

LEWES BPW

Howard Seymour Water Reclamation Plant

Operation and Maintenance Report



March 2023

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 issued PO for work to be completed spring 2023. **Waiting to hear back from vendor for start date but looking at a start date of no later than the week of 5/15/2023.**
- Filters- **De-ragging UF Train 4 will be completed during the week of 4-24-2023. UF Train 1 will be immediately taken offline for de-ragging upon restoring of UF Train 4 to service.**
- A rental emergency generator is online at Pump Station 4 while plans for a permanent solution are being evaluated. **Hills to complete PS3 pump and valve replacement starting 4/24/2023. Harry Caswell to replace wet well piping at PS2 starting 4/24/2023.**

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, P13, PS14, PS15, PS16, PS17, PS18, PS33, PS74 and PS83.

Projects

Project	Status	Priority Level	Approval	Est. Complete Date
Headworks Replacement	Out to bid	High	BPW Project	
Repair Cracks in Oxidation Ditch	BPW issued PO to vendor. Waiting on vendor to schedule	High	PW Project	QTR 2 2023
Replace Generator and ATS at PS4	GMB and Keystone are evaluating size based on future needs. Inframark soliciting quotes for temporary transfer switch.	High	BPW Project	
Rehab Pumps at PS3	Scheduled for 4/24/2023	High	BPW Project	QTR 2 2023
Replace wet-well piping PS2	Scheduled for 4/24/2023	High	Needed	QTR 2 2023
Sump Pump Repairs	Inframark Electrician sourcing materials	Med	NA	QTR 2 2023
Electric panel surveys and power cable megger testing	In Progress	High	NA	Ongoing through 2023

Operations

NPDES Permit Compliance

- Please review the following tables that summarize NPDES reporting criteria for March 2023. No violations will be reported for March 2023. The March DMR will be forwarded upon completion.
- The average daily influent flow for March was 0.840 MGD with a maximum daily flow of 1.130 MGD. Precipitation totaled 3.17 inches for March with a maximum daily total of 1.25 inches.

	Max	Sum
Precipitation (inches)	1.25	3.17

Influent	Limit	Average	Min	Max	Vio
Flow (MGD)		0.840	0.721	1.130	
BOD (mg/L)		104	104	104	
TSS (mg/L)		36	36	36	

Effluent	Limit	Average	Min	Max	Vio
Flow (MGD)		0.920	0.787	2.644	N
Dissolved Oxygen (mg/L)		5.45	3.28	6.77	N
pH (SU)	Min 6/ Max 9	7.07	6.87	7.32	N
Enterococcus (col/100ml)	Avg 10/ Max 104	<1	<1.0	5.2	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 (%)		97.7	97.7	97.7	
TSS (mg/L)	Avg 15/ Max 23	<0.6	<0.5	0.8	N
TSS Load (lbs)	Avg 188/ Max 288	<4	<3	5	N
TSS Removal (%)		98	98	98	
Total Nitrogen (mg/L)	Avg 8	3.10	3.10	3.10	N
Total Nitrogen Load (lbs)	Avg 100	15.91	15.91	15.91	N
Total Phosphorous (mg/L)	Avg 2	<0.05	<0.05	<0.05	N
Total Phosphorous Load (lbs)	Avg 25	<0.36	<0.36	<0.36	N

Process	Average	Min	Max
Bio #1 MLSS (mg/L)	8,653	8,410	8,930
Bio #2 MLSS (mg/L)	8,940	8,420	9,490
Train 1 MLSS (mg/L)	10,000	8,630	11,070
Train 2 MLSS (mg/L)	10,530	10,290	10,820
Train 3 MLSS (mg/L)	10,357	9,450	11,040
Train 4 MLSS (mg/L)	9,660	9,660	9,660
TSS Digester 1 (mg/L)	20,087	19,720	20,430
TSS Digester 2 (mg/L)	16,040	9,380	19,710

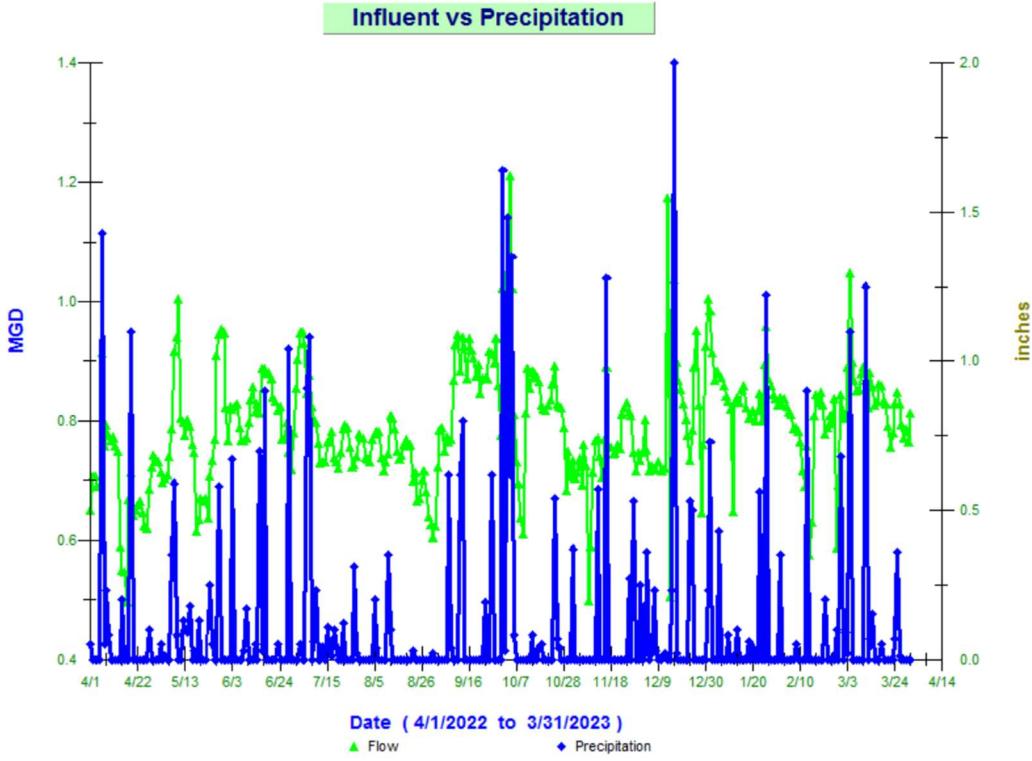
	Average	Max	Sum
Sludge Wasted (gallons)	15,956	16,000	494,623

Sludge Operations and Disposal

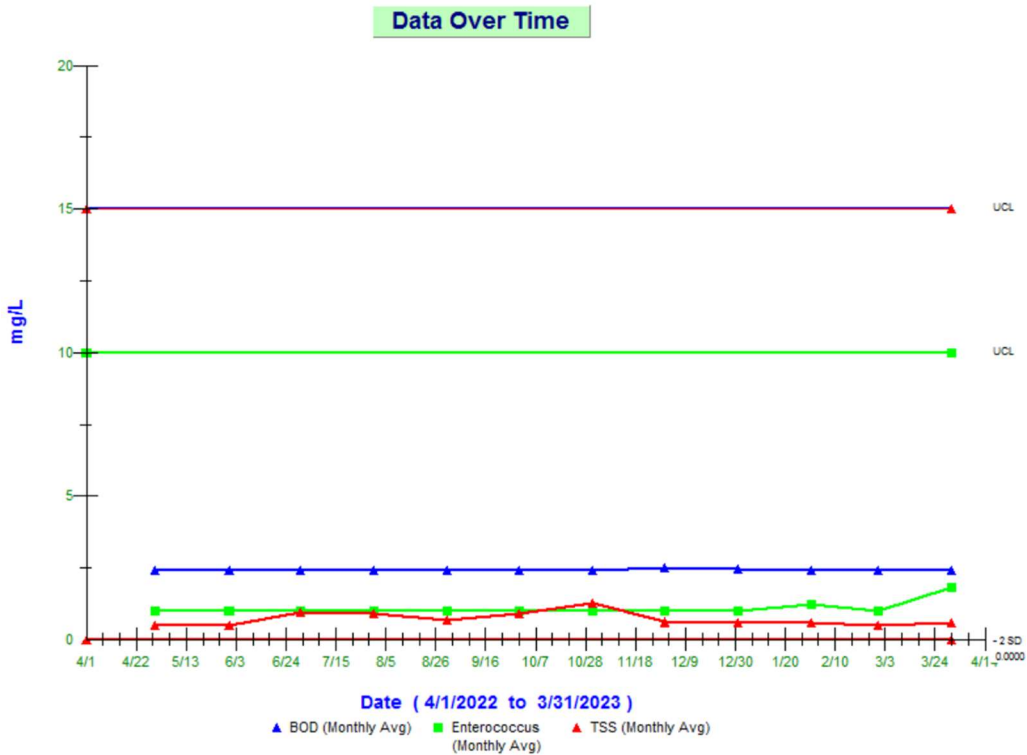
Liquid Hauled	108,000 Gallons	DELCORA
Cake Hauled	63.6 Wet Tons	Sussex County
Dewatering Container	16,000 Gallons	DELCORA

Trends

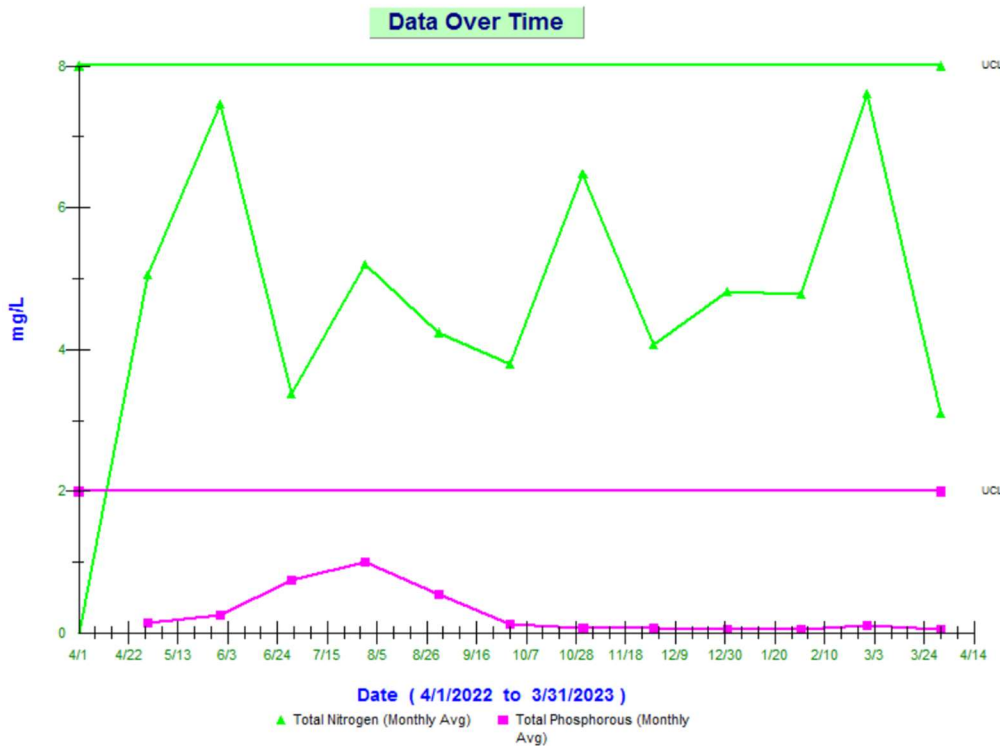
Influent vs Precipitation Trend Previous 12 Months



Effluent Biological Contaminants Trend Previous 12 Months



Effluent Nutrient Trends Previous 12 Months



Corrective Maintenance, Repair and Activities

- WWTP- Digester Building-Replaced sump pump to lower-level pump room.
- WWTP- Process Building-Replaced 24-Hour Effluent Composite Sampler with new Hach unit.
- WWTP- Process Building-Replaced Air Relief Valve tree to UF Train 1 downstream of permeate pump.
- WWTP- Headworks Building- Replaced level pressure transducer to 2mm screen.
- WWTP- Headworks Building- Pump Room exhaust fan had no power. Inframark ran a new conduit, pulled wire and connected fan to a spare breaker to restore power.
- PS15- Replaced Pump Start float switch.
- PS8- Replaced VFD to Pump 2.
- PS8- Fidelity Power onsite to service and inspect emergency generator and automatic transfer switch.
- During the month, Inframark completed routine preventive maintenance activities as recommended by equipment manufacturers and required by plant procedures. Maintenance activities are tracked utilizing a computerized maintenance management software (eMaint).

Work Order Statistics

Preventative WOs closed for month	71
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Maintenance Budget

Monthly Budget	March 2023	Contract Year to Date	Over/(Under)
\$6,667	\$17,478.26	\$39,213.66	\$(41,786.34)

Maintenance Expenditures

DATE	INVOICE	REPORT	VENDOR	MEMO	AMOUNT
1/15/2023	RIN200348572	Mar 2023	Carter Machinery Co Inc	PS4 Generator Rental	\$1,768.68
1/27/2023	2300382-IN	Mar 2023	Freemire & Associates, Inc.	Replacement Bladder for Pista Grit pinch valve	\$2,090.77
1/30/2023	2300398-IN	Mar 2023	Freemire & Associates, Inc.	Labor- Assist Inframark replace pinch valve	\$607.50
2/12/2023	RIN200354573	Mar 2023	Carter Machinery Co Inc	PS4 Generator Rental	\$1,768.68
2/15/2023	0138512	Mar 2023	Hill's Electric Motor Service Inc	Repair rotating assembly for Gorman Rupp pump	\$2,466.71
2/15/2023	0138513	Mar 2023	Hill's Electric Motor Service Inc	Repair rotating assembly for Gorman Rupp pump	\$2,474.49
3/7/2023	PCARD	Mar 2023	Best Ace Hardware	Thread lock for rotating assembly @ps#4 PB-blaster	\$19.18
3/7/2023	PCARD	Mar 2023	Home Depot	Conduit, related fittings, hangers, connectors outlets for installation of new digester outlet	\$355.11
3/7/2023	PCARD	Mar 2023	Hazzard Auto Parts	Oil for pump#2 @ps#3	\$99.00
3/7/2023	PCARD	Mar 2023	Home Depot	Sump pump outlet, outlet for battery backup in process building, misc maint supplies	\$141.60
3/7/2023	PCARD	Mar 2023	Best Ace Hardware	5/8 flare fitting for foam pump hypochlorite feed	\$5.49
3/12/2023	RIN200360755	Mar 2023	Carter Machinery Co Inc	PS4 Generator Rental	\$1,768.68
3/25/2023	PCARD	Mar 2023	Extra Packaging LLC	(4)Dewatering Container Liners	\$1,460.71
3/25/2023	PCARD	Mar 2023	USA Blue Book	Suction valve for pulsatron pump	\$118.26
3/25/2023	PCARD	Mar 2023	Penco Corporation	2 inch swing check valve for 2mm sump pump	\$46.40
3/25/2023	PCARD	Mar 2023	USA Blue Book	Thermometers for sample fridges. Buffers and slides for lab	\$335.02
3/25/2023	PCARD	Mar 2023	Home Depot	3/4 pipe clamps for Effluent sampler outlet	\$13.90
3/25/2023	PCARD	Mar 2023	Home Depot	Conduit, electrical boxes and miscelanous electrical supplies	\$258.32
3/25/2023	PCARD	Mar 2023	USA Blue Book	Pulsatron pump for hypochlorite	\$939.95
3/25/2023	PCARD	Mar 2023	Home Depot	Fuses for Zenon panel	\$18.42
3/25/2023	PCARD	Mar 2023	Amazon	Grease for membrane o-rings	\$140.94
3/25/2023	PCARD	Mar 2023	USA Blue Book	Chart pens for chart recorders	\$131.50
3/25/2023	PCARD	Mar 2023	ACF 22	Mulch sock/pig for storm drain & process building	\$240.00
3/25/2023	PCARD	Mar 2023	USA Blue Book	Logbooks	\$33.95
3/25/2023	PCARD	Mar 2023	A.E.T. Electric	Electrical contractor to troubleshoot pump station 9 January 25,2023	\$175.00
				Monthly Total	\$17,478.26

Afterhours Callouts

3-2-2023- WWTP- High Level Recycle Wetwell
 3-15-2023-WWTP-High Aeration Ditch Level

Health & Safety

- As of March 31, 2023, Inframark staff and contractors have worked 893 days at the Lewes Facilities without a lost time injury.
- Inframark Training and Presentations – Hazcom GHS

Personnel

Name	Title	DE Certification
Jerry Shupe Jr.	Regional VP	NA
Michael Wolgemuth	Regional Manager	DE Class IV WW
Jeffrey Kerin	Project Manager	DE Class IV WW
Mathew Davis	Lead Operator	DE Class IV WW
Paul Smith	Operator II	DE Class III WW
Vince Catalano	Lead Operator	DE Class II WW
Kurt Brittingham	Operator II	DE Class I WW
Andrew Courtney	Lead Maintenance Electrician	NA
Michael Mazzetti	Maintenance Technician III	OIT
Jack Masella	VP Health and Safety	NA

Attachments

- March Sussex County Flow Totals
- March eMaint Report