

**PUMP STATION 196**

Nov-22		PS 196	
		METER READING	24 HOUR FLOW
TUE	1	60751260	0.275570
WED	2	61026830	0.273480
THU	3	61300310	0.269430
FRI	4	61569740	0.278060
SAT	5	61847800	0.231650
SUN	6	62079450	0.285740
MON	7	62365190	0.292570
TUE	8	62657760	0.290430
WED	9	62948190	0.284040
THU	10	63232230	0.287810
FRI	11	63520040	0.269990
SAT	12	63790030	0.341540
SUN	13	64131570	0.306430
MON	14	64438000	0.300830
TUE	15	64738830	0.321980
WED	16	65060810	0.320600
THU	17	65381410	0.298230
FRI	18	65679640	0.295600
SAT	19	65975240	0.301410
SUN	20	66276650	0.306270
MON	21	66582920	0.303560
TUE	22	66886480	0.304420
WED	23	67190900	0.331260
THU	24	67522160	0.350300
FRI	25	67872460	0.334150
SAT	26	68206610	0.337400
SUN	27	68544010	0.338960
MON	28	68882970	0.303330
TUE	29	69186300	0.298180
WED	30	69484480	0.304820
		69789300	
TOTAL			9.038040
COUNT			30
AVERAGE			0.301268
MINIMUM			0.231650
MAXIMUM			0.350300

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 2022 11 01 TO 2022 11 30

REPORT DESIGNATOR: A  
 DATA ENTRY COMPLETE: 12/21/2022  
 REPORT SUBMITTED BY: mwolgemuth  
 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			
1/1	Flow	SAMPLE MEASUREMENT	0.768	0.86	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			--	5.14		6.72	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			--	6.9		7.4	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	<16	<18	lbs/Day		<2.5	<3	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			--		103	103	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	<4	6	lbs/Day		<0.6	0.8	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 2022 11 01 TO 2022 11 30

REPORT DESIGNATOR: A  
 DATA ENTRY COMPLETE: 12/21/2022  
 REPORT SUBMITTED BY: mwolgemuth  
 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			--		110	110	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		25.1	25.1	lbs/Day		4.07	4.07	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		0.4	0.4	lbs/Day		0.07	0.07	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

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 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	-	534.65
February	28	0.6951	5.52	896.01	7.57	0.12	19.48	2.78	7.57	-	527.08
March	31	0.6898	3.63	647.38	5.47	0.05	8.92	1.27	5.47	-	521.61
April	30	0.7412	5.05	936.51	7.91	0.14	25.96	3.70	7.91	-	513.70
May	31	0.7789	7.47	1,504.28	12.71	0.26	52.36	7.46	12.71	-	500.99
June	30	0.8116	3.38	686.35	5.80	0.75	152.30	21.56	21.56	-	479.43
July	31	0.7926	5.20	1,065.58	9.00	1.01	206.97	29.49	29.49	-	449.94
August	31	0.7753	4.24	849.89	7.18	0.54	108.24	15.42	15.42	-	434.52
September	30	0.8703	3.79	825.27	6.97	0.12	26.13	3.72	6.97	-	427.55
October	31	0.8498	6.48	1,423.70	12.03	0.08	17.58	2.50	12.03	-	415.52
November	30	0.7684	4.07	782.47	6.61	0.07	13.46	1.92	6.61	-	408.91
December	31				-			-		-	
Year Balance											408.91

Comments:



# Lewes BPW WWTP Biweekly InSight Report

Date: 11/30/2022

From: Erin Horocholyn - Veolia Water Technologies & Solutions  
To: Austin Calaman BPW, Inframark  
cc: Matt Stapleford - Veolia 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)

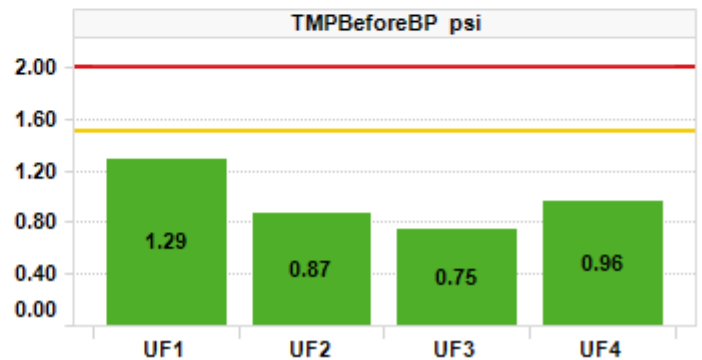
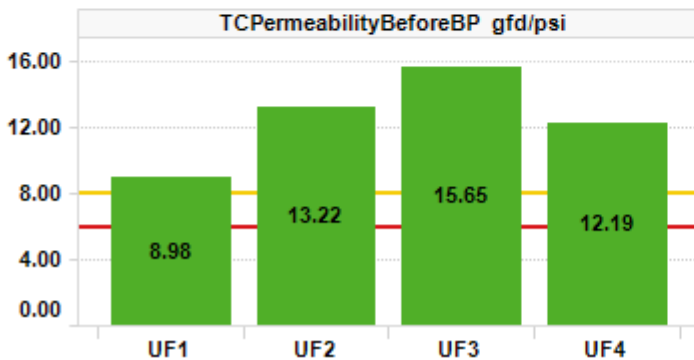
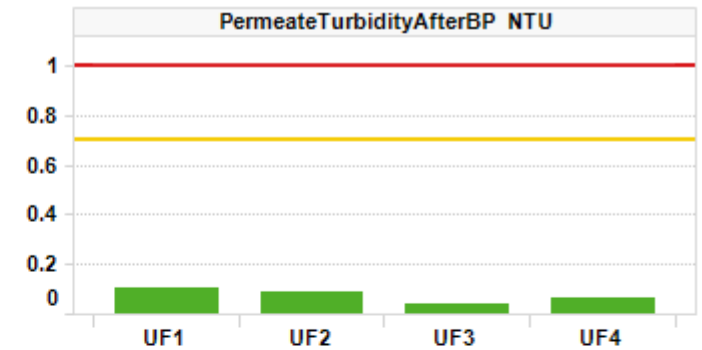
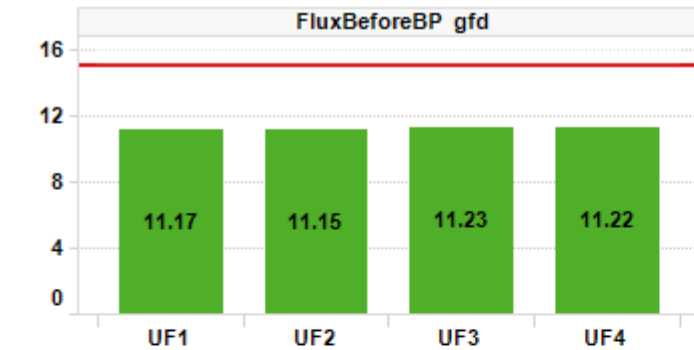
Replacement membranes installed Q1 2020 on trains UF3 and UF4

## 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

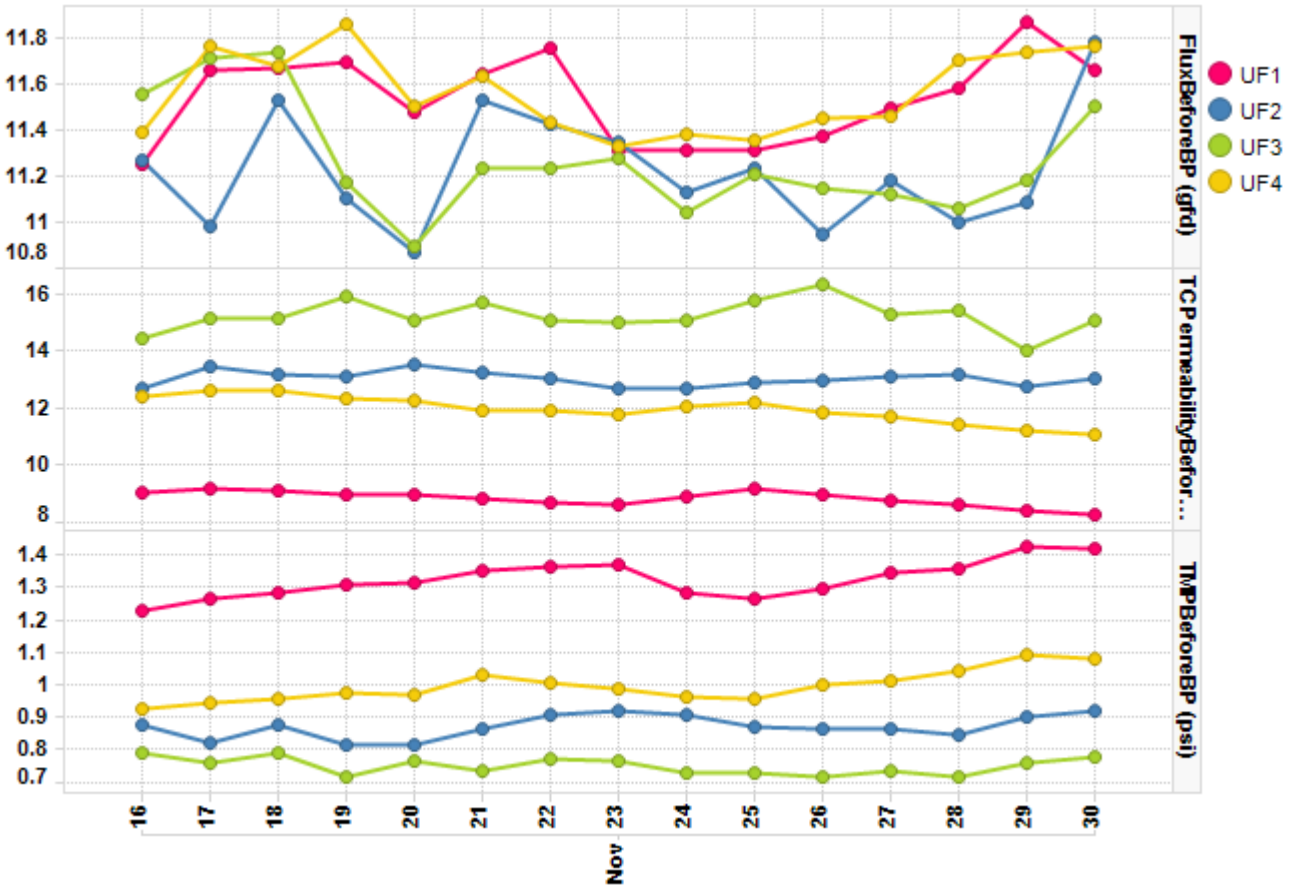
■ Action Required  
■ Caution  
■ No Limits  
■ Normal



## Plant Summary

The plant is operating well with good permeabilities and low TMPs. KPI trends are stable. Temperature is dropping but the membranes are in good condition to head into winter operations. Train 1 was offline from Nov 16 – 17 without change in permeability or TMP before and after. If a clean was run on train 1 over this time, the chemical delivery system may need to be checked to confirm it's working.

- TC permeability was  $\geq 8$  gfd/psi on all trains, averaging 9.0, 13.2, 15.7, and 12.2 gfd/psi on trains 1,2,3,4. TMP was good and stable on all trains, averaging 1.3, 0.9, 0.8, and 1.0 psi on trains 1,2,3,4



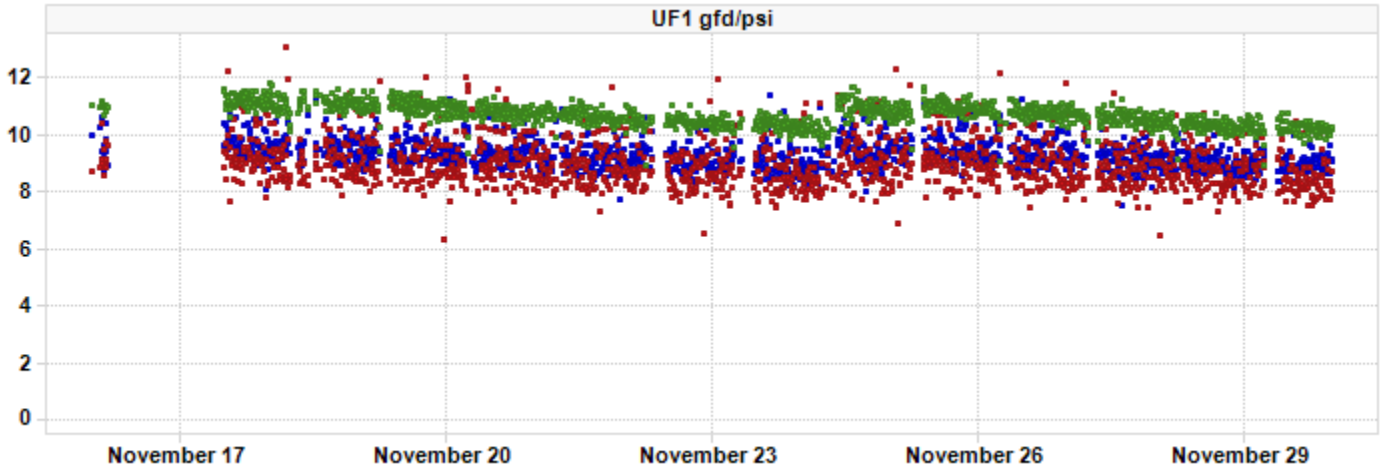
- Permeate turbidity averages ranged 0.04 – 0.11 NTU with steady trends on all trains during production. There were two small spikes on Nov 18 and 25, peaking at 0.2 NTU
- Daily permeate production averaged 0.80 MGD. Permeate temperature averaged 66°F (-5°F). All trains are in Backpulse with LEAP Hi aeration. Flux averaged 11.2 gfd on all trains

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

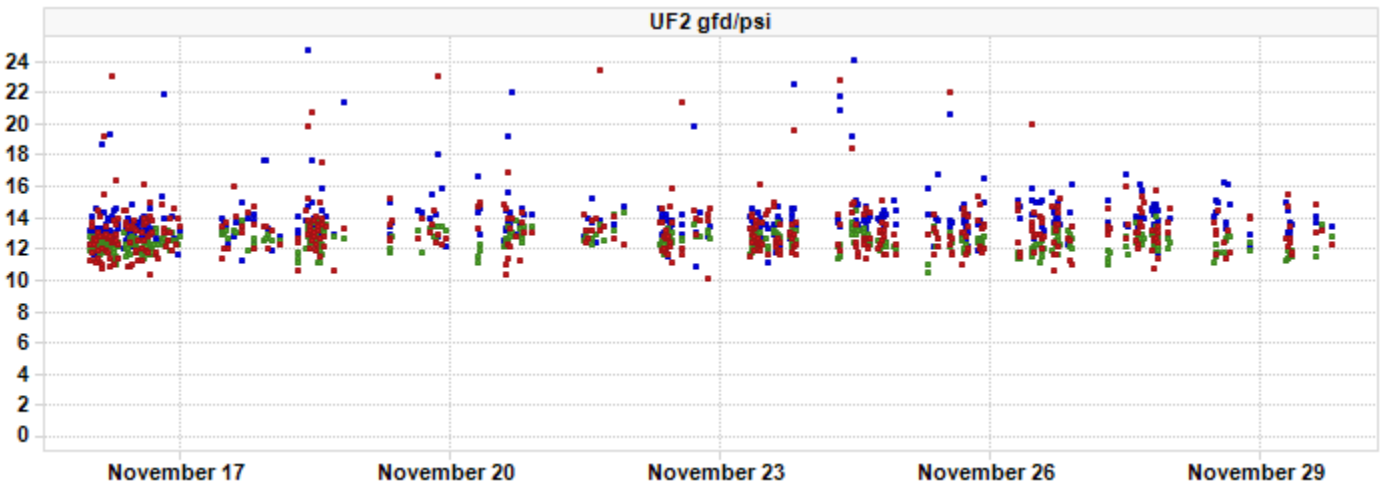
Train	UF1	UF2	UF3	UF4
# of Hypochlorite MCs	1	2	2	2
# of Citric Acid MCs	2	2	2	2

### TC Permeability Trends By Train

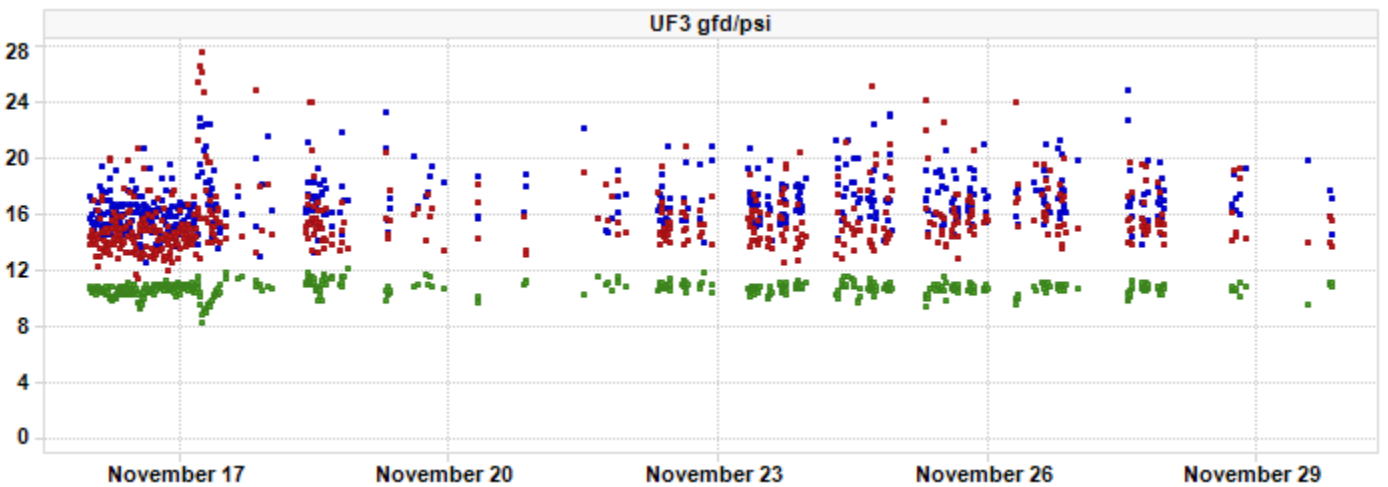
■ TCPermeabilityAfterBP  
■ TCPermeabilityBeforeBP  
■ TCPermeabilityDuringBP



■ TCPermeabilityAfterBP  
■ TCPermeabilityBeforeBP  
■ TCPermeabilityDuringBP

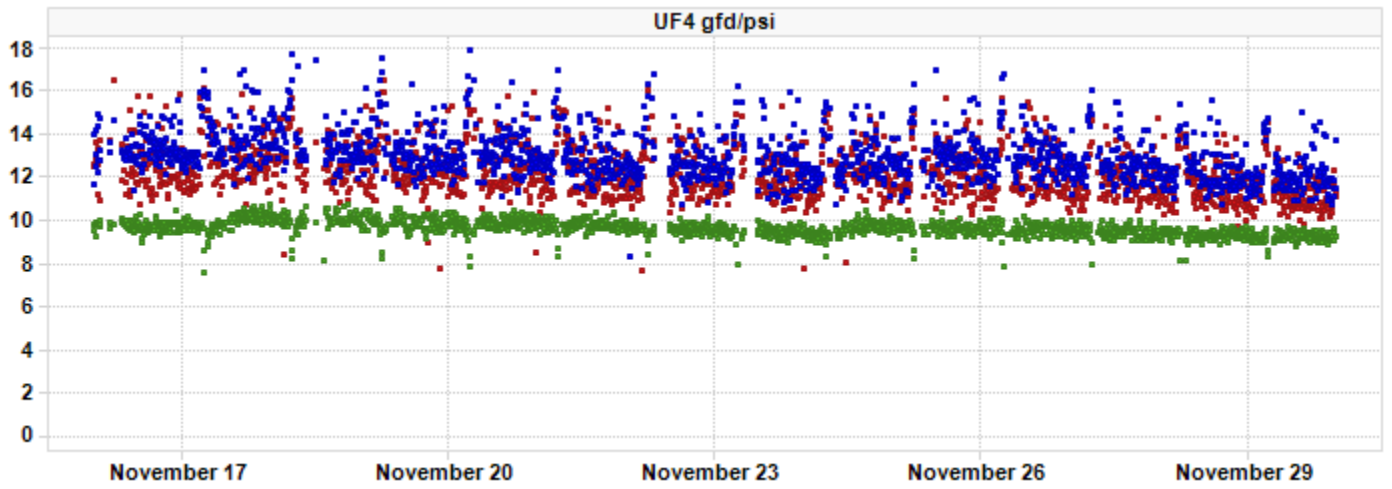


■ TCPermeabilityAfterBP  
■ TCPermeabilityBeforeBP  
■ TCPermeabilityDuringBP

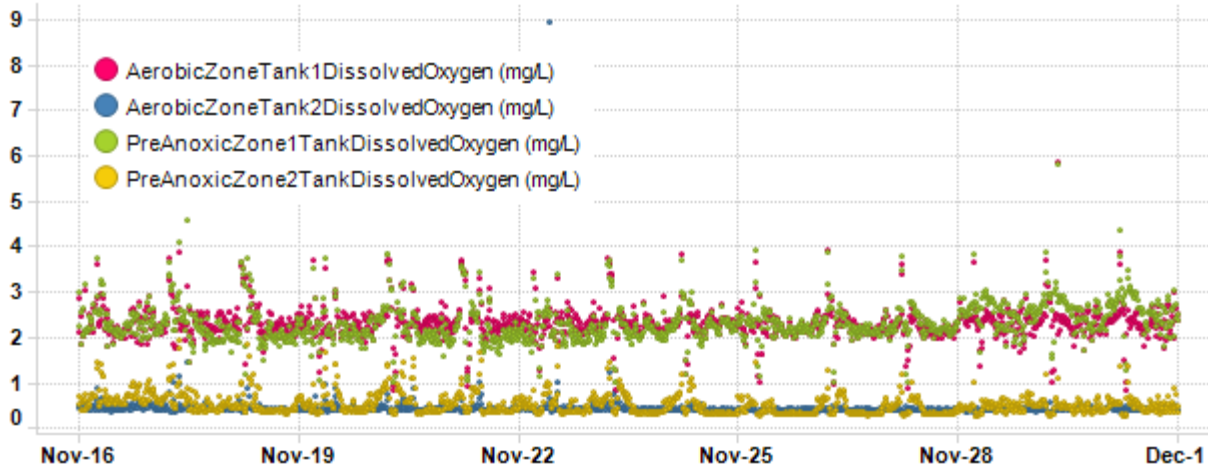




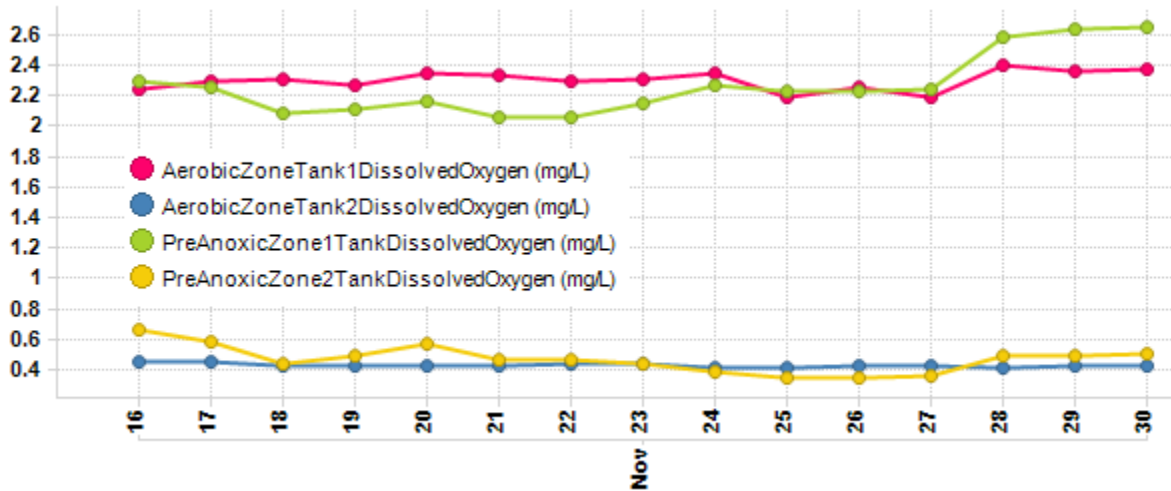
- TcPermeabilityAfterBP
- TcPermeabilityBeforeBP
- TcPermeabilityDuringBP



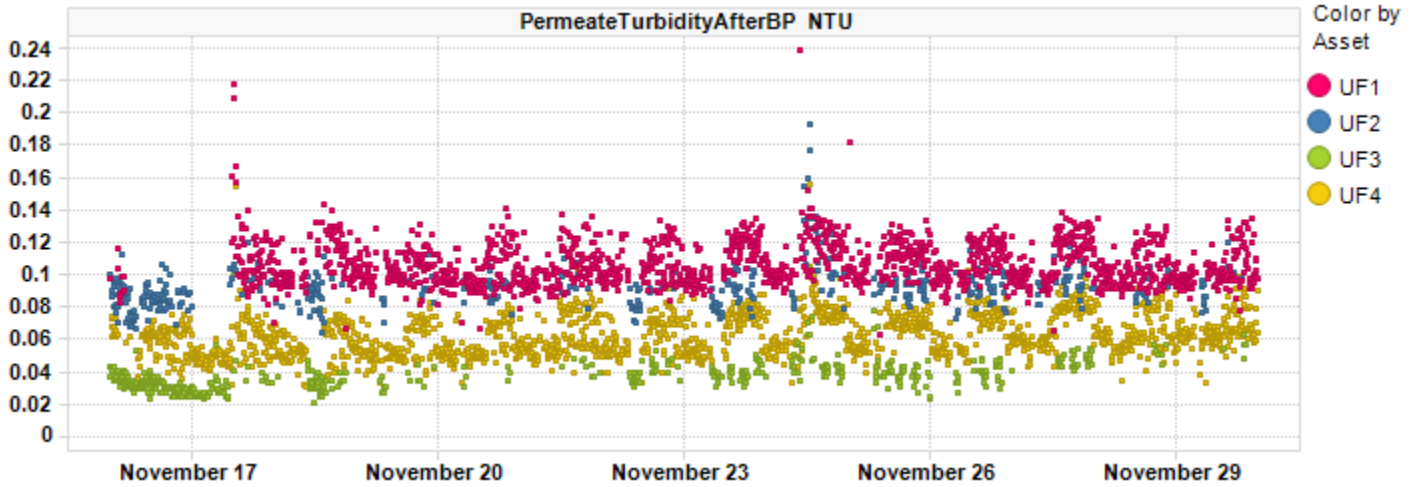
### Bioreactor Dissolved Oxygen



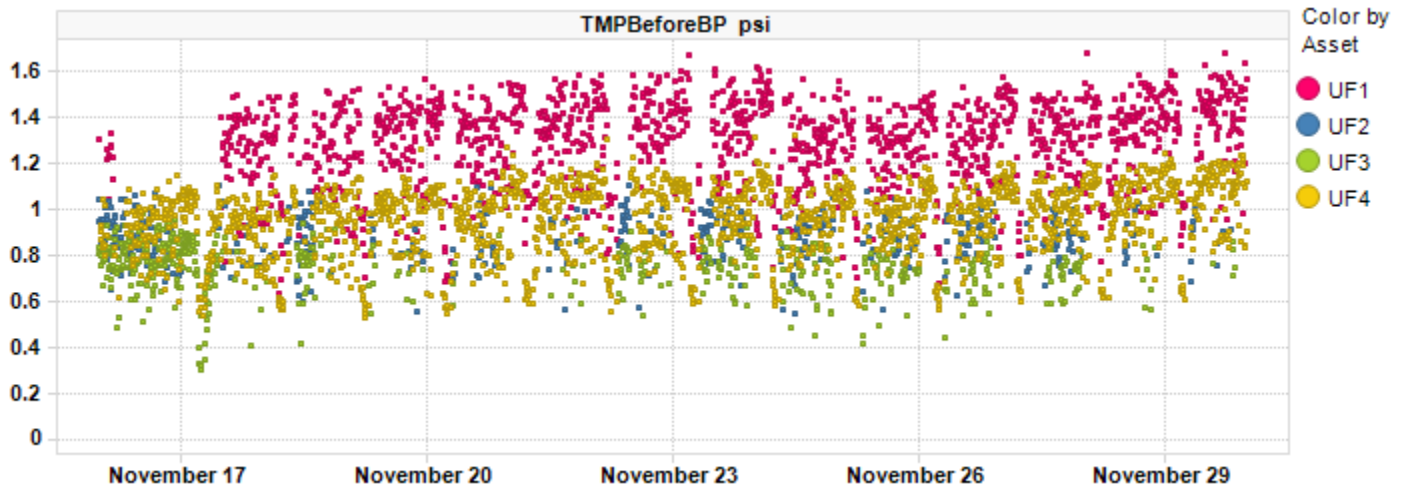
Daily median average values below:



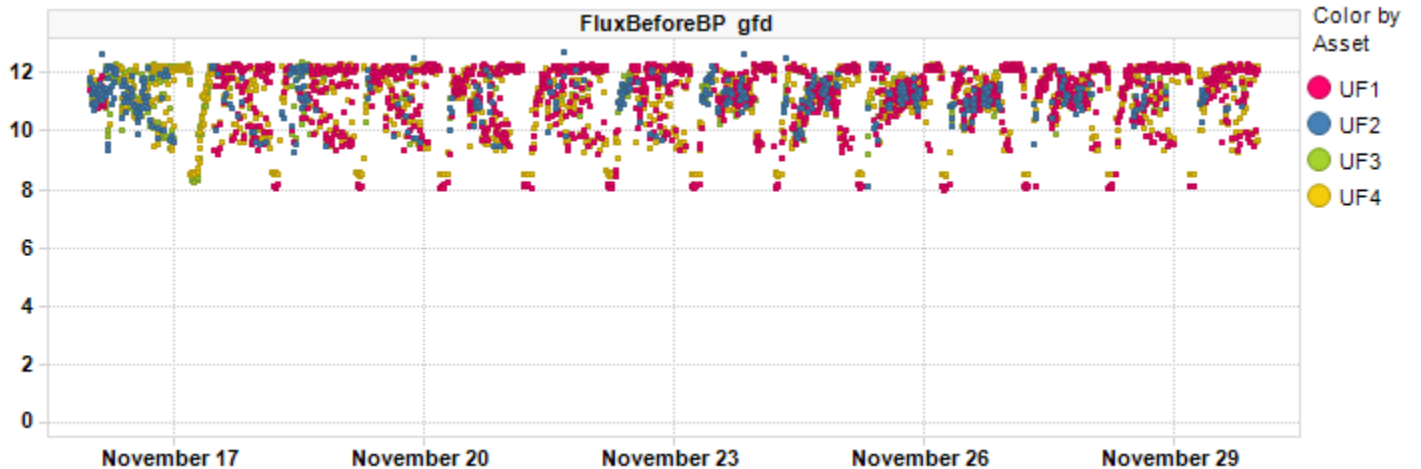
### Permeate Turbidity Trend



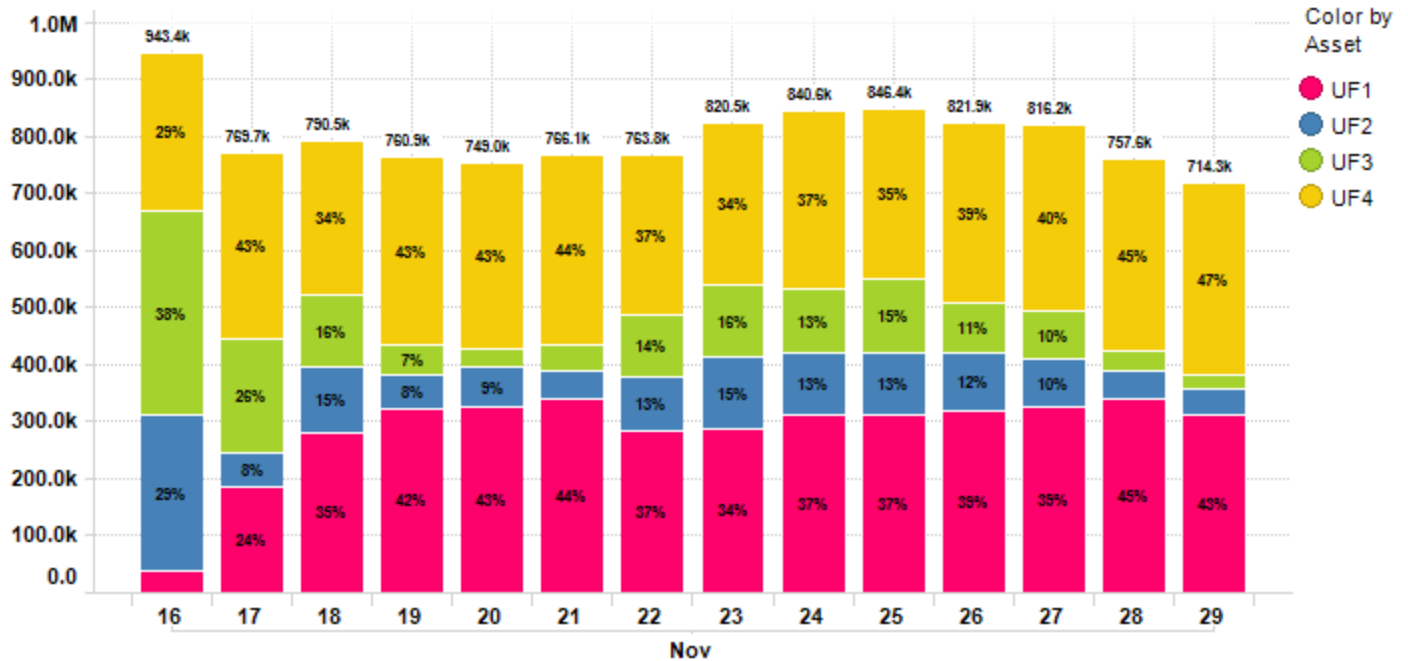
### Before BPTMP Trend



### Before BP Flux Trend



### Daily Permeate Flow



Average Daily permeate flow from 11/16/2022 to 11/29/2022 is 797.2k gal with a maximum daily flow of 943.4k gal.

### Asset Summary

KPI Parameters	Value/Ch...	UF1	UF2	UF3	UF4
FluxBeforeBP gfd	Value	11.17	11.15	11.23	11.22
	Change	1.85%	-0.61%	1.41%	2.03%
FluxDuringBP gfd	Value	18.96	18.43	18.38	18.78
	Change	1.00%	-0.51%	-0.14%	0.04%
PermeateTurbidityAfterBP NTU	Value	0.11	0.09	0.04	0.06
	Change	17.02%	4.75%	-17.4...	12.90%
TCPPermeabilityBeforeBP gfd/psi	Value	8.98	13.22	15.65	12.19
	Change	-6.72%	1.99%	-0.07%	7.90%
TMPBeforeBP psi	Value	1.29	0.87	0.75	0.96
	Change	14.65%	2.44%	5.23%	-3.38%
TotalPermeateFlowDaily gal	Value	281.6...	96.12k	108.3...	311.1...
	Change	-10.6...	24.56%	-1.44%	17.72%

### Plant Summary

KPI Parameters	Value/Change	UF Plant
PermeateTemperature °F	Value	66.14
	Change	-7.74%
TotalPermeateFlowDaily gal	Value	882.56k
	Change	5.91%



Contract Expiry Date: 08/11/2025

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 Veolia 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. Veolia Water Technologies & Solutions makes no representations or warranties as to the accuracy of the plant data utilized in the preparation of this review. Veolia 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