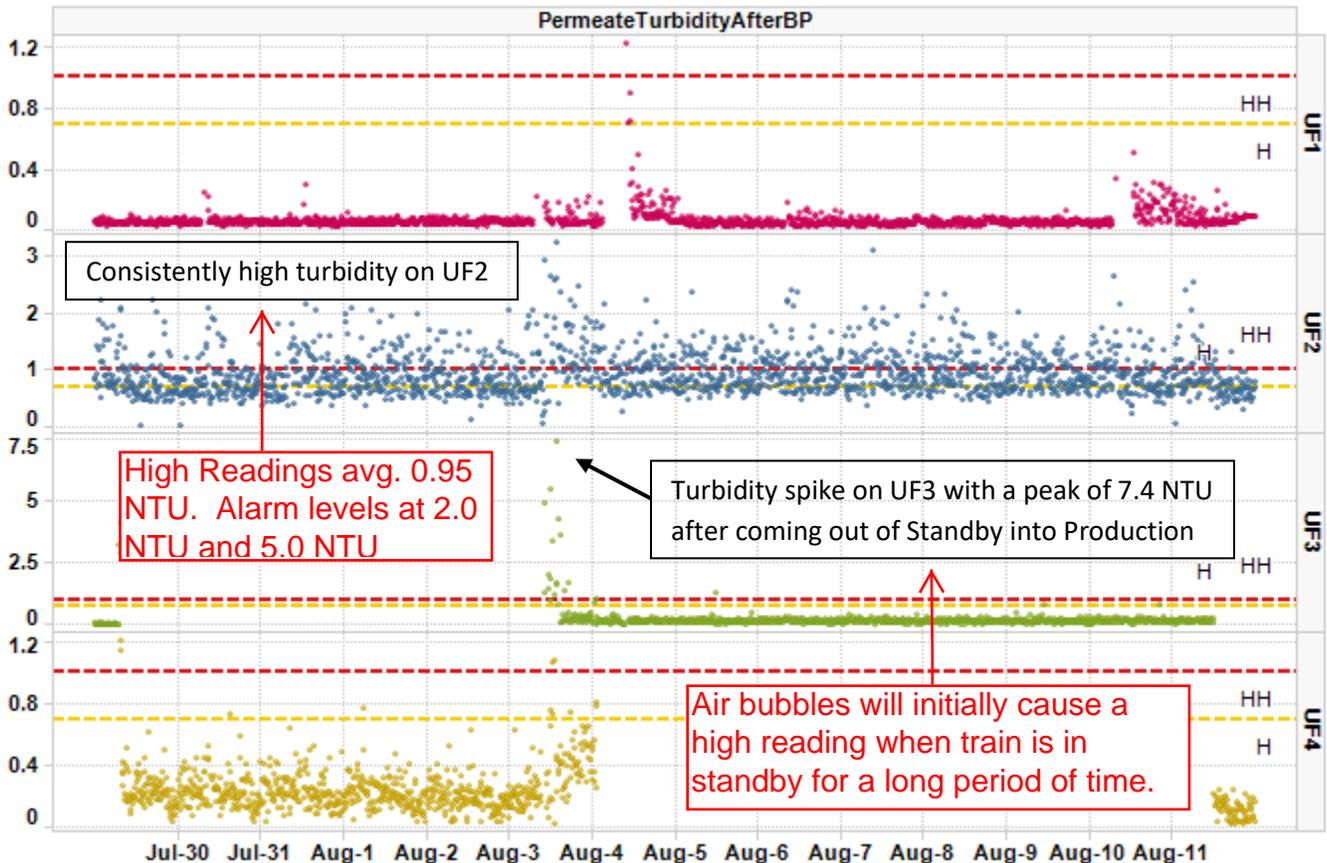
## Plant Summary

### Acronyms:

- TC = temperature corrected
- BBP = before backpulse
- RC = recovery clean
- TMP = trans membrane pressure

Overall, the plant operated well in terms of permeability and TMP. Train UF2 is seeing turbidities around 1 NTU, which is high. It would be good to verify this with a hand-held reading if possible, and check the turbidimeter tubing to see if there is any biogrowth in the UF2 tubes.

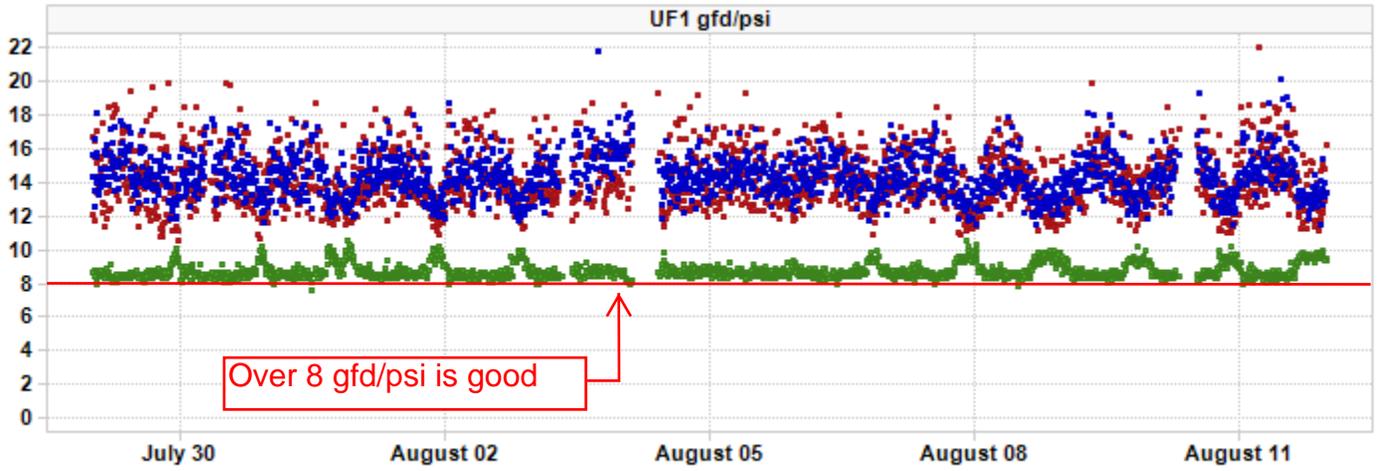
- Daily permeate production averaged 848 kgal on days where there was significant permeate production (Jul 30, Aug 5; see Daily Permeate Flow plot on page 5 of this report). Maximum permeate flow was 850 kgal on July 30<sup>th</sup>
- TC permeability BBP was good on all trains, and excellent on trains UF3 and UF4. UF1 and UF2 averaged 14.21 and 14.58 gfd/psi respectively. UF3 and UF4 averaged 26.85 and 25.27 respectively. For reference, TC permeability BBP is considered good above 8 gfd/psi.
- TMP was great on all trains. UF1 and UF2 averaged 0.56 – 0.57 psi, while UF3 and UF4 averaged 0.30 and 0.33 psi. For reference, excellent TMP is below 1.0 psi
- Permeate turbidity was excellent on UF1, averaging 0.07 NTU. UF3 had a turbidity spike with a peak of 7.4 NTU on Aug 3 when the train came out of standby into production, and after this short spike the train averaged 0.16 NTU which is good. UF4 averaged 0.24 NTU which is also good. UF2 had the highest permeate turbidity, averaging 0.95 NTU, which is just shy of the current HH limit of 1.0 NTU. For reference, excellent turbidity is less than 0.1 NTU, and good turbidity less than approximately 0.3 NTU



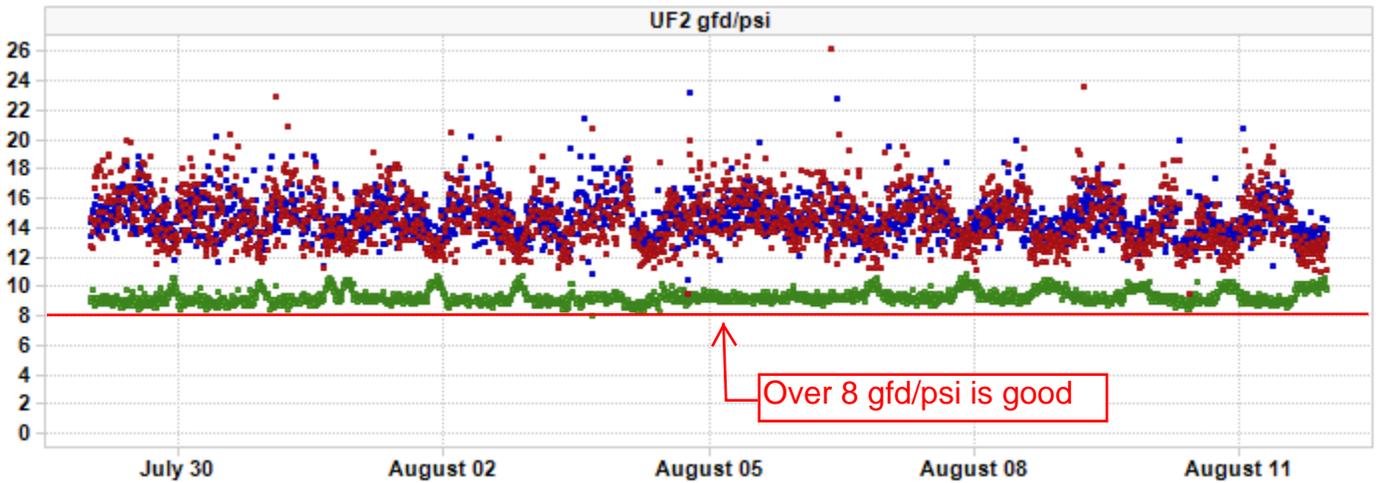


### TC Permeability Trends By Train

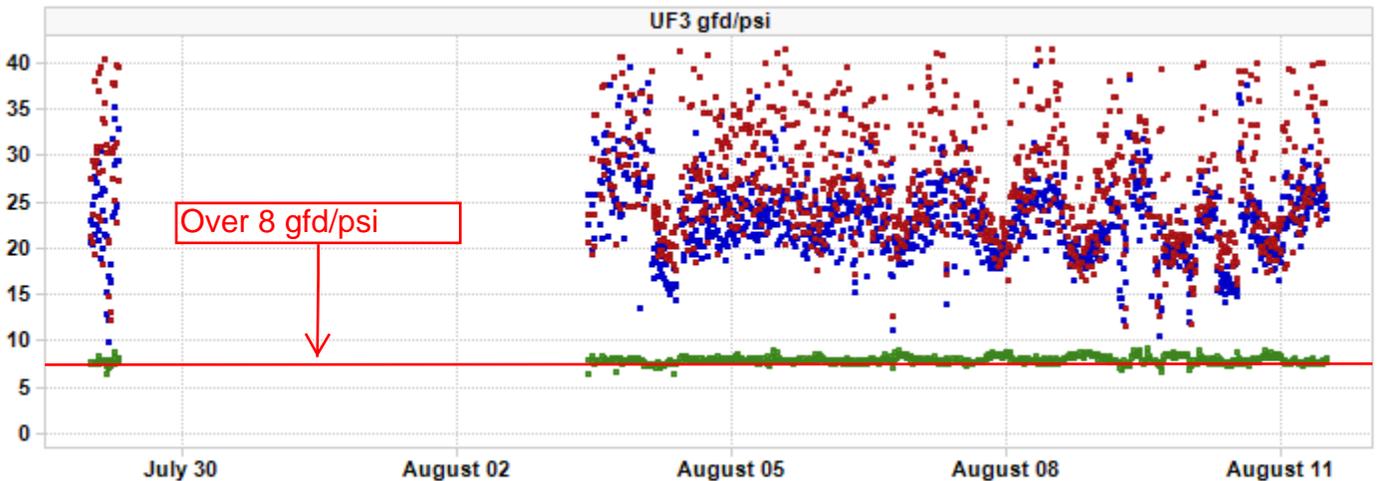
■ TCPermeabilityAfterBP  
■ TCPermeabilityBeforeBP  
■ TCPermeabilityDuringBP



■ TCPermeabilityAfterBP  
■ TCPermeabilityBeforeBP  
■ TCPermeabilityDuringBP

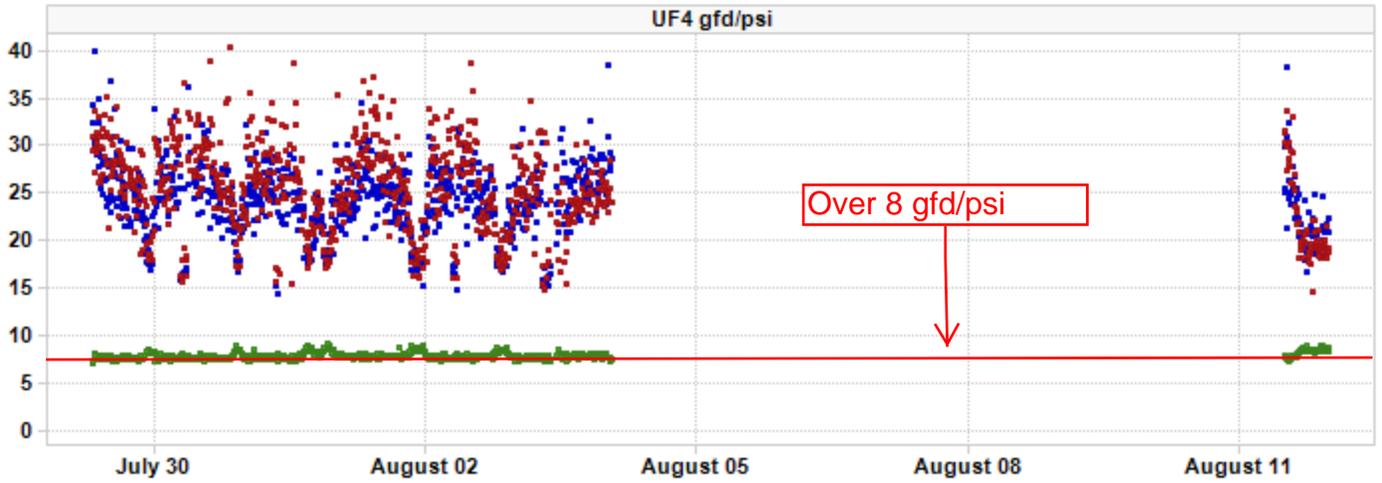


■ TCPermeabilityAfterBP  
■ TCPermeabilityBeforeBP  
■ TCPermeabilityDuringBP

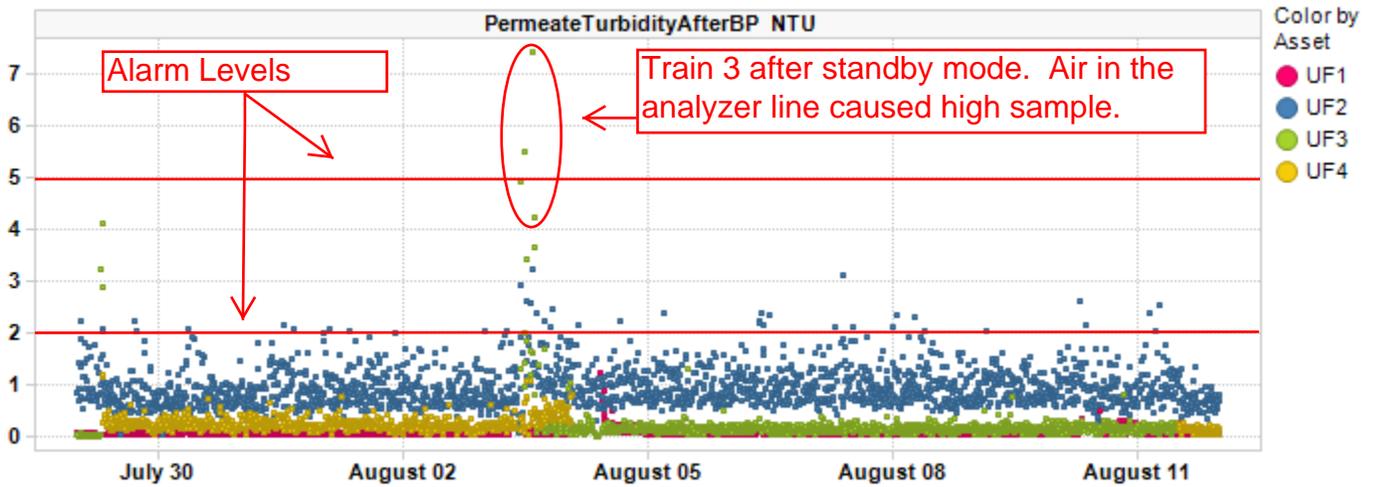




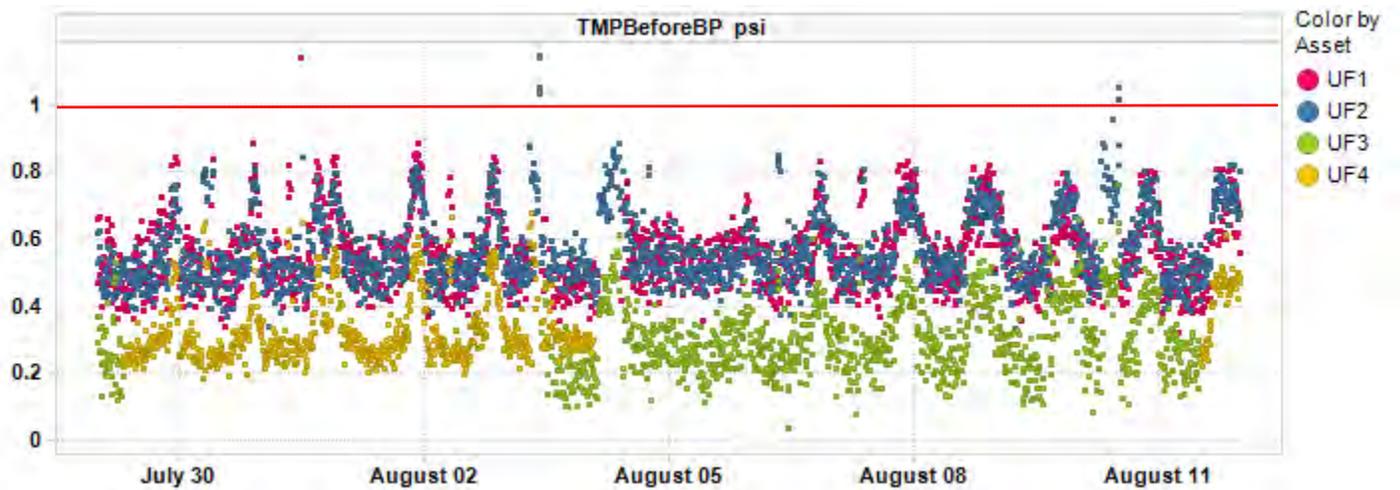
■ TCPermeabilityAfterBP  
■ TCPermeabilityBeforeBP  
■ TCPermeabilityDuringBP



### Permeate Turbidity Trend



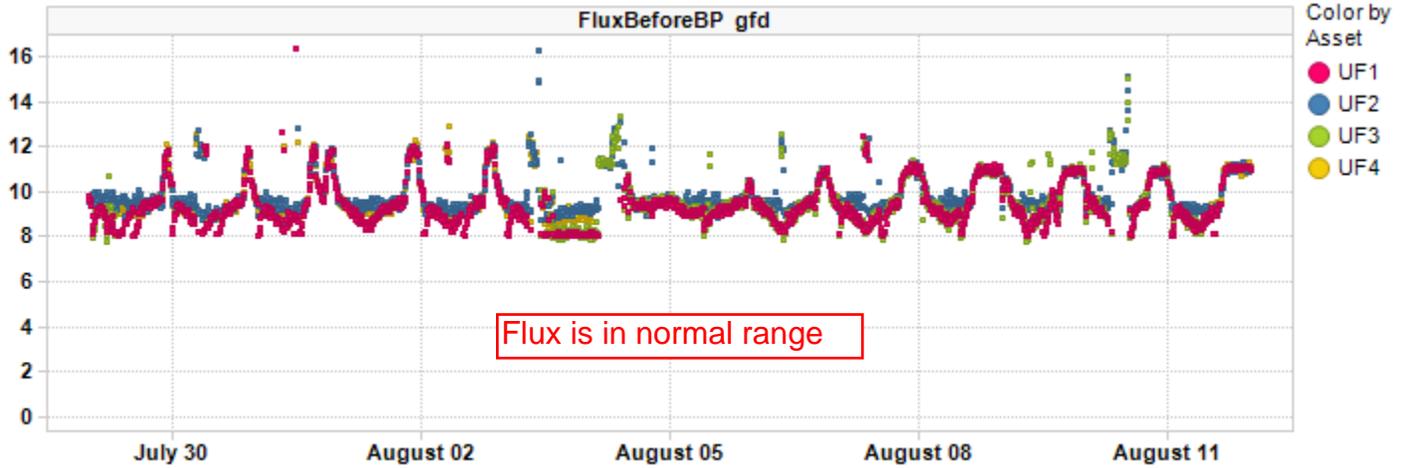
### Before BPTMP Trend



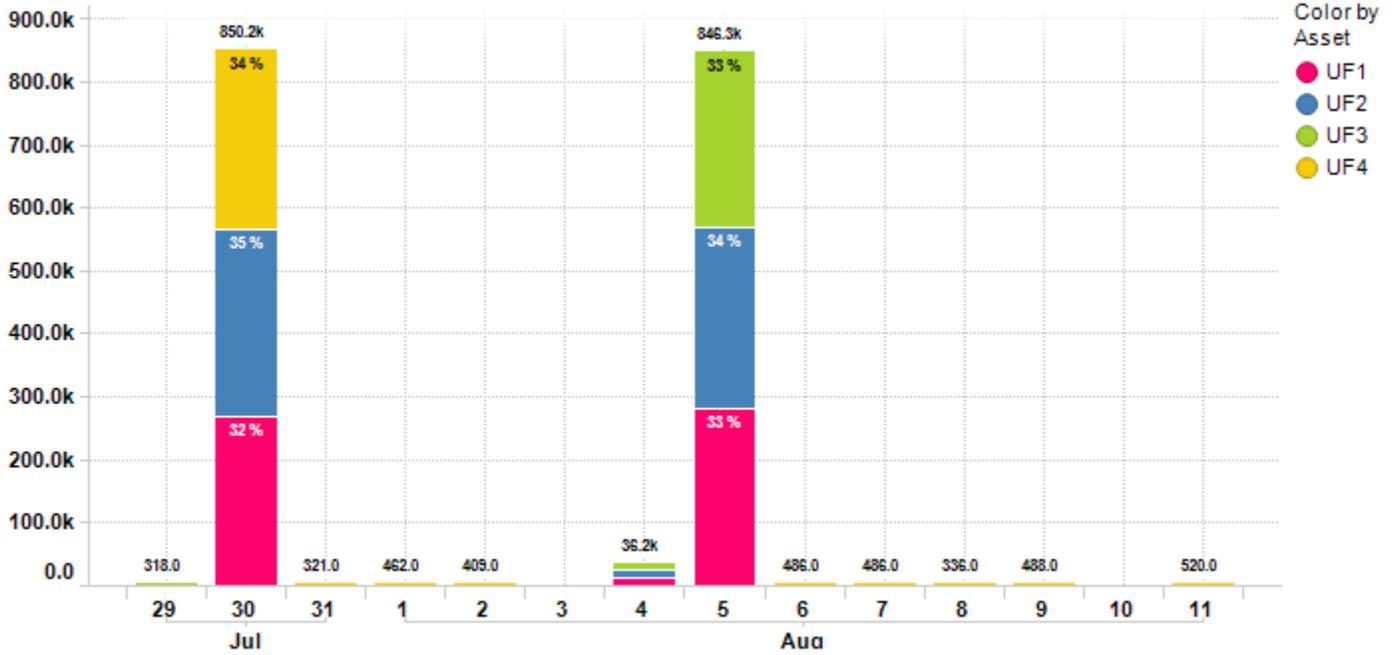
Below 1 psi is good



### Before BP Flux Trend



### Daily Permeate Flow



Average Daily permeate flow from 7/29/2020 to 8/11/2020 is 144.6k gal with a maximum daily flow of 850.2k gal.

### Plant Summary

KPI Parameters	Value/Change	UF Plant
TotalPermeateFlowDaily gal	Value	165.65k
	Change	50.95 %



### Asset Summary

KPI Parameters	Value/Change	UF1	UF2	UF3	UF4
FluxBeforeBP gfd	Value	9.46	9.86	9.56	9.70
	Change	-1.48 %	-1.83 %	2.45 %	-1.46 %
FluxDuringBP gfd	Value	18.82	18.54	18.66	18.78
	Change	7.22 %	4.94 %	8.89 %	7.91 %
PermeateTurbidityAfterBP NTU	Value	0.07	0.95	0.20	0.24
	Change	5.74 %	-5.03 %	85.69 %	100.00 %
TCPermeabilityBeforeBP gfd/psi	Value	14.21	14.58	26.85	25.27
	Change	12.97 %	8.54 %	15.78 %	17.56 %
TMPBeforeBP psi	Value	0.56	0.57	0.30	0.33
	Change	-19.89 %	-17.16 %	-23.45 %	-27.33 %
TotalPermeateFlowDaily gal	Value	51.28k	59.52k	24.29k	25.98k
	Change	42.70 %	56.38 %	-2.01 %	98.67 %

Contract Expiry Date : (Empty)

For InSight technical assistance please email [insight.src@suez.com](mailto:insight.src@suez.com) or please call technical support at 1 866 271 5425 or 905 469 7723 and follow the prompts, if you require after hours assistance please contact the 24/7 Emergency number provided in your plant documentation. This email is a summary of issues identified during a manual review of InSight data from the time period above. This review is an analysis of data that is logged by InSight and identifies key plant performance issues determined from this data. This data review was not focused on minor data issues but on identifying possible existing and/or upcoming critical operational issues.

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# LEWES BPW WWTP Biweekly InSight Report

**Date:** 8/26/2020

From: Erin Horocholyn - Suez Water Technologies & Solutions  
 To: Dave Weed, Darrin Gordon  
 cc: Matt Stapleford - Suez Water Technologies & Solutions

## System Equipment

4 × ZW trains, each train consists of 4 - 500D cassettes, 120 modules x 370 sq. ft. per train (surface area 44,400 sq. ft. per train)

Replacement membranes installed Q1 2020 on all 4 trains

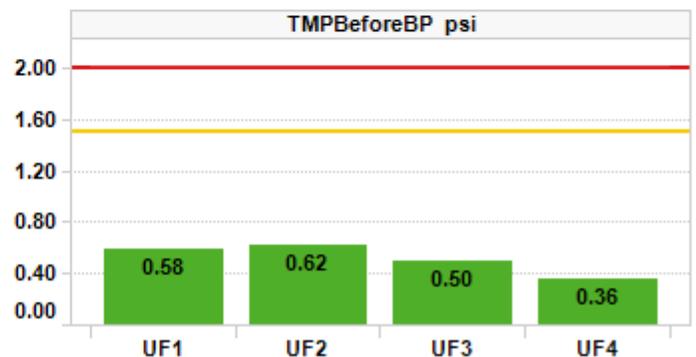
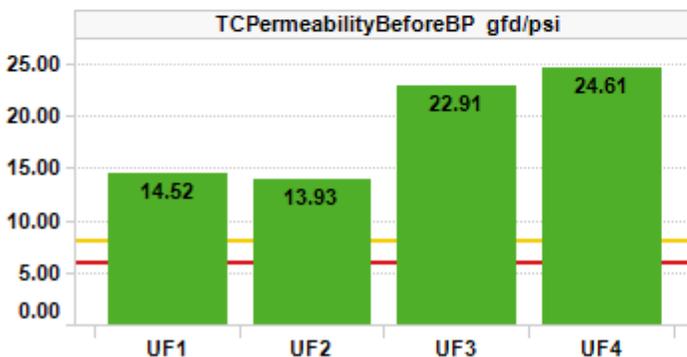
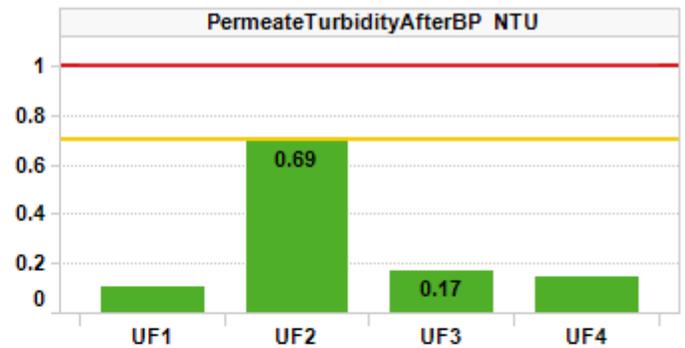
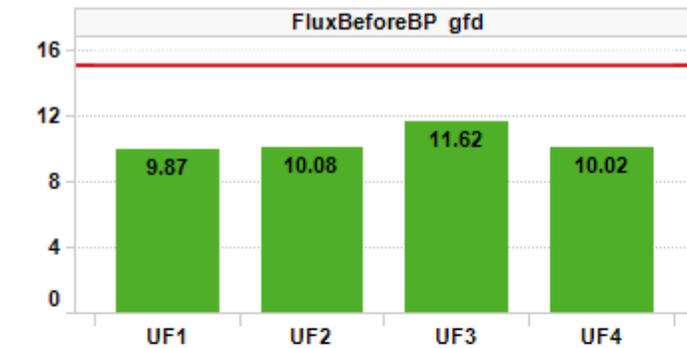
## Cleaning Strategy

Recovery cleaning - 2 NaOCl @ 2000 ppm dose/1000 ppm soak per year, 1 Citric acid @ 2000 ppm per year

Maintenance cleaning - 1 NaOCl per week @ 200 ppm, 1 Citric acid per week @ 2000 ppm

## KPI Dashboard – Avg values through reporting period

■ Action Required  
■ Caution  
■ No Limits  
■ Normal

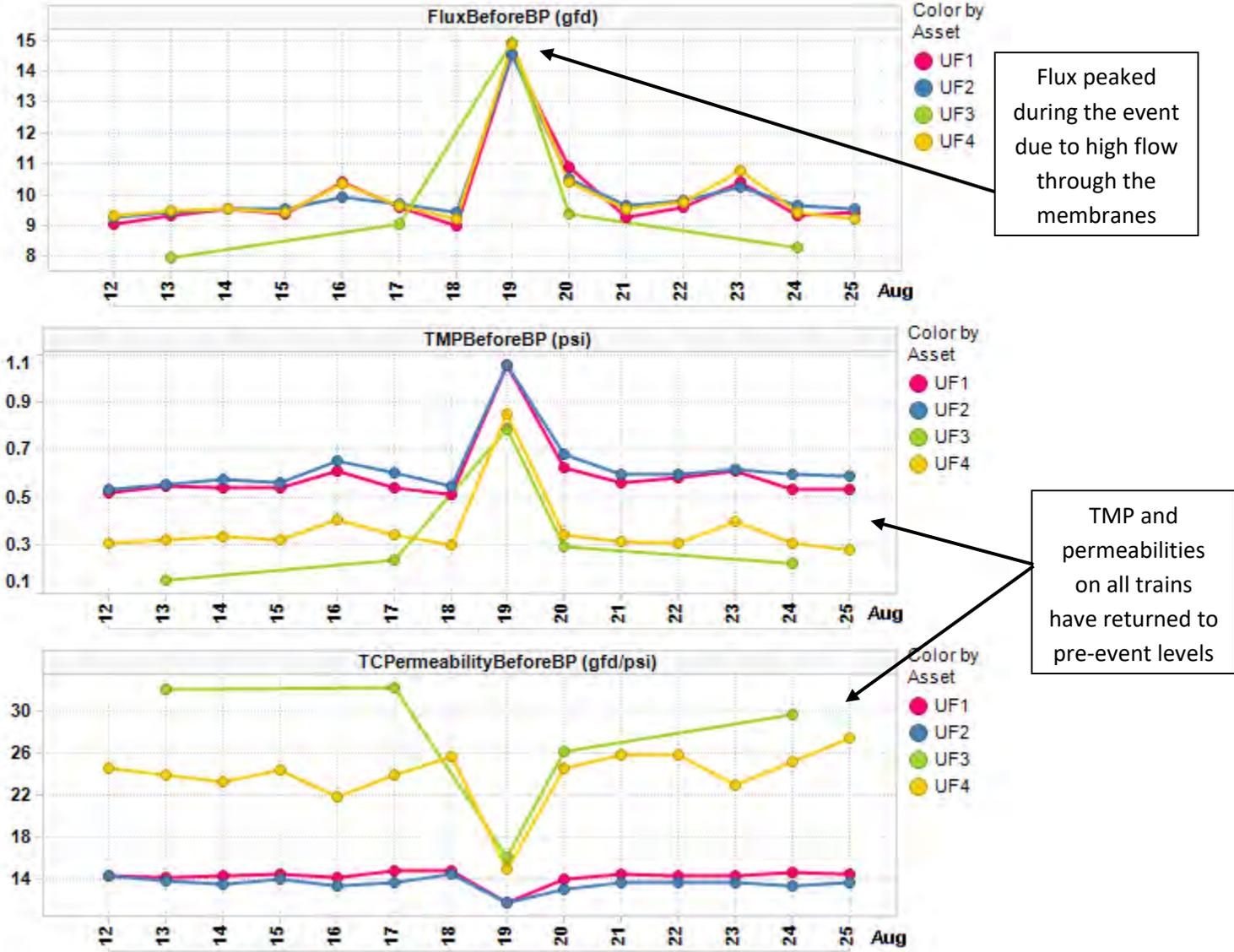


Peak events due to plant shutdown on the 19th. Plant returned to normal levels on the 20th.

**Plant Summary**

Overall, the plant operated well in terms of permeability and TMP.

Suez is aware of the plant spill on August 19<sup>th</sup> 2020, and we are working with the site to determine the cause of the incident. There is so far no indication of long-lasting impacts on the membranes of performance following the event; permeabilities and TMPs quickly restored to pre-event levels once flux decreased. Daily median values are shown in the plots below, which highlight the average membrane performance before, during, and after the Aug 19 event.



- TC permeability BBP was good on all trains, and excellent on trains UF3 and UF4. UF1 and UF2 averaged 14.52 and 13.98 gfd/psi respectively. UF3 and UF4 averaged 22.91 and 24.61 respectively. For reference, TC permeability BBP is considered good above 8 gfd/psi
- TMP was great on all trains. UF1 and UF2 averaged 0.58 – 0.62 psi, while UF3 and UF4 averaged 0.50 and 0.36 psi. For reference, excellent TMP is below 1.0 psi
- Permeate turbidity was above 1.0 NTU on UF1, UF3, and UF4, averaging 0.10, 0.17, and 0.14 respectively. UF2 permeate turbidity has decreased 37% since the last report, but still has a high weekly average of 0.69. There were no turbidity spikes on UF3, as was seen on the last report when UF3 came out of Standby and into Production, possibly from air trapped in the permeate header. For reference, excellent turbidity is less than 0.1 NTU, and good turbidity less than approximately 0.3 NTU

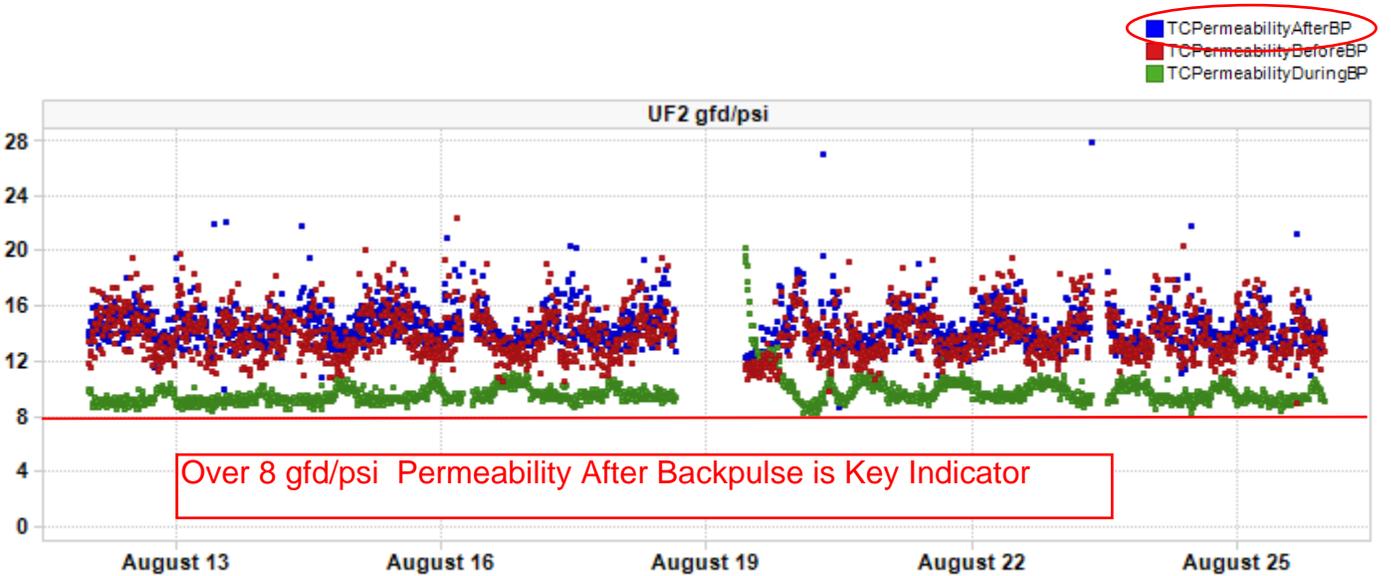
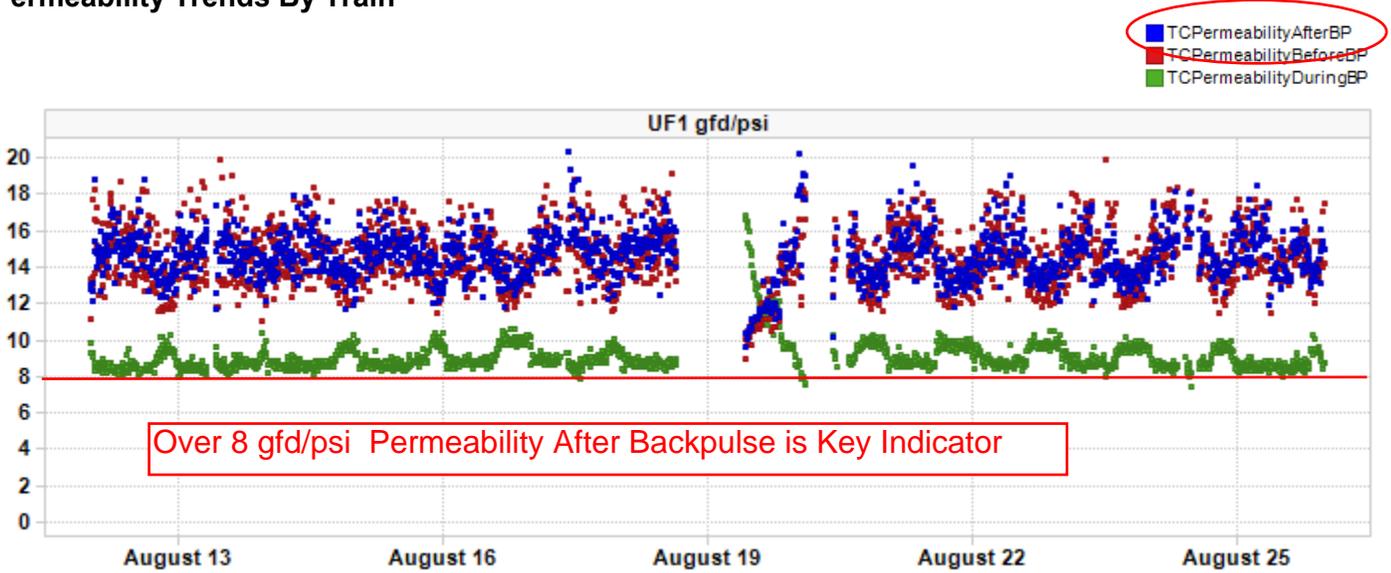


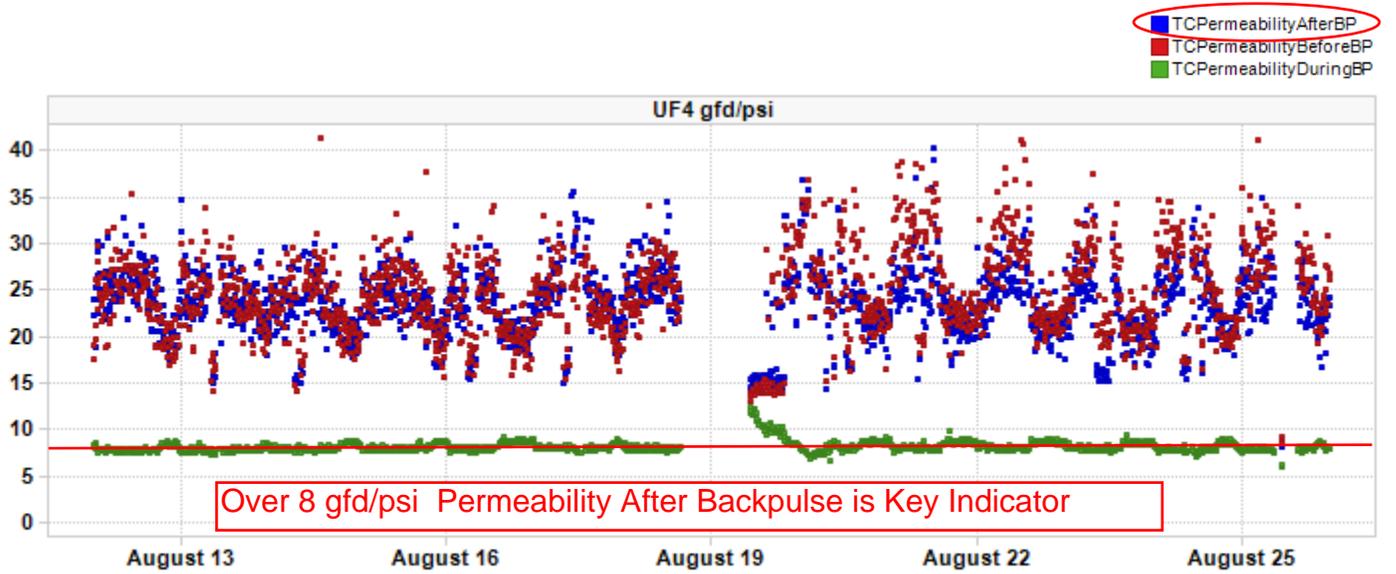
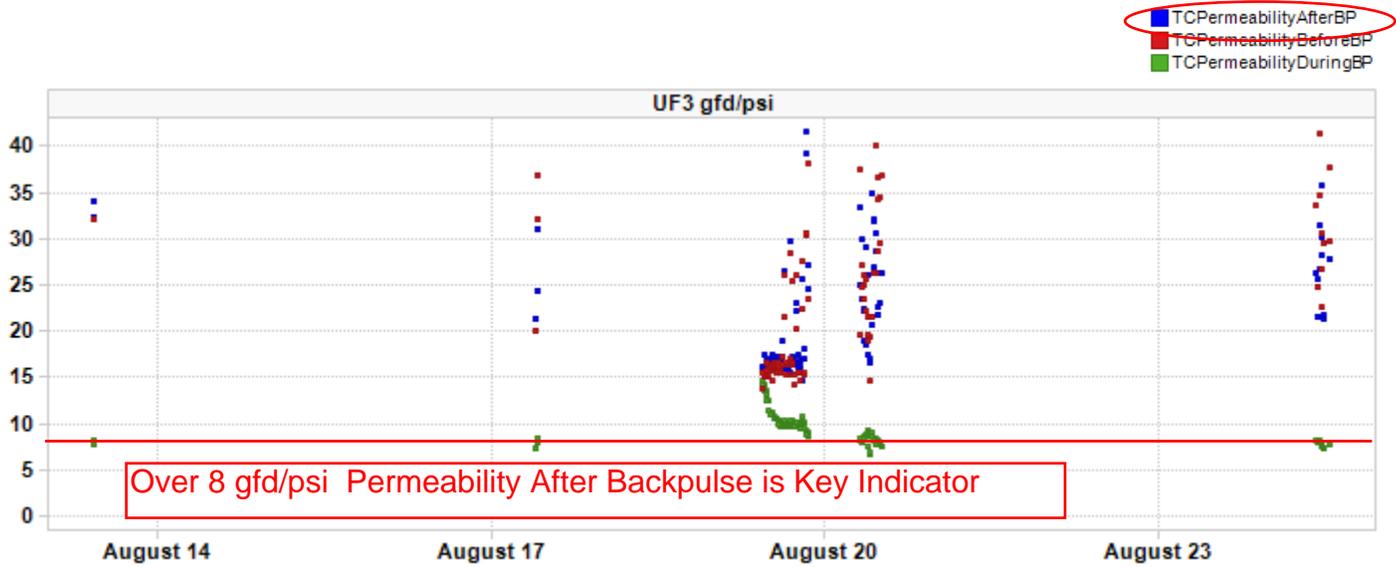
- Daily permeate production was 41.9 kgal on August 13<sup>th</sup>, and 14.5 kgal on August 22<sup>nd</sup>. Daily totals from these two days are lower than the previous report average of 848 kgal on days producing permeate. Other days had negligible permeate flow

Acronyms:

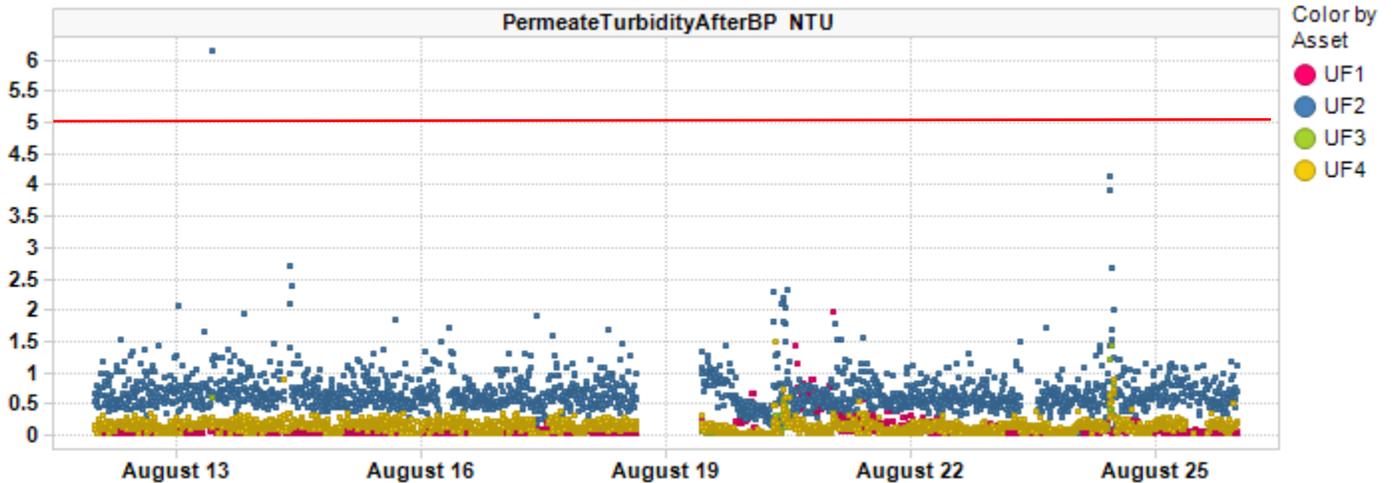
TC = temperature corrected, BBP = before backpulse, RC = recovery clean, TMP = trans membrane pressure

**TC Permeability Trends By Train**





### Permeate Turbidity Trend

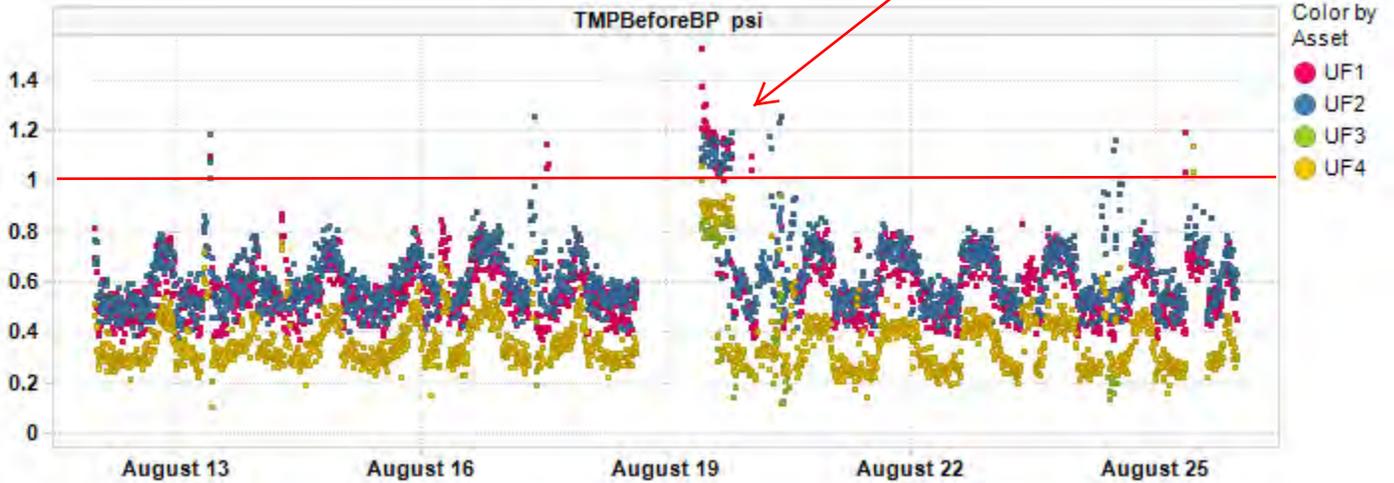


5 NTU is alarm level.

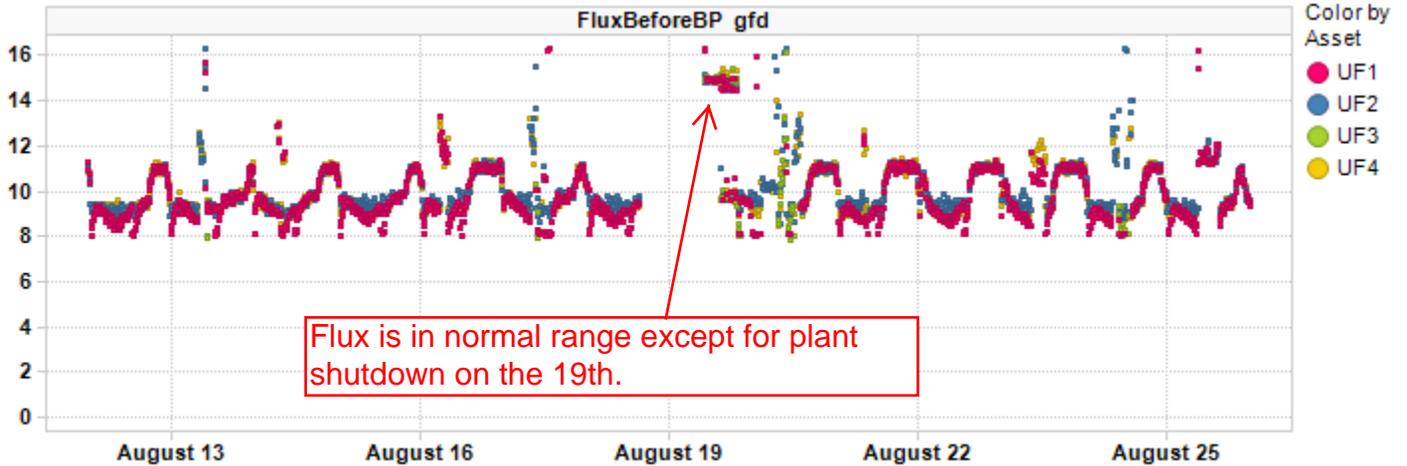


Issues during restart of plant after plant shutdown on the 19th.

Before BPTMP Trend

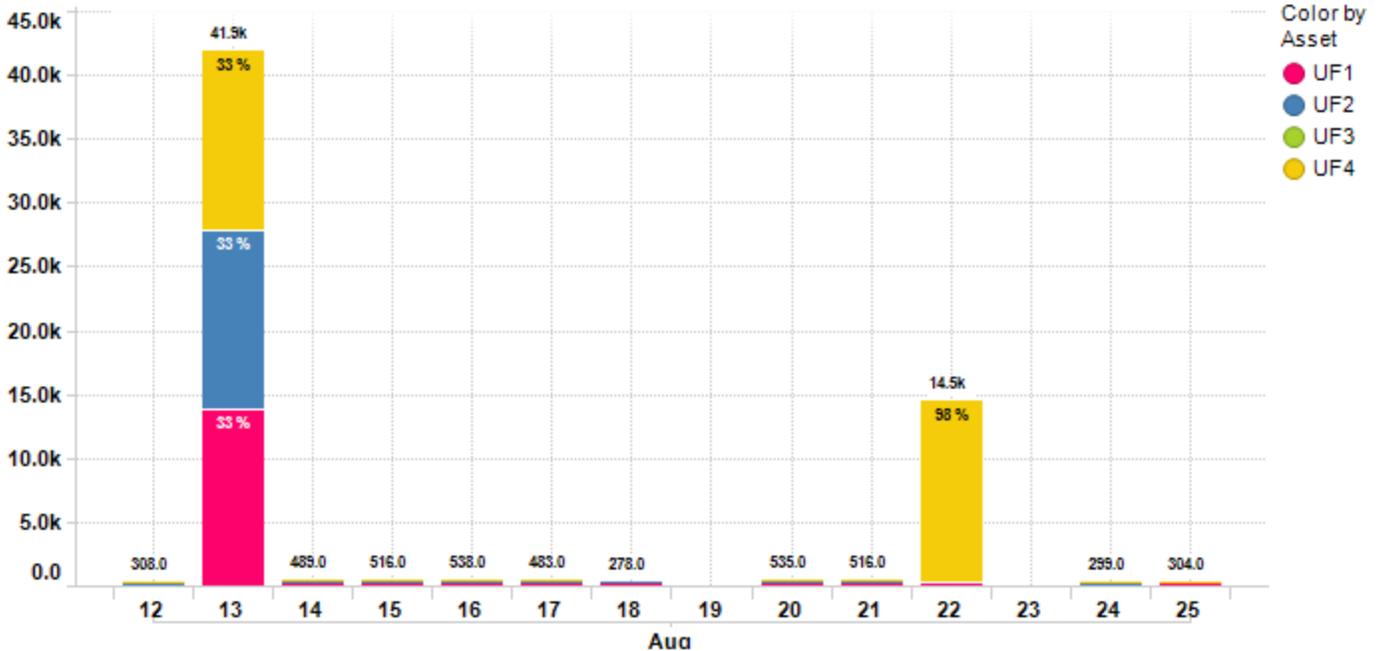


Before BP Flux Trend



Flux is in normal range except for plant shutdown on the 19th.

Daily Permeate Flow



Average Daily permeate flow from 8/12/2020 to 8/25/2020 is 5.0k gal with a maximum daily flow of 41.9k gal.



### Asset Summary

KPI Parameters	Value/Change	UF1	UF2	UF3	UF4
FluxBeforeBP gfd	Value	9.87	10.08	11.62	10.02
	Change	4.16 %	2.17 %	17.74 %	3.23 %
FluxDuringBP gfd	Value	18.83	18.53	18.69	18.76
	Change	0.03 %	-0.04 %	0.19 %	-0.10 %
PermeateTurbidityAfterBP NTU	Value	0.10	0.69	0.17	0.14
	Change	32.13 %	-37.22 %	-19.18 %	-68.13 %
TCPermeabilityBeforeBP gfd/psi	Value	14.52	13.93	22.91	24.61
	Change	2.17 %	-4.63 %	-17.18 %	-2.69 %
TMPBeforeBP psi	Value	0.58	0.62	0.50	0.36
	Change	4.22 %	8.45 %	39.59 %	8.40 %
TotalPermeateFlowDaily gal	Value	1.54k	1.42k	0.00	2.70k
	Change	-3229.0...	-4100.9...	0.00 %	-863.72 %

### Plant Summary

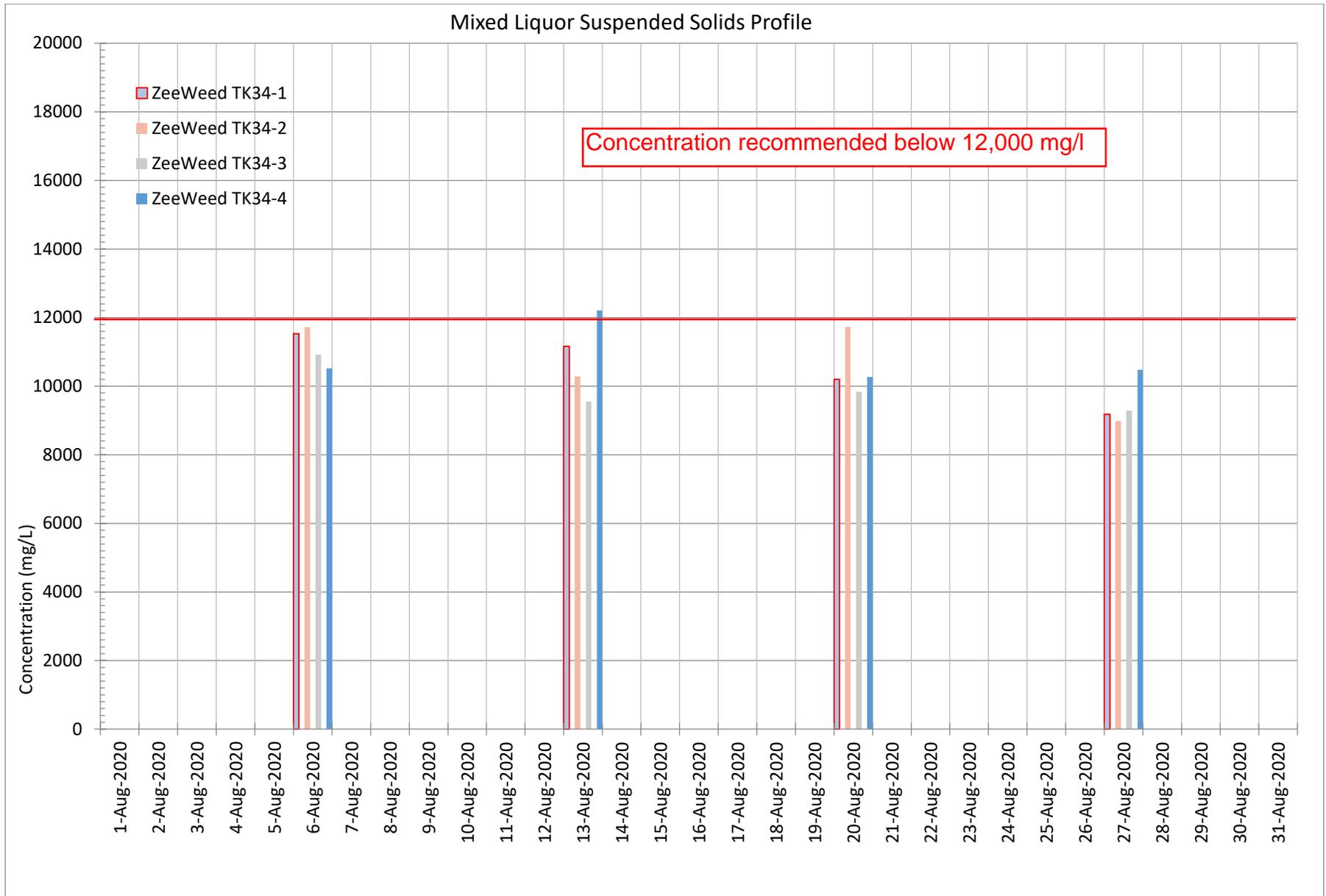
KPI Parameters	Value/Change	UF Plant
TotalPermeateFlowDaily gal	Value	4.22k
	Change	-3821.88 %

Contract Expiry Date : (Empty)

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Lewes WWTP



**PUMP STATION 196**

Aug-20		PS 196	
		METER READING	24 HOUR FLOW
SAT	1	71625130	0.130920
SUN	2	71756050	0.135210
MON	3	71891260	0.123070
TUE	4	72014330	0.132040
WED	5	72146370	0.139340
THUR	6	72285710	0.125560
FRI	7	72411270	0.135640
SAT	8	72546910	0.137990
SUN	9	72684900	0.135730
MON	10	72820630	0.128150
TUE	11	72948780	0.119530
WED	12	73068310	0.121910
THUR	13	73190220	0.127320
FRI	14	73317540	0.129420
SAT	15	73446960	0.129530
SUN	16	73576490	0.139160
MON	17	73715650	0.125270
TUE	18	73840920	0.129560
WED	19	73970480	back to wolfeneck
THUR	20	74090176	0.119934
FRI	21	74210110	0.130390
SAT	22	74340500	0.139170
SUN	23	74479670	0.142890
MON	24	74622560	0.129510
TUE	25	74752070	0.121070
WED	26	74873140	0.119350
THUR	27	74992490	0.121060
FRI	28	75113550	0.127770
SAT	29	75241320	0.147270
SUN	30	75388590	0.137780
MON	31	75526370	0.054198
TOTAL		75580568	3.835742
COUNT			30
AVERAGE			0.127858
MINIMUM			0.054198
MAXIMUM			0.147270

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)



PERMITTEE NAME/ADDRESS (include Facility Name/Location if different):

NAME: Howard Seymour Water Reclamation Plant  
 ADDRESS: 116 American Legion Road, Lewes, DE 19958 US  
 FACILITY: Howard Seymour Water Reclamation Plant  
 LOCATION: 116 American Legion Road, Lewes, DE 19958 US

DE0021512 PERMIT NUMBER  
 001 DISCHARGE NUMBER  
 MONITORING PERIOD FROM 2020 08 01 TO 2020 08 31  
 REPORT DESIGNATOR  
 DATA ENTRY COMPLETE  
 REPORT SUBMITTED BY  
 STATUS OF SUBMISSION

A  
 9/16/2020  
 jmarion@tuiwater.com  
 Submitted for Signature

#	PARAMETER	NDI	QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE
			AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
1/1	Flow	SAMPLE MEASUREMENT	0.7711	0.8663	Mil Gal/Day				--	0	99/99	RCOTOT
	Gross Effluent (50050)	PERMIT REQUIREMENT	No Limit   Monitoring Req'd	No Limit   Monitoring Req'd	Mil Gal/Day	No Monitoring Required	No Monitoring Required	No Monitoring Required	--	--	99/99	RCOTOT
1/2	Dissolved oxygen (DO)	SAMPLE MEASUREMENT			--	2.74		4.12	mg/l	0	99/99	Imersion
	Gross Effluent (00300)	PERMIT REQUIREMENT	No Monitoring Required	No Monitoring Required	--	No Limit   Monitoring Req'd	No Monitoring Required	No Limit   Monitoring Req'd	mg/l	--	99/99	Imersion
1/3	pH	SAMPLE MEASUREMENT			--	7.4		7.7	Std pH Units	0	01/01	Grab
	Gross Effluent (00400)	PERMIT REQUIREMENT	No Monitoring Required	No Monitoring Required	--	6	No Monitoring Required	9	Std pH Units	--	01/01	Grab
1/4	Enterococcus	SAMPLE MEASUREMENT			--		<1	<1	CFU/100 ML	0	01/07	Grab
	Gross Effluent (31639)	PERMIT REQUIREMENT	No Monitoring Required	No Monitoring Required	--	No Monitoring Required	10	104	CFU/100 ML	--	01/07	Grab
1/5	BOD5	SAMPLE MEASUREMENT	<2.4	<2.4	lbs/Day		<1.8	<16.09	mg/l	0	01/07	Composite 24
	Gross Effluent (00310)	PERMIT REQUIREMENT	188	288	lbs/Day	No Monitoring Required	15	23	mg/l	--	01/07	Composite 24
1/6	BOD5	SAMPLE MEASUREMENT			--		210.75	257	mg/l	0	01/30	Composite 24
	Raw Sewage (00310)	PERMIT REQUIREMENT	No Monitoring Required	No Monitoring Required	--	No Monitoring Required	No Limit   Monitoring Req'd	No Limit   Monitoring Req'd	mg/l	--	01/30	Composite 24
1/7	TSS	SAMPLE MEASUREMENT			lbs/Day		<1.25	<2	mg/l	0	01/07	Composite 24
	Gross Effluent (00530)	PERMIT REQUIREMENT	188	288	lbs/Day	No Monitoring Required	15	23	mg/l	--	01/07	Composite 24

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED, BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION. THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.	[ATTACH DIGITAL SIGNATURE RECEIPT FROM CROMERR]	TELEPHONE	DATE	
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		YEAR	MO

NDI (No Data Indicator) Reasons: 8 - No Sample (Other); 9 - No Sample (Monitoring Not Required this Monitoring Period); B - Not Detected; C - No Sample (No Discharge)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)



PERMITTEE NAME/ADDRESS (include Facility Name/Location if different):

NAME: Howard Seymour Water Reclamation Plant  
 ADDRESS: 116 American Legion Road, Lewes, DE 19958 US  
 FACILITY: Howard Seymour Water Reclamation Plant  
 LOCATION: 116 American Legion Road, Lewes, DE 19958 US

DE0021512 PERMIT NUMBER  
 001 DISCHARGE NUMBER  
 MONITORING PERIOD FROM 2020 08 01 TO 2020 08 31

REPORT DESIGNATOR: A  
 DATA ENTRY COMPLETE: 9/16/2020  
 REPORT SUBMITTED BY: jmarion@tuiwater.com  
 STATUS OF SUBMISSION: Submitted for Signature

#	PARAMETER		NDI	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE	
				AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM				UNITS
2/1	TSS	SAMPLE MEASUREMENT				--		276	377	mg/l	0	01/30	Composite 24
	Raw Sewage (00530)	PERMIT REQUIREMENT	-	No Monitoring Required	No Monitoring Required	--	No Monitoring Required	No Limit   Monitoring Req'd	No Limit   Monitoring Req'd	mg/l	--	01/30	Composite 24
2/2	Total Nitrogen	SAMPLE MEASUREMENT		33.83	32.63	lbs/Day		5.26	5.26	mg/l	0	01/30	Composite 24
	Gross Effluent (00600)	PERMIT REQUIREMENT	-	100	No Limit   Monitoring Req'd	lbs/Day	No Monitoring Required	8	No Limit   Monitoring Req'd	mg/l	--	01/30	Composite 24
2/3	Phosphorus, Total	SAMPLE MEASUREMENT		7.59	7.32	lbs/Day		1.18	1.18	mg/l	0	01/30	Composite 24
	Gross Effluent (00665)	PERMIT REQUIREMENT	-	25	No Limit   Monitoring Req'd	lbs/Day	No Monitoring Required	2	No Limit   Monitoring Req'd	mg/l	--	01/30	Composite 24

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.	[ATTACH DIGITAL SIGNATURE RECEIPT FROM CROMERR]	TELEPHONE	DATE
		TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	YEAR MO DAY

NDI (No Data Indicator) Reasons: 8 - No Sample (Other); 9 - No Sample (Monitoring Not Required this Monitoring Period); B - Not Detected; C - No Sample (No Discharge)

# LEWES WWTF

## NUTRIENT OFFSET REPORT

MONTH	Days	Average Monthly Flow	Monthly Average TN	Total Monthly TN Discharged	TN Based 11.8 lbs Manure Offset Required	Poultry Manure Relocated		Poultry Manure Offset Balance	Monthly Average TP	Total Monthly TP Discharged	TP Based 11.8 lbs Manure Offset Required
		MGD	mg/L	Lbs.	Lbs.	Tons	Lbs.	Lbs.	mg/L	Lbs.	Lbs.
Carry Over								3,195,312.26			
January	31	0.6789	7.74	1358.55	16030.85		-	3,179,281.41	0.15	26.33	310.68
February	29	0.8255	1.16	231.60	2732.88		-	3,176,548.53	0.06	11.58	136.64
March	31	0.8058	1.15	239.58	2827.06		-	3,173,721.47	0.07	14.58	172.08
April	30	0.6604	0.90	148.71	1754.76		-	3,171,966.70	0.51	84.27	994.37
May	31	0.7431	2.52	484.15	5712.91		-	3,166,253.79	1.71	328.53	3876.62
June	30	0.9442	1.97	465.39	5491.61		-	3,160,762.18	1.31	309.47	3651.78
July	31	0.9745	1.16	292.26	3448.65		-	3,157,313.53	1.45	365.32	4310.82
August	31	0.7711	5.26	1048.63	12373.89		-	3,144,939.64	1.18	235.25	2775.89
September	30			0.00	0.00		-	3,144,939.64		0.00	0.00
October	31			0.00	0.00		-	3,144,939.64		0.00	0.00
November	30			0.00	0.00		-	3,144,939.64		0.00	0.00
December	31			0.00	0.00		-	3,144,939.64		0.00	0.00
Year Balance								3,144,939.64			

Comments:

  
 \_\_\_\_\_  
 Authorized Signatory

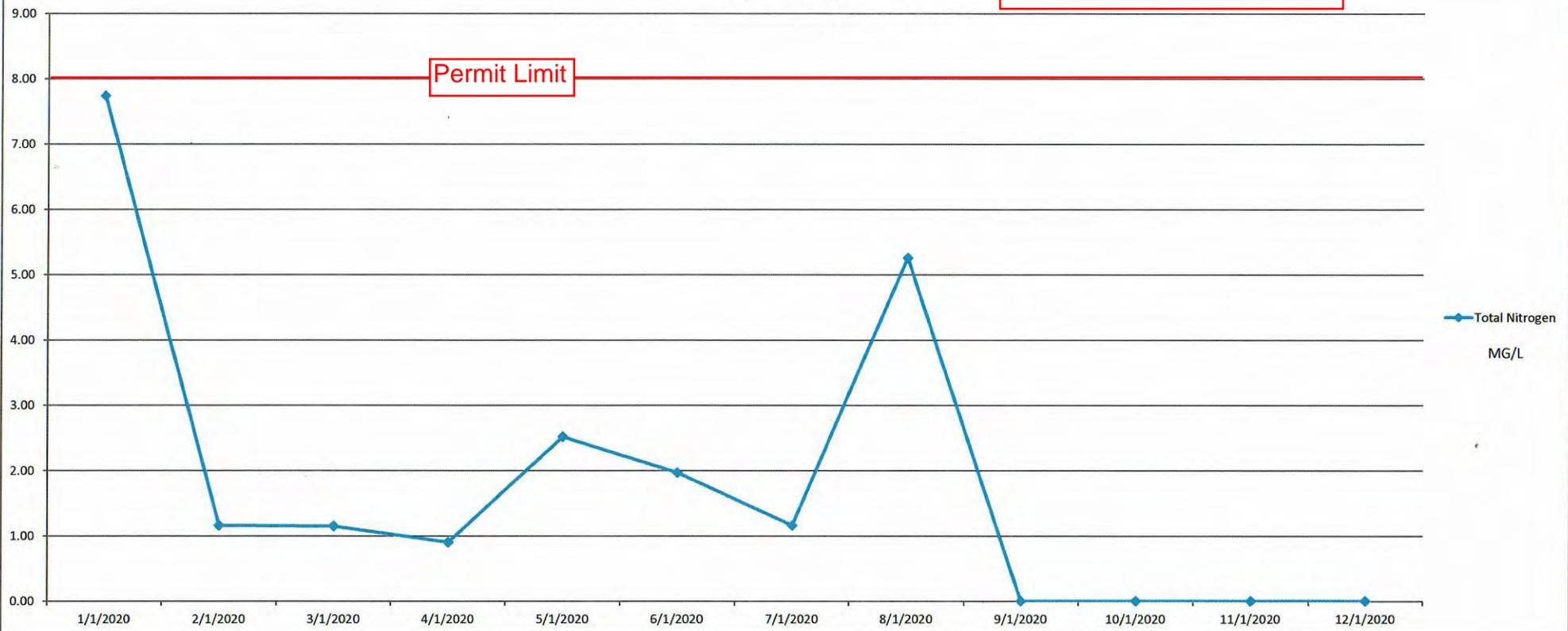
9/11/2020

DATE

# Total Nitrogen

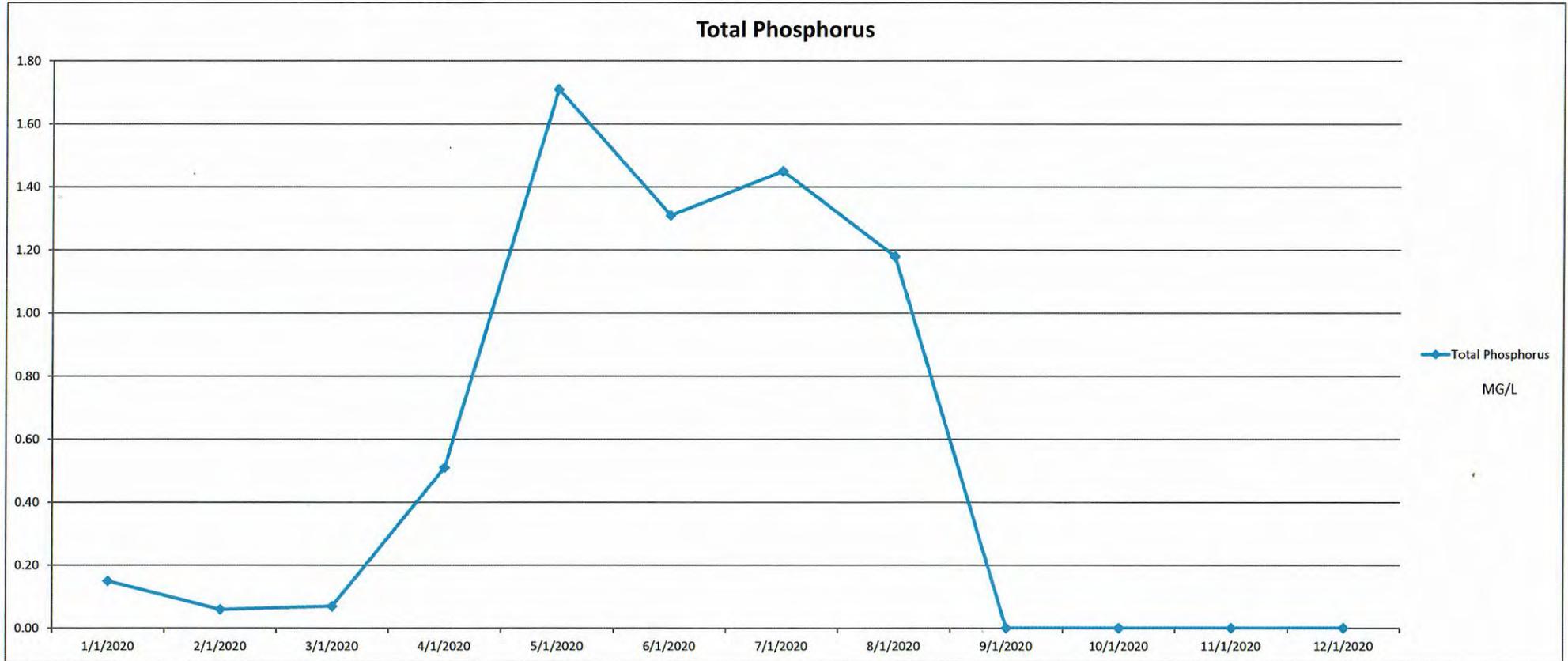
There is no max permit limit

Permit Limit

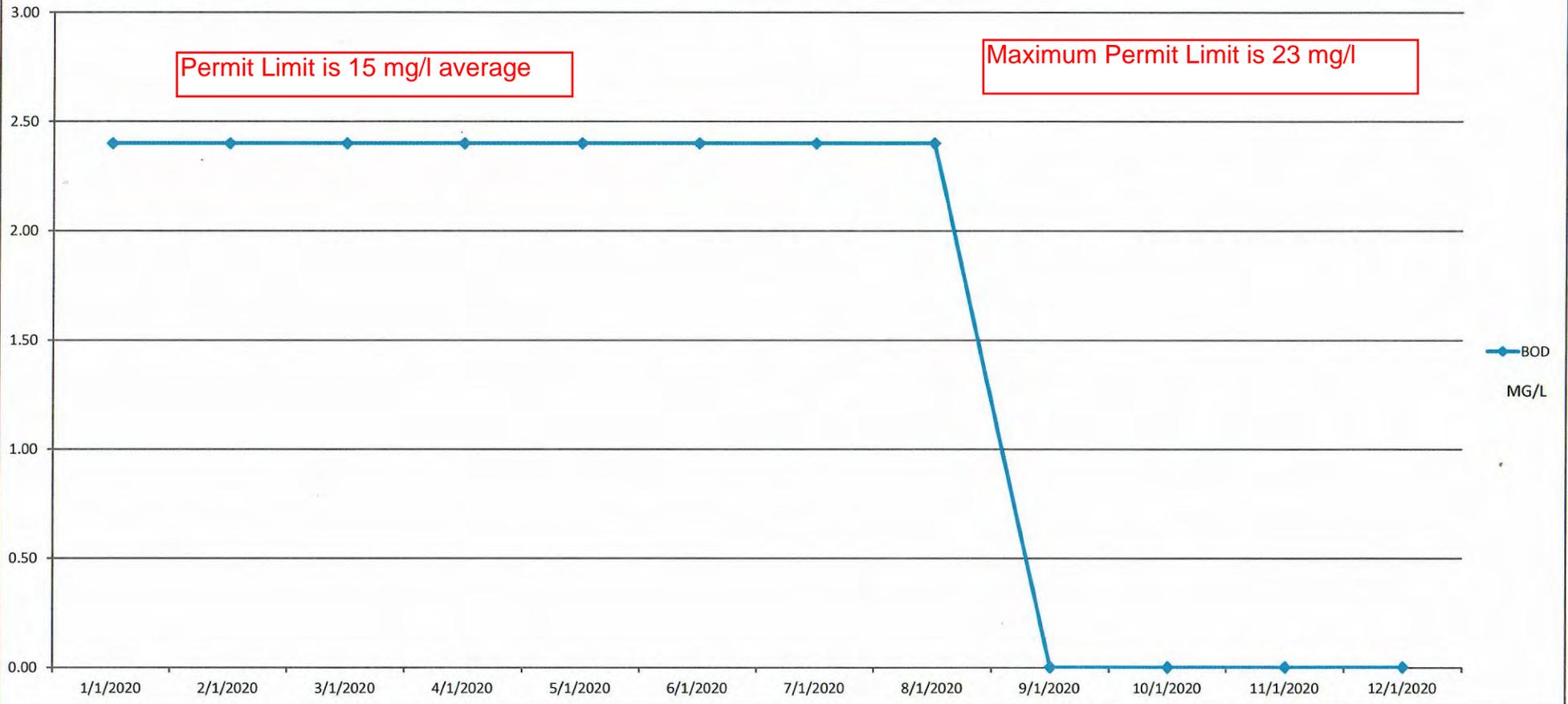


Permit Limit is 2 mg/l average.

There is no Maximum Permit Limit.



# BOD



Permit Limit is 15 mg/l average

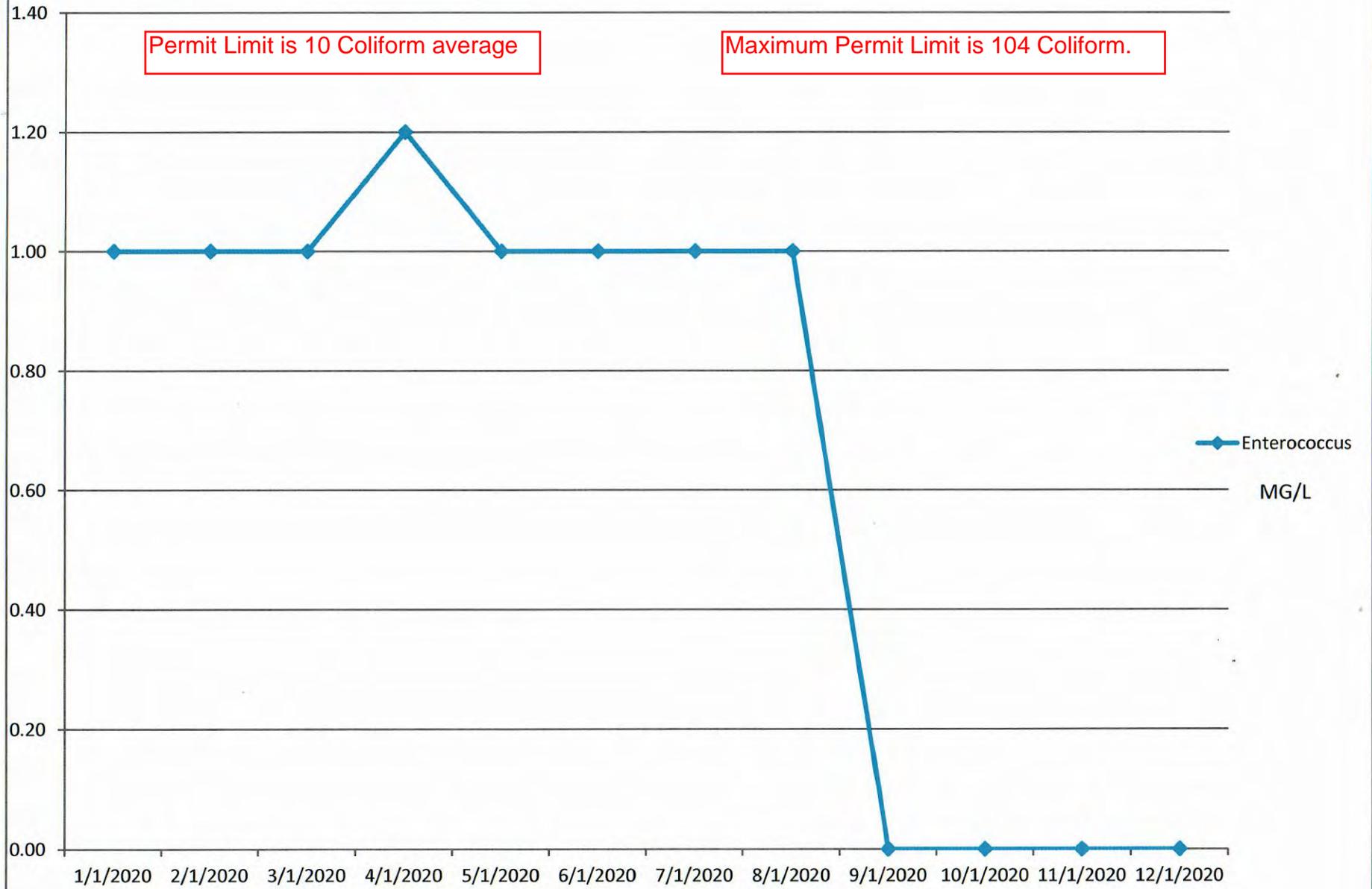
### TSS

Maximum Permit Limit is 23 mg/l



TSS  
MG

# Enterococcus



WHITE MARSH ENVIRONMENTAL SYSTEMS, INC.  
MONTHLY OPERATING REPORT - LEWES WASTEWATER TREATMENT PLANT  
ROOT CAUSE REPORT - CORRECTIVE ACTIONS SUMMARY - August 2020

Action Item	Due Date	Action Owner	Status Open/ Complete/ Ongoing	Comments/Notes
1. Replace all four trains of filter membranes	May 2020	BPW	Complete	Installation is complete.
2. Reset Turbidity set-point to Manufacture recommended setting	February 2020	WMES	Complete	Reset as of February 13, 2020.
3. Replace all four Turbidity monitors with new models that have additional functionality, including the ability to alarm on loss of flow.	February 2020	WMES	Complete	New model turbidity monitors installed as of February 13, 2020.
4. Have the BPW consulting engineers and BPW staff perform Quarterly WWTF walk through to evaluate the field condition, maintenance records, compliance records and the operation and maintenance of the WWTF.	February 2020	BPW	Complete	GMB performed their first walkthrough for the BPW on February 18, 2020. Paul Peris of WMES accompanied GMB on the walkthrough. WMES received a copy of the report from the first walkthrough on 4-30-20. <b>Second walkthrough was performed on 5-19-20.</b>
5. Review and update the plant Operation and Maintenance Manual to ensure that the current plant configuration is captured, including other updates such as Suez's recommendation on chemical and mechanical cleaning	5/1/2020	BPW	Complete	Darrin Gordon issued an Updated Suez O and M Manual in electronic format to WMES representative on March 3, 2020. WMES is maintaining the electronic version and a hard copy desk version on-site at the Howard H. Seymour Water Reclamation Facility.
6. Issue Contract with Suez to remotely collect data (Insight-Pro) and provide cloud-based access to the data for BPW and plant operator. Suez will monitor and trend data, provide bi-weekly reporting and cleaning recommendations. Suez will provide an annual summary report.	5/1/2020	BPW	Complete	Suez notified the BPW and WMES that the PLC was shipped on April 29, 2020. When the PLC is received by the BPW, it will be installed by the BPW's consultant (Keystone) in consultation with Suez. Programming of new panel scheduled for week of 6-15-20. Suez technician was onsite 6/15/20 to upload the programming for the new control panel. The Insight system is no online due to communication issues. BPW, Josh Gritton, is working with Suez and Keystone to solve the issue. <b>7/30/20 - Insight system is online and communicating to Suez as of 6/10/20.</b>
7. Perform an engineering analysis of the entire plant to identify ways to improve redundancy and reliability of the plant, including:	6/30/2020	BPW	Open	
a. Review current screen design to determine if there is a way to remove more of the "soft and spongy" material to reduce filter fouling	6/30/2020	BPW	Open	
b. Potential for splitting the four filter trains to have them operate in a redundant parallel configuration	6/30/2020	BPW	Open	
c. Configuration of turbidity meters to provide better protection against use of dirty water during back flush cycle	6/30/2020	BPW	Open	
8. WMES to establish an improvement program for monitoring of plant performance to be evaluated and accepted by BPW. The Corrective Actions contained in the WMES report are not detailed enough to provide assurance to BPW that the plant is being operated to industry Best Practices	5/16/2020	WMES	Complete	Included in April Monthly Report to BPW.
9. Improve reporting requirements from WMES to BPW for:	5/16/2020	WMES	Complete/Ongoing	Started in April Monthly Report to BPW.
a. Off-normal conditions at the plant	5/16/2020	WMES	Complete/Ongoing	Started in April Monthly Report to BPW.
b. Discharges outside of Permit limits	5/16/2020	WMES	Complete/Ongoing	Started in April Monthly Report to BPW.
c. OSHA accidents	5/16/2020	WMES	Complete/Ongoing	Started in April Monthly Report to BPW.
d. Details included in monthly reports (to include trending of performance data, trending of equipment failures, preventative maintenance required, suggested capital improvements and other concerns)	5/16/2020	WMES	Complete/Ongoing	Started in April Monthly Report to BPW.

**WHITE MARSH ENVIRONMENTAL SYSTEMS, INC.**  
**MONTHLY OPERATING REPORT - LEWES WASTEWATER TREATMENT PLANT**  
**ROOT CAUSE REPORT - CORRECTIVE ACTIONS SUMMARY - August 2020**

<b>Action Item</b>	<b>Due Date</b>	<b>Action Owner</b>	<b>Status Open/ Complete/ Ongoing</b>	<b>Comments/Notes</b>
e. WMES to present their report at the monthly BPW meeting	5/16/2020	WMES	Complete/Ongoing	Started in April Monthly Report to BPW.
f. Require, as per the contract, a detailed yearly reporting on the operation of the plant to include the items listed in a. through d. above	1/15/2021	WMES	Open	To be included in Annual Report to BPW beginning with the 2020 Annual Report.
10. BPW staff to strengthen its oversight of Operators performance				
a. Through the review of trending data in monthly and annual reports	5/16/2020	BPW	Complete/Ongoing	BPW indicates that its staff will commence this as part of the April monthly report process.
b. Schedule routine plant walk through with plant WMES management	5/16/2020	BPW	Complete/Ongoing	BPW indicates that its staff will commence this as part of the April monthly report process.
c. Annual review of WMES Policies and Procedures	5/16/2020	BPW	Complete/Ongoing	BPW indicates that its staff will commence this as part of the April monthly report process.
d. Reporting to the BPW Board of condition of the plant	5/16/2020	BPW	Complete/Ongoing	BPW indicates that its staff will commence this as part of the April monthly report process.
e. Developing of an open Item tracking system	5/16/2020	BPW	Complete/Ongoing	BPW indicates that its staff will commence this as part of the April monthly report process.
11. BPW Board of Directors to review its oversight function of the operation of the BPW.				
a. Continue to use outside subject matter experts such as Sargent and Lundy, Suez, GMB, etc. to provide the Board with guidance on the condition of the BPW systems	Annually	BPW	Open	To be completed annually by BPW. Schedule to be determined and added to tracking list that will be developed in Corrective Action 10. e.
b. Perform audit by a sub-group of the Board of the BPW operation and management systems				
12. WMES to develop plans for operating plant in off-normal conditions. BPW provided WMES with a Best Practices template and copy of the prior operating company plan. This should include, but not be limited to:	4/16/2020	WMES/BPW	Complete/Open	WMES portion complete, to be submitted as part of the amended March 2020 Monthly Report to the BPW. BPW portion Open; to be done by BPW Engineering Consultant.
a. Loss of filter membrane	4/16/2020	WMES/BPW	Complete/Open	WMES portion complete, to be submitted as part of the amended March 2020 Monthly Report to the BPW. BPW portion Open; to be done by BPW Engineering Consultant.
b. Digesters	4/16/2020	WMES/BPW	Complete/Open	WMES portion complete, to be submitted as part of the amended March 2020 Monthly Report to the BPW. BPW portion Open; to be done by BPW Engineering Consultant.
c. Other critical equipment	4/16/2020	WMES/BPW	Complete/Open	WMES portion complete, to be submitted as part of the amended March 2020 Monthly Report to the BPW. BPW portion Open; to be done by BPW Engineering Consultant.
d. Loss of Power	4/16/2020	WMES/BPW	Complete/Open	WMES portion complete, to be submitted as part of the amended March 2020 Monthly Report to the BPW. BPW portion Open; to be done by BPW Engineering Consultant.
e. Storm response	4/16/2020	WMES/BPW	Complete/Open	WMES portion complete, to be submitted as part of the amended March 2020 Monthly Report to the BPW. BPW portion Open; to be done by BPW Engineering Consultant.
f. Security Breach	4/16/2020	WMES/BPW	Complete/Open	WMES portion complete, to be submitted as part of the amended March 2020 Monthly Report to the BPW. BPW portion Open; to be done by BPW Engineering Consultant.
g. Terrorist/cyber terrorist attack	4/16/2020	WMES/BPW	Complete/Open	WMES portion complete, to be submitted as part of the amended March 2020 Monthly Report to the BPW. BPW portion Open; to be done by BPW Engineering Consultant.
13. BPW to look at other areas of its operation to determine if there are generic implications from the failure at the WWTF				
a. Evaluate the operation of the Water Department, electrical department and other areas of BPW operation to determine where improvements in Management practices are needed.	Undetermined	BPW	Open	Status: In process – Sargent & Lundy is currently performing a review of the BPW electrical system and will provide input to BPW for future capital projects and areas of improvement. Review quarterly at monthly BPW meeting

WHITE MARSH ENVIRONMENTAL SYSTEMS, INC.  
MONTHLY OPERATING REPORT - LEWES WASTEWATER TREATMENT PLANT  
ROOT CAUSE REPORT - CORRECTIVE ACTIONS SUMMARY - August 2020

Action Item	Due Date	Action Owner	Status Open/ Complete/ Ongoing	Comments/Notes
14. Require all WMES operational staff to have appropriate training by Suez on the proper operation and maintenance of the filters and plant	5/16/2020	WMES	Complete	Information included in April Monthly Report to BPW. WMES continues to follow-up with Suez on any training opportunities. Covid-19 pandemic has caused previously scheduled opportunities to be cancelled. Suez is looking at potentially having virtual training sessions. Suez will notify WMES if this becomes available. <b>Suez providing training on the Insight system on August 13, 2020. Train is complete.</b>
15. WMES to review its safety manual to verify they are complying with the appropriate CDC guidelines and industry best practices for sanitary conditions. Post the appropriate areas of the plant as no-smoking/no-eating	4/16/2020	WMES	Complete	Commitment due as part of the March 2020 Monthly Report to the BPW.
16. WMES to review its safety practices and plant conditions to determine what changes may be required. Note: The Temporary cabling that was installed to protect employees appears to create other safety concerns.	4/16/2020	WMES	Complete	Commitment due as part of the March 2020 Monthly Report to the BPW.
17. BPW to audit WMES safety procedures and practices to included:				
a. Lock-out/Tag-out of equipment	April 2020	BPW	Complete	Documents are in a binder at the Lewes WWTP
b. Confined entry permit	April 2020	BPW	Complete	Documents are in a binder at the Lewes WWTP
c. Personal Protective Equipment	April 2020	BPW	Complete	Documents are in a binder at the Lewes WWTP
d. General Housekeeping	April 2020	BPW	Complete	Documents are in a binder at the Lewes WWTP
e. Chemical control and handling	April 2020	BPW	Complete	Documents are in a binder at the Lewes WWTP
18. WMES to provide a monthly update on its Corrective Actions to BPW	4/16/2020	WMES	Ongoing	<b>Started</b> as part of the March 2020 Monthly Report to the BPW.
19. BPW Staff to provide an update on the status of the above Corrective Actions at routine monthly BPW meetings. This will be part of the standing agenda for the meetings	4/16/2020	BPW	Ongoing	Initially due as part of the review process of the March 2020 Monthly Report to the BPW.