

LEWES BPW

Howard Seymour Water Reclamation Plant

Operation and Maintenance Report



October 2022

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 the Lipactor is offline.**
- Oxidation Ditch-Cracks were identified in the concrete tank walls. BPW is working with their consultants to determine the best path to resolve.
- 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 completed 8-24-2022. **Citric Acid and Sodium Hypochlorite Recovery Cleans were completed for all 4 trains during October and the first week of November.**
- A rental emergency generator is online at Pump Station 4 while plans for a permanent solution are being evaluated. Pump and valve replacement proposals are being evaluated for PS3 by BPW Staff. Inframark continues to visit PS3 daily to top off oil to Pump 2 and ensure it has maintained prime. Approval for a proposal to replace wet well piping in PS2 is required. Frequent control issues have occurred at PS17 over the past two years. An unusual configuration exists to supply single phase power to the station. Plans to rehabilitate the station should be considered in the immediate future. PS16 is currently being serviced by one pump. The second pump had been sent to Hills for repair evaluation. The cost of the repair the pumps exceeds its value. A second pump is being purchased by BPW and will be installed as soon as it is received. **New pump received and will be installed the week of 11-28-2022.** Bypass connections and valves have been installed as a backup while the pump station is serviced by one pump. Inframark has solicited proposals for a spare pump at PS13. The station utilizes a single pump and there is no spare. **A PO was issued to STH for a new Grundfos Pump for PS13. Pump received 11-17-2022.**
- Personnel- Richard Plack left Inframark Lewes to pursue other opportunities. Michael Wolgemuth and David Weed will be Co-DRCs until the open manager position is filled. DNREC has been notified of the change in leadership. Four additional FTEs are assigned to the project, three of which are DE licensed operators.

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, 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	
Replace Generator and ATS at PS4	GMB and Keystone are evaluating size based on future needs	High	BPW Project	
Rehab Pumps at PS3	Sprig to cut in bypass valves during September. Proposals to replace pumps under consideration.	High	BPW Project	
Replace wet-well piping PS2	Proposal from Sprig submitted to BPW	High	Needed	QTR4 2022
Rehab PS17 Controls	Planning	High	Needed	
Electric Manhole Sump Pump power and control replacement	Soliciting Quotes	Medium		QTR4 2022
Megger Power Cables	Soliciting Quotes	Predictive		QTR4 2022

Operations

NPDES Permit Compliance

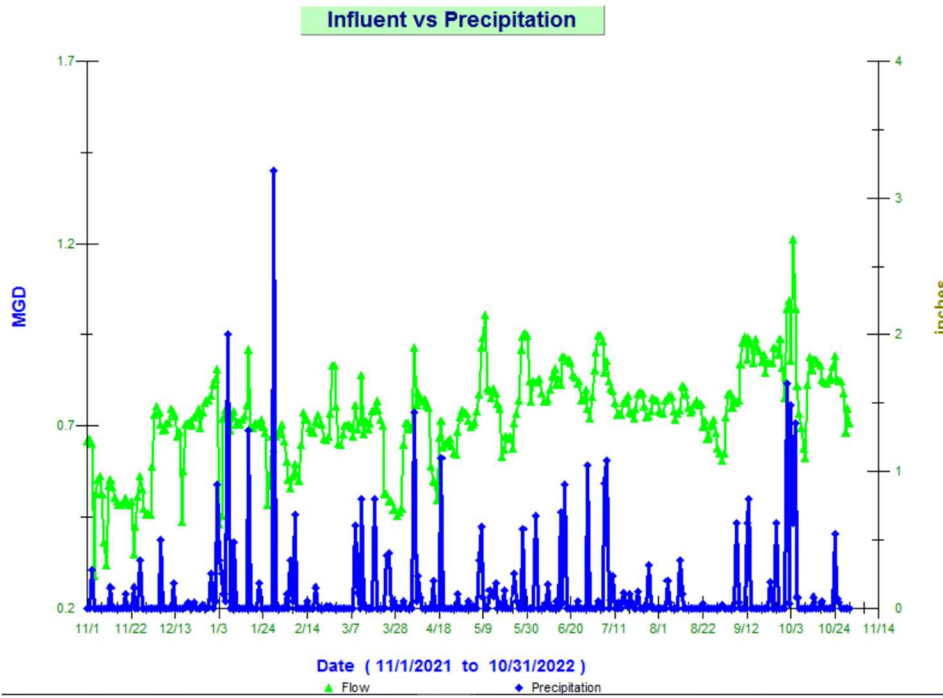
- Please review the following tables that summarize NPDES reporting criteria for October 2022. No violations will be reported for October 2022. The DMR included in report attachments.
- The average daily influent flow for October was 0.831 MGD with a maximum daily flow of 1.306 MGD. Precipitation totaled 6 inches for October with a maximum daily total of 1.6 inches.

	Max	Sum			
Precipitation (inches)	1.64	6.02			
Influent	Limit	Average	Min	Max	Vio
Flow (MGD)		0.831	0.522	1.306	
BOD (mg/L)		188	188	188	
TSS (mg/L)		247	247	247	
Effluent	Limit	Average	Min	Max	Vio
Flow (MGD)		0.850	0.595	1.289	N
Dissolved Oxygen (mg/L)		5.55	4.50	7.32	N
pH (SU)	Min 6/ Max 9	7.25	7.01	7.53	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	<19	<17	<26	N
BOD Removal (%)		98.7	98.7	98.7	
TSS (mg/L)	Avg 15/ Max 23	<1.3	<0.5	3.2	N
TSS Load (lbs)	Avg 188/ Max 288	<10	<3	23	N
TSS Removal (%)		99	99	99	
Total Nitrogen (mg/L)	Avg 8	6.48	6.48	6.48	N
Total Nitrogen Load (lbs)	Avg 100	63.62	63.62	63.62	N
Total Phosphorous (mg/L)	Avg 2	0.08	0.08	0.08	N
Total Phosphorous Load (lbs)	Avg 25	0.86	0.86	0.86	N
Process		Average	Min	Max	
Bio #1 MLSS (mg/L)		9,250	8,600	9,800	
Bio #2 MLSS (mg/L)		10,175	9,100	10,600	
Train 1 MLSS (mg/L)		8,267	7,400	9,200	
Train 2 MLSS (mg/L)		9,400	7,800	10,800	
Train 3 MLSS (mg/L)		9,700	8,800	11,000	
Train 4 MLSS (mg/L)		10,325	9,500	11,100	
TSS Digester 1 (mg/L)		15,250	14,600	16,000	
TSS Digester 2 (mg/L)		14,825	14,300	15,300	
		Average	Max	Sum	
Sludge Wasted (gallons)		11,333	14,645	351,312	

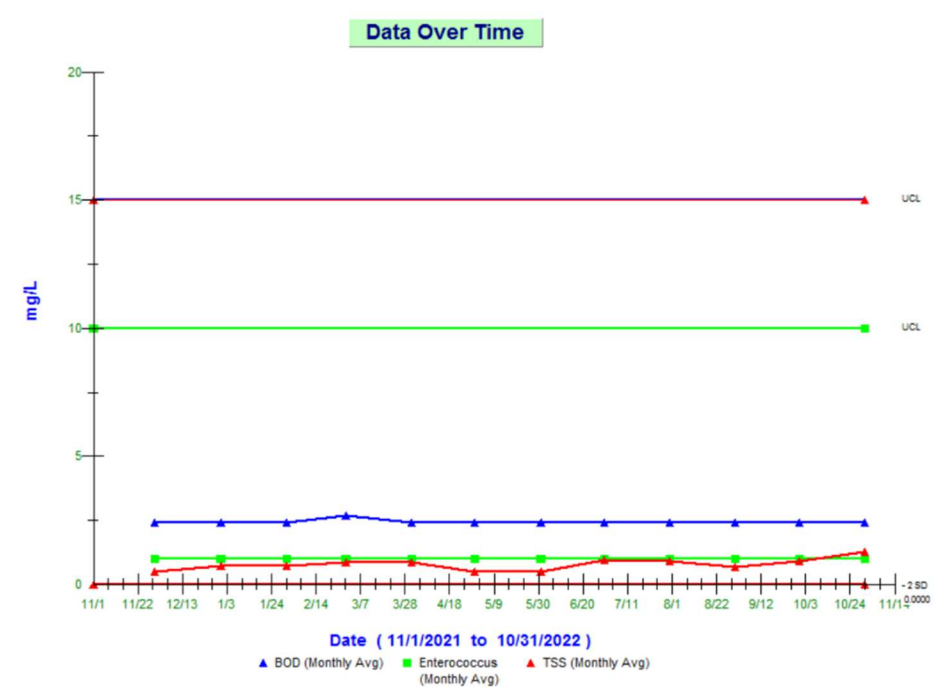
Sludge Operations and Disposal

Liquid Hauled	138,000 Gallons	DELCORA
Cake Hauled	30.6 Wet Tons	Sussex County
Dewatering Container	13,000 Gallons	DELCORA

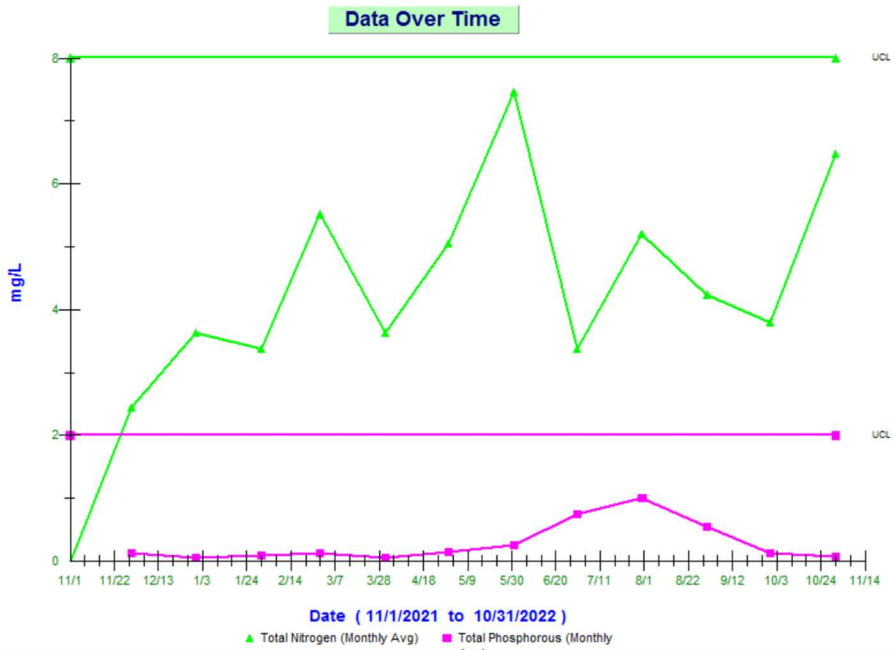
Trends Influent vs Precipitation Trend Previous 12 Months



Effluent Biological Contaminants Trend Previous 12 Months



Effluent Nutrient Trends Previous 12 Months



Maintenance, Repair and Activities

- 10-03-2022- WWTP- Replaced indicator bulbs to PistaGrit control panel
- 10-03-2022- WWTP- Replaced pump hose to influent composite sampler
- 10-04-2022- PS13- I&I surcharged the Wetwell. BPW pumped out with Vacuum Truck.
- 10-06-2022- WWTP- Replaced Pump1 Drying Bed PS
- 10-06-2022- PS13- Pulled pump to inspect for clog.
- 10-12-2022- PS13- Replaced float switches
- 10-13-2022- Keystone was on site to work on the control set points to the Kubota Digester Thickener.
- 10-14-2022- WWTP- Installed High Anoxic Tank High Level Float to be tied into SCADA by K
- 10-18-2022- WWTP- Replaced 2" discharge hose from 5mm Macipump to dewatering dumpster
- 10-20-2022- WWTP- Serviced Air Compressor A
- 10-25-2022- WWTP- Freemire and Associates completed a site visit to troubleshoot the PistaGrit failure. The Sonic Start probe was replaced.
- 10-27-2022- PS83- Replaced float switches

Maintenance Budget

Monthly Budget	October 2022	Contract Year to Date	Over
\$6,667	\$14,166.63	\$218,108.63	\$138,108.63

Maintenance Expenditures

See attached October Expense Report

Afterhours Callouts

10-02-2022- WWTP- High Level EQ Tank
10-12-2022- PS13- High level
10-12-2022- WWTP- High Level Oxidation Ditch
10-23-2022- WWTP- High Level 2mm Macipump

Health & Safety

- As of October 31, 2022, Inframark staff and contractors have worked 742 days at the Lewes Facilities without a lost time injury.
- Inframark Training and Presentations - Emergency action and Fire extinguisher plan review

Personnel

Name	Title	DE Certification
Jerry Shupe Jr.	Regional VP	NA
Michael Wolgemuth	Regional Manager	DE Class IV WW
Open	Project Manager	
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

- October DMR
- September DMR
- October Sussex County Flow Totals
- Zenon Reports

October Expenses					
DATE	INVOICE	REPORT	VENDOR	MEMO	AMOUNT
7/28/2022	133365	Oct-22	HILL'S ELECTRIC MOTOR	Pump station 2 Myers pump rebuild Job # 58384	\$3,682.50
10/3/2022	22-313	Oct-22	K & Z MECHANICAL	Site #16 pump wiring issues and pista grit terminal block installation	\$791.75
10/6/2022	PCARD	Oct-22	R.E MICHEL	Pista contactor replacement and spare	\$17.72
10/6/2022	PCARD	Oct-22	LOWES	alum chemical feed leak repair parts and spares	\$31.88
10/6/2022	PCARD	Oct-22	LOWES	Parts for bypass pump to keep operation clean	\$50.44
10/6/2022	PCARD	Oct-22	HAZZARD AUTO PARTS	oil for skid steer	\$69.99
10/6/2022	PCARD	Oct-22	BAKER'S HARDWARE	hose for temporary pump setup for drying bed pump station	\$72.99
10/6/2022	PCARD	Oct-22	GRAINGER	Hardware for hypochlorite pump instalation	\$140.68
10/6/2022	PCARD	Oct-22	HOME DEPOT	influent sampler fridge replacement	\$189.00
10/6/2022	PCARD	Oct-22	BELAIR ROAD SUPPLY CO	fittings for bypass pump for new connection ps16	\$317.35
10/6/2022	PCARD	Oct-22	ENVIREP INC	Replacement parts for station 8 and spare	\$408.28
10/6/2022	PCARD	Oct-22	LOWES	temporary replacement pump for drying bed pump station	\$439.00
10/6/2022	PCARD	Oct-22	ENVIREP INC	2 inch GR pump impeller	\$677.83
10/6/2022	PCARD	Oct-22	KLEEN RITE CORP	Replace membrane hypochlorite recovery clean pump	\$945.56
10/6/2022	PCARD	Oct-22	KLEEN RITE CORP	Replace membrane hypochlorite maintenance clean pump	\$1,476.47
10/6/2022	PCARD	Oct-22	SUMP PUMPS DIRECT	replacement pumps for Drying bed station	\$1,572.00
10/8/2022	PCARD	Oct-22	LOWES	Penetrating oil for gantries at ps8	\$27.92
10/8/2022	PCARD	Oct-22	LOWES	Tools for station 8 valve installation	\$54.98
10/8/2022	PCARD	Oct-22	IRON SOURCE GERGETO	Repair street brush for skid steer replaced damaged hose.	\$154.92
10/8/2022	PCARD	Oct-22	HARBOR FREIGHT TOOLS	Equipment needed to replace valves at station 8	\$257.35
10/8/2022	PCARD	Oct-22	HORNEY INDUSTRIAL ELECT	repair of flow meter head.	\$308.42
10/8/2022	PCARD	Oct-22	BELAIR ROAD SUPPLY CO	Station 8 Parts to isolate bypass for valve work on pumps	\$326.55
10/8/2022	PCARD	Oct-22	USA BLUE BOOK	Chart recorder supplies	\$384.37
10/23/2022	329678	Oct-22	CARTER MACHINERY CO	PS4 Generator Rental	\$1,768.68
				Monthly Total	\$14,166.63

Cap budget \$6,666.67
Client Total \$7,499.96