

# LEWES BPW

## Howard Seymour Water Reclamation Plant

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### Operation and Maintenance Report



June 2022

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## Executive Summary

	Green	Yellow	Red
Headworks			
Oxidation Ditch			
Filters			
Generator			
Weather			
Solids Handling			
NPDES Parameters			
Pump Stations			
Personnel			
Safety			
Compliance			

### (New information in bold font)

- Headworks- **Inframark continues to utilize the dewatering roll off container to capture screening while lipactor is offline.**
- Filters- De-ragging UF Train 4 was completed during the week of 12-27-2021. De-ragging UF Train 1 was completed during the week of 5-16-2022. **UF Train 2 De-ragging completed week of 6-27-2022. UF Train 3 De-ragging to be begin the week of 7-25-2022.**
- Pump Stations- Pump Station 8 Generator Transfer Switch replacement was completed 6-21-2022. A rental emergency generator is online at Pump Station 4 while plans for a permanent solution are being evaluated. PS9 wet-well pipe replacement and bypass install was completed during the week of 6-13-2022. Three Classic T8 rotating assemblies for PS3 were purchased from Freemire and Associates. The assemblies will be installed when additional parts for the rebuild are received. A contractor completed hydro-excavating at PS3 to locate the force main for future installation of bypass connections. Approval for a proposal to replace wet well piping in PS2 is required. **Inframark continues to visit PS3 daily to top off oil to Pump 2 and ensure it has maintained prime.**
- Personnel- Currently Inframark has 5 fulltime and one part-time employees assigned to the Lewes Facilities.

## Critical Issues

- Covid- Inframark is following CDC recommendations to ensure uninterrupted service to the BPW and the Lewes community.
- Condition of headworks screening equipment is in critical need of repair or replacement to decrease excessive ragging of UF membranes.
- Spare pumps are not in stock for PS11, PS15, PS16, PS17, PS17B, PS18 and PS32. Inframark does not have maintenance records for existing pumps. Based on recommendations made in Severn Trent's 2016 Annual Report, most pumps were in need of replacement within five years. We have found no evidence that these pumps had been replaced during the past five years. Many pump station control panels are in

need of repair or replacement including PS1, PS2, PS5, PS6, PS7, PS9, PS10, PS11, PS12, PS13, PS14, PS15, PS16, PS17, PS18, PS33, PS74 and PS83.

## Projects

Project	Status	Priority Level	Approval	Est. Complete Date
Headworks Replacement	In design	High	BPW Project	QTR4 2022
Replace Generator and ATS at PS4	GMB and Keystone are evaluating size based on future needs	High	BPW Project	QTR2 2022
Replace ATS at PS8	Complete	High	Received	QTR2 2022
Rehab Pumps at PS3	Rotating assemblies purchased not received	High	Received	QTR3 2022
Replace wet-well piping PS2	Proposal from Sprig submitted to BPW	High	Needed	QTR3 2022

## Operations

### NPDES Permit Compliance

- Please review the following tables that summarize NPDES reporting criteria for June 2022. No violations will be reported for June. The DMR will be forwarded upon completion.
- The average daily influent flow for June was 0.815 MGD with a maximum daily flow of 0.936 MGD. Precipitation totaled 3.6 inches for June with a maximum daily total of 1.0 inches.

	Max	Sum			
Precipitation (inches)	1.04	3.64			
Influent	Limit	Average	Min	Max	Vio
Flow (MGD)		0.815	0.654	0.936	
BOD (mg/L)		210	210	210	
TSS (mg/L)		80	80	80	
Effluent	Limit	Average	Min	Max	Vio
Flow (MGD)		0.812	0.665	0.964	N
Dissolved Oxygen (mg/L)		5.24	4.47	7.81	N
pH (SU)	Min 6/ Max 9	7.26	6.25	7.65	N
Enterococcus (col/100ml)	Avg 10/ Max 104	<1	<1.0	1.0	N
BOD (mg/L)	Avg 15/ Max 23	<2.4	<2.4	<2.4	N
BOD Load (lbs)	Avg 188/ Max 288	<16	<16	<17	N
BOD Removal (%)		98.9	98.9	98.9	
TSS (mg/L)	Avg 15/ Max 23	<1.0	<0.5	2.1	N
TSS Load (lbs)	Avg 188/ Max 288	<4	<3	5	N
TSS Removal (%)		99	99	99	
Total Nitrogen (mg/L)	Avg 8	3.38	3.06	3.70	N
Total Nitrogen Load (lbs)	Avg 100	17.59	16.64	18.54	N
Total Phosphorous (mg/L)	Avg 2	0.75	0.62	0.87	N
Total Phosphorous Load (lbs)	Avg 25	4.67	4.13	5.20	N

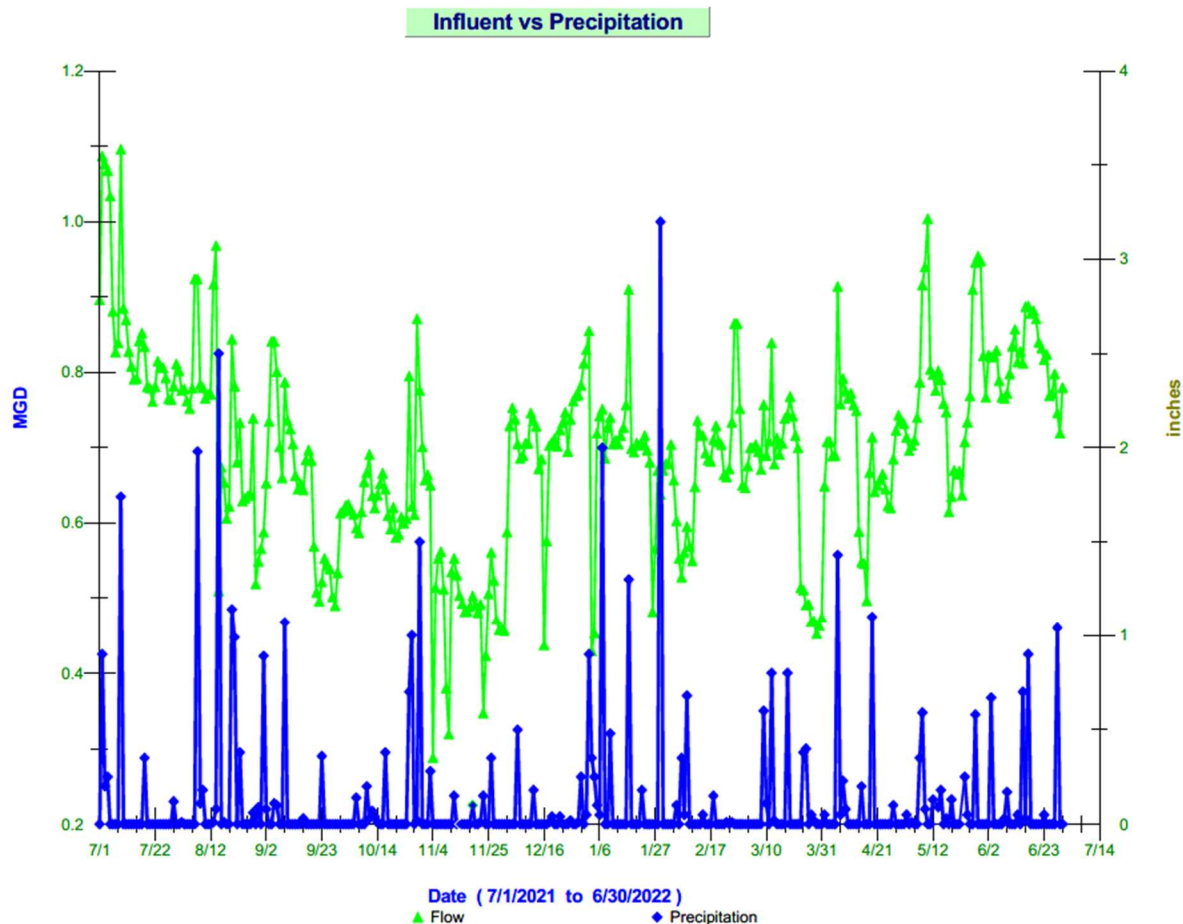
Process		Limit	Average	Min	
Bio #1 MLSS (mg/L)		9,360	8,400	11,500	
Bio #2 MLSS (mg/L)		9,480	6,900	12,100	
Train 1 MLSS (mg/L)		10,950	10,100	12,100	
Train 2 MLSS (mg/L)		8,900	8,000	9,800	
Train 3 MLSS (mg/L)		10,460	9,200	13,200	
Train 4 MLSS (mg/L)		10,620	8,900	12,700	
TSS Digester 1 (mg/L)		17,480	16,200	19,900	
TSS Digester 2 (mg/L)		14,680	12,200	17,500	
	<b>Average</b>	<b>Max</b>	<b>Sum</b>		
Sludge Wasted (gallons)	9,862	14,913	286,001		

## Sludge Operations and Disposal

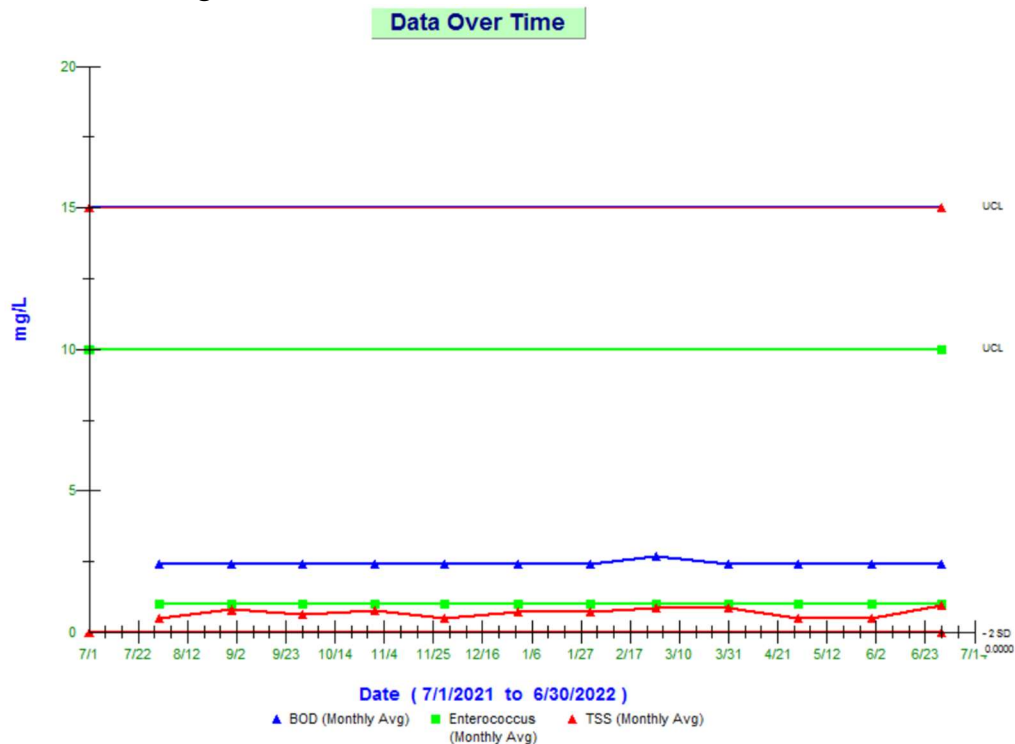
Liquid Hauled	83,500	Gallons	DELCORA
Cake Hauled	16.6	Wet Tons	Sussex County
Dewatering Container	14,000	Gallons	DELCORA

## Trends

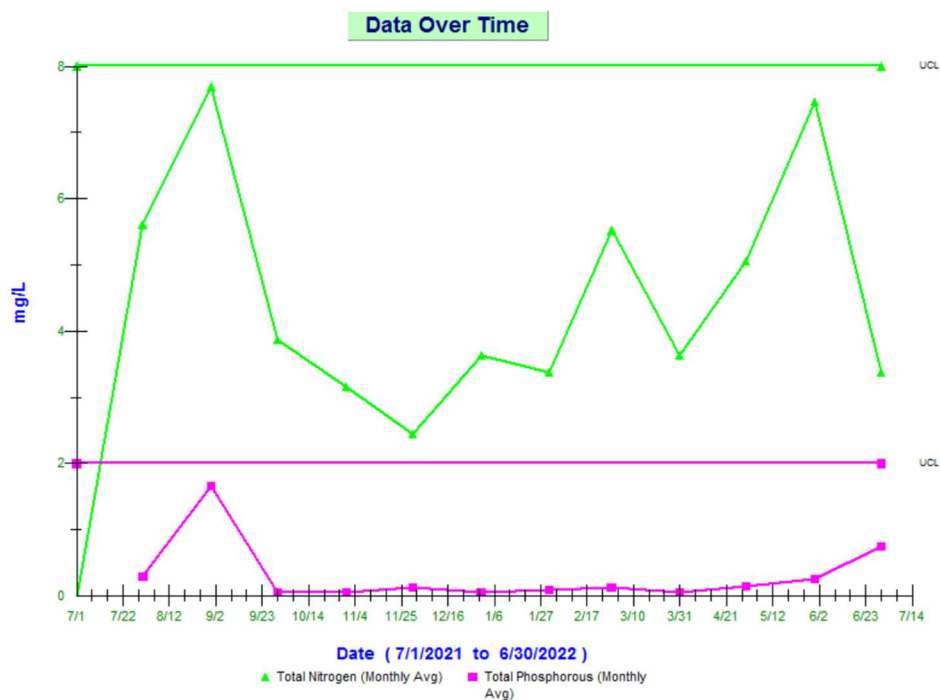
### Influent vs Precipitation Trend Previous 12 Months



## Effluent Biological Contaminants Trend Previous 12 Months



## Effluent Nutrient Trends Previous 12 Months



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## Maintenance, Repair and Activities

6-1-2022-WWTP-Inframark replaced oil to UF Train 1 Permeate Pump.  
6-1-2022-PS9-SPRIG on site to install pump bypass valves and fittings.  
6-1-2022-WWTP-Inframark replaced oil to UF Train 4 Permeate Pump.  
6-2-2022-WWTP-Inframark replaced desiccant cartridges to Turbidimeters for UF Trains 1,2,3,4  
6-2-2022-PS3-Inframark added oil to pump 2, Primed Pump 2  
6-7-2022-WWTP-BPW onsite to replace Drying Bed 1 fill valve.  
6-16-2022-WWTP-Inframark aligned motor coupling to UF Train 3 Permeate Pump  
6-17-2022-WWTP-Inframark replaced filtration system to Plant Effluent Fish Tank  
6-21-2022-WWTP-Inframark replaced the 2" submersible Digester Return Pump and returned to service.  
6-21-2022-PS8-Inframark bypassed the pumps at PS8 for installation of the automatic transfer switch by Curtis Power.  
6-21-2022-WWTP-Inframark lubricated valves to Digesters 1 and 2  
6-21-2022-WWTP-Inframark replace Aluminum Sulfate feed pump.  
6-22-2022-PS8-Fidelity Power Systems onsite to replace controller to Kohler emergency generator.  
6-22-2022-PS4-Inframark topped off fuel tank for rental generator.  
6-22-2022-PS8-Inframark topped off fuel tank for emergency generator.  
6-23-2022-WWTP-Hills onsite for emergency replacement of Process Blower A.  
6-27-2022-WWTP-Inframark replaced oil to UF Train 2 Permeate Pump.  
6-27-2022-WWTP-Inframark relaced discharge tubing to the Influent Composite Sampler.  
6-28-2022-WWTP-Inframark calibrated the level pressure transducer to UF Train 1.  
6-28-2022-WWTP-Inframark replaced worn aluminum sulfate pump feed tubing in the Chemical Room.  
6-28-2022-PS8-Inframark repaired and replaced valve actuator wheel to the Pump 1 discharge valve.  
6-29-2022-WWTP-Inframark replaced oil to Process Blowers A, B & C  
6-29-2022-WWTP-Inframark replaced oil to Zenon Blowers 1,2,3,4 & 5

## Afterhours Alarm Callouts

6-9-2022-PS1-Low Level Alarm  
6-16-2022-WWTP-High Level UF Train 4  
6-27-2022-WWTP-UF Train 3 Shutdown  
6-27-2022-WWTP-High Aeration Basin Alarm

## Maintenance Budget

Monthly Budget	June 2022	Contract Year to Date	Over
\$6,667	\$ 12,793.95	\$138,667.24	\$58,667.24



## Maintenance Expenditures

Vendor	Description	Expense
Mid-Shore Electrical Services, Inc.	Electrical Work Pump Stations Labor Materials: 1/2" male cord cap SS connector 1/2" sealing locknut 1 1/4" sealing locknut Furnas K52 overload heaters	2,280.31
Horney Industrial Electronics, Inc.	Siemens: Sensor Prom 2kb (new) for MAO 5000/6000 s/n#294513T505 Siemens: Wall Mounting Kit for Compact IP67/NEMA4 X16 Versions Siemens: Standard Coil & Electrode Cable, PVC Jacket, 3 Conductor Plus Overall Braided Shield, Per Foot	1,481.70
Hill's Electric Motor Service Inc	Pump station Myers pump rebuild Job	3,371.42
GRAINGER	PVC Fittings	42.24
GRAINGER	Pista-grit replacement vacuum pump, fuses, PVC fittings	1,079.16
THE HOME DEPOT	Replacement sprinkler for membrane cleaning, 20 pc Air Kit	78.91
RE MICHEL	Replacement Pista-grit and screener timers	770.25
HACH COMPANY	Desiccant for Turbidimeters	164.92
WEIS MARKETS	Vinegar to neutralize caustic	17.82
LOWES	Hardware to repair CIP Pump	16.48
BESTS ACE HDWE	Fasteners for chemical pump repair	13.50
FERGUSON ENT	PVC Plumbing fittings for chemical feed pumps Zenon building	44.22
GRAINGER	(2) Replacement power auger cables used to unclog the suction line at PS4	306.36

## Health & Safety

- As of June 30, 2022, Inframark staff have worked 619 days at the Lewes Facilities without a lost time injury.
- Inframark Training and Presentations -Biological Hazards

## Personnel

Name	Title	DE Certification
Jerry Shupe Jr.	Regional VP	NA
Michael Wolgemuth	Regional Manager	DE Class IV WW
Richard Plack	Project Manager	DE Class IV WW
Paul Smith	Operator II	DE Class II WW
Vince Catalano	Lead Operator	DE Class II OIT WW
Kurt Brittingham	Operator II	NA
Michael Mazzetti	Maintenance Technician III	NA
David Weed	PT Operator III	DE Class IV WW
Tom Callahan	Regional Safety Advisor	NA

## Attachments

- June Sussex County Flow Totals
- May DMR