pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0043273**
Facility Type	**Municipal**	APS ID	**276584**
Major / Minor	**Major**	Authorization ID	**1362913**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Hollidaysburg Borough Sewer Authority Blair County**	Facility Name	**Hollidaysburg STP**
Applicant Address	401 Blair Street Hollidaysburg, PA 16648-1805	Facility Address	2681 Reservoir Road Hollidaysburg, PA 16648
Applicant Contact	Regis Nale	Facility Contact	Frank Hicks
Applicant Phone	(814) 695-7543	Facility Phone	(814) 695-8368
Client ID	87468	Site ID	249447
Ch 94 Load Status	Not Overloaded	Municipality	Frankstown Township
Connection Status	No Limitations	County	Blair
Date Application Received	July 23, 2021	EPA Waived?	No
Date Application Accepted	August 5, 2021	If No, Reason	Major Facility, Pretreatment, Significant CB Discharge
Purpose of Application	This is an application for NPDES renewal.		

Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the Hollidaysburg STP located at 2681 Reservoir Road, Hollidaysburg, PA 16648 in Blair County, municipality of Frankstown Township. The existing permit became effective on March 1, 2017 and expires(d) on February 28, 2022. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on July 23, 2021.

The purpose of this Fact Sheet is to present the basis of information used for establishing the proposed NPDES permit effluent limitations. The Fact Sheet includes a description of the facility, a description of the facility's receiving waters, a description of the facility's receiving waters attainment/non-attainment assessment status, and a description of any changes to the proposed monitoring/sampling frequency. Section 6 provides the justification for the proposed NPDES effluent limits derived from technology based effluent limits (TBEL), water quality based effluent limits (WQBEL), total maximum daily loading (TMDL), antidegradation, anti-backsliding, and/or whole effluent toxicity (WET). A brief summary of the outlined descriptions has been included in the Summary of Review section.

The subject facility is a 6 MGD annual average treatment facility. The hydraulic design capacity of the treatment is 6 MGD. The applicant does not anticipate any proposed upgrades to the treatment facility in the next five years. The NPDES application has been processed as a Major Sewage Facility due to the type of wastewater and the design flow rate for the facility. The applicant disclosed the Act 14 requirement to Blair County and Allegheny Township Supervisors, Blair Township Supervisors,

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineer Nick Hong (via electronic signature)	January 11, 2022
x		Daniel W. Martin, P.E. / Environmental Engineer Manager Maria D. Bebenek for	January 25, 2022
x		Maria D. Bebenek, P.E. / Environmental Program Manager Maria D. Bebenek	January 25, 2022

Summary of Review

Borough of Hollidaysburg, Frankstown Township Supervisors, and Logan Township Supervisors, and the notice was received by the parties in June 2021. A planning approval letter was not necessary as the facility is neither new or expanding.

Utilizing the DEP's web-based Emap-PA information system, the receiving waters has been determined to be Frankstown Branch Juniata River. The sequence of receiving streams that the Frankstown Branch Juniata River discharges into are the Juniata River, and the Susquehanna River which eventually drains into the Chesapeake Bay. The subject site is subject to the Chesapeake Bay implementation requirements. The receiving water has protected water usage for warm water fishes (WWF) and migratory fishes (MF). No Class A Wild Trout fisheries are impacted by this discharge. The absence of high quality and/or exceptional value surface waters removes the need for an additional evaluation of anti-degradation requirements.

The Frankstown Branch Juniata River is a Category 2 and 5 stream listed in the 2020 Integrated List of All Waters (formerly 303d Listed Streams). This stream is an attaining stream that supports fish consumption. The receiving waters is also impaired for aquatic life due to siltation/sediment from industrial point sources. The receiving waters is not subject to a total maximum daily load (TMDL) plan to improve water quality in the subject facility's watershed.

The existing permit and proposed permit differ as follows:

- Consistent with EPA Triennial Review, E. Coli shall be monitored 1x/month.
- Total zinc shall be monitored 1x/month.
- TDS, sulfate, chloride, and bromide have been eliminated from monitoring.

Sludge use and disposal description and location(s): Biosolids disposed at Laurel Highlands Landfill, Jackson Township, Cambria County.

The proposed permit will expire five (5) years from the effective date.

Based on the review in this report, it is recommended that the permit be drafted. DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Any additional information or public review of documents associated with the discharge or facility may be available at PA DEP Southcentral Regional Office (SCRO), 909 Elmerton Avenue, Harrisburg, PA 17110. To make an appointment for file review, contact the SCRO File Review Coordinator at 717.705.4700.

1.0 Applicant

1.1 General Information

This fact sheet summarizes PA Department of Environmental Protection's review for the NPDES renewal for the following subject facility.

Facility Name:	Hollidaysburg Sewage Treatment Plant
NPDES Permit #	PA0043273
Physical Address:	2681 Reservoir Road Hollidaysburg, PA 16648
Mailing Address:	401 Blair Street Hollidaysburg, PA 16648
Contact:	Frank Hicks Director of Wastewater Operations Borough of Hollidaysburg fhicks@hollidaysburgpa.org
Consultant:	Stuart Sibold The EADS Group, Inc. (Altoona) 1126 Eighth Avenue Altoona, PA 16602 (814) 944-5035 ssibold@eadsgroup.com

1.2 Permit History

Description of Facility

The facility has a SOP or plan for managing peak flows.

The facility had forty-one CSO(s) wet weather events in the previous year. The Nine Minimum Controls (NMCs) was approved on December 1997 and updated on September 2016. The Long-Term Control Plan (LTCP) has also been approved by DEP.

On the Jones Street CSO, discharges will be manually activated by the facility when hydraulic overload of the Brush Run Interceptor or a blockage or other circumstance will cause sewer backups to homes. Refer to email correspondence date for March 4, 2019.

Permit submittal included the following information.

- NPDES Application
- Flow Diagrams
- Influent Sample Data
- Effluent Sample Data
- WET Testing Data
- LTCP for CSO updated on September 2019

2.0 Treatment Facility Summary

2.1.1 Site location

The physical address for the facility is 2681 Reservoir Road, Hollidaysburg, PA 16648. A topographical and an aerial photograph of the facility are depicted as Figure 1 and Figure 2.

Figure 1: Topographical map of the subject facility

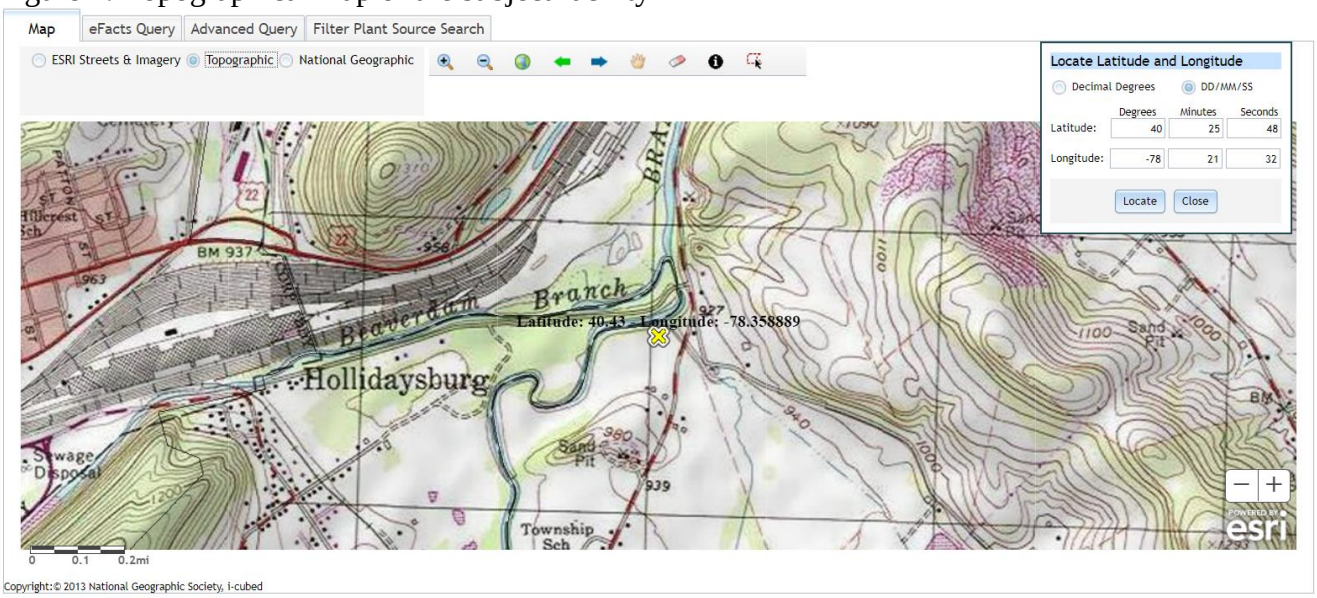
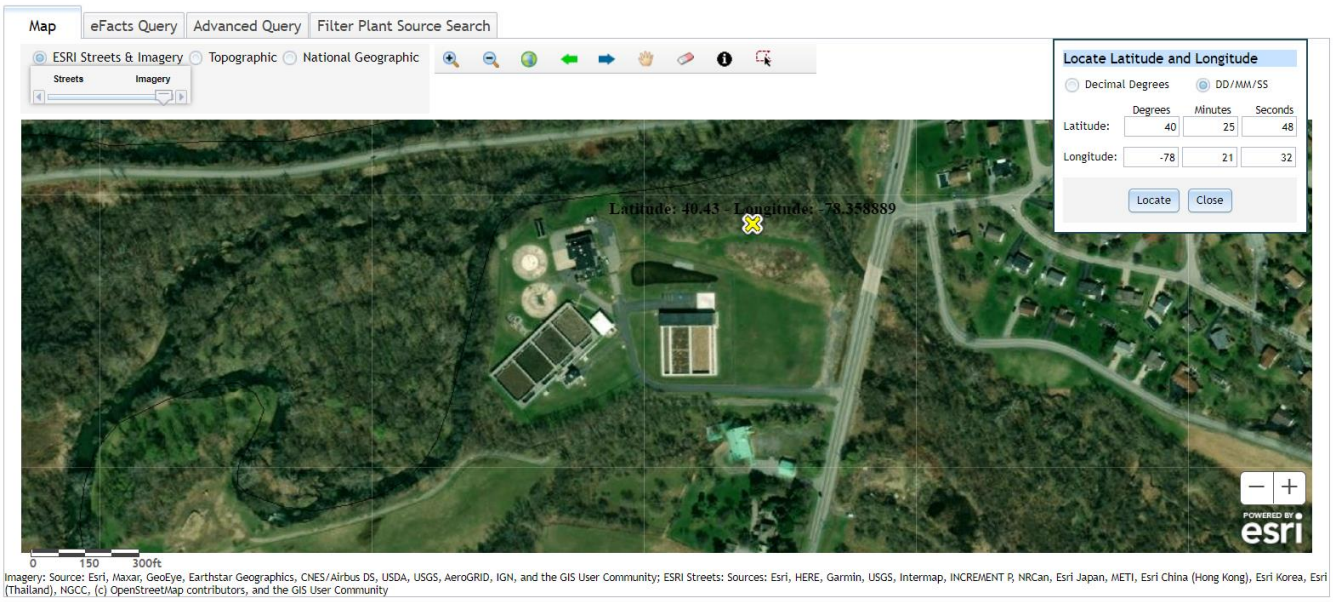


Figure 2: Aerial Photograph of the subject facility



2.1.2 Sources of Wastewater/Stormwater

The wastewater treatment plant receives wastewater contributions from the municipalities as summarized in the table.

Tributary Information	
Municipalities Served	Flow Contribution
Hollidaysburg Borough	47.60%
Allegheny Township	2.82%
Frankstown Township	16.71%
Blair Township	8.00%
Logan Township	24.87%
Total	100.00%

The most recent approval of the local limits pretreatment program by EPA was on August 27, 2018. The facility receives flow from the following industrial/commercial users.

- Anderson Electronics Building #1 located at 721 Scotch Valley Road, Hollidaysburg, PA. This facility is a significant industrial user and manufactures products associated with metal finishing and electronic crystals.
- Small Tube Products located at 200 Oliphant Drive in Allegheny Township, PA. This facility is a significant industrial user and manufactures products associated with alkaline cleaning (rinse), alkaline cleaning (bath), and pickling rinse.

The facility did not receive hauled in wastes in the last three years. The facility does not anticipate receiving hauled in wastes in the next five years.

The facility has multiple outfalls for sewage, stormwater, and CSOs.

Sewage

Outfall 001 discharges to the Frankstown Branch Juniata River.

CSOs

Outfall 003 discharges to Brush Run. Outfalls 004 and 005 discharge to Beaverdam Branch. This receiving waters has a TMDL called Beaverdam Branch Watershed.

Stormwater

The facility has 2 stormwater outfalls- Outfall 007 and 008. Both outfalls discharge to Frankstown Branch Juniata River. Outfall 006 was abandoned in 2013.

The facility's stormwater outfall information is summarized below.

Outfall No.	007	**Design Flow (MGD)**	0
Latitude	40º 25' 49.00"	**Longitude**	-78º 21' 37.00"
Wastewater Description:	Stormwater		

Outfall No. 008 **Design Flow (MGD)** 0
Latitude 40º 25' 49.00" **Longitude** -78º 21' 39.00"
Wastewater Description: Stormwater

The facility has three (3) CSOs- Outfall 003, 004 and 005.

- Outfall 003 discharges to Brush Run and is located at latitude 40^0 26' 19" and longitude -78^0 23' 11".
- Outfall 004 discharges to Beaverdam Branch and is located at latitude 40^0 25' 34" and longitude -78^0 23' 06".
- Outfall 005 discharges to Beaverdam Branch and is located at latitude 40^0 25' 20" and longitude -78^0 23' 35".

2.2 Description of Wastewater Treatment Process

The subject facility is a 6 MGD annual average design flow facility. The current treatment plant went online in 1994 and was upgraded in 2012. The subject facility treats wastewater using an influent pump station, a fine screen with vortex grit removal system which consists of a grit concentrator, 2 grit pumps, a grit washing unit, and grit dewatering /conveyor and controls. Flow from the grit removal system flows via a splitter box to the 4 ABJ continuous flow SBR units which are capable of treating 6 MGD. Four (4) banks of UV units are provided for disinfection. There are four (4) aerobic digesters and a centrifuge for handling biosolids and a belt filter press.

The facility is being evaluated for flow, pH, DO, CBOD5, TSS, dissolved solids, fecal coliform, UV, ammonia-nitrogen, copper, sulfate, chloride, bromide, nitrogen species, and phosphorus. The existing permits limits for the facility is summarized in Section 2.4.

The treatment process is summarized in the table.

Treatment Facility Summary

Treatment Facility Name: Hollidaysburg Regional STP

WQM Permit No.	Issuance Date
0791402, 10-1	05/09/2011

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Sequencing Batch Reactor	UV disinfection	6

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
15	10200	Not Overloaded		

2.3 Facility Outfall Information

The facility has the following outfall information for wastewater.

Outfall No. 001 **Design Flow (MGD)** 6
Latitude 40º 25' 47.62" **Longitude** -78º 21' 41.28"
Wastewater Description: Sewage Effluent

2.3.1 Operational Considerations- Chemical Additives

Chemical additives are chemical products introduced into a waste stream that is used for cleaning, disinfecting, or maintenance and which may be detected in effluent discharged to waters of the Commonwealth. Chemicals excluded are those used for neutralization of waste streams, the production of goods, and treatment of wastewater.

The subject facility utilizes the following chemicals as part of their treatment process.

- Cationic polymer for sludge dewatering

2.4 Existing NPDES Permits Limits

The existing NPDES permit limits are summarized in the table.

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. **For Outfall** 001 , **Latitude** 40° 25' 47.62" , **Longitude** 78° 21' 41.28" , **River Mile Index** 32.58 , **Stream Code** 16061

Receiving Waters: Frankstown Branch Juniata River

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **March 1, 2017** through **February 28, 2022**.

2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Max	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	1,250	2,000	XXX	25	40	50	1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	750	1,125	XXX	15.0	22.5	30	1/day	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/day	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/day	24-Hr Composite
Total Suspended Solids	1,500	2,250	XXX	30	45	60	1/day	24-Hr Composite
Total Dissolved Solids	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite

Outfall 001, Continued (from March 1, 2017 through February 28, 2022)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	1/day	Grab
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/day	Grab
Ultraviolet light intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Ammonia-Nitrogen Nov 1 - Apr 30	525	XXX	XXX	10.5	XXX	21	1/day	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	175	XXX	XXX	3.5	XXX	7	1/day	24-Hr Composite
Copper, Total	2.7	XXX	XXX	0.055	XXX	XXX	1/month	24-Hr Composite
Sulfate, Total	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Chloride	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Bromide	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. C. **For Outfall** 001 , **Latitude** 40° 25' 47.62" , **Longitude** 78° 21' 41.28" , **River Mile Index** 32.58 , **Stream Code** 16061

Receiving Waters: Frankstown Branch Juniata River

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **Permit Effective Date** through **Permit Expiration Date**.

2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	1/day	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Net Total Nitrogen(3)	Report	109,588	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	14,612	XXX	XXX	XXX	XXX	1/month	Calculation

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at Outfall 001

Footnotes:
(1) See Part C for Chesapeake Bay Requirements.
(2) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events required.
(3) The permittee is authorized to use 1,925lbs/year as Total Nitrogen (TN) offsets toward compliance with the Annual Net TN mass load limitations (Cap Loads), in accordance with Part C of this permit. These Offsets may be applied throughout the Compliance Year or during the Truing Period. The application of offsets must be reported to DEP as described in Part C. The Offsets are authorized for the following pollutant load reduction activities: Connection of 77 on-lot sewage disposal systems to the public sewer system after January 1, 2003, in which 25 lbs/year of TN offsets are granted per connection

3.0 Facility NPDES Compliance History

3.1 Summary of Inspections

A summary of the most recent inspections during the existing permit review cycle is as follows.

The DEP inspector noted the following during the inspection.

09/19/2018:

- The Authority completed the public portion of the M-2 and M-11 sub-basin projects in July 2017. The private portion of the project project, testing and replacing lateral lines, was due to be completed by October 2018. This deadline was extended by the Department and the Authority hopes to have this completed by the end of the year.
- Once the upgrades to the M-2 and M-11 basins are completed the Authority will be installing to flow meters to measure the effectiveness of the separation project.
- The Authority is working on an additional collection system upgrade project in the M-12 basin. The public portion of this construction project was completed on February 1, 2018. The private portion is still in progress. This area drains to the Jones Street CSO and should result in fewer CSO discharges.
- There were several manhole surging events this year due to heavy rainfall events. These SSOs were reported to the Department and non-compliance reports were submitted.
- PPC plan was last updated in 2003. Recommend reviewing the plan and updating as necessary.
- Operator has been reporting disposal of grit on the Sludge Production and Disposal Supplemental form. The NPDES permit only requires information regarding sludge or biosolids hauled from the plant.

09/19/2018:

- A CSO inspection was conducted for the CSOs and outfalls.
- The collection system map was updated and now identifies outfall locations. - All 3 CSOs have ultrasonic flow meters that were installed in 2016. The CSOs each contain a bar screen that is manually cleaned off as necessary.
- The Authority is under a Corrective Action Plan (CAP) to address Inflow and Infiltration in two of the collection system sub-basins, M-2 & M-11. The plan involves the separation of sewer and stormwater lines in order to eliminate hydraulic overloading in the area. The project began in the summer of 2016 and substantial completion was achieved on July 28, 2017.
- The testing and replacement of private laterals is ongoing.
- The Authority is also working on a project in the M-12 sub-basin to separate storm and sanitary lines in the area contributing to the Jones Street CSO. Private laterals will also be tested and replaced as necessary. A WQM permit was issued by the Department on January 3, 2017. This project should be completed sometime in 2019 and could eliminate or lessen discharges from CSO 003.

09/10/2019:

- A CSO inspection was conducted for the CSOs and outfalls.
- Sewer separation work in the M-12 sub-basin has allowed the Authority to isolate CSO 006 (Jones Street) and send all flow from this area to the treatment plant. The outfall was isolated by installing inflatable rubber plugs in the collection system lines leading to and from the CSO chamber. Pressure in the plugs is checked monthly and proper inflation is maintained.

- A surge indicator was installed at manhole A-0 (before CSO 006 chamber) to make operators aware of surcharges in the collection system piping. The CSO would only be activated in the event of a blockage or overload that would cause sewer back-ups to homes tributary to the CSO.
- The Nine Minimum Control Plan and Long Term Control Plans were updated to reflect changes to CSO 006 and other improvements to the collection system. Copies of the draft plans were submitted to the Department.
- CSOs 004 and 005 have ultrasonic flow meters that were installed in 2016. The flow meter at CSO 006 was removed after the CSO was isolated. The meter often reported false readings due to backflow from the receiving stream.
- The CSOs each contain a bar screen that is manually cleaned off as necessary.
- Observed an abundance of red and purple colored algae at outfall for CSO 004. The discharge from the outfall pipe collects in a tributary to the Beavertown Branch and receives no flow except for stormwater.
- The Authority is under a Corrective Action Plan (CAP) to address Inflow and Infiltration in two of the collection system sub-basins, M-2 & M-11. Substantial completion was achieved on July 28, 2017. The testing and replacement of private laterals is ongoing, with only about 5 homes remaining.
- About 10 private laterals in the M-12 sub-basin need to checked/repaired.

09/10/2019:

- The effluent flow meter was replaced with another doppler style meter. Facility will likely be replacing the fine screen unit with two new fine screens later this year.
- The Authority completed the public portion of the sewer replacement projects in the M-2 and M-11 sub-basins. There are only about 5 private laterals that need to be tested.
- A sewer separation project in the M-12 sub-basin has also been completed. There are about 10 private laterals that still need to be tested or repaired. The project has allowed the Authority to isolate the Jones Street CSO. The CSO may be removed from the NPDES permit during the next permit renewal

12/30/2020:

- An administrative review of the Chesapeake Bay was completed. The facility generated credits for nitrogen but no nitrogen or phosphorus credits were purchased or sold.

06/22/2021:

- The facility installed two influent screens with a compactor.
- The collection system projects in M-2, M-11, and M-12 have been completed.

06/29/2021:

- A CSO inspection was conducted for the three CSOs and outfalls.
- GIS mapping software is now being utilized to display collection system maps and to track system maintenance and repair work. - Since last inspection, collection system repairs and separation projects in the M-12, M-2, M-4, and M-11 sub-basins have been completed.
- In 2019 CSO 003 (Jones Street) was isolated by installing inflatable rubber plugs in the collection system lines leading to and from the CSO chamber. There have been no discharges from the CSO since installing the plugs and no back-ups have occurred as a result of isolating the outfall.
- The Nine Minimum Control Plan should be updated to reflect changes to CSO 003 and to provide more details about the operation and maintenance of the collection system and CSOs.

Recommend addressing each minimum control specifically and editing out information not directly related to the plan.

- A copy of the updated Long-Term Control Plan was submitted to the Department for approval on September 19, 2019.
- The Authority is considering future collection system work in the basin that contributes to CSO 004 (old plant) with the goal of reducing or eliminating CSO discharges in the future

3.2 Summary of DMR Data

A review of approximately 1-year of DMR data shows that the monthly average flow data for the facility below the design capacity of the treatment system. The maximum average flow data for the DMR reviewed was 3.567 MGD in March 2021. The hydraulic design capacity of the treatment system is 15 MGD.

The off-site laboratory used for the analysis of the parameters was Fairway Laboratories, Inc. located at 2019 Ninth Avenue, Altoona, PA.

The off-site laboratory used for the WET analysis of the parameters was American Aquatic Testing located at 890 N. Graham Street, Allentown, PA 18109.

DMR Data for Outfall 001 (from November 1, 2020 to October 31, 2021)

Parameter	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20
Flow (MGD) Average Monthly	2.338	3.529	2.083	2.263	2.593	2.734	2.633	3.567	2.764	2.714	2.957	2.358
Flow (MGD) Daily Maximum	7.631	14.168	6.327	4.797	5.68	6.122	5.995	10.472	6.41	5.169	11.01	6.323
pH (S.U.) Minimum	7.22	7.24	7.22	7.23	7.23	7.21	7.17	7.16	7.15	7.25	7.25	7.12
pH (S.U.) Maximum	7.42	7.48	7.67	7.44	7.40	7.57	7.58	7.35	7.42	7.24	7.45	7.73
DO (mg/L) Minimum	7.19	5.91	6.85	6.99	7.30	7.92	8.11	8.49	8.94	8.61	8.48	7.12
CBOD5 (lbs/day) Average Monthly	< 80	118	< 65	< 71	< 86	< 96	71	131	< 70	< 63	< 82	< 53
CBOD5 (lbs/day) Weekly Average	< 104	176	95	90	110	< 143	130	285	< 129	< 107	171	< 84
CBOD5 (mg/L) Average Monthly	< 4.0	3.8	< 3.5	< 3.6	< 3.9	4.0	< 3	4	< 3	< 3	< 3	< 3
CBOD5 (mg/L) Weekly Average	5.0	4.0	4.0	4.0	4.0	5.0	4	5	< 3	< 3	4	< 3
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	3515	1968	2391	1978	2058	2323	2205	2837	2937	1877	1950	2059
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	6255	5039	6332	3845	3061	7983	3309	14513	6711	2797	5010	7028
BOD5 (mg/L) Raw Sewage Influent Average Monthly	193	78	145	114	105	107	107	93	131	93	93	114
TSS (lbs/day) Average Monthly	104	188	< 64	< 78	82	193	198	675	122	92	170	< 84
TSS (lbs/day) Raw Sewage Influent Average Monthly	6528	2845	2833	2527	2920	4346	3716	5547	4572	2643	3864	3169
TSS (lbs/day) Raw Sewage Influent Daily Maximum	14464	10398	7166	12482	10895	23161	11075	23514	21021	7662	22379	20062
TSS (lbs/day) Weekly Average	173	326	96	103	123	520	607	1594	267	155	448	151

TSS (mg/L) Average Monthly	5.0	5.0	< 3	< 4.0	4.0	6	6	12	4	4	5	< 4
TSS (mg/L) Raw Sewage Influent Average Monthly	347	106	169	132	143	187	171	165	195	129	147	148
TSS (mg/L) Weekly Average	6.0	7.0	4	4.0	4.0	12	14	23	7	5	9	4
Total Dissolved Solids (lbs/day) Average Monthly	6359	6861	6059	6894	9184	8643	8299	8346	6661	8629	5814	5771
Total Dissolved Solids (mg/L) Average Monthly	441	398	434	354	450	425	458	444	428	454	374	360
Fecal Coliform (CFU/100 ml) Geometric Mean	26	28	< 24	< 12	< 14	20	20	20	33	25	21	< 11
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	59	5900	170	167	77	220	187	75	97	58	1670	2000
UV Intensity (mW/cm²) Minimum	10.8	5.5	12.5	10	5.8	4.9	4.9	5.2	6.6	4.5	9.7	9.7
Nitrate-Nitrite (mg/L) Average Monthly	< 1.148	< 1.098	0.785	< 0.699	< 0.636	< 0.436	0.887	0.746	< 1.108	< 1.637	< 1.562	< 1.358
Nitrate-Nitrite (lbs) Total Monthly	593.2	< 838.2	< 402.1	393.2	< 376.5	< 320.3	< 596	890	< 716.6	1168.1	< 1114.2	< 768.3
Total Nitrogen (mg/L) Average Monthly	< 2.554	< 2.983	< 2.032	< 1.729	< 1.807	< 2.204	< 2.255	< 2.447	< 2.048	< 3.022	< 5.16	< 3.189
Total Nitrogen (lbs) Effluent Net Total Monthly	1349.5	2347.9	1052.5	< 988.8	< 1098.3	< 1786.2	< 1529.3	< 2438.1	< 1445	2111.4	3842.9	1862.1
Total Nitrogen (lbs) Total Monthly	< 1349.5	< 2347.9	< 1052.5	< 988.8	< 1098.3	< 1779.9	< 1529.3	< 2438.1	< 1445	2111.4	< 3842.9	< 1862.1
Total Nitrogen (lbs) Effluent Net Total Annual		< 42241										
Total Nitrogen (lbs) Total Annual		< 21457										
Ammonia (lbs/day) Average Monthly	14	18	12	17	21.0	31	28	42	19	14	19	14
Ammonia (mg/L) Average Monthly	0.65	0.62	0.67	0.809	0.88	1.34	1.21	1.47	0.73	0.58	0.68	0.63
Ammonia (lbs) Total Monthly	425.9	549.9	372.4	513.4	625.8	951.3	831.5	< 1313.9	523.4	446.8	573.8	424

Ammonia (lbs) Total Annual		7478										
TKN (mg/L) Average Monthly	1.406	1.885	< 1.205	0.848	1.16	< 1.691	< 1.146	< 1.379	< 0.918	1.385	3.599	< 1.831
TKN (lbs) Total Monthly	756.2	1509.7	< 625	485.2	715.7	< 1411.2	< 780.3	< 1326.3	< 714	943.3	2728.6	< 1093.8
Total Phosphorus (mg/L) Average Monthly	1.954	2.027	3.747	2.36	1.876	1.813	2.01	0.872	1.31	1.173	2.152	1.616
Total Phosphorus (lbs) Effluent Net Total Monthly	980.5	< 2.983	1994.5	1281.5	1137.3	1214.2	1303.2	712.1	793.3	806	1478.1	923.6
Total Phosphorus (lbs) Total Monthly	980.5	1787.4	1994.5	1281.5	1137.3	1214.2	1303.2	712.1	793.3	806	1478.1	923.6
Total Phosphorus (lbs) Effluent Net Total Annual		14585										
Total Phosphorus (lbs) Total Annual		14585										
Total Copper (lbs/day) Average Monthly	< 0.10	< 1.7	< 0.10	< 0.08	< 0.2	0.06	< 0.06	< 0.2	0.07	0.2	0.1	< 0.2
Total Copper (mg/L) Average Monthly	< 0.0102	< 0.010	< 0.010	< 0.00386	< 0.010	0.00304	< 0.00351	0.010	0.00421	< 0.010	0.00724	< 0.010
Sulfate (lbs/day) Average Monthly	1021	993	899	1149	1110	1167	1042	1109	868	1091	992	957
Sulfate (mg/L) Average Monthly	71.7	57.6	64.4	59	54.4	57.9	57.6	59	55.8	57.4	63.8	59.7
Chloride (lbs/day) Average Monthly	1860	2120	1927	2454	2612	2851	2709	2763	2708	2813	1959	1843
Chloride (mg/L) Average Monthly	130	123	138	126	128	143	149	147	174	148	126	115
Bromide (lbs/day) Average Monthly	< 3.0	< 3.0	< 3	< 4	< 4.0	< 1	< 3	4	< 3	< 4	< 3	< 3
Bromide (mg/L) Average Monthly	< 0.20	< 0.2	< 0.2	< 0.20	< 0.2	< 0.055	< 0.136	0.2	< 0.2	< 0.2	< 0.2	< 0.2

3.3 Non-Compliance

3.3.1 Non-Compliance- NPDES Effluent

A summary of the non-compliance to the permit limits for the existing permit cycle is as follows.

From the DMR data beginning in March 1, 2017 to December 29, 2021, the following were the observed effluent non-compliances.

Summary of Non-Compliance with NPDES Effluent Limits
Beginning March 1, 2017 and Ending December 29, 2021

NON COMPLIANCE DATE	PARAMETER	SAMPLE VALUE	VIOLATION CONDITION	PERMIT VALUE	UNIT OF MEASURE	STATISTICAL BASE CODE
03/27/2018	Total Suspended Solids	76	>	45	mg/L	Weekly Average
03/27/2018	Total Suspended Solids	1905	>	1500	lbs/day	Average Monthly
03/27/2018	Total Suspended Solids	6254	>	2250	lbs/day	Weekly Average
10/26/2018	Fecal Coliform	3000	>	1000	CFU/100 ml	Instantaneous Maximum
10/27/2021	Fecal Coliform	5900	>	1000	CFU/100 ml	Maximum

3.3.2 Non-Compliance- Enforcement Actions

A summary of the non-compliance enforcement actions for the current permit cycle is as follows:

Beginning in March 1, 2017 to December 29, 2021, there were no observed enforcement actions.

3.4 Summary of Biosolids Disposal

A summary of the biosolids disposed of from the facility is as follows.

2020	
Sewage Sludge / Biosolids Production Information	
Hauled Off-Site	
2020	Dry Tons
January	51.935
February	44.444
March	19.072
April	36.683
May	2.227
June	16.153
July	0
August	0
September	4.124
October	16.055
November	20.026
December	47.662
Notes:	
Laurel Highlands Landfill, Jackson Township, Cambria County	

3.5 Open Violations

No open violations existed as of December 2021.

4.0 Receiving Waters and Water Supply Information Detail Summary

4.1 Receiving Waters

The receiving waters has been determined to be Frankstown Branch Juniata River. The sequence of receiving streams that the Frankstown Branch Juniata River discharges into are the Juniata River, and the Susquehanna River which eventually drains into the Chesapeake Bay.

4.2 Public Water Supply (PWS) Intake

The closest PWS to the subject facility is the Mifflintown Municipal Authority (PWS ID #4340008) located approximately 98 miles downstream of the subject facility on the Juniata River. Based upon the distance and the flow rate of the facility, the PWS should not be impacted.

4.3 Class A Wild Trout Streams

Class A Wild Trout Streams are waters that support a population of naturally produced trout of sufficient size and abundance to support long-term and rewarding sport fishery. DEP classifies these waters as high-quality coldwater fisheries.

The information obtained from EMAP suggests that no Class A Wild Trout Fishery will be impacted by this discharge.

4.4 2020 Integrated List of All Waters (303d Listed Streams)

Section 303(d) of the Clean Water Act requires States to list all impaired surface waters not supporting uses even after appropriate and required water pollution control technologies have been applied. The 303(d) list includes the reason for impairment which may be one or more point sources (i.e. industrial or sewage discharges) or non-point sources (i.e. abandoned mine lands or agricultural runoff and the pollutant causing the impairment such as metals, pH, mercury or siltation).

States or the U.S. Environmental Protection Agency (EPA) must determine the conditions that would return the water to a condition that meets water quality standards. As a follow-up to listing, the state or EPA must develop a Total Maximum Daily Load (TMDL) for each waterbody on the list. A TMDL identifies allowable pollutant loads to a waterbody from both point and non-point sources that will prevent a violation of water quality standards. A TMDL also includes a margin of safety to ensure protection of the water.

The water quality status of Pennsylvania's waters uses a five-part categorization (lists) of waters per their attainment use status. The categories represent varying levels of attainment, ranging from Category 1, where all designated water uses are met to Category 5 where impairment by pollutants requires a TMDL for water quality protection.

The receiving waters is listed in the 2020 Pennsylvania Integrated Water Quality Monitoring and Assessment Report as a Category 2 and 5 waterbody. The surface waters is an attaining stream that supports fish consumption. The stream is also impaired for aquatic life due to siltation/sediment from industrial point sources. The designated use has been classified as protected waters for warm water fishes (WWF) and migratory fishes (MF).

4.5 Low Flow Stream Conditions

Water quality modeling estimates are based upon conservative data inputs. The data are typically estimated using either a stream gauge or through USGS web based StreamStats program. The NPDES effluent limits are based upon the combined flows from both the stream and the facility discharge.

A conservative approach to estimate the impact of the facility discharge using values which minimize the total combined volume of the stream and the facility discharge. The volumetric flow rate for the stream is based upon the seven-day, 10-year low flow (Q710) which is the lowest estimated flow rate of the stream during a 7 consecutive day period that occurs once in 10 -year time period. The facility discharge is based upon a known design capacity of the subject facility.

The closest WQN station to the subject facility is the Frankstown Juniata River (WQN224). This WQN station is located approximately 15 miles downstream of the subject facility.

The closest gauge station to the subject facility is the Frankstown Branch Juniata River at Williamsburg, PA (USGS station number 1556000). This gauge station is located approximately 15 miles downstream of the subject facility.

For WQM modeling, pH and stream water temperature data from the water quality network station was used. pH was estimated to be 7.84 and the stream water temperature was estimated to be 22 C.

The hardness of the stream was estimated by collecting a sample upstream of the facility. The sampling result was 116 mg/l $CaCO_3$.

The low flow yield and the Q710 for the subject facility was estimated as shown below.

Gauge Station Data			
USGS Station Number	1556000		
Station Name	Frankstown Branch Juniata River at Williamsburg, PA		
Q710	47.8	ft^3/sec	
Drainage Area (DA)	291	mi^2	
Calculations			
The low flow yield of the gauge station is:			
Low Flow Yield (LFY) = Q710 / DA			
LFY =	(47.8 ft^3/sec / 291 mi^2)		
LFY =	0.1643	$ft^3/sec/mi^2$	
The low flow at the subject site is based upon the DA of		116	mi^2
Q710 = (LFY@gauge station)(DA@Subject Site)			
Q710 = (0.1643 $ft^3/sec/mi^2$)(116 mi^2)			
Q710 =	19.054	ft^3/sec	

4.6.1 Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	0
Latitude	40º 26' 12.09"	Longitude	-78º 22' 31.35"
Quad Name		Quad Code	
Wastewater Description:	Combined Sewer Overflow		

Receiving Waters	Brush Run (WWF)	Stream Code	16061
NHD Com ID	65608796	RMI	32.9
Drainage Area	116	Yield (cfs/mi^2)	0.1643
Q_{7-10} Flow (cfs)	19.054	Q_{7-10} Basis	StreamStats/Streamgauge
Elevation (ft)	923	Slope (ft/ft)	
Watershed No.	11-A	Chapter 93 Class.	WWF, MF
Existing Use	Same as Chapter 93 class	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s) supports fish consumption. Impaired for aquatic life due to siltation/sediment from industrial point source		
Cause(s) of Impairment	Siltation/sediment		
Source(s) of Impairment	Industrial Point Source		
TMDL Status	Final	Name	Beaverdam Branch Watershed

Background/Ambient Data		Data Source
pH (SU)	7.84	WQN224; median July to Sept
Temperature (°C)	22	WQN224; median July to Sept
Hardness (mg/L)	116	Sample result from NPDES renewal application
Other:		

Nearest Downstream Public Water Supply Intake	Mifflintown MA		
PWS Waters	Juniata River	Flow at Intake (cfs)	0
PWS RMI	98	Distance from Outfall (mi)	

4.6.2 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	004	Design Flow (MGD)	0
Latitude	40º 25' 29.29"	Longitude	-78º 23' 1.88"
Quad Name		Quad Code	
Wastewater Description:	Combined Sewer Overflow		

Receiving Waters	Beaverdam Branch	Stream Code	16061
NHD Com ID	65608966	RMI	32.9
Drainage Area	116	Yield (cfs/mi^2)	0.1643
Q_{7-10} Flow (cfs)	19.054	Q_{7-10} Basis	StreamStats/Streamgauge
Elevation (ft)	923	Slope (ft/ft)	
Watershed No.	11-A	Chapter 93 Class.	WWF, MF
Existing Use	Same as Chapter 93 Class.	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s) supports fish consumption. Impaired for aquatic life due to siltation/sediment from industrial point source		
Cause(s) of Impairment	Siltation/sediment		
Source(s) of Impairment	Industrial point source		
TMDL Status	Final	Name	Beaverdam Branch Watershed

Background/Ambient Data		Data Source
pH (SU)	7.84	WQN224; median July to Sept
Temperature (°C)	22	WQN224; median July to Sept
Hardness (mg/L)	116	Sample result from NPDES renewal application
Other:		

Nearest Downstream Public Water Supply Intake		Mifflintown MA	
PWS Waters	Juniata River	Flow at Intake (cfs)	0
PWS RMI	98	Distance from Outfall (mi)	

4.6.3 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	005	Design Flow (MGD)	0
Latitude	40º 25' 16.56"	Longitude	-78º 23' 37.02"
Quad Name		Quad Code	
Wastewater Description:	Combined Sewer Overflow		

Receiving Waters	Beaverdam Branch	Stream Code	16061
NHD Com ID	65608996	RMI	32.9
Drainage Area	116	Yield (cfs/mi^2)	0.1643
Q_{7-10} Flow (cfs)	19.054	Q_{7-10} Basis	StreamStats/Streamgauge
Elevation (ft)	923	Slope (ft/ft)	
Watershed No.	11-A	Chapter 93 Class.	WWF, MF
Existing Use	Same as Chapter 93 Class.	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s) supports fish consumption. Impaired for aquatic life due to siltation/sediment from industrial point source		
Cause(s) of Impairment	Siltation/sediment		
Source(s) of Impairment	Industrial point source		
TMDL Status	Final	Name	Beaverdam Branch Watershed

Background/Ambient Data		Data Source
pH (SU)	7.84	WQN224; median July to Sept
Temperature (°C)	22	WQN224; median July to Sept
Hardness (mg/L)	116	Sample result from NPDES renewal application
Other:		

Nearest Downstream Public Water Supply Intake	Mifflintown MA		
PWS Waters	Juniata River	Flow at Intake (cfs)	0
PWS RMI	98	Distance from Outfall (mi)	

4.6.4 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	6
Latitude	40º 25' 47.79"	Longitude	-78º 21' 41.47"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		

Receiving Waters	Frankstown Branch Juniata River	Stream Code	16061
NHD Com ID	65608828	RMI	32.9
Drainage Area	116	Yield (cfs/mi^2)	0.1643
Q_{7-10} Flow (cfs)	19.05	Q_{7-10} Basis	StreamStats/Streamgauge
Elevation (ft)	923	Slope (ft/ft)	
Watershed No.	11-A	Chapter 93 Class.	WWF, MF
Existing Use	Same as Chapter 93 class.	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s) supports fish consumption. Impaired for aquatic life due to siltation/sediment from industrial point source		
Cause(s) of Impairment	Siltation/sediment		
Source(s) of Impairment	Industrial point source		
TMDL Status	Not applicable	Name	

Background/Ambient Data		Data Source
pH (SU)	7.84	WQN224; median July to Sept
Temperature (°C)	22.0	WQN224; median July to Sept
Hardness (mg/L)	116	NPDES application dated for July 12, 2021
Other:		

Nearest Downstream Public Water Supply Intake	Mifflintown MA		
PWS Waters	Juniata River	Flow at Intake (cfs)	0
PWS RMI	98	Distance from Outfall (mi)	

4.6.5 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	007	Design Flow (MGD)	0
Latitude	40º 25' 49.02"	Longitude	-78º 21' 39.00"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Frankstown Branch Juniata River	Stream Code	16061
NHD Com ID	65608828	RMI	

4.6.6 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	008	Design Flow (MGD)	0
Latitude	40º 25' 49.02"	Longitude	-78º 21' 39.00"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Frankstown Branch Juniata River	Stream Code	16061
NHD Com ID	65608828	RMI	

5.0: Overview of Presiding Water Quality Standards

5.1 General

There are at least six (6) different policies which determines the effluent performance limits for the NPDES permit. The policies are technology based effluent limits (TBEL), water quality based effluent limits (WQBEL), antidegradation, total maximum daily loading (TMDL), anti-backsliding, and whole effluent toxicity (WET) The effluent performance limitations enforced are the selected permit limits that is most protective to the designated use of the receiving waters. An overview of each of the policies that are applicable to the subject facility has been presented in Section 6.

5.2.1 Technology-Based Limitations

TBEL treatment requirements under section 301(b) of the Act represent the minimum level of control that must be imposed in a permit issued under section 402 of the Act (40 CFR 125.3). Available TBEL requirements for the state of Pennsylvania are itemized in PA Code 25, Chapter 92a.47.

The presiding sources for the basis for the effluent limitations are governed by either federal or state regulation. The reference sources for each of the parameters is itemized in the tables. The following technology-based limitations apply, subject to water quality analysis and best professional judgement (BPJ) where applicable:

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

5.2.2 Mass Based Limits

For publicly owned treatment works (POTW), mass loadings are calculated based upon design flow rate of the facility and the permit limit concentration. The generalized calculation for mass loadings is shown below:

$$Quantity\left(\frac{lb}{day}\right) = (MGD)(Concentration)(8.34)$$

5.3 Water Quality-Based Limitations

WQBEL are based on the need to attain or maintain the water quality criteria and to assure protection of designated and existing uses (PA Code 25, Chapter 92a.2). The subject facility that is typically enforced is the more stringent limit of either the TBEL or the WQBEL.

Determination of WQBEL is calculated by spreadsheet analysis or by a computer modeling program developed by DEP. DEP permit engineers utilize the following computing programs for WQBEL permit limitations: (1) MS Excel worksheet for Total Residual Chorine (TRC); (2) WQM 7.0 for Windows Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen Version 1.1 (WQM Model) and (3) Toxics using DEP Toxics Management Spreadsheet for Toxics pollutants.

5.3.1 Water Quality Modeling 7.0

The WQM Model is a computer model that is used to determine NPDES discharge effluent limitations for Carbonaceous BOD (CBOD5), Ammonia Nitrogen (NH3-N), and Dissolved Oxygen (DO) for single and multiple point source discharges scenarios. WQM Model is a complete-mix model which means that the discharge flow and the stream flow are assumed to instantly and completely mixed at the discharge node.

WQM recommends effluent limits for DO, CBOD5, and NH_3-N in mg/l for the discharge(s) in the simulation.

Four types of limits may be recommended. The limits are

(a) a *minimum concentration for DO in the discharge as 30-day average;*
(b) a 30-day average concentration for CBOD5 in the discharge;
(c) a 30-day average concentration for the NH_3-N in the discharge;
(d) *24-hour average concentration for NH_3-N in the discharge*.

The WQM Model requires several input values for calculating output values. The source of data originates from either EMAP, the National Map, or Stream Stats. Data for stream gauge information, if any, was abstracted from USGS Low-Flow, Base-Flow, and Mean-Flow Regression Equations for Pennsylvania Streams authored by Marla H. Stuckey (Scientific Investigations Report 2006-5130).

The applicable WQM Effluent Limit Type are discussed in Section 6 under the corresponding parameter which is either DO, CBOD, or ammonia-nitrogen.

5.3.2 Toxics Modeling

The Toxics Management Spreadsheet model is a computer model that is used to determine effluent limitations for toxics (and other substances) for single discharge wasteload allocations. This computer model uses a mass-balance water quality analysis that includes consideration for mixing, first-order decay, and other factors used to determine recommended water quality-based effluent limits. Toxics Management Spreadsheet does not assume that all discharges completely mix with the stream. The point of compliance with water quality criteria are established using criteria compliance times (CCTs). The available CCTs are either acute fish criterion (AFC), chronic fish criterion (CFC), or human health criteria (THH & CRL).

Acute Fish Criterion (AFC) measures the criteria compliance time as either the maximum criteria compliance time (i.e.15 minutes travel time downstream of the current discharge) or the complete mix time whichever comes first. AFC is evaluated at Q710 conditions.

Chronic Fish Criterion (CFC) measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the complete mix time whichever comes first. CFC is evaluated at Q710 conditions.

Threshold Human Health (THH) measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the estimated travel time downstream to the nearest potable water supply intake whichever comes first. THH is evaluated at Q710 conditions.

Cancer Risk Level (CRL) measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the complete mix time whichever comes first. CRL is evaluated at Qh (harmonic mean or normal flow) conditions.

The Toxics Model requires several input values for calculating output values. The source of data originates from either EMAP, the National Map, or Stream Stats. Data for stream gauge information, if any, was abstracted from USGS Low-Flow, Base-Flow, and Mean-Flow Regression Equations for Pennsylvania Streams authored by Marla H. Stuckey (Scientific Investigations Report 2006-5130).

5.3.2.1 Determining if NPDES Permit Will Require Monitoring/Limits in the Proposed Permit for Toxic Pollutants

To determine if Toxics modeling is necessary, DEP has developed a Toxics Management Spreadsheet to identify toxics of concern. Toxic pollutants whose maximum concentrations as reported in the permit application or on DMRs are greater than the most stringent applicable water quality criterion are pollutants of concern. A Reasonable Potential Analysis was utilized to determine (a) if the toxic parameters modeled would require monitoring or (b) if permit limitations would be required for the parameters. The toxics reviewed for reasonable potential were the pollutants in Groups 1 through 6.

Based upon the SOP- Establishing Water Quality-Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants (Revised January 10, 2019), monitoring and/or limits will be established as follows.

(a) When reasonable potential is demonstrated, establish limits where the maximum reported concentration equals or exceeds 50% of the WQBEL.
(b) For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.
(c) For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10% - 50% of the WQBEL.

Using the data submitted with the NPDES renewal application, Toxics Management Spreadsheet (TMS) was used to determine impacts from pollutants on the receiving stream. The TMS was utilized for Run #1 and Run #2. Run #1 resulted in both bis(2-ethylhexyl)phthalate and free cyanide as pollutants requiring limits in the proposed permit. Upon further analysis, both pollutants were analyzed by the laboratory above DEP recommended target limits. The resample results are summarized in the table.

Re-Sampling Results

Date/ Parameter	BEHP ug/l		Free Cyanide ug/l	
10/26/2021	<	5		-----
11/2/2021	<	5		-----
11/8/2021	<	5	<	0.5
11/15/2021		-----	<	0.5
11/19/2021		-----	<	0.5
Notes:				
Resampling occurred in October/November 2021				

The pollutants were re-sampled through Run #2 and subsequently the parameters were not of concern.

Copper and zinc both had positive detections. Copper was reported at 3.24 ug/l. A total of three samples were collected with none of the samples being non-detected.

Zinc was reported at 48.8 ug/l. A total of three samples were collected with none of the samples being non-detected.

TMS recommends monitoring.

Applicable monitoring or permit limits for toxics are summarized in Section 6.

The Toxics Management Spreadsheet output has been included in Attachment B.

5.3.3 Whole Effluent Toxicity (WET)

Whole effluent toxicity is the aggregate toxic effect from a facility's wastewater discharge on aquatic organisms. WET measures the effect of wastewater effluent on an organisms' ability to survive, grow, and reproduce. WET testing is either acute or chronic. Acute testing measures lethality, the ability for an organism to survive after no more than 96 hours of exposure to an effluent. Chronic tests measures both lethality, immobility, and sublethal endpoints to exposures ranging longer than 96 hours and up to 8 days.

WET is required if the applicant satisfies any one of the following conditions.

(a) Major sewage facilities with an average annual design flow greater than or equal to 1.0 MGD (25 Pa. Code § 92a.27(a)(1)(i)).
(b) Sewage facilities with EPA-approved pretreatment programs or will be required in the permit to develop a program (25 Pa. Code § 92a.27(a)(1)(i)).
(c) Other facilities that are considered candidates for WET testing by one or more of the factors contained in 25 Pa. Code § 92a.27(a)(2).

5.3.3.1 WET Tests Review

The in-stream waste concentration and dilution series was estimated using partial mixing factor factors from Toxics Management Spreadsheet, the design flow rate for the facility, and the Q710.

The proposed NPDES permit shall utilize a chronic instream waste concentration of 33%. The complete dilution series will be 100%, 67%, 33%, 17%, and 8%.

The derivation is shown in the calculations.

Whole Effluent Toxicity (WET)

For Outfall 001, **Chronic** WET Testing was completed:

X	For the permit renewal application (4 tests).
	Quarterly throughout the permit term.
	Quarterly throughout the permit term and a TIE/TRE was conducted.
	Other:

The dilution series used for the tests was: 100%, 67%, 33%, 17%, and 8%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 33%.

Summary of Four Most Recent Test Results

(NOTE – Enter results into one table, depending on which data analysis method was used).

TST Data Analysis

(NOTE – In lieu of recording information below, the application manager may attach the DEP WET Analysis Spreadsheet).

Test Date	*Ceriodaphnia* Results (Pass/Fail)		*Pimephales* Results (Pass/Fail)	
	Survival	Reproduction	Survival	Growth
9/26/2017	Pass	Pass	Pass	Pass
11/13/2018	Pass	Pass	Pass	Pass
11/12/2019	Pass	Pass	Pass	Pass
10/13/2020	Pass	Pass	Pass	Pass

***** *A "passing" result is that in which the replicate data for the TIWC is not statistically significant from the control condition. This is exhibited when the calculated t value ("T-Test Result") is greater than the critical t value. A "failing" result is exhibited when the calculated t value ("T-Test Result") is less than the critical t value.*

Is there reasonable potential for an excursion above water quality standards based on the results of these tests? (*NOTE – In general, reasonable potential is determined anytime there is at least one test failure in the previous four tests). YES/NO*

Comments:

No; there is no reasonable potential.

Data

PMFa =	0.359	
PMFc =	1	
Qd =	6	MGD
Q710 =	19.054	cfs

Step 1: Determine IWC - Acute (IWCa)

IWCa = [(Qd x 1.547) / ((Q7-10 x PMFa) + (Qd x 1.547))] x 100

IWCa = 57.57

Is IWCA < 1% No (Yes- acute tests required; No- chronic test required)

If the discharge is to the tidal portion of the Delaware River, indicate how the type of test was

Type of Test for Permit Renewal:

Since IWCa is larger than 1%, chronic WET tests will be required

Step 2a: Determine Target IWCa (If acute tests required)

TIWCa = IWCA / 0.3

TIWCa = 191.91

Step 2b: Determine Target IWCc (If chronic tests required)

ICCc = [(Qd x 1.547) / ((Q7-10 x PWFc) + (Design Flow MGD x 1.547))] x 100

ICCc = 32.76

Step 3: Determine Dilution Series

Dilution Series =	100%	67%	33%	17%	8%

WET Limits

Has reasonable potential been determined ? No

Will WET limits be established in the permit No

If WET limits wil be established, identify the species and the limit values for the permit (TU).

Not Applicable

If WET limits will not be established, but reasonable potential was determined, indicate the

Not Applicable

5.4 Total Maximum Daily Loading (TMDL)

5.4.1 TMDL

The goal of the Clean Water Act (CWA), which governs water pollution, is to ensure that all of the Nation's waters are clean and healthy enough to support aquatic life and recreation. To achieve this goal, the CWA created programs designed to regulate and reduce the amount of pollution entering United States waters. Section 303(d) of the CWA requires states to assess their waterbodies to identify those not meeting water quality standards. If a waterbody is not meeting standards, it is listed as impaired and reported to the U.S. Environmental Protection Agency. The state then develops a plan to clean up the impaired waterbody. This plan includes the development of a Total Maximum Daily Load (TMDL) for the pollutant(s) that were found to be the cause of the water quality violations. A Total Maximum Daily Load (TMDL) calculates the maximum amount of a specific pollutant that a waterbody can receive and still meet water quality standards.

Pennsylvania has committed to restoring all impaired waters by developing TMDLs and TMDL alternatives for all impaired waterbodies. The TMDL serves as the starting point or planning tool for restoring water quality.

5.4.1.1 Local TMDL

The subject facility does not discharge into a local TMDL.

5.4.1.2 Chesapeake Bay TMDL Requirement

The Chesapeake Bay Watershed is a large ecosystem that encompasses approximately 64,000 square miles in Maryland, Delaware, Virginia, West Virginia, Pennsylvania, New York and the District of Columbia. An ecosystem is composed of interrelated parts that interact with each other to form a whole. All of the plants and animals in an ecosystem depend on each other in some way. Every living thing needs a healthy ecosystem to survive. Human activities affect the Chesapeake Bay ecosystem by adding pollution, using resources and changing the character of the land.

Most of the Chesapeake Bay and many of its tidal tributaries have been listed as impaired under Section 303(d) of the federal Water Pollution Control Act ("Clean Water Act"), 33 U.S.C. § 1313(d). While the Chesapeake Bay is outside the boundaries of Pennsylvania, more than half of the State lies within the watershed. Two major rivers in Pennsylvania are part of the Chesapeake Bay Watershed. They are (a) the Susquehanna River and (b) the Potomac River. These two rivers total 40 percent of the entire Chesapeake Bay watershed.

The overall management approach needed for reducing nitrogen, phosphorus and sediment are provided in the Bay TMDL document and the Phase I, II, and III WIPs which is described in the Bay TMDL document and Executive Order 13508.

The Bay TMDL is a comprehensive pollution reduction effort in the Chesapeake Bay watershed identifying the necessary pollution reductions of nitrogen, phosphorus and sediment across the seven Bay watershed jurisdictions of Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia and the District of Columbia to meet applicable water quality standards in the Bay and its tidal waters.

The Watershed Implementation Plans (WIPs) provides objectives for how the jurisdictions in partnership with federal and local governments will achieve the Bay TMDL's nutrient and sediment allocations.

Phase 3 WIP provides an update on Chesapeake Bay TMDL implementation activities for point sources and DEP's current implementation strategy for wastewater. The latest revision of the supplement was December 17, 2019.

The Chesapeake Bay TMDL (Appendix Q) categorizes point sources into four sectors:

- Sector A- significant sewage dischargers;
- Sector B- significant industrial waste (IW) dischargers;
- Sector C- non-significant dischargers (both sewage and IW facilities); and
- Sector D- combined sewer overflows (CSOs).

All sectors contain a listing of individual facilities with NPDES permits that were believed to be discharging at the time the TMDL was published (2010). All sectors with the exception of the non-significant dischargers have individual wasteload allocations (WLAs) for TN and TP assigned to specific facilities. Non-significant dischargers have a bulk or aggregate allocation for TN and TP based on the facilities in that sector that were believed to be discharging at that time and their estimated nutrient loads.

Based upon the supplement the subject facility has been categorized as a Sector A discharger. The supplement defines Sector A as a sewage facility that is considered significant if it has a design flow of at least 0.4 MGD. For rollout of its permitting strategy, DEP classified these facilities into three phases. Thirty IW facilities have individual WLAs in the TMDL.

Table 5 presents all NPDES permits for Significant Sewage dischargers with Cap Loads. The NPDES Permit No., phase, facility name, latest permit issuance date, expiration date, Cap Load compliance start date, TN and TP Cap Loads, and TN and TP Delivery Ratios are presented. In addition, if TN Offsets were incorporated into the TN Cap Loads when the permit was issued, the amount is shown; these Offsets will be removed from Cap Loads upon issuance of renewed permits to implement Section IV of the WIP document (i.e., a facility may use Offsets for compliance but may not register them as credits).

The total nitrogen (TN) and total phosphorus (TP) cap loads itemized by Table 5 for the subject facility are as follows:

TN Cap Load (lbs/yr)	109,588
TN Delivery Ratio	0.88
TP Cap Load (lbs/yr)	14,612
TP Delivery Ratio	0.436

Expansions by any Significant Sewage discharger will not result in any increase in Cap Loads. Where non-significant facilities expand to a design flow of 0.4 MGD or greater, the lesser of baseline Cap Loads of 7,306 lbs/yr TN and 974 lbs/yr TP or existing performance will be used for permits, and the load will be moved from the Non-Significant sector load to the Significant Sewage sector load. If considered necessary for environmental protection, DEP may decide to move load from the Point Source Reserve to the Significant Sewage sector in the future.

The minimum monitoring frequency for TN species and TP in new or renewed NPDES permits for Significant Sewage dischargers is 2x/week.

This facility is subject to Sector A monitoring requirements. Monitoring shall be required at least 2x/week.

Reporting

Cap Loads will be established in permits as Net Annual TN and TP loads (lbs/yr) that apply during the period of October 1 – September 30.

Facilities with NPDES permits must use DEP's eDMR system for reporting, except small flow treatment facilities. An Annual DMR must be submitted by the end of the Truing Period, November 28. As attachments to the Annual DMR a facility must submit a completed Annual Chesapeake Bay Spreadsheet, available through DEP's Supplemental Reports website, which contains an Annual Nutrient Monitoring worksheet and an Annual Nutrient Budget worksheet. This Spreadsheet will be submitted once per Compliance Year only, and reflect all nutrient sample results (for the period October 1 – September 30), Credit transactions (including the Truing Period) and Offsets applied during the Compliance Year.

5.5 Anti-Degradation Requirement

Chapter 93.4a of the PA regulations requires that surface water of the Commonwealth of Pennsylvania may not be degraded below levels that protect the existing uses. The regulations specifically state that *Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected*. Antidegradation requirements are implemented through DEP's guidance manual entitled Water Quality Antidegradation Implementation Guidance (Document #391-0300-02).

The policy requires DEP to protect the existing uses of all surface waters and the existing quality of High Quality (HQ) and Exceptional Value (EV) Waters. Existing uses are protected when DEP makes a final decision on any permit or approval for an activity that may affect a protected use. Existing uses are protected based upon DEP's evaluation of the best available information (which satisfies DEP protocols and Quality Assurance/Quality Control (QA/QC) procedures) that indicates the protected use of the waterbody.

For a new, additional, or increased point source discharge to an HQ or EV water, the person proposing the discharge is required to utilize a nondischarge alternative that is cost-effective and environmentally sound when compared with the cost of the proposed discharge. If a nondischarge alternative is not cost-effective and environmentally sound, the person must use the best available combination of treatment, pollution prevention, and wastewater reuse technologies and assure that

any discharge is nondegrading. In the case of HQ waters, DEP may find that after satisfaction of intergovernmental coordination and public participation requirements lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In addition, DEP will assure that cost-effective and reasonable best management practices for nonpoint source control in HQ and EV waters are achieved.

The subject facility's discharge will be to a non-special protection waters and the permit conditions are imposed to protect existing instream water quality and uses. Neither HQ waters or EV waters is impacted by this discharge.

5.6 Anti-Backsliding

Anti-backsliding is a federal regulation which prohibits a permit from being renewed, reissued, or modified containing effluent limitations which are less stringent than the comparable effluent limitations in the previous permit (40 CFR 122.l.1 and 40 CFR 122.l.2). A review of the existing permit limitations with the proposed permit limitations confirm that the facility is consistent with anti-backsliding requirements. The facility has proposed effluent limitations that are as stringent as the existing permit.

6.0 NPDES Parameter Details

The basis for the proposed sampling and their monitoring frequency that will appear in the permit for each individual parameter are itemized in this Section. The final limits are the more stringent of technology based effluent treatment (TBEL) requirements, water quality based (WQBEL) limits, TMDL, antidegradation, anti-degradation, or WET.

The reader will find in this section:

a) a justification of recommended permit monitoring requirements and limitations for each parameter in the proposed NPDES permit;
b) a summary of changes from the existing NPDES permit to the proposed permit; and
c) a summary of the proposed NPDES effluent limits.

6.1 Recommended Monitoring Requirements and Effluent Limitations

A summary of the recommended monitoring requirements and effluent limitations are itemized in the tables. The tables are categorized by (a) Conventional Pollutants and Disinfection, (b) Nitrogen Species and Phosphorus, and (c) Toxics.

6.1.1 Conventional Pollutants and Disinfection

Summary of Proposed NPDES Parameter Details for Conventional Pollutants and Disinfection Hollidaysburg STP; PA0043273; Outfall 001			
Parameter	**Permit Limitation Required by[1]:**	**Recommendation**	
pH (S.U.)	TBEL	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits may range from pH = 6.0 to 9.0
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 95.2(1).
Dissolved Oxygen	BPJ	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits shall be greater than 5.0 mg/l.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by best professional judgement.
CBOD	WQBEL	Monitoring:	The monitoring frequency shall be 1x/day as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	During the months of Nov 1 to Apr 30, effluent limits shall not exceed 1,250 lbs/day and 25 mg/l as an average monthly.During the months of May 1 to Oct 31, effluent limits shall not exceed 750 lbs/day and 15 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(1). WQM modeling indicates that the WQBEL is more stringent than the TBEL. Thus, the permit limit is confined to WQBEL.
TSS	TBEL	Monitoring:	The monitoring frequency shall be 1x/day as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 1,500 lbs/day and 30 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(1). While there is no WQM modeling for this parameter, the permit limit for TSS is generally assigned similar effluent limits as CBOD or BOD. Secondary effluent limits have been applied for TSS effluent limits.
UV disinfection	SOP	Monitoring:	The monitoring frequency is 1/day. The facility will be required to recording the UV intensity.
		Effluent Limit:	No effluent requirements.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised January 10, 2019), the facility will be required to have routine monitoring for UV transmittance, UV dosage, or UV intensity.
Fecal Coliform	TBEL	Monitoring:	The monitoring frequency shall be 1x/day as a grab sample (Table 6-3).
		Effluent Limit:	Summer effluent limits shall not exceed 200 No./100 mL as a geometric mean. Winter effluent limits shall not exceed 2000 No./100 mL as a geometric mean.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(4) and 92a.47(a)(5).
E. Coli	SOP; Chapter 92a.61	Monitoring:	The monitoring frequency shall be 1x/month as a grab sample (SOP).
		Effluent Limit:	No effluent requirements.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised March 22, 2019) and under the authority of Chapter 92a.61, the facility will be required to monitor for E.Coli.
Notes:			
1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other			
2 Monitoring frequency based on flow rate of 6.0 MGD.			
3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97			
4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)			
5 Phase 2 Watershed Implementation Plan Wastewater Supplement, Revised September 6, 2017			

6.1.2 Nitrogen Species and Phosphorus

Summary of Proposed NPDES Parameter Details for Nitrogen Species and Phosphorus

Hollidaysburg STP; PA0043273; Outfall 001

Parameter	Permit Limitation Required by[1]:	Recommendation	
Ammonia-Nitrogen	WQBEL	Monitoring:	The monitoring frequency shall be 1x/day as a 24-hr composite sample
		Effluent Limit:	Water quality modeling recommends an ammonia nitrogen limit of 3.44 mg/l. DMRs from November 2020 to October 2021 show that that the facility had ammonia nitrogen limit not exceeding 1.47 mg/l as an average monthly. This concentration is fractionally lower than the current permit limit of 3.5 mg/l. The current permit shall continue to the proposed permit. During the months of May 1 to Oct 31, effluent limits shall not exceed 175 lbs/day and 3.5 mg/l as an average monthly. During the months of Nov 1 to Apr 30, effluent limits shall not exceed 525 lbs/day and 10.5 mg/l as an average monthly
		Rationale:	Water quality modeling recommends water quality based effluent limits.
Nitrate-Nitrite as N	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 2x/wk as a 24-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 2x/wk.
Total Nitrogen	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/mo as a calculation
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/mo.
TKN	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 2x/wk as a 24-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 2x/wk.
Total Phosphorus	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 2x/wk as a 24-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 2x/yr.
Net Total Nitrogen	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/yr as a calculation
		Effluent Limit:	The cap load Is 109,588 lbs/yr.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/yr.
Net Total Phosphorus	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/yr as a calculation
		Effluent Limit:	The cap load Is 14,612 lbs/yr.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/yr.

Notes:

1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other

2 Monitoring frequency based on flow rate of 6.0 MGD.

3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97

4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)

5 Phase 2 Watershed Implementation Plan Wastewater Supplement, Revised September 6, 2017

6.1.3 Toxics

Summary of Proposed NPDES Parameter Details for Toxics

Hollidaysburg STP; PA0043273; Outfall 001

Parameter	Permit Limitation Required by[1]:	Recommendation	
Total Copper	Anti-backsliding	Monitoring:	The monitoring frequency shall be 1x/mo.
		Effluent Limit:	Effluent limits shall not exceed 2.7 lbs/day and 0.055 mg/l as an average monthly.
		Rationale:	While TMS modeling recommends monitoring only, antibacksliding regulations will require that the curent permit limit continue to the proposed permit.
Total Zinc	WQBEL	Monitoring:	The monitoring frequency shall be 1x/mo.
		Effluent Limit:	No effluent requirements.
		Rationale:	Daa submitted with the NPDES application had 3 samples that were non-detect. The maximum sample result was 48.8 ug/l. TMS recommends monitoring.

Notes:

1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other

2 Monitoring frequency based on flow rate of 6.0 MGD.

3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97

4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)

5 Phase 2 Watershed Implementation Plan Wastewater Supplement, Revised September 6, 2017

6.2 Summary of Changes From Existing Permit to Proposed Permit

A summary of how the proposed NPDES permit differs from the existing NPDES permit is summarized as follows.

Changes in Permit Monitoring or Effluent Quality

Parameter	Existing Permit	Draft Permit
E. Coli	There are no monitoring or effluent requirements.	Consistent with EPA Triennial, this parameter shall be monitored 1x/month.
Total Zinc	No monitoring or effluent requirements	Monitoring shall be required 1x/month as a 24 hr composite.
TDS	Monitoring is required 1x/month	Due to directives from EPA and DEP Central Office, monitoring for this parameter is no longer required.
Sulfate	Monitoring is required 1x/month	Due to directives from EPA and DEP Central Office, monitoring for this parameter is no longer required.
Chloride	Monitoring is required 1x/month	Due to directives from EPA and DEP Central Office, monitoring for this parameter is no longer required.
Bromide	Monitoring is required 1x/month	Due to directives from EPA and DEP Central Office, monitoring for this parameter is no longer required.

6.3.1 Summary of Proposed NPDES Effluent Limits

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

The proposed NPDES effluent limitations are summarized in the table below.

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 001 , **Latitude** 40° 25' 47.62" , **Longitude** 78° 21' 41.28" , **River Mile Index** 32.9 , **Stream Code** 16061

Receiving Waters: Frankstown Branch Juniata River (WWF)

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **Permit Effective Date** through **Permit Expiration Date**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	1250	2000	XXX	25	40	50	1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	750	1125	XXX	15.0	22.5	30	1/day	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/day	24-Hr Composite
Total Suspended Solids	1500	2250	XXX	30	45	60	1/day	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/day	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/day	Grab

Outfall001 , Continued (from Permit Effective Datethrough Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2]	Required
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum	Measurement Frequency	Sample Type
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/day	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/month	Grab
Ultraviolet light intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Ammonia-Nitrogen Nov 1 - Apr 30	525	XXX	XXX	10.5	XXX	21	1/day	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	175	XXX	XXX	3.5	XXX	7	1/day	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Copper, Total	2.7	XXX	XXX	0.055	XXX	XXX	1/month	24-Hr Composite
Zinc, Total	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

6.3.2 Summary of Proposed Permit Part C Conditions

The subject facility has the following Part C conditions.

- CSO Condition
- Pre-treatment Program Implementation
- SBR Batch Discharge Condition
- Peak Flow Management Plan
- Hauled-in Waste Restrictions
- Chesapeake Bay Nutrient Definitions
- Solids Management for Non-Lagoon Treatment Systems
- Whole Effluent Toxicity – No Permit Limits
- Stormwater Requirements

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: New and Reissuance Sewage Individual NPDES Permit Applications; revised October 11, 2013
☐	Other:

Attachment A

Stream Stats/Gauge Data

StreamStats Report

Region ID: PA
Workspace ID: PA20210813185015738000
Clicked Point (Latitude, Longitude): 40.43032, -78.36054
Time: 2021-08-13 14:50:35 -0400

Hollidaysburg STP PA0043273 Modeling Point #1 August 2021

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	116	square miles
PRECIP	Mean Annual Precipitation	38	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	2.3	miles per square mile
ROCKDEP	Depth to rock	4.6	feet
CARBON	Percentage of area of carbonate rock	24.24	percent

Low-Flow Statistics Parameters [100.0 Percent (116 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	116	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	38	inches	35	50.4
STRDEN	Stream Density	2.3	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.6	feet	3.32	5.65
CARBON	Percent Carbonate	24.24	percent	0	99

Low-Flow Statistics Flow Report [100.0 Percent (116 square miles) Low Flow Region 2]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	12.8	ft^3/s	38	38
30 Day 2 Year Low Flow	16.3	ft^3/s	33	33
7 Day 10 Year Low Flow	7.21	ft^3/s	51	51
30 Day 10 Year Low Flow	9.15	ft^3/s	46	46
90 Day 10 Year Low Flow	12.6	ft^3/s	36	36

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

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Application Version: 4.6.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

StreamStats Report

Region ID: PA
Workspace ID: PA20210813185307180000
Clicked Point (Latitude, Longitude): 40.44055, -78.32975
Time: 2021-08-13 14:53:27 -0400

Hollidaysburg STP PA0043273 Modeling Point #2 August 2021

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	221	square miles
PRECIP	Mean Annual Precipitation	40	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	2.09	miles per square mile
ROCKDEP	Depth to rock	4.6	feet
CARBON	Percentage of area of carbonate rock	17.18	percent

Low-Flow Statistics Parameters [100.0 Percent (221 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	221	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	40	inches	35	50.4
STRDEN	Stream Density	2.09	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.6	feet	3.32	5.65
CARBON	Percent Carbonate	17.18	percent	0	99

Low-Flow Statistics Flow Report [100.0 Percent (221 square miles) Low Flow Region 2]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	31.8	ft^3/s	38	38
30 Day 2 Year Low Flow	39.8	ft^3/s	33	33
7 Day 10 Year Low Flow	18.6	ft^3/s	51	51
30 Day 10 Year Low Flow	23.2	ft^3/s	46	46
90 Day 10 Year Low Flow	31.4	ft^3/s	36	36

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

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USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.6.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

StreamStats Report

Region ID: PA
Workspace ID: PA20210823171724140000
Clicked Point (Latitude, Longitude): 40.43504, -78.30982
Time: 2021-08-23 13:17:44 -0400

Hollidaysburg STP PA0043273 Modeling Point #3 August 2021

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	222	square miles
PRECIP	Mean Annual Precipitation	40	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	2.1	miles per square mile
ROCKDEP	Depth to rock	4.6	feet
CARBON	Percentage of area of carbonate rock	17.55	percent

Low-Flow Statistics Parameters [100.0 Percent (222 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	222	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	40	inches	35	50.4
STRDEN	Stream Density	2.1	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.6	feet	3.32	5.65
CARBON	Percent Carbonate	17.55	percent	0	99

Low-Flow Statistics Flow Report [100.0 Percent (222 square miles) Low Flow Region 2]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	31.9	ft^3/s	38	38
30 Day 2 Year Low Flow	40	ft^3/s	33	33
7 Day 10 Year Low Flow	18.7	ft^3/s	51	51
30 Day 10 Year Low Flow	23.3	ft^3/s	46	46
90 Day 10 Year Low Flow	31.5	ft^3/s	36	36

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

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Application Version: 4.6.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

Table 1. List of U.S. Geological Survey streamgage locations in and near Pennsylvania with updated streamflow statistics.—Continued

[Latitude and Longitude in decimal degrees; mi², square miles]

Streamgage number	Streamgage name	Latitude	Longitude	Drainage area (mi²)	Regulated[1]
01541303	West Branch Susquehanna River at Hyde, Pa.	41.005	-78.457	474	Y
01541308	Bradley Run near Ashville, Pa.	40.509	-78.584	6.77	N
01541500	Clearfield Creek at Dimeling, Pa.	40.972	-78.406	371	Y
01542000	Moshannon Creek at Osceola Mills, Pa.	40.850	-78.268	68.8	N
01542500	WB Susquehanna River at Karthaus, Pa.	41.118	-78.109	1,462	Y
01542810	Waldy Run near Emporium, Pa.	41.579	-78.293	5.24	N
01543000	Driftwood Branch Sinnemahoning Creek at Sterling Run, Pa.	41.413	-78.197	272	N
01543500	Sinnemahoning Creek at Sinnemahoning, Pa.	41.317	-78.103	685	N
01544000	First Fork Sinnemahoning Creek near Sinnemahoning, Pa.	41.402	-78.024	245	Y
01544500	Kettle Creek at Cross Fork, Pa.	41.476	-77.826	136	N
01545000	Kettle Creek near Westport, Pa.	41.320	-77.874	233	Y
01545500	West Branch Susquehanna River at Renovo, Pa.	41.325	-77.751	2,975	Y
01545600	Young Womans Creek near Renovo, Pa.	41.390	-77.691	46.2	N
01546000	North Bald Eagle Creek at Milesburg, Pa.	40.942	-77.794	119	N
01546400	Spring Creek at Houserville, Pa.	40.834	-77.828	58.5	N
01546500	Spring Creek near Axemann, Pa.	40.890	-77.794	87.2	N
01547100	Spring Creek at Milesburg, Pa.	40.932	-77.786	142	N
01547200	Bald Eagle Creek below Spring Creek at Milesburg, Pa.	40.943	-77.786	265	N
01547500	Bald Eagle Creek at Blanchard, Pa.	41.052	-77.604	339	Y
01547700	Marsh Creek at Blanchard, Pa.	41.060	-77.606	44.1	N
01547800	South Fork Beech Creek near Snow Shoe, Pa.	41.024	-77.904	12.2	N
01547950	Beech Creek at Monument, Pa.	41.112	-77.702	152	N
01548005	Bald Eagle Creek near Beech Creek Station, Pa.	41.081	-77.549	562	Y
01548500	Pine Creek at Cedar Run, Pa.	41.322	-77.447	604	N
01549000	Pine Creek near Waterville, Pa.	41.313	-77.379	750	N
01549500	Blockhouse Creek near English Center, Pa.	41.474	-77.231	37.7	N
01549700	Pine Creek below Little Pine Creek near Waterville, Pa.	41.274	-77.324	944	Y
01550000	Lycoming Creek near Trout Run, Pa.	41.418	-77.033	173	N
01551500	WB Susquehanna River at Williamsport, Pa.	41.236	-76.997	5,682	Y
01552000	Loyalsock Creek at Loyalsockville, Pa.	41.325	-76.912	435	N
01552500	Muncy Creek near Sonestown, Pa.	41.357	-76.535	23.8	N
01553130	Sand Spring Run near White Deer, Pa.	41.059	-77.077	4.93	N
01553500	West Branch Susquehanna River at Lewisburg, Pa.	40.968	-76.876	6,847	Y
01553700	Chillisquaque Creek at Washingtonville, Pa.	41.062	-76.680	51.3	N
01554000	Susquehanna River at Sunbury, Pa.	40.835	-76.827	18,300	Y
01554500	Shamokin Creek near Shamokin, Pa.	40.810	-76.584	54.2	N
01555000	Penns Creek at Penns Creek, Pa.	40.867	-77.048	301	N
01555500	East Mahantango Creek near Dalmatia, Pa.	40.611	-76.912	162	N
01556000	Frankstown Branch Juniata River at Williamsburg, Pa.	40.463	-78.200	291	N
01557500	Bald Eagle Creek at Tyrone, Pa.	40.684	-78.234	44.1	N
01558000	Little Juniata River at Spruce Creek, Pa.	40.613	-78.141	220	N
01559000	Juniata River at Huntingdon, Pa.	40.485	-78.019	816	LF
01559500	Standing Stone Creek near Huntingdon, Pa.	40.524	-77.971	128	N
01559700	Sulphur Springs Creek near Manns Choice, Pa.	39.978	-78.619	5.28	N
01560000	Dunning Creek at Belden, Pa.	40.072	-78.493	172	N

Table 2. Selected low-flow statistics for streamgage locations in and near Pennsylvania.—Continued

[ft³/s, cubic feet per second; —, statistic not computed; <, less than]

Streamgage number	Period of record used in analysis[1]	Number of years used in analysis	1-day, 10-year (ft³/s)	7-day, 10-year (ft³/s)	7-day, 2-year (ft³/s)	30-day, 10-year (ft³/s)	30-day, 2-year (ft³/s)	90-day, 10-year (ft³/s)
01546000	1912–1934	17	1.8	2.2	6.8	3.7	12.1	11.2
01546400	1986–2008	23	13.5	14.0	19.6	15.4	22.3	18.7
01546500	1942–2008	67	26.8	29.0	41.3	31.2	44.2	33.7
01547100	1969–2008	40	102	105	128	111	133	117
01547200	1957–2008	52	99.4	101	132	106	142	115
01547500	[2]1971–2008	38	28.2	109	151	131	172	153
01547500	[3]1956–1969	14	90.0	94.9	123	98.1	131	105
01547700	1957–2008	52	.5	.6	2.7	1.1	3.9	2.2
01547800	1971–1981	11	1.6	1.8	2.4	2.1	2.9	3.5
01547950	1970–2008	39	12.1	13.6	28.2	17.3	36.4	23.8
01548005	[2]1971–2000	25	142	151	206	178	241	223
01548005	[3]1912–1969	58	105	114	147	125	165	140
01548500	1920–2008	89	21.2	24.2	50.1	33.6	68.6	49.3
01549000	1910–1920	11	26.0	32.9	78.0	46.4	106	89.8
01549500	1942–2008	67	.6	.8	2.5	1.4	3.9	2.6
01549700	1959–2008	50	33.3	37.2	83.8	51.2	117	78.4
01550000	1915–2008	94	6.6	7.6	16.8	11.2	24.6	18.6
01551500	[2]1963–2008	46	520	578	1,020	678	1,330	919
01551500	[3]1901–1961	61	400	439	742	523	943	752
01552000	1927–2008	80	20.5	22.2	49.5	29.2	69.8	49.6
01552500	1942–2008	67	.9	1.2	3.1	1.7	4.4	3.3
01553130	1969–1981	13	1.0	1.1	1.5	1.3	1.8	1.7
01553500	[2]1968–2008	41	760	838	1,440	1,000	1,850	1,470
01553500	[3]1941–1966	26	562	619	880	690	1,090	881
01553700	1981–2008	28	9.1	10.9	15.0	12.6	17.1	15.2
01554000	[2]1981–2008	28	1,830	1,990	3,270	2,320	4,210	3,160
01554000	[3]1939–1979	41	1,560	1,630	2,870	1,880	3,620	2,570
01554500	1941–1993	53	16.2	22.0	31.2	25.9	35.7	31.4
01555000	1931–2008	78	33.5	37.6	58.8	43.4	69.6	54.6
01555500	1931–2008	78	4.9	6.5	18.0	9.4	24.3	16.6
01556000	1918–2008	91	43.3	47.8	66.0	55.1	75.0	63.7
01557500	1946–2008	63	2.8	3.2	6.3	4.2	8.1	5.8
01558000	1940–2008	69	56.3	59.0	79.8	65.7	86.2	73.7
01559000	1943–2008	66	104	177	249	198	279	227
01559500	1931–1958	28	9.3	10.5	15.0	12.4	17.8	15.8
01559700	1963–1978	16	.1	.1	.2	.1	.3	.2
01560000	1941–2008	68	8.5	9.4	15.6	12.0	20.2	16.2
01561000	1932–1958	27	.4	.5	1.6	.8	2.5	1.7
01562000	1913–2008	96	64.1	67.1	106	77.4	122	94.5
01562500	1931–1957	27	1.1	1.6	3.8	2.3	5.4	3.7
01563200	[2]1974–2008	35	—	—	—	112	266	129
01563200	[3]1948–1972	25	10.3	28.2	86.1	64.5	113	95.5
01563500	[2]1974–2008	35	384	415	519	441	580	493
01563500	[3]1939–1972	34	153	242	343	278	399	333
01564500	1940–2008	69	3.6	4.2	10.0	6.2	14.4	10.6

Attachment B

WQM 7.0 Modeling Output Values
Toxics Management Spreadsheet Output Values

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
11A	16061	FRANKSTOWN BRANCH JUNIATA RIVER

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
32.900	Hollda. WWTP	6.12	17.56	6.12	17.56	0	0
30.310		NA	NA	5.6	NA	NA	NA

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
32.900	Hollda. WWTP	1.02	3.44	1.02	3.44	0	0
30.310		NA	NA	.97	NA	NA	NA

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
32.90	Hollda. WWTP	18.42	18.42	3.44	3.44	5	5	0	0
30.31		NA	NA	NA	NA	NA	NA	NA	NA

Input Data WQM 7.0

	SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
	11A	16061	FRANKSTOWN BRANCH JUNIATA R	**32.900**	923.00	116.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.164	0.00	0.00	0.000	0.000	0.0	0.00	0.00	22.00	7.84	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Hollida. WWTP	PA0043273	6.0000	6.0000	6.0000	0.000	25.00	7.35

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
11A	16061	FRANKSTOWN BRANCH JUNIATA R	30.310	905.00	221.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.164	0.00	0.00	0.000	0.000	0.0	0.00	0.00	22.00	7.84	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
11A	16061	FRANKSTOWN BRANCH JUNIATA R	28.940	894.00	222.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.164	0.00	0.00	0.000	0.000	0.0	0.00	0.00	22.00	7.84	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
11A	16061	FRANKSTOWN BRANCH JUNIATA RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
32.900	6.000	22.983	7.614
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
75.600	0.872	86.717	0.430
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
7.38	0.862	1.13	0.881
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.161	2.834	Tsivoglou	5
Reach Travel Time (days)			
0.368			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.037	7.11	1.09	6.80
0.074	6.86	1.05	6.47
0.110	6.62	1.02	6.19
0.147	6.38	0.99	5.96
0.184	6.15	0.96	5.77
0.221	5.93	0.93	5.61
0.258	5.72	0.90	5.49
0.294	5.52	0.87	5.39
0.331	5.32	0.84	5.31
0.368	5.13	0.81	5.26

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
30.310	6.000	22.611	7.686
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
98.684	0.937	105.275	0.493
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
3.94	0.630	0.51	0.856
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.388	3.719	Tsivoglou	5
Reach Travel Time (days)			
0.170			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.017	3.90	0.50	6.43
0.034	3.85	0.49	6.47
0.051	3.80	0.48	6.51
0.068	3.76	0.48	6.55
0.085	3.71	0.47	6.59
0.102	3.67	0.46	6.62
0.119	3.63	0.46	6.66
0.136	3.58	0.45	6.69
0.153	3.54	0.44	6.73
0.170	3.50	0.44	6.76

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
11A	16061	FRANKSTOWN BRANCH JUNIATA RIVER

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Eff. Limit 30-day Ave. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
32.900	Hollda. WWTP	PA0043273	6.000	CBOD5	16.42		
				NH3-N	3.44	6.88	
				Dissolved Oxygen			5

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
11A	16061	FRANKSTOWN BRANCH JUNIATA RIVER

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
32.900	19.06	0.00	19.06	9.282	0.00132	.872	75.6	86.72	0.43	0.368	22.98	7.61
30.310	36.31	0.00	36.31	9.282	0.00152	.937	98.68	105.27	0.49	0.170	22.61	7.69
Q1-10 Flow												
32.900	17.34	0.00	17.34	9.282	0.00132	NA	NA	NA	0.42	0.381	23.05	7.60
30.310	33.04	0.00	33.04	9.282	0.00152	NA	NA	NA	0.47	0.177	22.66	7.68
Q30-10 Flow												
32.900	21.92	0.00	21.92	9.282	0.00132	NA	NA	NA	0.45	0.349	22.89	7.63
30.310	41.76	0.00	41.76	9.282	0.00152	NA	NA	NA	0.53	0.159	22.55	7.70

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☐
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.91	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.15	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
11A	18061	FRANKSTOWN BRANCH JUNIATA RIVER

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
32.900	Hollda. WWTP	6.12	17.56	6.12	17.56	0	0
30.310		NA	NA	5.6	NA	NA	NA

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
32.900	Hollda. WWTP	1.02	3.44	1.02	3.44	0	0
30.310		NA	NA	.97	NA	NA	NA

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
32.90	Hollda. WWTP	18.42	18.42	3.44	3.44	5	5	0	0
30.31		NA	NA	NA	NA	NA	NA	NA	NA

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Toxics Management Spreadsheet
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Discharge Information

Instructions | Discharge | Stream

Facility: **Hollidaysburg Sewage Treatment Plant** NPDES Permit No.: **PA0043273** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Sewage Effluent**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
6	200	7.35						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		678									
	Chloride (PWS)	mg/L		240									
	Bromide	mg/L		0.46									
	Sulfate (PWS)	mg/L		64									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L	<	8.7									
	Total Antimony	µg/L		0.5									
	Total Arsenic	µg/L	<	0.54									
	Total Barium	µg/L		75.7									
	Total Beryllium	µg/L	<	0.14									
	Total Boron	µg/L		165									
	Total Cadmium	µg/L	<	0.03									
	Total Chromium (III)	µg/L	<	1.99									
	Hexavalent Chromium	µg/L	<	0.25									
	Total Cobalt	µg/L		0.44									
	Total Copper	µg/L		3.24									
	Free Cyanide	µg/L	<	7									
	Total Cyanide	µg/L	<	7									
	Dissolved Iron	µg/L	<	30									
	Total Iron	µg/L		53									
	Total Lead	µg/L		0.46									
	Total Manganese	µg/L		56.7									
	Total Mercury	µg/L	<	0.1									
	Total Nickel	µg/L		3.05									
	Total Phenols (Phenolics) (PWS)	µg/L	<	0.25									
	Total Selenium	µg/L	<	1.67									
	Total Silver	µg/L	<	0.27									
	Total Thallium	µg/L	<	0.01									
	Total Zinc	µg/L		48.8									
	Total Molybdenum	µg/L		1.39									
	Acrolein	µg/L	<	1.95									
	Acrylamide	µg/L											
	Acrylonitrile	µg/L	<	0.51									
	Benzene	µg/L	<	0.43									
	Bromoform	µg/L	<	0.34									

Group 3	Carbon Tetrachloride	µg/L	<	0.51									
	Chlorobenzene	µg/L	<	0.21									
	Chlorodibromomethane	µg/L	<	0.32									
	Chloroethane	µg/L	<	0.42									
	2-Chloroethyl Vinyl Ether	µg/L	<	4									
	Chloroform	µg/L	<	1.37									
	Dichlorobromomethane	µg/L	<	0.39									
	1,1-Dichloroethane	µg/L	<	0.42									
	1,2-Dichloroethane	µg/L	<	0.39									
	1,1-Dichloroethylene	µg/L	<	0.33									
	1,2-Dichloropropane	µg/L	<	0.42									
	1,3-Dichloropropylene	µg/L	<	0.26									
	1,4-Dioxane	µg/L	<	0.33									
	Ethylbenzene	µg/L	<	0.27									
	Methyl Bromide	µg/L	<	0.46									
	Methyl Chloride	µg/L	<	0.36									
	Methylene Chloride	µg/L	<	0.45									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.36									
	Tetrachloroethylene	µg/L	<	0.39									
	Toluene	µg/L	<	0.33									
	1,2-trans-Dichloroethylene	µg/L	<	0.39									
	1,1,1-Trichloroethane	µg/L	<	0.38									
	1,1,2-Trichloroethane	µg/L	<	0.24									
	Trichloroethylene	µg/L	<	0.46									
	Vinyl Chloride	µg/L	<	0.46									
Group 4	2-Chlorophenol	µg/L	<	0.13									
	2,4-Dichlorophenol	µg/L	<	0.25									
	2,4-Dimethylphenol	µg/L	<	0.26									
	4,6-Dinitro-o-Cresol	µg/L	<	0.9									
	2,4-Dinitrophenol	µg/L	<	0.86									
	2-Nitrophenol	µg/L	<	0.25									
	4-Nitrophenol	µg/L	<	0.19									
	p-Chloro-m-Cresol	µg/L	<	0.4									
	Pentachlorophenol	µg/L	<	0.97									
	Phenol	µg/L	<	0.25									
	2,4,6-Trichlorophenol	µg/L	<	0.24									
Group 5	Acenaphthene	µg/L	<	0.26									
	Acenaphthylene	µg/L	<	0.22									
	Anthracene	µg/L	<	0.13									
	Benzidine	µg/L	<	0.35									
	Benzo(a)Anthracene	µg/L	<	0.21									
	Benzo(a)Pyrene	µg/L	<	0.29									
	3,4-Benzofluoranthene	µg/L	<	0.31									
	Benzo(ghi)Perylene	µg/L	<	0.32									
	Benzo(k)Fluoranthene	µg/L	<	0.4									
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.15									
	Bis(2-Chloroethyl)Ether	µg/L	<	0.25									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.34									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	6.84									
	4-Bromophenyl Phenyl Ether	µg/L	<	0.19									
	Butyl Benzyl Phthalate	µg/L	<	0.38									
	2-Chloronaphthalene	µg/L	<	0.28									
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.29									
	Chrysene	µg/L	<	0.45									
	Dibenzo(a,h)Anthrancene	µg/L	<	0.28									
	1,2-Dichlorobenzene	µg/L	<	0.32									
	1,3-Dichlorobenzene	µg/L	<	0.17									
	1,4-Dichlorobenzene	µg/L	<	0.15									
	3,3-Dichlorobenzidine	µg/L	<	0.13									
	Diethyl Phthalate	µg/L	<	0.27									
	Dimethyl Phthalate	µg/L	<	0.23									
	Di-n-Butyl Phthalate	µg/L	<	0.29									
	2,4-Dinitrotoluene	µg/L	<	0.77									

	2,6-Dinitrotoluene	µg/L	<	0.39										
	Di-n-Octyl Phthalate	µg/L	<	0.28										
	1,2-Diphenylhydrazine	µg/L	<	0.2										
	Fluoranthene	µg/L	<	0.35										
	Fluorene	µg/L	<	0.25										
	Hexachlorobenzene	µg/L	<	0.25										
	Hexachlorobutadiene	µg/L	<	0.27										
	Hexachlorocyclopentadiene	µg/L	<	0.22										
	Hexachloroethane	µg/L	<	0.26										
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.25										
	Isophorone	µg/L	<	0.23										
	Naphthalene	µg/L	<	0.25										
	Nitrobenzene	µg/L	<	0.26										
	n-Nitrosodimethylamine	µg/L	<	0.4										
	n-Nitrosodi-n-Propylamine	µg/L	<	0.31										
	n-Nitrosodiphenylamine	µg/L	<	0.27										
	Phenanthrene	µg/L	<	0.21										
	Pyrene	µg/L	<	0.16										
	1,2,4-Trichlorobenzene	µg/L	<	0.17										
Group 6	Aldrin	µg/L	<	0.0035										
	alpha-BHC	µg/L	<	0.0061										
	beta-BHC	µg/L	<	0.0113										
	gamma-BHC	µg/L	<	0.0027										
	delta BHC	µg/L	<	0.00605										
	Chlordane	µg/L	<	0.125										
	4,4-DDT	µg/L	<	0.0033										
	4,4-DDE	µg/L	<	0.0049										
	4,4-DDD	µg/L	<	0.0033										
	Dieldrin	µg/L	<	0.0036										
	alpha-Endosulfan	µg/L	<	0.0168										
	beta-Endosulfan	µg/L	<	0.0017										
	Endosulfan Sulfate	µg/L	<	0.0037										
	Endrin	µg/L	<	0.0062										
	Endrin Aldehyde	µg/L	<	0.013										
	Heptachlor	µg/L	<	0.0056										
	Heptachlor Epoxide	µg/L	<	0.00265										
	PCB-1016	µg/L												
	PCB-1221	µg/L												
	PCB-1232	µg/L												
	PCB-1242	µg/L												
	PCB-1248	µg/L												
	PCB-1254	µg/L												
	PCB-1260	µg/L												
	PCBs, Total	µg/L												
	Toxaphene	µg/L	<	0.208										
	2,3,7,8-TCDD	ng/L												
Group 7	Gross Alpha	pCi/L												
	Total Beta	pCi/L												
	Radium 226/228	pCi/L												
	Total Strontium	µg/L												
	Total Uranium	µg/L												
	Osmotic Pressure	mOs/kg												

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Toxics Management Spreadsheet
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Stream / Surface Water Information

Hollidaysburg Sewage Treatment Plant, NPDES Permit No. PA0043273, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Frankstown Branch Juniata River**

No. Reaches to Model: 1

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	016061	32.9	923	116			Yes
End of Reach 1	016061	28.94	894	222			Yes

$Q_{7\text{-}10}$

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	32.9	0.1643										116	7.84		
End of Reach 1	28.94	0.1643										116	7.84		

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	32.9														
End of Reach 1	28.94														

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	Report	Report	Report	Report	Report	µg/L	24.9	AFC	Discharge Conc > 10% WQBEL (no RP)
Free Cyanide	0.61	0.95	12.2	19.1	30.5	µg/L	12.2	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	203	AFC	Discharge Conc > 10% WQBEL (no RP)
Bis(2-Ethylhexyl)Phthalate	0.18	0.29	3.69	5.75	9.22	µg/L	3.69	CRL	Discharge Conc ≥ 50% WQBEL (RP)

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Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Hollidaysburg Sewage Treatment Plant** NPDES Permit No.: **PA0043273** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Sewage Effluent**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
6	200	7.35						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		678									
	Chloride (PWS)	mg/L		240									
	Bromide	mg/L		0.46									
	Sulfate (PWS)	mg/L		64									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L	<	8.7									
	Total Antimony	µg/L		0.5									
	Total Arsenic	µg/L	<	0.54									
	Total Barium	µg/L		75.7									
	Total Beryllium	µg/L	<	0.14									
	Total Boron	µg/L		165									
	Total Cadmium	µg/L	<	0.03									
	Total Chromium (III)	µg/L	<	1.99									
	Hexavalent Chromium	µg/L	<	0.25									
	Total Cobalt	µg/L		0.44									
	Total Copper	µg/L		3.24									
	Free Cyanide	µg/L	<	0.5									
	Total Cyanide	µg/L	<	7									
	Dissolved Iron	µg/L	<	30									
	Total Iron	µg/L		53									
	Total Lead	µg/L		0.46									
	Total Manganese	µg/L		56.7									
	Total Mercury	µg/L	<	0.1									
	Total Nickel	µg/L		3.05									
	Total Phenols (Phenolics) (PWS)	µg/L	<	0.25									
	Total Selenium	µg/L	<	1.67									
	Total Silver	µg/L	<	0.27									
	Total Thallium	µg/L	<	0.01									
	Total Zinc	µg/L		48.8									
	Total Molybdenum	µg/L		1.39									
	Acrolein	µg/L	<	1.95									
	Acrylamide	µg/L											
	Acrylonitrile	µg/L	<	0.51									
	Benzene	µg/L	<	0.43									
	Bromoform	µg/L	<	0.34									

Group 3	Carbon Tetrachloride	µg/L	<	0.51										
	Chlorobenzene	µg/L	<	0.21										
	Chlorodibromomethane	µg/L	<	0.32										
	Chloroethane	µg/L	<	0.42										
	2-Chloroethyl Vinyl Ether	µg/L	<	4										
	Chloroform	µg/L	<	1.37										
	Dichlorobromomethane	µg/L	<	0.39										
	1,1-Dichloroethane	µg/L	<	0.42										
	1,2-Dichloroethane	µg/L	<	0.39										
	1,1-Dichloroethylene	µg/L	<	0.33										
	1,2-Dichloropropane	µg/L	<	0.42										
	1,3-Dichloropropylene	µg/L	<	0.26										
	1,4-Dioxane	µg/L	<	0.33										
	Ethylbenzene	µg/L	<	0.27										
	Methyl Bromide	µg/L	<	0.46										
	Methyl Chloride	µg/L	<	0.36										
	Methylene Chloride	µg/L	<	0.45										
	1,1,2,2-Tetrachloroethane	µg/L	<	0.36										
	Tetrachloroethylene	µg/L	<	0.39										
	Toluene	µg/L	<	0.33										
	1,2-trans-Dichloroethylene	µg/L	<	0.39										
	1,1,1-Trichloroethane	µg/L	<	0.38										
	1,1,2-Trichloroethane	µg/L	<	0.24										
	Trichloroethylene	µg/L	<	0.46										
	Vinyl Chloride	µg/L	<	0.46										
Group 4	2-Chlorophenol	µg/L	<	0.13										
	2,4-Dichlorophenol	µg/L	<	0.25										
	2,4-Dimethylphenol	µg/L	<	0.26										
	4,6-Dinitro-o-Cresol	µg/L	<	0.9										
	2,4-Dinitrophenol	µg/L	<	0.86										
	2-Nitrophenol	µg/L	<	0.25										
	4-Nitrophenol	µg/L	<	0.19										
	p-Chloro-m-Cresol	µg/L	<	0.4										
	Pentachlorophenol	µg/L	<	0.97										
	Phenol	µg/L	<	0.25										
	2,4,6-Trichlorophenol	µg/L	<	0.24										
Group 5	Acenaphthene	µg/L	<	0.26										
	Acenaphthylene	µg/L	<	0.22										
	Anthracene	µg/L	<	0.13										
	Benzidine	µg/L	<	0.35										
	Benzo(a)Anthracene	µg/L	<	0.21										
	Benzo(a)Pyrene	µg/L	<	0.29										
	3,4-Benzofluoranthene	µg/L	<	0.31										
	Benzo(ghi)Perylene	µg/L	<	0.32										
	Benzo(k)Fluoranthene	µg/L	<	0.4										
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.15										
	Bis(2-Chloroethyl)Ether	µg/L	<	0.25										
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.34										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	5										
	4-Bromophenyl Phenyl Ether	µg/L	<	0.19										
	Butyl Benzyl Phthalate	µg/L	<	0.38										
	2-Chloronaphthalene	µg/L	<	0.28										
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.29										
	Chrysene	µg/L	<	0.45										
	Dibenzo(a,h)Anthrancene	µg/L	<	0.28										
	1,2-Dichlorobenzene	µg/L	<	0.32										
	1,3-Dichlorobenzene	µg/L	<	0.17										
	1,4-Dichlorobenzene	µg/L	<	0.15										
	3,3-Dichlorobenzidine	µg/L	<	0.13										
	Diethyl Phthalate	µg/L	<	0.27										
	Dimethyl Phthalate	µg/L	<	0.23										
	Di-n-Butyl Phthalate	µg/L	<	0.29										
	2,4-Dinitrotoluene	µg/L	<	0.77										

	2,6-Dinitrotoluene	µg/L	<	0.39										
	Di-n-Octyl Phthalate	µg/L	<	0.28										
	1,2-Diphenylhydrazine	µg/L	<	0.2										
	Fluoranthene	µg/L	<	0.35										
	Fluorene	µg/L	<	0.25										
	Hexachlorobenzene	µg/L	<	0.25										
	Hexachlorobutadiene	µg/L	<	0.27										
	Hexachlorocyclopentadiene	µg/L	<	0.22										
	Hexachloroethane	µg/L	<	0.26										
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.25										
	Isophorone	µg/L	<	0.23										
	Naphthalene	µg/L	<	0.25										
	Nitrobenzene	µg/L	<	0.26										
	n-Nitrosodimethylamine	µg/L	<	0.4										
	n-Nitrosodi-n-Propylamine	µg/L	<	0.31										
	n-Nitrosodiphenylamine	µg/L	<	0.27										
	Phenanthrene	µg/L	<	0.21										
	Pyrene	µg/L	<	0.16										
	1,2,4-Trichlorobenzene	µg/L	<	0.17										
Group 6	Aldrin	µg/L	<	0.0035										
	alpha-BHC	µg/L	<	0.0061										
	beta-BHC	µg/L	<	0.0113										
	gamma-BHC	µg/L	<	0.0027										
	delta BHC	µg/L	<	0.00605										
	Chlordane	µg/L	<	0.125										
	4,4-DDT	µg/L	<	0.0033										
	4,4-DDE	µg/L	<	0.0049										
	4,4-DDD	µg/L	<	0.0033										
	Dieldrin	µg/L	<	0.0036										
	alpha-Endosulfan	µg/L	<	0.0168										
	beta-Endosulfan	µg/L	<	0.0017										
	Endosulfan Sulfate	µg/L	<	0.0037										
	Endrin	µg/L	<	0.0062										
	Endrin Aldehyde	µg/L	<	0.013										
	Heptachlor	µg/L	<	0.0056										
	Heptachlor Epoxide	µg/L	<	0.00265										
	PCB-1016	µg/L												
	PCB-1221	µg/L												
	PCB-1232	µg/L												
	PCB-1242	µg/L												
	PCB-1248	µg/L												
	PCB-1254	µg/L												
	PCB-1260	µg/L												
	PCBs, Total	µg/L												
	Toxaphene	µg/L	<	0.208										
	2,3,7,8-TCDD	ng/L												
Group 7	Gross Alpha	pCi/L												
	Total Beta	pCi/L												
	Radium 226/228	pCi/L												
	Total Strontium	µg/L												
	Total Uranium	µg/L												
	Osmotic Pressure	mOs/kg												

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Hollidaysburg Sewage Treatment Plant, NPDES Permit No. PA0043273, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Frankstown Branch Juniata River**

No. Reaches to Model: 1

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	016061	32.9	923	116			Yes
End of Reach 1	016061	28.94	894	222			Yes

$Q_{7\text{-}10}$

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	32.9	0.1643										116	7.84		
End of Reach 1	28.94	0.1643										116	7.84		

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	32.9														
End of Reach 1	28.94														

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	Report	Report	Report	Report	Report	µg/L	24.9	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	203	AFC	Discharge Conc > 10% WQBEL (no RP)

WETT Results

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.33
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Hollidaysburg Borough Sewer Authority

Permit No.: PA0043273

Test Completion Date: 7/28/2014

Replicate No.	Control	TIWC
1	25	22
2	25	28
3	27	23
4	24	26
5	23	27
6	31	30
7	25	23
8	25	24
9	29	25
10	28	30
11		
12		
13		
14		
15		
Mean	26.000	25.800
Std Dev.	2.404	2.898
# Replicates	10	10

T-Test Result	5.8368
Deg. of Freedom	15
Critical T Value	0.8662
Pass or Fail	PASS

Test Completion Date: 8/4/2014

Replicate No.	Control	TIWC
1	18	30
2	23	32
3	24	18
4	33	28
5	25	17
6	25	15
7	22	32
8	28	27
9	25	3
10	23	28
11		
12		
13		
14		
15		
Mean	24.600	23.000
Std Dev.	3.921	9.440
# Replicates	10	10

T-Test Result	1.4552
Deg. of Freedom	12
Critical T Value	0.8726
Pass or Fail	PASS

Test Completion Date: 8/19/2014

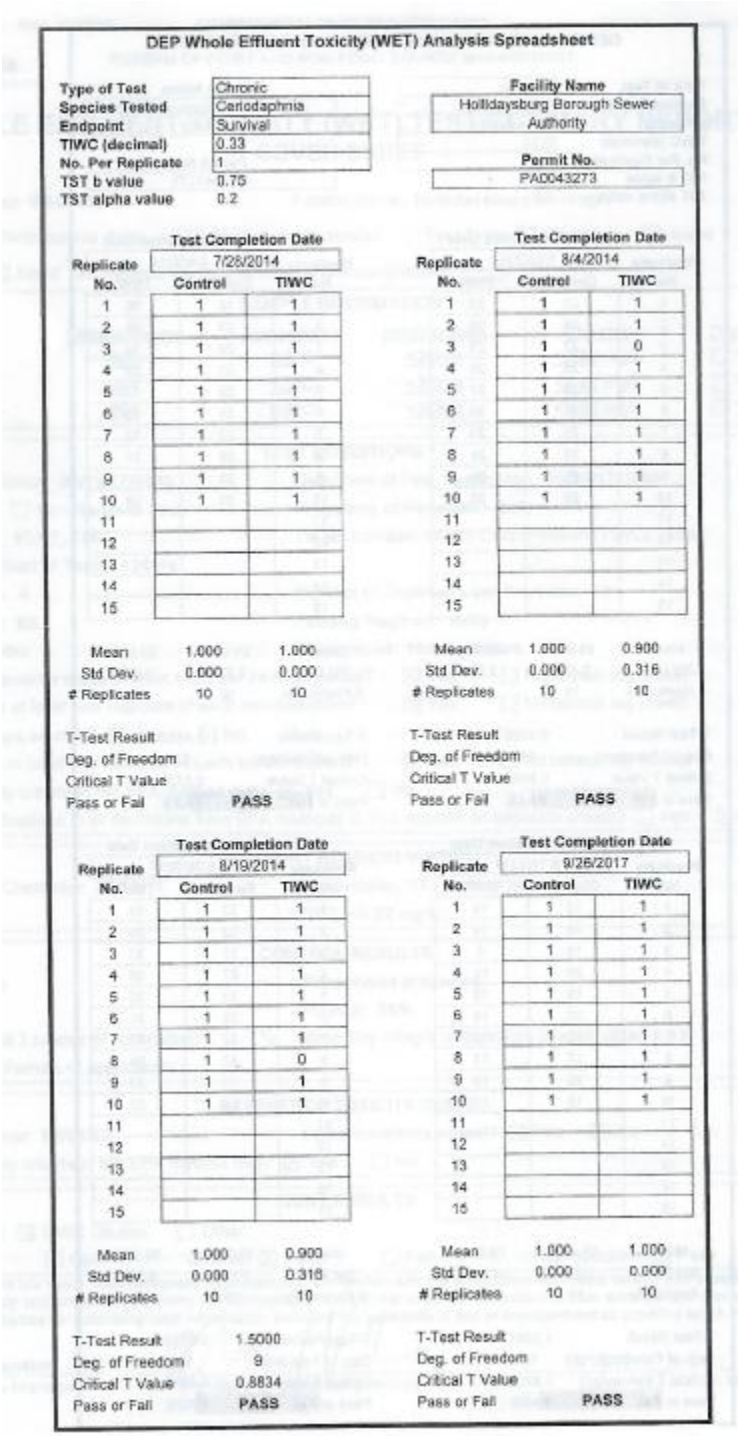
Replicate No.	Control	TIWC
1	15	18
2	14	14
3	16	5
4	20	15
5	19	16
6	20	19
7	17	22
8	17	11
9	20	19
10	16	13
11		
12		
13		
14		
15		
Mean	17.400	15.200
Std Dev.	2.221	4.849
# Replicates	10	10

T-Test Result	1.3261
Deg. of Freedom	13
Critical T Value	0.8702
Pass or Fail	PASS

Test Completion Date: 9/26/2017

Replicate No.	Control	TIWC
1	33	28
2	33	29
3	37	37
4	27	38
5	33	32
6	35	31
7	32	37
8	33	34
9	35	33
10	39	33
11		
12		
13		
14		
15		
Mean	33.700	33.200
Std Dev.	3.199	3.393
# Replicates	10	10

T-Test Result	6.0310
Deg. of Freedom	18
Critical T Value	0.8647
Pass or Fail	PASS



DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.33
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Hollidaysburg Borough Sewer Authority

Permit No.: PA0043273

Replicate No.	Test Completion Date: 7/28/2014 Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 8/4/2014 Control	TIWC
1	1	1
2	1	1
3	1	0
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	0.900
Std Dev.	0.000	0.316
# Replicates	10	10
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 8/19/2014 Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	0
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	0.900
Std Dev.	0.000	0.316
# Replicates	10	10
T-Test Result	1.5000	
Deg. of Freedom	9	
Critical T Value	0.8834	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 9/26/2017 Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.33
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Hollidaysburg Borough Sewer Authority

Permit No.: PA0043273

Test Completion Date: 7/29/2014

Replicate No.	Control	TIWC
1	0.9	1
2	0.9	1
3	1	1
4	1	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.950	1.000
Std Dev.	0.058	0.000
# Replicates	4	4

T-Test Result	23.5123
Deg. of Freedom	3
Critical T Value	0.7649
Pass or Fail	PASS

Test Completion Date: 8/5/2014

Replicate No.	Control	TIWC
1	0.9	1
2	1	1
3	1	1
4	1	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.975	1.000
Std Dev.	0.050	0.000
# Replicates	4	4

T-Test Result	26.1497
Deg. of Freedom	3
Critical T Value	0.7649
Pass or Fail	PASS

Test Completion Date: 8/19/2014

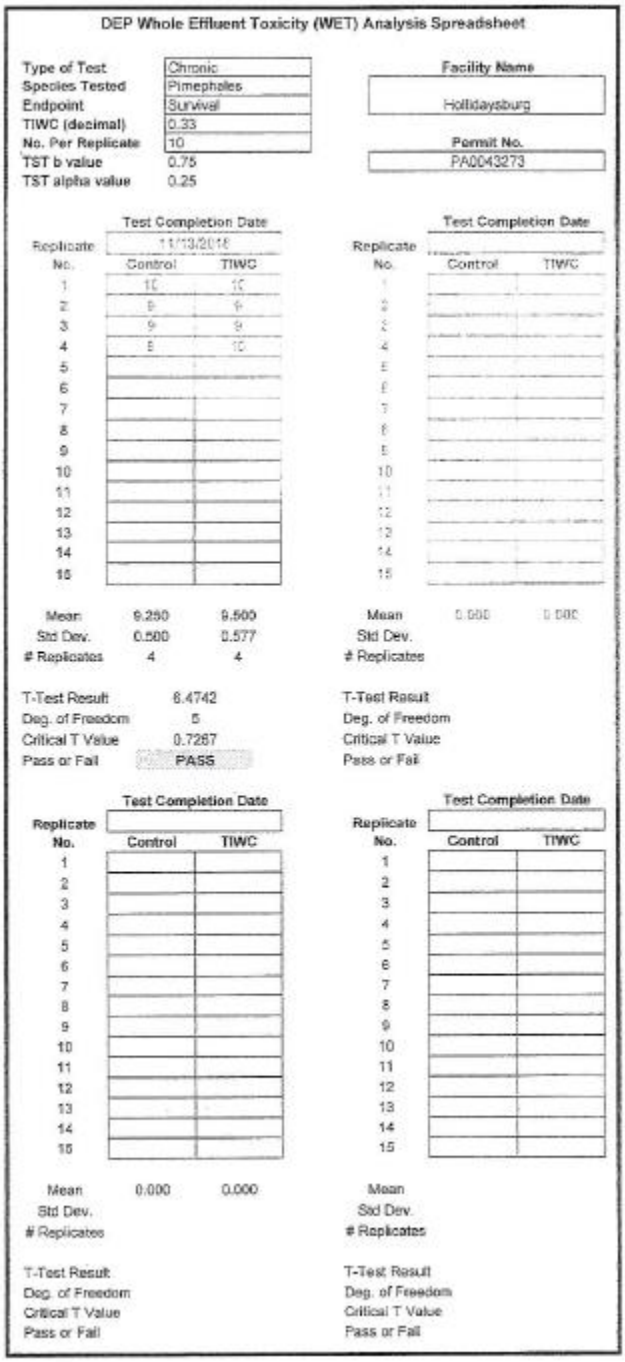
Replicate No.	Control	TIWC
1	1	1
2	0.9	1
3	1	1
4	1	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.975	1.000
Std Dev.	0.050	0.000
# Replicates	4	4

T-Test Result	26.1497
Deg. of Freedom	3
Critical T Value	0.7649
Pass or Fail	PASS

Test Completion Date: 8/26/2017

Replicate No.	Control	TIWC
1	0.9	1
2	1	1
3	1	1
4	1	0.9
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.975	0.975
Std Dev.	0.050	0.050
# Replicates	4	4

T-Test Result	14.8898
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS



DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.33
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Hollidaysburg

Permit No.: PA0043273

Replicate No.	Test Completion Date 11/13/2018 Control	TIWC
1	10	10
2	9	9
3	9	9
4	8	10
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.250	9.500
Std Dev.	0.500	0.577
# Replicates	4	4

T-Test Result 6.4742
Deg. of Freedom 5
Critical T Value 0.7267
Pass or Fail PASS

Replicate No.	Test Completion Date Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail

Replicate No.	Test Completion Date Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean		
Std Dev.		
# Replicates		

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.33
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Hollidaysburg

Permit No.: PA0043273

Test Completion Date: 11/13/2018

Replicate No.	Control	TIWC
1	0.328	0.305
2	0.299	0.308
3	0.307	0.371
4	0.29	0.335
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.309	0.330
Std Dev.	0.023	0.031
# Replicates	4	4

T-Test Result: 5.5807
Deg. of Freedom: 5
Critical T Value: 0.7267
Pass or Fail: PASS

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean		
Std Dev.		
# Replicates		

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.33
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Hollidaysburg

Permit No.: PA0043273

Test Completion Date: 11/13/2018

Replicate No.	Control	TIWC
1	1	1
2	1	0
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	0.900
Std Dev.	0.000	0.316
# Replicates	10	10

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail **PASS**

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev		
# Replicates		

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean		
Std Dev.		
# Replicates		

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.33
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Hollidaysburg

Permit No.: PA0043273

Test Completion Date: 11/13/2018

Replicate No.	Control	TIWC
1	29	36
2	27	0
3	38	35
4	30	37
5	29	26
6	25	38
7	31	32
8	38	37
9	23	37
10	28	34
11		
12		
13		
14		
15		
Mean	29.800	31.200
Std Dev.	4.917	11.516
# Replicates	10	10
T-Test Result	2.3144	
Deg. of Freedom	13	
Critical T Value	0.8702	
Pass or Fail	PASS	

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean		
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.33
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Hollidaysburg

Permit No.: PA0043273

Replicate No.	Test Completion Date: 11/12/2019 Control	TIWC
1	9	10
2	9	10
3	10	10
4	10	10
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.500	10.000
Std Dev.	0.577	0.000
# Replicates	4	4

T-Test Result: 11.7367
Deg. of Freedom: 3
Critical T Value: 0.7649
Pass or Fail: PASS

Replicate No.	Test Completion Date: Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail

Replicate No.	Test Completion Date: Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail

Replicate No.	Test Completion Date: Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean		
Std Dev.		
# Replicates		

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.33
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Hollidaysburg

Permit No.: PA0043273

Test Completion Date: 11/12/2019

Replicate No.	Control	TIWC
1	0.286	0.354
2	0.314	0.333
3	0.314	0.35
4	0.385	0.35
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.325	0.347
Std Dev.	0.042	0.009
# Replicates	4	4

T-Test Result	6.2421
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		

T-Test Result	
Deg. of Freedom	
Critical T Value	
Pass or Fail	

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		

T-Test Result	
Deg. of Freedom	
Critical T Value	
Pass or Fail	

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean		
Std Dev.		
# Replicates		

T-Test Result	
Deg. of Freedom	
Critical T Value	
Pass or Fail	

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.33
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Hollidaysburg

Permit No.: PA0043273

Replicate No.	Test Completion Date: 11/11/2019 Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail: PASS

Replicate No.	Test Completion Date: Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail

Replicate No.	Test Completion Date: Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail

Replicate No.	Test Completion Date: Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean		
Std Dev.		
# Replicates		

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.33
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Hollidaysburg

Permit No.: PA0043273

Test Completion Date: 11/11/2019

Replicate No.	Control	TIWC
1	25	26
2	11	16
3	28	31
4	29	28
5	7	16
6	25	30
7	22	27
8	25	30
9	27	30
10	30	31
11		
12		
13		
14		
15		
Mean	22.900	26.500
Std Dev.	7.738	5.778
# Replicates	10	10

T-Test Result	3.6007
Deg. of Freedom	17
Critical T Value	0.8633
Pass or Fail	PASS

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		

T-Test Result	
Deg. of Freedom	
Critical T Value	
Pass or Fail	

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean		
Std Dev.		
# Replicates		

T-Test Result	
Deg. of Freedom	
Critical T Value	
Pass or Fail	

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean		
Std Dev.		
# Replicates		

T-Test Result	
Deg. of Freedom	
Critical T Value	
Pass or Fail	

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.33
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Hollidaysburg

Permit No.: PA0043273

Test Completion Date: 10/13/2020

Replicate No.	Control	TIWC
1	10	10
2	10	10
3	10	10
4	10	10
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	10.000	10.000
Std Dev.	0.000	0.000
# Replicates	4	4

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail: PASS

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean		
Std Dev.		
# Replicates		

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.33
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Hollidaysburg

Permit No.: PA0043273

Test Completion Date: 10/13/2020

Replicate No.	Control	TIWC
1	0.404	0.385
2	0.448	0.407
3	0.47	0.455
4	0.407	0.441
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.432	0.422
Std Dev.	0.032	0.032
# Replicates	4	4
T-Test Result	4.8944	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean		
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.33
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Hollidaysburg

Permit No.: PA0043273

Replicate No.	Test Completion Date: 10/12/2020 Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

Replicate No.	Test Completion Date: Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

Replicate No.	Test Completion Date: Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

Replicate No.	Test Completion Date: Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean		
Std Dev.		
# Replicates		
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail		

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.33
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Hollidaysburg

Permit No.: PA0043273

Test Completion Date: 10/12/2020

Replicate No.	Control	TIWC
1	34	31
2	25	35
3	23	31
4	32	31
5	20	31
6	23	38
7	29	24
8	33	32
9	27	26
10	32	15
11		
12		
13		
14		
15		
Mean	27.800	28.400
Std Dev.	4.917	6.415
# Replicates	10	10

T-Test Result: 3.6539
Deg. of Freedom: 18
Critical T Value: 0.8662
Pass or Fail: PASS

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.000	0.000
Std Dev.		
# Replicates		

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail

Test Completion Date:

Replicate No.	Control	TIWC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean		
Std Dev.		
# Replicates		

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.33
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Hollidaysburg Borough Sewer Authority

Permit No.: PA0043273

Replicate No.	Test Completion Date: 9/26/2017 Control	TIWC
1	0.316	0.3
2	0.351	0.291
3	0.332	0.287
4	0.29	0.332
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.322	0.303
Std Dev.	0.026	0.020
# Replicates	4	4
T-Test Result	4.3232	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 11/13/2018 Control	TIWC
1	0.328	0.305
2	0.299	0.308
3	0.327	0.371
4	0.28	0.335
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.309	0.330
Std Dev.	0.023	0.031
# Replicates	4	4
T-Test Result	5.5807	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 11/12/2019 Control	TIWC
1	0.286	0.354
2	0.314	0.333
3	0.314	0.35
4	0.385	0.35
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.325	0.347
Std Dev.	0.042	0.009
# Replicates	4	4
T-Test Result	6.2421	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 10/13/2020 Control	TIWC
1	0.404	0.385
2	0.448	0.407
3	0.47	0.455
4	0.407	0.441
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.432	0.422
Std Dev.	0.032	0.032
# Replicates	4	4
T-Test Result	4.8944	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

CORRESPONDENCE

HOLLIDAYSBURG

Frank Hicks <fhicks@hollidaysburgpa.org>

NPDES PA0043273 - Jones Street CSO Outfall 003

13 messages

Frank Hicks <fhicks@hollidaysburgpa.org> Mon, Mar 4, 2019 at 8:52 AM
To: "Clark, Frederick D" <freclark@pa.gov>, Todd Banks <tbanks@stiffler-mcgraw.com>, Dave Stiffler <dstiffler@stiffler-mcgraw.com>

Good morning, Fred

In follow-up to our meeting on February 26, 2019 regarding the Jones Street CSO in Hollidaysburg Borough, Please see below the following operational and procedural changes implemented or planned for the above referenced outfall:

- Jones Street sewer flow has been diverted from the Jones Street CSO chamber to the Brush Run Interceptor at MH A-0.
- A 15" Inflatable plug has been installed in the effluent line of MH A-0 connected to the Jones Street CSO chamber (BL-A).
- A 15" Inflatable plug has been installed in the influent line of Jones Street CSO junction box (BL-A).
- A 15" Inflatable plug has been installed in the effluent line of Jones Street CSO junction box (existing sewer line connected to Brush Run Interceptor).
- Plugs are inflated to the manufacturer's recommended pressure of 25 psi.
- To prevent leakage of the plugs and ensure a water tight seal, plug pressure will be checked once monthly by HSA personnel to insure inflation to the recommended pressure. Air to be added as needed.
- HSA personnel will monitor MH A-0 during significant rain events to assess the performance of the Brush Run Interceptor and Jones Street sewer system. A surge indicator will also be installed at this location.
- The ultrasonic meter in the Jones Street CSO will be deleted in order to prevent false flow readings caused by inflow from Brush Run Creek into the CSO Junction box
- CSO discharges will be manually activated by HSA personnel only if necessary due to hydraulic overload of the Brush Run Interceptor or a blockage or other circumstance that will cause sewer backups to homes connected to sewer mains tributary to the Brush Run interceptor upstream of the Jones Street CSO chamber. Any CSO will be reported on monthly CSO detailed report form as duration of the event.

For your reference, please find attached a plan sheet that shows the location of the referenced CSO chamber, manhole, influent and effluent lines and inflatable plugs. The operational and procedural changes outlined above will be included in the Hollidaysburg Sewer Authority's (HSA) 2018 Municipal Wasteload Management Report, and will also be included as an update to the HSA's Nine Minimum Controls.

I hope this covers everything that we discussed during your visit, please advise if you have any questions, or require further information.

Thank you for your attention to this matter.

Frank Hicks, Jr.
Director of Wastewater Operations
The Borough of Hollidaysburg