

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 2023 05 01 TO 2023 05 31

REPORT DESIGNATOR: A  
 DATA ENTRY COMPLETE: 6/21/2023  
 REPORT SUBMITTED BY: jkerin  
 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	0.79	1.068	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			--	1.7		4.66	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			--	6.8		7.2	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	<17	20	lbs/Day		<2.6	3.5	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			--		108	108	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	<6	<12	lbs/Day		<0.9	<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)

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REPORT DESIGNATOR: A  
 DATA ENTRY COMPLETE: 6/21/2023  
 REPORT SUBMITTED BY: jkerin  
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#	PARAMETER	SAMPLE MEASUREMENT	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	-			--		142	142	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	-	30	30	lbs/Day		4.09	4.09	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	-	1	1	lbs/Day		0.13	0.13	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

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# Monthly Operations Report: May 2023

Site: LEWES WWTP

FINAL EFFLUENT OUTFALL 001																	
DATE	DAY	Flow	BOD		TSS		Enteroc.	Total P		Total N		Ammonia as N		Nitrite + Nitrate		TKN	
		MGD	mg/L	lbs	mg/L	lbs	col/100ml	mg/L	lbs	mg/L	lbs	mg/L	lbs	mg/L	lbs	mg/L	lbs
1	Mon.	0.972															
2	Tue.	0.878	<2.4	<18	<1.0	<7		0.1	0.95	4.1	29.96	0.1	1	3.6	26	0.5	4
3	Wed.	0.793					<1.0										
4	Thu.	0.795															
5	Fri.	0.809															
6	Sat.	0.744															
7	Sun.	0.785															
8	Mon.	0.735															
9	Tue.	0.585	<2.4	<12	<0.5	<2											
10	Wed.	0.729					<1.0										
11	Thu.	0.554															
12	Fri.	0.672															
13	Sat.	0.656															
14	Sun.	0.565															
15	Mon.	0.648															
16	Tue.	0.966	<2.4	<19	<0.5	<4											
17	Wed.	0.901					<1.0										
18	Thu.	1.004															
19	Fri.	0.938															
20	Sat.	1.068															
21	Sun.	0.945															
22	Mon.	0.831															
23	Tue.	0.688	3.5	20	<2.0	<12											
24	Wed.	0.671					1.0										
25	Thu.	0.722															
26	Fri.	0.791															
27	Sat.	0.881															
28	Sun.	0.831															
29	Mon.	0.887															
30	Tue.	0.727	<2.4	<15	<0.5	<3											
31	Wed.	0.717					<1.0										
TOTAL		24.4890															
AVERAGE		0.7900	<2.62	<16.66	<0.90	<5.64	1.0	0.13	0.95	4.09	29.96	0.11	0.81	3.56	26.08	0.54	3.96
MAXIMUM		1.0682	3.50	20.10	<2.00	<11.50	1.00	0.13	0.95	4.09	29.96	0.11	0.81	3.56	26.08	0.54	3.96
MINIMUM		0.5541	<2.40	<11.70	<0.50	<2.40	<1.00	0.13	0.95	4.09	29.96	0.11	0.81	3.56	26.08	0.54	3.96
Removal (%)			97.6		99.4												

INFLUENT						
DATE	DAY	Flow	BOD		TSS	
		MGD	mg/L	lbs	mg/L	lbs
1	Mon.	1.034				
2	Tue.	0.936	108.0	843	142.0	1108
3	Wed.	0.806				
4	Thu.	0.764				
5	Fri.	0.757				
6	Sat.	0.752				
7	Sun.	0.728				
8	Mon.	0.694				
9	Tue.	0.591				
10	Wed.	0.522				
11	Thu.	0.484				
12	Fri.	0.456				
13	Sat.	0.614				
14	Sun.	0.570				
15	Mon.	0.774				
16	Tue.	0.954				
17	Wed.	0.901				
18	Thu.	0.943				
19	Fri.	0.948				
20	Sat.	1.005				
21	Sun.	0.972				
22	Mon.	0.861				
23	Tue.	0.627				
24	Wed.	0.625				
25	Thu.	0.664				
26	Fri.	0.758				
27	Sat.	0.821				
28	Sun.	0.839				
29	Mon.	0.846				
30	Tue.	0.732				
31	Wed.	0.666				
TOTAL		23.6440				
AVERAGE		0.76	108	843	142	1,108
MAXIMUM		1.03	108	843	142	1,108
MINIMUM		0.46	108	843	142	1,108
Removal (%)						

# LEWES WWTF

## NUTRIENT OFFSET REPORT 2023

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											400.29
January	31	0.8609	4.78	1,063.92	8.99	0.06	13.35	1.90	8.99	-	391.30
February	28	0.8134	7.61	1,445.48	12.21	0.11	20.89	2.98	12.21	-	379.09
March	31	0.8603	3.10	689.51	5.83	<0.05	11.12	1.58	5.83	-	373.26
April	30	0.9072	3.30	749.04	6.33	<0.05	11.35	1.62	6.33	-	366.93
May	31	0.7900	4.09	835.37	7.06	0.13	26.55	3.78	7.06	-	359.87
June	30				-			-		-	-
July	31	-	-		-	-		-		-	-
August	31	-	-		-	-		-		-	-
September	30	-	-		-	-		-		-	-
October	31	-	-		-	-		-		-	-
November	30	-	-		-	-		-		-	-
December	31	-	-		-	-		-		-	-
Year Balance											359.87

Comments:

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

\_\_\_\_\_  
Date

Work Orders Completed in Prior Month

WO No.	Asset Description	Brief Description	Comments	Work Completed Date	WO Type
2149	Howard Seymour STP	FUWO: Monthly Electrical System Inspection		06/01/2023	FOLLOW UP
2323	Howard Seymour STP	FUWO: Monthly Chemical Processing and Storage Inspection	Line replaced for 50% caustic.	06/01/2023	FOLLOW UP
2325	LS #15 Cape Henlopen Dr Port Lewes	FUWO: Pump Station Monthly Inspection	Replaced broken 8x8 cover. Cleaned up all overgrown vegetation.	06/01/2023	FOLLOW UP
2328	LS #19 Pilottown Village Ocean Blvd	FUWO: Pump Station Monthly Inspection	Repaired/replaced gate latch. Still needs new lock which are being ordered. Sprayed weed killer	06/01/2023	FOLLOW UP
2333	LS #10 Reserves	FUWO: Pump Station Monthly Inspection	Cleaned up all pine needles and trash. Pulled weeds. Still needs lock which is being ordered.	06/01/2023	FOLLOW UP
2408	LS #4 Gills Neck Savannah	General Cleanup of pump station	Cleaned up around pumps. Sprayed weed killer. Cut out overgrown weeds.	06/01/2023	PROACTIVE
2332	LS #18 Drake Knoll	FUWO: Pump Station Monthly Inspection	Float tree was pulled and cleaned. Spider infestation was sprayed. General cleanup of area was done.	06/05/2023	FOLLOW UP
2334	Lewes Turbidimeters	Daily Turbidity Meter PM	All meters wiped daily.	06/05/2023	PM
2335	Blowers	Weekly Oil Check	All blower oil checked daily.	06/05/2023	PM
2321	Howard Seymour STP	Weekly Universal Waste Inspection	Inspection completed. No issues found.	06/06/2023	PM
2400	Blower Motors	Quarterly Motor PM	All blower motors greased.	06/06/2023	PM
2401	Blowers	Monthly Blower Inspection / PM	Inspection completed. No issues to report.	06/06/2023	PM
2405	Blowers	Weekly Oil Check	Oil checks completed. No issues found.	06/06/2023	PM
2390	Generator, Main Plant	Monthly Generator Inspection	All fluids good. Battery good.	06/07/2023	PM
2391	Generator	Monthly Generator Inspection	All fluids good. Battery good.	06/07/2023	PM
2392	Generator	Monthly Generator Inspection	All fluids good. Battery good.	06/07/2023	PM
2394	1 Ton Hoist, Process Building	Hoist Inspection - Monthly	Inspection completed. No issues to report.	06/07/2023	PM
2396	Overhead Trolley 2	Hoist Inspection - Monthly	Inspection completed. No issues found.	06/07/2023	PM
2407	Lewes DO Probes	Weekly DO meter PM	Probes calibrated. Effluent DO probe calibration failed first attempt. Contacted Hach about issue to cause failure.	06/07/2023	PM
2395	Overhead Trolley 1	Hoist Inspection - Monthly	Inspection completed. No issues to report.	06/09/2023	PM
2397	Hoist	Hoist Inspection - Monthly	Inspection completed. No issues found.	06/09/2023	PM
2398	Overhead Crane Davit Arm Second Floor	Hoist Inspection - Monthly	Inspection completed. No issues found.	06/09/2023	PM
2404	Lewes Turbidimeters	Daily Turbidity Meter PM	All meters wiped daily.	06/09/2023	PM
2336	Howard Seymour STP	Weekly Universal Waste Inspection	Weekly inspection completed. No issues to report.	06/12/2023	PM
2413	Headworks Building	Replace Electrical Panel in Headworks Building	Electrical panel replaced. New breakers and blank plates. Photos of old panel and new installed panel available.	06/12/2023	PROACTIVE

Work Orders Completed in Prior Month

WO No.	Asset Description	Brief Description	Comments	Work Completed Date	WO Type
2412	Lewes DO Probes	Weekly DO meter PM	Probes cleaned and calibrated.	06/13/2023	PM
2381	Pressure Washer	Monthly Rolling Stock PM	Pressure washer broken. New pressure washer on order. Received new pressure washer on 6/13/2023 but refused due to damage. Awaiting replacement.	06/14/2023	PM
2331	LS #12 Market Street Devon Inn	GFI w/Cover	Installed new GFIC with bubble cover.	06/15/2023	PROACTIVE
2410	Blowers	Weekly Oil Check	All blower oil levels checked. No issues.	06/15/2023	PM
2409	Lewes Turbidimeters	Daily Turbidity Meter PM	All meters wiped daily.	06/16/2023	PM
2326	LS #7 Cape Henlopen Dr Pilot Point	FUWO: Pump Station Monthly Inspection	Replaced lamp and photocell.	06/19/2023	FOLLOW UP
2339	Howard Seymour STP	Monthly General Safety Inspection	Inspection completed. No issues found.	06/21/2023	PM
2341	Howard Seymour STP	Monthly Fire Prevention and Emerg Action Inspctn	Inspection completed. Will be adding fire extinguisher to maintenance office electrical room.	06/21/2023	PM
2343	Howard Seymour STP	Monthly Material Handling and Storage Inspection	Inspection completed. No issues found.	06/21/2023	PM
2346	Howard Seymour STP	Monthly Protective and Emergency Equipment Inspection	Inspection completed. No issues found.	06/21/2023	PM
2348	Howard Seymour STP	Monthly Universal Waste Inspection	Inspection completed. No issues found.	06/21/2023	PM
2349	Howard Seymour STP	Monthly SPCC Inspection	Inspection completed. No issues found.	06/21/2023	PM
2350	LS #1 U of D	Pump Station Monthly Inspection	Wet well clean no FOG. Floats clean, operating normally. Both pumps operating normally.	06/21/2023	PM
2351	LS #2 Pilottown Rodney Ave	Pump Station Monthly Inspection	Wet well clean no FOG. Floats clean. Floats and pumps operating normally.	06/21/2023	PM
2352	LS #3 Pilottown Marina	Pump Station Monthly Inspection	Pumps both operating normally.	06/21/2023	PM
2353	LS #4 Gills Neck Savannah	Pump Station Monthly Inspection	Light FOG. Both pumps operating normally. Station checked and flows recorded daily.	06/21/2023	PM
2354	LS #5 California Ave	Pump Station Monthly Inspection	Light FOG. Floats clean. Floats and pumps operating normally. Junction box needs repaired. WO already created to address this issue.	06/21/2023	PM
2355	LS #6 Connecticut Ave	Pump Station Monthly Inspection	Both pumps operating normally. Wet well not easily accessible due to broken hinges.	06/21/2023	PM
2356	LS #7 Cape Henlopen Dr Pilot Point	Pump Station Monthly Inspection	Wet well clean. Pumps operating normally.	06/21/2023	PM
2357	LS #8, American Legion	Pump Station Monthly Inspection	Medium FOG. Both pumps operating normally. Station checked and flows recorded daily.	06/21/2023	PM
2358	LS #9 Sussex Drive	Pump Station Monthly Inspection	Heavy FOG. Both pumps operating normally. Floats clean.	06/21/2023	PM
2359	LS #10 Reserves	Pump Station Monthly Inspection	Light FOG. Pumps operating normally. Floats clean.	06/21/2023	PM

Work Orders Completed in Prior Month

WO No.	Asset Description	Brief Description	Comments	Work Completed Date	WO Type
2360	LS #11 Hoornkill Avenue	Pump Station Monthly Inspection	Light FOG. Door to wet well needs hinges. Both pumps operating normally.	06/21/2023	PM
2361	LS #12 Market Street Devon Inn	Pump Station Monthly Inspection	Heavy FOG. Floats and pumps operating normally.	06/21/2023	PM
2362	LS #13 Schley Avenue at the old Power Plant	Pump Station Monthly Inspection	Pump working normally. Wet well and floats clean.	06/21/2023	PM
2363	LS #14 Harborview Road	Pump Station Monthly Inspection	Heavy FOG. Both pumps operating normally. Applied weed killer to area around station.	06/21/2023	PM
2364	LS #15 Cape Henlopen Dr Port Lewes	Pump Station Monthly Inspection	Light FOG. Floats clean. Floats and pumps operating normally.	06/21/2023	PM
2365	LS #16 Henlopen Gardens	Pump Station Monthly Inspection	Light to medium FOG. Pump 1 offline. Pump 2 operating normally. Floats working properly.	06/21/2023	PM
2366	LS #17 Savannah Road Huling Cove	Pump Station Monthly Inspection	Heavy FOG. Pump 1 heater had to be reset. Pumps operating normally. Floats clean and operating.	06/21/2023	PM
2367	LS #17B	Pump Station Monthly Inspection	Light FOG. Pumps operating normally.	06/21/2023	PM
2368	LS #18 Drake Knoll	Pump Station Monthly Inspection	Light FOG. Both pumps operating normally.	06/21/2023	PM
2369	LS #19 Pilottown Village Ocean Blvd	Pump Station Monthly Inspection	Light FOG. Muffin monster operating normally. Both pumps operating normally. Applied weed killer to area around station.	06/21/2023	PM
2370	LS #20 Monroe Ave	Pump Station Monthly Inspection	E1 operating normally.	06/21/2023	PM
2371	LS #21 Monroe Ave	Pump Station Monthly Inspection	E1 operating normally.	06/21/2023	PM
2372	LS #22 Monroe Ave	Pump Station Monthly Inspection	E1 operating normally.	06/21/2023	PM
2373	LS #23 Monroe Ave	Pump Station Monthly Inspection	E1 operating normally.	06/21/2023	PM
2374	LS #25 Monroe Ave	Pump Station Monthly Inspection	E1 operating normally.	06/21/2023	PM
2375	LS #29 Washington Street	Pump Station Monthly Inspection	E1 operating normally.	06/21/2023	PM
2376	LS #30 Washington Street	Pump Station Monthly Inspection	E1 operating normally.	06/21/2023	PM
2377	LS #32 Canary Creek	Pump Station Monthly Inspection	Light FOG. Both pumps operating normally.	06/21/2023	PM
2378	LS #33 DNREC Station	Pump Station Monthly Inspection	Wet well and floats clean. Both pumps operating.	06/21/2023	PM
2379	LS #74 Cape Shores	Pump Station Monthly Inspection	Light FOG. Floats clean. Floats and pumps operating normally. Weed killer needed for poison ivy on fence.	06/21/2023	PM
2380	LS #83	Pump Station Monthly Inspection	Medium FOG. Both pumps were running loud but issue has been fixed. Screening basket wet well needs vac.	06/21/2023	PM
2402	Tower Hill	Pump Station Monthly Inspection	Light FOG. Both pumps operating normally.	06/21/2023	PM
2406	Howard Seymour STP	Weekly Universal Waste Inspection	Inspection completed. No issues found.	06/21/2023	PM
2382	Gehl Skid Steer	Monthly Rolling Stock PM	Inspection completed. No issues found.	06/22/2023	PM

Work Orders Completed in Prior Month

WO No.	Asset Description	Brief Description	Comments	Work Completed Date	WO Type
2383	Portable Water Pump, Gas	Monthly Rolling Stock PM	Inspection completed. No issues found.	06/22/2023	PM
2384	Ford F350 Crane Truck	Monthly Rolling Stock PM	Inspection completed. No issues found.	06/22/2023	PM
2385	Snowblower	Monthly Rolling Stock PM		06/22/2023	PM
2386	Edge Loader Brush	Monthly Rolling Stock PM	Inspection completed. No issues found.	06/22/2023	PM
2403	Lewes Exhaust Fans	Monthly Exhaust Fan Inspection	Inspection completed. Replaced one A36 belt on exhaust fan 2.	06/22/2023	PM
2415	Blowers	Weekly Oil Check	All blowers oil checked.	06/22/2023	PM
2417	Lewes DO Probes	Weekly DO meter PM	Probes cleaned and meters calibrated.	06/22/2023	PM
2414	Lewes Turbidimeters	Daily Turbidity Meter PM	All probes wiped daily.	06/23/2023	PM
2345	Howard Seymour STP	Monthly Training and Recordkeeping Inspection	Inspection complete. All training and records up to date.	06/27/2023	PM
2393	5 Ton Hoist, Process Building	Hoist Inspection - Monthly	Hoist inspection complete. hoist functioning properly. Hard to move between trains 1 & 2. Have reached out to have a contractor come check it.	06/27/2023	PM
2411	Howard Seymour STP	Weekly Universal Waste Inspection	Weekly check completed. No issues found.	06/27/2023	PM
2419	Blowers	Weekly Oil Check	All blowers checked. Oil good. No issues found.	06/27/2023	PM
2421	Lewes DO Probes	Weekly DO meter PM	Probes cleaned and calibrated.	06/27/2023	PM
2422	Digester Blower 2	Corrective Action Needed - See Comments		06/27/2023	ICM
2423	LS #3 Pilottown Marina	Inspect and Repair cover for bypass connection.	The cover for the bypass valve appears to have been damaged by dragging something across it. The cover was held in place by three bolts anchored in the concrete. One of these bolts was ripped out and the concrete broken. Mike installed two new bolts, realigned the cover, and tightened it in place.	06/27/2023	REACTIVE
2330	LS #3 Pilottown Marina	FUWO: Pump Station Monthly Inspection	PS building cleaned. Light photocell issue fixed.	06/28/2023	FOLLOW UP
2347	Howard Seymour STP	Monthly Chemical Processing and Storage Inspection	Inspection completed. Cleaned out caustic containment area and cleaned chemical room.	06/28/2023	PM
2344	Howard Seymour STP	Monthly Machinery and Equipment Inspection	Inspection completed. No issues found.	06/29/2023	PM
2387	Generator	Annual Generator PM	Annual PM completed by Cummings	06/29/2023	PM
2388	Generator, Main Plant	Annual Generator PM	Annual PM completed by Cummings	06/29/2023	PM
2389	Generator	Annual Generator PM	Annual inspection completed by Fidelity.	06/29/2023	PM
2418	Lewes Turbidimeters	Daily Turbidity Meter PM	All probes wiped daily.	06/30/2023	PM

Printed 93 items



**PUMP STATION 196**

Jun-23		PS 196	
		METER READING	24 HOUR FLOW
THU	1	29038390	0.139220
FRI	2	29177610	0.145130
SAT	3	29322740	0.144560
SUN	4	29467300	0.150210
MON	5	29617510	0.145650
TUE	6	29763160	0.138940
WED	7	29902100	0.137910
THU	8	30040010	0.153450
FRI	9	30193460	0.147260
SAT	10	30340720	0.152620
SUN	11	30493340	0.156710
MON	12	30650050	0.153690
TUE	13	30803740	0.139390
WED	14	30943130	0.139830
THU	15	31082960	0.144640
FRI	16	31227600	0.156560
SAT	17	31384160	0.162420
SUN	18	31546580	0.167660
MON	19	31714240	0.160260
TUE	20	31874500	0.148160
WED	21	32022660	0.158390
THU	22	32181050	0.154280
FRI	23	32335330	0.162510
SAT	24	32497840	0.161530
SUN	25	32659370	0.167980
MON	26	32827350	0.156650
TUE	27	32984000	0.142040
WED	28	33126040	0.149680
THU	29	33275720	0.152650
FRI	30	33428370	0.173150
		33601520	
TOTAL COUNT		4.563130	
AVERAGE		30	
		0.152104	
MINIMUM		0.137910	
MAXIMUM		0.173150	



## KPI Dashboard - Avg Values Through Reporting Period

### Lewes BPW WWTP InSight Report

26-Jun-23 to 10-Jul-23

From: ES - Erin Horocholyn - Veolia WTS  
 To: Austin Calaman BPW, Michael Wolgemuth Inframark  
 cc: Shawn Addison, Al Farrell, Matthew Stapleford - Veolia Water Technologies & Solutions

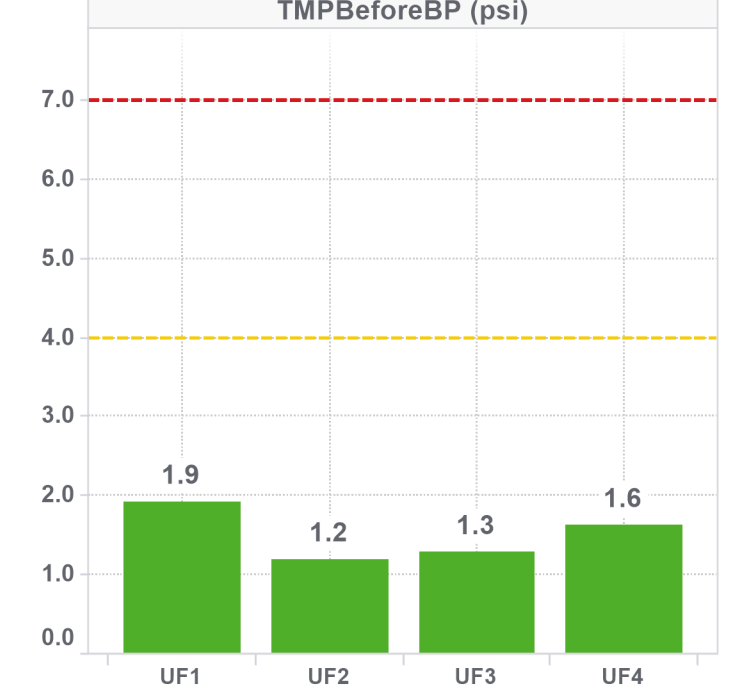
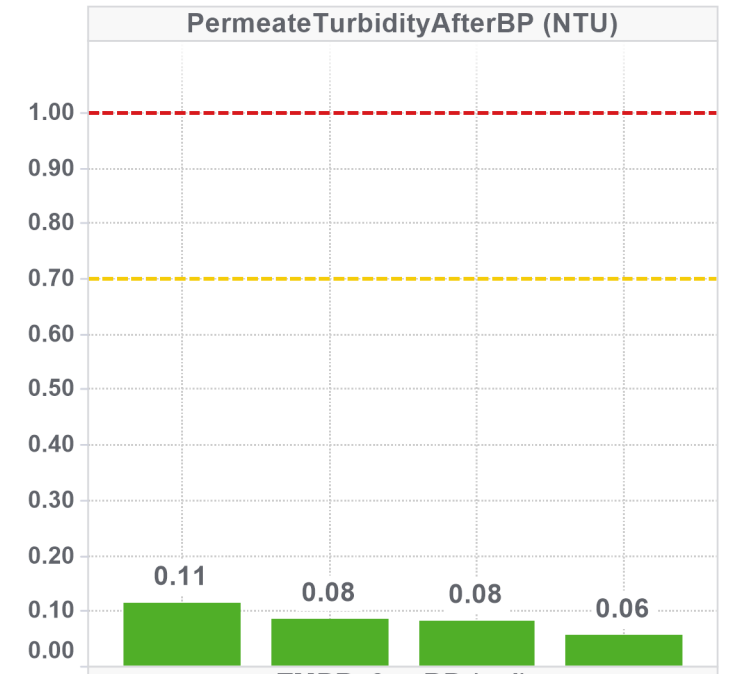
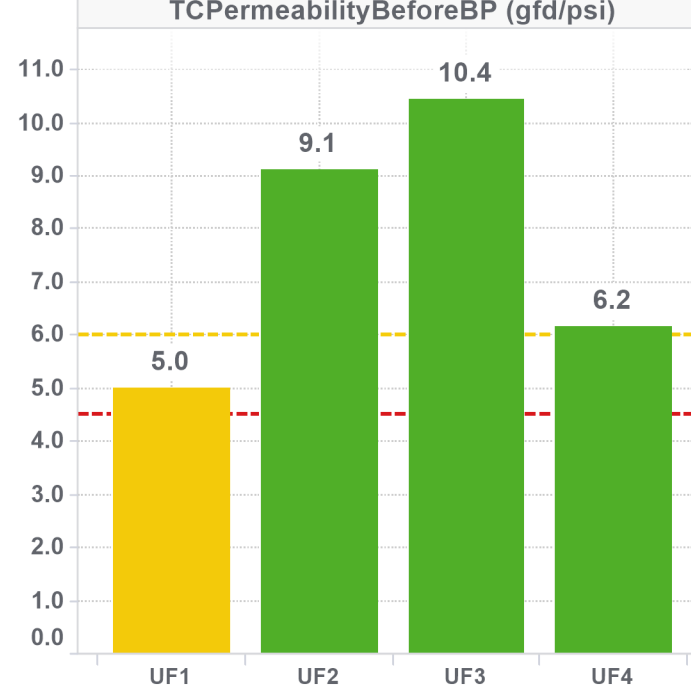
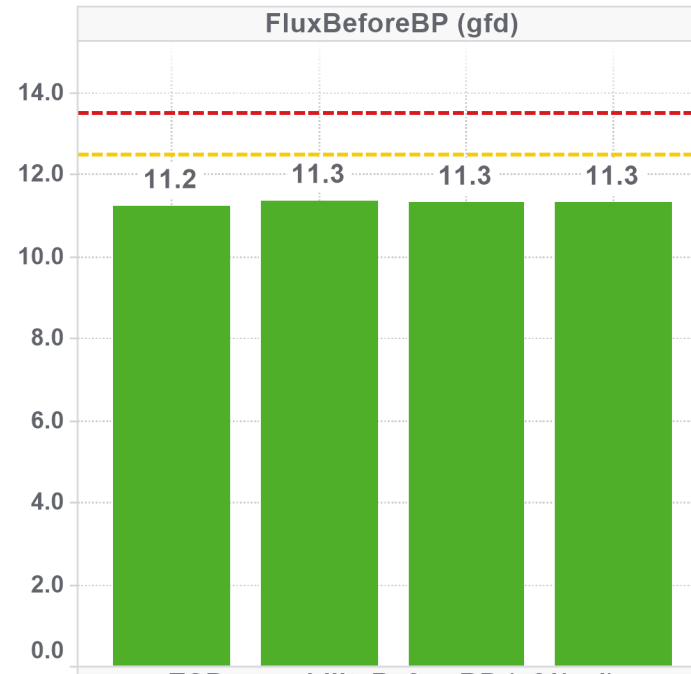
#### System Equipment

4 x ZW 500D UF trains, 4 cassettes per train, 120 modules x 370 sq. ft. per train (44,400 sq. ft. per train)  
 UF3 & UF4 membranes replaced 2020 Q1  
 Net Capacity: 1.50 MGD (avg. daily flow), 2.25 MGD (peak daily flow)

#### Cleaning Strategy

Maintenance Cleans:  
 2 x 200 ppm Sodium Hypochlorite per week  
 1 x 2000 ppm Citric Acid per week

Recovery Cleans:  
 2 x 2000 ppm dose/1000 ppm soak Sodium Hypochlorite per year  
 1 x 2000 ppm Citric Acid per year



## Report Highlights

### Recommendations:

- Check UF3's membrane tank for changes in aeration delivery and/or MLSS/sludge concentration

### Membrane Performance:

- UF3's performance dropped over July 6 - 8 after coming back into Production after being in Standby/Off since July 3. TMPs increased to >2.0 psi while permeability dropped from 12 gfd/psi to range as low as 0.6 gfd/psi mid-day with diurnal peaks around 6 gfd/psi overnight. On the permeability plots to the right, a gap between BeforeBP and AfterBP values began at this time, indicating a change in the MLSS quality in UF3's membrane tank. This may be related to insufficient aeration (plugged aerator tubes) in this tank, unbalanced hydraulics, high MLSS concentrations >10 g/L, or possibly declining sludge biohealth (though this is typically seen in all train tanks at once)
- Turbidity was low and <0.1 NTU on trains UF1, UF2, and UF4 >98% of the time. UF3's turbidity was high over July 8 - 9

### Cleans:

- Maintenance cleans were run regularly on all trains in Production

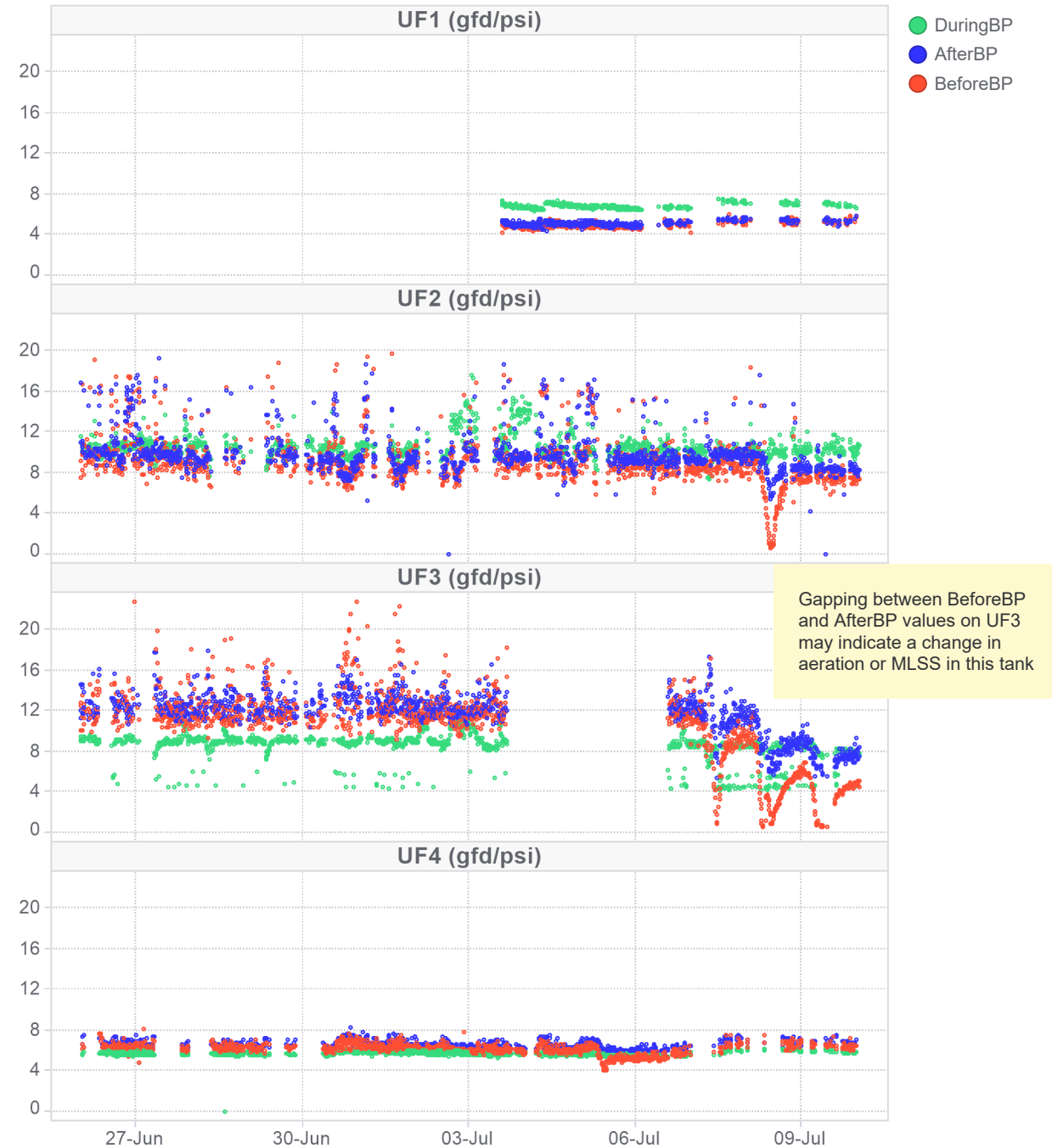
### Plant Updates:

- UF1 came online on July 3. At the same time, UF3 went into Standby, then switched to Off on July 5 before returning to Production on July 6
- LEAP aeration spent more time in LEAP High, especially over July 2 - 4

## Averages Through Reporting Period

Parameter	Unit		UF1	UF2	UF3	UF4
FluxBeforeBP	gfd	Value	11.22	11.35	11.29	11.32
		Change		-1%	0%	1%
FluxDuringBP	gfd	Value	18.44	18.20	17.52	18.75
		Change		-2%	-4%	0%
PermeateTurbidityAfterBP	NTU	Value	0.11	0.08	0.08	0.06
		Change		17%	46%	9%
TCPPermeabilityBeforeBP	gfd/psi	Value	4.98	9.12	10.43	6.15
		Change		-18%	-17%	2%
TCPPermeabilityDuringBP	gfd/psi	Value	6.85	10.53	8.51	5.72
		Change		-6%	-10%	4%
TMPBeforeBP	psi	Value	1.92	1.19	1.29	1.61
		Change		16%	33%	-6%
TotalPermeateFlowDaily	gal	Value	75,986.38	289,818.08	265,406.77	237,311.46
		Change		100%	16%	-23%

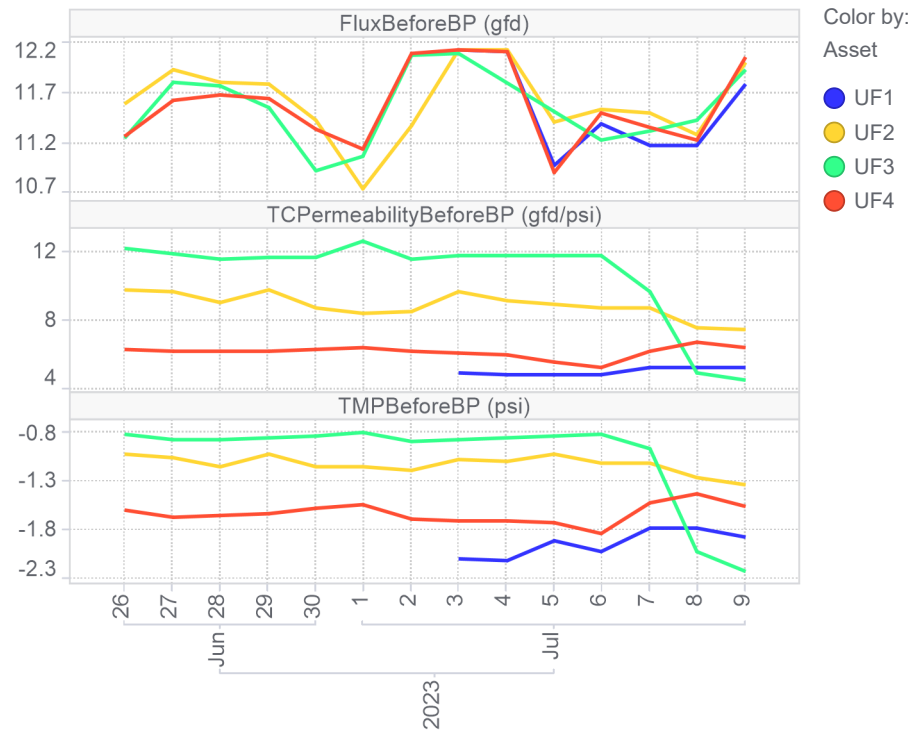
## Temperature Corrected Permeability Trends



### Comments

- UF3's TMP and permeability changed significantly over July 6 - 8. TMPs increased from <1.0 psi to >2.0 psi while permeability dropped from ~12 gfd/psi to range as low as 0.6 gfd/psi mid-day with diurnal peaks around 6 gfd/psi overnight. Flux/flow rate did not increase until after these trends were already impacted so is not the cause
- Trains saw mostly steady flow rates over this report period, with typical diurnal trends

### MBR KPI Daily Median Averages



### MBR KPI Raw Trends



## Comments

- Turbidity was low and <0.1 NTU on trains UF1, UF2, and UF4 >98% of the time
- UF3's turbidity rose over July 8 - 9 before decreasing to 0.3 NTU

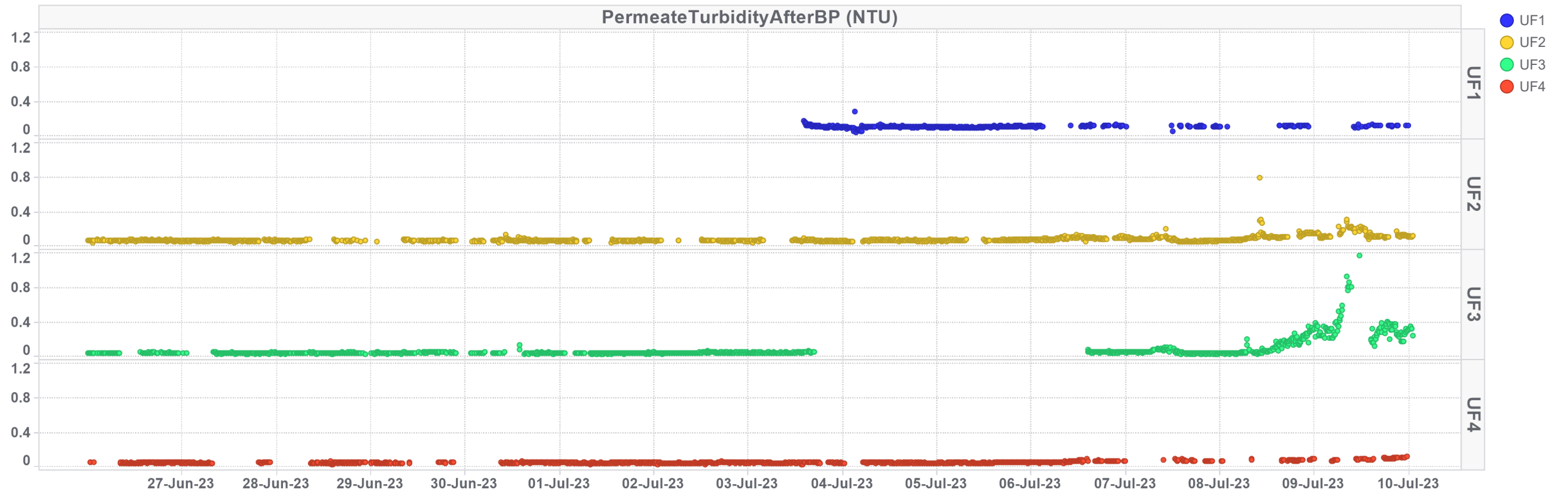
## Permeate Turbidity: % Data Within Range

Parameter	Value Range	UF1	UF2	UF3	UF4
PermeateTurbidityAfterBP	< 0.20 NTU	99.77%	98.27%	90.60%	100.00%
	> 0.50 NTU	-	0.07%	0.73%	-
	0.50 NTU > x > 0.20 NTU	0.23%	1.66%	8.67%	-

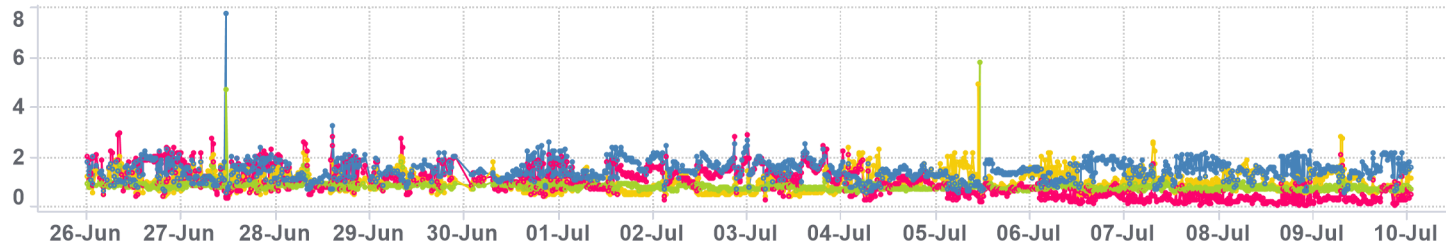
## Permeate Turbidity Distribution

Parameter - Unit	Asset	Average	Min	Max
PermeateTurbidityAfterBP (NTU)	UF1	0.11	0.05	0.29
	UF2	0.08	0.04	0.80
	UF3	0.08	0.03	1.18
	UF4	0.06	0.03	0.12

## Permeate Quality Trends



### Dissolved Oxygen and pH Trends

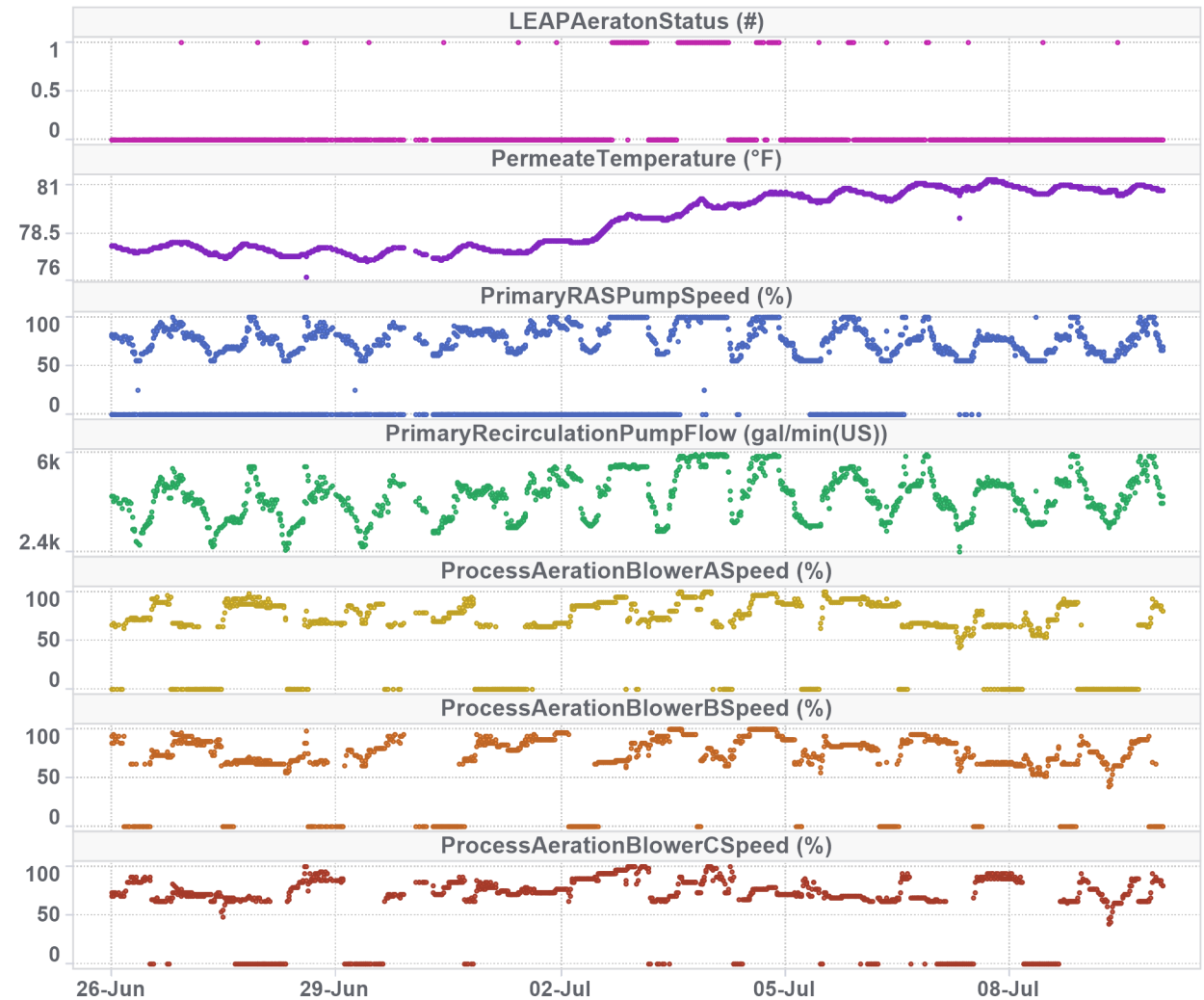


### Dissolved Oxygen Distribution

Parameter - Unit	Average	Min	Max
AerobicZoneTank1DissolvedOxygen (mg/L)	0.99	0.11	3.02
AerobicZoneTank2DissolvedOxygen (mg/L)	1.50	0.61	7.79
PreAnoxicZone1TankDissolvedOxygen (mg/L)	0.85	0.64	5.84
PreAnoxicZone2TankDissolvedOxygen (mg/L)	1.05	0.46	4.98

### Process Control Parameter Distribution

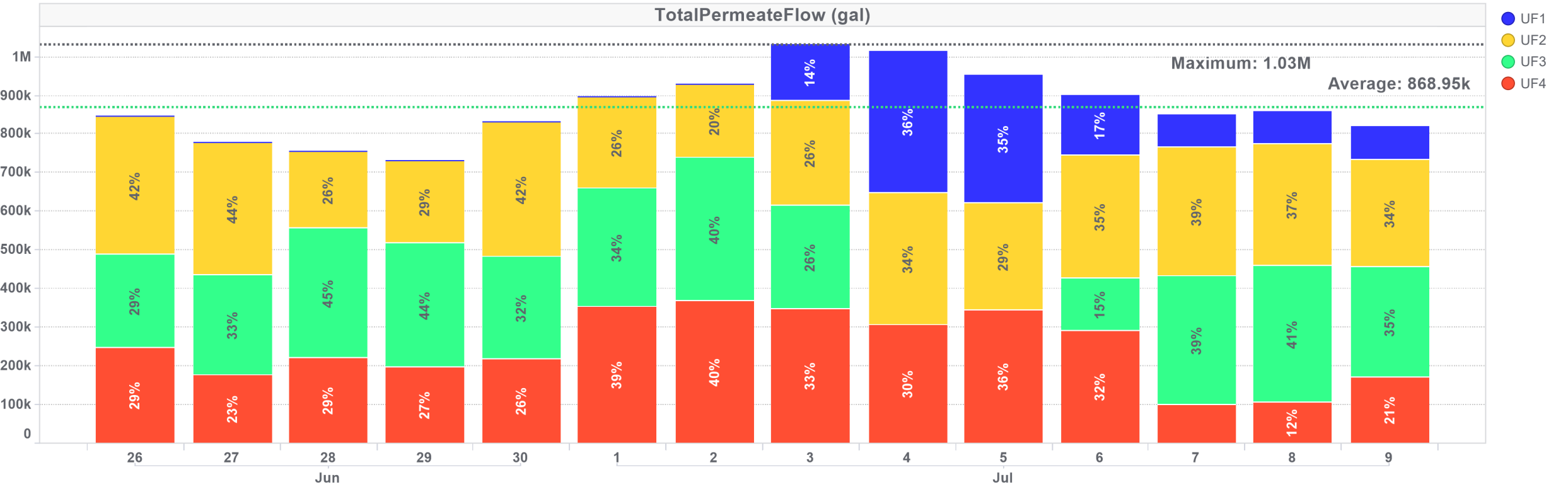
Parameter - Unit	Asset	Average	Min	Max
FeedFlowRate (gal/min(US))	UF1	2205.26	562.00	2779.00
	UF2	763.85	0.00	4571.00
	UF3	558.19	0.00	2795.00
	UF4	659.48	0.00	2231.00
FoamPumpFlow (gal/min(US))	UF Plant	0.01	0.01	0.02
MembraneAerationAirFlow (scfm)	UF Plant	1200.89	637.84	2879.49
PermeateTemperatureAfterBP (°F)	UF1	80.48	79.46	81.26
	UF2	77.44	73.20	81.29
	UF3	76.70	72.87	81.28
	UF4	76.76	72.88	81.27
PrimaryRAS PumpSpeed (%)	UF1	18.87	0.00	100.00
	UF2	77.49	0.00	100.00
	UF3	73.97	0.00	100.00
	UF4	77.53	0.00	100.00
PrimaryRecirculationPumpFlow (gal/min(US))	UF Plant	4290.81	2402.42	5948.86
ProcessAerationBlowerASpeed (%)	UF Plant	56.65	0.00	100.00
ProcessAerationBlowerBSpeed (%)	UF Plant	59.53	0.00	100.00
ProcessAerationBlowerCSpeed (%)	UF Plant	57.52	0.00	100.00
TotalWASFlowDaily (gal)	UF Plant	0.00	0.00	0.00
WasteSlugWASFlow (gal/min(US))	UF Plant	8.05	0.03	300.00



### Comments

- Aerobic zone 1's dissolved oxygen decreased on July 5
- Process blowers A, B, and C are all online and rotating to share the aeration load

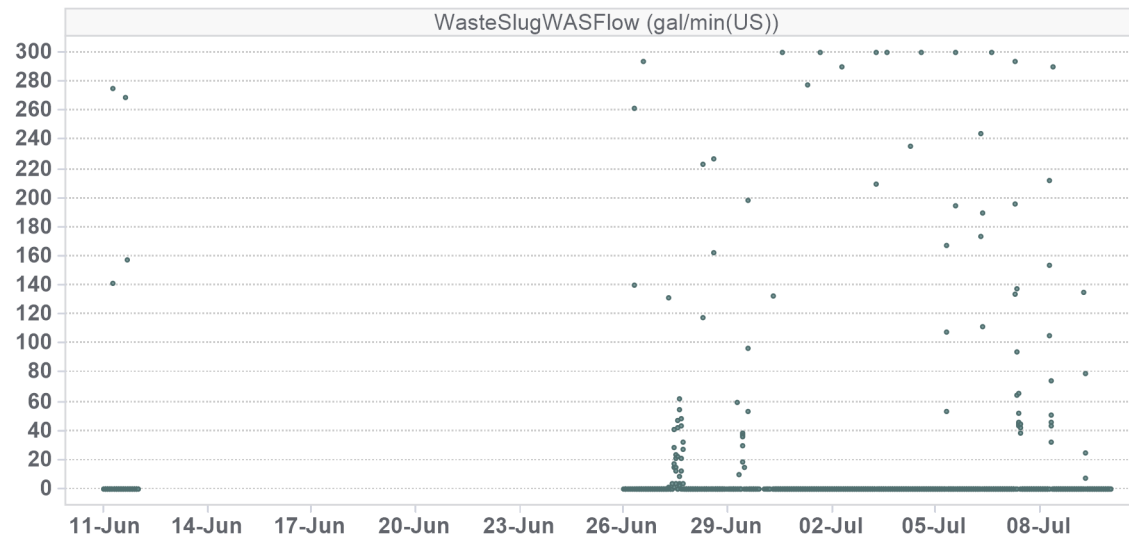
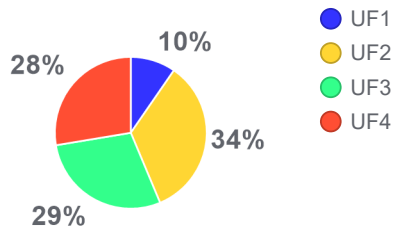
## Production Summary



## Flow Division

Asset	Flow Division
UF1	9.6%
UF2	34.1%
UF3	28.7%
UF4	27.6%

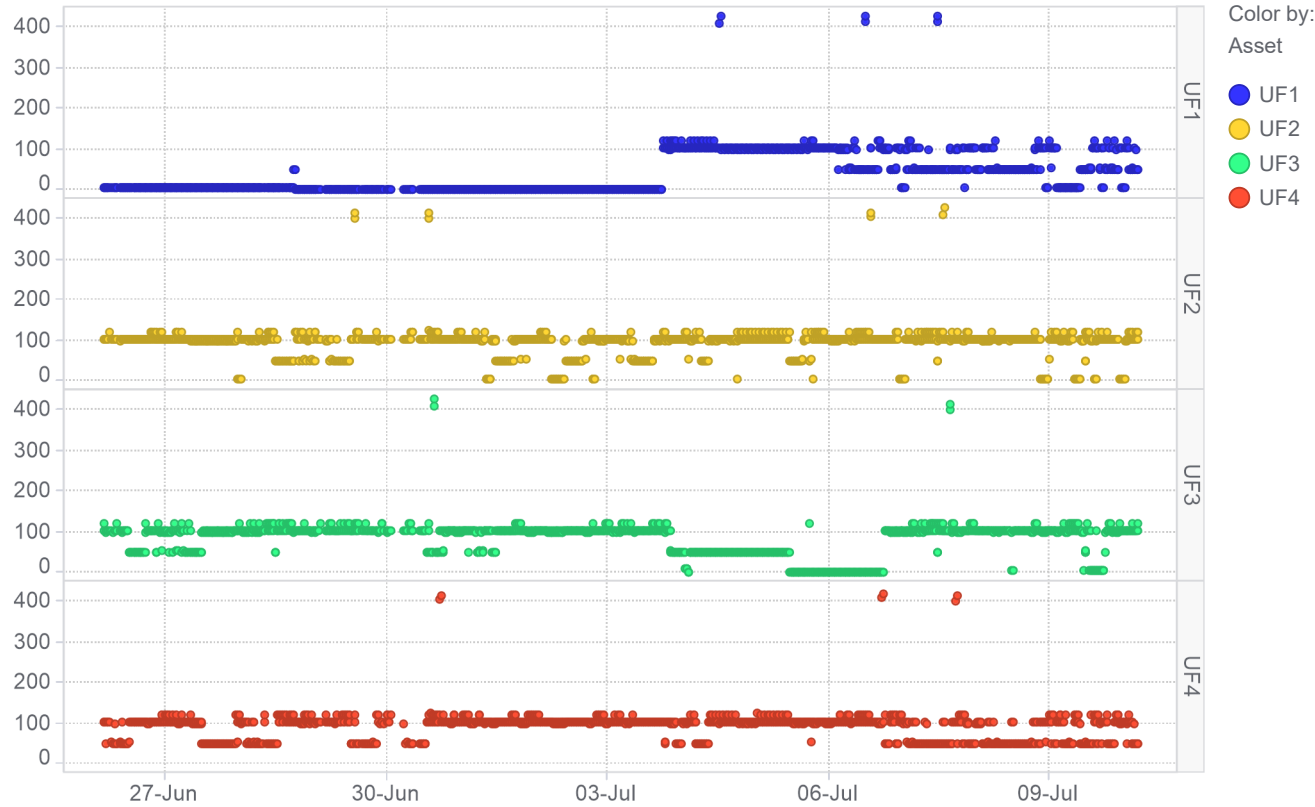
- + 5%
- Even Distribution
- -5%



## Comments

- Plant production averaged 0.87 MGD, with a maximum on 1.03 MGD on July 3
- When trains are in Standby or Off they contribute less to plant production during these periods as expected

### Train Status Plot



### Train Status Comments

- Maintenance cleans (MCs) were run regularly on all trains in Production
- UF1 came online on July 3. At the same time, UF3 went into Standby, then switched to Off on July 5 before returning to Production on July 6
- Trains were in Standby intermittently
- UF trains are in LEAP Low most of the time, indicating efficient membrane scouring aeration. LEAP spent more time in LEAP High compared to the previous report period (12.7% vs 1.1%). Trains were in LEAP High more between July 2 - 4

#### Train Status Legend:

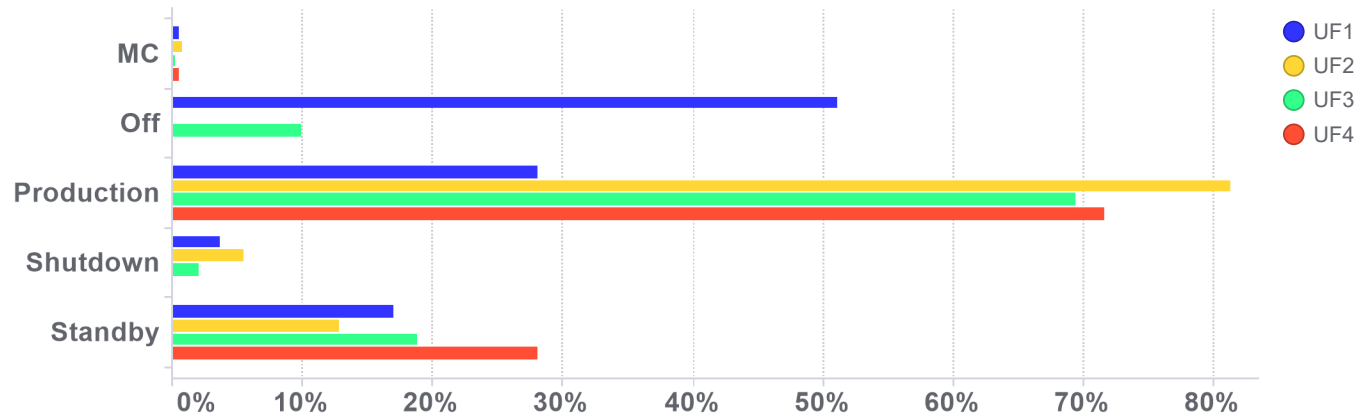
2 = Off, 7 = Shutdown, 52 = Standby, 102 = Production, 400 = Maintenance clean, 500 = Recovery clean

### Train Status Analysis

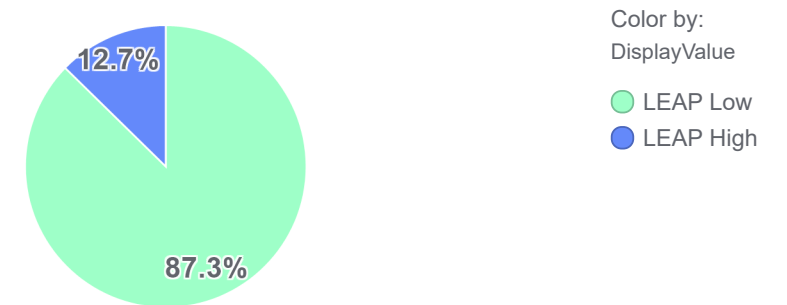
Mode	UF1	UF2	UF3	UF4
MC	0.47%	0.63%	0.32%	0.47%
Off	50.95%	-	9.78%	-
Production	28.00%	81.23%	69.32%	71.53%
Shutdown	3.63%	5.44%	1.89%	-
Standby	16.96%	12.70%	18.69%	28.00%

● Max  
○ Min

### Train Status Distribution % Time



### LEAP Aeration Distribution





For InSight technical assistance please email [insight.src@veolia.com](mailto:insight.src@veolia.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