

**WHITE MARSH**  
ENVIRONMENTAL SYSTEMS, INC.  
A Middlesex Water Company Affiliate

December 11, 2018

Mr. Darrin Gordon  
General Manager  
Lewes Board of Public Works  
107 Franklin Avenue  
Lewes, DE 19958

**Subject: Monthly Report, November 2018**

Attached is a summary of the Operations and Maintenance activities at the Board's lift stations and wastewater treatment plant for the month of November. Please direct any questions to my attention. Thank you.

Sincerely,



Mike Evans  
District Manager  
Tidewater Utilities, Inc.

## I. Effluent Quality and Compliance

\* Due to permit changes and the E-DMR's new formatting, the November E-DMR is not currently available from DNREC. The November DMR will be forwarded to the BPW as soon as available.

Below are the reportable results from November permit required testing.

November 2018 Effluent Testing

Sample Data	Total Nitrogen	Total Phosphorus	BOD	TSS	Enterococci
Average:	3.95 mg/L	1.11 mg/L	<2.40 mg/L	<1.13 mg/L	<1.0 Col.
Maximum:	N/A	N/A	<2.40 mg/L	<2.00 mg/L	<1.0 Col.
Permit Limit:	8 mg /L average	2 mg /L average	15 mg/L average 23 mg/L MAX	15 mg/L average 23 mg/l MAX	10 Col average

Maximum daily flow 1.1203 MGD  
Monthly average flow 0.9282 MGD

## II. Activities

### STATION MAINTENANCE PERFORMED

- TUI Maintenance in to replace the VFD for pump #1 at Station #8.
- Operator made repairs to unsecure lid at lift station #9.
- Lift station #15 High-level alarm Thanksgiving night. The operator on-call established that there was an incoming power electrical problem. The on-call manager notifying the BPW had a vac-truck made the call to have CDI come in to pump down the station. The following day BPW's Electrical dept. restored power to the station. TUI Maintenance worked to re-seat pump #1 that was jostled out of place by a failing pump rail system. Rail system repair is in planning and is forthcoming.
- Point Watch station monitoring and call service is in use for all stations. Data is being collected and stored for future evaluation. TUI staff will review data and provide BPW a report showing station activities during rain events and non rain events to assist in identifying potential I&I trouble areas.

### MAINTENANCE PERFORMED

- Several call outs for train #1 membrane low flow shut downs.
- On Thanksgiving, train #1 experienced a low flow shut down. The operator on-call was unable to bring it back online after several attempts with a back-up operator. Meanwhile, the plant was receiving a high volume of flow that could not be processed due to train 1 and train 4 being offline. With only 50% of the process running, process tank levels were rising. The operator was instructed by the DRC of the Lewes plant to request a temporary stop of county flow. South Coastal

complied and stopped flow until train #1 was put back online. The county sent the Lewes plant an average of 295,000 gallons per day during the week.

- After troubleshooting, a critical love-joy coupler between the motor and the pump impellers had disconnected, causing train #1 failure. Train #1 is now repaired and online.
- Train #4 membrane cleaning resumed. 1 out of 3 modules completed.
- Schneider Electric in to work on RAS pump #2 VFD programming.
- Hill's Electric picked up permeate pump for repair.
- Replaced cooling fan on process pump #1 MCC.
- Contractor in to install grit auger. Grit removal system back in service.
- Work nearing completion for the rehabilitation of sludge drying vacuum drum unit. Mechanically we seem to be ready. Currently reviewing PLC program and sequence of operation verification of the programming.
- Continued liquid sludge hauling to reduce solids in system.
  - We were informed by A-1 that there will be a hauling rate increase letter sent to BPW.
  - With increased flow from Sussex County there is obviously a higher November sludge production over last November.
- Continuing to rotate out all blowers for servicing and rehabilitation.
- Membrane Blower A and E are out of service. Rent out.

### SAFETY INFORMATION

No work place injuries.

PPE inspected.

Eyewash and fire extinguisher inspections conducted.

\*\*Caustic lines in chemical building process building and in the retaining area of process building have deteriorated.

Crystallization is occurring causing a safety hazard. Leaking Caustic is seeping through the retaining wall in the process building as well.

### ADDITIONAL INFORMATION

Whitemarsh is evaluating hydrogen sulfide in the Gorman Rupp E.Q. pump cabinets.

Whitemarsh is evaluating the bioreactor air diffuser replacement project.

Schneider Electric and E.D. Supply met with Maintenance and operations to discuss Headworks VFD MCC replacement.

Whitemarsh is evaluating the caustic line replacement project.

Whitemarsh is also evaluating the odor complaints at station #4 to assist the BPW with developing a solution.

**High influent daily max flows and the monthly average flow significantly increased to station #4 contributed by the County pump station.**

Preliminary Board Document

**LEWES WWTP  
NUTRIENT OFFSET REPORT**

MONTH	Days	Average Monthly Flow MGD	Monthly Average TN mg/L	Total Monthly TN Discharged Lbs.	TN Based 16.9 lbs Manure Offset Required Lbs.	Poultry Manure Relocated		Poultry Manure Offset Balance Lbs.	Monthly Average TP mg/L	Total Monthly TP Discharged Lbs.	TP Based 285 lbs Manure Offset Required Lbs.
						Tons	Lbs.				
Carry Over											
January	31	0.5796	7.81	4,510.33	19,778.52			130,493.68			
February	28	0.6519	4.68	712.47	12,040.31	1,554.93	3,109,860.00	3,201,919.16	0.36	53.95	15,374.59
March	31	0.7362	4.73	900.73	15,214.98			3,186,704.18	0.43	65.46	18,655.99
April	30	0.6802	2.40	408.27	6,802.75				0.25	47.58	13,561.52
May	31	0.7910	1.47	500.62	5,000.52			3,141,596.37	0.93	158.27	45,107.81
June	30	0.7215	1.80	324.93	4,140.00			3,111,288.71	0.52	106.34	30,307.66
July	31	0.7569	2.92	571.41	9,656.00			3,092,767.43	0.36	64.99	18,521.28
August	31	0.7073	4.85	886.90	11,987.56			3,058,189.20	0.62	121.33	34,578.23
September	30	0.7499	1.83	343.35	5,802.67			2,988,352.92	1.34	245.04	69,835.27
October	31	0.7454	1.35	260.17	4,396.80			2,896,379.16	1.72	322.71	9,193.77
November	30	0.9282	3.95	917.33	15,502.80			2,801,909.92	1.72	331.47	9,449.24
December	31			0.00	0.00			2,728,442.17	1.11	257.78	7,346.74
<b>Year Balance</b>								<b>2,728,442.17</b>		<b>0.00</b>	<b>0.00</b>

Comments: Effective July 1, 2018, we will be using the new required Manure offset lbs. of 16.9 lbs. for TN and 285 lbs for TP as set by DNREC. This sheet has been recalculated to reflect these calculations back to January 1, 2018.

*[Signature]*  
Authorized Signatory

12/14/18  
DATE

