

LEWES BPW

Howard Seymour Water Reclamation Plant

Operation and Maintenance Report



July 2021

Executive Summary

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

(New information in bold font)

- **Headworks-Meetings with Inframark, BPW, Keystone and Hills Industrial to discuss the Equalization Pump control panel replacement project occurred during July and August. Inframark has piped up a temporary solution utilizing a dewatering roll off container. Inframark met with BPW and GMB regarding Headworks Project.**
- Filters- UF Train 4 de-ragged and returned to service 3-8-2021. UF Train 1 de-ragged and returned to service 4-19-2021. De-ragging of UF Train 2 complete 5-28-2021. UF Train 3 de-ragged and returned to service 7-21-2021.
- **Pump Station 4 Emergency Generator and Transfer Switch are in need of replacement. Inframark is getting three quotes. Pump Station 8 Generator Transfer Switch is in need of replacement. Inframark is getting three quotes. Pump 1 at PS4 became clogged again on 8-13-2021. Inframark is working with BPW to provide a solution.**

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 to decrease excessive ragging of UF membranes.

Projects

Project	Status	Priority Level	Approval	Est. Complete Date
Rebuild band-screens	Discussion to complete Headworks Projects as one large project	High	BPW Project	QTR1 2022
Replace Lipactor with compactor	Discussion to complete Headworks Projects as one large project	High	BPW Project	QTR1 2022
Replace EQ Pump Drives and Control Panel	Project meetings regarding design and install completed during July and August	High	BPW Project	QTR4 2021
Clean Membranes	All trains cleaned one time 2021	High	NA	ongoing

Pump Station Evaluation	We are developing a Pump Station asset list and evaluation	High	NA	2021
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Operations

NPDES Permit Compliance

- Please review the following tables that summarize NPDES reporting criteria for July 2021. No violations will be reported for July. The DMR will be forwarded upon completion.
- The average daily influent flow for July was 0.857 MGD with a maximum daily flow of 1.096 MGD. Precipitation totaled 3.6 inches for July with a maximum daily total of 1.74 inches.

	Max	Sum
Precipitation (inches)	1.74	3.56

Influent	Limit	Average	Min	Max	Vio
Flow (MGD)		0.857	0.761	1.096	
BOD (mg/L)		316	316	316	
BOD Load (lbs)		2,322	2,322	2,322	
TSS (mg/L)		533	533	533	
TSS Load (lbs)		3,916	3,916	3,916	
Effluent					
Flow (MGD)		0.890	0.762	1.167	N
Dissolved Oxygen (mg/L)		4.13	0.41	6.16	N
pH (SU)	Min 6/ Max 9	7.27	7.01	7.48	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	<17	<16	<20	N
BOD Removal (%)		99.2	99.2	99.2	
TSS (mg/L)	Avg 15/ Max 23	<0.5	<0.5	0.5	N
TSS Load (lbs)	Avg 188/ Max 288	<4	<3	<4	N
TSS Removal (%)		100	100	100	
Total Nitrogen (mg/L)	Avg 8	5.60	2.05	9.15	N
Total Nitrogen Load (lbs)	Avg 100	5.14	1.41	8.86	N
Total Phosphorous (mg/L)	Avg 2	0.30	0.30	0.30	N
Total Phosphorous Load (lbs)	Avg 25	2.49	2.49	2.49	N
Process					
Bio #1 MLSS (mg/L)		11,143	9,100	12,390	
Bio #2 MLSS (mg/L)		11,403	8,800	12,990	
Train 1 MLSS (mg/L)		11,660	7,700	13,690	
Train 2 MLSS (mg/L)		12,530	11,000	13,640	
Train 3 MLSS (mg/L)		8,700	8,700	8,700	

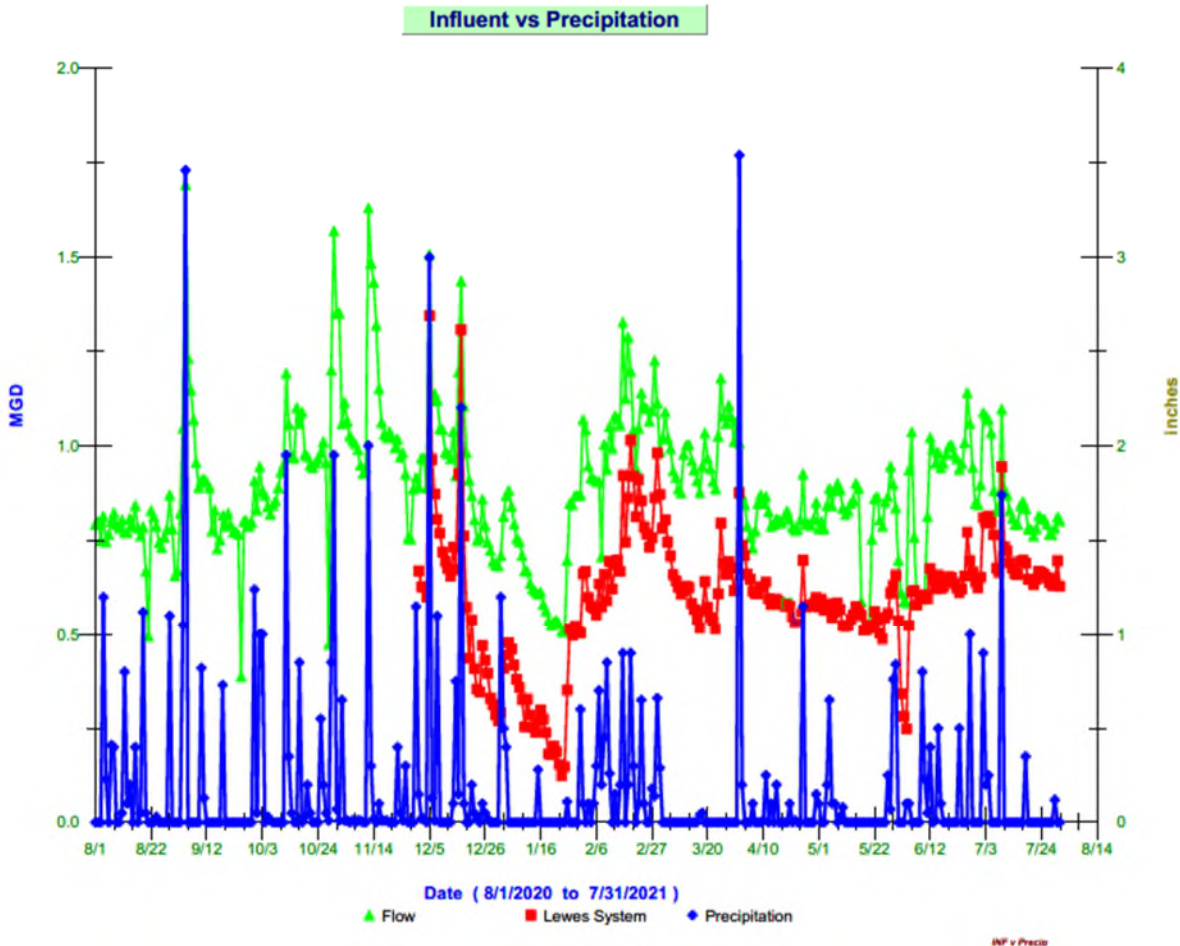
Train 4 MLSS (mg/L)		12,413	9,200	14,540	
TSS Digester 1 (mg/L)		21,210	17,600	23,680	
TSS Digester 2 (mg/L)		21,470	18,300	23,940	

Sludge Operations and Disposal

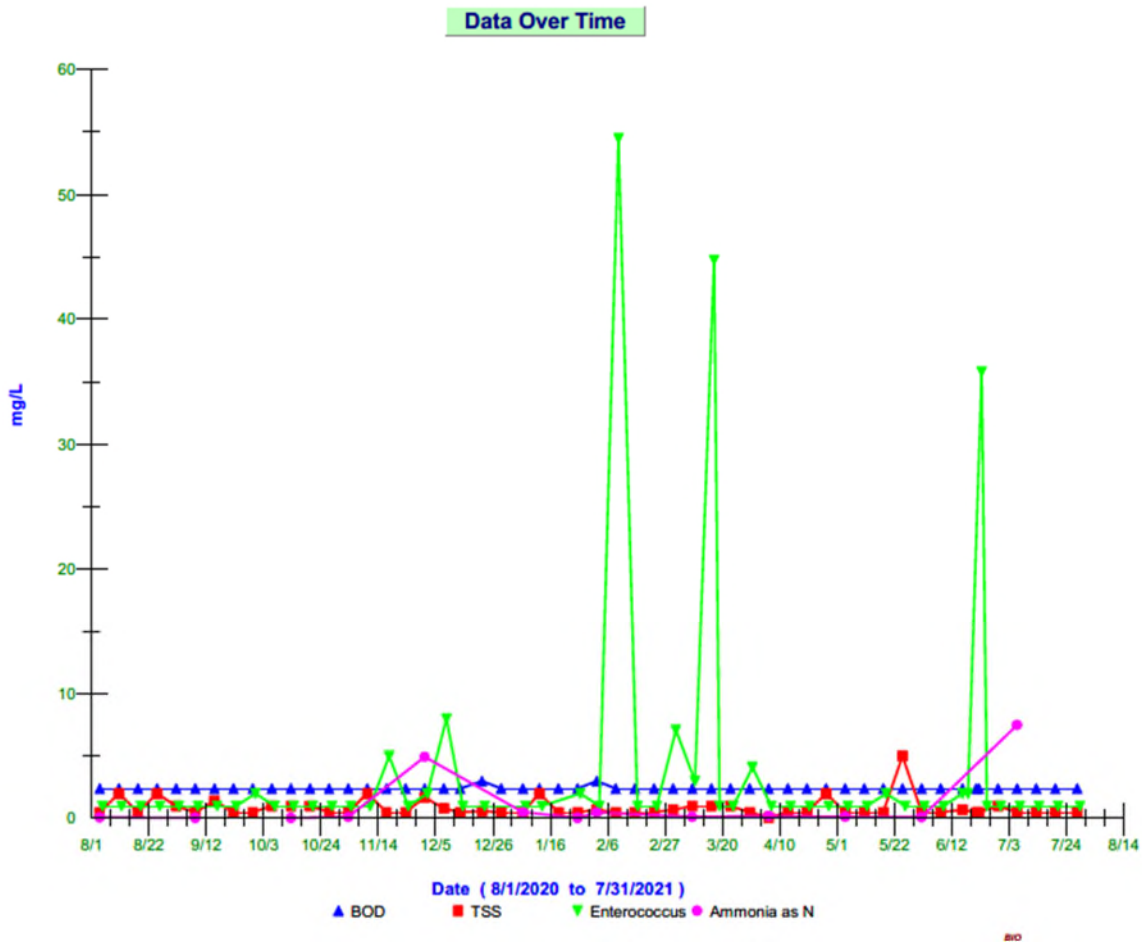
Liquid Hauled	60,600	Gallons	DELCORA
Cake Hauled	78	Wet Tons	Sussex County
Cake Hauled	36	Wet Tons	Pioneer Crossing

Trends

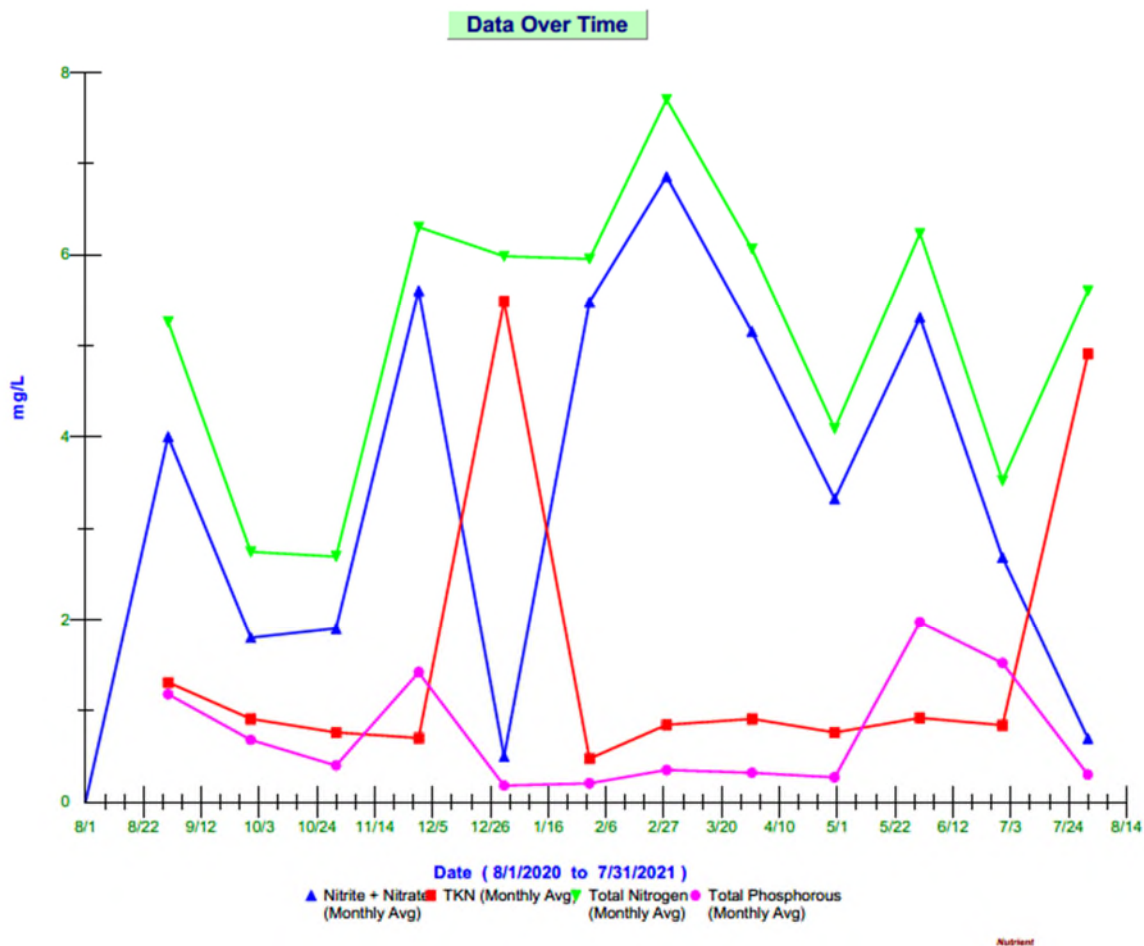
Influent vs Precipitation Trend Previous 12 Months



Effluent Biological Contaminants Trend Previous 12 Months



Effluent Nutrient Trends Previous 12 Months



Maintenance, Repair and Activities

- 7-02-2021 Fidelity Power Systems onsite to service, inspect and test emergency generator at the WWTP.
- 7-02-2021 Fidelity Power Systems onsite to service, inspect and test emergency generators at PS4 and PS8.
- 7-07-2021 Staff completed oil change and air filter element replacement to Bio Blower A,B&C.
- 7-07-2021 Keystone onsite to troubleshoot EQ Pump VFD faulting issue.
- 7-13-2021 Staff replaced exhaust fan belts in the Blower and Process Rooms.
- 7-14-2021 Staff removed the 5mm Maci Pump to send for repair quote.
- 7-16-2021 Staff replaced a hydraulic hose to the skid steerer
- 7-16-2021 Staff replaced belts, oil and air filter elements to 5 UF Blowers.
- 7-19-2021 Staff removed Blower B85-E to send for repair.
- 7-24-2021 Dolphin Electric onsite to troubleshoot 2mm Maci Pump Controls.
- 7-29-2021 With assistance from BPW crew, staff installed a rebuilt submersible mixer in the EQ tank.

Callouts

7-01-2021	Callouts for seven pump stations system power failure
7-02-2021	EQ Pump VFD Fault
7-05-2021	UF Train 4 High Turbidity
7-06-2021	EQ Pump VFD Fault
7-10-2021	EQ Pump VFD Fault
7-10-2021	High Level Dewatering Container
7-11-2021	High Level Dewatering Container
7-11-2021	EQ Pump VFD Fault
7-12-2021	EQ Pump VFD Fault
7-13-2021	PS3 Power Failure
7-13-2021	EQ Pump VFD Fault
7-14-2021	EQ Pump VFD Fault
7-16-2021	UF Train 4 Low Flow
7-17-2021	UF System Low Air
7-18-2021	UF Train 2 High Turbidity
7-29-2021	PS33 High Level
7-30-2021	EQ Pump VFD Fault

Maintenance Budget

Monthly Budget	July Expenses 2021	Contract Year to Date	Remaining Balance
\$7,500	\$ 5,008	\$ 137,121	\$ (47,121)

Maintenance Expenditures

Vendor	Description	Expense
GRAINGER	Spare Fuse's needed.	93.82
ADVANCE AUTO PARTS	Parts for repair of forklift	13.68
FISHER AUTO PARTS	Digester Blower belts	131.00
GRAINGER	Level transducers for replacement and spare	1,211.14
DOVER ELECTRIC SUPPLY	5MM Maci pump parts	57.06
GRAINGER	Headworks parts timer for grit system	309.20
HAZZARD AUTO PARTS	Skid steer part	156.78
BESTS ACE HDWE	Keys for BPW	9.45
GRAINGER	Belts for annual maintenance	382.96
GRAINGER	Parts for screening dumpster and belts for annual maintenance	217.74
United Rentals North America Inc	Dewatering dumpster rental July	1,522.38
K & Z Mechanical, Inc.	Rate: 1.5 hourly rate portal to portal = 6 hrs Description After Hours weekend request by Richard Saturday 7/24/21 resolve control issues with 2mm Maci Pump	855.00
Lowes	Fan for 2mm screen controls overheating	34.98

Health & Safety

Inframark Training and Presentations

- Sampling Standards
- Universal Waste

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
David Sylvester	Operator II	NA
Nick Karpin	Maintenance Technician II	NA
Loran George	PT Operator III	DE Class IV WW
Tom Callahan	Regional Safety Advisor	NA

Attachments

- July County Flow Totals
- June DMR
- Zenon InSight Report- 7-14-2021
- Zenon InSight Report- 7-28-2021
- Pump Station Flow vs Rain Graphs