pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0020214**
Facility Type	**Municipal**	APS ID	**4658**
Major / Minor	**Major**	Authorization ID	**1392604**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Mount Union Municipal Authority** **Huntingdon County**	Facility Name	**Mt Union STP**
Applicant Address	9 West Market Street Mount Union, PA 17066	Facility Address	400 North Drake Street Mount Union, PA 17066
Applicant Contact	William Shives	Facility Contact	Aaron Estep
Applicant Phone	(814) 542-4051	Facility Phone	(814) 644-9198
Client ID	24194	Site ID	447413
Ch 94 Load Status	Not Overloaded	Municipality	Mount Union Borough
Connection Status	No Limitations	County	Huntingdon
Date Application Received	April 14, 2022	EPA Waived?	No
Date Application Accepted	April 25, 2022	If No, Reason	Major Facility, Significant CB Discharge
Purpose of Application	NPDES permit renewal		

Summary of Review

Keller Engineers, Inc., on behalf of the Mount Union Municipal Authority (MUMA), has applied to the Pennsylvania Department of Environmental Protection (DEP) for issuance of the NPDES permit. The permit was reissued on April 17, 2017 and became effective on May 1, 2017. The permit expired on April 30, 2022.

This facility receives 52% of its flow from Mount Union Borough; 6.0% from Kistler Borough; 4.0% from Newton Hamilton Borough; 17% from Wayne Township, Mifflin County; and 21% from Shirley Township, Huntingdon County. The facility has average annual design flow 1.1 MGD and hydraulic design capacity of 1.5 MGD. The organic design capacity is 2,150 lbs BOD_5/day. There are also 3 non-significant categorical industrial users. The facility discharge is to Juniata River, which classified for warm water and migratory fishes (WWF & MF).

The WQM Part II permit No. 3199402 was issued on September 1, 2009. The WQM Part II permit No. 3199402 13-1 amendment was issued on May 22, 2013 for installed chemical storage tank, alum feed system, and increased maximum monthly organic loading to 2,150 lbs/day.

Sludge use and disposal description and location(s): N/A due to Class B sludge which is disposed of in the Sandy Run Landfill.

Changes from the previous permit: Unit of Fecal Coliform changed from CFU/100 ml to No./100 ml. The E. Coli. monitoring and report requirements will add to the proposed permit.

Based on the review outline in this fact sheet, it is recommended that the permit be drafted and published in the Pennsylvania Bulletin for public comments for 30 days.

Approve	Deny	Signatures	Date
X		*Hilaryle* Hilary H. Le / Environmental Engineering Specialist	May 20, 2022
X		/s/ Daniel W. Martin, P.E. / Environmental Engineer Manager	June 17, 2022

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	1.1
Latitude	40º 23' 4.07"	Longitude	-77º 52' 22.42"
Quad Name	Newton Hamilton	Quad Code	1523
Wastewater Description:	Sewage Effluent		
Receiving Waters	Juniata River (WWF, MF)	Stream Code	11414
NHD Com ID	66209983	RMI	80.76 miles
Drainage Area	2050 mi.^{2}	Yield (cfs/mi^2)	See comments below
Q_{7-10} Flow (cfs)	See comments below	Q_{7-10} Basis	See comments below
Elevation (ft)	542	Slope (ft/ft)	
Watershed No.	12-C	Chapter 93 Class.	WWF, MF
Existing Use	none	Existing Use Qualifier	
Exceptions to Use	none	Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	N/A		
Source(s) of Impairment	N/A		
TMDL Status	None	Name	

Background/Ambient Data		Data Source
pH (SU)	7.6	WQN0214, median July-Sep 1962-1987
Temperature (°F)		
Hardness (mg/L)	114	WQN0214, median July-Sep 1962-1987
Other:		

Nearest Downstream Public Water Supply Intake	Mifflintown Water Systems, Juniata County		
PWS Waters	Juniata River	Flow at Intake (cfs)	
PWS RMI	37.37 miles	Distance from Outfall (mi)	Approximate 44.0 miles

Changes Since Last Permit Issuance: none

Streamflow:
Nearest USGS Stream gage is 01563500 on Juniata River at Mapleton Depot Creek, PA. Recent stream flow retrievals resulted in a Q_{7-10} of 223 cfs. These values were obtained from the latest USGS streamflow report. The drainage area is reported to be 2,030 mi.^{2} at the gage station. The flow calculations are shown below:

Q_{7-10} runoff rate = 223 cfs /2,030 mi.^{2} = 0.11 cfs/mi.^{2}
Q_{30-10} / Q_{7-10} = 1.36
Q_{1-10} / Q_{7-10} = 0.64

The drainage area at discharge point is found to be 2,050 mi.^{2} from USGS StreamStats.

The Q7-10 at discharge = 0.11 cfs/mi.^{2} x 2050 mi.^{2} = 225.5 cfs

For WQM modelling purposes, 25% of the flow will be used.

Q_{7-10} model = 225.5 cfs x 0.25 = 56.38 cfs

PWS Intake:
The nearest downstream PWS is Mifflintown Water Systems in Juniata County at RMI approximately 44.0 miles downstream of the discharge. The discharge will not impact the intake because of the distance, dilution, and effluent limits.

Treatment Facility Summary

Treatment Facility Name: Mt Union Borough - STP

WQM Permit No.	Issuance Date	Description
3199402 13-1	5/22/2013	Installation of chemical storage tank, alum feed system, and increase Maximum Monthly Organic Loading from 1,835 lbs/day to 2,150 lbs/day.
3199402	9/1/2009	Replacement of Liverpool pump station force main, replacement of gravity sewers on East Milford Street, construction of storm sewers and three inlets on East Milford St., and construction of gravity sewers from manhole # 101A to 101C.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Sequencing Batch Reactor	Ultraviolet	1.1

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
1.5	2,150	Not Overloaded	Aerobic Digestion	Landfill

Changes Since Last Permit Issuance:

According to the permit renewal application, the treatment process follows the below train:

Wastewater:

Raw influent → Raw influent pumping → Screening → Grit removal → SBR basins (2) → UV disinfection chamber → Outfall 001

Sludge:

SBR basins → Aerobic Digesters (3) → sludge drying bed (1)/belt filter press (1) → land disposal

Belt filter press filtrate and digester supernatant is sent back to raw influent before raw influent pumping.

Raw influent sampling location is before raw influent pumping and final effluent sampling is after UV disinfection chamber.

The facility is using Delpac 1525 for phosphorus removal, and Pollutreat CL-835 for sludge dewatering.

The facility can operate in “normal mode” or “storm mode”. There are 12 decant cycles/day in normal mode and one (1) in storm mode. The length of decant cycles is 60 minutes in normal mode and 30 minutes in storm mode. Decant rate is 716 GPM. To manage the peak flow, the facility goes to “storm-flow” mode and additional operational staffs become available.

Industrial/commercial users:

The MUMA receives wastewater from three non-significant categorical industrial users throughout its service area. Two of them are non-significant categorical and one is non-significant non-categorical industry. A summary is provided below:

Industrial User	Discharge Rate (GPD)					Significant Industrial User?	Applicable Pretreatment Standard
	Process	NCCW	Sanitary	Other	*Total*		
Containment Solutions, Inc	1,584	0	367	0	1,951	No	40 CFR Part 463
Bonney Forge Corporation	1,904	0	594	0	2,498	No	40 CFR Part 420
Parks Transfer & Recycling Station	0	0	10	300	310	No	N/A
TOTAL	**3,488**	0	**971**	**300**	**4,759**	-	

The permittee mentioned in their 2015 Chapter 94 report that Containment Solutions, Inc. and Bonney Forge Corporation applies pre-treatment prior to discharge in MUMA’s collection system. The pre-treatment for Containment Solutions, Inc. consists of filtration of wastewater from the manufacturing building (tank grinding operation) prior to discharge into municipal sewer system. In addition, all wastewater from the test building drains into a settling tank prior to discharge to the municipal sewer system. In a letter issued on August 4, 2011, EPA identified Bonney Forge as an industrial user and

subject to the Metal Finishing Category, 40 CFR Part 433, Pretreatment Standards for New Sources (PSNS) (*the fact sheet, page 45*). As such, the monitoring and reporting requirements of the General Pretreatment Regulations, 40 CFR Part 403.12, apply to the discharge from the facility. Bonney Forge has a custom pretreatment system that removes metals to trace levels and enables recycling of effluent water back into the manufacturing process.

Biosolids Management:

The solids are stabilized in a 2-stage aerobic digestion process. Waste activated sludge (WAS) is pumped from the SBR to the two first stage aerobic digesters. Digested sludge is manually transferred to the second stage aerobic digester on an "as needed" basis for holding and storage, then pumped periodically to the belt filter press or sludge drying beds. The biosolids are Class B sludge which is disposed of in the Sandy Run Landfill.

The total sewage sludge /biosolids production within the facility for the previous year was 38.67 dry tons.

Compliance History	
Summary of DMRs:	DMRs reported last 12 months from April 1, 2021 to March 31, 2022 are summarized in the Table below (Pages 5 thru 7).
Summary of Inspections:	**05/27/21:** Mr. Clark, DEP WQS, conducted a compliance evaluation inspection. There were no violations noted. Treatment plant appeared to be operating properly, effluent clear, field tests results were within permit limits. Since last inspection one influent pump was repaired, one digester blower was replaced, and the Liverpool pump station was upgraded. The recommendations were to clean effluent flow meter flume and replace effluent thermometer. **01/25/21:** Mr. Clark, DEP WQS, conducted an administrative review of the Mount Union STP Annual Chesapeake Bay report. There were no violations noted. No nutrient credits were sold or purchased. The facility has achieved compliance with it's nitrogen and phosphorus annual loading limits for the 2019-2020 compliance year. **04/4/19:** Mr. Clark, DEP WQS, conducted a compliance evaluation inspection. Treatment plant appeared to be operating properly, effluent clear, field tests results were within permit limits. Since last inspection repairs were made to the #2 SBR blower coupler, #1 air valve, #1 decanter arm, fine screen, and generator.

Other Comments: There was one violation associated with the permittee due to not submit the NPDES permit renewal application 180 days before the permit expiration day until April 14, 2022. However, the open violation was removed by the Department after the documents were received.

Compliance History

DMR Data for Outfall 001 (from April 1, 2021 to March 31, 2022)

Parameter	MAR-22	FEB-22	JAN-22	DEC-21	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21
Flow (MGD) Average Monthly	0.625	1.081	0.345	0.345	0.339	0.372	0.712	0.436	0.362	0.397	0.605	0.702
Flow (MGD) Daily Maximum	1.074	2.830	1.063	1.063	0.745	1.26	3.987	1.985	1.033	0.579	1.209	1.756
pH (S.U.) Minimum	6.9	6.6	6.6	6.6	6.7	6.7	6.8	6.8	6.8	6.8	6.7	6.7
pH (S.U.) Maximum	7.1	7.1	7.0	7.0	7.1	7.3	7.2	7.3	7.3	7.2	7.1	6.9
DO (mg/L) Minimum	6.0	6.9	6.4	6.4	6.7	5.8	5.6	6.7	5.4	6.1	6.0	6.4
CBOD5 (lbs/day) Average Monthly	17.0	23.0	7.0	11.0	9.0	13.0	22.0	14.0	9.0	10.0	17.0	19.0
CBOD5 (lbs/day) Weekly Average	22.5	31.0	7.5	22.5	11.0	27.0	100.0	31.5	13.0	12.5	21.0	34.5
CBOD5 (mg/L) Average Monthly	3.0	4.0	3.0	4.0	3.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0
CBOD5 (mg/L) Weekly Average	3.0	4.0	3.0	3.5	5.0	11.0	3.0	3.0	4.5	3.0	4.0	4.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	812	960	317	456	334	438	522	692	358.0	717	576	496
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	1682	1616	802	617	451	682	1239	1928	474	1512	1.103	755
BOD5 (mg/L) Raw Sewage Influent Average Monthly	155	159	143	183	139	165	110	185	130	225	105	101
TSS (lbs/day) Average Monthly	9.0	15	4.0	20.0	11	5.0	26.0	12.0	9.0	31.0	10.0	11.0
TSS (lbs/day) Raw Sewage Influent Average Monthly	638	690	296	275	290	292	578	1064	237	678	568	551
TSS (lbs/day) Raw Sewage Influent Daily Maximum	1436	1049	1105	432	882	531	1787	3741	425	1461	1103	805
TSS (lbs/day) Weekly Average	10.5	19.0	5.5	79.5	26.0	7.5	173.0	35.5	17.0	106.0	15.5	24.5
TSS (mg/L) Average Monthly	2.0	2.0	2.0	5.0	4.0	2.0	2.0	3.0	3.0	8.0	2.0	2.0

TSS (mg/L) Raw Sewage Influent Average Monthly	123	117	128	105	119	110	113	193	87	212	102	118
TSS (mg/L) Weekly Average	2.0	3.5	4.5	15.0	11.5	3.0	5.0	6.0	5.5	25.0	2.5	2.0
Fecal Coliform (No./100 ml) Geometric Mean	1	2	2.0	7	5.0	8.0	14.0	5	4	1	1.0	2.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	1	16	6	70	101	397	1046	39	50.0	3	3.0	11.0
Nitrate-Nitrite (mg/L) Average Monthly	5	4	4	5	5	7	5	6	5.2	3.7	4.6	3.8
Nitrate-Nitrite (lbs) Total Monthly	837	700	248	465	420	589	900	713	465	360	713	660
Total Nitrogen (mg/L) Average Monthly	6	5	4	9	6	8	5	6	5.8	4.3	5.3	4
Total Nitrogen (lbs) Effluent Net Total Monthly	992	896	279	806	480	682	1050	775	496	420	837	750
Total Nitrogen (lbs) Total Monthly	992	896	279	806	480	682	1050	775	496	420	837	750
Total Nitrogen (lbs) Effluent Net Total Annual							11602					
Total Nitrogen (lbs) Total Annual							11602					
Ammonia (mg/L) Average Monthly	0.4	0.4	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.1	< 0.3	0.2
Ammonia (lbs) Total Monthly	59	84	9	22	9	9	36	81	22	12	46.5	39
Ammonia (lbs) Total Annual							489					
TKN (mg/L) Average Monthly	0.8	0.8	0.6	1.1	0.7	0.5	0.7	0.5	0.6	0.5	< 0.6	< 0.5
TKN (lbs) Total Monthly	124	140	31	124	60	31	150	62	62	60	124	90
Total Phosphorus (mg/L) Average Monthly	1.3	1.4	1.5	1.2	0.4	1.6	0.5	0.7	0.9	0.6	0.4	0.2
Total Phosphorus (lbs) Effluent Net Total Monthly	217	252	93	124	12	124	120	93	93	60	62	30
Total Phosphorus (lbs) Total Monthly	217	252	93	124	12	124	120	93	93	60	62	30

Total Phosphorus (lbs) Effluent Net Total Annual							630					
Total Phosphorus (lbs) Total Annual							630					
UV Dosage ($mWsec/cm^2$) Minimum	23.11	21.89	24.3	24.30	24.11	24.91	16.54	24.04	23.82	24.02	23.11	23.45

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 1.1
Latitude 40º 23' 4.07" **Longitude** -77º 52' 22.42"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	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)

Comments: Total residual chlorine does not apply to this facility.

Water Quality-Based Limitations

WQM 7.0 version 1.1 is a water quality model designed to assist DEP to determine appropriate effluent limits for $CBOD_5$, NH_3-N and D.O. The model simulates two basic processes. In the NH_3-N module, the model simulates the mixing and degradation of NH_3-N in the stream and compares calculated instream NH_3-N concentrations to NH_3-N water quality criteria. In the D.O. module, the model simulates the mixing and consumption of D.O. in the stream due to the degradation of $CBOD_5$ and NH_3-N and compares calculated instream D.O. concentrations to D.O. water quality criteria. Since WQM 7.0 assumes immediate and complete mix between the discharge and stream flow, Q_{7-10} was adjusted, as shown in this factsheet page 2, to examine allowable wasteload allocations under appropriate mixing conditions. The model was utilized for this permit renewal by using adjusted Q_{7-10} and current background water quality levels of the river.

Ammonia (NH_3-N):
NH_3-N calculations were based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013). The following data is necessary to determine the in-stream NH_3-N criteria used in the attached computer model of the stream:

*	Discharge pH	7.0	(Default per 391-2000-007)
*	Discharge Temperature	25°C	(Default per 391-2000-007)
*	Stream pH	7.0	(Default per 391-2000-006)
*	Stream Temperature	20°C	(Default for WWF per 391-2000-003)
*	Background NH_3-N	0 mg/L	(Assumed since no nearby upstream WWTPs)

Regarding NH_3-N limits, the attached computer printout of the WQM 7.0 stream model (version 1.1) indicates that a limit of 25.0 mg/L NH_3-N as a monthly average (AML) and 50.0 mg/L NH_3-N instantaneous maximum (IMAX) are necessary to protect the aquatic life from toxicity effects. Recent DMR data show that the plant is discharging NH_3-N well below 25.0 mg/l year-round. Therefore, no NH_3-N limits are proposed in this renewal permit.

Dissolved Oxygen (D.O.):
The D.O. goal is 6.0 mg/L. However, a minimum D.O. of 5.0 mg/L is required per 25 Pa. Code § 93.7. It is recommended that this limit be maintained in the proposed permit to ensure the protection of water quality standards. This approach is consistent with DEP's current Standard Operating Procedure (SOP) No. BPNPSM-PMT-033 and has been applied to other point source dischargers throughout the state.

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$):
The attached computer printout of the WQM 7.0 stream model (ver. 1.1) indicates that a monthly average limit (AML) of 25.0 mg/L, 40.0 mg/L average weekly limit (AWL), & 50.0 mg/L IMAX will remain in the proposed permit. Recent DMRs and inspection reports show that the facility has typically been achieving concentrations below this limit. Mass limits are calculated as follows:

Average monthly mass limit: 25.0 mg/L x 1.1 MGD x 8.34 = 229.35 lbs/day
Average weekly mass limit: 40.0 mg/L x 1.1 MGD x 8.34 = 367.0 lbs/day

The average monthly and average weekly mass loadings were calculated as 229.35 lbs/day and 367.0 lbs/day respectively. These values are rounded down to 225.0 lbs/day and 365.0 lbs/day, respectively. The minimum monitoring frequency will remain the same as 2/week.

Fecal Coliform:
The recent coliform guidance in 25 Pa. Code § 92a.47.(a)(4) requires a summer technology limit of 200/100 ml as a geometric mean and an instantaneous maximum not greater than 1,000/100ml and 25 Pa. Code § 92a.47.(a)(5) requires a winter limit of 2,000/100ml as a geometric mean and an instantaneous maximum not greater than 10,000/100ml.

E. Coli:
As recommended by DEP's SOP no. BPNPSM-PMT-033, a routine monitoring for E. Coli will be included in the permit under 25 Pa. Code §92a.61. This requirement applies to all sewage dischargers greater than 0.002 MGD in their new and reissued permits. A monitoring frequency of 1/month will be included in the permit to be consistent with the recommendation from this SOP.

pH:
The effluent discharge pH should remain above 6.0 and below 9.0 standard units (S.U.) according to 25 Pa. Code § 95.2(1).

Toxics:
The data was analyzed based on the guidelines found in DEP's Water Quality Toxics Management Strategy (Document No. 361-0100-003) and DEP's SOP No. BPNPSM-PMT-033. Spreadsheet results are attached to this fact sheet (*page 24*). The Toxics Management Spreadsheet uses the following logic:

a. Establish average monthly and IMAX limits in the draft permit where the maximum reported concentration 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.

Pollutant testing results on the current application were reviewed in comparison with DEP's Toxic Management Spreadsheet, version 1.3, March 2021, output recommends no routine monitoring requirements. Therefore, no monitoring requirements are added in the proposed permit.

UV:
The UV system monitor and report the UV light dosage ($mWsec/cm^2$) will remain in the proposed permit.

Chesapeake Bay:
In the Phase 3 WIP Wastewater Supplement revised on September 13, 2021, Table 5 of this document shows that Huntingdon Borough has been allocated 20,091 lbs/year of TN and 2,679 lbs/year of TP (*this fact sheet, page 48*). This approach is consistent with the Chesapeake Bay TMDL was based on the actual performance data previously evaluated by the Department. Since the permittee is easily capable of achieving compliance with these loads, the Department determines that no "compliance schedule" for the requirements associated with the Chesapeake Bay Strategy is necessary. Accordingly, the Chesapeake Bay nutrient existing limitations and monitoring requirements will remain in the proposed permit.

This facility is currently a significant discharger. Therefore, the facility's waste load allocation (WLA) will be tracked under an individual WLA as a significant discharger in the Phase 2 WIP Wastewater Supplement. Monitoring frequency for TN constituents will be remained in the proposed permit.

Total Phosphorus:
The discharge is into a stream segment of Juniata River. DEP's phosphorus guidance (BPNPSM-PMT-033, version 1.5. revised August 23, 2013) mentions that "(a) Phosphorus controls for waste discharges to streams shall be established, under subsection (b) whenever the Department determines that instream phosphorus, alone or in combination with other pollutants or instream conditions, contribute to impairment of designated uses as defined in Chapter 93 (relating to water quality standard). No determination made under this subsection shall constitute a final Department action with respect to any person until a specific treatment or control requirement is imposed under subsection (b)." Since Juniata River doesn't have instream phosphorus related impairment, local phosphorus limit is not necessary at this time. This determination may be re-evaluated in next permit term if regulation demands.

Additional Considerations

Flow Monitoring
Flow monitoring is recommended by the permit guidance and is also required by 25 Pa. Code §§ 92a.27 and 92a.61.

Influent Monitoring
As a result of negotiation with EPA, influent monitoring of TSS and BOD_5 are required for any POTWs; therefore, influent sampling of BOD_5 and TSS will be included in the draft permit. A 24-hr composite sample type will be required to be consistent with the proposed sampling frequency for TSS and $CBOD_5$ in the effluent.

Total Dissolved Solids (TDS)
Total Dissolved Solids and its major constituents including Bromide, Chloride, and Sulfate have become statewide pollutants of concern and threats to DEP's mission to prevent violations of water quality standards. The requirement to monitor these pollutants is necessary under the following DEP Central Office directive:

For point source discharges and upon issuance or reissuance of an individual NPDES permit:

- *Where the concentration of TDS in the discharge exceeds 1,000 mg/L, or the net TDS load from a discharge exceeds 20,000 lbs/day, and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for TDS, sulfate, chloride, and bromide. Discharges of 0.1 MGD or less should monitor and report for TDS, sulfate, chloride, and bromide if the concentration of TDS in the discharge exceeds 5,000 mg/L.*
- *Where the concentration of bromide in a discharge exceeds 1.0 mg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for bromide. Discharges of 0.1 MGD or less should monitor and report for bromide if the concentration of bromide in the discharge exceeds 10 mg/L.*

The facility has no record of monitoring these pollutants. However, the application shows a maximum influent concentration of 388.0 mg/L for TDS. The effluent concentration is not expected to exceed 1,000 mg/L. No monitoring is necessary.

Pretreatment:
Pre-treatment is discussed under Industrial/Commercial users section (*pages 3 & 4*) of this fact sheet.

Stormwater Outfalls:
There are no stormwater outfalls associated with this WWTP.

Whole Effluent Toxicity Testing (WETT):

The permittee submitted four (4) WET Test results during/after the submission of the renewal application. The details are under WETT section (*page 18*) of this fact sheet. In summary, all four WETT results are "Passing" which doesn't necessitate the inclusion of WET parameters; however, WETT requirement will remain in the permit to submit four (4) WETT results during next permit renewal. The dilution series is updated by using new $Q_{7\text{-}10}$.

303d Listed Streams:

The discharge from this facility is to Juniata River which is assessed as attaining its designated uses.

Antidegradation (93.4):

The effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High-Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

Class A Wild Trout Fisheries:

No Class A Wild Trout Fisheries are impacted by this discharge.

WQM 7.0:

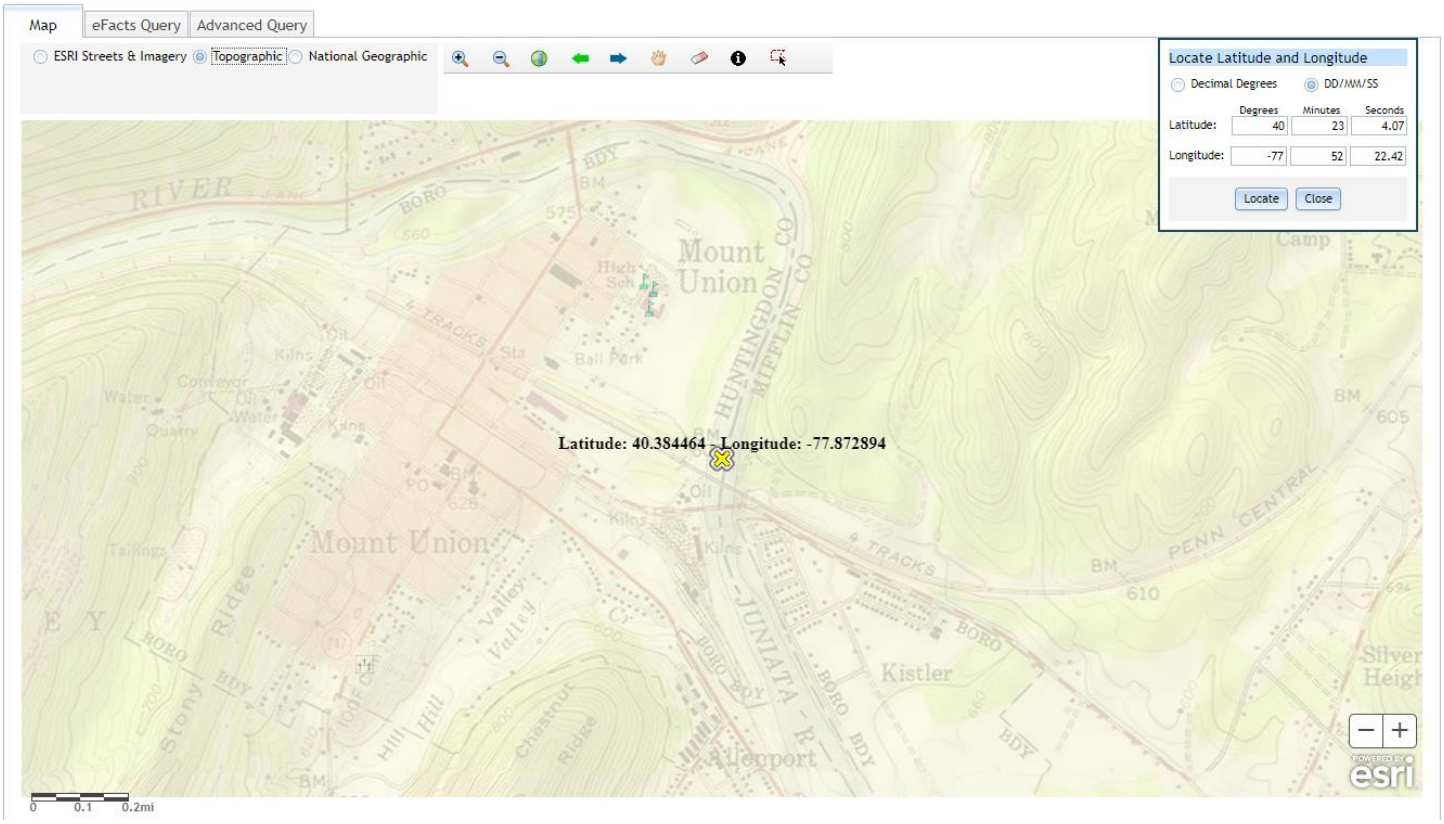
The following data were used in the attached computer model (WQM 7.0) of the stream:

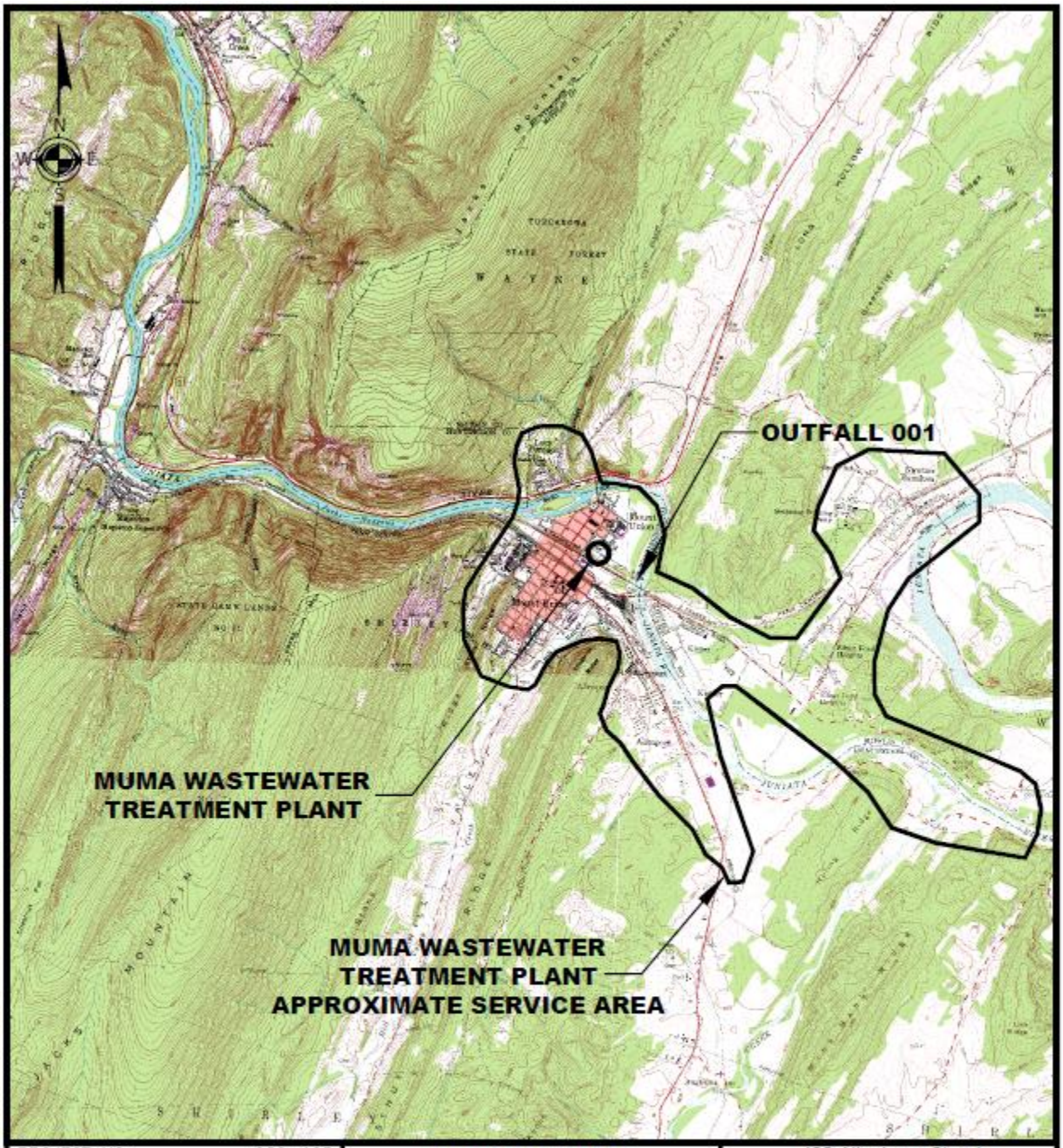
- Discharge pH 7.0 (Default)
- Discharge Temperature 25°C (Default)
- Discharge Hardness 217 mg/l (Application data)
- Stream pH 7.0 (Default)
- Stream Temperature 20°C (Default)

The following two nodes were used in modeling:

Node 1: Outfall 001 at Juniata River (11414)
Elevation: 542 ft (USGS)
Drainage Area: 2,050 mi^2 (USGS StreamStats)
River Mile Index: 80.76 (PA DEP eMapPA)
Low Flow Yield: 0.11 cfs/mi^2
Discharge Flow: 1.1 MGD

Node 2: At the confluence with Aughwick Creek (12753)
Elevation: 526 ft (USGS)
Drainage Area: 2,060 mi^2 (USGS StreamStats)
River Mile Index: 77.43 (PA DEP eMapPA)
Low Flow Yield: 0.11 cfs/mi^2
Discharge Flow: 0.00 MGD





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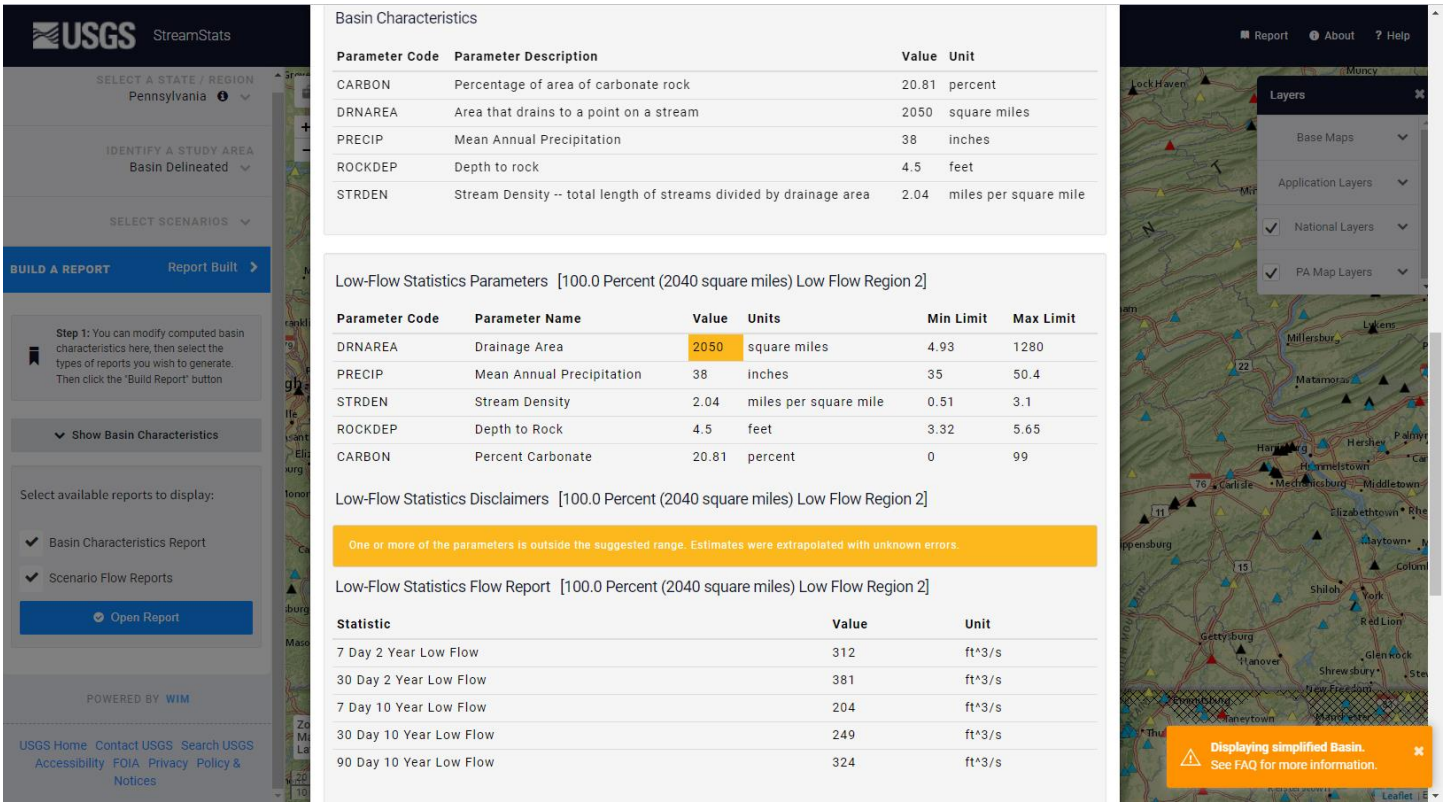
DATE:	ARPIL 2022
DESIGNED BY:	-
DRAWN BY:	AMC
CHECKED BY:	AMC
PAGE NO.:	1/1
SCALE: 1"=5000'	

LOCATION MAP
MOUNT UNION MUNICIPAL AUTHORITY

MOUNT UNION WASTEWATER TREATMENT PLANT
NPDES PERMIT RENEWAL APPLICATION
MOUNT UNION BOROUGH, HUNTINGDON COUNTY, PENNSYLVANIA

420 Allegheny Street
Hollidaysburg, PA 16648
P:(814) 696-7430
www.keller-engineers.com



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	20.81	percent
DRNAREA	Area that drains to a point on a stream	2050	square miles
PRECIP	Mean Annual Precipitation	38	inches
ROCKDEP	Depth to rock	4.5	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.04	miles per square mile

Low-Flow Statistics Parameters [100.0 Percent (2040 square miles) Low Flow Region 2]

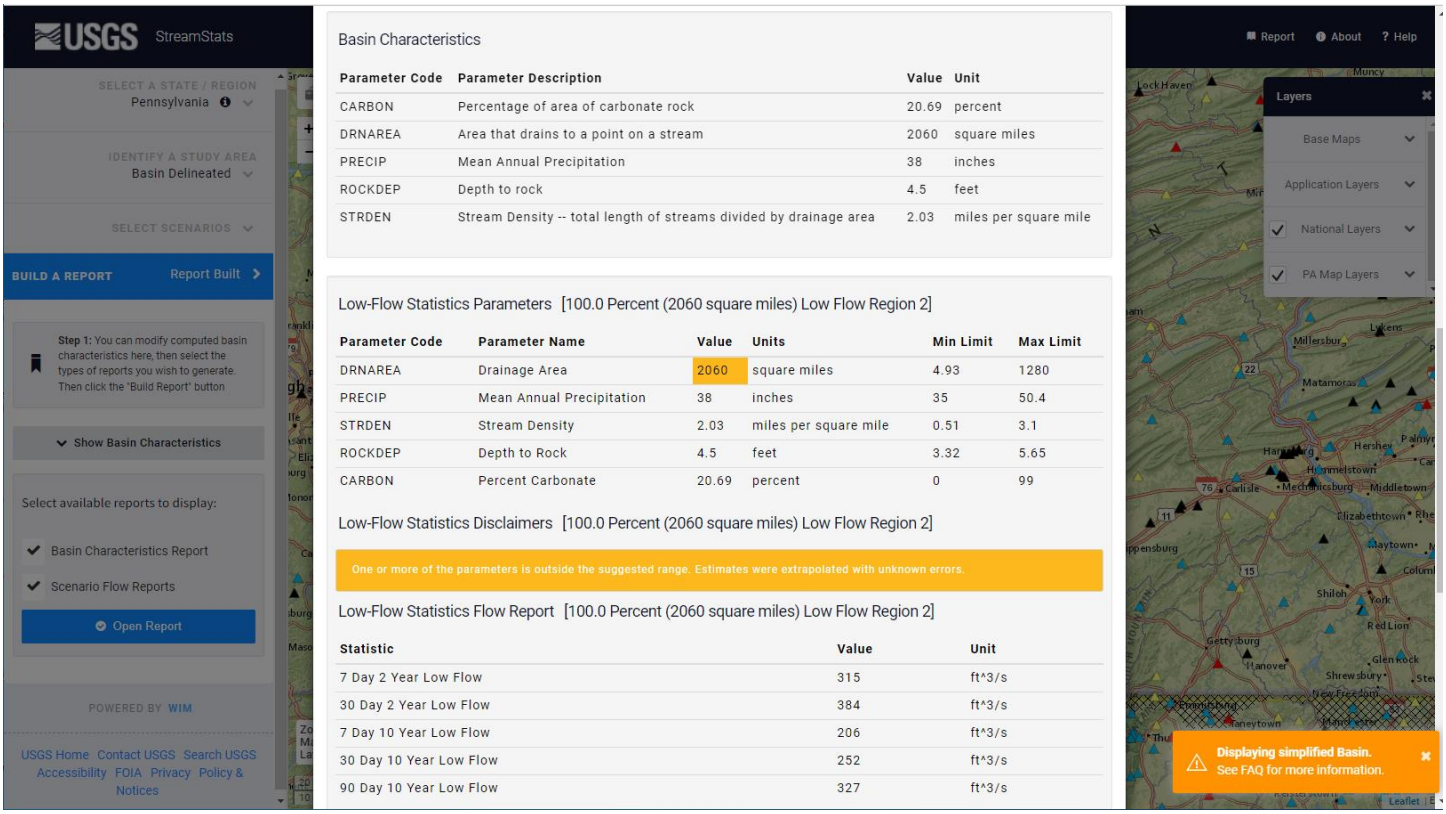
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2050	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	38	inches	35	50.4
STRDEN	Stream Density	2.04	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.5	feet	3.32	5.65
CARBON	Percent Carbonate	20.81	percent	0	99

Low-Flow Statistics Disclaimers [100.0 Percent (2040 square miles) Low Flow Region 2]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [100.0 Percent (2040 square miles) Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	312	ft^3/s
30 Day 2 Year Low Flow	381	ft^3/s
7 Day 10 Year Low Flow	204	ft^3/s
30 Day 10 Year Low Flow	249	ft^3/s
90 Day 10 Year Low Flow	324	ft^3/s



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	20.69	percent
DRNAREA	Area that drains to a point on a stream	2060	square miles
PRECIP	Mean Annual Precipitation	38	inches
ROCKDEP	Depth to rock	4.5	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.03	miles per square mile

Low-Flow Statistics Parameters [100.0 Percent (2060 square miles) Low Flow Region 2]

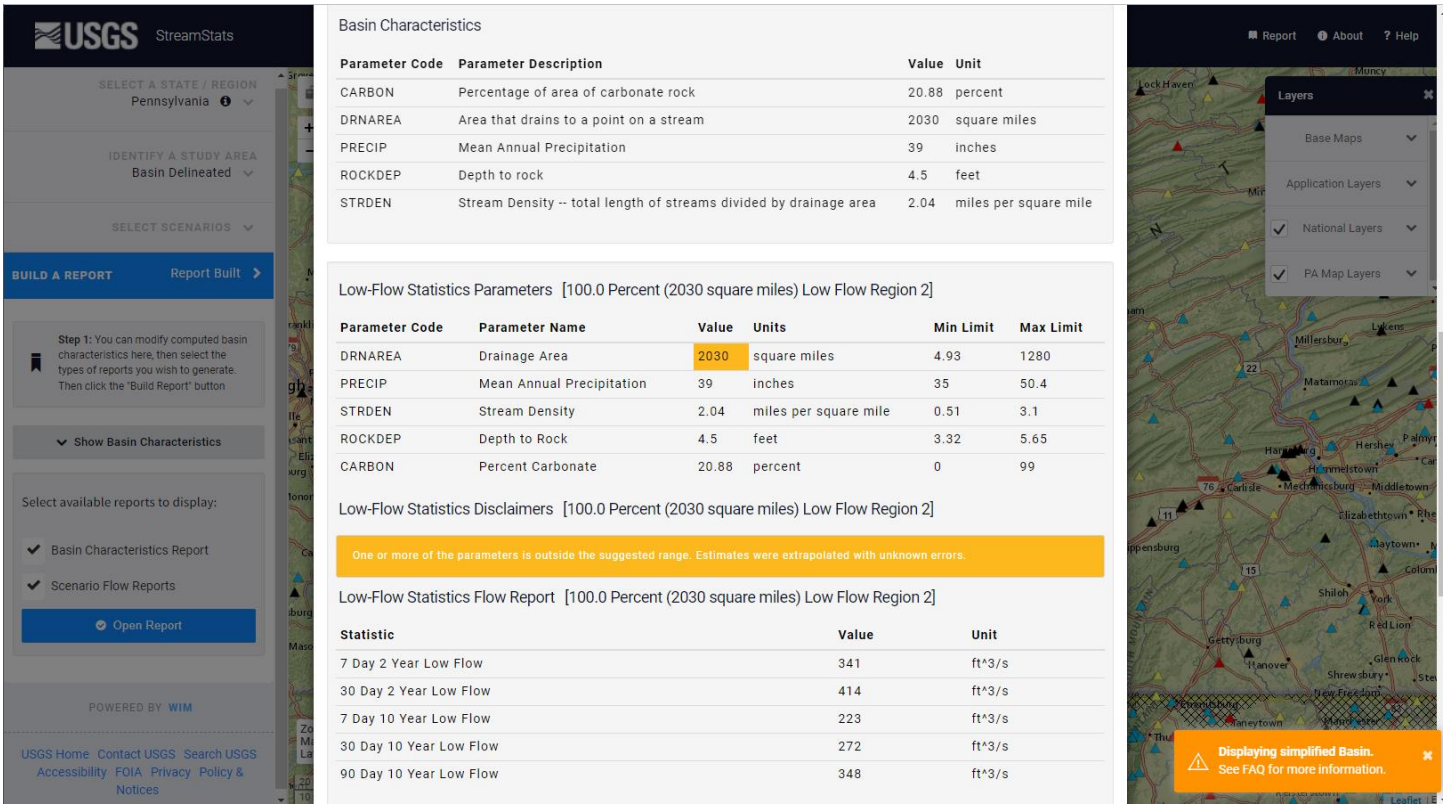
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2060	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	38	inches	35	50.4
STRDEN	Stream Density	2.03	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.5	feet	3.32	5.65
CARBON	Percent Carbonate	20.69	percent	0	99

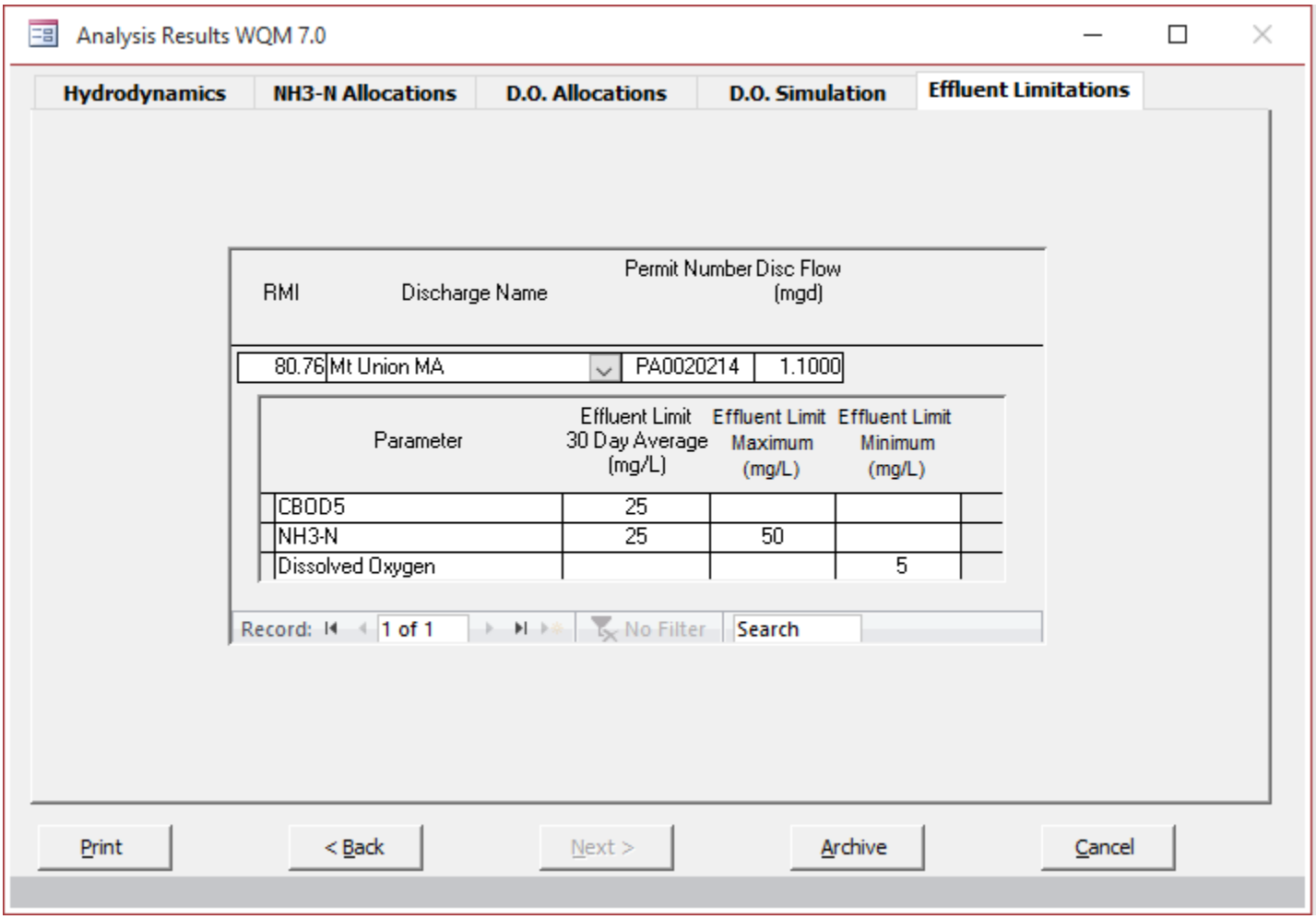
Low-Flow Statistics Disclaimers [100.0 Percent (2060 square miles) Low Flow Region 2]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [100.0 Percent (2060 square miles) Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	315	ft^3/s
30 Day 2 Year Low Flow	384	ft^3/s
7 Day 10 Year Low Flow	206	ft^3/s
30 Day 10 Year Low Flow	252	ft^3/s
90 Day 10 Year Low Flow	327	ft^3/s


USGS StreamStats
SELECT A STATE / REGION
Pennsylvania
IDENTIFY A STUDY AREA
Basin Delineated
SELECT SCENARIOS
BUILD A REPORT
Report Built
Step 1: You can modify computed basin characteristics here, then select the types of reports you wish to generate. Then click the "Build Report" button
Show Basin Characteristics
Select available reports to display:
Basin Characteristics Report
Scenario Flow Reports
Open Report
POWERED BY WIM
USGS Home Contact USGS Search USGS
Accessibility FOIA Privacy Policy & Notices
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
CARBON | Percentage of area of carbonate rock | 20.88 | percent
DRNAREA | Area that drains to a point on a stream | 2030 | square miles
PRECIP | Mean Annual Precipitation | 39 | inches
ROCKDEP | Depth to rock | 4.5 | feet
STRDEN | Stream Density -- total length of streams divided by drainage area | 2.04 | miles per square mile
Low-Flow Statistics Parameters [100.0 Percent (2030 square miles) Low Flow Region 2]
Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit
DRNAREA | Drainage Area | 2030 | square miles | 4.93 | 1280
PRECIP | Mean Annual Precipitation | 39 | inches | 35 | 50.4
STRDEN | Stream Density | 2.04 | miles per square mile | 0.51 | 3.1
ROCKDEP | Depth to Rock | 4.5 | feet | 3.32 | 5.65
CARBON | Percent Carbonate | 20.88 | percent | 0 | 99
Low-Flow Statistics Disclaimers [100.0 Percent (2030 square miles) Low Flow Region 2]
One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.
Low-Flow Statistics Flow Report [100.0 Percent (2030 square miles) Low Flow Region 2]
Statistic | Value | Unit
7 Day 2 Year Low Flow | 341 | ft^3/s
30 Day 2 Year Low Flow | 414 | ft^3/s
7 Day 10 Year Low Flow | 223 | ft^3/s
30 Day 10 Year Low Flow | 272 | ft^3/s
90 Day 10 Year Low Flow | 348 | ft^3/s
Report
About
Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers
Displaying simplified Basin.
See FAQ for more information.


Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI
Discharge Name
Permit Number
Disc Flow (mgd)
80.76
Mt Union MA
PA0020214
1.1000
Parameter
Effluent Limit 30 Day Average (mg/L)
Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5
25
NH3-N
25
50
Dissolved Oxygen
5
Record: 1 of 1
No Filter
Search
Print
< Back
Next >
Archive
Cancel

rptEffLimits

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
12B	11414	JUNIATA RIVER

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
80.760	Mt Union MA	PA0020214	1.100	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			5

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rpt_WLA

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
12B	11414	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
80.760	Mt Union MA	16.45	50	16.45	50	0	0

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
80.760	Mt Union MA	1.87	25	1.87	25	0	0

Dissolved Oxygen Allocations

		CBOD5		NH3-N		Dissolved Oxygen			
RMI	Discharge Name	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Critical Reach	Percent Reduction
80.76	Mt Union MA	25	25	25	25	5	5	0	0

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rptDOSim

WQM 7.0 D.O. Simulation

SWP Basin	Stream Code	Stream Name
12B	11414	JUNIATA RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
80.760	1.100	20.146	7.000
Reach Width (ft)	Reach Depth (ft)	Reach WD Ratio	Reach Velocity (fps)
150.911	1.137	132.727	0.338
Reach CBOD5 (mg/L)	Reach Kr (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
2.67	0.295	0.73	0.708
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
8.148	1.442	Tsivoglou	6
Reach Travel Time (days)			
0.601			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.060	2.63	0.70	8.03
0.120	2.58	0.67	7.99
0.180	2.53	0.64	7.94
0.240	2.49	0.62	7.76
0.301	2.45	0.59	7.70
0.361	2.40	0.57	7.65
0.421	2.36	0.54	7.61
0.481	2.32	0.52	7.58
0.541	2.28	0.50	7.55
0.601	2.24	0.48	7.53

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rptModelSpecs

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	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

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rptHydro

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
12B	11414	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)	WD Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
80.760	56.38	0.00	56.38	1.7017	0.00091	1.137	150.91	132.73	0.34	0.601	20.15	7.00
Q1-10 Flow												
80.760	36.08	0.00	36.08	1.7017	0.00091	NA	NA	NA	0.27	0.765	20.23	7.00
Q30-10 Flow												
80.760	76.68	0.00	76.68	1.7017	0.00091	NA	NA	NA	0.40	0.508	20.11	7.00

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rptGeneral

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
12B	11414	JUNIATA RIVER	**80.760**	542.00	2050.00	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	0.110	56.38	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10			0.00	0.000	0.000							
Q30-10			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
Mt Union MA	PA0020214	1.1000	1.1000	1.1000	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	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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Page: 1 No Filter

rptGeneral

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
12B	11414	JUNIATA RIVER	**77.430**	526.00	2060.00	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	0.110	51.50	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	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
Mt Union MA	PA0020214	0.0000	0.0000	0.0000	0.000	0.00	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	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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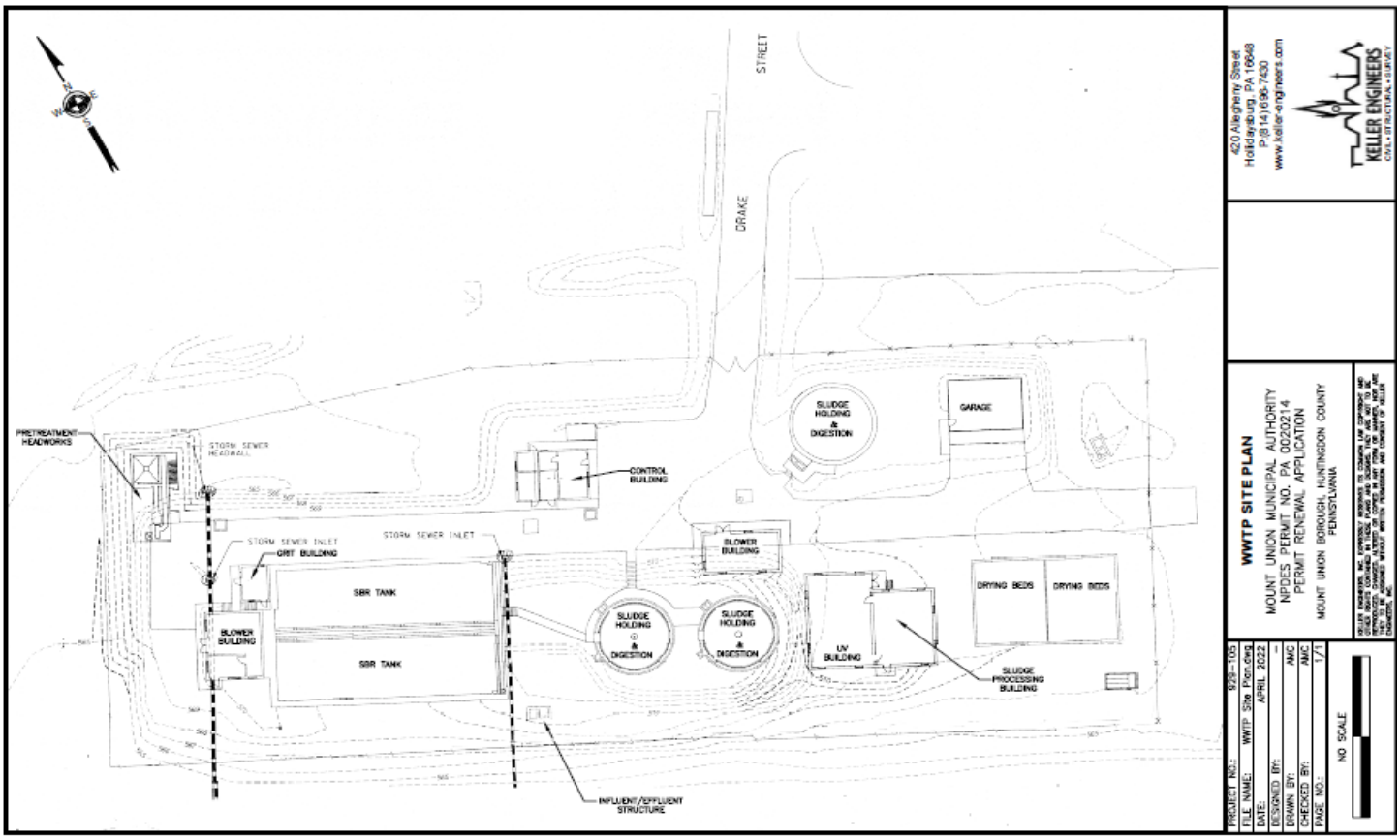
Page: 2 No Filter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DRAKE
PRETREATMENT HEADWORKS
STORM SEWER HEADWALL
STORM SEWER INLET
GRIT BUILDING
STORM SEWER INLET
SBR TANK
SBR TANK
BLOWER BUILDING
SLUDGE HOLDING & DIGESTION
SLUDGE HOLDING & DIGESTION
CONTROL BUILDING
SLUDGE HOLDING & DIGESTION
GARAGE
BLOWER BUILDING
UV BUILDING
DRYING BEDS
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SLUDGE PROCESSING BUILDING
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KELLER ENGINEERS
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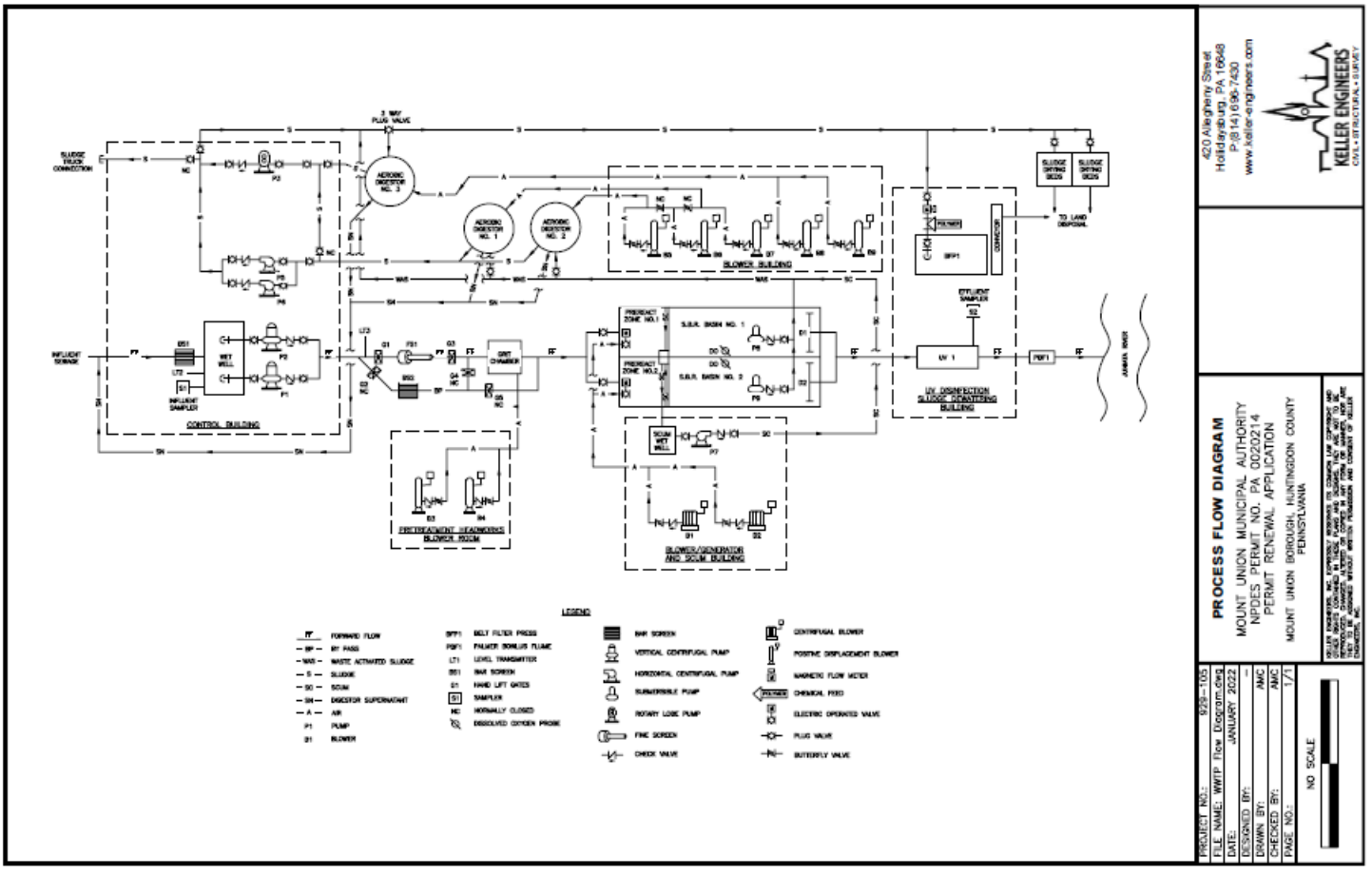
WWTP SITE PLAN
MOUNT UNION MUNICIPAL AUTHORITY
NPDES PERMIT NO. PA 0020214
PERMIT RENEWAL APPLICATION
MOUNT UNION BOROUGH, HUNTINGDON COUNTY
PENNSYLVANIA
PROJECT NO.: 928-105
FILE NAME: WWTP Site Plan.dwg
DATE: APRIL 2022
DESIGNED BY: -
DRAWN BY: AMC
CHECKED BY: AMC
PAGE NO.: 1/1
NO SCALE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SLUDGE TRUCK CONNECTION
AEROBIC DIGESTOR NO. 3
AEROBIC DIGESTOR NO. 1
AEROBIC DIGESTOR NO. 2
SLUDGE DRYING BEDS
SLUDGE DRYING BEDS
TO LAND DISPOSAL
BLOWER BUILDING
POLYMER
BFP1
CHEMICAL FEED
INFLUENT SEWAGE
WET WELL
INFLUENT SAMPLER
CONTROL BUILDING
GRIT CHAMBER
PREREACT ZONE NO. 1
PREREACT ZONE NO. 2
S.B.R. BASIN NO. 1
S.B.R. BASIN NO. 2
EFFLUENT SAMPLER
UV 1
UV DISINFECTION & SLUDGE DEWATERING BUILDING
PSF1
ARMCO INLET
SCUM WET WELL
PRETREATMENT HEADWORKS BLOWER ROOM
BLOWER/GENERATOR AND SCUM BUILDING
LEGEND
FORWARD FLOW
BY PASS
WASTE ACTIVATED SLUDGE
SLUDGE
SCUM
DIGESTOR SUPERNATANT
AIR
PUMP
BLOWER
BELT FILTER PRESS
PALMER BOWLUS FLUME
LEVEL TRANSMITTER
BAR SCREEN
HAND LIFT GATES
SAMPLER
NORMALLY CLOSED
DISSOLVED OXYGEN PROBE
BAR SCREEN
VERTICAL CENTRIFUGAL PUMP
HORIZONTAL CENTRIFUGAL PUMP
SUBMERSIBLE PUMP
ROTARY LOBE PUMP
FINE SCREEN
CHECK VALVE
CENTRIFUGAL BLOWER
POSITIVE DISPLACEMENT BLOWER
MAGNETIC FLOW METER
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NPDES PERMIT NO. PA 0020214
PERMIT RENEWAL APPLICATION
MOUNT UNION BOROUGH, HUNTINGDON COUNTY
PENNSYLVANIA
PROJECT NO.: 928-105
FILE NAME: WWTP Flow Diagram.dwg
DATE: JANUARY 2022
DESIGNED BY: -
DRAWN BY: AMC
CHECKED BY: AMC
PAGE NO.: 1/1
NO SCALE

Whole Effluent Toxicity (WET)

For Outfall ____, ☐ **Acute** ☒ **Chronic** WET Testing was completed:

☒ 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%, 60%, 30%, 2%, and 1%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 1%.

Summary of Four Most Recent Test Results

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

NOEC/LC50 Data Analysis

	***Ceriodaphnia* Results (% Effluent)**			***Pimephales* Results (% Effluent)**			
Test Date	**NOEC Survival**	**NOEC Reproduction**	**LC50**	**NOEC Survival**	**NOEC Growth**	**LC50**	**Pass? ***
01/30/2018	100	60	100	50	100	100	Yes
07/16/2019	60	60	100	100	100	100	Yes
09/22/2020	100	30	100	100	100	100	Yes
10/05/2021	100	100	100	100	100	100	Yes

***** *A "passing" result is that which is greater than or equal to the TIWC 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: none

Evaluation of Test Type, IWC and Dilution Series for Renewed Permit

Acute Partial Mix Factor (PMFa): **0.077** Chronic Partial Mix Factor (PMFc): **0.535**

1. Determine IWC – Acute (IWCa):

$(Q_d \times 1.547) / ((Q_{7\text{-}10} \times PMFa) + (Q_d \times 1.547))$

[(1.1 MGD x 1.547) / ((225.5 cfs x 0.077) + (1.1 MGD x 1.547))] x 100 = **8.95%**

Is IWCa < 1%? ☐ **YES** ☒ **NO** **(YES - Acute Tests Required OR NO - Chronic Tests Required)**

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

Type of Test for Permit Renewal: ____

2a. Determine Target IWCa (If Acute Tests Required)

TIWCa = IWCa / 0.3 = ____**%**

2b. Determine Target IWCc (If Chronic Tests Required)

$(Q_d \times 1.547) / (Q_{7\text{-}10} \times PMFc) + (Q_d \times 1.547)$

[(1.1 MGD x 1.547) / ((225.5 cfs x 0.535) + (1.1 MGD x 1.547))] x 100 = **1.4%**

3. Determine Dilution Series

(NOTE – check Attachment C of WET SOP for dilution series based on TIWCa or TIWCc, whichever applies).

Dilution Series = 100%, 60%, 30%, 2%, and 1%.

WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

Will WET limits be established in the permit? ☐ YES ☒ NO

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

If WET limits will not be established, but reasonable potential was determined, indicate the rationale for not establishing WET limits:

WET Summary and Evaluation

Facility Name	Mount Union Municipal Authority
Permit No.	PA0020214
Design Flow (MGD)	1.1
Q_{7-10} Flow (cfs)	225.5
PMF_a	0.077
PMF_c	0.535

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	2/6/18	7/23/19	9/28/20	10/12/21
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	2/6/18	7/23/19	9/28/20	10/12/21
Ceriodaphnia	Reproduction	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	2/6/18	7/23/19	9/29/20	10/12/21
Pimephales	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	2/6/18	7/23/19	9/29/20	10/12/21
Pimephales	Growth	PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type	**Chronic**
TIWC	**1** % Effluent
Dilution Series	**1, 2, 30, 60, 100** % Effluent
Permit Limit	**None**
Permit Limit Species	

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.01
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Mount Union Municipal Authority

Permit No.: PA0020214

Replicate No.	Test Completion Date 2/6/2018 Control	TIWC	Test Completion Date 7/23/2019 Control	TIWC
1	1	1	1	0
2	1	1	1	1
3	1	1	1	1
4	1	1	1	1
5	1	1	1	1
6	0	1	1	1
7	1	1	1	1
8	1	1	1	1
9	1	1	0	1
10	1	1	1	1
11				
12				
13				
14				
15				
Mean	0.900	1.000	0.900	0.900
Std Dev.	0.316	0.000	0.316	0.316
# Replicates	10	10	10	10
T-Test Result				
Deg. of Freedom				
Critical T Value				
Pass or Fail	PASS		PASS	

Replicate No.	Test Completion Date 9/28/2020 Control	TIWC	Test Completion Date 10/12/2021 Control	TIWC
1	1	1	1	1
2	1	1	1	1
3	1	1	1	1
4	1	1	1	1
5	1	1	1	1
6	1	1	1	1
7	1	1	1	1
8	1	1	1	1
9	1	1	1	1
10	1	1	1	1
11				
12				
13				
14				
15				
Mean	1.000	1.000	1.000	1.000
Std Dev.	0.000	0.000	0.000	0.000
# Replicates	10	10	10	10
T-Test Result				
Deg. of Freedom				
Critical T Value				
Pass or Fail	PASS		PASS	

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.01
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.2

Facility Name: Mount Union Municipal Authority

Permit No.: PA0020214

Replicate No.	Test Completion Date 2/6/2018 Control	TIWC
1	34	41
2	41	27
3	37	37
4	32	40
5	40	39
6	0	40
7	36	37
8	32	43
9	37	41
10	37	41
11		
12		
13		
14		
15		
Mean	32.600	38.600
Std Dev.	11.834	4.477
# Replicates	10	10
T-Test Result	4.5013	
Deg. of Freedom	17	
Critical T Value	0.8633	
Pass or Fail	PASS	

Replicate No.	Test Completion Date 7/23/2019 Control	TIWC
1	27	14
2	26	37
3	32	31
4	30	34
5	26	35
6	20	29
7	15	29
8	28	30
9	14	34
10	28	31
11		
12		
13		
14		
15		
Mean	24.600	30.400
Std Dev.	6.168	6.363
# Replicates	10	10
T-Test Result	4.8035	
Deg. of Freedom	16	
Critical T Value	0.8647	
Pass or Fail	PASS	

Replicate No.	Test Completion Date 9/28/2020 Control	TIWC
1	32	26
2	24	16
3	11	14
4	16	24
5	6	11
6	22	22
7	36	36
8	34	31
9	30	37
10	38	38
11		
12		
13		
14		
15		
Mean	24.900	25.500
Std Dev.	11.020	9.869
# Replicates	10	10
T-Test Result	1.6767	
Deg. of Freedom	17	
Critical T Value	0.8633	
Pass or Fail	PASS	

Replicate No.	Test Completion Date 10/12/2021 Control	TIWC
1	30	38
2	36	35
3	31	17
4	32	26
5	26	30
6	29	26
7	28	20
8	28	34
9	29	30
10	25	28
11		
12		
13		
14		
15		
Mean	29.400	28.400
Std Dev.	3.134	6.535
# Replicates	10	10
T-Test Result	2.8913	
Deg. of Freedom	13	
Critical T Value	0.8702	
Pass or Fail	PASS	

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.01
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Mount Union Municipal Authority

Permit No.: PA0020214

Test Completion Date: 2/6/2018

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: 7/23/2019

Replicate No.	Control	TIWC
1	10	10
2	10	10
3	10	9
4	10	10
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	10.000	9.750
Std Dev.	0.000	0.500
# Replicates	4	4

T-Test Result: 7.6643
Deg. of Freedom: 3
Critical T Value: 0.7649
Pass or Fail: **PASS**

Test Completion Date: 9/29/2020

Replicate No.	Control	TIWC
1	10	10
2	10	10
3	10	10
4	10	9
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	10.000	9.750
Std Dev.	0.000	0.500
# Replicates	4	4

T-Test Result: 7.6643
Deg. of Freedom: 3
Critical T Value: 0.7649
Pass or Fail: **PASS**

Test Completion Date: 10/12/2021

Replicate No.	Control	TIWC
1	10	10
2	10	10
3	10	10
4	10	9
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	10.000	9.750
Std Dev.	0.000	0.500
# Replicates	4	4

T-Test Result: 7.6643
Deg. of Freedom: 3
Critical T Value: 0.7649
Pass or Fail: **PASS**

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.01
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Mount Union Municipal Authority

Permit No.: PA0020214

Replicate No.	Test Completion Date: 2/6/2018 Control	TIWC
1	0.312	0.367
2	0.397	0.373
3	0.104	0.352
4	0.36	0.36
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.293	0.363
Std Dev.	0.131	0.009
# Replicates	4	4
T-Test Result	2.9026	
Deg. of Freedom	3	
Critical T Value	0.7649	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 7/23/2019 Control	TIWC
1	0.251	0.301
2	0.313	0.289
3	0.31	0.321
4	0.309	0.347
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.296	0.315
Std Dev.	0.030	0.025
# Replicates	4	4
T-Test Result	5.4761	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 9/29/2020 Control	TIWC
1	0.362	0.367
2	0.393	0.412
3	0.348	0.45
4	0.384	0.348
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.372	0.394
Std Dev.	0.021	0.046
# Replicates	4	4
T-Test Result	4.7748	
Deg. of Freedom	4	
Critical T Value	0.7407	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 10/12/2021 Control	TIWC
1	0.45	0.472
2	0.492	0.506
3	0.497	0.473
4	0.511	0.455
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.488	0.477
Std Dev.	0.026	0.021
# Replicates	4	4
T-Test Result	7.6378	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Mt Union Municipal Authority** NPDES Permit No.: **PA0020214** Outfall No.: **001**

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

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
1.1	217	7.3						

					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		388									
	Chloride (PWS)	mg/L		83									
	Bromide	mg/L	<	0.4									
	Sulfate (PWS)	mg/L		52.8									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L	<	43.5									
	Total Antimony	µg/L	<	0.348									
	Total Arsenic	µg/L	<	0.5									
	Total Barium	µg/L		26.1									
	Total Beryllium	µg/L	<	0.676									
	Total Boron	µg/L		169									
	Total Cadmium	µg/L	<	0.123									
	Total Chromium (III)	µg/L	<	1.99									
	Hexavalent Chromium	µg/L	<	0.25									
	Total Cobalt	µg/L		0.331									
	Total Copper	µg/L		8.77									
	Free Cyanide	µg/L		5									
	Total Cyanide	µg/L	<	6									
	Dissolved Iron	µg/L	<	10									
	Total Iron	µg/L	<	20									
	Total Lead	µg/L		0.188									
	Total Manganese	µg/L		8.41									
	Total Mercury	µg/L	<	0.104									
	Total Nickel	µg/L		3.86									
	Total Phenols (Phenolics) (PWS)	µg/L	<	0.2									
	Total Selenium	µg/L	<	1.67									
	Total Silver	µg/L	<	1.37									
	Total Thallium	µg/L	<	0.068									
	Total Zinc	µg/L		42.7									
	Total Molybdenum	µg/L		0.592									
	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	<	0.39										
	Chloroethane	µg/L	<	0.42										
	2-Chloroethyl Vinyl Ether	µg/L	<	4										
	Chloroform	µg/L	<	0.51										
	Dichlorobromomethane	µg/L	<	0.32										
	1,1-Dichloroethane	µg/L	<	0.42										
	1,2-Dichloroethane	µg/L	<	0.39										
	1,1-Dichloroethylene	µg/L	<											
	1,2-Dichloropropane	µg/L	<	0.42										
	1,3-Dichloropropylene	µg/L	<											
	1,4-Dioxane	µg/L	<	1.4										
	Ethylbenzene	µg/L	<	0.27										
	Methyl Bromide	µg/L	<											
	Methyl Chloride	µg/L	<											
	Methylene Chloride	µg/L	<	0.45										
	1,1,2,2-Tetrachloroethane	µg/L	<	0.36										
	Tetrachloroethylene	µg/L	<											
	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	<											
	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	<											
	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	<											
	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		0.64										
	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	<	0.38										
	Di-n-Butyl Phthalate	µg/L	<	0.29										
	2,4-Dinitrotoluene	µg/L	<	0.77										

	2,6-Dinitrotoluene	µg/L	<	0.32										
	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	<											
	alpha-BHC	µg/L	<											
	beta-BHC	µg/L	<											
	gamma-BHC	µg/L	<											
	delta BHC	µg/L	<											
	Chlordane	µg/L	<											
	4,4-DDT	µg/L	<											
	4,4-DDE	µg/L	<											
	4,4-DDD	µg/L	<											
	Dieldrin	µg/L	<											
	alpha-Endosulfan	µg/L	<											
	beta-Endosulfan	µg/L	<											
	Endosulfan Sulfate	µg/L	<											
	Endrin	µg/L	<											
	Endrin Aldehyde	µg/L	<											
	Heptachlor	µg/L	<											
	Heptachlor Epoxide	µg/L	<											
	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	<											
	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
Version 1.3, March 2021

Stream / Surface Water Information

Mt Union Municipal Authority, NPDES Permit No. PA0020214, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **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	011414	80.76	542	2050			Yes
End of Reach 1	011414	77.43	526	2060			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	80.76	0.11										114	7.6		
End of Reach 1	77.43	0.11													

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	80.76														
End of Reach 1	77.43														

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Mt Union Municipal Authority, NPDES Permit No. PA0020214, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | ◉ All ○ Inputs ○ Results ○ Limits

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.077 Analysis Hardness (mg/l): 123.16 Analysis pH: 7.56

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	8,430	
Total Antimony	0	0		0	1,100	1,100	12,364	
Total Arsenic	0	0		0	340	340	3,822	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	236,034	
Total Boron	0	0		0	8,100	8,100	91,042	
Total Cadmium	0	0		0	2.466	2.64	29.6	Chem Translator of 0.935 applied
Total Chromium (III)	0	0		0	675.773	2,139	24,036	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	183	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	1,068	
Total Copper	0	0		0	16.354	17.0	191	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	247	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	80.965	106	1,196	Chem Translator of 0.761 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	18.5	Chem Translator of 0.85 applied
Total Nickel	0	0		0	558.488	560	6,290	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	4.603	5.42	60.9	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	731	
Total Zinc	0	0		0	139.805	143	1,607	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	33.7	

Acrylonitrile	0	0		0	650	650	7,306	
Benzene	0	0		0	640	640	7,193	
Bromoform	0	0		0	1,800	1,800	20,231	
Carbon Tetrachloride	0	0		0	2,800	2,800	31,471	
Chlorobenzene	0	0		0	1,200	1,200	13,488	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	202,315	
Chloroform	0	0		0	1,900	1,900	21,355	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	168,596	
1,2-Dichloropropane	0	0		0	11,000	11,000	123,637	
Ethylbenzene	0	0		0	2,900	2,900	32,595	
Methylene Chloride	0	0		0	12,000	12,000	134,877	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	11,240	
Toluene	0	0		0	1,700	1,700	19,108	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	76,430	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	33,719	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	38,215	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	6,294	
2,4-Dichlorophenol	0	0		0	1,700	1,700	19,108	
2,4-Dimethylphenol	0	0		0	660	660	7,418	
2,4-Dinitrophenol	0	0		0	660	660	7,418	
2-Nitrophenol	0	0		0	8,000	8,000	89,918	
4-Nitrophenol	0	0		0	2,300	2,300	25,851	
Pentachlorophenol	0	0		0	15.363	15.4	173	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	5,170	
Acenaphthene	0	0		0	83	83.0	933	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	3,372	
Benzo(a)Anthracene	0	0		0	0.5	0.5	5.62	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	337,191	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	50,579	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	3,035	
Butyl Benzyl Phthalate	0	0		0	140	140	1,574	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	9,217	
1,3-Dichlorobenzene	0	0		0	350	350	3,934	
1,4-Dichlorobenzene	0	0		0	730	730	8,205	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	44,959	

Dimethyl Phthalate	0	0		0	2,500	2,500	28,099	
Di-n-Butyl Phthalate	0	0		0	110	110	1,236	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	17,984	
2,6-Dinitrotoluene	0	0		0	990	990	11,127	
1,2-Diphenylhydrazine	0	0		0	15	15.0	169	
Fluoranthene	0	0		0	200	200	2,248	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	112	
Hexachlorocyclopentadiene	0	0		0	5	5.0	56.2	
Hexachloroethane	0	0		0	60	60.0	674	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	112,397	
Naphthalene	0	0		0	140	140	1,574	
Nitrobenzene	0	0		0	4,000	4,000	44,959	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	191,075	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	3,372	
Phenanthrene	0	0		0	5	5.0	56.2	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	1,461	

☑ *CFC* CCT (min): 720 PMF: 0.535 Analysis Hardness (mg/l): 115.43 Analysis pH: 7.59

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	15,827	
Total Arsenic	0	0		0	150	150	10,791	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	294,965	
Total Boron	0	0		0	1,600	1,600	115,108	
Total Cadmium	0	0		0	0.272	0.3	21.7	Chem Translator of 0.903 applied
Total Chromium (III)	0	0		0	83.358	96.9	6,973	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	748	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	1,367	
Total Copper	0	0		0	10.124	10.5	759	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	374	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	200,272	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.941	3.82	275	Chem Translator of 0.77 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	65.2	Chem Translator of 0.85 applied
Total Nickel	0	0		0	58.720	58.9	4,237	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	

Total Selenium	0	0		0	4.600	4.99	359	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	935	
Total Zinc	0	0		0	133.414	135	9,734	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	216	
Acrylonitrile	0	0		0	130	130	9,353	
Benzene	0	0		0	130	130	9,353	
Bromoform	0	0		0	370	370	26,619	
Carbon Tetrachloride	0	0		0	560	560	40,288	
Chlorobenzene	0	0		0	240	240	17,266	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	251,800	
Chloroform	0	0		0	390	390	28,058	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	223,023	
1,2-Dichloropropane	0	0		0	2,200	2,200	158,274	
Ethylbenzene	0	0		0	580	580	41,727	
Methylene Chloride	0	0		0	2,400	2,400	172,663	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	15,108	
Toluene	0	0		0	330	330	23,741	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	100,720	
1,1,1-Trichloroethane	0	0		0	610	610	43,885	
1,1,2-Trichloroethane	0	0		0	680	680	48,921	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	7,914	
2,4-Dichlorophenol	0	0		0	340	340	24,461	
2,4-Dimethylphenol	0	0		0	130	130	9,353	
2,4-Dinitrophenol	0	0		0	130	130	9,353	
2-Nitrophenol	0	0		0	1,600	1,600	115,108	
4-Nitrophenol	0	0		0	470	470	33,813	
Pentachlorophenol	0	0		0	11.787	11.8	848	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	6,547	
Acenaphthene	0	0		0	17	17.0	1,223	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	4,245	
Benzo(a)Anthracene	0	0		0	0.1	0.1	7.19	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	431,657	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	65,468	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	3,885	
Butyl Benzyl Phthalate	0	0		0	35	35.0	2,518	

2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	11,511	
1,3-Dichlorobenzene	0	0		0	69	69.0	4,964	
1,4-Dichlorobenzene	0	0		0	150	150	10,791	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	57,554	
Dimethyl Phthalate	0	0		0	500	500	35,971	
Di-n-Butyl Phthalate	0	0		0	21	21.0	1,511	
2,4-Dinitrotoluene	0	0		0	320	320	23,022	
2,6-Dinitrotoluene	0	0		0	200	200	14,389	
1,2-Diphenylhydrazine	0	0		0	3	3.0	216	
Fluoranthene	0	0		0	40	40.0	2,878	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	144	
Hexachlorocyclopentadiene	0	0		0	1	1.0	71.9	
Hexachloroethane	0	0		0	12	12.0	863	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	151,080	
Naphthalene	0	0		0	43	43.0	3,094	
Nitrobenzene	0	0		0	810	810	58,274	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	244,605	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	4,245	
Phenanthrene	0	0		0	1	1.0	71.9	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	1,871	

☑ ***THH*** CCT (min): 720 PMF: 0.535 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	403	
Total Arsenic	0	0		0	10	10.0	719	
Total Barium	0	0		0	2,400	2,400	172,663	
Total Boron	0	0		0	3,100	3,100	223,023	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	

Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	4	4.0	288	
Dissolved Iron	0	0		0	300	300	21,583	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	71,943	
Total Mercury	0	0		0	0.050	0.05	3.6	
Total Nickel	0	0		0	610	610	43,885	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	17.3	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	216	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	7,194	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	410	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	4,892	
Methylene Chloride	0	0		0	N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
Toluene	0	0		0	57	57.0	4,101	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	7,194	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	719,428	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	30	30.0	2,158	
2,4-Dichlorophenol	0	0		0	10	10.0	719	
2,4-Dimethylphenol	0	0		0	100	100.0	7,194	
2,4-Dinitrophenol	0	0		0	10	10.0	719	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	287,771	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	5,036	
Anthracene	0	0		0	300	300	21,583	

Benzidine	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	14,389	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	7.19	
2-Chloronaphthalene	0	0		0	800	800	57,554	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	71,943	
1,3-Dichlorobenzene	0	0		0	7	7.0	504	
1,4-Dichlorobenzene	0	0		0	300	300	21,583	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	43,166	
Dimethyl Phthalate	0	0		0	2,000	2,000	143,886	
Di-n-Butyl Phthalate	0	0		0	20	20.0	1,439	
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
Fluoranthene	0	0		0	20	20.0	1,439	
Fluorene	0	0		0	50	50.0	3,597	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	288	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	34	34.0	2,446	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	719	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	1,439	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	5.04	

☑ *CRL* CCT (min): 720 PMF: 0.822 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	

Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	24.6	
Benzene	0	0		0	0.58	0.58	238	
Bromoform	0	0		0	7	7.0	2,871	
Carbon Tetrachloride	0	0		0	0.4	0.4	164	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	328	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	390	
1,2-Dichloroethane	0	0		0	9.9	9.9	4,060	
1,2-Dichloropropane	0	0		0	0.9	0.9	369	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	8,201	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	82.0	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	226	
Vinyl Chloride	0	0		0	0.02	0.02	8.2	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	

2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	12.3	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	615	
Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.041	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.41	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.041	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.41	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	4.1	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	12.3	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	131	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	49.2	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.041	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	20.5	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	20.5	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	20.5	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	12.3	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.033	
Hexachlorobutadiene	0	0		0	0.01	0.01	4.1	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	41.0	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.41	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.29	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	2.05	

n-Nitrosodiphenylamine	0	0		0	3.3	3.3	1,353	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

Pollutants	*Mass Limits*		*Concentration Limits*				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	5,403	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	151,288	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	58,354	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	19.0	µg/L	Discharge Conc < TQL
Total Chromium (III)	6,973	µg/L	Discharge Conc < TQL
Hexavalent Chromium	117	µg/L	Discharge Conc < TQL
Total Cobalt	684	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	123	µg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	158	µg/L	Discharge Conc ≤ 25% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	21,583	µg/L	Discharge Conc < TQL
Total Iron	200,272	µg/L	Discharge Conc < TQL
Total Lead	275	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	71,943	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	3.6	µg/L	Discharge Conc < TQL
Total Nickel	4,032	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	359	µg/L	Discharge Conc < TQL

Total Silver	39.0	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	17.3	µg/L	Discharge Conc < TQL
Total Zinc	1,030	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	21.6	µg/L	Discharge Conc < TQL
Acrylonitrile	24.6	µg/L	Discharge Conc < TQL
Benzene	238	µg/L	Discharge Conc < TQL
Bromoform	2,871	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	164	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorobenzene	7,194	µg/L	Discharge Conc < TQL
Chlorodibromomethane	328	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	129,676	µg/L	Discharge Conc < TQL
Chloroform	410	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	390	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	4,060	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	369	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	4,892	µg/L	Discharge Conc < TQL
Methylene Chloride	8,201	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	82.0	µg/L	Discharge Conc < TQL
Toluene	4,101	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	7,194	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	21,613	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	226	µg/L	Discharge Conc < TQL
Vinyl Chloride	8.2	µg/L	Discharge Conc < TQL
2-Chlorophenol	2,158	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	719	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	4,755	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	719	µg/L	Discharge Conc < TQL
2-Nitrophenol	57,634	µg/L	Discharge Conc < TQL
4-Nitrophenol	16,570	µg/L	Discharge Conc < TQL
Pentachlorophenol	12.3	µg/L	Discharge Conc < TQL
Phenol	287,771	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	615	µg/L	Discharge Conc < TQL
Acenaphthene	598	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	21,583	µg/L	Discharge Conc < TQL
Benzidine	0.041	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.41	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.041	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.41	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	4.1	µg/L	Discharge Conc < TQL

Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	12.3	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	14,389	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	131	µg/L	Discharge Conc ≤ 25% WQBEL
4-Bromophenyl Phenyl Ether	1,945	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	7.19	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	57,554	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	49.2	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.041	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	5,907	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	504	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	5,259	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	20.5	µg/L	Discharge Conc < TQL
Diethyl Phthalate	28,817	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	18,010	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	792	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	20.5	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	20.5	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	12.3	µg/L	Discharge Conc < TQL
Fluoranthene	1,439	µg/L	Discharge Conc < TQL
Fluorene	3,597	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.033	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	4.1	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	36.0	µg/L	Discharge Conc < TQL
Hexachloroethane	41.0	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.41	µg/L	Discharge Conc < TQL
Isophorone	2,446	µg/L	Discharge Conc < TQL
Naphthalene	1,009	µg/L	Discharge Conc < TQL
Nitrobenzene	719	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.29	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	2.05	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	1,353	µg/L	Discharge Conc < TQL
Phenanthrene	36.0	µg/L	Discharge Conc < TQL
Pyrene	1,439	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	5.04	µg/L	Discharge Conc < TQL

Existing Effluent Limitations and Monitoring Requirements

Outfall 001,

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
CBOD5	225.0	365.0 Wkly Avg	XXX	25.0	40.0	50.0	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS	275.0	410.0 Wkly Avg	XXX	30.0	45.0	60.0	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/week	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/week	Grab
UV Dosage (mWsec/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded

Existing Effluent Limitations and Monitoring Requirements

Outfall 001, Chesapeake Bay Requirements

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	2/week	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	Report	20,091	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	2,679	XXX	XXX	XXX	XXX	1/month	Calculation

Proposed Effluent Limitations and Monitoring Requirements

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.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
$CBOD_5$	225.0	365.0 Wkly Avg	XXX	25.0	40.0	50.0	2/week	24-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS	275.0	410.0 Wkly Avg	XXX	30.0	45.0	60.0	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/week	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
UV Dosage ($mWsec/cm^2$)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded

Compliance Sampling Location:

Other Comments:

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, to comply with Pennsylvania's Chesapeake Bay Tributary Strategy.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

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	2/week	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	Report	20,091	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	2,679	XXX	XXX	XXX	XXX	1/month	Calculation

Compliance Sampling Location:

Other Comments:

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: BPNPSM-PMT-033
☐	Other:

H-3A
Mount Union STP
PA 0020214

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

AUG 04 2011

RECEIVED
DEP SOUTHCENTRAL REGION
AUG 8 2011
WQ/WSHD PROGRAMS

Mr. Glenn L. Gribble
V.P. Human Resource & Safety
Bonney Forge Corporation
14496 Croghan Pike
P.O. Box 330
Mount Union, PA 17066-0330

Re: Industrial User Requirements
PAP 120214

Dear Mr. Gribble:

In accordance with the information submitted by Bonney Forge, your facility in Mount Union is an industrial user of a publicly owned treatment works and subject to the Metal Finishing Category, 40 CFR Part 433, Pretreatment Standards for New Sources (PSNS). As such, the monitoring and reporting requirements of the General Pretreatment Regulations, 40 CFR Part 403.12, apply to the discharge from the facility.

Enclosed is information regarding your requirements as an industrial user. The package sets forth specific requirements for your facility, including monitoring requirements that the Environmental Protection Agency (EPA) has established in accordance with 40 CFR Part 403.12(e). Appendix A includes a summary of the General Pretreatment Regulations. Please note the monitoring and reporting provisions, including the requirements for resampling whenever a violation occurs. Appendix B includes information on hazardous waste requirements under the Resource, Conservation, and Recovery Act.

New sources are required to be in compliance upon commencement of discharge. Thereafter, periodic compliance reports are required to be submitted to the EPA each June and December in accordance with 40 CFR Part 403.12(e). In this package, EPA, as Control Authority, is modifying the due dates for future periodic monitoring reports. Monitoring data obtained from sampling conducted in the January through June monitoring period will be due July 31 of each year, while data obtained in the July through December monitoring period will be due January 31 of the following year.

In the event that a violation occurs, you are required to notify EPA within 24 hours of becoming aware of the violation. In addition, you are required to resample for those pollutants for which the violation occurred and submit the results of the resampling within 30 days of becoming aware of the violation. Although not required by the regulations, the 30 day report should also include the cause of the violation and the steps taken to ensure that it does not recur.

This package is based on information supplied by Bonney Forge. The company is required to provide EPA with complete and updated information on its manufacturing operations and discharges. Any changes to the manufacturing facilities and/or discharges may result in changes to the specific requirements for your facility. Where there is a conflict between the regulatory requirements and this package, the regulatory requirement applies.

In addition, the company must comply with the requirements of any state or local agencies which may have jurisdiction. Nothing contained in this package, or in any EPA regulation, is meant to restrict state or local agencies from imposing additional requirements in accordance with applicable laws including requirements which are more stringent than those imposed by EPA.

You should carefully review the enclosed information and communicate to each responsible official the actions necessary to comply with pretreatment requirements. A copy of the General Pretreatment Regulations is enclosed for your use.

In order to promote further strides in the reduction of discharges, pollution prevention in the form of source reduction such as raw material, product substitution, and process or equipment modification, recycling and reuse is being encouraged by the EPA. We strongly encourage you to explore pollution prevention alternatives in your operation and implement them as appropriate.

If you have any questions, please contact Robert Hansford at (215) 814-5791 or John Lovell at (215) 814-5790.

Sincerely,

Evelyn S MacKnight, for

David B. McGuigan, Ph.D
Associate Director
Office of NPDES Permits and Enforcement
Water Protection Division

Enclosures

cc: Lee McDonnell, PADEP-Southcentral Regional Office
Sean Furjanic, PADEP Central Office

Discharge Limitations and Monitoring Requirements for:
Bonney Forge Corporation – 14496 Croghan Pike – Mt. Union, PA 17066-0330
(PAP120214)

Such discharges shall be limited and monitored by the permittee as specified below:

Parameter	Concentration (mg/l)	Concentration (mg/l)	Monitoring Requirements (2)	
	Monthly Avg	Daily Max	Frequency	Sample Type (3)
Regulated Flow (gal/day)			1/month	Measured
pH (1)			1/month	grabs/low chart read
Cadmium (T)	0.07	0.11	1/6 months	Composite
Chromium (T)	1.71	2.77	1/6 months	Composite
Copper (T)	2.07	3.38	1/6 months	Composite
Lead (T)	0.43	0.69	1/6 months	Composite
Nickel (T)	2.38	3.98	1/6 months	Composite
Silver (T)	0.24	0.43	1/6 months	Composite
Zinc (T)	1.48	2.61	1/6 months	Composite
Cyanide (T)	0.65	1.20	1/6 months	grabs
TTO (4)	----	2.13	1/6 months	Grabs

(1) The pH shall not be less than 5.0 standard units at any time and shall be monitored at least once per month by grab sample or continuously by a pH monitoring device.

(2) Samples taken in compliance with the monitoring requirements specified above shall be representative of the combined effluent streams from the two **Rinse Tanks** in the 5-stage washline, taken at a point not subject to dilution by other wastestreams. Prior to discharge of any other process wastes, notification must be provided to both EPA and the local POTW.

(3) Compliance sampling shall consist of a series of 4 grab samples taken over the discharge period of one calendar day or 24-hour period. Grab samples **(except pH)** may be combined in the lab prior to analysis or tested separately and the test results averaged to derive a daily maximum value. Also see attachment outlining VOA collection, preservation and compositing procedures.

(4) TTO shall mean total toxic organics, which is the summation of all quantifiable values greater than 0.01 mg/liter for the toxic organics shown in attachment 1. Analysis shall be conducted for all TTO parameters such that the detection limit (MDL) is less than or equal to 0.01 mg/liter. The industrial user can monitor for TTO semiannually, or develop and implement a toxic organics management plan (TOMP) and submit semi-annual certification of no dumping of solvents as stated in 40 CFR 433.12. TTO monitoring must be continued until the TOMP is approved by EPA. Guidance for the preparation of a TOMP is attached.

Phase 3 WIP Wastewater Supplement
Revised, September 13, 2021

Table 5: Significant Chesapeake Bay Sewage NPDES Permits Issued

NPDES Permit No.	Phase	Facility	Latest Permit Issuance Date	Permit Expiration Date	Cap Load Compliance Start Date	TN Cap Load (lbs/yr)	TN Offsets Included in Cap Load (lbs/yr)	TP Cap Load (lbs/yr)	TN Delivery Ratio	TP Delivery Ratio
PA0020036	3	Blossburg Borough	1/10/2017	1/31/2022	10/1/2012	7,306	-	974	0.474	0.436
PA0020214	3	Mount Union Borough	4/17/2017	4/30/2022	10/1/2013	20,091	-	2,679	0.88	0.436
PA0020249	3	Roaring Spring Borough	1/31/2020	1/31/2025	1/1/2016	12,785	-	1,705	0.88	0.436
PA0020273	2	Milton Regional Sewage Authority	9/25/2017	9/30/2022	10/1/2009	72,217	-	10,049	0.941	0.436
PA0020320	1	Lititz Sewer Authority	7/19/2019	6/30/2023	10/1/2010	70,319	-	9,376	0.891	0.436
PA0020338	3	Kulpmont-Marion Heights Joint Municipal Authority	5/4/2017	5/31/2022	10/1/2011	9,132	-	1,218	0.871	0.436
PA0020486	1	Bellefonte Borough	6/1/2019	5/31/2024	10/1/2010	58,812	-	7,842	0.93	0.436
PA0020508	3	McConnellsburg Borough	1/14/2021	1/30/2026	10/1/2012	10,959	-	1,461	0.749	0.67
PA0020567	3	Northumberland Borough	1/17/2018	9/31/2023	10/1/2012	20,548	-	2,740	0.941	0.436
PA0020583	2	Middleburg Municipal Authority	7/16/2020	7/31/2025	10/1/2012	8,219	-	1,096	0.951	0.436
PA0020621	2	Waynesboro Borough	9/14/2018	9/30/2023	10/1/2013	29,223	-	3,896	0.819	0.67
PA0020664	1	Middletown STP	2/16/2021	2/28/2026	10/1/2011	40,182	-	5,358	0.961	0.436
PA0020800	3	White Deer Township	2/10/2021	2/28/2026	10/1/2011	10,959	-	1,461	0.941	0.436
PA0020818	2	Glen Rock Sewer Authority	10/21/2015	10/31/2020	10/1/2012	10,959	-	1,461	0.961	0.436
PA0020826	1	Dover Township Sewer Authority	6/2/2017	6/30/2022	10/1/2010	146,117	-	19,482	0.961	0.436
PA0020834	2	Franklin County Authority – Greencastle	5/21/2021	5/31/2026	10/1/2012	17,351	-	2,314	0.683	0.67
PA0020885	1	Mechanicsburg Borough Municipal Authority	4/27/2017	4/30/2022	10/1/2012	37,990	-	5,065	0.951	0.436
PA0020893	1	Manheim Borough Authority	1/17/2008	1/31/2013	10/1/2011	21,847	1,025	2,776	0.97	0.436
PA0020915	2	Pine Grove Borough Authority	2/04/2016	2/28/2021	10/1/2012	27,397	-	3,653	0.961	0.436
PA0020923	1	New Oxford Municipal Authority	5/23/2016	5/31/2021	10/1/2011	32,657	-	4,354	0.961	0.436
PA0021067	1	Mount Joy Borough	2/18/2021	2/28/2026	10/1/2010	27,945	-	3,726	0.97	0.436
PA0021229	3	Littlestown Borough	6/1/2012	6/30/2017	10/1/2014	18,265	-	2,435	0.627	0.67