PUMP STATION 196

Dec-22		PS 196	
		METER READING	24 HOUR FLOW
THU	1	69789300	0.292120
FRI	2	70081420	0.306210
SAT	3	70387630	0.312210
SUN	4	70699840	0.309940
MON	5	71009780	0.297460
TUE	6	71307240	0.300310
WED	7	71607550	0.292940
THU	8	71900490	0.292050
FRI	9	72192540	0.295700
SAT	10	72488240	0.295600
SUN	11	72783840	0.295380
MON	12	73079220	0.295530
TUE	13	73374750	0.293270
WED	14	73668020	0.294690
THU	15	73962710	0.366830
FRI	16	74329540	0.325120
SAT	17	74654660	0.320490
SUN	18	74975150	0.316600
MON	19	75291750	0.321880
TUE	20	75613630	0.303010
WED	21	75916640	0.316040
THU	22	76232680	0.216800
FRI	23	76449480	0.151390
SAT	24	76600870	0.338630
SUN	25	76939500	0.418330
MON	26	77357830	0.434150
TUE	27	77791980	0.215880
WED	28	78007860	0.147430
THU	29	78155290	0.306190
FRI	30	78461480	0.415080
SAT	31	78876560	0.442790
		79319350	
TOTAL			9.530050
COUNT			31
AVERAGE			0.307421
MINIMUM			0.147430
MAXIMUM			0.442790

Lewes BPW WWTP Biweekly InSight Report

Date: 12/28/2022

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

This report covers multiple reporting periods. Averages in-text refer to Dec 14 – 27 unless otherwise specified.

**KPI Dashboard – Avg values through Dec 14 – 27**
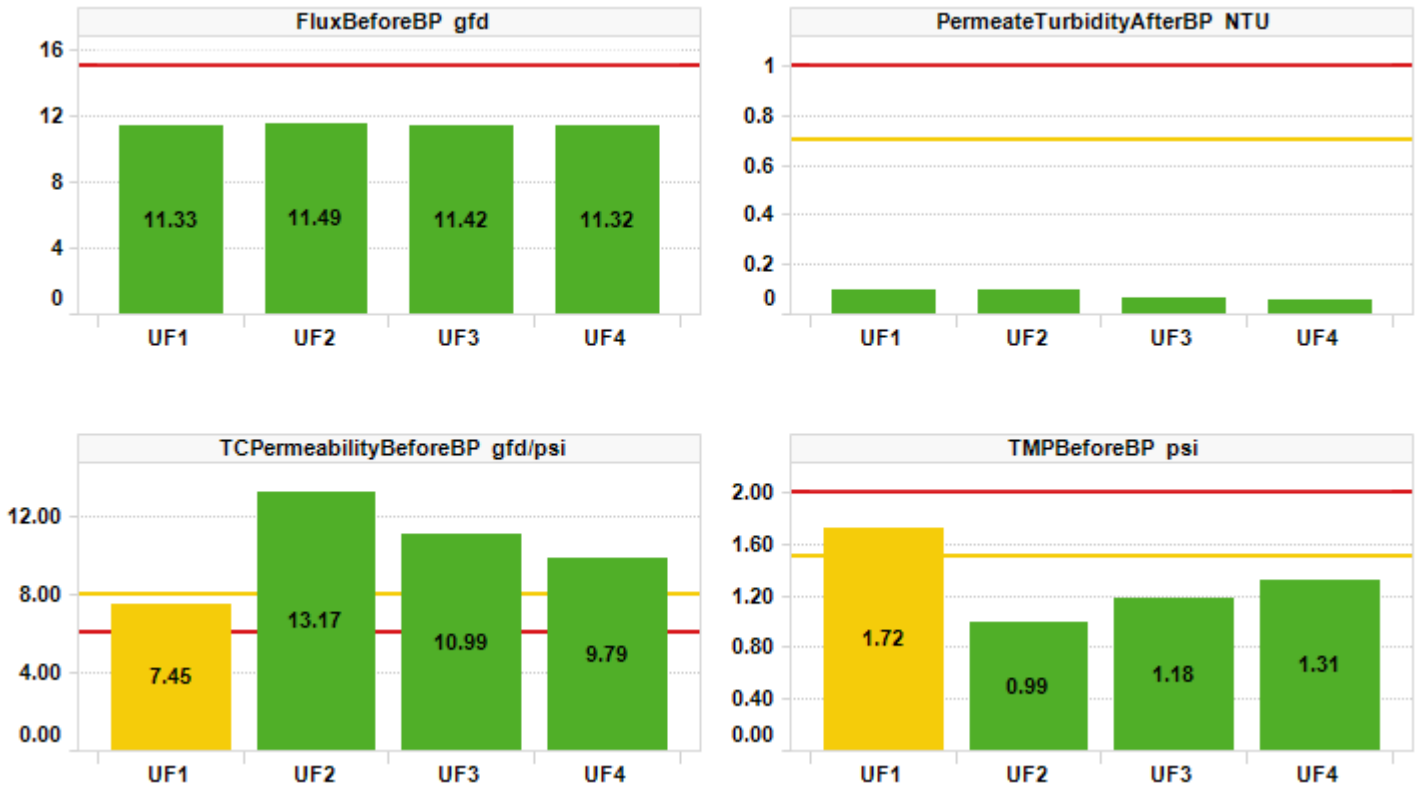
Plant Summary

- TC permeability was ≥8 gfd/psi on all trains, averaging 7.5, 13.2, 11.0, and 9.8 gfd/psi on trains 1,2,3,4. TMP averaged 1.7, 1.0, 1.2, and 1.3 psi on trains 1,2,3,4. TMP increased on UF1,3,4 in this report as permeate temperature dropped

- Looking at the year-over-year plots below, permeability trends in 2022 are lower on UF1,3,4 compared to 2021. Even so, all trains remain close to the 8 gfd/psi threshold for good permeability and performance is not a concern. If site wants to get ahead of the seasonal decline, another weekly hypo maintenance clean could be scheduled on UF1 to raise permeability
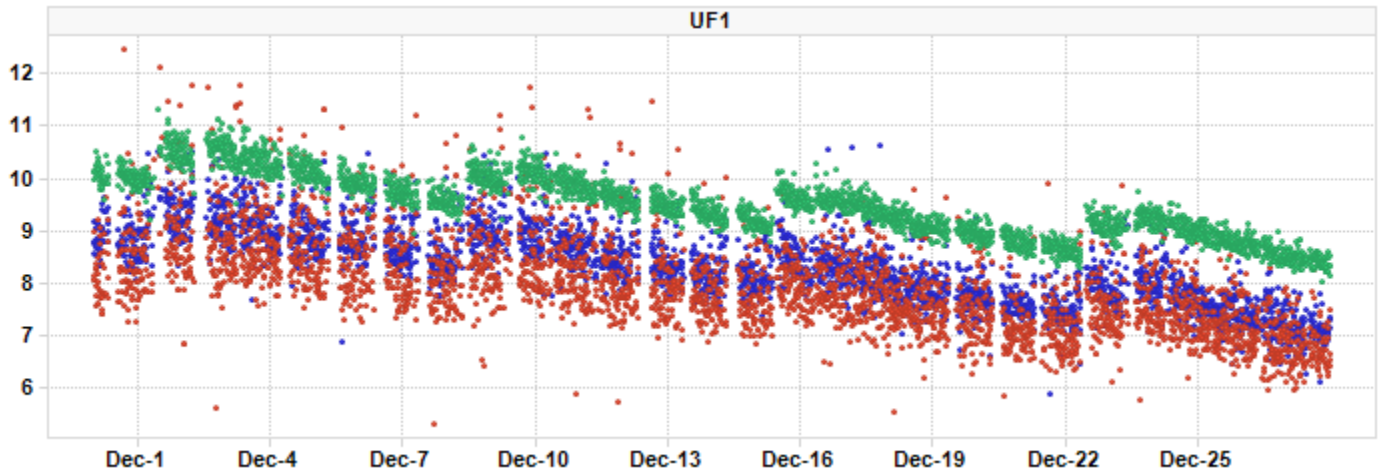
TC Permeability BBP Year over Year
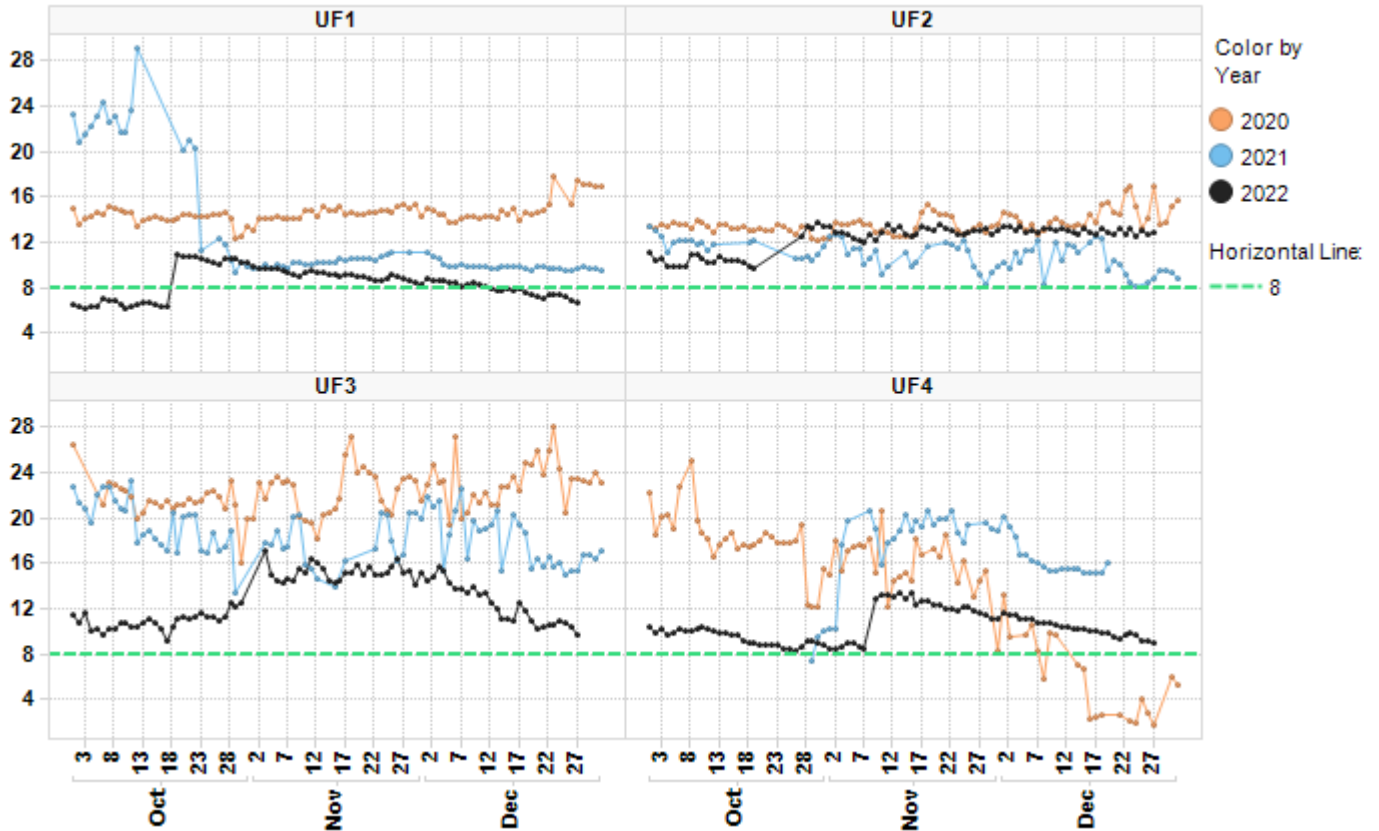
- Permeate turbidity averages ranged 0.06 – 0.10 NTU. UF3 spiked over Dec 9 – 15, peaking at 0.9 NTU

- Daily permeate production averaged 0.88 MGD. Permeate temperature averaged 60°F (-6°F). All trains are in Backpulse with LEAP Hi aeration. Flux averaged 11.3 – 11.5 gfd on all trains
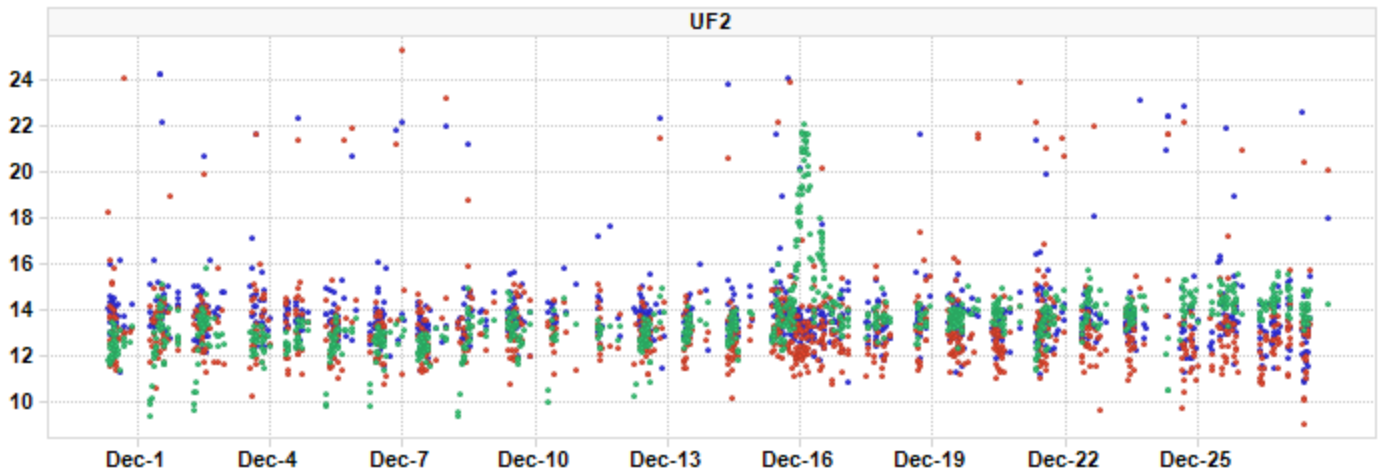
Table 1. Record of maintenance cleans (MCs) run.

Train	UF1	UF2	UF3	UF4
# of Hypo MCs **Dec 14 - 27**	2	2	2	2
# of Citric MCs **Dec 14 - 27**	2	2	1	2
# of Hypo MCs **Nov 30 – Dec 13**	2	2	2	2
# of Citric MCs **Nov 30 – Dec 13**	2	1	2	2

TC Permeability Trends By Train

UF4

Legend:
- TCPermeabilityAfterBP (blue)
- TCPermeabilityBeforeBP (red)
- TCPermeabilityDuringBP (green)
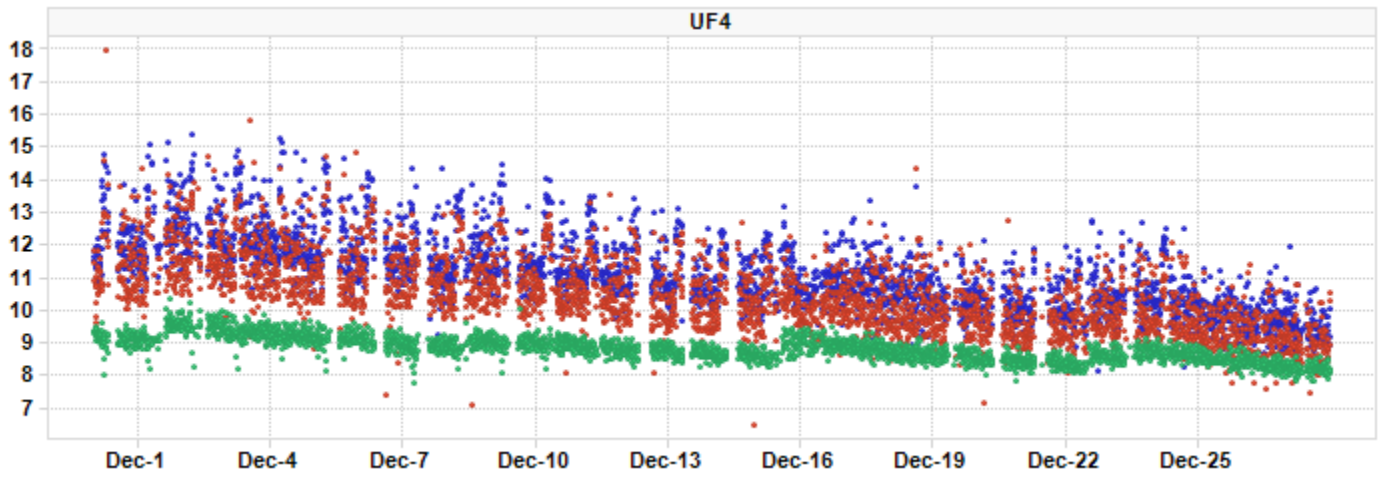
Bioreactor Dissolved Oxygen

Legend:
- AerobicZoneTank1DissolvedOxygen (mg/L)
- AerobicZoneTank2DissolvedOxygen (mg/L)
- PreAnoxicZone1TankDissolvedOxygen (mg/L)
- PreAnoxicZone2TankDissolvedOxygen (mg/L)
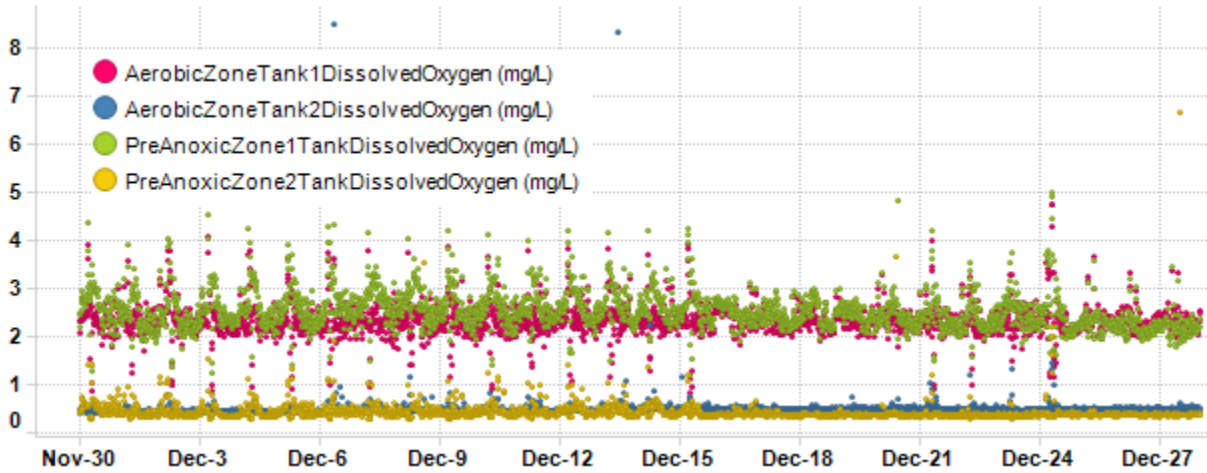
Daily median average values below:

Legend:
- AerobicZoneTank1DissolvedOxygen (mg/L)
- AerobicZoneTank2DissolvedOxygen (mg/L)
- PreAnoxicZone1TankDissolvedOxygen (mg/L)
- PreAnoxicZone2TankDissolvedOxygen (mg/L)

Permeate Turbidity Trend

PermeateTurbidityAfterBP (NTU)

Before BPTMP Trend

TMPBeforeBP (psi)
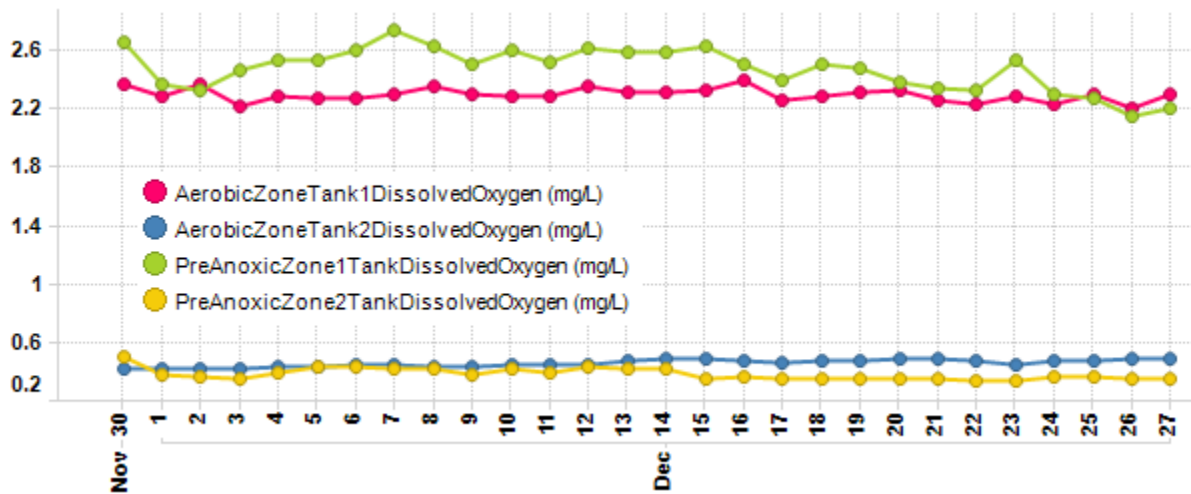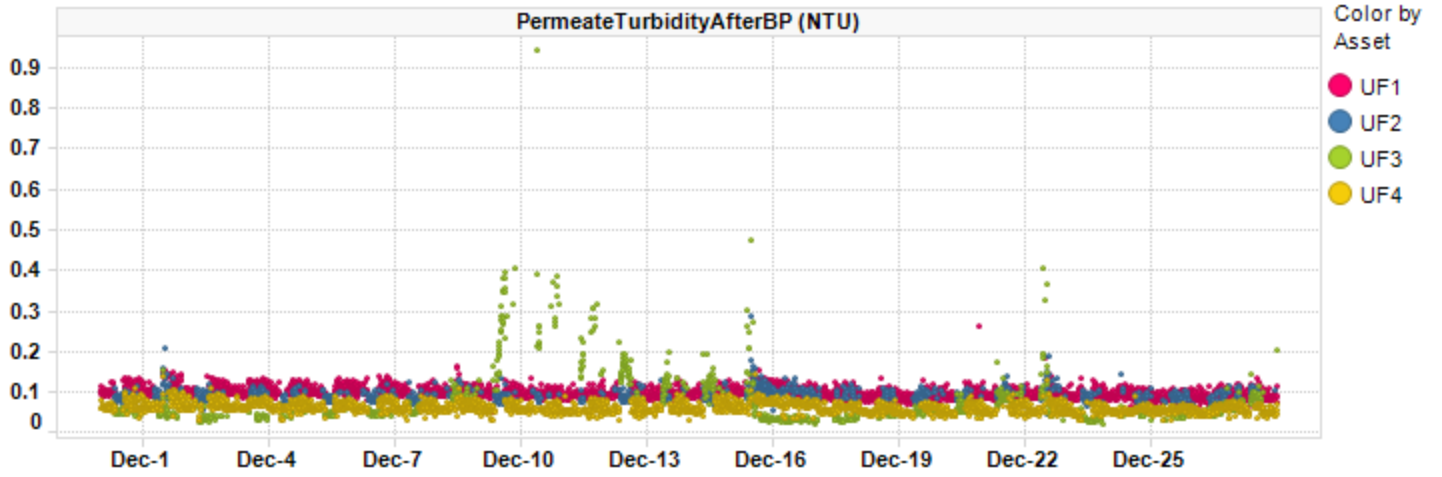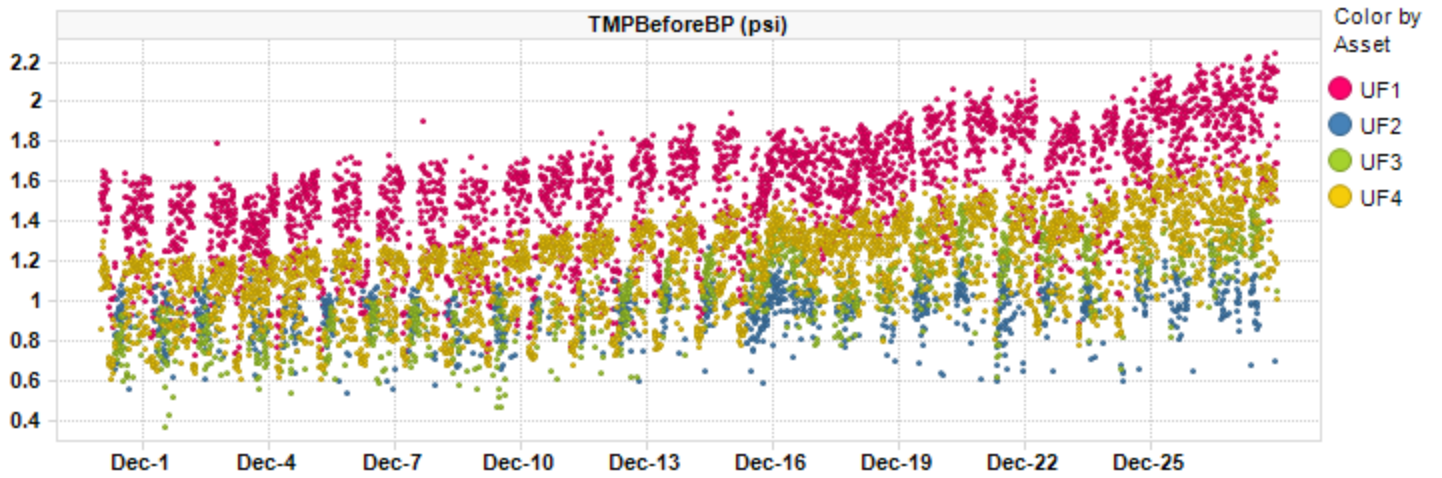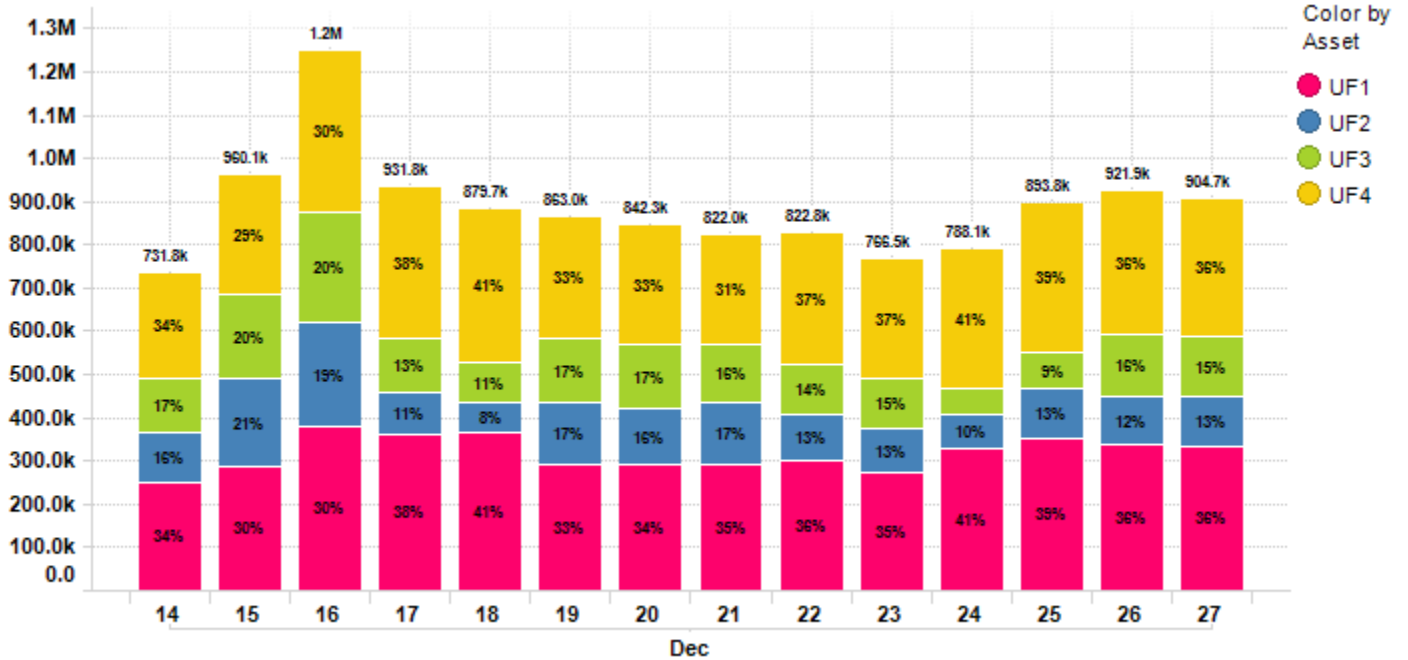
Before BP Flux Trend

FluxBeforeBP (gfd)
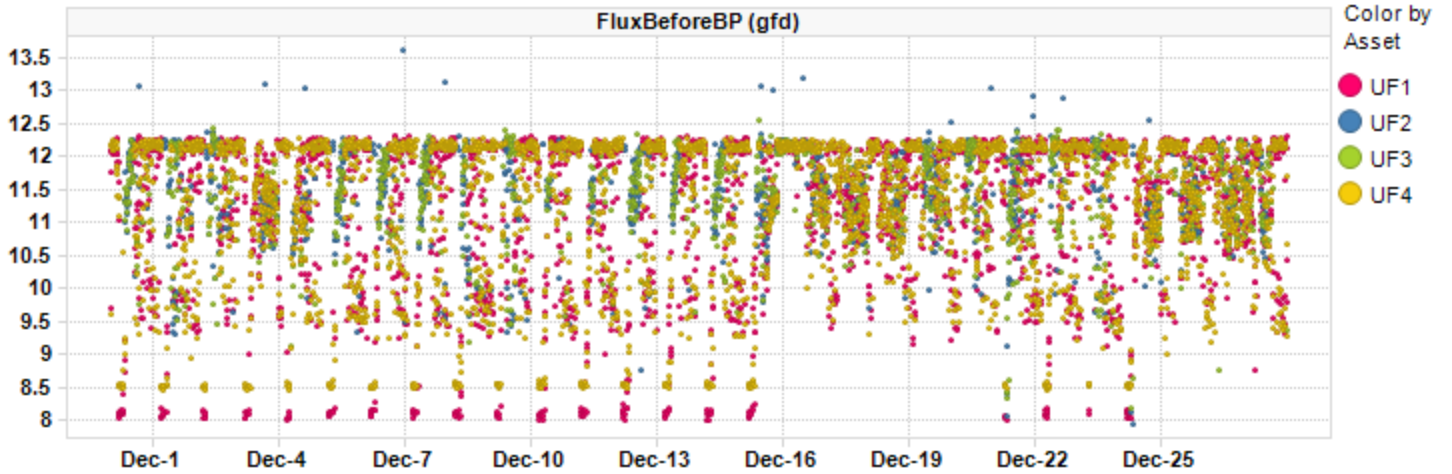
Daily Permeate Flow

Average Daily permeate flow from 12/14/2022 to 12/27/2022 is 883.9k gal with a maximum daily flow of 1.2M gal.

Average Daily permeate flow from 11/30/2022 to 12/13/2022 is 748.3k gal with a maximum daily flow of 810.1k gal.

Asset Summary Dec 14 – 27

KPI Parameters	Value/Ch...	UF1	UF2	UF3	UF4
FluxBeforeBP gfd	Value	11.33	11.49	11.42	11.32
	Change	2.45%	1.10%	0.67%	2.11%
FluxDuringBP gfd	Value	18.78	18.39	18.38	18.79
	Change	-0.69%	-0.18%	0.07%	-0.01%
PermeateTurbidityAfterBP NTU	Value	0.10	0.10	0.06	0.06
	Change	-8.51%	5.13%	-60.7...	-8.38%
TCPermeabilityBeforeBP gfd/psi	Value	7.45	13.17	10.99	9.79
	Change	-13.5...	-0.68%	-30.5...	-13.4...
TMPBeforeBP psi	Value	1.72	0.99	1.18	1.31
	Change	19.08%	7.66%	27.72%	18.62%
TotalPermeateFlowDaily gal	Value	313.1...	127.2...	133.5...	309.9...
	Change	13.98%	19.20%	25.60%	10.70%

Asset Summary Nov 30 – Dec 13

KPI Parameters	Value/Ch...	UF1	UF2	UF3	UF4
FluxBeforeBP gfd	Value	11.05	11.36	11.35	11.08
	Change	-1.15%	1.87%	1.05%	-1.23%
FluxDuringBP gfd	Value	18.91	18.42	18.37	18.79
	Change	-0.28%	-0.06%	-0.04%	0.05%
PermeateTurbidityAfterBP NTU	Value	0.10	0.09	0.10	0.06
	Change	-3.20%	0.05%	63.13%	2.37%
TCPermeabilityBeforeBP gfd/psi	Value	8.47	13.26	14.35	11.10
	Change	-6.03%	0.35%	-9.04%	-9.84%
TMPBeforeBP psi	Value	1.39	0.91	0.85	1.07
	Change	7.21%	4.40%	12.52%	10.42%
TotalPermeateFlowDaily gal	Value	269.3...	102.8...	99.37k	276.8...
	Change	-4.57%	6.50%	-9.00%	-12.3...

Plant Summary Dec 14 – 27

KPI Parameters	Value/Change	UF Plant
PermeateTemperature °F	Value	59.88
	Change	-7.14%
TotalPermeateFlowDaily gal	Value	973.52k
	Change	14.73%

Plant Summary Nov 30 – Dec 13

KPI Parameters	Value/Change	UF Plant
PermeateTemperature °F	Value	64.16
	Change	-3.09%
TotalPermeateFlowDaily gal	Value	830.10k
	Change	-6.32%

Contract Expiry Date: **08/11/2025**

For InSight technical assistance please email 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.