

LEWES BPW

Howard Seymour Water Reclamation Plant

Operation and Maintenance Report



January 2021

Executive Summary

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

- Headworks- Equalization Pump control panel and VFDs in need of replacement. Inframark met with the sales representative for the influent Screens and Lipactor on February 3, 2021. A second visit from the sales representative is scheduled for February 19, 2021 to generate a parts list for required repair and maintenance.
- Filters- High TMP for train 4. Inframark pulled and unclogged membrane air diffusers, completed a recovery clean and are manually cleaning modules ongoing through completion. We continue to have intermittent issues with air entrapment. Additional air relief valves have been ordered and will be installed during the next several weeks.
- Solids Handling- Awaiting receipt and replacement of diffuser cleaning valve and actuator for Digester Membranes. Diffuser cleaning continues to be completed manually on a daily basis. Drying Beds 1-7 have not been performing efficiently. Staff have been hot water pressure washing them as weather permits. The beds that have been cleaned appear to be draining better.
- We are developing a pump station evaluation. No critical issues exist currently.
- Our Health and Safety advisor completed a plant wide audit. Audit items being addressed through first quarter 2021.

Critical Issues

- Covid. Inframark is following CDC recommendations to ensure uninterrupted service to the BPW and the Lewes community. We are communicating with our teams daily to ensure employees with primary or secondary exposure are staying home until receiving a negative test. So far, we have had little impact across our projects.

Projects

Project	Status	Priority Level	Approval	Est. Complete Date
Clean Membranes	Cleaning Train 4	High	NA	QTR 1 2021
Repairs to Digester Filtration System	A new diffuser flush valve and actuator are required.	High	Maintenance Budget	January/February 2021

Rebuild Foam Pump	Received Rebuild Parts	Medium	Maintenance Budget	March 2021
Replace EQ Pump Drives and Control Panel	Only one drive operates in Auto. A proposal from Gorman Rupp has been received.	High	Needed	2021
Pump Station Evaluation	We are developing a Pump Station asset list and evaluation	High	NA	QTR 1 2021
Buildout CMMS	Asset list has been built out in eMaint	High	Part of our base services	QTR 1 2021

Operations

NPDES Permit Compliance

- Please review the following tables that summarize NPDES reporting criteria for January 2021. No violations will be reported for January. The DMR will be forwarded upon completion.
- The average daily influent flow for January was 0.69 MGD with a maximum daily flow of 0.88 MGD. Precipitation totaled 3.1 inches for January with a maximum daily total of 1.2 inches.

		Average	Max	Sum	
Precipitation (inches)		0.1	1.2	3.1	

Influent	Limit	Average	Min	Max	
Flow (MGD)		0.69	0.51	0.88	
BOD (mg/L)		251	129	346	
BOD Load (lbs)		1455	684	2424	
TSS (mg/L)		345	190	467	
TSS Load (lbs)		2009	1007	3272	

Effluent	Limit	Average	Min	Max	Vio
Flow (MGD)		0.716	0.548	.924	N
Dissolved Oxygen (mg/L)		6.05	4.05	7.23	N
pH (SU)	Min 6/ Max 9	7.14	6.78	7.33	N
Enterococcus (col/100ml)	Avg 10/ Max 104	<1.3	<1.0	2.0	N
BOD (mg/L)	Avg 15/ Max 23	<2.4	<2.4	<2.4	N
BOD Load (lbs)	Avg 188/ Max 288	<14	<12	<16	N
BOD Removal (%)		99.0	99.0	99.0	
TSS (mg/L)	Avg 15/ Max 23	<0.9	<0.5	<2.0	N
TSS Load (lbs)	Avg 188/ Max 288	<5	<3	<11	N
TSS Removal (%)		100	100	100	N
Total Nitrogen (mg/L)	Avg 8	5.95	4.26	7.64	N
Total Nitrogen Load (lbs)	Avg 100	36.82	28.14	45.49	N
Total Phosphorous (mg/L)	Avg 2	0.21	0.20	0.21	N
Total Phosphorous Load (lbs)	Avg 25	1.29	1.25	1.32	N

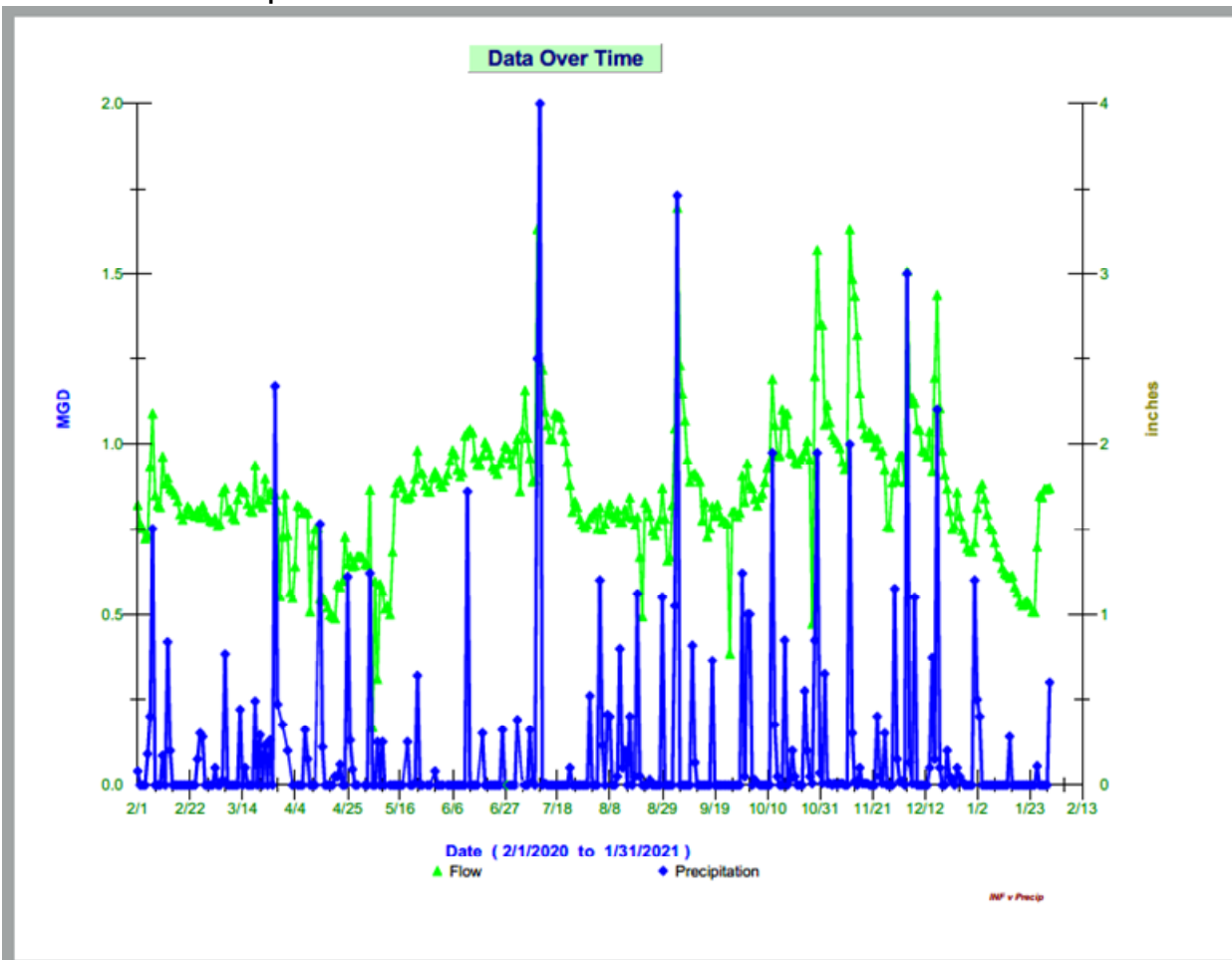
Process	Limit	Average	Min	Max	
Bio-Train 1 MLSS (mg/L)		10934	9540	12170	
Bio-Train 2 MLSS (mg/L)		10940	9540	12380	
Membrane Train 1 MLSS (mg/L)		13,412	11,500	15,290	
Membrane Train 2 MLSS (mg/L)		11,496	10,620	13,280	
Membrane Train 3 MLSS (mg/L)		11,722	10,620	13,950	
Membrane Train 4 MLSS (mg/L)		12,130	10,830	12,790	
TSS Digester 1 (mg/L)		27288	26260	29050	
TSS Digester 2 (mg/L)		24224	23240	25250	

Sludge Operations and Disposal

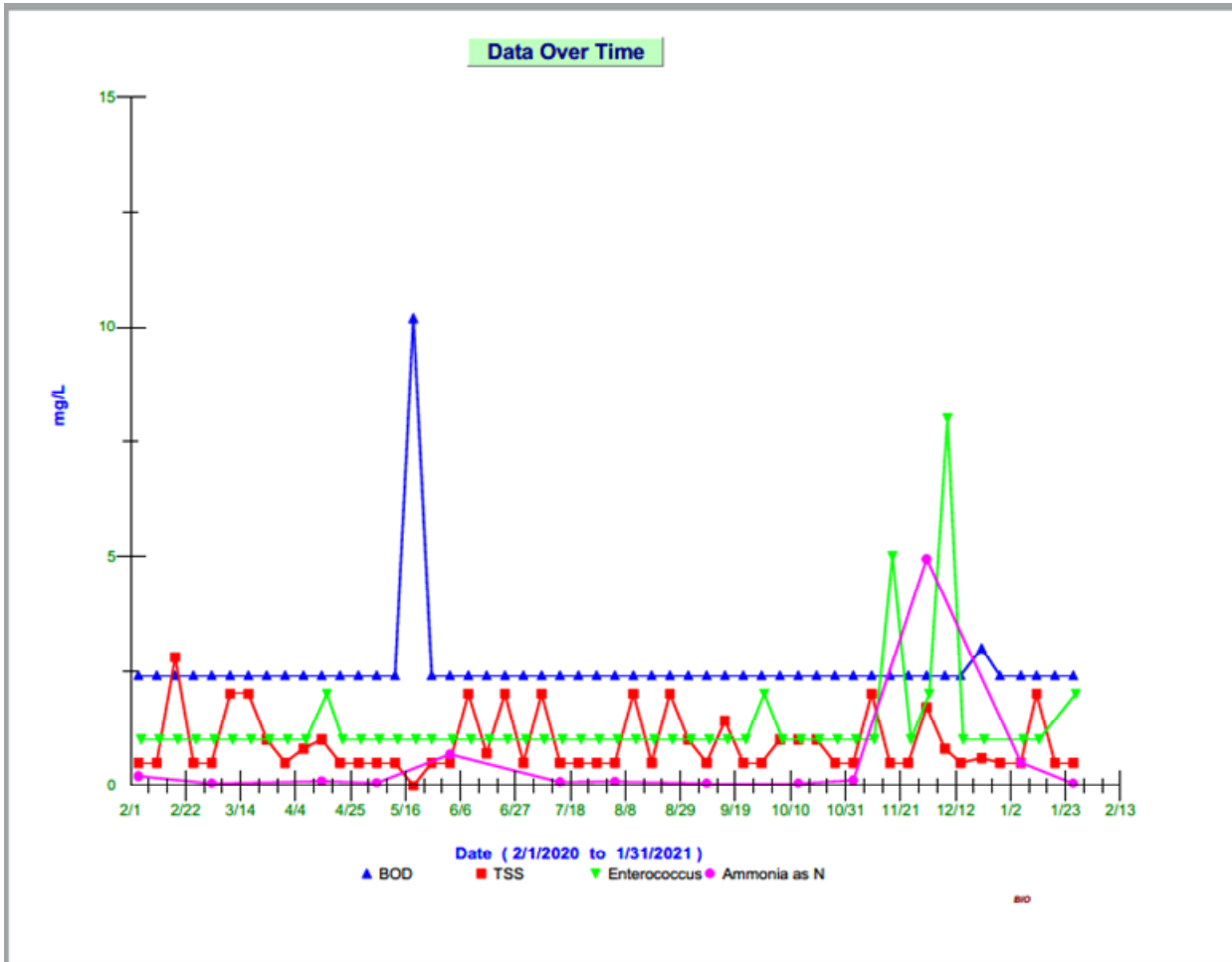
Liquid Hauled	24,000	Gallons	DELCORA
Cake Hauled	64	Wet Tons	Mountain View Reclamation

Trends

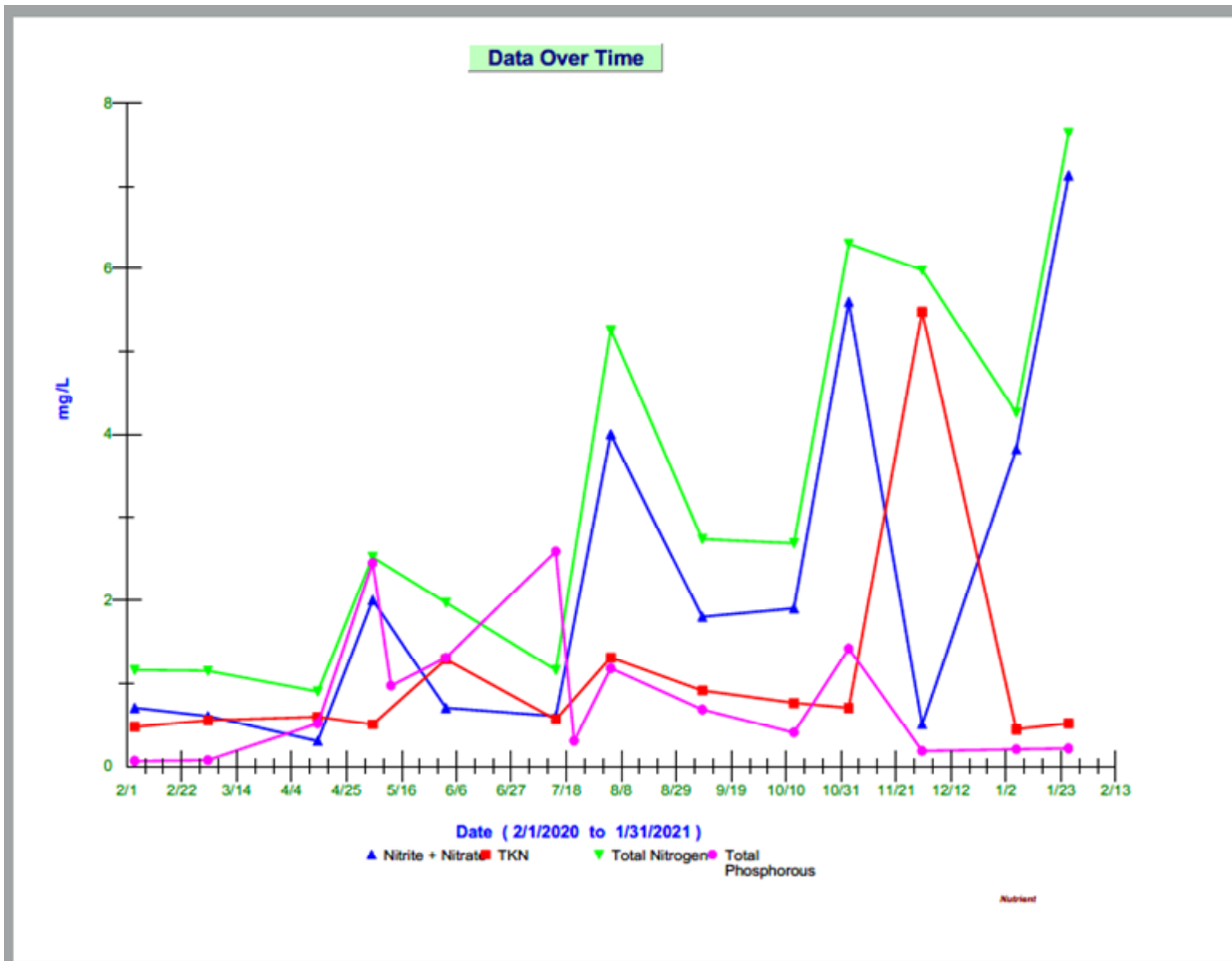
Influent vs Precipitation Trend Previous 12 Months



Effluent Biological Contaminants Trend Previous 12 Months



Effluent Nutrient Trends Previous 12 Months



Maintenance & Repair

Pump Stations

- 1-5-2021-Inframark replaced Low Level and Pump Start Floats at PS83
- 1-11-2021-Inframark replaced Pump 2 and check valve at PS12
- 1-15-2021-K&Z Mechanical onsite at PS83 to replace motor contactors, overload relays and auxiliary contactors for pumps 1 and 2.
- 1-20-2021- Inframark replaced Pump Stop Float at PS1
- 1-20-2021-Inframark replaced all three floats at PS13. Staff installed a junction box for floats at top of the wet well.

WWTP

- 1-5-2021- Horney Industrial Electronics onsite to install effluent flow signal splitter in order to flow pace the effluent sampler as required by permit. They also calibrated plant flow meters while onsite.
- 1-12-2021- AmeriCrane Inspections LLC onsite to complete overhead hoist inspections of 1-ton and 5-ton units in the Process Building.
- 1-22-2021- Inframark pressure washed drying beds 5,6 and 7.
- 1-26-2021 through 1-28-2021, Inframark pulled 3 cassettes Zenon Train 4. Cleared clogged aeration diffusers.
- 1-28-2021- Inframark replaced the pressure switch to the Utility Water Booster Pump in the Headworks Building.

Afterhours Alarm Callouts

- 1-04-21- PS83 High Level
- 1-13-21- Membrane Blower Failure
- 1-17-21- Train 1 High Pressure
- 1-18-21- Train 1 High Pressure
- 1-19-21- Train 1 High Pressure
- 1-20-21- PS1 High Level
- 1-23-21- Train 2 High Pressure
- 1-23-21- Train 2 High Pressure
- 1-26-21- Train 2 High Pressure
- 1-26-21- EQ Pump VFD Fault
- 1-28-21- 2mm Screen Fault

Maintenance Budget

Monthly Budget	January Expenses 2020	Contract Year to Date	Remaining Balance
\$7,500	\$ 3,754.75	\$ 35,599.28	\$ 54,400.72

Maintenance Expenditures

Vendor	Description	Expense
Horney Industrial Electronics, Inc.	Install equipment to flow pace effluent sampler	2,030.41
Horney Industrial Electronics, Inc.	Calibrate flow meters	500.00
Hill's Electric Motor Service Inc	Freight for PS12 Pump	109.23
Freemire & Associates, Inc.	Parts to rebuild E1 pump	815.14
PENCO CORPORATION	PVC Flange for PS12	13.64
FERGUSON ENT	2" swing check brass	78.42
THE HOME DEPOT	Plumbing supplies	56.16

BESTS ACE HDWE	Plumbing adapter	5.99
THE HOME DEPOT	PVC Union	13.16
TRACTOR SUPPLY	Tarp and straps for roll off dumpster	104.90
THE HOME DEPOT	Plumbing supplies	18.71
BESTS ACE HDWE	Pump Station gate latch	8.99

Health & Safety

- Through the end of January, Inframark Lewes employees have worked 105 days without a lost time injury.

Personnel

- David Weed was hired part time to assist with membrane cleaning.

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

Attachments

- January County Flow Totals
- Zenon InSight Report-1-27-21
- Pump Station Vs Rain Graphs