PUMP STATION		196	
Jan-21		PS 196	
		METER READING	24 HOUR FLOW
FRI	1	12302770	0.419860
SAT	2	12722630	0.403940
SUN	3	13126570	0.422550
MON	4	13549120	0.404230
TUE	5	13953350	0.379340
WED	6	14332690	0.374530
THUR	7	14707220	0.374590
FRI	8	15081810	0.389480
SAT	9	15471290	0.383190
SUN	10	15854480	0.416430
MON	11	16270910	0.340910
TUE	12	16611820	0.350890
WED	13	16962710	0.368600
THUR	14	17331310	0.375770
FRI	15	17707080	0.339200
SAT	16	18046280	0.315330
SUN	17	18361610	0.305830
MON	18	18667440	0.326220
TUE	19	18993660	0.354960
WED	20	19348620	0.344550
THUR	21	19693170	0.332490
FRI	22	20025660	0.351090
SAT	23	20376750	0.374540
SUN	24	20751290	0.383770
MON	25	21135060	0.357730
TUE	26	21492790	0.344830
WED	27	21837620	0.331140
THUR	28	22168760	0.347030
FRI	29	22515790	0.346340
SAT	30	22862130	0.357980
SUN	31	23220110	0.365880
		23585990	
TOTAL			11.283220
COUNT			31
AVERAGE			0.363975
MINIMUM			0.305830
MAXIMUM			0.422550

LEWES BPW WWTP Biweekly InSight Report

Date: 1/27/2021

From: Erin Horocholyn - Suez Water Technologies & Solutions
To: Darrin Gordon, Austin Calaman, Inframark
cc: Matt Stapleford - Suez Water Technologies & Solutions

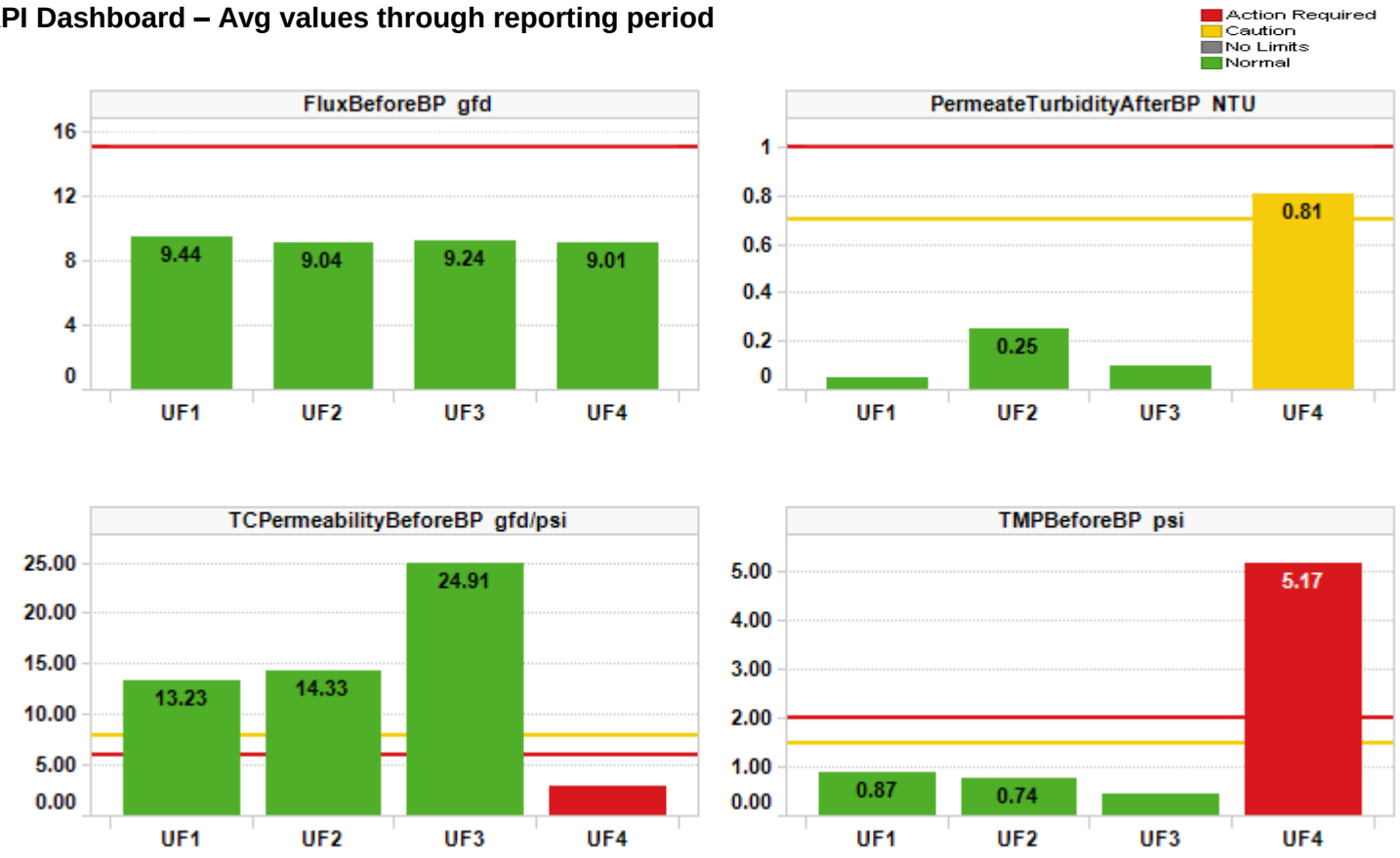
System Equipment

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

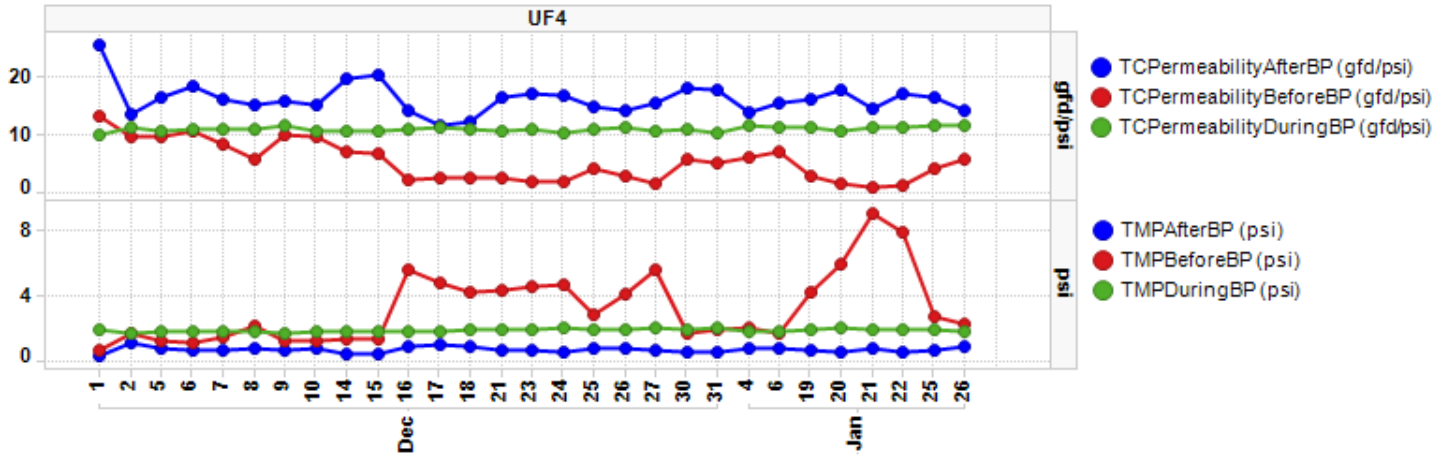
KPI Dashboard – Avg values through reporting period



Plant Summary

Overall, trains UF1 – UF3 operated well, with good TMPs and permeabilities. UF4 is being pulled for cleaning.

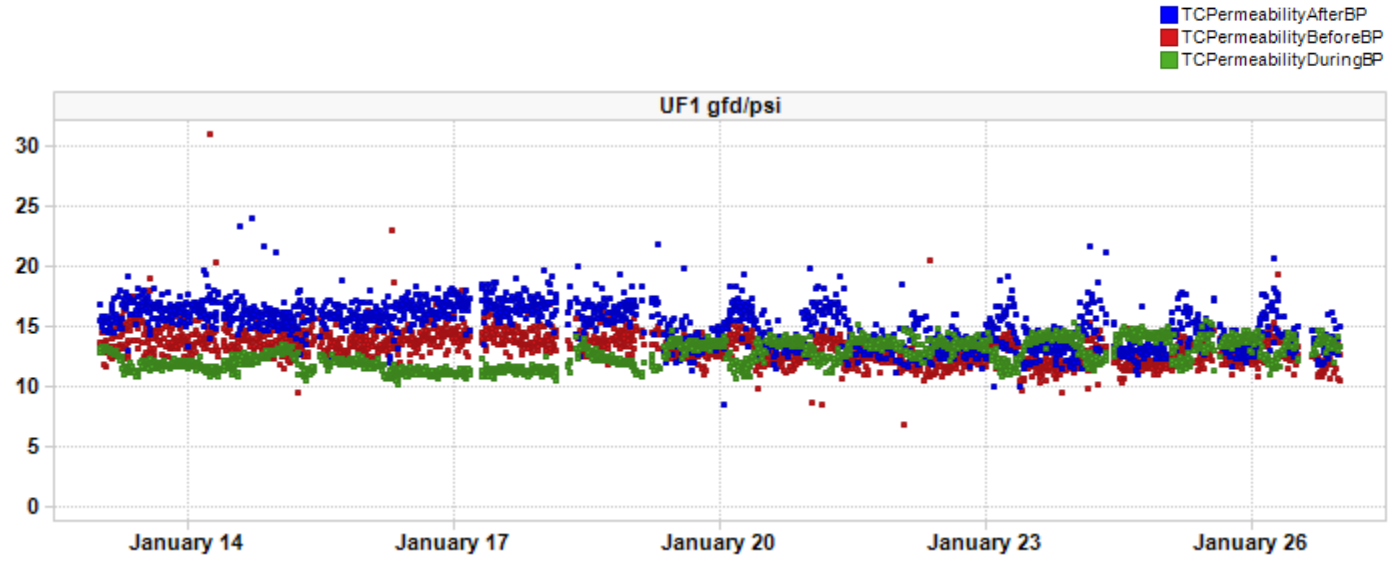
- Daily permeate production averaged 0.64 MGD. Flow peaked on Jan 13 at 0.72 MGD. Train UF4 has been mainly off during this report. Train UF2 was taken out of full production from Jan 18 – 25, so flux increased on UF1 and UF3 which handled the plant load during this time
- Flux BBP averages ranged from 9.01 – 9.44 gfd for all trains
- Average TMP BBP was good on trains UF1, UF2, and UF3, averaging 0.87, 0.74, and 0.46 psi respectively. Train UF4 averaged 5.17 psi, up from the previous average of 1.93 psi
- TC permeability BBP was excellent on UF1, UF2, and UF3, averaging 13.23, 14.33, and 24.91 gfd/psi respectively. Train UF4 averaged 2.99 gfd/psi, down from the previous average of 5.67 gfd/psi
- UF4 has had high TMP BBP reaching TMP control (TMP > ~7.0 psi) since Dec 16, 2020. On Jan 26, a module from UF4 was pulled, and the LEAP air diffusers were found to be clogged with sludge. The other modules will be pulled, and their diffusers and center channel cleaned. After, a recovery clean will be run. After the RC, the train will be aerated for 24 hours in clean permeate water to dislodge solids. Then, the modules will be pulled and manually cleaned to remove any remaining sludge. There is also separation of values between TMP before and after BP, indicating in-cycle fouling. The plot below shows daily median averages, and skips days UF4 wasn't in Production

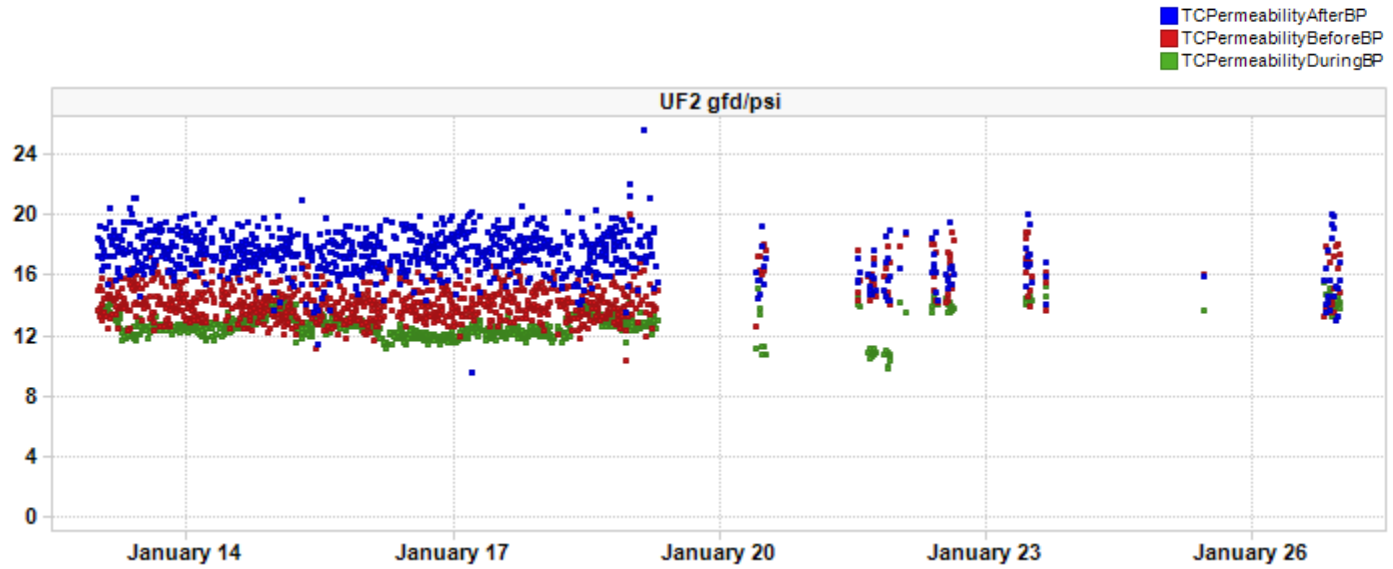


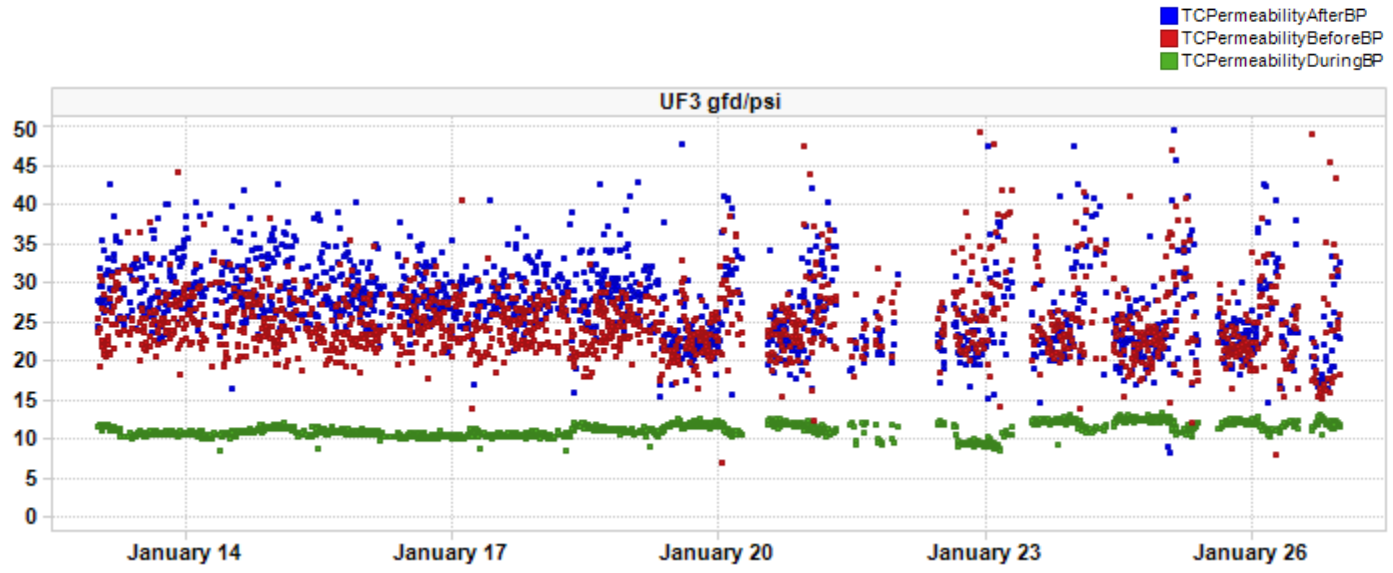
- Permeate turbidity ABP averaged 0.05, 0.25, 0.10, and 0.81 NTU on UF1, UF2, UF3, and UF4
- UF1, UF2, and UF4 had 2 hypo and 2 citric MCs, while UF3 had 3 hypo and 1 citric MC in this report

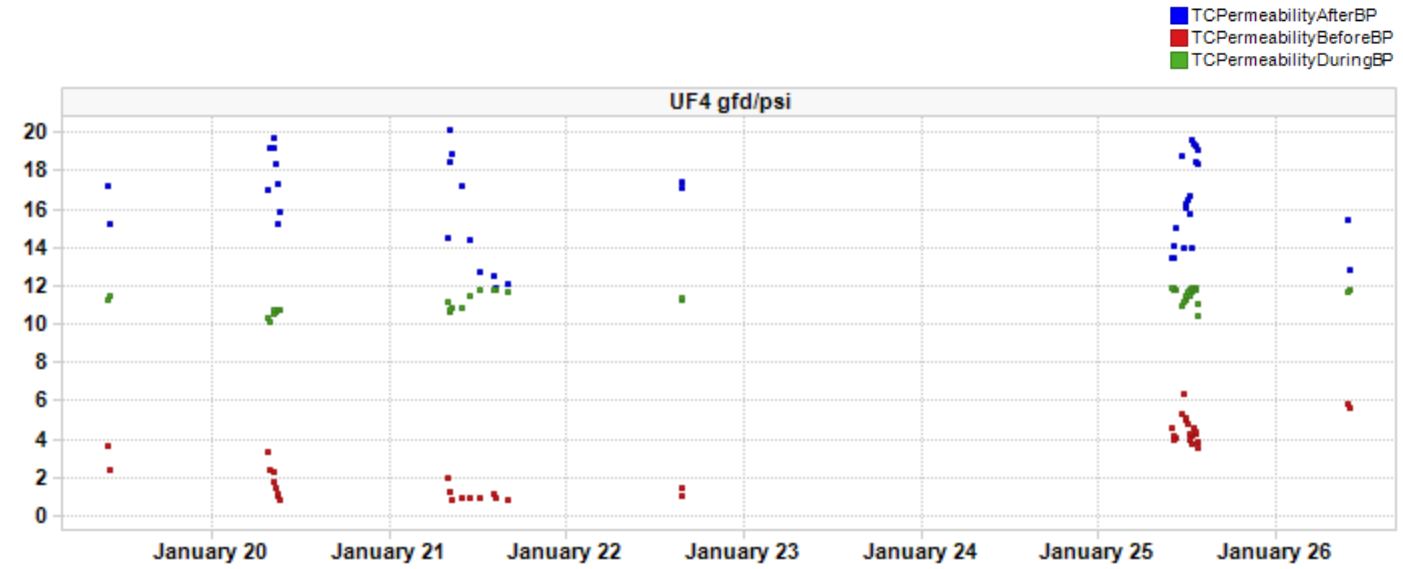
Acronyms:
TC = temperature corrected, BBP = before backpulse, ABP = after backpulse, DBP = during backpulse,
RC = recovery clean, MC = maintenance clean, TMP = trans membrane pressure

TC Permeability Trends By Train

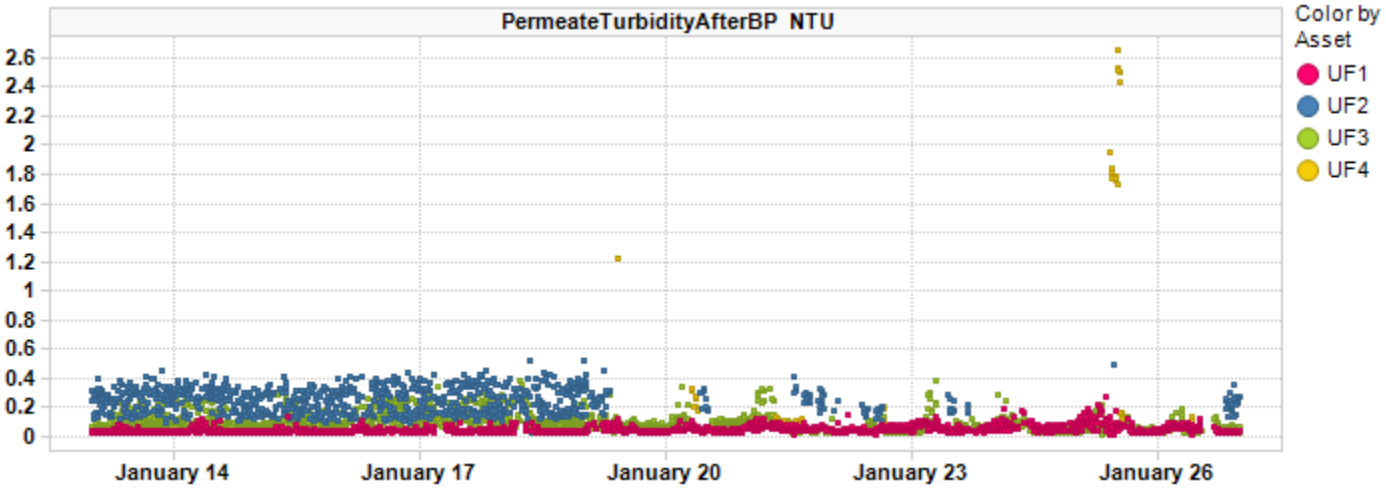




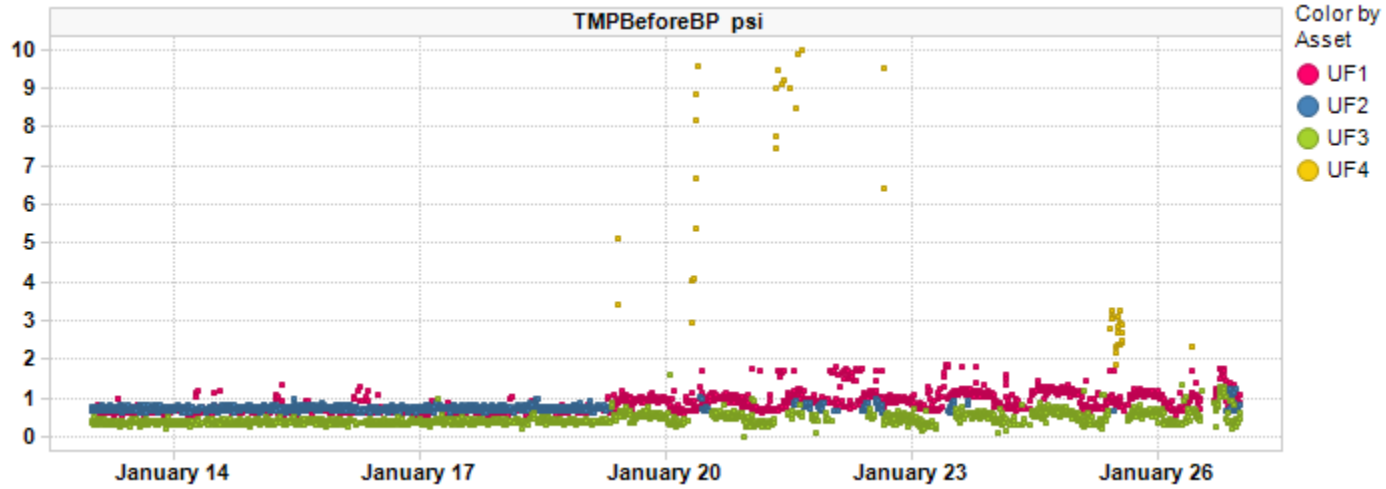




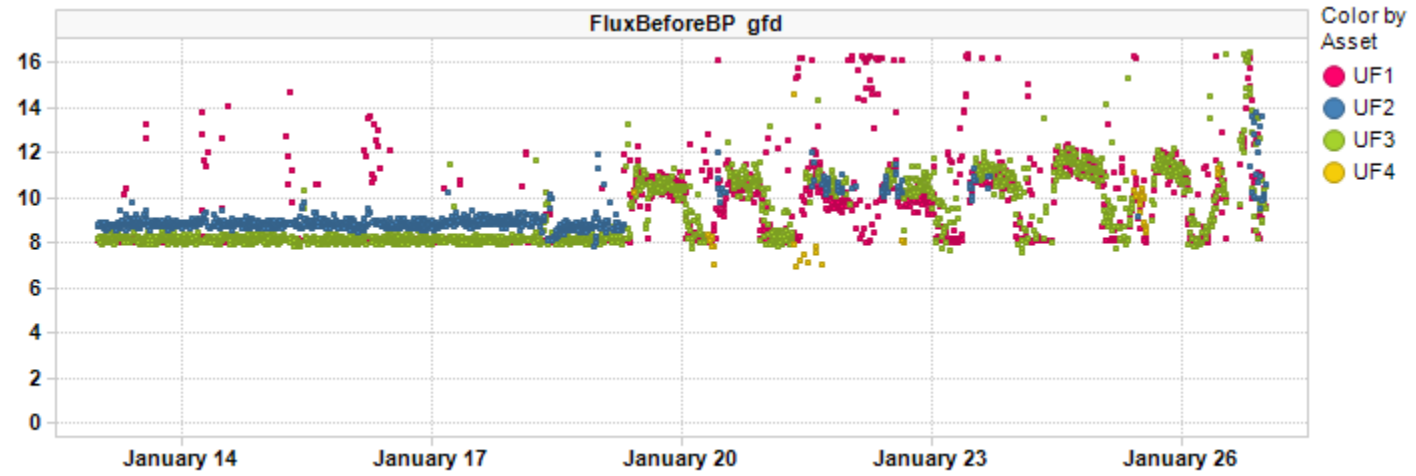
Permeate Turbidity Trend



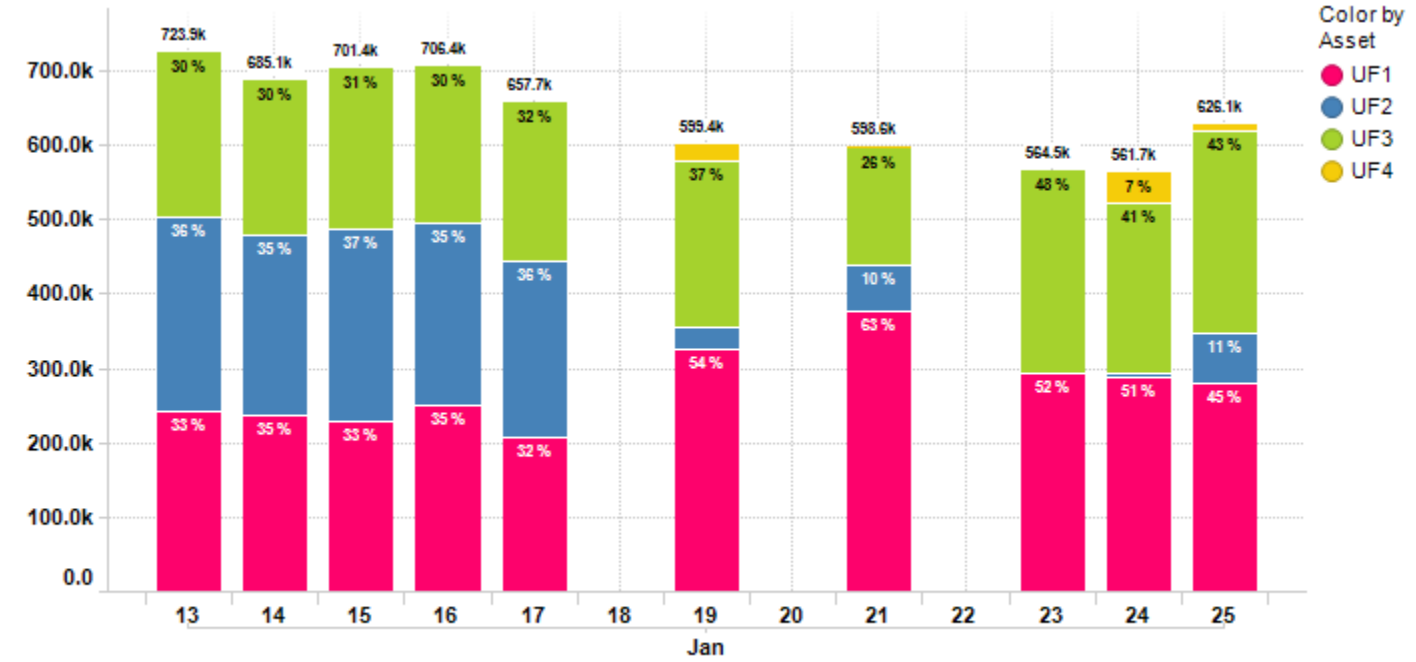
Before BPTMP Trend



Before BP Flux Trend

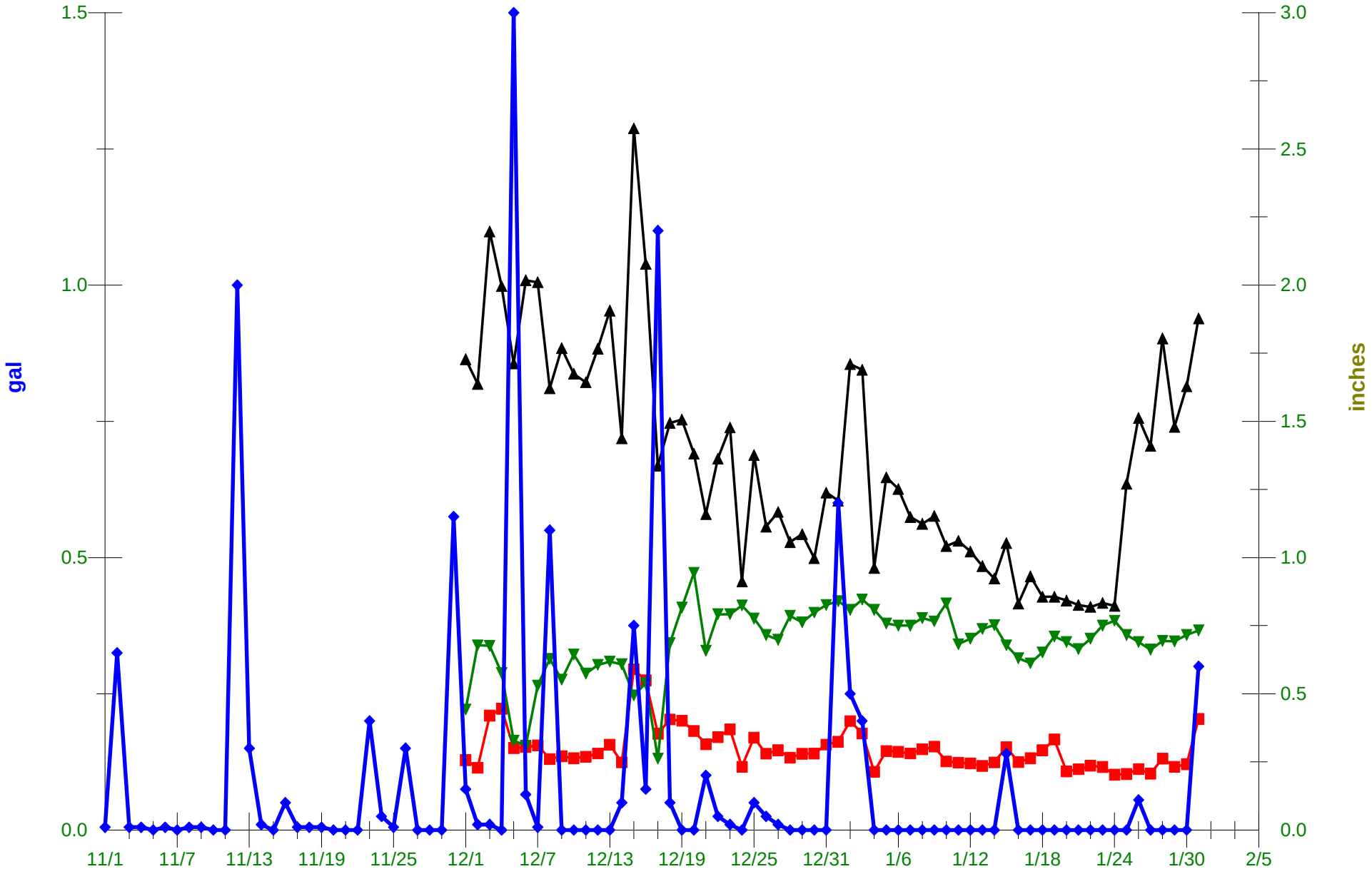


Daily Permeate Flow



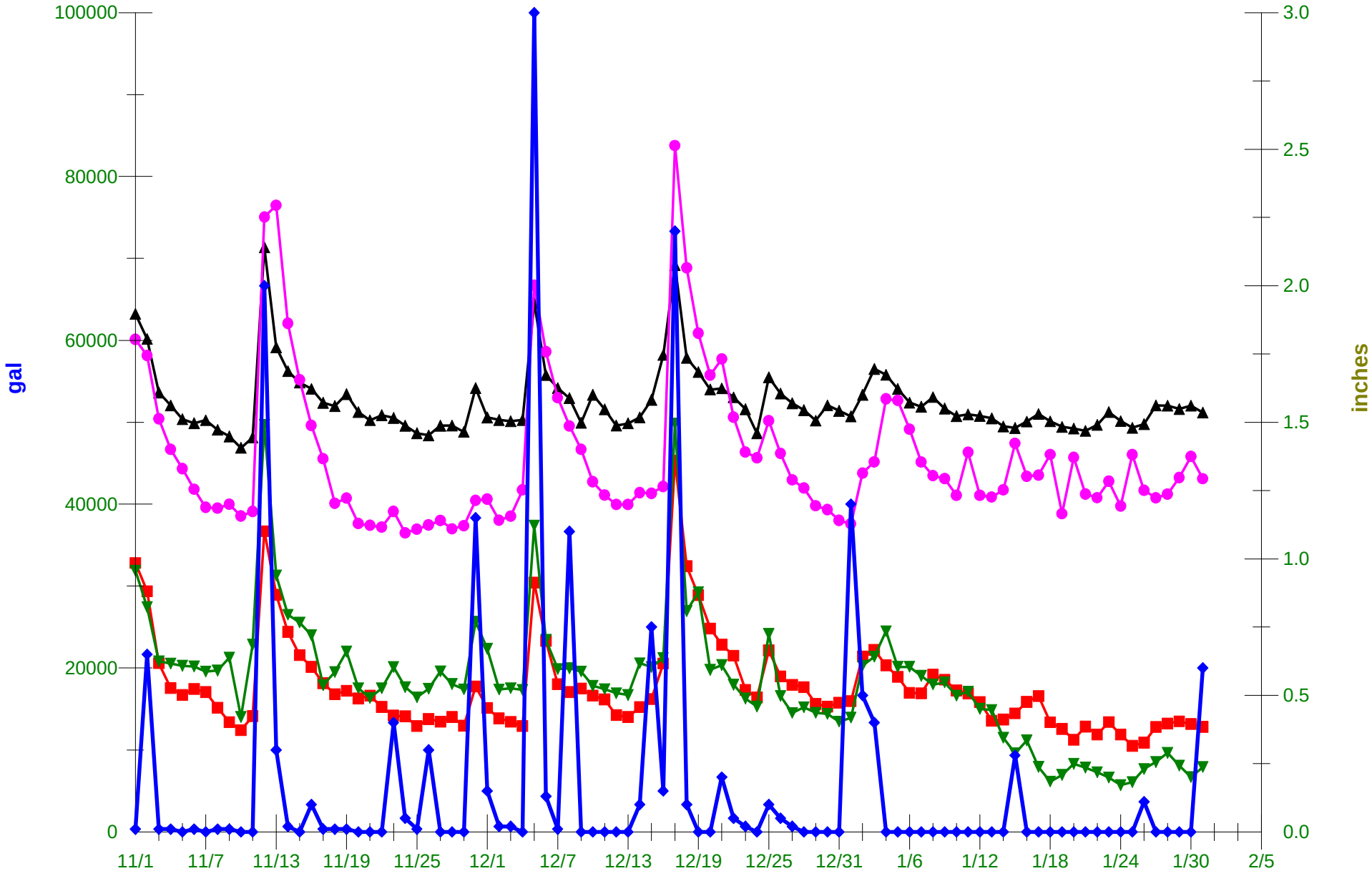
Average Daily permeate flow from 1/13/2021 to 1/26/2021 is 642.5k gal with a maximum daily flow of 723.9k gal.

Data Over Time



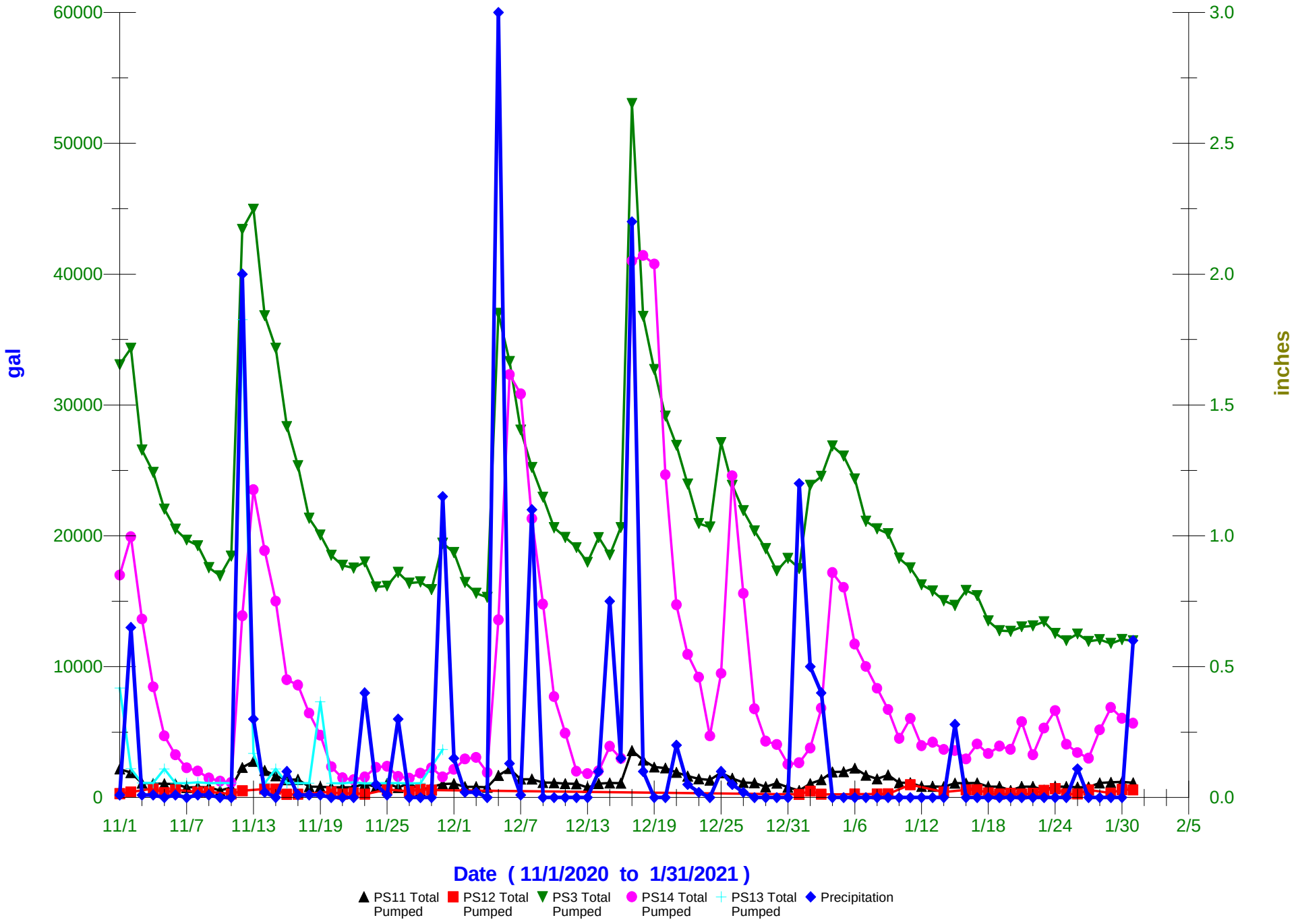
PS4,8 +County

Data Over Time



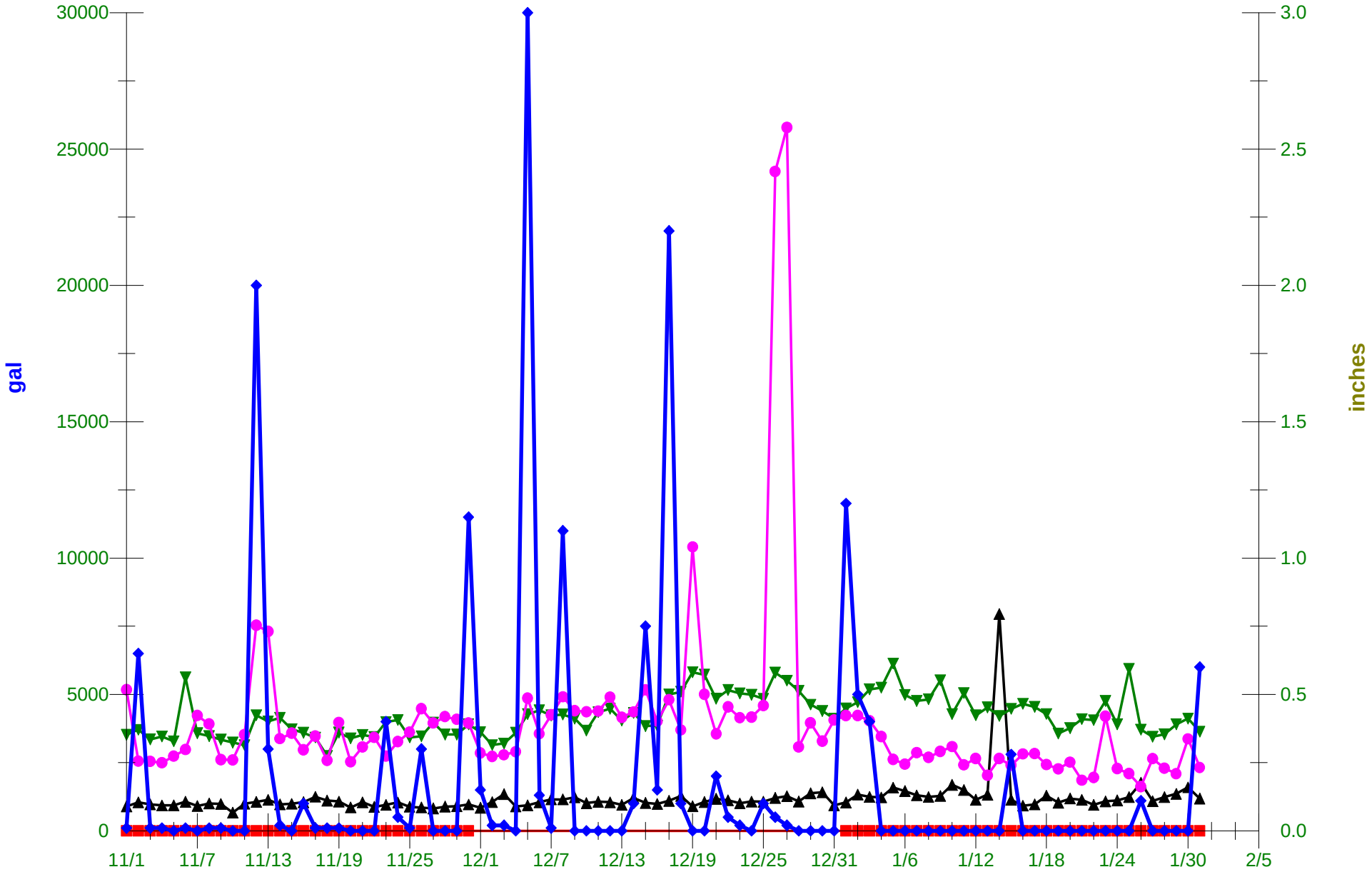
PS1,2,5,6

Data Over Time



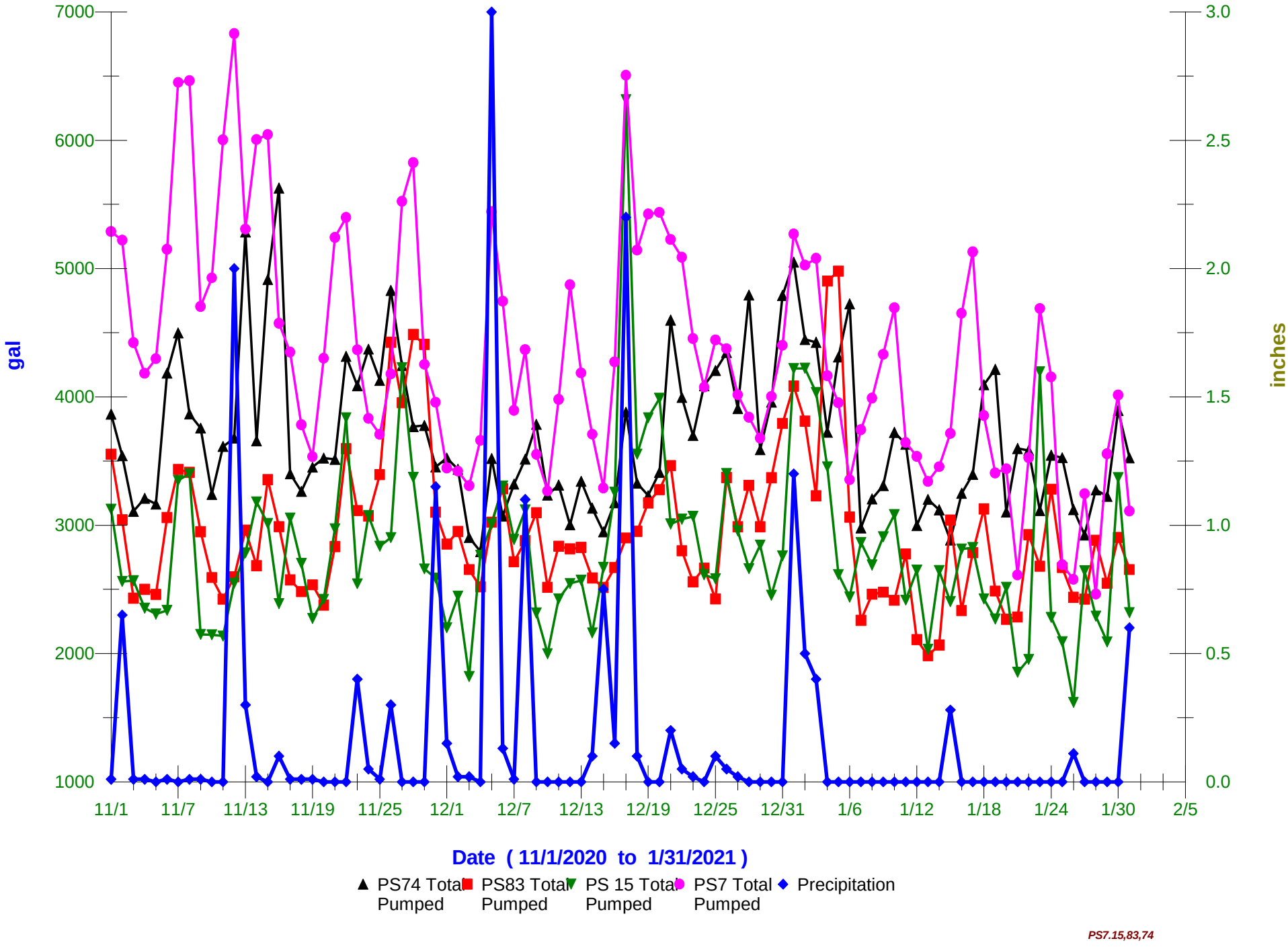
PS3,11,12,13,14

Data Over Time



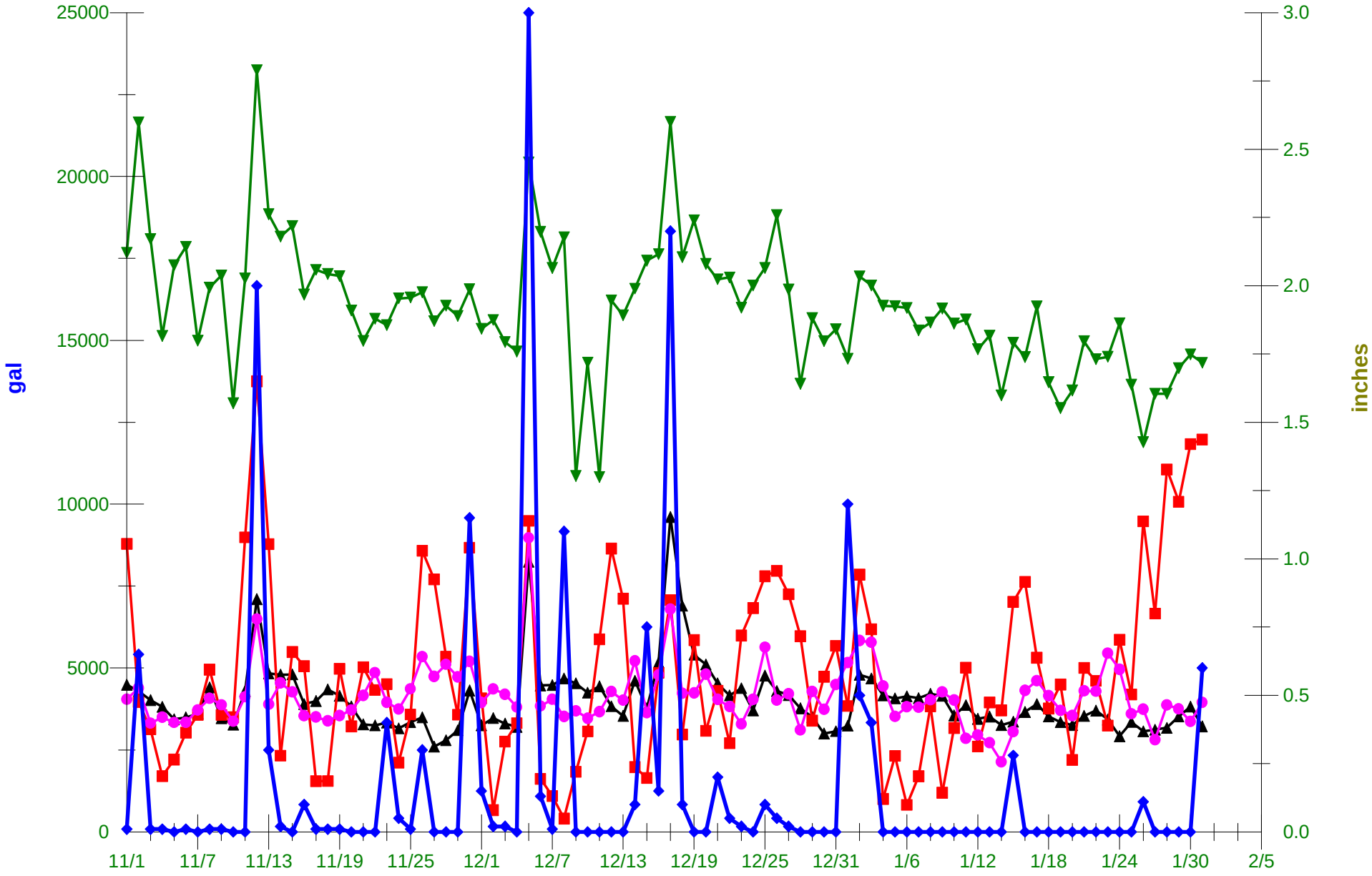
PS16,17,17b,18

Data Over Time



PS7.15,83,74

Data Over Time



PS9,10,19,32

Asset Summary

KPI Parameters	Value/Change	UF1	UF2	UF3	UF4
FluxBeforeBP gfd	Value	9.44	9.04	9.24	9.01
	Change	5.02 %	-7.53 %	2.45 %	-1.68 %
FluxDuringBP gfd	Value	18.86	18.49	18.54	18.79
	Change	-0.24 %	-0.53 %	-0.36 %	0.14 %
PermeateTurbidityAfterBP NTU	Value	0.05	0.25	0.10	0.81
	Change	15.99 %	-2.75 %	19.08 %	83.94 %
TCPermeabilityBeforeBP gfd/psi	Value	13.23	14.33	24.91	2.99
	Change	-13.33 %	-2.21 %	1.67 %	-89.46 %
TMPBeforeBP psi	Value	0.87	0.74	0.46	5.17
	Change	18.18 %	-5.88 %	2.78 %	62.57 %
TotalPermeateFlowDaily gal	Value	273.05k	140.64k	221.59k	8.00k
	Change	0.96 %	-119.57 %	-18.53 %	-120.74 %

Plant Summary

KPI Parameters	Value/Change	UF Plant
TotalPermeateFlowDaily gal	Value	720.25k
	Change	-29.41 %

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

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.

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