pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0098973**
Facility Type	**Municipal**	APS ID	**833959**
Major / Minor	**Minor**	Authorization ID	**1300409**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Conemaugh Township Supervisors Somerset County**	Facility Name	**Benson Wastewater Treatment Plant**
Applicant Address	1120 Tire Hill Road Johnstown, PA 15905-7707	Facility Address	209 Oak Street Hollsopple, PA 15935
Applicant Contact	Steve Buncich	Facility Contact	Brian Bloom
Applicant Phone	(814) 288-1400	Facility Phone	814-535-5388
Client ID	90463	Site ID	257544
Ch 94 Load Status	Overloaded	Municipality	Paint Township
Connection Status	No Limitations	County	Somerset
Date Application Received	December 30, 2019	EPA Waived?	Yes
Date Application Accepted	January 2, 2020	If No, Reason	N/A

Purpose of Application: Renewal of NPDES Permit PA0098973

Summary of Review

On December 30, 2019 the Department received an NPDES renewal application from Conemaugh Township Supervisors in Somerset County for the Benson Wastewater Treatment Plant (Benson STP) located in Paint Township of Somerset County. This permit, PA0098973, authorized discharge to Stony Creek River, designated in 25 Pa. Code Chapter 93 as a Warm Water Fishery (WWF). The current permit was issued on June 23, 2015 and expired June 30, 2020 but has been administratively extended. The renewal application was received timely.

The facility serves a population of approximately 1762 people all from Conemaugh Township at a hydraulic design capacity of 0.1597 MGD and 275 lbs/day organic load. There are no combined stormwater flows, bypasses or overflows of raw or partially treated sewage. Influent flow enters a comminutor and then an aerated lagoon. From the first lagoon the water flows through a transfer pipe to a second lagoon where it is aerated in the first half. The flow then passes through a baffle to the unaerated half of the lagoon. The effluent flows through a transfer pipe through a baffle, over a weir, and into a chlorine contact tank with three baffled chambers. The final effluent flows over a weir to the outfall. Hypochlorite is used for disinfection and sodium hydroxide is used for pH adjustment. Both chemicals are dosed at a maximum 10 gpd. It is planned that both lagoons will have liners replaced within the next five years. Treatment plant operations, maintenance and the collection system are all managed by the plant's contractor.

The facility has received numerous Notices of Violations (NOVs) during recent years. See the Compliance History section for more details. NOVs include improper system operation, exceedance of effluent limitations, and organic overloading. The Department's Compliance section is aware of this and considering enforcement, as appropriate, outside of the issuance of this permit.

Act 14 notifications were submitted to and received by Conemaugh Township Supervisors and Somerset County Commissioners.

Approve	Deny	Signatures	Date
X		Nicole H. Benoit, P.E. / Environmental Engineering Specialist	March 17, 2021
X		Donald J. Leone Donald J. Leone, P.E. / Environmental Engineer Manager	March 18, 2021

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

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.1597
Latitude	40º 12' 30.13"	Longitude	-78º 54' 58.48"
Quad Name	Hooversville	Quad Code	1714
Wastewater Description:	Sewage Effluent		

Receiving Waters	Stony Creek River (WWF)	Stream Code	45084
NHD Com ID	123719603	RMI	15.49
Drainage Area	249 sq. mi.	Yield (cfs/mi^2)	0.07068
Q_{7-10} Flow (cfs)	17.6	Q_{7-10} Basis	U.S.G.S. StreamStats
Elevation (ft)	1400	Slope (ft/ft)	0.0030
Watershed No.	18-E	Chapter 93 Class.	WWF
Existing Use	Non-attaining	Existing Use Qualifier	N/A
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Impaired		
Cause(s) of Impairment	Nutrients, Siltation		
Source(s) of Impairment	Urban Runoff/Storm Sewers, Acid Mine Drainage		
TMDL Status	Final	Name	Kiskiminetas-Conemaugh River Watersheds TMDL

Background/Ambient Data		Data Source
pH (SU)	7.0	Default
Temperature (°F)	Ambient	Default
Hardness (mg/L)	100	Default
Other:	N/A	N/A

Nearest Downstream Public Water Supply Intake		Saltsburg Municipal Waterworks	
PWS Waters	No	Flow at Intake (cfs)	N/A
PWS RMI	0.55 Conemaugh River	Distance from Outfall (mi)	>50 miles

Changes Since Last Permit Issuance: None

Other Comments: None

Treatment Facility Summary

Treatment Facility Name: Benson STP

WQM Permit No.	Issuance Date
5691406	March 24, 1993

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Aerated Lagoon	Hypochlorite	0.1597

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.1597	275	Overloaded	Sludge Lagoon	Landfill

Changes Since Last Permit Issuance: None

Other Comments: None

Compliance History

DMR Data for Outfall 001 (from March 1, 2020 to February 28, 2021)

Parameter	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20
Flow (MGD) Average Monthly	0.0940	0.1015	0.1077	0.0890	0.0762	0.0783	0.0867	0.0886	0.0725	0.0995	0.1412	0.1204
Flow (MGD) Daily Maximum	0.2497	0.2223	0.2737	0.1779	0.2218	0.2098	0.2536	0.2015	0.1247	0.2456	0.1991	0.2496
pH (S.U.) Minimum	7.27	6.68	7.21	7.21	6.03	6.43	6.55	6.0	7.49	7.31	7.19	7.09
pH (S.U.) Maximum	7.82	7.83	7.83	7.72	7.24	7.2	7.8	7.72	7.83	7.64	7.61	7.62
DO (mg/L) Minimum	9.78	10.86	9.46	8.91	7.84	6.07	5.04	5.14	5.92	6.98	8.12	8.39
TRC (mg/L) Average Monthly	0.42	0.41	0.43	0.47	0.34	0.26	0.26	0.22	0.46	0.4	0.41	0.4
TRC (mg/L) Instantaneous Maximum	0.62	0.67	0.70	0.66	0.77	0.57	0.79	0.43	0.69	0.71	0.64	0.56
CBOD5 (lbs/day) Average Monthly	12.0	12.0	7.0	3.0	3	< 5	4	7	4	< 3	7	8.0
CBOD5 (lbs/day) Weekly Average	16.0	23.0	14.0	4.0	6	12	6	12	9	4	11	8.0
CBOD5 (mg/L) Average Monthly	18.0	12.5	7.22	4.84	5.23	< 10.1	5.35	6.86	6.97	< 4.41	6.59	6.63
CBOD5 (mg/L) Weekly Average	20.1	14.4	10.3	6.42	8.62	24.8	6.1	9.72	8.75	7.28	10.6	9.29
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	114	129	240	124	111	110	124	84	106	136	100	221
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	119	157	665	169	129	150	147	148	203	190	142	325
BOD5 (mg/L) Raw Sewage Influent Average Monthly	173	171.1	261	185	187	169.8	189	99	186.4	178	97.4	218
TSS (lbs/day) Raw Sewage Influent Average Monthly	39	73	35	48	39	44	76	81	77	137	60	97

TSS (lbs/day) Raw Sewage Influent Daily Maximum	53	113	47	90	76	117	118	141	94	279	110	139
TSS (mg/L) Raw Sewage Influent Average Monthly	61	94	41	68	69	56	111	98	155	169	62	100
TSS (lbs/day) Average Monthly	8.0	6.0	9.0	8.0	7	4	11	16	11	7	5	5.0
TSS (lbs/day) Weekly Average	11.0	11.0	15.0	11.0	9	6	17	28	26	9	7	10.0
TSS (mg/L) Average Monthly	11.7	7.1	11.0	10.6	10.9	6.6	15.7	17	16.3	9.6	4.8	4.5
TSS (mg/L) Weekly Average	13.6	8.0	19.0	14.0	12.4	9.6	22	22.4	26.7	18.4	6.8	6.0
Fecal Coliform (CFU/100 ml) Geometric Mean	22	<20	173	251	< 55	< 39	< 22	45	< 9	< 13	86	100
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	140	189	1223	379	301	359	75	108	20.8	79.6	428	717.2
Total Nitrogen (mg/L) Daily Maximum						2.875						
Ammonia (mg/L) Average Monthly	34.49	16.141	26.73	22.17	6.192	< 1.092	< 0.1	16.723	41.57	21.97	17.88	22.19
Ammonia (mg/L) Daily Maximum	39.32	24.98	33.93	25.94	9.111	3.502	< 0.1	46.16	47.22	26.13	19.4	31.04
Total Phosphorus (mg/L) Daily Maximum						4.91						

No DMR exceedances during this time period.

Compliance History

Inspections:

The most recent inspection was conducted on November 27, 2019. The report notes the NOV listed below, as well as an exceedance of the IMAX effluent limit for fecal coliform in September 2018. It was also noted that the lagoon liners were planned to be replaced in 2020 and that the aeration lines would be upgraded during that time. The inspector requested that they be notified prior to the start of this work. It was also recommended that a copy of the System Specific Management Plan (SSMP) be maintained onsite. As of the date of this fact sheet, a new liner and upgrading of the airline have not yet been performed, though there have been discussions between the Department inspector and plant operator about plans to do this.

The inspection conducted on August 30, 2018 states that the Chapter 94 report indicated the STP was neither organically nor hydraulically overloaded during the 2017 calendar year. An NOV was issued for DMR violations. It was recommended that a plan and schedule be developed for sludge disposal since the township had not disposed of sludge from the wastewater lagoons as of the date of the inspection and that improper operation and maintenance could lead to a loss of capacity and effluent violations. It was also recommended that any holes/tears in the lagoon liners be patched.

The April 19, 2017 inspection report noted the Chapter 94 report indicated the STP was neither organically nor hydraulically overloaded during the 2016 calendar year. Recommendations included removing growth from the lagoon, placing barrels of disinfectant in secondary containment and developing a plan/schedule for sludge handling. During the March 17, 2016 inspection recommendations included that the lagoon liners be patched where holes appeared.

Violations:

A Notice of Violation (NOV) was issued to the permittee on December 18, 2019 for organically overloading the system with 295 lbs BOD5/day in February 2018 according to a Chapter 94 report. The organic limit is 275 lbs BOD5/day. The same report indicated the system was not hydraulically overloaded during the 2018 calendar year.

The NOV issued October 1, 2018 is for numerous Discharge Monitoring Report (DMR) effluent limitation violations summarized here:

Month	Year	Parameter(s)/Violation(s)
May	2017	TSS (Monthly Average); Fecal Coliform (Geo Mean and IMAX)
June	2017	TSS (Monthly Average)
July	2017	Fecal Coliform (IMAX)
August	2017	pH (Minimum)
May	2018	Fecal Coliform (IMAX)
July	2018	Fecal Coliform (IMAX)

On June 7, 2017 the Department sent the permittee an NOV for failing to properly maintain the Benson STP lagoons in accordance with 25 Pa. Code 92a.41(A)5.

On April 25, 2016 the Department mailed the permittee an NOV for organically overloading the STP during calendar year 2015. The design Organic Loading for the plant is 275 lbs BOD/day. During March 2015 the load was 480 lbs BOD/day and during June 2015 the load was 669 lbs BOD/day.

Operations Compliance Check Summary Report

Facility: Benson STP
NPDES Permit No.: PA0098973
Compliance Review Period: 12/2015 – 12/2020

Inspection Summary:

INSP ID	INSPECTED DATE	AGENCY	INSPECTION RESULT DESC	CREATION DATE
2972588	11/27/2019	PA Dept of Environmental Protection	Violation(s) Noted	12/18/2019
2782096	08/30/2018	PA Dept of Environmental Protection	Violation(s) Noted	10/01/2018
2601656	04/19/2017	PA Dept of Environmental Protection	Violation(s) Noted	06/07/2017
2477697	03/17/2016	PA Dept of Environmental Protection	Violation(s) Noted	04/25/2016

Violation Summary:

VIOL ID	VIOLATION DATE	VIOLATION TYPE	VIOLATION TYPE DESC	RESOLVED DATE
871245	11/27/2019	94.21	Wasteload Management - Failure to implement required measures for an existing overload	12/18/2019
829365	08/30/2018	92A.44	NPDES - Violation of effluent limits in Part A of permit	10/01/2018
787458	04/19/2017	92A.41(A)5	NPDES - Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance	06/07/2017
757569	03/17/2016	94.21	Wasteload Management - Failure to implement required measures for an existing overload	04/25/2016

Open Violations by Client ID:

No open violations for Client ID 90463

Enforcement Summary:

ENF ID	ENF TYPE	ENF CREATION DATE	EXECUTED DATE	VIOLATIONS	# OF VIOLATIONS	ENF FINALSTATUS	ENF CLOSED DATE
381961	NOV	12/18/2019	12/18/2019	94.21	1		
367924	NOV	10/01/2018	10/01/2018	92A.44	1	Administrative Close Out	08/30/2019
354073	NOV	06/07/2017	06/07/2017	92A.41(A)5	1	Administrative Close Out	08/30/2019
342159	NOV	04/25/2016	04/25/2016	94.21	1	Administrative Close Out	08/30/2019

DMR Violation Summary:

MONITORING START DATE	MONITORING END DATE	NON COMPLIANCE CATEGORY	PARAMETER	SAMPLE VALUE	PERMIT VALUE	STATISTICAL BASE CODE
09/01/2018	09/30/2018	Concentration 3 Effluent Violation	Fecal Coliform	2419.6	1000	Instantaneous Maximum
07/01/2018	07/31/2018	Concentration 3 Effluent Violation	Fecal Coliform	1986.3	1000	Instantaneous Maximum
05/01/2018	05/31/2018	Concentration 3 Effluent Violation	Fecal Coliform	1732.9	1000	Instantaneous Maximum
09/01/2017	09/30/2017	Concentration 2 Effluent Violation	Total Suspended Solids	36.3	30	Average Monthly
09/01/2017	09/30/2017	Concentration 3 Effluent Violation	Total Suspended Solids	71.0	45	Weekly Average
08/01/2017	08/31/2017	Concentration 1 Effluent Violation	pH	5.32	6.0	Minimum
07/01/2017	07/31/2017	Concentration 3 Effluent Violation	Fecal Coliform	1312.9	1000	Instantaneous Maximum
06/01/2017	06/30/2017	Concentration 2 Effluent Violation	Total Suspended Solids	31	30	Average Monthly
05/01/2017	05/31/2017	Concentration 2 Effluent Violation	Fecal Coliform	278	200	Geometric Mean
05/01/2017	05/31/2017	Concentration 2 Effluent Violation	Total Suspended Solids	33	30	Average Monthly
05/01/2017	05/31/2017	Concentration 3 Effluent Violation	Fecal Coliform	7120	1000	Instantaneous Maximum
12/01/2016	12/31/2016	Concentration 3 Effluent Violation	Fecal Coliform	24196	10000	Instantaneous Maximum

Compliance Status:

Completed by: John Murphy
Completed date: 12/30/2020

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.1597
Latitude 40º 12' 30.13" **Longitude** -78º 54' 58.48"
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
Flow	Report	Average Monthly	-	92a.47, 92a.61(b)
	Report	Daily Maximum	-	92a.47, 92a.61(b)
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
	50	IMAX	-	BPJ
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)
	60	IMAX	-	BPJ
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2), 92a.47(a)(8)
	1.6	IMAX	-	BPJ
Ammonia-Nitrogen	Report	Average Monthly	-	BPJ
Dissolved Oxygen	4.0	Minimum	-	BPJ
pH	6.0 S.U.	Minimum	133.102(c)	95.2(1), 92a.47(a)(7)
	9.0 S.U.	IMAX	133.102(c)	95.2(1), 92a.47(a)(7)
Total Nitrogen	Report	Average Monthly	-	92a.61(b)
Total Phosphorus	Report	Average Monthly	-	92a.61(b)
Fecal Coliform (May – September)	200 / 100 ml	Monthly Geo Mean	-	92a.47(a)(4)
Fecal Coliform (May – September)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (October – April)	2,000 / 100 ml	Monthly Geo Mean	-	92a.47(a)(5)
Fecal Coliform (October – April)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)

Comments:

These technology-based effluent limitations and monitoring are being imposed in accordance with "Standard Operating Procedure (SOP) for Clean Water Program; Establishing Effluent Limitations for Individual Sewage Permits; SOP No. BCW-PMT-033; Final, November 9, 2012; Revised, October 1, 2020; Version 1.8".

In addition to the effluent limitations for CBOD5 and Total Suspended Solids, a Part A Additional Requirements condition will require the 30-day (monthly) average percent removal to be not less than 85 percent in accordance with 40 CFR 133.102(a)(4)(iii) and 133.102(b)(3), respectively. In addition to the federal regulations, the state specifies this percent removal as well in 25 Pa. Code Chapter 92a.47(a)(3). The percent removal is to be on a concentration basis. The permittee shall report any exceedances in the DMR submittal and the Chapter 94 report.

25 Pa. Code Chapter 92a.47(a)(7) states sewage permits must comply with 95.2(1) for pH and 95.2(2) for oil in the discharge. The narrative standards in the Additional Requirements of Part A of the NPDES permit prohibits the presence of a film or sheen on the receiving water. A sheen or film would be visible at concentrations of less than 15 mg/L of oil at any time.

Monitoring of ammonia, total nitrogen and total phosphorus will be required based on their presence as pollutants of concern in sewage.

Anti-Backsliding:

Section 402(o) of the CWA states "…a permit may not be renewed, reissued, or modified … subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit." Similarly, 40 CFR 122.44(l)(1) states "(l) *Reissued permits*. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62.)"

A Best Professional Judgement (BPJ) does not need to be developed where anti-backsliding requirements are in effect. The permit issued June 23, 2015 established the same effluent limitations for dissolved oxygen, total residual chlorine, CBOD5 (average monthly and IMAX), total suspended solids,

The SOP recommends a weekly average 40 mg/L limit for CBOD5 however the current permit imposed a limit of 38 mg/L. Therefore, 38 mg/L will be imposed in the renewed permit.

Flow will continue to be limited to the maximum design authorized in the WQM Part II permit, 0.1597 MGD.

In addition to concentration limits, the current permit limits CBOD5 and TSS mass discharge as well. The following average monthly and weekly maximum effluent limitations will continue in the renewed permit.

Parameter	Average Monthly (lbs/day)	Weekly Maximum (lbs/day)
CBOD5	33	50
TSS	40	60

The current permit limits CBOD5 and TSS to instantaneous maximum limits but has a required sample type of 8-hour composite. Instantaneous limitations are applicable to grab samples rather than composite samples which span a collection period of time. The concentration effluent limitation will be implemented as a daily maximum and the same value will be applied as an IMAX limit that will be applicable in the event a grab sample is collected outside of the Part A NPDES sampling requirements. This will have the same intent as is currently permitted and will not be less stringent of a limitation.

Water Quality-Based Limitations

WQM 7.0 Model:

WQM 7.0 for Windows determines wasteload allocations and effluent limitations for CBOD5, NH3-N and DO for single and multiple point source discharge scenarios. To accomplish this, the model simulates two basic processes. In the NH3-N module, the model simulates the mixing and degradation of NH3-N in the stream and compares calculated instream NH3-N concentrations to NH3-N water quality criteria. In the DO module, the model simulates the mixing and consumption of DO in the stream due to the degradation of CBOD5 and NH3-N, and compares calculated instream DO concentrations to DO water quality criteria. WQM 7.0 then determines the highest pollutant loadings that the stream can assimilate while still meeting water quality criteria under design conditions.

Title 25 Chapter 93 §93.7 of the Pennsylvania Code contains the NH3-N and DO criteria that are applicable to WQM 7.0. NH3-N criteria are divided into acute fish and aquatic life toxicity criteria, and chronic fish and aquatic life toxicity criteria. The NH3-N criteria are pH and temperature dependent. WQM 7.0 automatically calculates the appropriate NH3-N criteria for any given scenario based on the pH and temperature entered by the user. One of four possible criteria for DO is applicable to any given stream segment in the Commonwealth, depending on the designated water use for that stream segment specified in Chapter 93 §93.9. CBOD5 is important only because of its effect on DO concentrations in the stream.

The procedure for applying the model generally involves five steps. The first step is to select or create a set of data inputs, which include general, stream, discharge, and parameter data. The second step is to provide a set of modeling

specifications, which specify how the model should handle the input data. The third step is to run the NH3-N module to determine allowable NH3-N wasteload allocations required to meet both acute and chronic toxicity NH3-N water quality criteria. The fourth step is to run the DO module to determine allowable CBOD5 and (where applicable) NH3-N wasteload allocations required to meet DO water quality criteria. The final step is to determine the allowable NPDES effluent concentrations based on the wasteload allocations determined in steps 3 and 4.

Total ammonia in an aqueous system is a balance between un-ionized ammonia (NH3-N) and the ionized ammonium ion (NH4+). The speciation between NH3-N and NH4+ is important, because NH3-N is highly toxic to fish and aquatic life, while NH4+ is much less toxic. High temperature and high pH favor the formation of NH3-N, while low temperature and low pH favor the formation of NH4+ . For instance, much more of the toxic NH3-N will exist at pH 8 as compared to pH 7. WQM 7.0 calculates the applicable instream NH3-N water quality criteria for each reach based on equations defined in PA Code 25 §93.7. The calculated instream NH3-N water quality criteria is sensitive to the instream (analysis) temperature and pH, and substantially different water quality criteria and WLAs may result from relatively small changes in instream temperature and pH. It is important to assure that the simulation reflects the best data available for stream/tributary and discharge temperature and pH.

"SOP No. BCW-PMT-033; Establishing Effluent Limitations for Individual Sewage Permits; Final, November 9, 2012; Revised, October 1, 2020; Version 1.8" states "For the renewal of Minor individual sewage permit applications and/or any renewal of a discharge with a very large dilution ratio (e.g., discharges to large water bodies), application managers may, at their discretion, review the results of previous modeling efforts and determine that existing CBOD5 and NH3-N limitations are technically adequate and appropriate. This should only be considered where it is known that there have been no significant modifications to the facility, discharge or receiving waters and when water quality criteria have not been modified since the time the modeling was completed. If WQM modeling is not performed, the results of the prior modeling effort will be attached to the fact sheet to support continuation of existing limits."

The Benson STP is a minor individual sewage permit and has not undergone any changes since the prior permit was issued June 23, 2015. The corresponding 2015 fact sheet deferred to the previously approved Pollution Report dated June 6, 1999. The design flow of discharge was 0.1597 MGD with a temperature of 20 °C, DO of 2 mg/L, CBOD5 of 25 mg/L, and NH3-N of 25 mg/L. The receiving stream was listed as 9.76 cfs, however the most current U.S.G.S. StreamStats model estimates the Q7-10 flow rate as 17.6 cfs. Since this is approximately twice the stream flow previously used, and the modeling data is approximately 20 years old, a new model was run.

Using the maximum reported ammonia concentration of 47.2 mg/L, the maximum CBOD5 concentration of 24.8 mg/L and the minimum dissolved oxygen concentration of 5.0 mg/L from the DMR data above, effluent limitations are not recommended. The current effluent data is protective of the stream water quality, including at a maximum summer stream temperature of 87 °F (30.5 °C). Per the SOP, "For existing discharges, if WQM modeling results for summer indicates that an average monthly limit of 25 mg/L is acceptable, the application manager will generally establish a year-round monitoring requirement for ammonia-nitrogen, at a minimum. A seasonal multiplier of 3 times the summertime average monthly limit should be established for the winter period." Year-round monitoring of ammonia-nitrogen and dissolved oxygen will continue to be required in the renewed permit.

Chlorination:

The facility uses hypochlorite (bleach) for disinfection in the chlorine contact tank. The TRC spreadsheet was used to calculate the water quality based TRC limits since the TRC model was not previously run. The discharge flow rate of 0.1597 MGD was used as an input. The in-stream and discharge chlorine demand were set to 0.3 mg/L and 0.0 mg/L, respectively, since there is no site-specific data supporting different values. The stream flow was set to 17.6 cfs.

The model results support the continuation of 0.5 mg/L monthly average and 1.6 mg/L instantaneous maximum.

Total Dissolved Solids:

The requirements of §95.10 related to TDS and constituent solids is not applicable to this discharge. The facility's discharge was authorized prior to August 21, 2010 and has not expanded since. The facility reported a TDS concentration of 230 mg/L in the renewal application. The SOP - Establishing Effluent Limitations for Individual Sewage Permits recommends

monitoring where the TDS exceeds 1000 mg/L. Since this facility's discharge is well below that concentration, no monitoring of TDS or its related constituents will be imposed.

Toxics Management Spreadsheet:

The design flow of the facility is 0.1597 MGD. The Stony Creek River Q7-10 flow is 17.6 cfs (11.38 MGD). This is a ratio of approximately 1:71. None of the metals reported in the application exceeded more than 0.3 mg/L. At these low concentrations, there is no reasonable potential to exceed the water quality standards for any toxic pollutants.

Kiskiminetas-Conemaugh River TMDL:

Section 303(d) of the Clean Water Act and the U.S. Environmental Protection Agency's (EPA) Water Quality Planning and Management Regulations (codified at Title 40 of the Code of Federal Regulations Part 130) require states to develop Total Maximum Daily Loads (TMDLs) for impaired waterbodies. A TMDL establishes the amount of a pollutant that a waterbody can assimilate without exceeding its water quality standard for that pollutant. TMDLs provide the scientific basis for a state to establish water quality-based controls to reduce pollution from both point and nonpoint sources to restore and maintain the quality of the state's water resources (USEPA 1991a).
A TMDL for a given pollutant and waterbody is composed of the sum of individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background levels. In addition, the TMDL must include an implicit or explicit Margin of Safety (MOS) to account for the uncertainty in the relationship between pollutant loads and the quality of the receiving waterbody. The TMDL components are illustrated using the following equation:

$$\text{TMDL} = \sum WLAs + \sum LAs + MOS$$

Stream reaches in the Kiskiminetas River and Conemaugh River watersheds in southwestern Pennsylvania are included on the state's 2008 Section 303(d) list because of various impairments, including metals, pH, and sediment. TMDLs were developed to address metals, pH, and sediment impairments associated with abandoned mine drainage or discharge using the Mining Data Analysis System (MDAS). MDAS is a comprehensive data management and modeling system capable of representing loads from nonpoint and point sources in the watershed and simulating instream processes.

Modeled subwatershed loadings were iteratively reduced to estimate the load reductions required to meet instream concentration targets for metals. The target concentrations were based on established water quality criteria of 0.750 milligrams per liter (mg/L) total aluminum, 1.5 mg/L total iron, 0.3 mg/L dissolved iron, and 1.0 mg/L manganese. Iron reductions were used as a surrogate for sediment reductions. For purposes of this TMDL, sediment includes total suspended solids (TSS). Streams placed on Pennsylvania's Section 303(d) list with a designated use of high quality or exceptional value are subject to additional protection pursuant to the state's antidegradation policy. Data from a PADEP reference stream was obtained from PADEP and used to develop endpoints for high quality or exceptional value streams. Long-term loads based on the TMDL allocations were identified, as well as median and maximum allowable daily loads. Loads are presented in full in Appendix G of this report.

WLAs were assigned to permitted facilities and municipal separate storm sewer systems (MS4s) that discharge in the watershed. The LAs include nonpoint sources and include drainage from abandoned mine lands. An explicit MOS of five percent is included in the TMDL to account for uncertainty. The state reserves the right to revise these allocations, with approval from EPA, provided that the revised allocations are consistent with achieving the water quality standards. This TMDL addresses waters that have not been previously addressed by a TMDL and will supersede all preexisting metals TMDLs in the watershed. EPA is establishing these TMDLs at the request of PADEP.

Outfall 001 discharges to Stony Creek River which is a tributary of the Conemaugh River which flows into the Kiskiminetas River. The Outfall 001 discharge is into stream segment 4168. This segment is listed as an aggregated negligible non-mining wasteload allocation with no percent reduction needed of aluminum, iron or manganese. The facility is not assigned an individual WLA and is therefore a part of the segment WLA. The permit renewal application sampling reports <0.1 mg/L aluminum, 0.216 mg/L iron and 0.0566 mg/L manganese. These concentrations are much less than the TMDL water quality criteria levels of 0.75 m/L aluminum, 1.5 mg/L total aluminum and 1.0 mg/L manganese. With no individual WLA, percent

reduction required for this segment, and no reasonable potential to exceed the water quality criteria based on sample results, no effluent limitations nor monitoring for the TMDL pollutants will be imposed.

Sampling Frequency

The current permit issued in 2015 requires continuous monitoring of flow; once per day sampling of pH, DO, and TRC; once per week sampling of CBDO5, BOD5, TSS, fecal coliform, and ammonia-nitrogen; and once per year sampling of total nitrogen and total phosphorus. The monitoring frequencies will remain the same in the renewed permit, except total nitrogen and phosphorus. Monitoring of total nitrogen and total phosphorus has been reported once per year in the current permit but will be increased to monthly per the SOP recommendations and in light of the historic compliance and overloading issues.

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	Weekly Average	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	0.1597	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	33	50	25.0	38.0 Weekly Avg	50.0	50	1/week	8-Hr Composite
CBOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	Report	XXX	1/week	8-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	Report	XXX	1/week	8-Hr Composite
TSS	40	60	30.0	45.0 Weekly Avg	60.0	60	1/week	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10,000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	1/week	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/month	Grab
Ammonia	XXX	XXX	XXX	Report	Report	XXX	1/week	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/month	Grab

Compliance Sampling Location: End of pipe

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment **A**)
☐	PENTOXSD for Windows Model (see Attachment)
☒	TRC Model Spreadsheet (see Attachment **B**)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Toxics Screening Analysis Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: New and Reissuance Sewage Individual NPDES Permit Applications; SOP No. BCW-PMT-002; Final, November 9, 2012; Revised, January 6, 2020; Version 1.9
☒	SOP: Establishing Effluent Limitations for Individual Sewage Permits; SOP No. BCW-PMT-033 Final, November 9, 2012; Revised, October 1, 2020; Version 1.8
☒	Other: Kiskiminetas Conemaugh River Watershed TMDL

Attachment A – WQM 7.0 Modeling

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
18E	45084	STONY CREEK RIVER

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Eff. Limit 30-day Ave. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
15.490	Outfall 001	PA0098973	0.160	CBOD5	24.8		
				NH3-N	47.2	94.4	
				Dissolved Oxygen			5

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WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
18E	45084	STONY CREEK 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
15.490	Outfall 001	4.67	94.4	4.67	94.4	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
15.490	Outfall 001	.92	47.2	.92	47.2	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
15.49	Outfall 001	24.8	24.8	47.2	47.2	5	5	0	0

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WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
18E	45084	STONY CREEK RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
15.490	0.160	30.424	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
68.462	0.868	78.896	0.300
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	Reach NH3-N (mg/L)	**Reach Kn (1/days)**
2.32	0.172	0.65	1.561
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	Reach DO Goal (mg/L)
8.198	7.875	Tsivoglou	6
Reach Travel Time (days)			
0.256			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.026	2.30	0.63	6.90
0.051	2.28	0.60	6.90
0.077	2.27	0.58	6.90
0.103	2.25	0.56	6.90
0.128	2.23	0.53	6.90
0.154	2.22	0.51	6.90
0.179	2.20	0.49	6.90
0.205	2.19	0.47	6.90
0.231	2.17	0.46	6.90
0.256	2.16	0.44	6.90

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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WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
18E	45084	STONY CREEK RIVER

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
15.490	17.60	0.00	17.60	.2471	0.00300	.868	68.46	78.9	0.30	0.256	30.42	7.00
Q1-10 Flow												
15.490	11.28	0.00	11.28	.2471	0.00300	NA	NA	NA	0.23	0.328	30.38	7.00
Q30-10 Flow												
15.490	23.94	0.00	23.94	.2471	0.00300	NA	NA	NA	0.36	0.216	30.44	7.00

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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
18E	45084	STONYCREEK RIVER	15.490	1400.00	249.00	0.00300	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	0.071	0.00	17.60	0.000	0.000	0.0	0.00	0.00	30.50	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
Outfall 001	PA0098973	0.1597	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	24.80	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	47.20	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
18E	45084	STONYCREEK RIVER	**14.230**	1380.00	250.00	0.00300	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	0.071	0.00	17.70	0.000	0.000	0.0	0.00	0.00	30.50	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
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

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

Parameter	*Symbol*	*Criteria*	*Critical Use**
Iron	Fe_1	30-day average 1.5 mg/l as total recoverable.	CWF, WWF, TSF, MF
	Fe_2	Maximum 0.3 mg/l as dissolved.	PWS
Manganese	Mn	Maximum 1.0 mg/l, as total recoverable.	PWS
Nitrite plus Nitrate	N	Maximum 10 mg/l as nitrogen.	PWS
Osmotic Pressure	OP	Maximum 50 milliosmoles per kilogram.	CWF, WWF, TSF, MF
pH	pH	From 6.0 to 9.0 inclusive.	CWF, WWF, TSF, MF
Phenolics (except § 307(a)(1) (33 U.S.C.A. § 1317(a)(1)), Priority Pollutants)	Phen	Maximum 0.005 mg/l.	PWS
Sulfate	Sul	Maximum 250 mg/l.	PWS
Temperature		Maximum temperatures in the receiving water body resulting from heated waste sources regulated under Chapters 92a, 96 and other sources where temperature limits are necessary to protect designated and existing uses.	See the following table.

SYMBOL: CRITICAL USE: PERIOD	*$TEMP_1$ CWF*	*$TEMP_2$ WWF TEMPERATURE °F*	*$TEMP_3$ TSF*
January 1-31	38	40	40
February 1-29	38	40	40
March 1-31	42	46	46
April 1-15	48	52	52
April 16-30	52	58	58
May 1-15	54	64	64
May 16-31	58	72	68
June 1-15	60	80	70
June 16-30	64	84	72
July 1-31	66	87	74
August 1-15	66	87	80
August 16-30	66	87	87
September 1-15	64	84	84
September 16-30	60	78	78
October 1-15	54	72	72
October 16-31	50	66	66
November 1-15	46	58	58
November 16-30	42	50	50
December 1-31	40	42	42

Attachment B – TRC Model Spreadsheet

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

17.6	= Q stream (cfs)	0.5	= CV Daily
0.1567	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	1.3.2.iii	WLA afc =	23.179	1.3.2.iii	WLA cfc =	22.590
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	8.637	5.1d	LTA_cfc =	13.133

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) =	1.635	

WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...** **...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...** **...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**

(0.011/EXP(-K*CFC_tc/1440))+(((CFC_Yc*Qs*0.011)/(1.547*Qd)....
....*EXP(-K*CFC_tc/1440)))+Xd+(CFC_Yc*Qs*Xs/1.547*Qd))*(1-FOS/100)

Attachment C – Toxics Reasonable Potential

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.1, October 2020

Discharge Information

Instructions | Discharge | Stream

Facility: **Benson STP** NPDES Permit No.: **PA0098973** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **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
0.1567	100	7						

	Discharge Pollutant	Units	Max Discharge Conc		0 if left blank: Trib Conc		0.5 if left blank: Daily CV	Hourly CV	0 if left blank: Stream CV	Fate Coeff	FOS	1 if left blank: Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		230									
	Chloride (PWS)	mg/L		46.1									
	Bromide	mg/L	<	0.4									
	Sulfate (PWS)	mg/L		44.8									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	mg/L	<	0.1									
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	mg/L	<	0.0125									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	mg/L		0.216									
	Total Lead	mg/L	<	0.0005									
	Total Manganese	mg/L		0.0566									
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	mg/L		0.0334									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

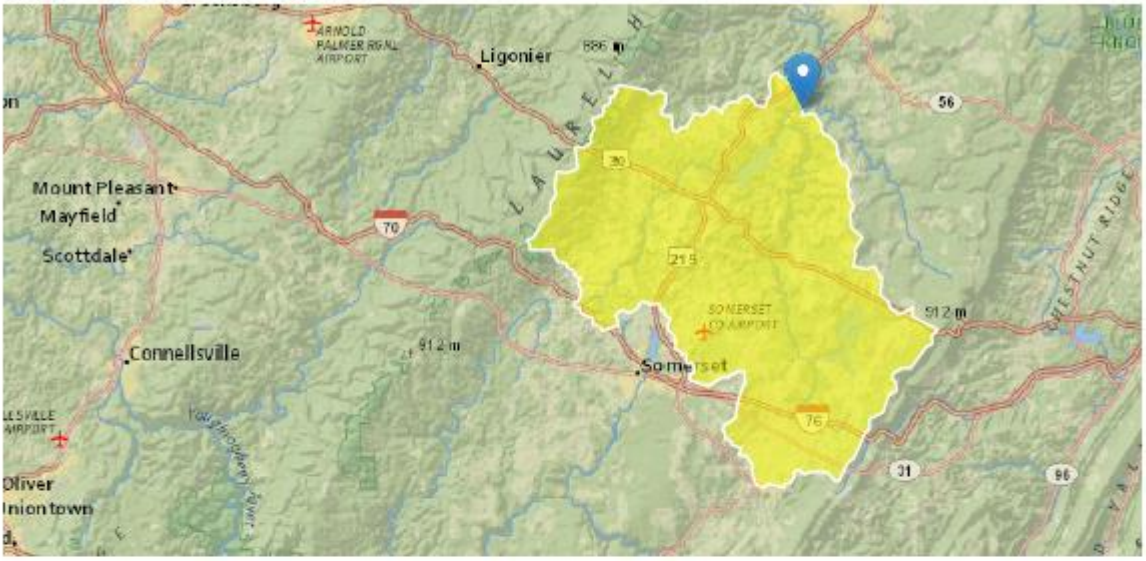
Attachment D – Chapter 93 Stream Designation

Stream	Zone	County	Water Uses Protected	Exceptions To Specific Criteria
8—Beams Run	Basin	Somerset	CWF	None
8—Spruce Run	Basin	Somerset	HQ-CWF	None
8—Beaverdam Run	Basin	Somerset	CWF	None
7—Beaverdam Creek	Basin	Somerset	HQ-CWF	None
7—Roaring Run	Basin, Source to Boswell Municipal Authority Dam	Somerset	EV	None
7—Roaring Run	Basin, Boswell Municipal Authority Dam to Mouth	Somerset	CWF	None
7—Twomile Run	Basin	Somerset	CWF	None
7—Higgins Run	Basin, Source to UNT 45416 at 40°6′45.9″N; 78°59′50.6″W	Somerset	CWF	None
8—UNT 45416 to Higgins Run	Basin	Somerset	CWF	None
7—Higgins Run	Main Stem, UNT 45416 to Mouth	Somerset	HQ-CWF	None
8—Tributaries to Higgins Run	Basins, from UNT 45416 to Mouth (including UNTs 45406 and 45405)	Somerset	CWF	None
5—Stony Creek	Main Stem, Quemahoning Creek to Confluence with Little Conemaugh River	Cambria	WWF	None
6—Unnamed Tributaries to Stony Creek	Basins, Quemahoning Creek to Confluence with Little Conemaugh River	Somerset-Cambria	CWF	None
6—Shade Creek	Main Stem	Somerset	CWF	None
7—Unnamed Tributaries to Shade Creek	Basins	Somerset	CWF	None
7—Dark Shade Creek	Basin, Source to Laurel Run	Somerset	CWF	None
8—Laurel Run	Basin, Source to Beaverdam Run	Somerset	CWF	None

Attachment E – U.S.G.S. StreamStats

StreamStats Report, PA0098973, Outfall 001, RMI 15.49

Region ID: PA
Workspace ID: PA20201213192951206000
Clicked Point (Latitude, Longitude): 40.20851, -78.91658
Time: 2020-12-13 14:30:12 -0500



PA0098973, Outfall 001, RMI 15.49

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	249	square miles
ELEV	Mean Basin Elevation	2161	feet
PRECIP	Mean Annual Precipitation	42	inches
ELEVMAX	Maximum basin elevation	2960	feet

Low-Flow Statistics Parameters[100 Percent (249 square miles) Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	249	square miles	2.33	1720
ELEV	Mean Basin Elevation	2161	feet	898	2700
PRECIP	Mean Annual Precipitation	42	inches	38.7	47.9

Low-Flow Statistics Flow Report[100 Percent (249 square miles) Low Flow Region 3]

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	SEp
7 Day 2 Year Low Flow	34	ft^3/s	43	43

Statistic	Value	Unit	SE	SEp
30 Day 2 Year Low Flow	44.5	ft^3/s	38	38
7 Day 10 Year Low Flow	17.6	ft^3/s	54	54
30 Day 10 Year Low Flow	21.9	ft^3/s	49	49
90 Day 10 Year Low Flow	31.1	ft^3/s	41	41

Low-Flow Statistics Citations

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

Application Version: 4.4.0

Attachment F – Federal Regulations

§133.102 Secondary treatment.

The following paragraphs describe the minimum level of effluent quality attainable by secondary treatment in terms of the parameters—BOD_5, SS and pH. All requirements for each parameter shall be achieved except as provided for in §§133.103 and 133.105.

(a) *BOD_5*.

(1) The 30-day average shall not exceed 30 mg/l.

(2) The 7-day average shall not exceed 45 mg/l.

(3) The 30-day average percent removal shall not be less than 85 percent.

(4) At the option of the NPDES permitting authority, in lieu of the parameter BOD_5 and the levels of the effluent quality specified in paragraphs (a)(1), (a)(2) and (a)(3), the parameter $CBOD_5$ may be substituted with the following levels of the $CBOD_5$ effluent quality provided:

(i) The 30-day average shall not exceed 25 mg/l.

(ii) The 7-day average shall not exceed 40 mg/l.

(iii) The 30-day average percent removal shall not be less than 85 percent.

(b) *SS.* (1) The 30-day average shall not exceed 30 mg/l.

(2) The 7-day average shall not exceed 45 mg/l.

(3) The 30-day average percent removal shall not be less than 85 percent.

(c) *pH.* The effluent values for pH shall be maintained within the limits of 6.0 to 9.0 unless the publicly owned treatment works demonstrates that: (1) Inorganic chemicals are not added to the waste stream as part of the treatment process; and (2) contributions from industrial sources do not cause the pH of the effluent to be less than 6.0 or greater than 9.0.

[49 FR 37006, Sept. 20, 1984; 49 FR 40405, Oct. 16, 1984]

this paragraph, and at least once every 5 years thereafter, the Administrator shall review and, as necessary, revise the water quality criteria.

(b) For the purposes of adopting or revising effluent limitations under this Act the Administrator shall, after consultation with appropriate Federal and State agencies and other interested persons, publish within one year of enactment of this title, regulations, providing guidelines for effluent limitations, and, at least annually thereafter, revise, if appropriate, such regulations. Such regulations shall—

(1)(A) identify, in terms of amounts of constituents and chemical, physical, and biological characteristics of pullutants, the degree of effluent reduction attainable through the application of the best practicable control technology currently available for classes and categories to point sources (other than publicly owned treatment works); and

(B) specify factors to be taken into account in determining the control measures and practices to be applicable to point sources (other than publicly owned treatment works) within such categories of classes. Factors relating to the assessment of best practical control technology currently available to comply with subsection (b)(1) of section 301 of this Act shall include consideration of the total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application, and shall also take into account the age of equipment and facilities involved, the process employed, the engineering aspects of the application of various types of control techniques, process changes, non-water quality environmental impact (including energy requirements), and such other factors as the Administrator deems appropriate;

(2)(A) identify, in terms of amounts of constituents and chemical, physical, and biological characteristics of pollutants, the degree of effluent reduction attainable through the application of the best control measures and practices achievable including treatment techniques, process and procedure innovations, operating methods, and other alternatives for classes and categories of point sources (other than publicly owned treatment works); and

(B) specify factors to be taken into account in determining the best measures and practices available to comply with subsection (b)(2) of section 301 of this Act to be applicable to any point source (other than publicly owned treatment works) within such categories of classes. Factors relating to the assessment of best available technology shall take into account the age of equipment and facilities involved, the process employed, the engineering aspects of the application of various types of control techniques, process changes, the cost of achieving such effluent reduction, non-water quality environmental impact (including energy requirements), and such other factors as the Administrator deems appropriate;

(3) identify control measures and practices available to eliminate the discharge of pollutants from categories and classes of point sources, taking into account the cost of achieving such elimination of the discharge of pollutants; and

Attachment G – State Regulations

(2) Toxic reduction activities, effluent limitations based on WETT, and other measures that eliminate, or substantially reduce releases of pollutants at their source.

§ 92a.47. Sewage permit.

(a) Sewage, except that discharged from a CSO that is in compliance with subsection (b), or as provided for in subsections (f)—(i), shall be given a minimum of secondary treatment. Secondary treatment for sewage is that treatment that includes significant biological treatment and accomplishes the following:

(1) Monthly average discharge limitation for BOD_5 and TSS may not exceed 30 milligrams per liter. If $CBOD_5$ is specified instead of BOD_5 the limitation may not exceed 25 milligrams per liter.

(2) Weekly average discharge limitation for BOD_5 and TSS may not exceed 45 milligrams per liter for POTW facilities. If $CBOD_5$ is specified instead of BOD_5 the limitation may not exceed 40 milligrams per liter.

(3) On a concentration basis, the monthly average percent removal of BOD_5 or $CBOD_5$, and TSS, must be at least 85% for POTW facilities.

(4) From May through September, a monthly average discharge limitation for fecal coliform of 200/100 mL as a geometric mean and an instantaneous maximum effluent limitation not greater than 1,000/100 mL.

(5) From October through April, a monthly average discharge limitation for fecal coliform of 2,000/100 mL as a geometric mean and an instantaneous maximum effluent limitation not greater than 10,000/100 mL.

(6) Provision for the disposal or beneficial use of sludge in accordance with applicable Department regulations.

(7) Compliance with § 95.2(1) and (2) (relating to effluent standards for industrial waste).

(8) Compliance with § 92a.48 (b) (relating to industrial waste permit) if chlorine is used.

(b) Dischargers of sewage from a CSO shall implement, as approved by the Department, nine minimum controls (NMCs) and a long-term control plan (LTCP) to minimize or eliminate the CSO discharge impact on the water quality of the receiving surface water.

(c) Discharges from an SSO are prohibited.

(d) When pollutants contributed by indirect dischargers result in interference or pass through, and a violation is likely to recur, a permittee shall develop and implement specific local limits for indirect dischargers and other users, as appropriate, that together with appropriate sewerage facility or operational changes, are necessary to ensure renewed or continued compliance with the plant's NPDES permit or sludge use or disposal practices.

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(e) POTWs that serve indirect dischargers shall give notice to the Department in accordance with 40 CFR 122.42(b) (relating to additional conditions applicable to specific categories of NPDES permits (applicable to State NPDES programs, see § 123.25)).

(f) POTWs with effluent limits that are less stringent than those specified in subsection (a)(1) and (2) in effect on October 9, 2010, shall meet the requirements of subsection (a)(1) and (2) when a new or amended water quality management permit authorizing an increase in the design flow of the facility is issued under the provisions of Chapter 91 (relating to general provisions).

(g) POTWs subject to this section may not be capable of meeting the percentage removal requirements established under subsection (a)(3) during wet weather, where the treatment works receive flows from combined sewers (that is, sewers which are designed to transport both storm water and sanitary sewage). For those treatment works, the decision must be made on a case-by-case basis as to whether any attainable percentage removal level can be defined, and if so, what the level should be.

(h) POTWs subject to this section may not be capable of meeting the percentage removal requirements established under subsection (a)(3) during dry weather, where the treatment works receive flows from combined sewers. The Department may substitute less stringent removal requirements than that specified in subsection (a)(3) for any POTW with less concentrated influent wastewater for combined sewers during dry weather. The Department may substitute either a lower percent removal requirement or a mass loading limit for the percent removal requirements specified in subsection (a)(3) provided that the permittee satisfactorily demonstrates all of the following:

(1) The treatment works is consistently meeting, or will consistently meet, its permit effluent concentration limits, but the percent removal requirements cannot be met due to less concentrated influent wastewater.

(2) To meet the percent removal requirements, the treatment works would have to achieve significantly more stringent effluent concentrations than would otherwise be required by the concentration-based standards.

(3) The less concentrated influent wastewater does not result from either excessive infiltration or clear water indirect dischargers during dry weather periods. The determination of whether the less concentrated wastewater results from excessive infiltration is discussed in 40 CFR 35.2005(b)(28) (relating to definitions), plus the additional criterion that either 40 gallons per capita per day or 1,500 gallons per inch diameter per mile of sewer may be used as the threshold value for that portion of the dry weather base flow attributed to infiltration. If the less concentrated influent wastewater is the result of clear water indirect dischargers, the treatment works must control these discharges pursuant to 40 CFR Part 403 (relating to general pretreatment regulations for existing and new sources of pollution).

(i) The Department may substitute less stringent removal requirements than that specified in subsection (a)(3) for any POTW with less concentrated influent wastewater for separate sewers, provided that the permittee satisfactorily demonstrates all of the following:

(1) The treatment works is consistently meeting, or will consistently meet, its permit effluent concentration limits but its percent removal requirements cannot be met due to less concentrated influent wastewater.

(2) To meet the percent removal requirements, the treatment works would have to achieve significantly more stringent limitations than would otherwise be required by the concentration-based standards.

(3) The less concentrated influent wastewater is not the result of excessive inflow/infiltration. The determination of whether the less concentrated wastewater is the result of excessive inflow/infiltration will be based on the definition of excessive inflow/infiltration in 40 CFR 35.2005(b)(16), plus the additional criterion that inflow is nonexcessive if the total flow to the POTW (that is, wastewater plus inflow plus infiltration) is less than 275 gallons per capita per day.

§ 92a.48. Industrial waste permit.

(a) Industrial waste regulated by this chapter must meet the following requirements:

(1) EPA-promulgated effluent limitation guidelines established under section 304(b) of the Federal Act (33 U.S.C.A. § 1314(b)).

(2) Compliance with § 95.2 (relating to effluent standards for industrial waste).

(3) For those industrial categories for which no effluent limitations have been established under paragraph (1), Department-developed technology-based limitations established in accordance with 40 CFR 125.3 (relating to technology-based treatment requirements in permits).

(b) For facilities or activities using chlorination, the following apply:

(1) If the EPA adopts a National categorical ELG promulgating limits for Total Residual Chlorine (TRC) or free available chlorine for a specific industry or activity under section 301 or 304(b) of the Federal Act (33 U.S.C.A. §§ 1311 and 1314(b)), that ELG constitutes BAT for the industry or activity. If the EPA has not promulgated a National ELG for TRC or free available chlorine for an industry or activity, the Department may develop a facility-specific BAT effluent limitation for TRC. Factors, which will be considered in developing a facility-specific BAT effluent limitation, include the following:

(i) The age of equipment and facilities involved.

(ii) The engineering aspects of the application of various types of control techniques and alternatives to the use of chlorine or reductions in the volume of chlorine used during the disinfection process.

(iii) The cost of achieving the effluent reduction.

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Notes of Decisions

Authority of Department

This section contains no test to balance economic development against environmental harm, and the EHB appropriately concluded that the second prong of the section was designed to consider the environmental impact apart from the aspect of economic development. *Department of Environmental Resources v. Big B Mining Company, Inc.*, 554 A.2d 1002 (Pa. Cmwlth. 1989).

It was proper for the EHB to consider "need" in terms of market price and not in terms of public need. *Department of Environmental Resources v. Big B Mining Company, Inc.*, 554 A.2d 1002 (Pa. Cmwlth. 1989).

Evidence

Where a body of water is designated "high quality" under 25 Pa. Code § 93.9, that fact together with the provisions of subsection (b) demand that the permit holder developers and the DER be the parties responsible for justifying the permit after evidence has been presented showing the likelihood of environmental harm. *Marcon, Inc. v. Department of Environmental Resources*, 462 A.2d 969 (Pa. Cmwlth. 1983).

The nondegradation provision does not apply in the absence of evidence that a particular body of water is of better quality than the applicable water quality criteria. *Concerned Citizens for Orderly Progress v. Department of Environmental Resources*, 387 A.2d 989 (Pa. Cmwlth. 1978).

Cross References

This section cited in 25 Pa. Code § 89.57 (relating to treatment facility design); and 25 Pa. Code § 105.15 (relating to environmental assessment).

§ 95.2. Effluent standards for industrial wastes.

Industrial wastes must meet the following effluent standards:

(1) Wastes must have a pH of not less than 6 and not greater than 9, except where:

(i) The wastes are discharged to an acid stream, in which case the pH may be greater than 9.

(ii) The discharger affirmatively demonstrates, in writing, to the Department that biological respiration in the wastewater treatment system will cause the discharge to exceed the limits in this paragraph and that exceeding these limits will not result in a violation of applicable water quality standards or of the applicable treatment requirements and effluent limitations to which a discharge is subject under the Federal Act, in which case the Department may grant a variance, in writing, from the limitation set forth in this paragraph.

(2) Oil-bearing wastewaters, except those subject to paragraph (3), must comply with the following:

(i) At no time cause a film or sheen upon or discoloration of the waters of this Commonwealth or adjoining shoreline.

(ii) At no time contain more than 15 milligrams of oil per liter as a daily average value nor more than 30 milligrams of oil per liter at any time, or whatever lesser amount the Department may specify for a given discharge or

type of discharge as being necessary for the proper protection of the public interest or to meet any requirements based upon the State Act or the Federal Act, as defined in § 92.1 (relating to definitions).

(3) Petroleum marketing terminals must:

(i) Be provided with facilities to remove oil from waters, including stormwater runoff, before discharge into waters of this Commonwealth. Compliance with this paragraph constitutes compliance with paragraph (2)(i) except to the extent that the State Act or Federal Act or regulations promulgated thereunder impose a more stringent requirement.

(ii) Develop, implement and keep up to date pollution incident prevention plans as described in § 91.34 (relating to activities utilizing pollutants).

(iii) Design, maintain and utilize oil removal facilities that consist of an American Petroleum Institute (A.P.I.) listed oil separator, unless the person operating the facility can demonstrate to the Department that an alternate design is equivalent or better in removing oil from water to maintain and protect the waters of this Commonwealth, including all existing and designated uses established under Chapter 93 (relating to water quality standards).

(4) Waste may not contain more than 7 milligrams per liter of dissolved iron.

(5) When surface waters are used in the industrial plant, the quality of the effluent need not exceed the quality of the raw water supply if the source or supply would normally drain to the point of effluent discharge, unless otherwise required under the act or Federal Act or regulations promulgated thereunder.

Authority

The provisions of this § 95.2 issued under section 9 of the Pennsylvania Sewage Facilities Act (35 P. S. § 750.9); amended under sections 5 and 402 of The Clean Streams Law (35 P. S. §§ 691.5 and 691.402); and section 1920-A of The Administrative Code of 1929 (71 P. S. § 510-20).

Source

The provisions of this § 95.2 amended October 3, 1980, effective October 4, 1980, 10 Pa.B. 3917; amended February 17, 1989, effective February 18, 1989, 19 Pa.B. 636; amended November 17, 2000, effective November 18, 2000, 30 Pa.B. 6059; amended August 20, 2010, effective August 21, 2010, 40 Pa.B. 4835. Immediately preceding text appears at serial pages (344188) and (313617).

Cross References

This section cited in 25 Pa. Code § 92a.47 (relating to sewage permit); and 25 Pa. Code § 92a.48 (relating to industrial waste permit).

(i) The Department may substitute less stringent removal requirements than that specified in subsection (a)(3) for any POTW with less concentrated influent wastewater for separate sewers, provided that the permittee satisfactorily demonstrates all of the following:

(1) The treatment works is consistently meeting, or will consistently meet, its permit effluent concentration limits but its percent removal requirements cannot be met due to less concentrated influent wastewater.

(2) To meet the percent removal requirements, the treatment works would have to achieve significantly more stringent limitations than would otherwise be required by the concentration-based standards.

(3) The less concentrated influent wastewater is not the result of excessive inflow/infiltration. The determination of whether the less concentrated wastewater is the result of excessive inflow/infiltration will be based on the definition of excessive inflow/infiltration in 40 CFR 35.2005(b)(16), plus the additional criterion that inflow is nonexcessive if the total flow to the POTW (that is, wastewater plus inflow plus infiltration) is less than 275 gallons per capita per day.

§ 92a.48. Industrial waste permit.

(a) Industrial waste regulated by this chapter must meet the following requirements:

(1) EPA-promulgated effluent limitation guidelines established under section 304(b) of the Federal Act (33 U.S.C.A. § 1314(b)).

(2) Compliance with § 95.2 (relating to effluent standards for industrial waste).

(3) For those industrial categories for which no effluent limitations have been established under paragraph (1), Department-developed technology-based limitations established in accordance with 40 CFR 125.3 (relating to technology-based treatment requirements in permits).

(b) For facilities or activities using chlorination, the following apply:

(1) If the EPA adopts a National categorical ELG promulgating limits for Total Residual Chlorine (TRC) or free available chlorine for a specific industry or activity under section 301 or 304(b) of the Federal Act (33 U.S.C.A. §§ 1311 and 1314(b)), that ELG constitutes BAT for the industry or activity. If the EPA has not promulgated a National ELG for TRC or free available chlorine for an industry or activity, the Department may develop a facility-specific BAT effluent limitation for TRC. Factors, which will be considered in developing a facility-specific BAT effluent limitation, include the following:

(i) The age of equipment and facilities involved.

(ii) The engineering aspects of the application of various types of control techniques and alternatives to the use of chlorine or reductions in the volume of chlorine used during the disinfection process.

(iii) The cost of achieving the effluent reduction.

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(iv) Nonwater quality environmental impacts (including energy requirements).

(v) Other factors the Department deems appropriate.

(2) For facilities where the EPA has not promulgated a National ELG setting forth limits for TRC or free available chlorine for an industry or activity, and the Department has not developed a facility-specific BAT effluent limitation for TRC under the factors in paragraph (1), an effluent limitation for TRC of 0.5 milligrams per liter (30-day average) constitutes BAT.

(3) Facilities using chlorination that discharge to an Exceptional Value Water, or to a High Quality Water where economic or social justification under § 93.4c(b) (1)(iii) (relating to implementation of antidegradation requirements) has not been demonstrated under applicable State or Federal law or regulations, shall discontinue chlorination or dechlorinate their effluents prior to discharge into the waters.

Cross References

This section cited in 25 Pa. Code § 92a.47 (relating to sewage permit).

§ 92a.49. CAFO.

NPDES permits for each CAFO must include, but are not limited to, conditions requiring the following:

(1) Compliance with the Nutrient Management Plan, the Preparedness, Prevention and Contingency Plan and the Erosion and Sediment Control Plan.

(2) A separate NPDES permit for stormwater discharges associated with a construction activity meeting the requirements of Chapter 102 (relating to erosion and sediment control) when applicable.

(3) Compliance with 3 Pa.C.S. Chapter 23 (relating to the Domestic Animal Law).

(4) Compliance with § 91.36 (relating to pollution control and prevention at agricultural operations).

(5) Recordkeeping and reporting requirements as described in the permit.

(6) When applicable, effluent limitations and other conditions as required under § 92a.12 (relating to treatment requirements) to meet water quality standards, for treated wastewater discharges.

(7) Measures necessary to prevent the discharge to surface water from storage of raw materials such as feed and supplies, which are not otherwise included in the nutrient management plan.

§ 92a.50. CAAP.

(a) Each discharger shall prepare and implement a BMP plan that addresses:

(1) Solids and excess feed management and removal.

(2) Proper facility operation and maintenance.

(3) Nonnative species loss prevention.

Cross References

This section cited in 25 Pa. Code § 92a.2 (relating to definitions); and 25 Pa. Code § 92a.23 (relating to NOI for coverage under an NPDES general permit).

§ 92a.55. Disposal of pollutants into wells, into POTW or by land application.

The provisions of 40 CFR 122.50 (relating to disposal of pollutants into wells, into publicly owned treatment works or by land application) are incorporated by reference.

Cross References

This section cited in 25 Pa. Code § 92a.3 (relating to incorporation of Federal regulations by reference).

Subchapter D. MONITORING AND ANNUAL FEES

Sec.
92a.61. Monitoring.
92a.62. Annual fees.

§ 92a.61. Monitoring.

(a) The provisions of 40 CFR 122.48 (relating to requirements for recording and reporting of monitoring results (applicable to State programs, see § 123.25)) are incorporated by reference.

(b) The Department may impose reasonable monitoring requirements on any discharge, including monitoring of the surface water intake and discharge of a facility or activity, other operational parameters that may affect effluent quality, and of surface waters adjacent to or associated with the intake or discharge flow of a facility or activity. The Department may require submission of data related to the monitoring.

(c) Each person who discharges pollutants may be required to monitor and report all toxic, conventional, nonconventional and other pollutants in its discharge, at least once a year, and on a more frequent basis if required by a permit condition. The monitoring requirements will be specified in the permit.

(d) Except for stormwater discharges subject to the requirements of subsection (h), a discharge authorized by an NPDES permit for a facility that is not a minor facility or contains toxic pollutants for which an effluent standard has been established by the Administrator under section 307(a) of the Federal Act (33 U.S.C.A. § 1317(a)) shall be monitored by the permittee for at least the following:

(1) Flow (in GPD or MGD).

Attachment H – TMDL

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

TMDLs for Streams Impaired by Acid Mine Drainage in the Kiskiminetas-Conemaugh River Watershed, Pennsylvania

Jon M. Capacasa, Director
Water Protection Division

Date: 1/29/2010

EXECUTIVE SUMMARY

Section 303(d) of the Clean Water Act and the U.S. Environmental Protection Agency's (EPA) Water Quality Planning and Management Regulations (codified at Title 40 of the *Code of Federal Regulations* Part 130) require states to develop Total Maximum Daily Loads (TMDLs) for impaired waterbodies. A TMDL establishes the amount of a pollutant that a waterbody can assimilate without exceeding its water quality standard for that pollutant. TMDLs provide the scientific basis for a state to establish water quality-based controls to reduce pollution from both point and nonpoint sources to restore and maintain the quality of the state's water resources (USEPA 1991a).

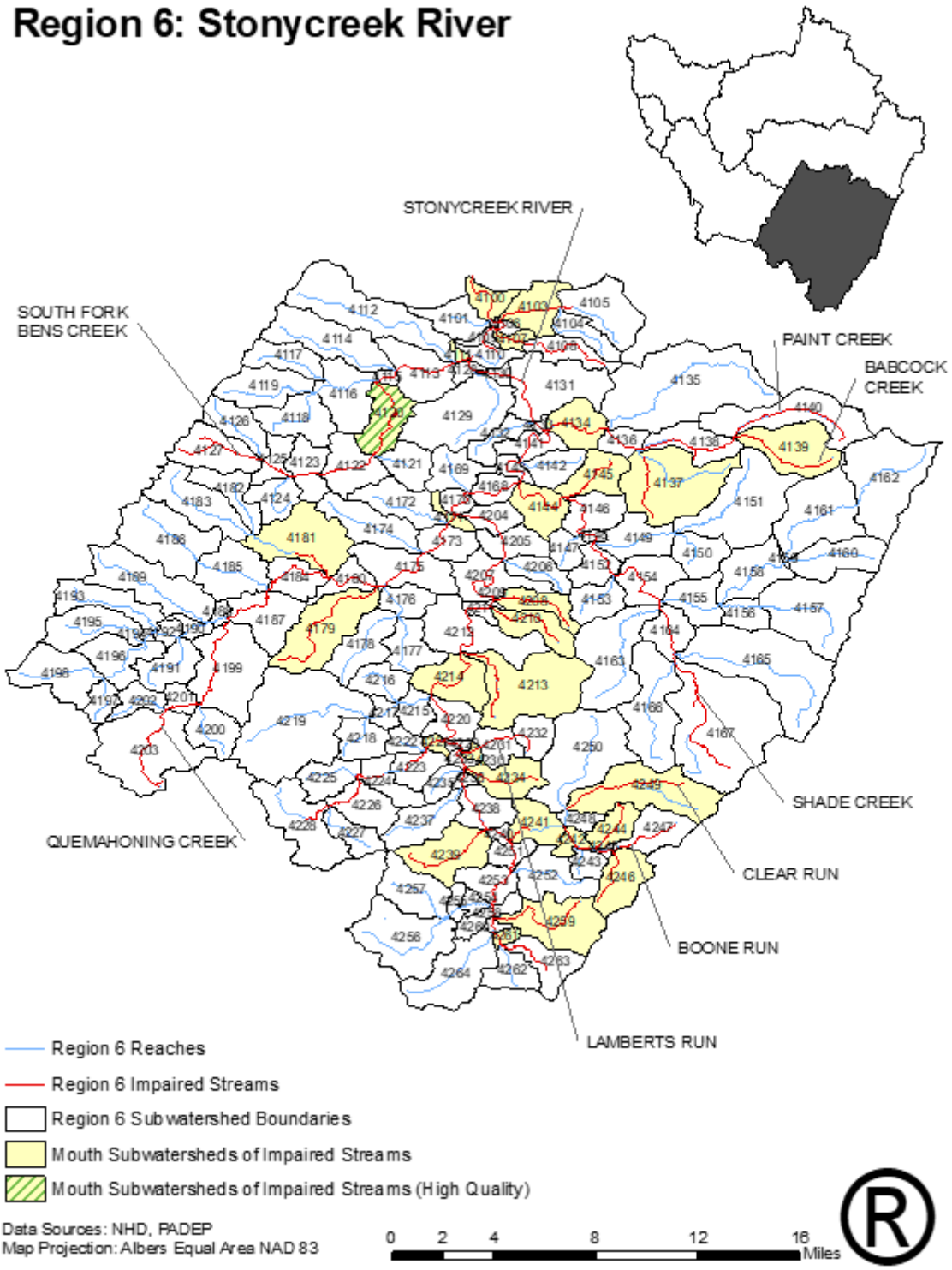
A TMDL for a given pollutant and waterbody is composed of the sum of individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background levels. In addition, the TMDL must include an implicit or explicit Margin of Safety (MOS) to account for the uncertainty in the relationship between pollutant loads and the quality of the receiving waterbody. The TMDL components are illustrated using the following equation:

$$TMDL = \Sigma\, WLAs + \Sigma\, LAs + MOS$$

Stream reaches in the Kiskiminetas River and Conemaugh River watersheds in southwestern Pennsylvania are included on the state's 2008 Section 303(d) list because of various impairments, including metals, pH, and sediment. TMDLs were developed to address metals, pH, and sediment impairments associated with abandoned mine drainage or discharge using the Mining Data Analysis System (MDAS). MDAS is a comprehensive data management and modeling system capable of representing loads from nonpoint and point sources in the watershed and simulating instream processes.

Modeled subwatershed loadings were iteratively reduced to estimate the load reductions required to meet instream concentration targets for metals. The target concentrations were based on established water quality criteria of 0.750 milligrams per liter (mg/L) total aluminum, 1.5 mg/L total iron, 0.3 mg/L dissolved iron, and 1.0 mg/L manganese. Iron reductions were used as a surrogate for sediment reductions. For purposes of this TMDL, sediment includes total suspended solids (TSS). Streams placed on Pennsylvania's Section 303(d) list with a designated use of high quality or exceptional value are subject to additional protection pursuant to the state's antidegradation policy. Data from a PADEP reference stream was obtained from PADEP and used to develop endpoints for high quality or exceptional value streams. Long-term loads based on the TMDL allocations were identified, as well as median and maximum allowable daily loads. Loads are presented in full in Appendix G of this report.

WLAs were assigned to permitted facilities and municipal separate storm sewer systems (MS4s) that discharge in the watershed. The LAs include nonpoint sources and include drainage from abandoned mine lands. An explicit MOS of five percent is included in the TMDL to account for uncertainty. The state reserves the right to revise these allocations, with approval from EPA, provided that the revised allocations are consistent with achieving the water quality standards. This TMDL addresses waters that have not been previously addressed by a TMDL and will supersede all preexisting metals TMDLs in the watershed. EPA is establishing these TMDLs at the request of PADEP.



Kiskiminetas River Watershed Aggregated Negligible Non-Mining Wasteload Allocations

Region	SWS	Metal	Baseline Load (lbs/yr)	Baseline Concentration (mg/L)	Allocated Load (lbs/yr)	Allocated Concentration (mg/L)	% Reduction	Comments
6	4168	Aluminum	365	0.75	365	0.75	0	
6	4168	Iron	730	1.50	730	1.50	0	
6	4168	Manganese	487	1.00	487	1.00	0	