

# **PUMP STATION 196**

MAR 22		PS 196	
		METER READING	24 HOUR FLOW
TUE	1	6694860	0.207906
WED	2	6902766	0.205928
THU	3	7108694	0.230087
FRI	4	7338781	0.239582
SAT	5	7578363	0.249496
SUN	6	7827859	0.248066
MON	7	8075925	0.244396
TUE	8	8320321	0.237352
WED	9	8557673	0.251914
THU	10	8809587	0.237344
FRI	11	9046931	0.238936
SAT	12	9285867	0.271669
SUN	13	9557536	0.248745
MON	14	9806281	0.242529
TUE	15	10048810	0.231510
WED	16	10280320	0.240780
THU	17	10521100	0.246530
FRI	18	10767630	0.248040
SAT	19	11015670	0.261320
SUN	20	11276990	0.260540
MON	21	11537530	0.251310
TUE	22	11788840	0.303268
WED	23	12092108	0.099072
THU	24	12191180	0.127900
FRI	25	12319080	0.117740
SAT	26	12436820	0.123020
SUN	27	12559840	0.127840
MON	28	12687680	0.120030
TUE	29	12807710	0.118300
WED	30	12926010	0.116280
THU	31	13042290	0.120560
TOTAL COUNT AVERAGE		13162850	6.467990
MINIMUM			0.099072
MAXIMUM			0.303268

flow back to WolfeNeck

at 10:30am

W

W

W

W

W

W

W

Wolfe Neck total flow

31 1,070,742 gals.

Lewes total flow

5,397,248 gals.



## 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

## DISCHARGE MONITORING REPORT (DMR)

PERMIT NUMBER DE0021512  
DISCHARGE NUMBER 001  
REPORT DESIGNATOR A  
DATA ENTRY COMPLETE 3/28/2022  
REPORT SUBMITTED BY richardplack  
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			
1/1	Flow		0.695	0.796	Mil Gal/Day				0	99/99	RCOTOT
	Gross Effluent (50050)	-	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)				--	5.77		8.94	0	99/99	Imersion
	Gross Effluent (00300)	-	No Monitoring Required	No Monitoring Required	--	No Limit   Monitoring Req'd	No Monitoring Required	No Limit   Monitoring Req'd	-	99/99	Imersion
1/3	pH				--	7		8.3	0	01/01	Grab
	Gross Effluent (00400)	-	No Monitoring Required	No Monitoring Required	--	6	No Monitoring Required	9	-	01/01	Grab
1/4	Enterococcus				--		<1	<1	0	01/07	Grab
	Gross Effluent (31639)	-	No Monitoring Required	No Monitoring Required	--	No Monitoring Required	10	104	-	01/07	Grab
1/5	BOD5		<15	20	lbs/Day		<2.7	3.5	0	01/07	Composite 24
	Gross Effluent (00310)	-	188	288	lbs/Day	No Monitoring Required	15	23	-	01/07	Composite 24
1/6	BOD5				--		169	169	0	01/30	Composite 24
	Raw Sewage (00310)	-	No Monitoring Required	No Monitoring Required	--	No Monitoring Required	No Limit   Monitoring Req'd	No Limit   Monitoring Req'd	-	01/30	Composite 24
1/7	TSS		<5	<10	lbs/Day		<0.9	<2	0	01/07	Composite 24
	Gross Effluent (00530)	-	188	288	lbs/Day	No Monitoring Required	15	23	-	01/07	Composite 24

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

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

*Richard Plack*

TYPED OR PRINTED

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 HAVE BEEN TRAINED AND MONITORED TO OBTAIN DATA ACCURATELY AND TO REPORT THE DATA TO THE PERSONS WHO MANAGE THE SYSTEM. ON THOSE PERSONS WHO OBTAIN DATA IN ACCORDANCE WITH THE SYSTEM, 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)

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE

302-260-1794

DATE

2022 3 28

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)

DNREC DISCHARGE MONITORING REPORT - DMR1 (EPA FORM 3320-1 (Rev. 10-96) USED AS TEMPLATE), 2016.

PRINTED:

3/28/2022 4:16 PM

PAGE 1 OF 2



# NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

## DISCHARGE MONITORING REPORT (DMR)

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

REPORT DESIGNATOR  
 DATA ENTRY COMPLETE  
 REPORT SUBMITTED BY  
 STATUS OF SUBMISSION

A  
 3/28/2022  
 richardblack  
 Submitted for Signature

#	PARAMETER	NDI	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE
			AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM			
2/1	TSS										
			SAMPLE MEASUREMENT								
			PERMIT REQUIREMENT								
	Raw Sewage (00530)		No Monitoring Required	No Monitoring Required	--	No Monitoring Required	No Limit   Monitoring Req'd	No Limit   Monitoring Req'd	--	01/30	Composite 24
2/2	Total Nitrogen										
			SAMPLE MEASUREMENT								
			PERMIT REQUIREMENT								
	Gross Effluent (00600)		32.8	32.8	lbs/Day	No Monitoring Required	5.52	5.52	0	01/30	Composite 24
			100	No Limit   Monitoring Req'd	lbs/Day	No Monitoring Required	8	No Limit   Monitoring Req'd	--	01/30	Composite 24
2/3	Phosphorus, Total										
			SAMPLE MEASUREMENT								
			PERMIT REQUIREMENT								
	Gross Effluent (00665)		0.7	0.7	lbs/Day	No Monitoring Required	0.12	0.12	0	01/30	Composite 24
			25	No Limit   Monitoring Req'd	lbs/Day	No Monitoring Required	2	No Limit   Monitoring Req'd	--	01/30	Composite 24

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

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

Richard Black

TYPED OR PRINTED

[ATTACH DIGITAL SIGNATURE RECEIPT FROM CROMERR]

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE

302 260 1794

DATE

3/28/2022  
 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)

DNREC DISCHARGE MONITORING REPORT - DMR1 (EPA FORM 3320-1 (Rev. 10-96) USED AS TEMPLATE), 2016.

PRINTED:

3/28/2022 4:16 PM

PAGE 2 OF 2

# Submission Receipt

Copy of Record: 73739 Confirmation ID: r202232873739

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Site: Howard Seymour Water Reclamation  
Plant

Site ID: DE0021512

Submission: Discharge Monitoring Report for DE0021512 Howard Seymour  
Water Reclamation Plant Outfall: 001, February, 2022

File Name: 20222-3297-60749445

File Type: .pdf

Report: DMR

Status: Signed

---

Hash of Data Document:

54323e1e964bbbed339689d19a1cf1d3573a40529553286e97da3e418e48b8e28

---

Data Entry Completed: 3/28/2022  
4:16 PM

By: Richard Plack (richardplack)

E-Mail of Submitter: Richard.Plack@Inframark.com From: 172.31.25.193

Signed: 3/28/2022 4:19 PM

By: Richard Plack (richardplack)

E-Mail of Signator: Richard.Plack@Inframark.com From: 172.31.25.193

Token Used When Signed: xmPDhxXeCKRpVDF9vH8gZjxxfxvIGHxssM7yUXoQ+wY=

# LEWES WWTF

## NUTRIENT OFFSET REPORT

2022

Month	Days	Average Monthly Flow	Monthly Average TN	Total Monthly TN Discharged	TN Based 16.9 lbs Manure Offset Required	Monthly Average TP	Total Monthly TP Discharged	TP Based 285 lbs Manure Offset Required	Max Manure Equivalent	Poultry Manure Relocated	Poultry Manure Offset Balance
		MGD	mg/L	lbs	Tons	mg/L	lbs	Tons	Tons	Tons	Tons
Carry Over											540.16
January	31	0.7485	3.37	652.15	5.51	0.09	17.42	2.48	5.51	-	5.51
February	28	0.6951	5.52	896.01	7.57	0.12	19.48	2.78	7.57	-	7.57
March	31	-	-	-	-	-	-	-	-	-	-
April	30	-	-	-	-	-	-	-	-	-	-
May	31	-	-	-	-	-	-	-	-	-	-
June	30	-	-	-	-	-	-	-	-	-	-
July	31	-	-	-	-	-	-	-	-	-	-
August	31	-	-	-	-	-	-	-	-	-	-
September	30	-	-	-	-	-	-	-	-	-	-
October	31	-	-	-	-	-	-	-	-	-	-
November	30	-	-	-	-	-	-	-	-	-	-
December	31	-	-	-	-	-	-	-	-	-	-
Year Balance											527.08

Comments:



Authorized Signatory

3/28/22

Date



## Site: LEWES WWTP

[illegible]

INFLUENT						
DATE	DAY	Flow	BOD		TSS	
		MGD	mg/L	lbs	mg/L	lbs
1	Tue.		169.0		104.0	
2	Wed.					
3	Thu.					
4	Fri.					
5	Sat.					
6	Sun.					
7	Mon.					
8	Tue.					
9	Wed.					
10	Thu.					
11	Fri.					
12	Sat.					
13	Sun.					
14	Mon.					
15	Tue.					
16	Wed.					
17	Thu.					
18	Fri.					
19	Sat.					
20	Sun.					
21	Mon.					
22	Tue.					
23	Wed.					
24	Thu.					
25	Fri.					
26	Sat.					
27	Sun.					
28	Mon.					
TOTAL						
AVERAGE			169		104	
MAXIMUM			169		104	
MINIMUM			169		104	
Removal (%)						



# LEWES BPW WWTP Biweekly InSight Report

**Date:** 4/6/2022

From: Erin Horocholyn - Suez Water Technologies & Solutions

To: Austin Calaman BPW, Inframark

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)

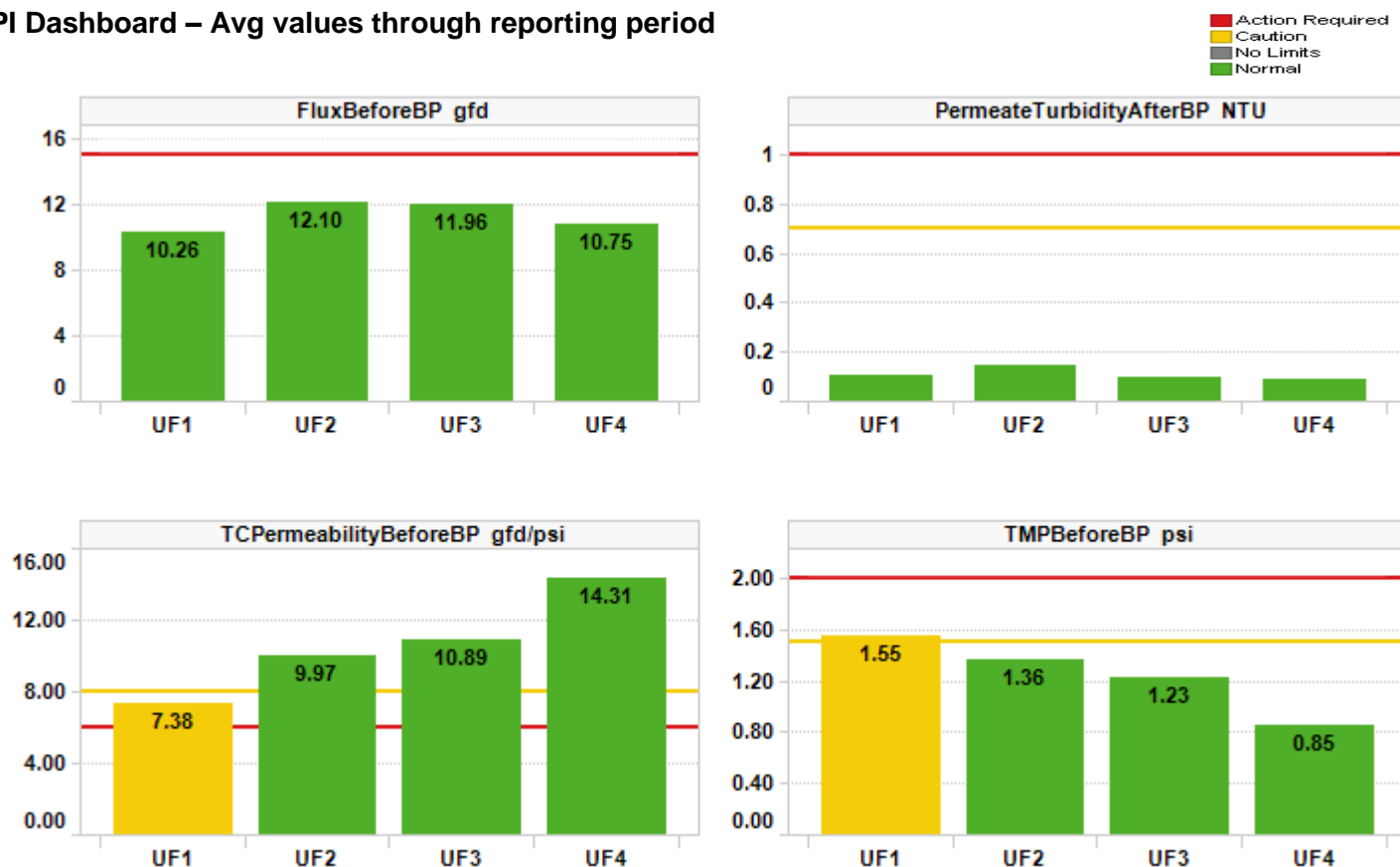
Replacement membranes installed Q1 2020 on trains UF3 and UF4

## 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

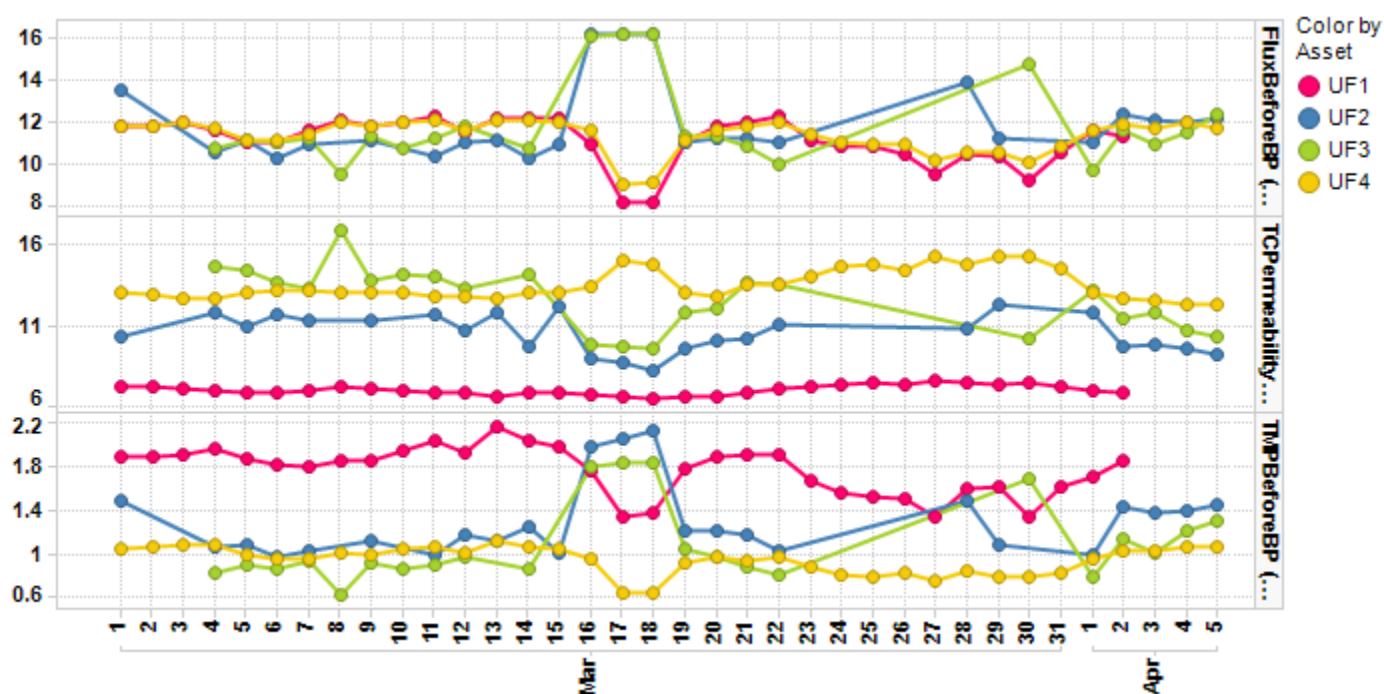
## KPI Dashboard – Avg values through reporting period



## Plant Summary

Trains UF1,2,3,4 are operating well overall in terms of KPIs. Permeability remains >8.0 gfd/psi on trains UF2,3,4 while UF1 averaged 7.4 gfd/psi. No maintenance cleans were run in this report. Alum dosing location is under consideration to move it further upstream from the membranes to ensure proper mixing and less coagulant stuck to the membranes.

- Daily permeate production averaged 0.59 MGD. UF2 and UF3 produced <10% of daily permeate between Mar 23 – April 1. After this date, UF2 and UF3 were in production more as UF1 and UF4 were shut off. Permeate temperature averaged 61°F (+1°F). All online trains are in Backpulse with constant LEAP Hi aeration. Flux averages ranged 10.3 – 12.1 across all trains
- UF1 went offline on April 2, and UF4 went offline April 5
- No maintenance cleans were run in this report's 2-week period
- Permeate turbidity ABP averages ranged from 0.09 – 0.14 NTU
- TMP BBP averaged 1.6, 1.4, 1.2, and 0.9 psi on UF1,2,3,4
- TC permeability BBP averages were >8 gfd/psi on trains UF2,3,4. TCP on UF1,2,3,4 averaged 7.4, 10.0, 10.9, and 14.3 gfd/psi overall. The plot below displays daily median averages



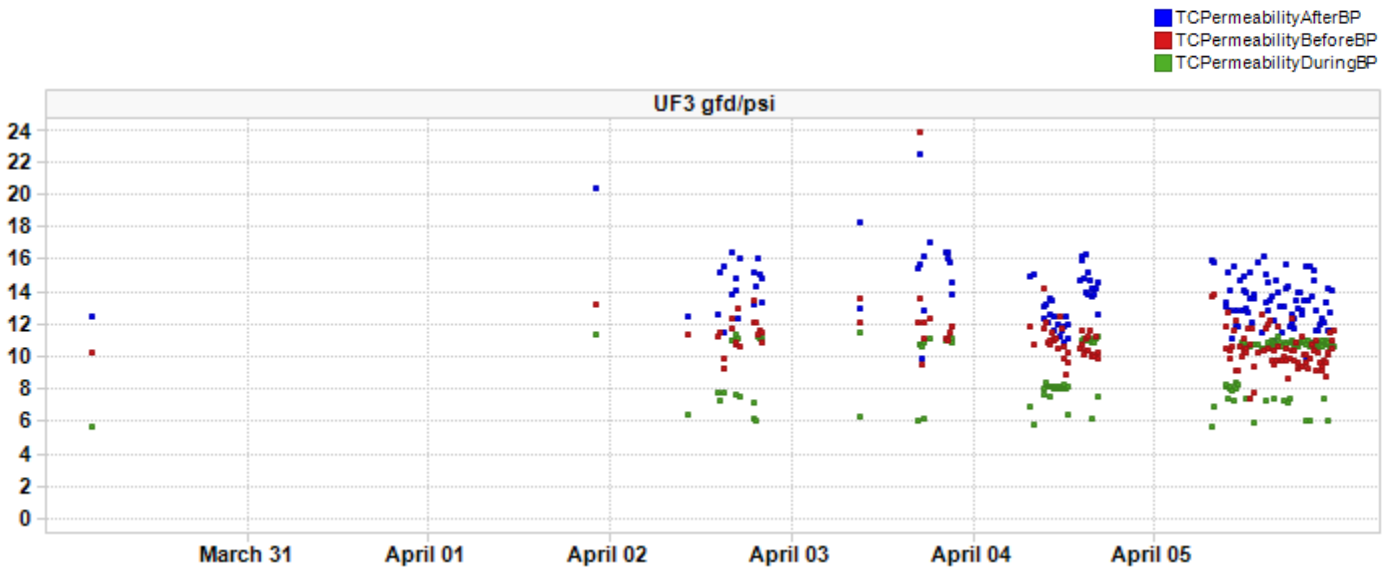
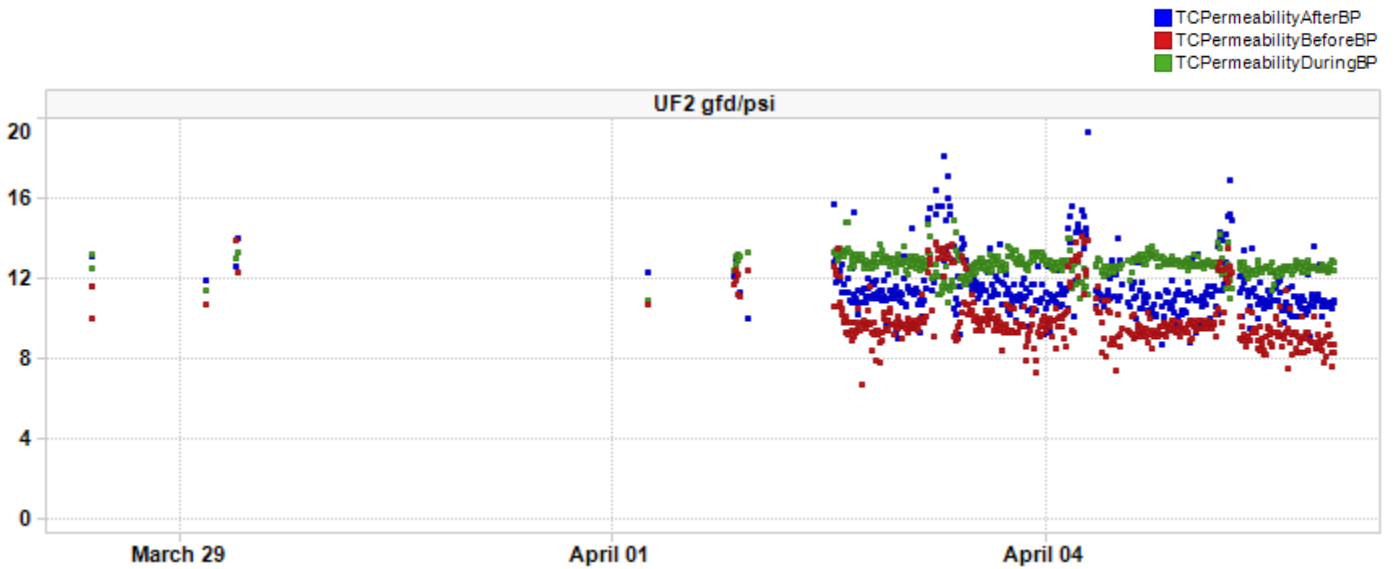
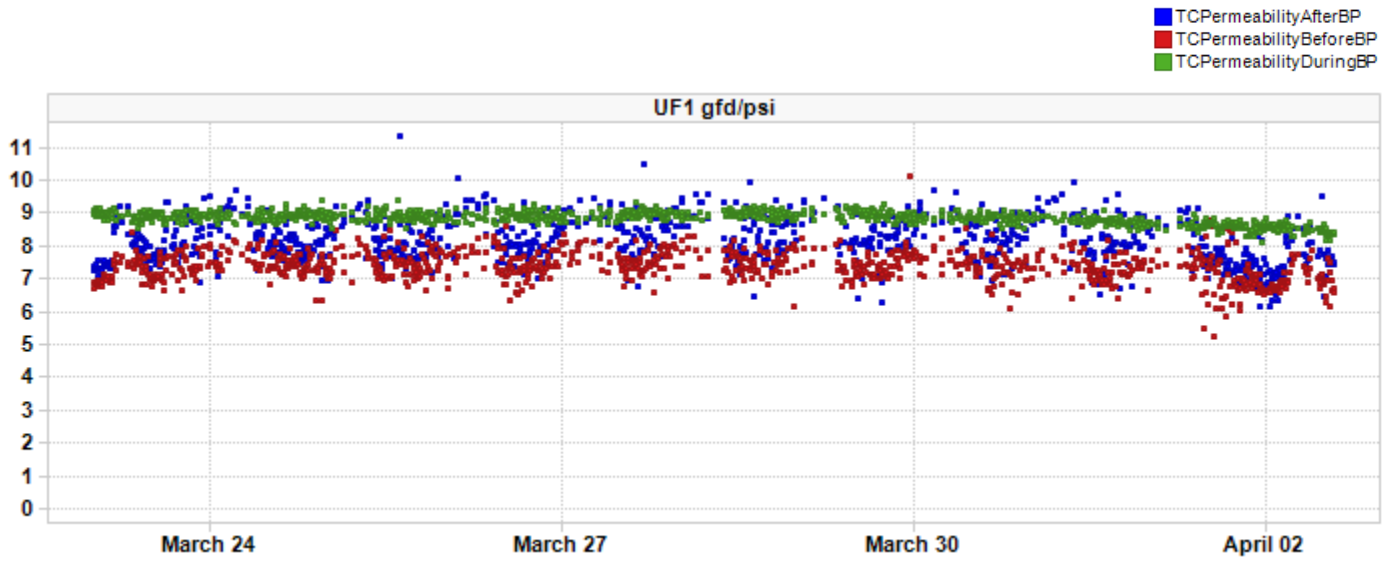
**Table 1.** Record of maintenance cleans (MCs) run.

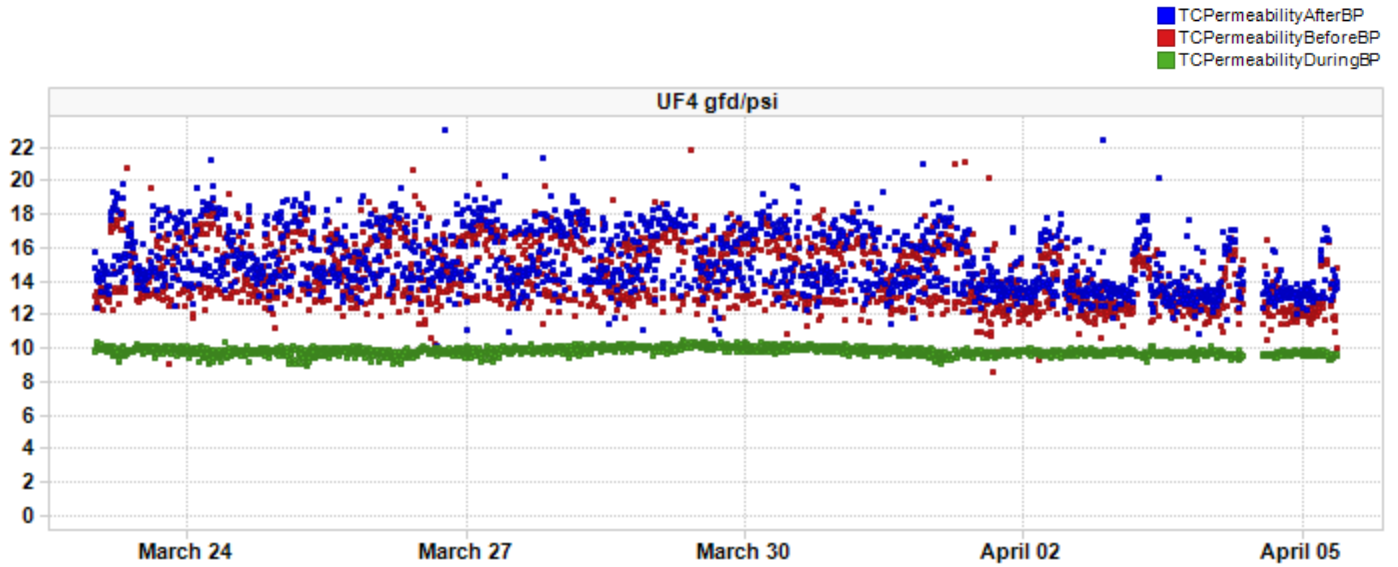
Train	UF1	UF2	UF3	UF4
# of Hypochlorite MCs	0	0	0	0
# of Citric Acid MCs	0	0	0	0

- Aerobic dissolved oxygen averaged 1.14 ppm in tank 1 and 1.70 ppm in tank 2. The pre-anoxic zone's DO averages were 0.79 ppm in tank 1, and 1.22 ppm in tank 2 which is slightly high for nitrification

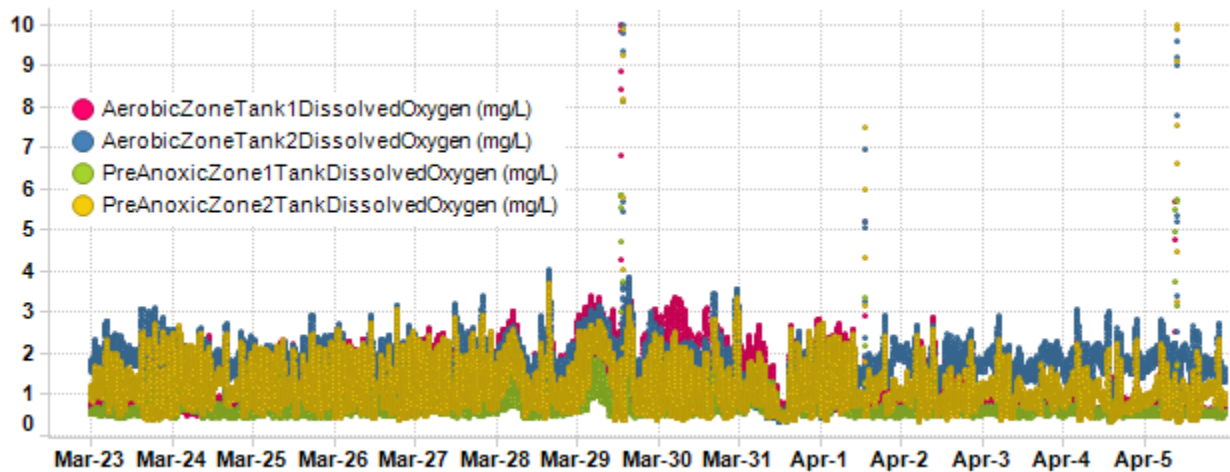


## TC Permeability Trends By Train

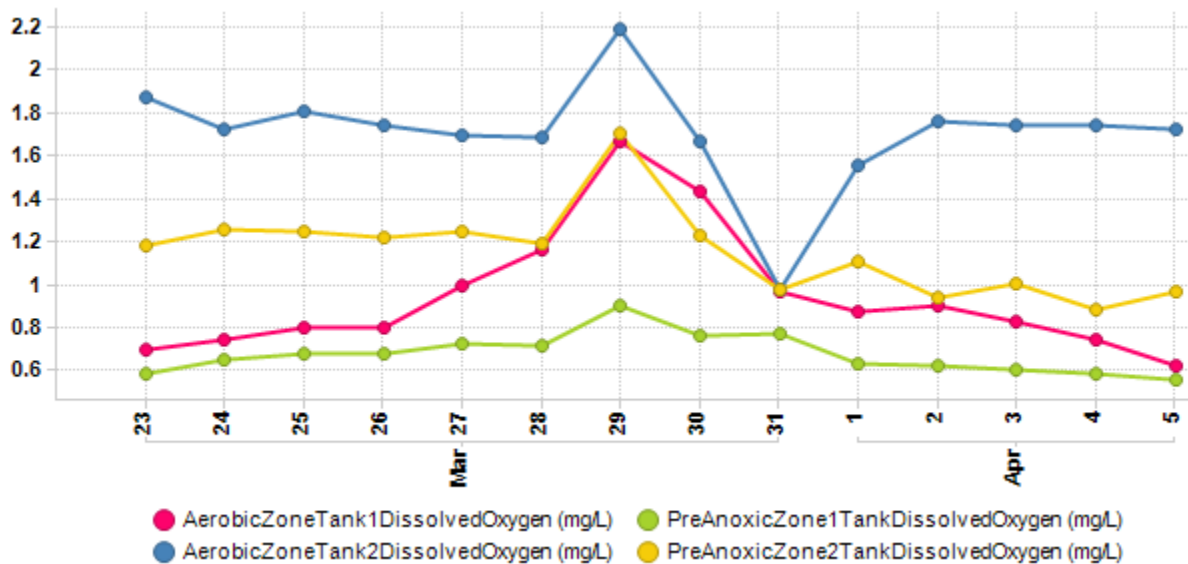




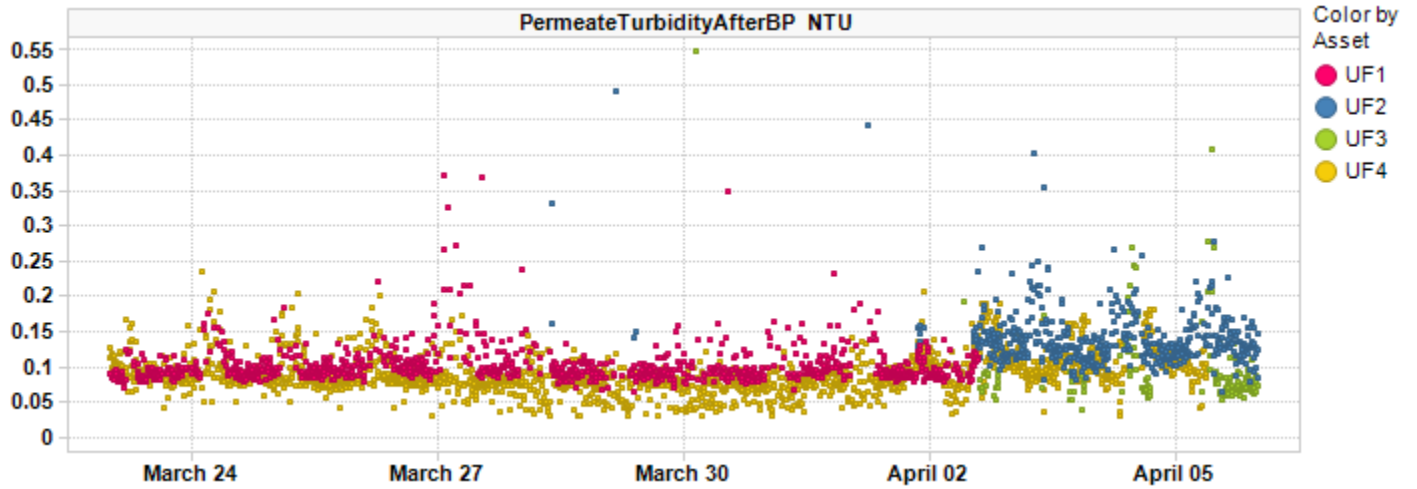
### Bioreactor Dissolved Oxygen



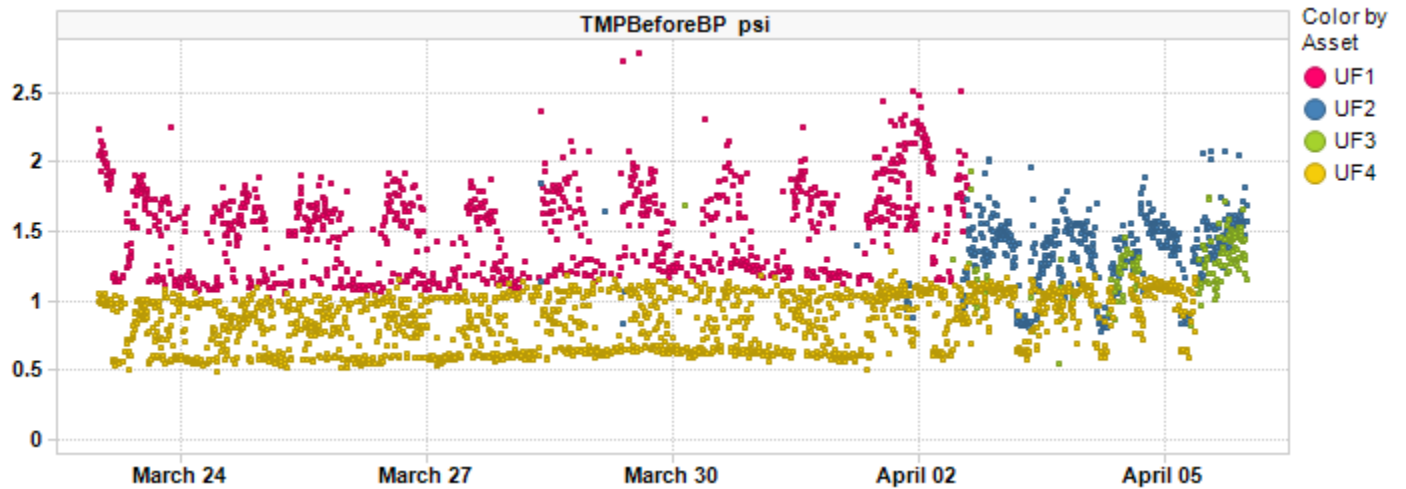
### Daily median average values below



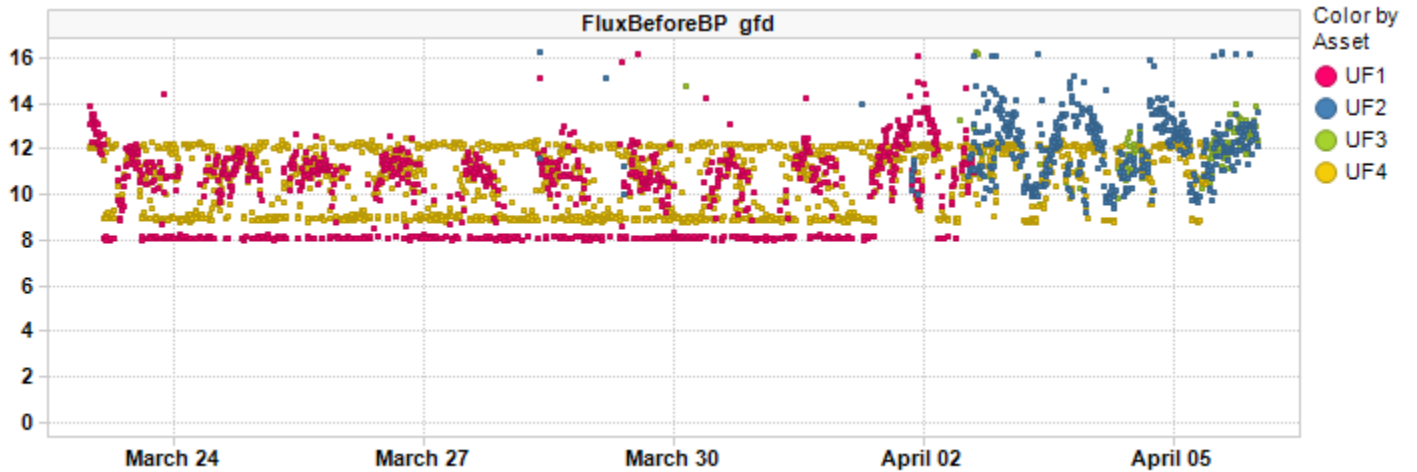
### Permeate Turbidity Trend



### Before BPTMP Trend



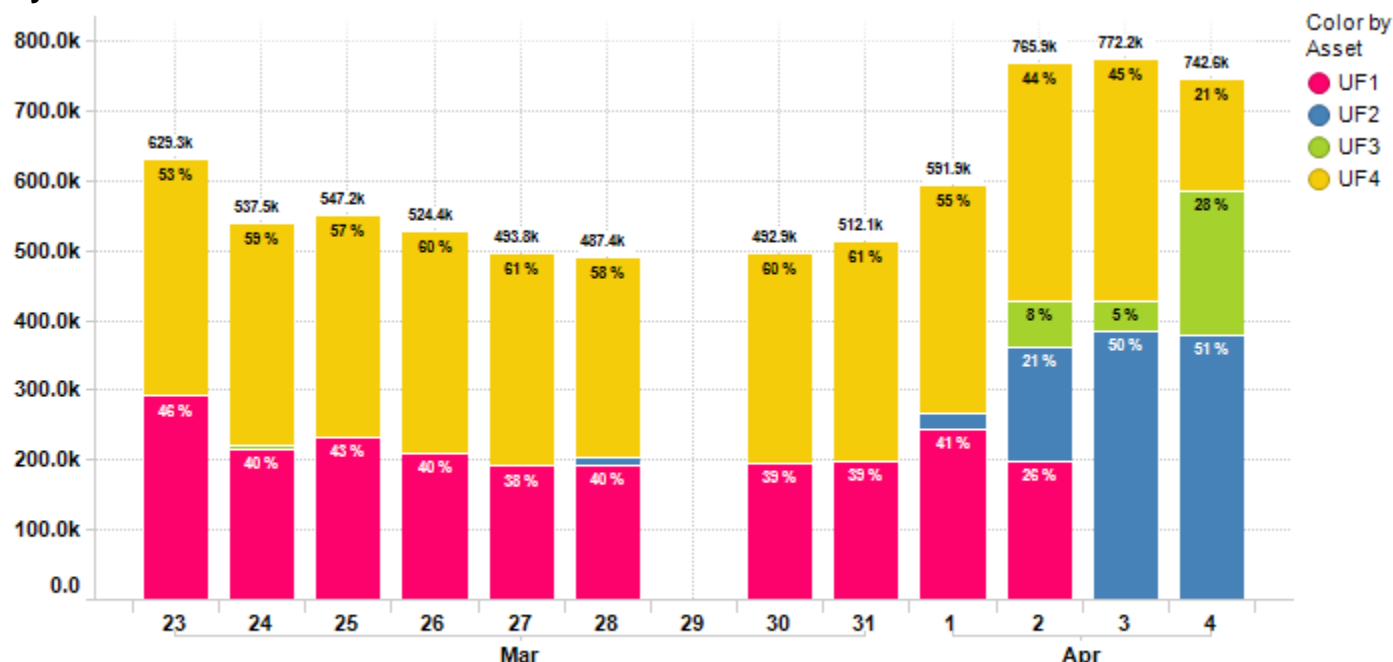
### Before BP Flux Trend







## Daily Permeate Flow



Average Daily permeate flow from 3/23/2022 to 4/5/2022 is 591.4k gal with a maximum daily flow of 772.2k gal.

## Asset Summary

KPI Parameters	Value/Change	UF1	UF2	UF3	UF4
FluxBeforeBP gfd	Value	10.26	12.10	11.96	10.75
	Change	-12.81 %	-1.05 %	2.29 %	-3.61 %
FluxDuringBP gfd	Value	18.66	18.42	16.98	18.73
	Change	0.06 %	-0.20 %	8.10 %	0.02 %
PermeateTurbidityAfterBP NTU	Value	0.10	0.14	0.10	0.09
	Change	1.85 %	-11.70 %	8.82 %	-22.11 %
TCPermeabilityBeforeBP gfd/psi	Value	7.38	9.97	10.89	14.31
	Change	7.15 %	-3.54 %	-19.90 %	4.84 %
TMPBeforeBP psi	Value	1.55	1.36	1.23	0.85
	Change	-22.58 %	-0.01 %	17.09 %	-9.02 %
TotalPermeateFlowDaily gal	Value	180.70k	137.66k	40.15k	303.66k
	Change	-87.79 %	70.33 %	-7.05 %	-9.46 %

## Plant Summary

KPI Parameters	Value/Change	UF Plant
PermeateTemperature °F	Value	60.70
	Change	0.55 %
TotalPermeateFlowDaily gal	Value	658.62k
	Change	-25.84 %



**Contract Expiry Date : 08/11/2021**

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.

This review was prepared by SUEZ Water Technologies & Solutions solely to assist water treatment plant owners and/or operators in analyzing and optimizing plant performance and is not intended to be used or relied upon for regulatory compliance or any other purpose. The content of this review is based in whole or in part on operation data obtained from the plant using InSight software. SUEZ Water Technologies & Solutions makes no representations or warranties as to the accuracy of the plant data utilized in the preparation of this review. SUEZ Water Technologies & Solutions accepts no liability for consequences or actions taken in whole or in part by any person on the basis of this review or its contents



# LEWES BPW WWTP Biweekly InSight Report

**Date:** 3/23/2022

From: Erin Horocholyn - Suez Water Technologies & Solutions

To: Austin Calaman BPW, Inframark

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 trains UF3 and UF4

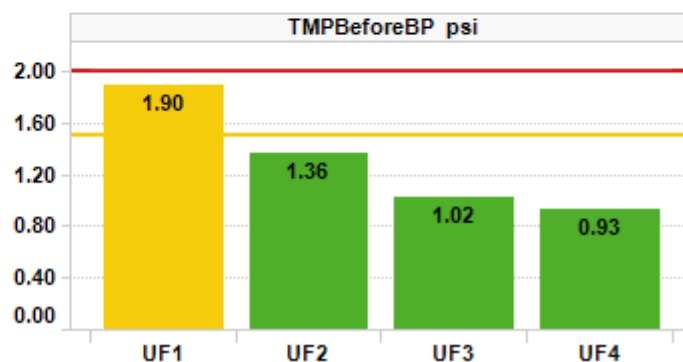
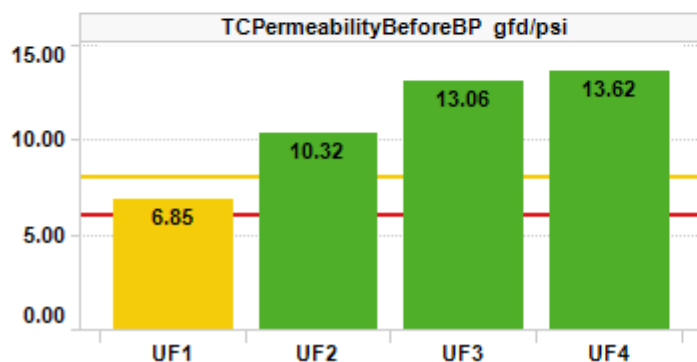
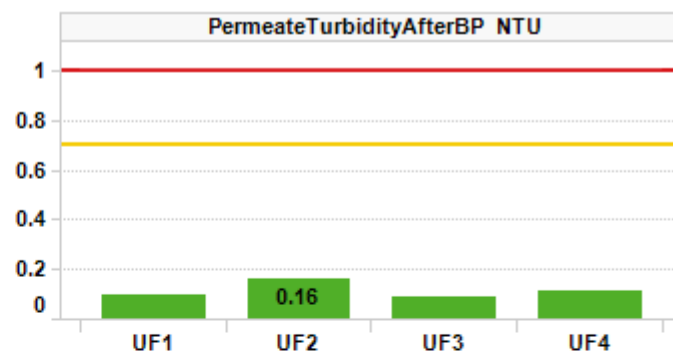
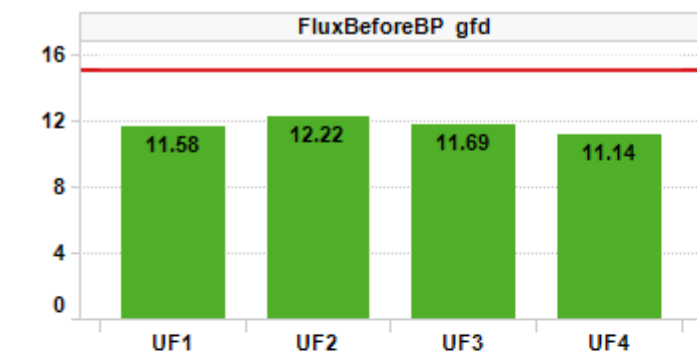
## Cleaning Strategy

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

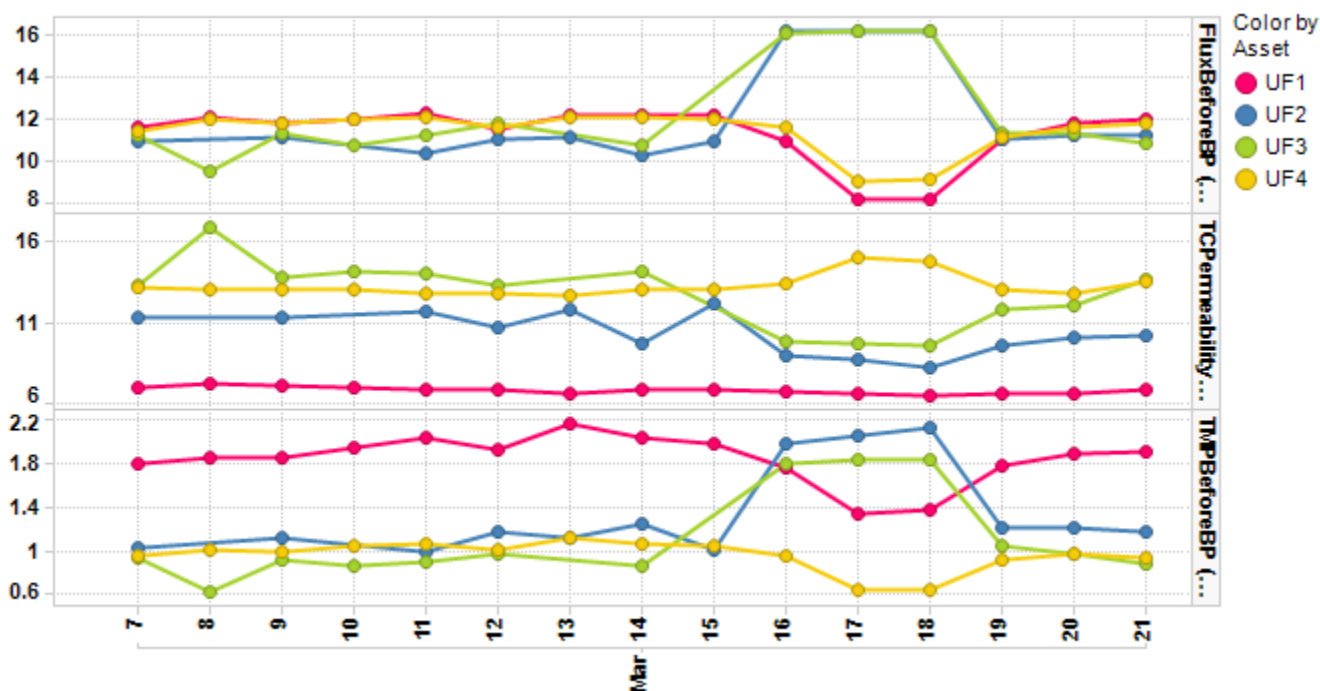




## Plant Summary

Trains UF1,2,3,4 are operating well overall. Permeability remains >8.0 gfd/psi on trains UF2,3,4 while UF1 averaged 6.9 gfd/psi. There is a slight fouling trend on UF1 which is being managed with hypo MCs.

- Daily permeate production averaged 0.76 MGD. UF2 and UF3 produced <10% of daily permeate except on Mar 12, 17, and 18. Permeate temperature averaged 60°F (+1°F). All online trains are in Backpulse with constant LEAP Hi aeration. Flux averages ranged 11.1 – 12.2 across all trains
- Permeate turbidity ABP averages ranged from 0.09 – 0.16 NTU
- TMP BBP averaged 1.9, 1.4, 1.0, and 0.9 psi on UF1,2,3,4
- TC permeability BBP averages were >8 gfd/psi on trains UF2,3,4. TCP on UF1,2,3,4 averaged 6.9, 10.3, 13.1, and 13.6 gfd/psi overall. The plot below displays daily median averages

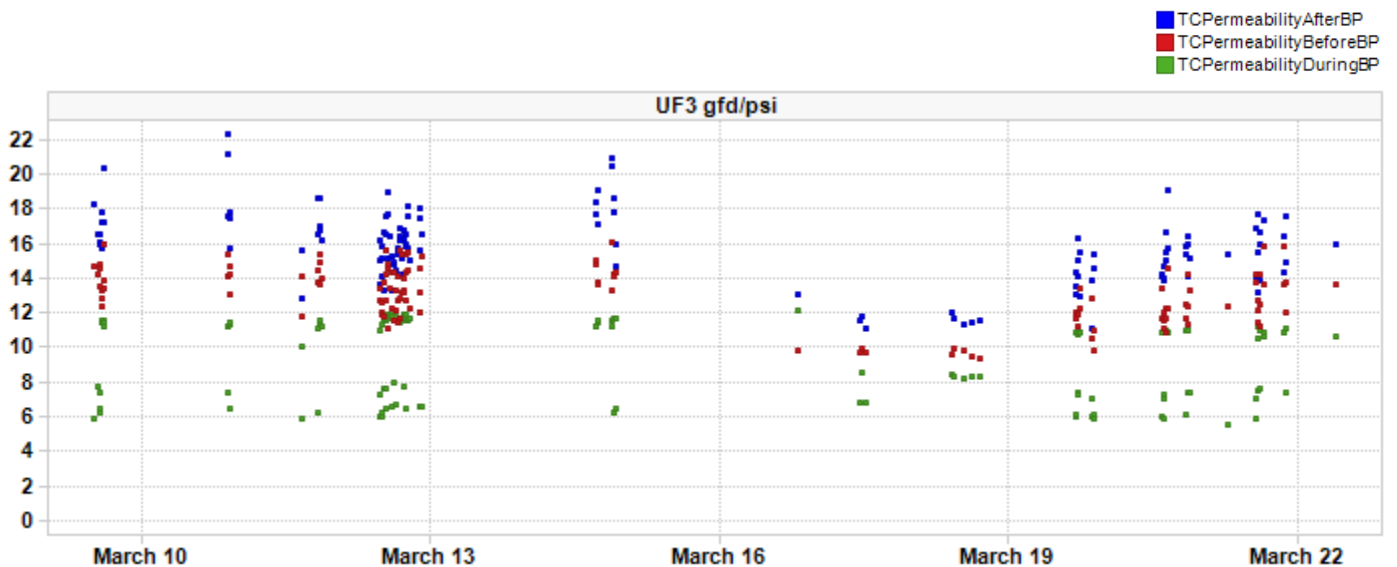
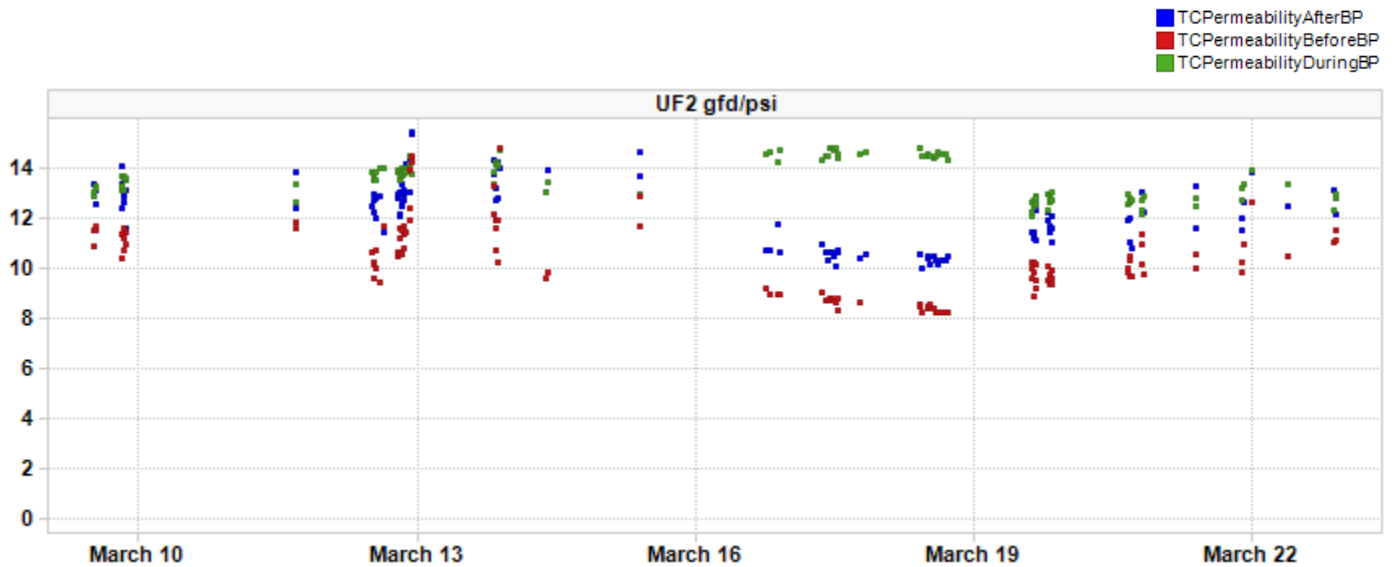
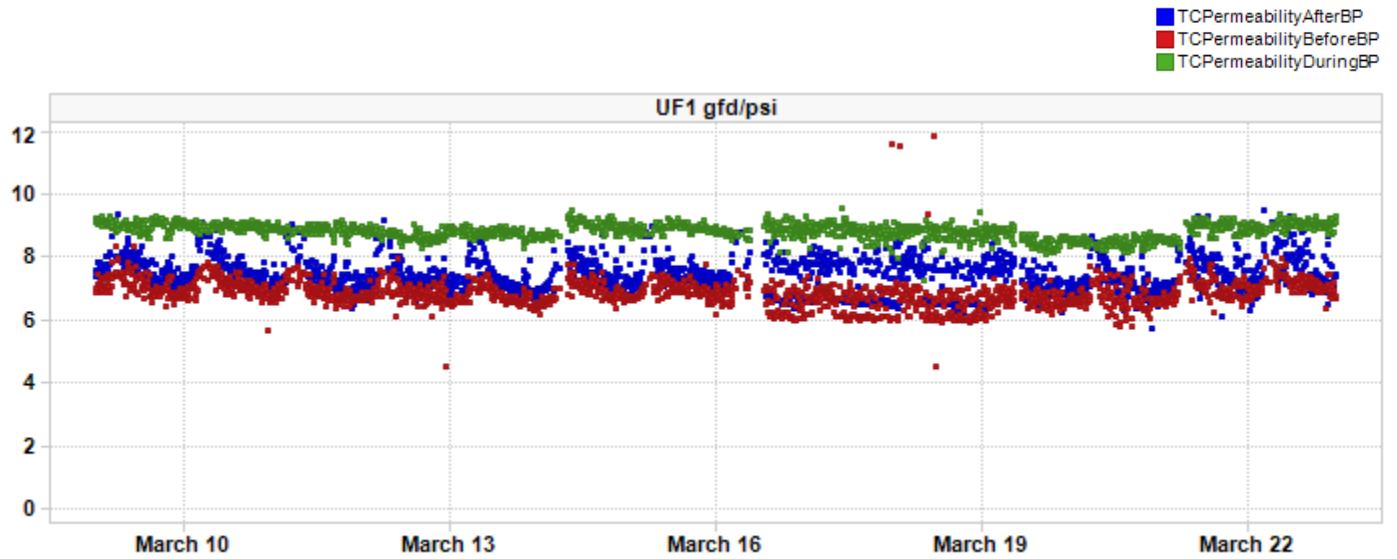


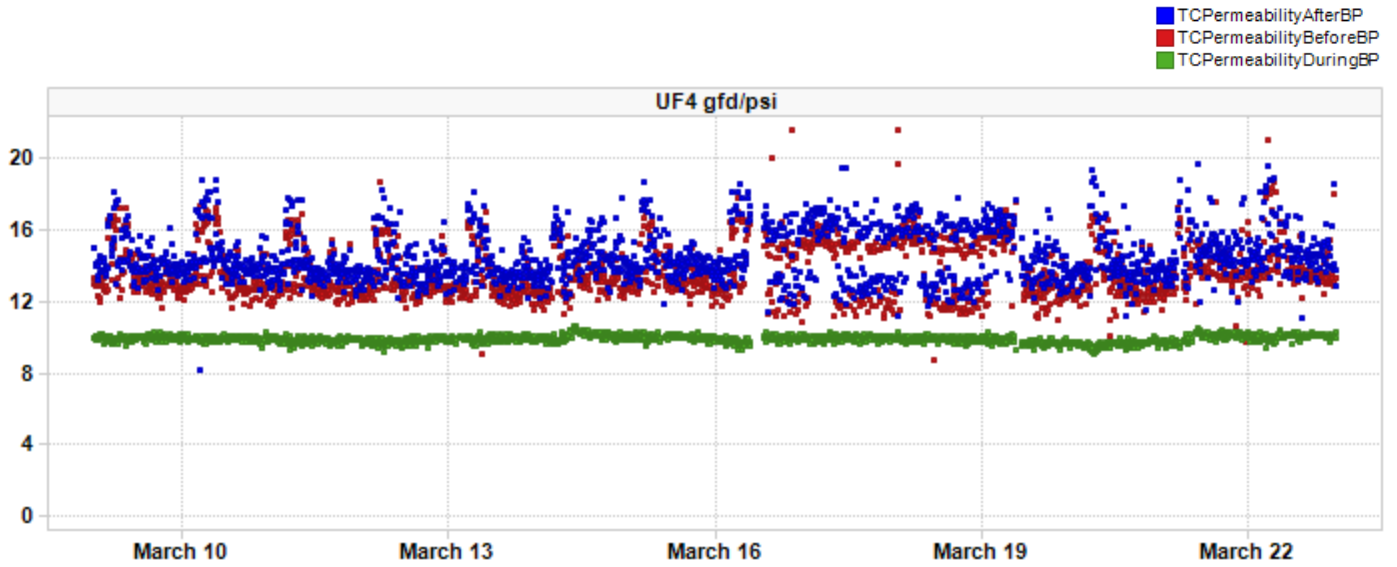
**Table 1.** Record of maintenance cleans (MCs) run.

Train	UF1	UF2	UF3	UF4
# of Hypochlorite MCs	2	2	2	2
# of Citric Acid MCs	2	1	2	2

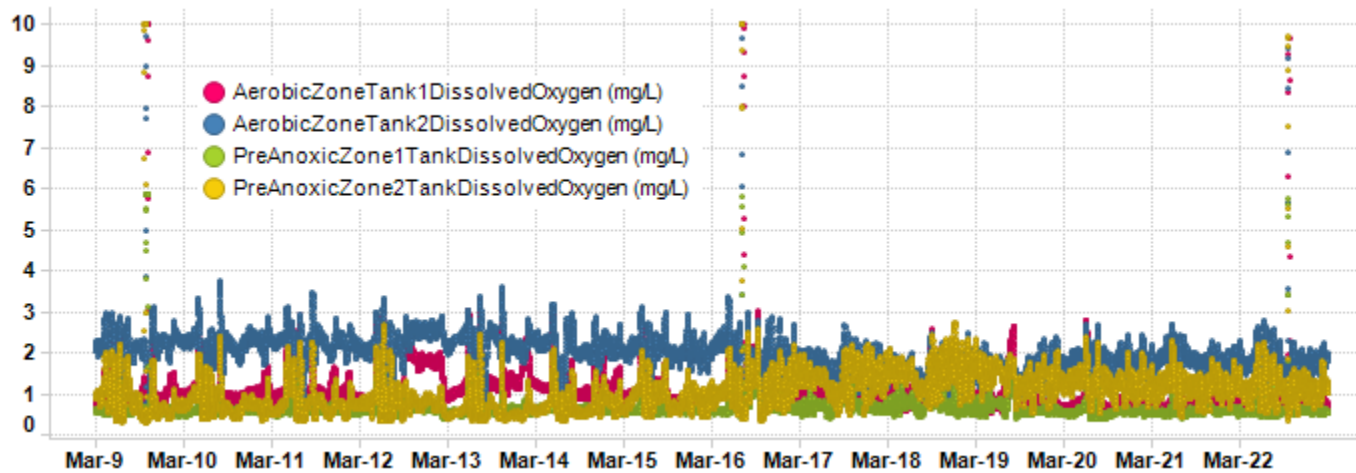
- Aerobic dissolved oxygen averaged 1.06 ppm in tank 1 and 1.97 ppm in tank 2. The pre-anoxic zone's DO averages were 0.66 ppm in tank 1, and 1.05 ppm in tank 2 which is slightly high for nitrification

## TC Permeability Trends By Train

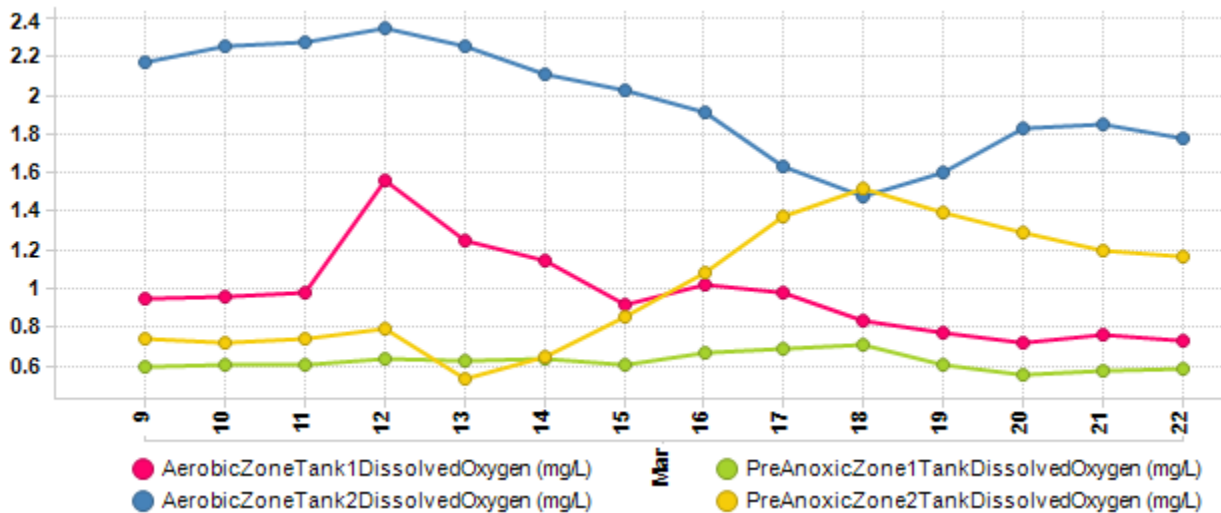




### Bioreactor Dissolved Oxygen

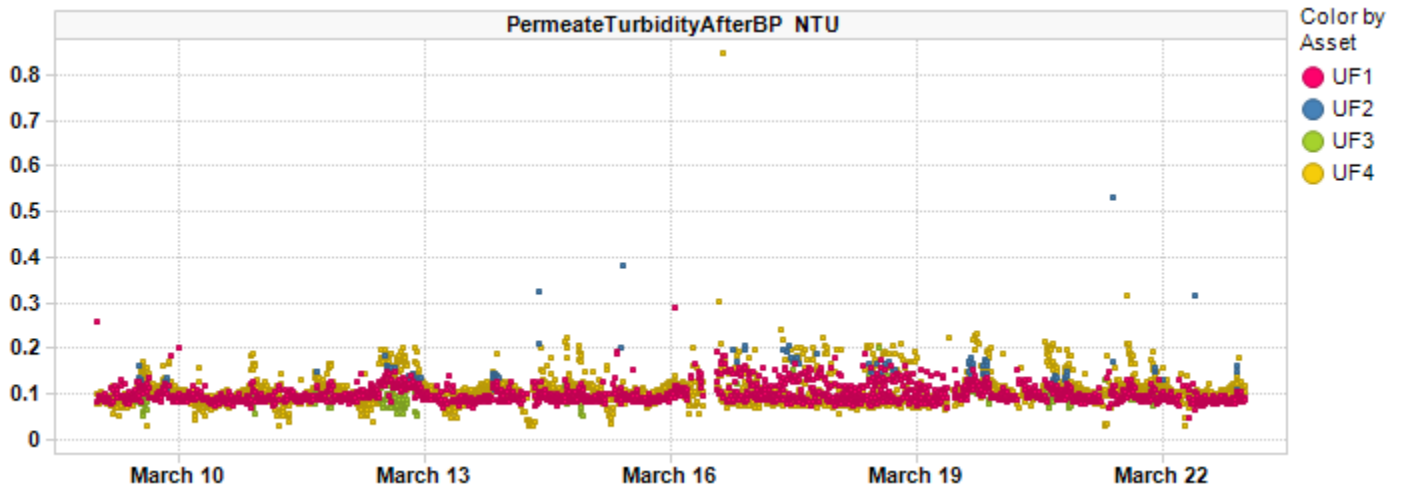


### Daily median average values below

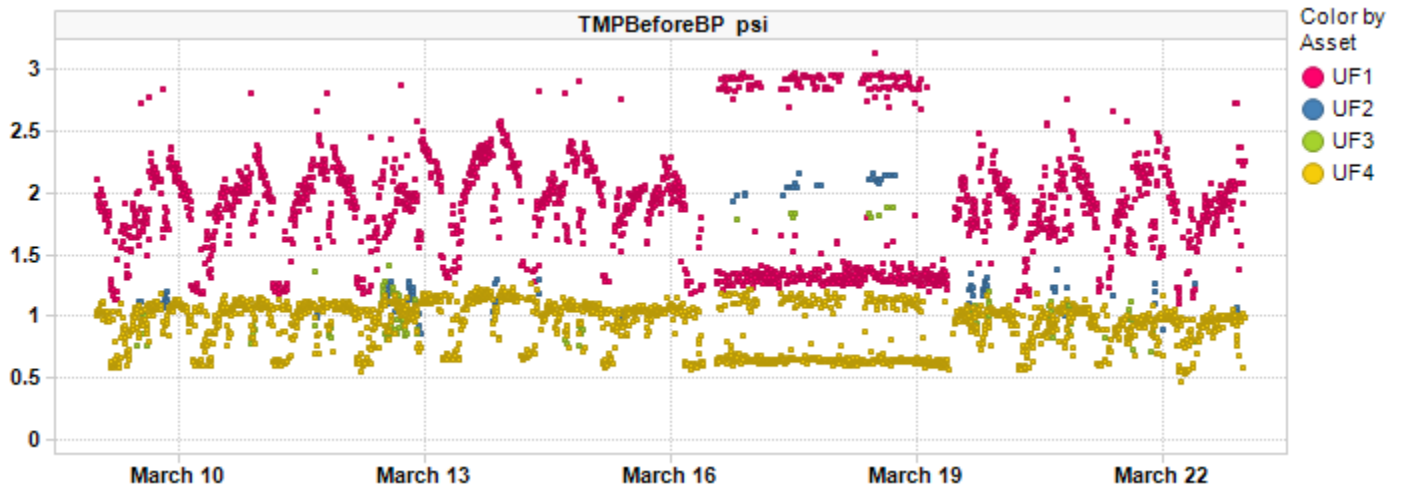




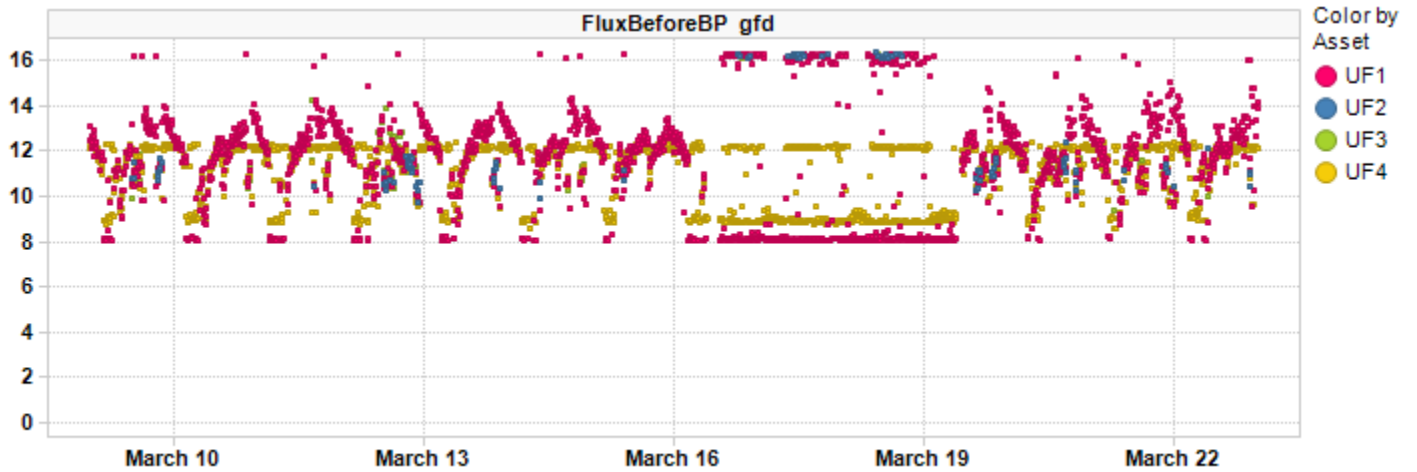
## Permeate Turbidity Trend



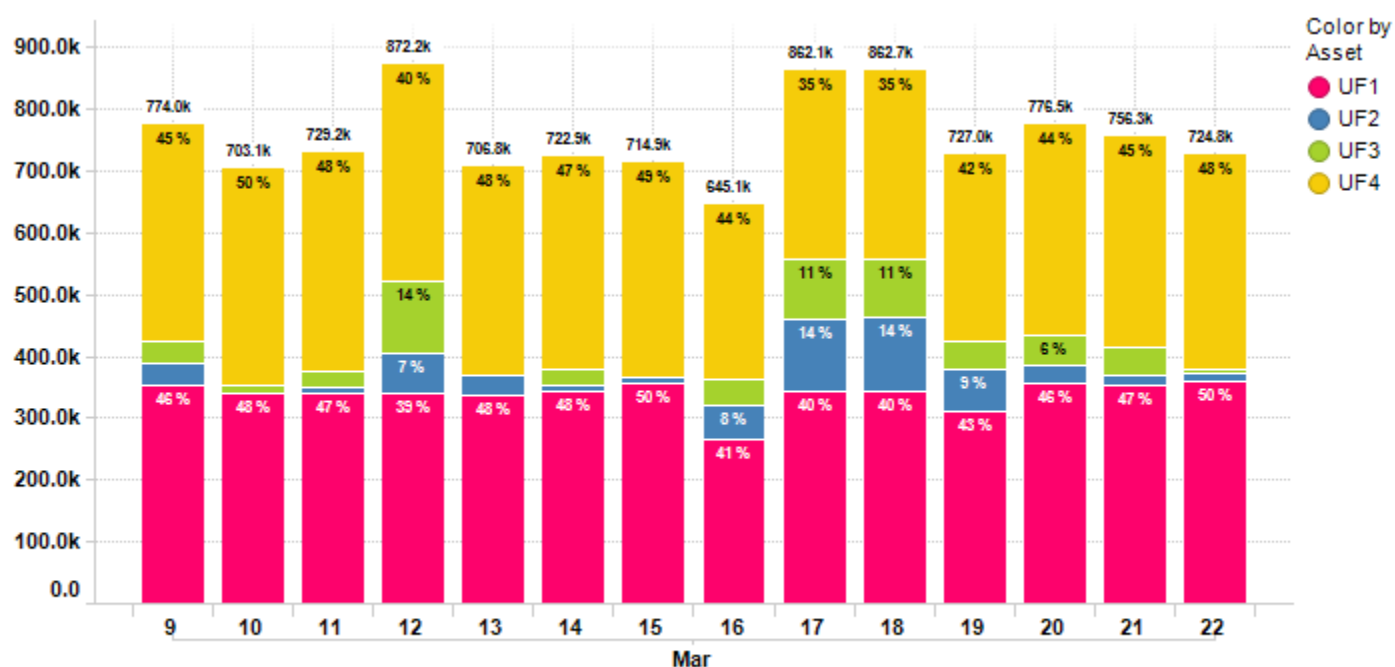
## Before BPTMP Trend



## Before BP Flux Trend



## Daily Permeate Flow



Average Daily permeate flow from 3/9/2022 to 3/22/2022 is 755.5k gal with a maximum daily flow of 872.2k gal.

## Asset Summary

KPI Parameters	Value/Change	UF1	UF2	UF3	UF4
FluxBeforeBP gfd	Value	11.58	12.22	11.69	11.14
	Change	1.37 %	7.72 %	6.16 %	-1.54 %
FluxDuringBP gfd	Value	18.65	18.46	15.61	18.73
	Change	0.03 %	0.22 %	-13.77 %	0.02 %
PermeateTurbidityAfterBP NTU	Value	0.10	0.16	0.09	0.11
	Change	7.21 %	-2.28 %	2.83 %	15.31 %
TCPPermeabilityBeforeBP gfd/psi	Value	6.85	10.32	13.06	13.62
	Change	-4.72 %	-8.22 %	-9.63 %	2.33 %
TMPBeforeBP psi	Value	1.90	1.36	1.02	0.93
	Change	4.12 %	15.36 %	14.98 %	-5.42 %
TotalPermeateFlowDaily gal	Value	339.35k	40.84k	42.98k	332.38k
	Change	5.34 %	56.83 %	51.02 %	-3.52 %

## Plant Summary

KPI Parameters	Value/Change	UF Plant
PermeateTemperature °F	Value	60.37
	Change	2.49 %
TotalPermeateFlowDaily gal	Value	828.82k
	Change	7.23 %



**Contract Expiry Date : 08/11/2021**

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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