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**EXHIBIT E2**

**CHAPTER 94 REPORT FOR 2016 -  
POSSUM HOLLOW WASTE WATER TREATMENT FACILITY**

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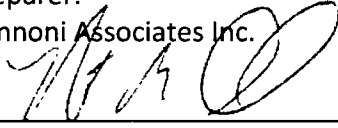
**CHAPTER 94  
MUNICIPAL WASTELOAD MANAGEMENT  
ANNUAL REPORT**

**2016**

**LIMERICK TOWNSHIP  
POSSUM HOLLOW WWTP SERVICE AREA  
MONTGOMERY COUNTY, PENNSYLVANIA**

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LMSD 0100.2016

**LIMERICK TOWNSHIP  
MONTGOMERY COUNTY, PENNSYLVANIA  
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**1.0 INTRODUCTION**

This Report is submitted in compliance with the latest regulation set forth under Title 25, Part I, Subpart C, Article II, Chapter 94 Municipal Wasteload Management Regulations of the Pennsylvania Department of Environmental Protection (PADEP) concerning sewerage facilities.

**1.1 Delineation of Sewerage Service Areas**

Limerick Township, Montgomery County, PA borders Upper Frederick and New Hanover Townships to the north; Lower Frederick Township to the northeast; Lower Pottsgrove Township to the northwest; Perkiomen Township to the east; Upper Providence Township to the southeast; the Borough of Royersford to the south and Chester County boundaries to the west.

The Township contains approximately 22 square miles of land. Approximately 75% of the Township is zoned residential, 22% industrial and 3% commercial. The Township zoning ordinance allows for a number of land uses as described below.

- **Residential-Agricultural (R-1)** is intended to preserve agricultural and natural areas while allowing limited compatible residential development. This encompasses much of the land north of Ridge Pike.
- **Low Density Residential (R-2)** is intended to provide residential neighborhoods that primarily include single family detached dwelling units at a low density
- **Medium Density Residential (R-3)** is intended for residential neighborhoods with a mix of dwelling types at a medium density.
- **Medium-High Density Residential (R-4)** is intended for a mix of housing types at medium- high densities around village centers.
- **Village Residential (R-5)** is intended for a mix of housing types and densities within a village area, with emphasis on pedestrian circulation.
- **Mobile Home Park (MHP)** is intended to provide that mobile homes are integrated into the community.
- **Village Commercial (VC)** is intended to encourage compact mixed development within the historic village areas.
- **Retail Business (RB)** is intended to encourage commercial development that is less restrictive than the VC district, but less permissive than the HC district.
- **Highway Commercial (HC)** is intended to focus larger commercial development in areas where public facilities and appropriate lot sizes are available.
- **Office/Limited Industrial (O/LI)** is intended to provide appropriate areas for a mix of business oriented land uses.
- **Limited Light Industrial (LLI)** is intended for a wide range of industrial uses while avoiding heavy industrial uses that are likely to cause nuisances and hazards.

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- **Heavy Industrial (HI)** is intended for a wide range of industrial uses and complementary commercial uses. A coordinated interior road system and control of nuisances and hazards are encouraged.
- **Heavy Industrial and Energy (HI/E)** is intended to provide appropriate areas for heavy industrial use.

\*Zoning district designation and description per report entitled "Land Use Assumptions Report" dated February 2011 by Traffic Planning and Design

The Township has entered into inter-municipal Sewer Agreements with the downstream municipality, Borough of Royersford, to provide for sewer conveyance, and treatment of wastewater at the Royersford Wastewater Treatment Plant. The Agreements establish the following items: terms of the relationship; location of connection points; flow limits, loading and billing information; and other necessary requirements for the wastewater which passes through the Borough of Royersford's sewer collection and conveyance system.

**1.2 General Description of Existing Sewage Facilities**

The wastewater system in the Township consists of multiple collectors and interceptors ranging in size from eight (8) to thirty-six (36) inches, seventeen (17) dedicated sewage pumping stations, a 1.7 MGD wastewater treatment plant (King Road) and a 0.7 MGD wastewater treatment plant (Possum Hollow). The wastewater systems are owned and operated by Limerick Township, which took ownership and operational responsibility from the Municipal Authority in September 2008.

**1.3 Description of Treatment Plant**

The Possum Hollow Wastewater Treatment Plant (WWTP) is located at 642 Longview Road in Limerick Township. The primary source of wastewater is residential, although there are several industrial and commercial operations located throughout the Township. A portion of the WWTP's influent flow is from Pump Station #17 while the remainder of the flow is conveyed through Pump Station # 16.

Under NPDES Permit # PA0058041 (expires at midnight on 9/30/2018), the plant is permitted for the following:

Flow:		
	Design	0.70 MGD
	One (1) Hour Peak	2.175 MGD
	Sustained Peak	1.50 MGD

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Influent:

	Average
BOD <sub>5</sub>	1,720 ppd
TSS	1,877 ppd
NH <sub>3</sub> -N	407 ppd

Effluent:

BOD <sub>5</sub>	10 mg/l
TSS	15 mg/l
NH <sub>3</sub> -N	1.0 mg/l

The treatment process at the Possum Hollow Wastewater Treatment Plant is summarized below.

- A pretreatment process contained within and around the pre-engineered steel headworks building consisting of a mechanical fine screen, aerated grit chamber, and grit classifier.
- The plant utilizes an AeroMod activated sludge biological treatment system that includes two-stage aeration, clarification, and aerobic sludge digestion.
- In-line ultraviolet disinfection and effluent metering.
- Standby power and support facilities, located in and around the pre-engineered steel service building.

Treated effluent is discharged to the Schuylkill River.

All sludge generated at the WWTP is hauled away as thickened liquid to the Pottstown Wastewater Treatment Plant for further processing before final disposal.

The overall condition of the WWTP is in good condition, operating well and consistently producing effluent that meets the permitted requirements.

At the WWTP, the Township staff monitors and visually inspects the treatment processes and supporting mechanical equipment daily for any signs of failure or malfunctioning. Discharge Monitoring Reports (DMRs) are generated and forwarded to the PaDEP monthly, providing useful data of the WWTP operation to produce a clean effluent in accordance with the NPDES effluent limitation. The frequency of sampling and analysis for the final effluent can be found in the NPDES permit which is provided in Appendix D.

The Possum Hollow WWTP does not currently have an influent flow meter. The Township utilizes the measured effluent flow for calculating and reporting the loadings at the treatment facility. Since there are no equalization facilities at the WWTP, the

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effluent flow measured after final treatment also reasonably measures the influent flow to the plant. Should daily flows increase, Township staff then inspect the collection system for leaks. Since the WWTP receives flow directly from two separate pump station (16 and 17), it is not feasible to measure the flow at a single point prior to the treatment plant without significant and costly changes to the headworks at the WWTP. The Township is currently working towards ascertaining a method to meet the DEP's request of influent flow monitoring that is able to continuously measure, indicate, and report the flows entering the WWTP. This includes metering the influent/effluent at the Pump Station #16 and #17, which feed the WWTP and then adding the flows together to determine the influent flow.

Routine maintenance is performed at the WWTP on a regular basis. Maintenance includes the following:

- Grease equipment
- Weekly exercising of the emergency generator
- Wet wells are cleaned
- Weirs are cleaned
- Pumps are checked for wear
- Meters calibrated (calibration records are provided in the Appendix D).

There were no major repairs or rehabilitation of equipment at the WWTP in 2015.

#### **1.4 Current WWTP Service Area**

The Township's existing sewerage facilities map is located in Appendix B. The Possum Hollow service area is approximately 4.6 square miles and, as of December 31, 2016, consists of approximately 1,606 EDUs.

The service area for the WWTP consists of the connections found in Table 1.4-A. These connections are either existing or under construction (connection by lateral). Total Connections are based on number of water billing users, residential and non-residential. There were 30 connections constructed and/or connected in 2016 as can be seen on Table 1.4-A. Proposed and/or projected connections can be found in Table 2.2-A and is discussed in Section 2.2 of this report.

As previously mentioned, the Township has entered into inter-municipal Sewer Agreements with the downstream municipality, Borough of Royersford, to provide for sewer conveyance, and treatment of wastewater at the Royersford Wastewater Treatment Plant. Limerick Township has 103 connections resulting in an estimated 127 EDUs that discharge from the Chester View Apartments development into the Borough of Royersford's collection system.



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**Table 1.4-A  
2016 Connection Data**

<b>Connection Date</b>	<b>Address</b>	<b>Town</b>	<b>EDU'S</b>	<b>Type</b>	<b>Sewage Service Area</b>	<b>Pump Station Service</b>
1/5/2016	29 Phaeton Way	Limerick	1	Residential	King Road WWTP	PS #2
1/8/2016	50 Phaeton Way	Limerick	1	Residential	King Road WWTP	PS #2
1/8/2016	100 Dogwood Ct.	Royersford	1	Residential	King Road WWTP	PS #5
1/8/2016	101 Dogwood Ct.	Royersford	1	Residential	King Road WWTP	PS #5
1/8/2016	102 Dogwood Ct.	Royersford	1	Residential	King Road WWTP	PS #5
1/8/2016	103 Dogwood Ct.	Royersford	1	Residential	King Road WWTP	PS #5
1/8/2016	104 Dogwood Ct.	Royersford	1	Residential	King Road WWTP	PS #5
1/8/2016	105 Dogwood Ct.	Royersford	1	Residential	King Road WWTP	PS #5
1/8/2016	106 Dogwood Ct.	Royersford	1	Residential	King Road WWTP	PS #5
1/8/2016	107 Dogwood Ct.	Royersford	1	Residential	King Road WWTP	PS #5
1/8/2016	108 Dogwood Ct.	Royersford	1	Residential	King Road WWTP	PS #5
1/8/2016	109 Dogwood Ct.	Royersford	1	Residential	King Road WWTP	PS #5
1/8/2016	110 Dogwood Ct.	Royersford	1	Residential	King Road WWTP	PS #5
1/8/2016	111 Dogwood Ct.	Royersford	1	Residential	King Road WWTP	PS #5
1/8/2016	112 Dogwood Ct.	Royersford	1	Residential	King Road WWTP	PS #5
1/8/2016	113 Dogwood Ct.	Royersford	1	Residential	King Road WWTP	PS #5
1/8/2016	114 Dogwood Ct.	Royersford	1	Residential	King Road WWTP	PS #5
1/8/2016	115 Dogwood Ct.	Royersford	1	Residential	King Road WWTP	PS #5
1/8/2016	116 Dogwood Ct.	Royersford	1	Residential	King Road WWTP	PS #5
1/8/2016	117 Dogwood Ct.	Royersford	1	Residential	King Road WWTP	PS #5
1/8/2016	118 Dogwood Ct.	Royersford	1	Residential	King Road WWTP	PS #5
1/8/2016	119 Dogwood Ct.	Royersford	1	Residential	King Road WWTP	PS #5
1/8/2016	120 Dogwood Ct.	Royersford	1	Residential	King Road WWTP	PS #5
1/8/2016	121 Dogwood Ct.	Royersford	1	Residential	King Road WWTP	PS #5
1/13/2016	100 Cypress Ct, Apt 110	Royersford	1	Residential	King Road WWTP	PS #5
1/14/2016	100 Cypress Ct, Apt 111	Royersford	1	Residential	King Road WWTP	PS #5
1/15/2016	318 Graterford Rd.	Schwenksville	1	Residential	King Road WWTP	PS #20
1/15/2016	100 Cypress Ct, Apt 114	Royersford	1	Residential	King Road WWTP	PS #5
1/16/2016	100 Cypress Ct, Apt 116	Royersford	1	Residential	King Road WWTP	PS #5
1/17/2016	100 Cypress Ct, Apt 117	Royersford	1	Residential	King Road WWTP	PS #5
1/18/2016	100 Cypress Ct, Apt 124	Royersford	1	Residential	King Road WWTP	PS #5
1/19/2016	100 Cypress Ct, Apt 210	Royersford	1	Residential	King Road WWTP	PS #5
1/20/2016	100 Cypress Ct, Apt 211	Royersford	1	Residential	King Road WWTP	PS #5
1/21/2016	12 Montella Cir	Pottstown	1	Residential	Possum Hollow WWTP	PS #18
1/21/2016	35 Montella Cir	Pottstown	1	Residential	Possum Hollow WWTP	PS #18
1/21/2016	100 Cypress Ct, Apt 212	Royersford	1	Residential	King Road WWTP	PS #5
1/22/2016	100 Cypress Ct, Apt 213	Royersford	1	Residential	King Road WWTP	PS #5
1/23/2016	100 Cypress Ct, Apt 214	Royersford	1	Residential	King Road WWTP	PS #5
1/24/2016	100 Cypress Ct, Apt 215	Royersford	1	Residential	King Road WWTP	PS #5
1/25/2016	100 Cypress Ct, Apt 216	Royersford	1	Residential	King Road WWTP	PS #5

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1/26/2016	100 Cypress Ct, Apt 217	Royersford	1	Residential	King Road WWTP	PS #5
1/27/2016	33 Mt. Veiw Ln	Schwenksville	1	Residential	King Road WWTP	PS #20
1/27/2016	100 Cypress Ct, Apt 310	Royersford	1	Residential	King Road WWTP	PS #5
1/28/2016	100 Cypress Ct, Apt 311	Royersford	1	Residential	King Road WWTP	PS #5
1/29/2016	100 Cypress Ct, Apt 312	Royersford	1	Residential	King Road WWTP	PS #5
1/30/2016	100 Cypress Ct, Apt 313	Royersford	1	Residential	King Road WWTP	PS #5
1/31/2016	100 Cypress Ct, Apt 314	Royersford	1	Residential	King Road WWTP	PS #5
2/1/2016	100 Cypress Ct, Apt 315	Royersford	1	Residential	King Road WWTP	PS #5
2/2/2016	7 Montella Cir	Pottstown	1	Residential	Possum Hollow WWTP	PS #18
2/2/2016	54 Phaeton Way	Limerick	1	Residential	King Road WWTP	PS #2
2/2/2016	100 Cypress Ct, Apt 316	Royersford	1	Residential	King Road WWTP	PS #5
2/3/2016	100 Cypress Ct, Apt 317	Royersford	1	Residential	King Road WWTP	PS #5
3/9/2016	67 Phaeton Way	Limerick	1	Residential	King Road WWTP	PS #2
3/9/2016	66 Phaeton Way	Limerick	1	Residential	King Road WWTP	PS #2
3/9/2016	314 Graterford Rd.	Schwenksville	1	Residential	King Road WWTP	PS #20
3/10/2016	16 Montella Cir	Pottstown	1	Residential	Possum Hollow WWTP	PS #18
3/15/2016	20 Montella Cir	Pottstown	1	Residential	Possum Hollow WWTP	PS #18
3/21/2016	46 Montella Cir	Pottstown	1	Residential	Possum Hollow WWTP	PS #18
4/1/2016	65 Putter Ln	Pottstown	1	Residential	Possum Hollow WWTP	PS #18
4/1/2016	131 Masters Dr	Pottstown	1	Residential	Possum Hollow WWTP	PS #18
4/5/2016	5 Phaeton Way	Limerick	1	Residential	King Road WWTP	PS #2
4/12/2016	10 Mountain View Ln	Schwenksville	1	Residential	King Road WWTP	PS #20
4/20/2016	3383 Pruss Hill Rd.	Pottstown	1	Residential	Possum Hollow WWTP	PS #18
4/25/2016	29 Mountain View Ln	Schwenksville	1	Residential	King Road WWTP	PS #20
5/4/2016	116 Redwood Dr.	Royersford	1	Residential	King Road WWTP	PS #5
5/4/2016	204 Redwood Dr.	Royersford	1	Residential	King Road WWTP	PS #5
5/4/2016	104 Sage Ct.	Royersford	1	Residential	King Road WWTP	PS #5
5/4/2016	116 Sage Ct.	Royersford	1	Residential	King Road WWTP	PS #5
5/5/2016	46 Phaeton Way	Limerick	1	Residential	King Road WWTP	PS #3
5/10/2016	196 W Ridge Pike	Limerick	2	Commercial	King Road WWTP	PS #10
5/10/2016	708-712 W Ridge Pike	Limerick	4	Commercial	Possum Hollow WWTP	PS #18
5/11/2016	341 Sunset Rd.	Schwenksville	1	Residential	King Road WWTP	PS #20
5/17/2016	58 Phaeton Way	Limerick	1	Residential	King Road WWTP	PS #3
5/18/2016	108 Sage Ct	Royersford	1	Residential	King Road WWTP	PS #5
5/19/2016	36 W Ridge Pike Ste 101	Limerick	1	Commercial	King Road WWTP	PS #6
5/23/2016	57 Mt View Ln	Schwenksville	1	Residential	King Road WWTP	PS #20
5/25/2016	9 Montella Cir	Pottstown	1	Residential	Possum Hollow WWTP	PS #18
5/25/2016	29 Montella Cir	Pottstown	1	Residential	Possum Hollow WWTP	PS #18
5/26/2016	208 Redwood Dr.	Royersford	1	Residential	King Road WWTP	PS #5
5/26/2016	124 Sage Ct.	Royersford	1	Residential	King Road WWTP	PS #5
5/26/2016	312 Redwood Dr	Royersford	1	Residential	King Road WWTP	PS #5
5/26/2016	320 Redwood Dr	Royersford	1	Residential	King Road WWTP	PS #5
5/26/2016	212 Redwood Dr	Royersford	1	Residential	King Road WWTP	PS #5
5/26/2016	108 Redwood Dr.	Royersford	1	Residential	King Road WWTP	PS #5

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5/26/2016	304 Redwood Dr.	Royersford	1	Residential	King Road WWTP	PS #5
5/26/2016	500 Redwood Dr. Apt 116	Royersford	1	Residential	King Road WWTP	PS #5
6/3/2016	400 Redwood Dr Apt 310	Royersford	1	Residential	King Road WWTP	PS #5
6/15/2016	25 Mt. View Ln	Schwenksville	1	Residential	King Road WWTP	PS #20
6/15/2016	86 Phaeton Way	Limerick	1	Residential	King Road WWTP	PS #3
6/15/2016	71 Phaeton Way	Limerick	1	Residential	King Road WWTP	PS #3
6/20/2016	36 Montella Cir	Pottstown	1	Residential	Poosum Hollow WWTP	PS #18
6/20/2016	12 Tee Ct.	Pottstown	1	Residential	Poosum Hollow WWTP	PS #18
6/21/2016	500 Redwood Dr. Apt 212	Royersford	1	Residential	King Road WWTP	PS #5
6/21/2016	500 Redwood Dr. Apt 313	Royersford	1	Residential	King Road WWTP	PS #5
6/21/2016	316 Redwood Dr.	Royersford	1	Residential	King Road WWTP	PS #5
6/27/2016	500 Redwood Dr. Apt 311	Royersford	1	Residential	King Road WWTP	PS #5
6/27/2016	120 Sage Ct.	Royersford	1	Residential	King Road WWTP	PS #5
6/28/2016	26 Montella Cir	Pottstown	1	Residential	Poosum Hollow WWTP	PS #18
6/30/2016	500 Redwood Dr. Apt 210	Royersford	1	Residential	King Road WWTP	PS #5
6/30/2016	9 Phaeton Way	Limerick	1	Residential	King Road WWTP	PS #3
7/7/2016	24 Montella Cir	Pottstown	1	Residential	Poosum Hollow WWTP	PS #18
7/13/2016	400 Redwood Dr. Apt 111	Royersford	1	Residential	King Road WWTP	PS #5
7/13/2016	400 Redwood Dr. Apt 110	Royersford	1	Residential	King Road WWTP	PS #5
7/20/2016	42 Montella Cir	Pottstown	1	Residential	Poosum Hollow WWTP	PS #18
7/20/2016	44 Montella Cir	Pottstown	1	Residential	Poosum Hollow WWTP	PS #18
7/28/2016	400 Redwood Dr. Apt 13	Royersford	1	Residential	King Road WWTP	PS #5
7/28/2016	500 Redwood Dr. Apt 213	Royersford	1	Residential	King Road WWTP	PS #5
7/28/2016	308 Redwood Dr.	Royersford	1	Residential	King Road WWTP	PS #5
7/28/2016	400 Redwood Dr. Apt 212	Royersford	1	Residential	King Road WWTP	PS #5
8/8/2016	38 Montella Cir	Pottstown	1	Residential	Poosum Hollow WWTP	PS #18
8/8/2016	112 Sage Ct.	Royersford	1	Residential	King Road WWTP	PS #5
8/8/2016	400 Redwood Dr. Apt 213	Royersford	1	Residential	King Road WWTP	PS #5
8/9/2016	33 Montella Cir	Pottstown	1	Residential	Poosum Hollow WWTP	PS #18
8/10/2016	328 Sunset Rd.	Schwenksville	1	Residential	King Road WWTP	PS #11
8/11/2016	50 Montella Cir	Pottstown	1	Residential	Poosum Hollow WWTP	PS #18
8/25/2016	53 Montella Cir	Pottstown	1	Residential	Poosum Hollow WWTP	PS #18
8/25/2016	345 Sunset Rd.	Schwenksville	1	Residential	King Road WWTP	PS #11
8/26/2016	400 Redwood Dr. Apt 312	Royersford	1	Residential	King Road WWTP	PS #5
8/30/2016	1 Phaeton Way	Royersford	1	Residential	King Road WWTP	PS #3
8/30/2016	400 Redwood Dr. Apt 210	Royersford	1	Residential	King Road WWTP	PS #5
8/30/2016	400 Redwood Dr. Apt 211	Royersford	1	Residential	King Road WWTP	PS #5
8/30/2016	400 Redwood Dr. Apt 217	Royersford	1	Residential	King Road WWTP	PS #5
8/30/2016	500 Redwood Dr. Apt 117	Royersford	1	Residential	King Road WWTP	PS #5
8/30/2016	500 Redwood Dr. Apt 312	Royersford	1	Residential	King Road WWTP	PS #5
8/30/2016	500 Redwood Dr. Apt 316	Royersford	1	Residential	King Road WWTP	PS #5
9/6/2016	49 Mountain View Ln	Schwenksville	1	Residential	King Road WWTP	PS #20
9/12/2016	26 Putter Ln	Pottstown	1	Residential	Poosum Hollow WWTP	PS #18
9/22/2016	400 Redwood Dr. Apt 124	Royersford	1	Residential	King Road WWTP	PS #5

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9/22/2016	500 Redwood Dr. Apt 211	Royersford	1	Residential	King Road WWTP	PS #5
9/22/2016	500 Redwood Dr. Apt 111	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	400 Redwood Dr. Apt 114	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	400 Redwood Dr. Apt 116	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	400 Redwood Dr. Apt 117	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	400 Redwood Dr. Apt 214	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	400 Redwood Dr. Apt 215	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	400 Redwood Dr. Apt 216	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	400 Redwood Dr. Apt 313	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	400 Redwood Dr. Apt 314	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	400 Redwood Dr. Apt 315	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	400 Redwood Dr. Apt 316	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	400 Redwood Dr. Apt 317	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	500 Redwood Dr. Apt 110	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	500 Redwood Dr. Apt 114	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	500 Redwood Dr. Apt 124	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	500 Redwood Dr. Apt 214	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	500 Redwood Dr. Apt 215	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	500 Redwood Dr. Apt 216	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	500 Redwood Dr. Apt 217	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	500 Redwood Dr. Apt 310	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	500 Redwood Dr. Apt 314	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	500 Redwood Dr. Apt 315	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	500 Redwood Dr. Apt 317	Royersford	1	Residential	King Road WWTP	PS #5
9/27/2016	112 Redwood Dr.	Royersford	1	Residential	King Road WWTP	PS #5
10/12/2016	70 Phaeton Way	Limerick	1	Residential	King Road WWTP	PS #3
10/13/2016	18 Railroad St.	Llfield	1	Residential	King Road WWTP	PS #5
10/17/2016	48 Montella Cir	Pottstown	1	Residential	Possum Hollow WWTP	PS #18
10/17/2016	25 Montella Cir	Pottstown	1	Residential	Possum Hollow WWTP	PS #18
10/17/2016	23 Montella Cir	Pottstown	1	Residential	Possum Hollow WWTP	PS #18
10/26/2016	6 Phaeton Way	Limerick	1	Residential	King Road WWTP	PS #3
10/26/2016	41 Mt. View Ln	Schwenksville	1	Residential	King Road WWTP	PS #20
11/3/2016	38 Mt. View Ln	Schwenksville	1	Residential	King Road WWTP	PS #20
11/10/2016	5 Montella Circ	Pottstown	1	Residential	Possum Hollow WWTP	PS #18
12/15/2016	336 Graterford Rd	Schwenksville	1	Residential	King Road WWTP	PS #20

**2016 Total                      167**

<b>King Road WWTP</b>	
Existing Connections:	<b>6,662</b>
New Connections:	<b>137</b>
Total Connections:	<b>6,799</b>

<b>Possum Hollow WWTP</b>	
Existing Connections:	<b>1,606</b>
New Connections:	<b>30</b>
Total Connections:	<b>1,636</b>

**Total Township Connections:                      8,435**

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**2.0 HYDRAULIC & ORGANIC LOADINGS** [§ 94.12.Sec. (a) (1), (2), (3)]

**2.1 Historical & Present Loadings**

A. Hydraulic Loading

The permitted hydraulic capacity of the WWTP is 0.75 million gallons per day (MGD). Table 2.1-A shows monthly average wastewater flows for the WWTP during 2016.

**Table 2.1-A**

<b>Possum Hollow Hydraulic Loading (MGD)</b>						<b>Rainfall (in)</b>
<b>Month</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2016</b>
January	0.209	0.221	0.248	0.211	0.191	0.85
February	0.201	0.214	0.269	0.203	0.256	5.65
March	0.207	0.217	0.25	0.271	0.198	1.75
April	0.2	0.223	0.261	0.233	0.191	2.55
May	0.216	0.22	0.255	0.207	0.229	2.55
June	0.218	0.253	0.236	0.227	0.189	2.55
July	0.217	0.23	0.22	0.229	0.203	4.99
August	0.232	0.234	0.214	0.158	0.208	2.33
September	0.228	0.205	0.212	0.166	0.208	2.33
October	0.225	0.209	0.212	0.171	0.18	1.30
November	0.208	0.21	0.211	0.165	0.181	3.42
December	0.226	0.26	0.235	0.198	0.195	3.16
<b>Annual Average (AA)</b>	0.216	0.225	0.235	0.203	0.202	2.786
<b>3 Month Max Avg</b>	0.228	0.239	0.260	0.237	0.215	3.363
<b>Ratio Max/AA</b>	1.06	1.06	1.11	1.17	1.06	1.21
<b>5-year Avg Hydraulic Ratio</b>						1.09

The monthly average flows ranged from 0.256 MGD in February to 0.18 MGD in October. The annual average flow of 0.202 MGD was generated by approximately 1,636 connections which results in a calculated unit flow of 124 gallons per day per equivalent dwelling unit (EDU) which is lower than the average design flow per EDU of 230 gpd per the Township's Ordinance. The calculated unit flow is used later in the report for development of the projected hydraulic loadings.

It should be noted that the maximum 3-month average flow of 0.215 MGD did not exceed the WWTP's permitted hydraulic capacity of 0.75 MGD for 3-consecutive months in 2016. **Therefore, the WWTP was not hydraulically overloaded in 2016.**

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Table 2.1-A also shows historical (past 5 years) hydraulic flows at the WWTP, including monthly total rainfall data for the reporting year. Based on these historical flows, a hydraulic ratio (peaking factor) of the 3-month maximum flow divided by the annual average flow was calculated in each year. A 5-Year average hydraulic ratio of 1.09 has been calculated and is used later in the report for development of the projected hydraulic loadings.

A hydraulic loading graph incorporating the historical monthly average and annual average flows to the WWTP is located in Appendix A.

**B. Organic Loading**

The permitted organic capacity of the WWTP is 1,700 pounds per day (ppd) of BOD<sub>5</sub>. Table 2.1-B1 shows average daily influent organic loadings for the WWTP during 2016, expressed in pounds per day (ppd) of calculated organic load.

<b>Table 2.1-B1</b>					
<b>Possum Hollow Organic Loading (lbs / day)</b>					
<b>Month</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
January	424	500	372	468	446
February	535	443	515	514	383
March	455	431	464	539	491
April	396	525	641	584	318
May	438	442	399	512	328
June	354	401	406	378	348
July	422	379	353	389	346
August	477	463	322	315	276
September	458	321	336	326	330
October	507	348	405	335	349
November	611	453	557	318	358
December	540	402	590	387	434
<b>Annual Average</b>	468	426	447	422	367
<b>Max Month</b>	611	525	641	584	491
<b>Ratio (Max Month to Annual Average Ratio)</b>	1.31	1.23	1.43	1.39	1.34
<b>5-Year Average Organic Ratio =</b>					1.34

The average daily organic load ranged from 491 ppd in March to 276 ppd in August for the WWTP during 2016. The annual average organic load of 367 ppd

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was generated by approximately 1,636 connections which resulted in a calculated organic load of 0.224 pounds per day (ppd) per equivalent dwelling unit (EDU) which is used later in the report for development of the projected organic loadings.

It should be noted that the maximum average daily organic loading of 491 pounds per day of BOD<sub>5</sub> for the month of March did not exceed the WWTP's permitted organic capacity of 1,700 ppd in 2016. ***Therefore, the WWTP was not organically overloaded in 2016.***

Table 2.1-B1 also shows historical (past 5 years) organic loading at the WWTP. Based on the historical organic loadings, an organic ratio (peaking factor) of the maximum average organic divided by the annual average organic loading was calculated in each year. A 5-Year average organic ratio of 1.34 has been calculated and is used later in the report for development of the projected organic loadings. It is influent BOD<sub>5</sub> that is used to determine the organic capacity of a treatment plant.

Table 2.1.B2 shows a summary of the WWTP's influent organic sampling events in 2016. The average daily organic load is calculated by multiplying the influent BOD<sub>5</sub> concentration by the recorded flow the day of the influent BOD<sub>5</sub> concentration was sampled and the unit conversion factor 8.34. The calculated average daily organic load for the month is the average of all the sampling events in that month.

Based on the organic sampling events at the WWTP, an annual average daily influent concentration strength of 210.35 mg/l was calculated in 2016. The organic concentration strength is a flow based calculation of the sum of the entire year average daily organic loadings divided by the total flow the day the samples were taken.

Regarding current influent sampling of organic load (5-day biochemical oxygen demand or "BOD<sub>5</sub>"):

1. 24-hour composite samples of treatment plant influent are collected and analyzed weekly at the force main discharge chamber prior to screening and grit removal. The sample collection is not flow proportioned. The treatment plant does not accept hauled-in waste.
2. Weekly organic loadings are calculated by multiplying the flow on sample day (in MGD) by that day's BOD<sub>5</sub> concentration in milligrams per liter (mg/l) sampled and a conversion factor of 8.34.

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3. Monthly average organic loading is the average of the weekly loading values in a calendar month.

An organic loading graph incorporating the historical annual average and maximum average daily organic loadings to WWTP is located in Appendix A.



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Table 2.1-B2				
Possum Hollow Organic Loading Sampling Data				
	A	B	C = A x B x 8.34	
Date of Sample	BOD5 (mg/l)	Flow (MGD)	Daily BOD5 (lbs/day)	Monthly Average (lbs/day)
1/5/2016	267	0.197	439	
1/13/2016	179	0.162	242	
1/20/2016	263	0.158	347	
1/27/2016	229	0.210	401	357.3
2/3/2016	188	0.510	800	
2/10/2016	201	0.255	427	
2/17/2016	220	0.249	457	
2/24/2016	119	0.436	433	529.3
3/2/2016	123	0.209	214	
3/9/2016	299	0.193	481	
3/16/2016	262	0.203	444	
3/23/2016	309	0.201	518	
3/30/2016	338	0.184	519	435.2
4/6/2016	167	0.196	273	
4/13/2016	162	0.189	255	
4/20/2016	264	0.178	392	306.7
5/4/2016	200	0.228	380	
5/11/2016	184	0.256	393	
5/18/2016	181	0.216	326	
5/25/2016	156	0.212	276	343.8
6/1/2016	196	0.194	317	
6/8/2016	222	0.216	400	
6/15/2016	214	0.191	341	
6/22/2016	196	0.173	283	
6/29/2016	238	0.185	367	341.6
7/6/2016	241	0.198	398	
7/13/2016	211	0.223	392	
7/20/2016	250	0.178	371	
7/27/2016	170	0.197	279	360.0
8/3/2016	184	0.190	292	
8/10/2016	136	0.204	231	
8/17/2016	63	0.198	104	
8/24/2016	212	0.201	355	

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8/31/2016	251	0.198	414	279.2
9/7/2016	188	0.207	325	
9/14/2016	203	0.167	283	
9/21/2016	219	0.208	380	
9/28/2016	193	0.206	332	330.0
10/5/2016	244	0.186	379	
10/12/2016	235	0.181	355	
10/19/2016	229	0.187	357	
10/26/2016	198	0.178	294	346.3
11/2/2016	225	0.193	362	
11/9/2016	241	0.188	378	
11/16/2016	268	0.169	378	
11/23/2016	262	0.187	409	
11/30/2016	111	0.286	265	358.4
12/7/2016	254	0.220	466	
12/14/2016	235	0.188	368	
12/21/2016	277	0.197	455	
12/28/2016	303	0.177	447	434.0
Daily BOD5 Average (ppd):				368.51
Flow Average (MGD):				0.21
AA Daily Influent Concentration (mg/l):				210.35

Sampling Data per Township Provided DMRs

## 2.2 Projected Loadings

### A. Projected Connections

Prior to 2016, the total number of connections was 1,606. During 2016, there were 30 new connections to the WWTP. Development within the Township will continue; however, it is anticipated to be at a faster pace over the next couple of years. Table 2.2-A shows a summary of total existing connections and connections projected to occur within the next five (5) years that are existing, under construction, or awaiting Act 537 planning approval.

Accordingly, the WWTP projected hydraulic loadings for the next five (5) years are shown in Table 2.2-B3. The annual average and maximum 3-month average flows are indicated. Likewise, the annual average and maximum daily organic loadings are indicated. Graphs incorporating the historical and projected loadings for the next five (5) years to the WWTP are located in Appendix A for hydraulic and organic loadings.

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**Table 2.2-A Possum Hollow Wastewater Treatment Plant  
Active or Planned Developments (as of 12/31/2016)**

Name	Remaining No. of EDUs	Sewage Flow (GPD)	Pump Station Service Area	Projected Buildout Schedule				
				2017	2018	2019	2020	2021
<b>A</b>								
<b>Active or Planned Developments</b>								
Allied Landscaping	2	460	PS #16	2				
Buckman Enterprises	9	2,070	PS #17		9			
Carr Penn	1	230	PS #18		1			
DHLP - Heritage Hills	23	5,290	PS #18	10	13			
Ely Property	7	1,610	PS #18	3	4			
Evans Creek Industrial (Jason Griggs)	6	1,380	PS #16	3				
Fruitville Road (Rest & Car Dealer)	35	8,050	PS #18					
Gambone, 40/44 High (Limerick Airport Business Center)	11	2,530	PS #1					
Hirschorn Property	18	4,140	PS #18	10	10	8		
Limerick Deli Hardware	6	1,380	PS #18					
Manfredi / Possum Hollow Industrial Park	4	920	PS #17	2	2			
Moscariello - Springford/Fruitville	42	9,660	PS #18	10	15			
North Pointe Community Church	10	2,300	PS #18					
Oak Creek (Neiffer Woods) / ARC Investment	9	2,070	PS #18	9				
Ross Property	12	2,760	PS #18	6	6			
Sanatoga Springs	241	55,430	PS #17	56	56	85	44	
Venezia	3	690	PS #18					
<b>Subtotal</b>	<b>439</b>	<b>100,970</b>		<b>111</b>	<b>116</b>	<b>93</b>	<b>44</b>	<b>0</b>

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**Table 2.2-A Possum Hollow Wastewater Treatment Plant  
Projected Developments (as of 12/31/2016)**

Name	Remaining No. of EDUs	Sewage Flow (GPD)	Pump Station Service Area	Projected Buildout Schedule				
				2017	2018	2019	2020	2021
<b>B Projected Developments</b>								
Heritage Hills - Commercial	40	9200	PS #17		20	20		
Providence Properties	150	34500	PS #17	50	50	50		
Boyd	200	46000	PS #17	50	50	50	50	
SPFD (Spring-Ford School District)	65	14950	PS #18		30	35		
Miscellaneous Connections	2	460			1	1		
<b>Subtotal</b>	<b>457</b>	<b>105110</b>		<b>100</b>	<b>151</b>	<b>156</b>	<b>50</b>	<b>0</b>

<b>EDU Totals</b>	<b>896</b>			<b>211</b>	<b>267</b>	<b>249</b>	<b>94</b>	<b>0</b>
<b>Current No. of EDUs</b>	<b>1,636</b>							
<b>Flow Totals</b>		<b>206,080</b>		<b>48530</b>	<b>61410</b>	<b>57270</b>	<b>21620</b>	<b>0</b>
<b>Cummulative EDU Totals (2016 = 1636 EDUs)</b>				<b>1,847</b>	<b>2,114</b>	<b>2,363</b>	<b>2,457</b>	<b>2,457</b>
<b>Cummulative Flow Totals (2016 = 203250 gpd)</b>				<b>251,780</b>	<b>313,190</b>	<b>370,460</b>	<b>392,080</b>	<b>392,080</b>

\*Flow Totals Based off of Township Planning flow Rate of 230 gpd/EDU

**B. Basis for Projected Hydraulic Loading**

The projected hydraulic loadings were developed as follow:

1. First, by calculating new flow at the WWTP in each calendar year; the number of new EDUs that connected multiplied by the calculated unit flow in the calendar year. The unit flow is based on the total flow at the WWTP

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divided by the total number of connection to in the plant. New flows were calculated for each year as can be seen in Table 2.2-B1.

2. Second, a 5-Year adjusted annual average flow is derived by adjusting 2012 thru 2016 calendar years flow by adding new flow to the previous calendar years annual average flow as can be seen in Table 2.2-B2.
3. The adjusted annual average flow of 0.229 MGD in lieu of the 0.220 is used as the previous year's annual average flow (2016) in Table 2.2-B3 to begin hydraulic projections.
4. Third, the projected annual average flows for the Township are based on projected new connections flows that are added to the previous year annual average flow for the next 5 years. New connections are multiplied by 2016 unit flow of 124 gallons per day per EDU. The projected annual average flow at the end of the next five year period is estimated to be 0.330 MGD.
5. Last, the maximum 3-month average flow projections (2017 to 2021) to the plant on Table 2.2-B3 were calculated by multiplying the 5-Year Average Hydraulic Ratio of 1.09 times the projected annual average flow to the WWTP. The projected maximum 3-month average daily flow at the end of the next five year period is estimated to be 0.360 MGD.

As evident in Table 2.2-B3 and the hydraulic loading graph, projections for maximum 3-month average flow to the WWTP will not exceed the permitted hydraulic capacity of 0.70 MGD for the next five years. ***Therefore, the WWTP is not projected to be hydraulically overloaded within the next five years.***

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<b>Table 2.2-B1</b>			
<b>Possum Hollow Historical Added Flow</b>			
<b>Year</b>	<b># EDUs Connected</b>	<b>gpd/EDU*</b>	<b>New Flow</b>
2012	28	110	0.003
2013	27	110	0.003
2014	27	154	0.004
2015	33	191	0.006
2016	30	124	0.004

\*Planning Flow Rate: 230

\*Calculated Flow Rate: 124

<b>Table 2.2-B2</b>							
<b>Possum Hollow 5-Year Adjusted Flow Projections</b>							
<b>Year</b>	<b>AA Flow in MGD</b>	<b>All Projects Connected</b>					<b>Adjusted AA Flow</b>
		2012	2013	2014	2015	2016	
2012	0.216	0.003	0.003	0.004	0.006	0.004	0.236
2013	0.225		0.003	0.004	0.006	0.004	0.242
2014	0.235			0.004	0.006	0.004	0.249
2015	0.203				0.006	0.004	0.213
2016	0.202					0.004	0.202
<b>Total</b>	<b>0.879</b>						<b>1.143</b>
<b>5 Yr Avg</b>	<b>0.220</b>						<b>0.229</b>

<b>Table 2.2-B3</b>						
<b>Possum Hollow Adjusted Flow Projections</b>						
<b>Year</b>	<b>Previous Year's Annual Average Flow</b>	<b>New EDUs</b>	<b>Increased Flow (MGD)</b>	<b>Projected Annual Average Flow (MGD)</b>	<b>Hydraulic Ratio</b>	<b>Projected Max Month Flow (MGD)</b>
2017	0.229	211	0.026	0.255	1.09	0.278
2018	0.255	267	0.033	0.288	1.09	0.314
2019	0.288	249	0.031	0.319	1.09	0.348
2020	0.319	94	0.012	0.330	1.09	0.360
2021	0.330	0	0.000	0.330	1.09	0.360

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C. Basis for Projected Organic Loading

The projected organic loadings were developed as follow:

1. First, the 2016 annual average organic load of 367 ppd is used as the previous annual average organic load in Table 2.2-C to begin organic projections.
2. Second, the projected annual average organic loadings for the Township are based on projected new connections organic load that are added to the previous calendar year organic loading for the next 5 years. New connections are multiplied by the 2016 calculated organic load of 0.23 ppd per EDU. The projected annual average organic load at the end of the next five year period is estimated to be 555 ppd.
3. Last, the maximum average daily organic loading projections (2016 to 2020) to the plant on Table 2.2-C were calculated by multiplying the 5-Year Average Daily Organic Ratio of 1.34 times the projected annual average daily organic load. The projected maximum average daily organic loading at the end of the next five years period is estimated to be 743 ppd.

As evident in Table 2.2-C and the organic loading graph, projections for maximum average daily organic loading to the WWTP will not exceed the permitted organic rating of 1,700 ppd for the next five (5) years. ***Therefore, the WWTP is not projected to be organically overloaded within the next five years.***

Table 2.2-C							
Loading Projections							
Year	Previous Year's Annual Average Loading	New EDUs	Load/EDU	Increased Load (ppd)	Projected Annual Average Loading (ppd)	Organic Ratio	Projected Max Month Loading (lbs/day)
2016	-	33	0.23	7.55	367.19	-	490.50
2017	367.19	211	0.23	48.24	415.43	1.34	556.15
2018	415.43	267	0.23	61.05	476.48	1.34	637.88
2019	476.48	249	0.23	56.93	533.41	1.34	714.09
2020	533.41	94	0.23	21.49	554.90	1.34	742.86
2021	554.90	0	0.23	0.00	554.90	1.34	742.86

\* Calculated Loading: 0.23

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**3.0 SEWER EXTENSIONS** [§ 94.12Sec. (a) (4)]

The following is a summary of new/proposed sewer extensions in 2016 for the Township.

**3.1 Extensions Constructed**

There were no sewer extensions constructed in 2016.

**3.2 Extensions Exempted**

There were no exempted sewer extensions in 2016.

**3.3 Proposed Project Extensions and Planned Build-out**

There are multiple active and planned developments for the Possum Hollow Service Area. As discussed previously, a list summarizing the planned developments and anticipated EDU allotment are included in Table 2.2-A.



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**4.0 SEWER SYSTEM MONITORING, MAINTENANCE, REPAIR, & REHABILITATION**

[§ 94.12.Sec. (a) (5)]

The Township has the duty to monitor, maintain, repair and rehabilitate the WWTP and sanitary sewer collection and conveyance system on a regularly basis. The Township has a certified operator and staff in the Sewer Department that operates and maintains the sanitary sewer collection and conveyance system and the WWTP. Assistance with larger tasks is provided by additional staff from the Township Sewer Department or is contracted out to independent contractors.

The Township has an ongoing sewer televising and flow monitoring program to inspect the sewers in order to identify and locate sources of Infiltration and Inflow (I&I). The Township has a backhoe, dump trucks, and hand tools available for routine maintenance. Maintenance and repairs to the sewer system that cannot be performed by the Township staff are carried out by independent contractors hired on an "as needed" basis.

There were no problematic sewer sections found to be in need of substantial repair or rehabilitated in 2016.

**4.1 Monitoring and Maintenance**

The sanitary sewer collection and pumping systems are monitored daily. Township staff visits the pump stations weekly to check for operational problems, to perform periodic and routine maintenance, and to perform routine monitoring such as recording the total time each pumping unit is operated per day. Each pump station is continuously monitored 24 hours a day via alarm system/auto dialer which contacts the Township personnel currently on duty, then the WWTP Superintendent and then the King Road WWTP phone in case of an emergency. This cycle continues every 10 minutes until the alarm is acknowledged. The following conditions are electronically monitored:

- Wetwell high and low water levels
- Pump motor failure
- Loss of electrical service
- Emergency generator start at relative pump stations

There are no permanent flow meters on the influent sewers entering the pumping stations. The Township is currently working towards ascertaining a method to meet the DEPs request of influent flow monitoring at the pump stations to record actual flow data that will provide annual average and peak instantaneous flows within the sanitary sewer collection system.

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**4.2 Repair and Rehabilitation**

Repair and/or rehabilitation efforts within the Limerick Township collection and conveyance system in 2016 include:

**January 2016**

- Pump Station #12 (Bradford Woods) room heater failed, replaced with heater from the decommissioned Pump Station #11
- Pump Station #6 (Royersford Rd.) new VFD was purchased for pump #2, installed the new VFD, tested and then removed the rental VFD, replaced MP2 pump control with other unit to control pump operations
- Pump Station #20 (Graterford Rd.) pump # 2 breaker tripped causing high pump hours with pump not running on time hour meter was counting, found problem to be incorrectly adjusted breaker sensitivity
- Pump Station #5 from the Possum Hollow Plant used tractor to put new check valve
- Lateral Inspection Carriage Crossing: 29 & 50 Phaeton Way, PS #2, KR
- Lateral Inspection Spring Ford Estates: 13 & 35 Montella Circle, Lot 4 & 19, PS #18, PH
- Lateral Inspection 33 Mountain view Lane, PS #20 (Graterford Rd.), KR
- Lateral Inspection 318 Graterford Rd., PS #20, KR
- Lateral Repair 326 Laurel Drive. Estimated 5 feet for replacement of trap.

**February 2016**

- Pump Station #10 new battery and trickling charger installed on generator
- Pump Station #5 new check valve installed by contractor, old check valve was returned to plant for future scrap
- Pump Station #6 had 1500 gallons of peroxide delivered for odor control
- Pump Station #14 Pulled pump #2 and sent to Deckmans for repair
- Pump Station #12 Pump #2 replaced impeller, wear rings and O-rings
- Pump Station #1 new Crystal Ball monitoring system installed, alarm dialer was removed, rewired electrical cabinet and installed new motor starters and installed a level transducer
- Lateral Inspection Carriage Crossing: 54 Phaeton Way, PS #2, KR
- Lateral Inspection Spring Ford Estates: 7 Montella Circle, Lot 4, PS #18, PH
- Lateral Repair 43 Oak Lane had an overflow in vent. Dave Erman and Brian Hill provided a courtesy plunge for the vent which solved the problem.

**March 2016**

- Pump Station #2 (N. Limerick Rd.) repaired Louver Motor for generator ventilation
- Pump Station #5 (Trinley Rd.) replaced well pump

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- Pump Station #6 (Royersford Rd.) generator failed to start during maintenance check due to engine over speed error, adjustment was made to the timer and retests proved successful
- Pump Station #10 (Sunnybrook) replaced entire generator with the generator removed from PS #11 (decommissioned)
- Pump Station #14 (Bradford Woods) replaced failed pump with a Sultzer pump
- Pump Station #16 (Brook Evans) replaced sump Pump Float
- Lateral Inspection Carriage Crossing: 66 & 67 Phaeton Way, PS #2, KR
- Lateral Inspection Spring Ford Estates: 16, 20, & 46 Montella Circle, PS #18, PH
- Lateral Inspection 314 Gratersford Rd., PS #20, KR
- Lateral Inspection 131 Masters Drive & 65 Putter Lane, PS#18, PH

**April 2016**

- Pump Station # 3 grease and rag removal using Kleins as our contractor
- Pump Station # 5 grease and rag removal using Kleins as our contractor
- Pump Station # 6 grease and rag removal using Kleins as our contractor, prebid meeting with a good turnout
- Pump Station # 10 grease and rag removal using Kleins as our contractor
- Pump Station #7 repaired and improved Peroxide system and returned to service with very good odor elimination
- Pump Station #5 generator contractor was called for a rough idling generator during normal maintenance, they made a few adjustments and recommended a few improvements including generator load test and transfer switch controls upgrade
- Pump Station #1 received a quote to repair the fence around our pumping station (\$990)
- Pump station #18 (Ravens Claw) installed a Crystal Ball Monitoring system and back up controller
- Lateral Inspection Carriage Crossing: 5 & 46 Phaeton Way, PS #2, KR
- Lateral Inspection 3383 Pruss Hill Rd., PS #18, PH
- Lateral Inspection 10 & 29 Mountainview, PS #20, KR

**May 2016**

- Pump Station #2 removed the grinder, replaced with new grinder with one in stock
- Pump Station #5 and #6 had crane inspections, some minor repairs needed.
- Pump Station #6 replaced the grinder (1 of 2) in PS #6
- Pump Station #14 (Bradford Woods) completed the Crystal Ball monitoring system and pump controls upgrade
- Pump Station #8 removal, decommissioned loose manhole ring on West Cherry. to fill this manhole in with concrete/stone
- Pump Station #16 had the rebuilt Muffin Monster grinder installed, the first rebuild they completed in a few years

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- Pump Station #1 (Airport Rd) Gambone repaired manhole, completed inspection
- Lateral Inspection 46 Phaeton Way, PS 2, KR
- Lateral Inspection 18 Railroad St., PS 5, KR
- Lateral Inspection 712 W. Ridge Pike, PS 18, PH (Craft Ale House and Limerick Hardware)
- Lateral Inspection 58 Phaeton Way, PS 2, KR
- Lateral Inspection 341 Sunset Rd., PS 20, KR
- Lateral Inspection 36 W. Ridge Pike, STE 101, Citadel Bank, PS 6, KR
- Lateral Inspection 57 Mountain View Lane, Lot 15, PS 20, KR
- Lateral Inspection 09 Montella Circle, Lot 5, PS 18, PH
- Lateral Inspection 29 Montella Circle, Lot 15, PS 18, PH

June 2016

- Pump Station #6 found a small leak in valve pit on an unserviceable valve, will try to incorporate repair with other work being performed at this station with the upgrade
- Pump Station #2 Klines pumped out wet well, new control system was installed indoors which included new breakers, motor starters, overloads, Crystal Ball controller and monitoring system for reporting and a transducer. The generator was also serviced to include new oil, coolant, filters and hoses
- Pump Station #12 generator was serviced to include new oil, coolant, filters and hoses
- Pump Station #13 generator was serviced to include new oil, coolant, filters and hoses
- Pump Station #14 generator was serviced to include new oil, coolant, filters and hoses, the coolant overflow container was replaced from spare at PS #9
- Pump Station #15 Klines pumped out the wet well, generator completed quarterly PM
- Pump Station #5 Premium Power replaced the governor on the generator and tested, upgrade also completed on transfer switch
- Pump Station #1 Klines pumped out the wet well.
- Pump Station #17 Klines pumped out the wet well.
- Lateral Inspection 86 Phaeton Way, Lot 11
- Lateral Inspection 71 Phaeton Way, Lot 04
- Lateral Inspection 9 Phaeton Way, Lot 09
- Lateral Inspection 25 Mountain View Ln., Lot 7
- Lateral Inspection 36 Montella Circle, Lot 26
- Lateral Inspection 26 Montella Circle, Lot 31

July 2016

- Pump Station #3 generator needed a new battery and charger
- Pump Station #4 replaced battery

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- Pump Station #5 grinder failed and the crew had to pull it out and use the bar screens to protect the pump, this is a large station and we ordered a replacement grinder to come in next month
- Pump Station #6 replace roof, set up the site for the dig
- Pump Station #1 replaced generator radiator
- Pump Station #17 raised wet well and serviced pump #2, back in service
- Pump Station #18 extended antenna to improve cell reception for monitoring
- Lateral Inspection 24 Montella Circle, Lot 32
- Lateral Inspection 42 Montella Circle, Lot 23
- Lateral Inspection 44 Montella Circle, Lot 22

August 2016

- Pump Station #6 and #7 received 1300 gallons of peroxide to help with odor control
- Pump Station #3 repairs (electrical short), Pump Station #4 repairs (level sensor), Pump Station #5 repairs (transfer switch controller) and Pump Station #13 (motor starter coil)
- Pump Station #2, 18, and 20 performed schedule maintenance
- Pump Station #5 had the crane repaired by American Crane
- Pump Station #1 Gambone used a camera to video main feeding the pump station
- Lateral Inspection 38 Montella Circle, Lot 25                      338 Sunset Rd.
- Lateral Inspection 33 Montella Circle, Lot 17                      345 Sunset Rd.
- Lateral Inspection 50 Montella Circle, Lot 19                      53 Fruitville Rd.
- Lateral Inspection 1 Phaeton Way, Lot 7

September 2016

- Pump Station #3 (South Limerick) Installed a Crystal Ball monitoring system with pressure transducer, first outside install
- Pump Station #5 (Trinley) completed the install of the other check valve, replaced fan belts for wet well blowers and replaced the switch and conduit for wet well lighting
- Pump Station #10 removed grinder (Muffin Monster) for repair or replacement
- Pump Station #17 Klines cleaned the wet well
- Pump Station #18 full generator maintenance
- Lateral Inspection 49 Mountainview Lane
- Lateral Inspection 328 Sunset Rd.
- Lateral Inspection 26 Putter Lane
- Lateral Inspection 320 Swamp Pike (Oxford)

October 2016

- Pump Station #4 Pump #1 was removed for repair
- Pump Station #6 grinder kept shutting off so we switched power packs, Pump #1 was not pumping due to bad speed signal so the pump settings were adjusted to run one speed, this will be fixed in the upgrade

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- Pump Station #20 had Flyght controls come out to address an alarm issue with the control system, adjusted timers and believe the problem is repaired for now
- Pump Station #1 grinder failure, replaced all the hydraulic hoses which were leaking
- Pump Station #18 odor complaint, changed pump settings with some success, installed new filters but they did not work well as there were other leaks
- Lateral Insepection 62 and 70 Phaeton Way
- Lateral Insepection 23, 25, and 48 Montella Circle
- Lateral Insepection 38 Mountain View Lane

November 2016

- Pump Station #5 Verizon repaired a faulty phone line outside our station property as the Verbatim alarm dialer was not working, later in the month we ran the generator for several hours as PECO did repairs
- Pump Station #18 installed filters on the wet well vents to help with the odors in the morning, put seals on the wet well doors
- Pump Station #15 transfer switch wasn't working during a PM, found a blown fuse
- Pump Station #3 looking at the logistics to rebuild the pumps and install higher flow impellers instead of completely rebuilding the station
- Pump Station #4 was returned from Dekman's for rebuild and was installed
- Pump Station #19 removed a pump for poor performance and sent off to Flyght for repair
- Lateral Insepection Phaeton Way
- Lateral Insepection 5 Montella Circle, Lot 3

December 2016

- Pump Station #5 installed a Crystal Ball to monitor operations and report alarms.
- Pump Station #19 received the rebuilt pumps from Flyght and installed with no problems, replaced faucet as it would not shut off
- Pump Station #6 line stop was installed by contractor as part of upgrade contract
- Pump Station #17 wet well cleaned by contractor
- Lateral Inspection 2 Phaeton Way
- Lateral Inspection 116 N. Limerick Rd
- Lateral Inspection 9 Pennstone Ct. – Lot 26

As required by DEP operating permit Limerick Township flushed and televised sewer mains and lateral in the Township. Televised 8" sewer mains in Kings Road Plant area totaled 1.63 miles and 1.58 miles in Possum Hollow Plant area. In July and August 2016, 6,835 feet of gravity sewer system was flushed and televised.

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**4.3 Infiltration and Inflow**

The Possum Hollow service area has not shown signs of excessive I&I in the past. The Township addresses I&I through routine maintenance and monitoring at the pump stations and periodic flow metering within the collection system with portable flow meters. It is believed that the current I&I preventative measures are adequate as the hydraulic loadings are not projected to be exceeded in the next 5 years (please reference section 2.2 of the report). In an instance that I&I is found or believed to be an issue, the Township utilizes a portable flow monitor to isolate the problem area and determines the source via television inspection. Corrective action, based on the nature of the source, is then taken by the Township.

Limerick Township has implemented ordinances designed to deal with illegal sump pump connections and lateral installations. Township Ordinances 254 and 143 have been included in Appendix D. These ordinances include:

- Required written Authority approved permit prior to any and all actions regarding the sewerage system (reference Ordinance No. 254 §140-6A).
- General procedures for dealing with unsatisfactory wastewater systems (reference Ordinance No. 254 §140-5E).
- Required inspection and approval of building wastewater systems (reference Ordinance No. 254 §140-5B).
- Efforts to ensure proper sanitary sewer installation including multiple stipulations for the use of master plumbers included in the installation of house drainage systems, connection of house drainage system to a public sanitary sewer or lateral thereof, and supervision of all plumbing work within the township (reference Ordinance No.143 §129-8: P-123.1, P-123.6, P-123.7).
- Strictly prohibiting floor drains, basement sump-pump, and area drain connections to the sanitary sewer system (reference Ordinance No.143 §129-8: P-1211.4).

Limerick Township has implemented procedures for lateral and sump pump inspections. The Lateral Inspection Procedure has been included in Appendix D. Proper sump pump discharge connections are inspected (1) during lateral inspections for new home construction or (2) during water meter inspection and/or upon receiving permission from the homeowner. In the instance where an inspection reveals an illegal discharge connection, the Township requests the owner to rectify and then re-inspects. Should the owner fail to correct the situation, the matter is sent to the Codes Office for review and enforcement.

There were no recorded occurrences where both the lag pump turned on in conjunction with the lead pump. The Township's current I&I preventative measures are adequate for maintaining the Possum Hollow service area portion of the system.

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A list of areas televised sewer liens and repairs made can be found in Appendix B.

**4.4 Engineering Studies**

There have been no engineering studies performed in the Township.



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**5.0 CONDITION OF SEWER SYSTEM** [§ 94.12.Sec. (a) (6)]

The Township is divided into two (2) service areas. The Township collects sanitary sewage in each service area and conveys it to the respective WWTP. A majority of the Township's sanitary sewer system was originally constructed between 1986 and 1992 and has since been extended to accommodate additional developments as needed. The sanitary sewer system consists of a multiple of interceptors ranging in size from eight (8) inch to thirty-six (36) inches. A bulk the gravity system is constructed of PVC pipe while a majority of the force mains are made of ductile iron pipe. The sanitary sewer collection system totals approximately 533,280 feet (101 miles) of pipe. The Possum Hollow Service area accounts for approximately 89,760 feet (17 miles) of this pipe; while the King Road Service area accounts for the remaining 443,530 feet (84 miles) of pipe. There are seven (7) private pump stations in addition to the seventeen (17) active Township owned pumping stations. Private sewer lines also exist within the system.

The overall condition of the sewer system is in fair to good condition, typical of systems of similar age and construction.

There is no portion of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years.

**5.1 Discussion of Repaired, Replaced, or Rehabilitated Sewers**

There no known portions of the sewer collection system that have been identified as requiring immediate repair or replacement. Additional information on sewer repair and rehabilitation can be found in section 4.2.

**5.2 Sanitary Sewer Overflows**

There are no combined sewers in the Township sewer collection system; hence, there are no possibilities for any combined sewer overflows (CSO). The Township reports that there were no sanitary sewer overflows (SSO) in 2016.

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**5.3 Sanitary Sewer Surcharges**

There were no reported events or evidence to indicate that any sanitary sewer surcharges occurred in the Possum Hollow Service area in 2016.

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**6.0 SEWERAGE PUMPING STATIONS** [§ 94.12.Sec. (a) (7)]

There are seventeen (17) sewage pump stations currently operating within the two service areas in the Township. Pump Stations 1, 16, 17, and 18 operate within the Possum Hollow Service Area; while Pump Stations 2, 3, 4, 5, 6, 7, 10, 11, 12, 13, 14, 15 and 19 operate within the King Road Service Area. A pump station flow schematic diagram of the Service Areas has been included in Appendix D. The pump stations in the Possum Hollow Service Area that are owned and maintained by the Township and are described below.

1. Pump Station #1 AKA Airport Road Pump Station

This pump station is located near Jones Boulevard in the Limerick Airport Business Center and is equipped with two (2) explosion proof, 142-gpm submersible pumps. Wastewater is discharged through a six (6) inch force main that ties into a manhole on Limerick Center Road where it flows by gravity to Pump Station #16 and then is conveyed to the WWTP.

Pump Station #1 also has an emergency generator and an auto-dialer that alerts Township personnel when the generator is engaged.

There is no flow meter or monitoring equipment currently at Pump Station #1. Estimated flows are derived from a pump run timer. An auto-dialer is installed on this pump station to alert Township personnel of high flow conditions. It is proposed to add flow monitoring capabilities to Pump Station #1 when it is in need of upgrading or overhauling or if it is believed that it is approaching its design capacity.

2. Pump Station #16 AKA Brook Evans Pump Station

Pump Station #16 is located within the confines of the WWTP on Longview Road near Brooke Evans Creek. It was constructed as part of the Possum Hollow Sewerage System and is equipped with three (3) explosion proof 652-gpm submersible pumps. Pump Station #16 can achieve a capacity of 1,213-gpm when two (2) of the pumps are running. Wastewater is discharged to the headworks of the WWTP.

Pump Station #16 also has an emergency generator and an auto-dialer that alerts Township personnel when the generator is engaged.

Pump Station #16 includes a pump controller that has the capability of calculating and recording the peak influent flow. The instantaneous peak influent values were analyzed and provided in table 6.1-A.2 where available. The

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required data was unavailable in 2016. An auto-dialer is installed on Pump Station #16 to alert Township personnel of high flow conditions.

3. Pump Station #17 AKA Possum Hollow Run Pump Station

Pump Station #17 is located off Longview Road near Possum Hollow Run. It was constructed as part of the Possum Hollow Sewerage System and is equipped with three (3) explosion proof 615-gpm submersible pumps. The pump station can achieve a capacity of 810 gpm when two (2) of the pumps are running. Wastewater is discharged through an 8" force main to the headworks of the WWTP.

Pump Station #17 has an emergency generator and an auto-dialer that alerts Township personnel when the generator is engaged.

Pump Station #17 includes a pump controller that has the capability of calculating and recording the peak influent flow. The instantaneous peak influent values were analyzed and provided in table 6.1-A.2 where available. The Instantaneous Peak Flow was taken on 2/24/2016 during a storm event of 1.62" (an average wet weather event in 2016). An auto-dialer is installed on Pump Station #17 to alert Township personnel of high flow conditions.

4. Pump Station #18 AKA Heritage Hills Golf Club / Ravens Claw Pump Station

Pump Station #18 is located along Masters Drive alongside Hartenstine Creek within the Raven's Claw Country Club Development and is equipped with two (2) explosion proof 510-gpm submersible pumps. Wastewater is discharged through an eight (8) inch force main to a manhole located near the intersection of Airport Road and Ridge Pike where it flows by gravity to Pump Station #17 and then on to the WWTP.

Pump Station #18 has an emergency generator and an auto-dialer that alerts Township personnel when the generator is engaged.

Pump Station #18 includes a pump controller that has the capability of calculating and recording the peak influent flow. Pump Station #18 includes a pump controller that has the capability of calculating and recording the peak influent flow. The instantaneous peak influent values were analyzed and provided in table 6.1-A.2 where available. The Instantaneous Peak Flow was taken on 2/24/2016 during a storm event of 1.62" (an average wet weather event in 2016). An auto-dialer is installed on Pump Station #18 to alert Township personnel of high flow conditions.

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The pumping stations are running without any mechanical problems and are in good condition. Each pump station is inspected, at a minimum, once a week and, if the station is equipped with an effluent flow meter, the meter is calibrated annually. Meter calibration records can be found in Appendix D. All necessary maintenance is performed by the Township personnel or by service contractors. The Township's extensive preventative maintenance program continues to maintain all facilities in good working condition.

The Township reports that the pump stations were capable of pumping peak instantaneous flows without problem.

Major Repairs and/or upgrades during 2016 are listed in the pump station descriptions. Presently, the Township is currently working towards ascertaining a method to meet the DEPs request of influent flow monitoring that is able to measure, indicate, and record the flow at the pump stations and to document peak hour or instantaneous readings during a major storm event(s).

#### **6.1 Hydraulic Load Projection to the Pump Stations**

Pump Stations #16, #17, and #18 have been identified as having controllers capable of calculating and recording peak influent flows. However, due to technical issues with the equipment and questions in accuracy, the Township has been working with equipment vendors in an effort to utilize this controller feature for the requested purpose. Data from the three controllers were included where appropriate.

There are no flow metering devices installed at Pump Station #1 to indicate present peak hourly or instantaneous flow recordings during major storm events in 2016; therefore, a peaking factor ratio of peak flow to annual average flow could not accurately be determined for each pump station. The peaking factor from the 2010 Wasteload Management Report was used to project the hydraulic loading at each pump station.

The annual flow data for each pump station is summarized in Table 6.1-A1 and 6.1-A2 of this Report. Table 6.1-A2 - "Possum Hollow Pump Station Capacity Projections" compares the present maximum and projected 2-year maximum flows to the available maximum pumping rate at each station. Please note that the peak instantaneous flow was not available and therefore, the peaking factor was taken from the previous year's report. Flow projections have been calculated using the Townships standard planning flow rate of 230 gpd/edu. The Township's growth projections have been taken from Table 2.2-A.

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As can be seen in Table 6.1-A2 there is no projected overloads within the next 5-years. The 2-year projected maximum loading does not present an overload condition either.

***There is no projected hydraulic overload at the Township's pump stations in the Possum Hollow Service Area.***

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**Table 6.1-A1  
Possum Hollow Pump Station Flow Data (MGD)**

Month	PS #1	PS #2	PS #3	PS #4	PS #5	PS #6	PS #7	PS #10	PS #11	PS #12	PS #13	PS #14	PS #15	PS #16	PS #17	PS #18	PS #19	PS #20
January	0.0670	0.0410	0.2680	0.0160	0.5200	0.8820	0.0250	0.0380	0.0000	0.0290	0.0076	0.0210	0.0082	0.1260	0.1600	0.1120	0.0069	0.0590
February	0.0620	0.0530	0.3660	0.0300	0.6090	1.1000	0.0260	0.0560	0.0000	0.0370	0.0779	0.0170	0.0088	0.1370	0.2120	0.1430	0.0066	0.0830
March	0.0531	0.0369	0.1918	0.0160	0.4542	0.8138	0.0211	0.0366	0.0000	0.0246	0.0065	0.0176	0.0067	0.1049	0.1586	0.0932	0.0080	0.0648
April	0.0570	0.0420	0.2540	0.0140	0.4540	0.8210	0.0130	0.0350	0.0000	0.0260	0.0070	0.0180	0.0090	0.1110	0.1690	0.0790	0.0080	0.0790
May	0.0730	0.0470	0.2750	0.0190	0.4920	0.8670	0.0240	0.0384	0.0000	0.0290	0.0075	0.2216	0.0078	0.1110	0.1760	0.0733	0.0096	0.0852
June	0.0730	0.0470	0.2750	0.0190	0.4920	0.8670	0.0240	0.0384	0.0000	0.0290	0.0075	0.2216	0.0078	0.1110	0.1760	0.0733	0.0096	0.0852
July	0.0769	0.0259	0.2356	0.0448	0.4230	0.7396	0.0231	0.0296	0.0000	0.0223	0.0069	0.0155	0.0088	0.1221	0.1365	0.0727	0.0107	0.0592
August	0.0806	0.0280	0.2400	0.0226	0.4280	0.7539	0.0232	0.0307	0.0000	0.0224	0.0073	0.0145	0.0068	0.1239	0.1395	0.0749	0.0255	0.0529
September	0.0788	0.0285	0.2084	0.0194	0.4002	0.8140	0.0252	0.0277	0.0000	0.0236	0.0795	0.0138	0.0072	0.1295	0.1465	0.0744	0.0131	0.0558
October	0.0660	0.0330	0.2580	0.0160	0.4340	0.8080	0.0270	0.0240	0.0000	0.0230	0.0082	0.0150	0.0077	0.3820	0.0970	0.0760	0.0110	0.0540
November	0.0490	0.0330	0.2450	0.0180	0.3680	0.7580	0.0250	0.0260	0.0000	0.0220	0.0090	0.0140	0.0080	0.0940	0.1410	0.0780	0.0980	0.0520
December	0.0480	0.0330	0.2950	0.0200	15.2800	0.8700	0.0280	0.0370	0.0000	0.0990	0.0100	0.0150	0.0090	0.1030	0.1640	0.0890	0.0110	0.0640
<b>Annual Average</b>	0.0654	0.0374	0.2593	0.0212	1.6962	0.8412	0.0237	0.0348	0.0000	0.0322	0.0196	0.0504	0.0080	0.1379	0.1563	0.0866	0.0182	0.0604
<b>Max Month</b>	0.0806	0.0530	0.3660	0.0448	15.2800	1.1000	0.0280	0.0560	0.0000	0.0990	0.0795	0.2216	0.0090	0.3820	0.2120	0.1430	0.0980	0.0852

Note: Pump Station Data for both the King Road and Possum Hollow Service Areas

**Table 6.1-A2**

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**King Road Pump Station Capacity Projections (MGD)**

Pump Station ID	No. of Pumps	Hydraulic Design Capacity (gpm)	Annual Average Permitted Capacity (gpd)	Annual Average Flows (gpd)	Maximum Monthly Flows (gpd)	Peak Instantaneous Flow (gpm)	Peaking Factor	Projected 2-Year EDU Buildout	Projected 5-Year EDU Buildout	GPD/EDU*	2-Year Projected Annual Average Flow	5-Year Projected Annual Average Flow	2-Year Projected Maximum Flow (gpd)	Projected Overload?
PS #1	2	142	204,480	65,363	80,603	-	1.53	0	0	230	65,360	65,363	99,837	No
PS #2	2	130	187,200	37,353	53,000	-	1.55	13	26	230	40,340	43,333	62,628	No
PS #3	2	1,150	1,656,000	259,319	366,000	-	1.51	113	209	230	285,310	307,389	431,959	No
PS #4	2	120	172,800	21,234	44,800	-	2.07	0	0	230	21,230	21,234	43,912	No
PS #5	2	1,900	2,736,000	1,696,199	15,280,000	-	1.20	159	288	230	1,732,770	1,762,439	2,070,660	No
PS #6	2	2,225	3,204,000	841,189	1,100,000	-	1.57	138	138	230	872,930	872,929	1,370,762	No
PS #7	2	260	374,400	23,716	28,000	-	1.24	0	0	230	23,720	23,716	29,432	No
PS #10	2	180	259,200	34,789	56,000	139	3.57	2	2	230	35,250	35,249	125,994	No
PS #11	2	90	129,600	0	0	-	1.57	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PS #12	2	94	135,360	32,240	99,000	-	1.34	6	7	230	33,620	33,850	45,172	No
PS #13	2	28	39,600	19,574	79,503	-	1.13	0	0	230	19,570	19,574	22,016	No
PS #14	2	103	148,320	50,385	221,600	76	0.49	0	0	230	50,380	50,385	24,881	No
PS #15	2	33	47,520	7,982	9,000	-	1.24	0	0	230	7,980	7,982	9,915	No
PS #16	3	1,213	1,746,720	137,949	382,000	-	1.42	5	5	230	139,100	139,099	197,828	No
PS #17	3	810	1,166,400	156,347	212,000	203	1.38	345	644	230	235,700	304,467	324,999	No
PS #18	2	510	734,400	86,567	143,000	199	2.00	127	170	230	115,780	125,667	232,013	No
PS #19	2	96	138,240	18,169	98,000	21	1.47	12	12	230	20,930	20,929	30,757	No
PS #20	2	320	460,800	60,449	85,200	-	5.41	0	50	230	60,450	71,949	326,941	No

\*Planning  
Flow Rate: 230

\*Calculated  
Flow Rate: 124

**Note:**

Hydraulic Design Capacity does not include the capacity of backup pumps

Pump Station data for both King Road and Possum Hollow Service Areas

Peaking Factors from previous years report

Peak Instantaneous Value taken on 2/24/2016 during storm event of 1.62"



## **7.0 INDUSTRIAL WASTES** [§ 94.12.Sec. (a) (8)]

The primary source of wastewater to the WWTP is residential. The Township is currently not required to implement a Municipal Industrial Pretreatment Program (MIPP); however, the Township must assure that the effluent discharged from the WWTP is in compliance with the limitations outlined in their NPDES Permit. Rules and Regulations Governing Use of the Sewer System was adopted in 1986 to facilitate maintaining compliance. Amendments made in 1994, 2001, and 2006, enable the Township, as successor to the Municipal Authority, to enforce compliance with the standards set in the Rules, to require all industrial facilities to be permitted and to complete on-site inspections of industrial facilities. A copy of the resolution as amended is provided in Appendix D in this report.

At present time there are no permitted industrial wastewater dischargers in the Possum Hollow WWTP service area.

***There are no significant problems caused at the WWTP due to industrial discharge.***

**8.0 PREVENTION OF OVERLOAD CONDITIONS** [§ 94.12.Sec. (a) (9)]

**8.1 Hydraulics**

There are no current or projected hydraulic overloads of the Township's sewage facilities in the Possum Hollow Service Area; therefore, no action is required at this time.

**8.2 Organics**

There is no current or projected organic overload conditions; therefore, no action is required at this time.

# APPENDIX A

Hydraulic and Organic Loading

## APPENDIX B

Wastewater Facilities Map and Year 2016 Connections

## APPENDIX C

Attachment 1	NPDES Permit
Attachment 2	Pump Station Flow Schematic Diagram
Attachment 3	Meter Calibration Records
Attachment 4	Township Industrial Discharge Resolution
Attachment 5	Sewer and Plumbing Ordinances
Attachment 6	Lateral Inspection Procedures

## NPDES Permit

## Pump Station Flow Schematic Diagram

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## Meter Calibration Records



## Township Industrial Discharge Resolution

## Sewer and Plumbing Ordinances

## Lateral Inspection Procedures