pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0038164**
Facility Type	**Municipal**	APS ID	**807232**
Major / Minor	**Minor**	Authorization ID	**1372950**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Confluence Borough Municipal Authority**	Facility Name	**Confluence Borough STP**
Applicant Address	PO Box 6 711 Logan Place	Facility Address	2847 Drake Town Road
	Confluence, PA 15424-0006		Confluence, PA 15424
Applicant Contact	Mark Waszczak	Facility Contact	Mark Waszczak
Applicant Phone	(814) 395-5512	Facility Phone	(814) 395-5512
Client ID	133984	Site ID	250268
Ch 94 Load Status	Existing Hydraulic Overload	Municipality	Confluence Borough
Connection Status	Dept. Imposed Connection Prohibitions	County	Somerset
Date Application Received	October 5, 2021	EPA Waived?	Yes
Date Application Accepted		If No, Reason	
Purpose of Application	NPDES permit renewal.		

Summary of Review

The PA Department of Environmental Protection (PADEP/Department) received an NPDES permit renewal application from CME Engineering on behalf of Confluence Borough Municipal Authority (permittee) on October 5, 2021 for permittee's Confluence Borough STP (facility). The facility is a minor STP with an average annual design flow of 0.137 MGD. The treated effluent is discharged into Youghiogheny River (HQ-CWF) through Outfall 001 in state watershed 19-E. The existing permit will expire on March 31, 2022. The terms and conditions are administratively extended since the renewal application *was not* received at least 180 days of permit expiration date. Renewal NPDES permit applications under Clean Water program are not covered by PADEP's PDG per 021-2100-001.

This fact sheet is developed in accordance with 40 CFR §124.56.

Changes in this renewal: Quarterly E. Coli monitoring is added, and minimum DO limit is changed to 5.0 mg/l.

Sludge use and disposal description and location(s): Hauled off-site.

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.

Approve	Deny	Signatures	Date
√		Reza H. Chowdhury, E.I.T. / Project Manager	November 16, 2021
X		Pravin Patel Pravin C. Patel, P.E. / Environmental Engineer Manager	11/17/2021

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.137
Latitude	39º 49' 2"	Longitude	-79º 21' 54.31"
Quad Name	Confluence	Quad Code	2011
Wastewater Description:	Sewage Effluent		
Receiving Waters	Youghiogheny River (HQ-CWF)	Stream Code	37456
NHD Com ID	69922129	RMI	73.5
Drainage Area	1,029 mi^2	Yield (cfs/mi^2)	0.275
Q_{7-10} Flow (cfs)	283	Q_{7-10} Basis	Please see below
Elevation (ft)	1310.33	Slope (ft/ft)	
Watershed No.	19-E	Chapter 93 Class.	HQ-CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	MERCURY		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	**N/A**	Name	

Background/Ambient Data		Data Source
pH (SU)	7.0	Median Jul-Sep, 1999-2019, WQN0709
Temperature (°C)	17.2	Median Jul-Sep, 1999-2019, WQN0709
Hardness (mg/L)	30	Median Jul-Sep, 1999-2019, WQN0709
Other:		

Nearest Downstream Public Water Supply Intake		Indian Creek Valley Water Department	
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	
PWS RMI	62.85	Distance from Outfall (mi)	10.65

Changes Since Last Permit Issuance: Confluence Borough MA completed a Sewer Improvement Project to handle SSOs.

Other Comments:

Streamflow:

USGS's web based watershed delineation tool StreamStats (accessible at https://streamstats.usgs.gov/ss/, accessed on November 2, 2021) was utilized to determine the drainage area and low flow statistics of the receiving stream at discharge point. The drainage area was found to be 1,029 mi^2. Data from the nearby StreamGage 03081000 was also considered. This gage is located in Youghiogheny River below Confluence, PA. Q_{7-10}, Q_{1-10}, and Q_{30-10} values at this gage are 283 cfs, 240 cfs, and 358 cfs respectively for the reporting years of 1942-2008. The drainage area was found to be 1,029 mi^2. These values were obtained from the latest USGS streamflow report (1).

Q_{7-10} runoff rate = 283 cfs/1029 mi^2 = 0.275 cfs/mi^2
Q_{7-10} = 0.275 cfs/mi^2 * 1029 mi^2 = 283 cfs
Q_{1-10}/Q_{7-10} = 240 cfs/283 cfs = 0.848
Q_{30-10}/Q_{7-10} = 358 cfs/283 cfs = 1.27

(1) Stuckey, M.H., Roland, M.A., 2011, Selected streamflow statistics for streamgage locations in and near Pennsylvania: U.S. Geological Survey Scientific Investigations Report 2011-1070, PP 31, PP 45.

DEP's SOP (BPMPSM-PMT-033, revised March 24, 2021) section II.B.4 states that where a facility is eligible for technology-based limits of $CBOD_5$ exceeding 25 mg/l, application managers will evaluate a WQBEL for $CBOD_5$ as follows:

a. *Model the discharge using Toxics Management Spreadsheet (TMS)*
b. *Multiply the acute partial mix factor by the Q_{7-10} of the receiving waters*
c. *Run the WQM 7.0 model using the adjusted Q_{7-10} and apply the WQBEL in the permit, if less than the technology-based limits*
d. *Establish the average monthly concentration limit for TSS at the same concentration as for $CBOD_5$ using BPJ, if the $CBOD_5$ limit is a WQBEL*

The attached TMS model suggested a PMFa of 5.8%. A partial mixing factor, according to DEP's technical guidance (391-2000-011), is used to describe the factional portion of the stream that mixes with the discharge at the criteria compliance times. The partial mix factor is a value between 0 and 1; 1 presenting complete mixing and less than 1 represents there is incomplete mixing between the discharge and the stream. Therefore, the revised Q_{7-10} will be **283 * 0.058 or 16.41 cfs**.

PWS Intake:
The nearest downstream public water supply is Indian Creek Valley Water Dept, on Youghiogheny River at RMI 62.85. Its approximately 10.65 miles downstream of Outfall 001.

Wastewater Characteristics:
A median pH of 6.74 from daily DMR during dry months July through September for the year 2021, discharge temperature of 14.03^0C (application data), and a default discharge hardness of 100 mg/l will be used for modeling, if needed.

Background data:
The nearby WQN station is WQN0709 on Youghiogheny River at Confluence. The stream pH, Temperature, and Hardness for dry months (July-September) for the period 1999-2018 was calculated to be 7.0 S.U, 17.2°C, and 30 mg/l, respectively.

303d Listed Streams:
The Youghiogheny River is impaired for Fish Consumption due to Mercury from unknown sources. No TMDL is prepared/proposed for this river segment and the discharge is believed not to add to its existing impairment.

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. The receiving streams are designated as High-Quality Cold-Water Fishes (HQ-CWF). This is a renewal application; therefore, an anti-degradation analysis is not performed.

Treatment Facility Summary

Treatment Facility Name: Confluence Borough STP

WQM Permit No.	Issuance Date

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Hypochlorite	0.137

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.137	28.5	Existing Hydraulic Overload		

Other Comments:

Treatment Plant Description

Confluence Borough STP is a 0.137 MGD minor sewage facility located in Confluence Borough, Somerset County which discharges treated sewage through Outfall 001 into Youghiogheny Creek in state watershed 19-E. This is an extended aeration treatment system with chlorine-dechlorination. The application indicated the following treatment train*: Influent enters the distribution box which separates the influent to two identical treatment systems. The process is aeration tank, primary clarifier, secondary clarifier, then effluent to the chlorine contact tank and dechlorination tablet feeder. The effluent is discharged to the outfall. Solids are pumped to the sludge tank.* The facility receives 80% of its flow from Confluence borough and 20% from Henry Clay Township. The sewer system is now 100% separated.

Summary of Inspection:

07/30/2021: RTPT conducted to review the progress of the COA the Department issued. New blowers, new building ventilation and new electronics have been installed inside the STP control building. Composite sampler was installed, and flow proportioned.

05/03/2021: RTPT conducted in response to a bypass reported by the operator. They initiated the bypass due to influent PS pumps malfunctioning. A portable pump was installed temporarily. Since the permittee will be separating their system in approximately two months and the wet well will be eliminated, the malfunctioning pumps will not be replaced, and the portable pumps will be kept at site until separation.

04/02/2019: CEI conducted. Violations noted including DMR effluent violation, SSO bypass, and Ch. 94 hydraulic overload condition. Several recommendations were made including purchase of a refrigerated composite sampler for effluent sampling, separate logbook for maintenance and daily operations, and to submit a WQM permit amendment application to install de-chlorination.

Compliance History

DMR Data for Outfall 001 (from September 1, 2020 to August 31, 2021)

Parameter	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20
Flow (MGD) Average Monthly	0.048	0.078	0.139	0.215	0.094	0.206	0.133	0.193	0.134	0.100	0.073	0.077
Flow (MGD) Daily Maximum	0.070	0.177	0.354	0.774	0.210	0.507	0.273	0.434	0.219	0.198	0.327	0.223
pH (S.U.) Minimum	6.21	6.50	6.24	6.15	6.58	6.70	6.59	6.51	6.04	6.03	6.03	6.45
pH (S.U.) Maximum	8.28	7.07	7.17	7.97	8.74	8.00	7.58	7.97	7.92	7.88	6.91	7.52
DO (mg/L) Minimum	5.75	5.65	6.09	6.41	6.39	6.88	6.40	8.22	4.80	4.55	6.33	6.61
TRC (mg/L) Average Monthly	0.14	0.28	0.53	0.51	0.50	0.48	0.06	0.33	0.77	0.78	0.47	0.41
TRC (mg/L) Instantaneous Maximum	0.68	0.99	1.00	0.98	0.89	0.84	0.57	0.83	1.04	1.29	0.96	0.97
CBOD5 (lbs/day) Average Monthly	2.35	3.05	3.72	3.72	1.72	4.73	6.47	12.00	7.91	2.60	1.69	3.21
CBOD5 (lbs/day) Weekly Average	3.84	3.83	5.70	8.74	2.00	12.68	11.77	15.33	24.94	7.25	2.00	5.78
CBOD5 (mg/L) Average Monthly	5.86	5.28	3.29	3.50	3.0	3.00	5.25	11.25	6.22	3.36	3.23	4.57
CBOD5 (mg/L) Weekly Average	9.22	6.13	4.43	4.99	3.0	3.00	6.92	16.20	16.90	3.86	3.91	8.78
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	130.01	156.33	262.33	281.18	111.61	207.27	148.65	216.77	131.76	124.04	50.75	72.65
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	146.87	199.93	389.90	467.62	193.90	285.48	240.86	282.33	234.17	277.46	65.85	148.85
BOD5 (mg/L) Raw Sewage Influent Average Monthly	368.0	279.5	231.80	275.25	195.75	239.30	195.75	226.30	239.00	161.70	99.78	103.52
BOD5 (mg/L) Raw Sewage Influent Daily Maximum	452.0	393.0	324.00	364.00	347.00	391.00	380.00	312.00	288.00	323.00	141.00	184.00
TSS (lbs/day) Average Monthly	2.32	4.58	5.51	2.84	2.06	30.64	16.41	7.83	3.63	5.15	2.80	5.48
TSS (lbs/day) Raw Sewage Influent Average Monthly	59.42	91.77	181.19	175.03	66.12	127.58	62.09	133.09	67.07	40.07	24.89	59.82

TSS (lbs/day) Raw Sewage Influent Daily Maximum	92.86	120.10	277.61	297.74	101.41	143.61	144.52	227.73	154.99	58.05	31.76	118.11
TSS (lbs/day) Weekly Average	3.34	7.76	8.38	4.14	3.03	123.47	48.32	10.37	9.45	12.25	4.33	16.60
TSS (mg/L) Average Monthly	6.20	7.90	5.12	3.80	3.70	10.96	11.20	7.70	3.04	7.90	5.40	8.08
TSS (mg/L) Raw Sewage Influent Average Monthly	159.0	163.00	182.60	165.77	113.00	111.00	85.38	143.30	72.4	56.50	48.25	84.20
TSS (mg/L) Raw Sewage Influent Daily Maximum	210.0	202.00	272.00	264.00	152.00	194.00	228.00	246.00	184.00	80.00	68.00	146.00
TSS (mg/L) Weekly Average	10.00	12.40	9.20	5.60	5.60	29.20	28.40	11.20	6.40	20.40	8.80	25.20
Fecal Coliform (CFU/100 ml) Geometric Mean	34.86	125.22	66.56	10.74	5.05	40.43	203.53	416.12	82.06	17.87	163.92	634.64
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	2419.60	2419.60	1011.20	770.10	209.80	2419.00	1230.40	18416	9678.00	980.40	1553.00	39726
Total Nitrogen (mg/L) Daily Maximum									0.54			
Ammonia (mg/L) Average Monthly	13.41	9.84	3.43	0.26	0.45	0.58	0.70	9.95	1.53	0.17	0.70	3.56
Ammonia (mg/L) Weekly Average	28.20	12.08	7.19	0.52	0.69	1.34	2.15	15.72	6.97	0.36	2.51	14.04
Total Phosphorus (mg/L) Daily Maximum									3.40			

Compliance History

Effluent Violations for Outfall 001, from: October 1, 2020 To: August 31, 2021

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Flow	05/31/21	Avg Mo	0.215	MGD	.137	MGD
Flow	03/31/21	Avg Mo	0.206	MGD	0.137	MGD
Flow	06/30/21	Avg Mo	0.139	MGD	.137	MGD
Flow	01/31/21	Avg Mo	0.193	MGD	0.137	MGD
TRC	06/30/21	Avg Mo	0.53	mg/L	.5	mg/L

TRC	05/31/21	Avg Mo	0.51	mg/L	.5	mg/L
TRC	11/30/20	Avg Mo	0.78	mg/L	0.5	mg/L
TRC	12/31/20	Avg Mo	0.77	mg/L	0.5	mg/L
TSS	03/31/21	Wkly Avg	123.47	lbs/day	51.4	lbs/day
Fecal Coliform	07/31/21	IMAX	2419.60	CFU/100 ml	1000	CFU/100 ml
Fecal Coliform	08/31/21	IMAX	2419.60	CFU/100 ml	1000	CFU/100 ml
Fecal Coliform	01/31/21	IMAX	18416	CFU/100 ml	10000	CFU/100 ml
Fecal Coliform	06/30/21	IMAX	1011.20	CFU/100 ml	1000	CFU/100 ml

Other Comments: A COA was entered in between the permittee and the Department to address the non-compliance.

Existing Effluent Limitations and Monitoring Requirements

Outfall 001 , Continued (from 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)	0.137	Report	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Max	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	4.0	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	28.5	42.8 Wkly Avg	XXX	25	38	50	1/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report	XXX	Report	Report Daily Max	XXX	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report	XXX	Report	Report Daily Max	XXX	1/week	24-Hr Composite
Total Suspended Solids	34.3	51.4 Wkly Avg	XXX	30	45	60	1/week	24-Hr Composite

Outfall 001, Continued (from 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		
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	24-Hr Composite
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	24-Hr Composite

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.137
Latitude 39º 49' 2.00" **Longitude** -79º 21' 54.00"
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)

Water Quality-Based Limitations

WQM 7.0:

WQM 7.0 version 1.0b is a water quality model designed to assist DEP to determine appropriate effluent limits for $CBOD_5$, NH_3-N and DO. 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_3N 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 on page 3, to examine allowable wasteload allocations under appropriate mixing conditions. The model was utilized for this permit renewal by using adjusted Q_{7-10} and historic background water quality levels of the river. .The following data were used in the attached computer model of the stream:

- Discharge pH 6.74 (median Jul-Sep, 2021, eDMR data)
- Discharge Temperature 14.03°C (Application data)
- Discharge Hardness 100 mg/l (Default)
- Stream pH 7.0 (WQN0709, Median Jul-Sep, 1999-2018)
- Stream Temperature 17.2°C (WQN0709, Median Jul-Sep, 1999-2018)
- Stream Hardness 30 mg/l (WQN0709, Median Jul-Sep, 1999-2018)

The following nodes were considered in modeling:

Node 1: Outfall 001 at Youghiogheny River (37456)
Elevation: 1311.25 ft (USGS National Map viewer, 11/02/2021)
Drainage Area: 1029 mi^2 (StreamStat Version 3.0, 11/02/2021)
River Mile Index: 73.5 (PA DEP eMapPA)
Low Flow Yield: 0.275 cfs/mi^2
Discharge Flow: 0.137 MGD

Node 2: At confluence with 38573 at Youghiogheny River (37456)
Elevation: 1307.4 ft (USGS National Map viewer, 11/02/2021)
Drainage Area: 1030 mi^2 (StreamStat Version 3.0, 11/02/2021)

River Mile Index: 72.10 (PA DEP eMapPA)
Low Flow Yield: 0.275 cfs/mi^2
Discharge Flow: 0.0 MGD

NH_3-N:
WQM 7.0 suggested NH_3-N limit of 25.0 mg/l as monthly average and 50.0 mg/l as IMAX limit are necessary to protect water quality standards. Per BCW-PMT-033, 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. The current permit has monitoring requirement that is consistent with SOP's guidance and will be carried over.

$CBOD_5$:
The WQM 7.0 model suggests a monthly average $CBOD_5$ limit of 25 mg/l. The average monthly and average weekly mass loadings were calculated as 28.5 lbs/day and 42.8 lbs/day respectively. These limits are the same as in the existing permit and will be carried over.

Dissolved Oxygen (DO):
The existing permit has a minimum DO of 4.0 mg/l. Per Pa Code 25 Ch.93.7, a minimum DO of 5.0 is required for CWF. This is also supported by WQM 7.0 output. A review of the past 12 months DMR data indicated that the facility is meeting at least 5.0 mg/l DO concentration 83% of the time. A schedule may be provided to meet the final DO limit.

Toxics:
Minor facilities are not required to provide Total Copper, Total Lead, and Total Zinc effluent data if there are no industrial or commercial contributors. The permit application indicated there is no commercial/industrial contributor to the treatment plant.

TDS and its constituents:
TMS suggests no RP for TDS and its constituents. Therefore, no monitoring or limits requirement will be placed in the permit.

Additional Considerations

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 § 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. These are existing limits that will be carried over.

E. Coli:
DEP's SOP titled "Establishing Effluent Limitations for Individual Sewage Permits (BCW-PMT-033, revised March 24, 2021) recommends quarterly E. Coli monitoring for all sewage dischargers with design flows ≥ 0.05 MGD and < 1.0 MGD. This requirement will be applied from this permit term.

pH:
The TBEL for pH is above 6.0 and below 9.0 S.U. (40 CFR §133.102(c) and Pa Code 25 § 95.2(1)) which are existing limits and will be carried over.

Total Suspended Solids (TSS):
There is no water quality criterion for TSS. The existing limits of 30 mg/L average monthly, 45 mg/l average weekly, and 60 mg/L instantaneous maximum will remain in the permit based on the minimum level of effluent quality attainable by secondary treatment, 25 Pa. Code § 92a.47 and 40CFR 133.102(b). The mass based average monthly and weekly average limits are calculated to be 34.3 lbs./day and 51.4 lbs./day respectively. These are all existing limits that will be carried over.

Total Residual Chlorine (TRC):
The attached computer printout utilizes the equation and calculations as presented in the Department's 2003 Implementation Guidance for Total Residual Chlorine (TRC) (ID#391-2000-015) for developing chlorine limitations. The attached printout indicates that a water quality limit of 0.5 mg/l would be needed to prevent toxicity concerns at the

discharge point for Outfall 002. The Instantaneous Maximum (IMAX) limit is 1.6 mg/l. These are the existing permit limit that will be carried over.

Flow and Influent BOD_5 and TSS Monitoring Requirement:
The requirement to monitor the volume of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii). Influent BOD_5 and TSS monitoring requirements are established in the permit per the requirements set in Pa Code 25 Chapter 94.

Best Professional Judgement (BPJ):

Total Phosphorus:
PADEP's SOP BCW-PMT-033 suggests monitoring requirement, at a minimum, for facilities with design flow greater than 2,000 GPD. This requirement is applied for all facilities meeting the flow criteria. This is an existing parameter with monitoring requirement that will be carried over.

Total Nitrogen:
PADEP's SOP BCW-PMT-033 suggests monitoring requirement, at a minimum, for facilities with design flow greater than 2,000 GPD. This requirement is applied for all facilities meeting the flow criteria. This is an existing parameter with monitoring requirement that will be carried over.

Monitoring Frequency and Sample Types:
Otherwise specified above, the monitoring frequency and sample type of compliance monitoring for existing parameters are recommended by DEP's SOP and Permit Writers Manual and/or on a case-by-case basis using best professional judgment (BPJ).

Anti-Backsliding

The proposed limits are at least as stringent as are in existing permit, unless otherwise stated; therefore, anti-backsliding is not applicable.

Proposed Effluent Limitations and Monitoring Requirements

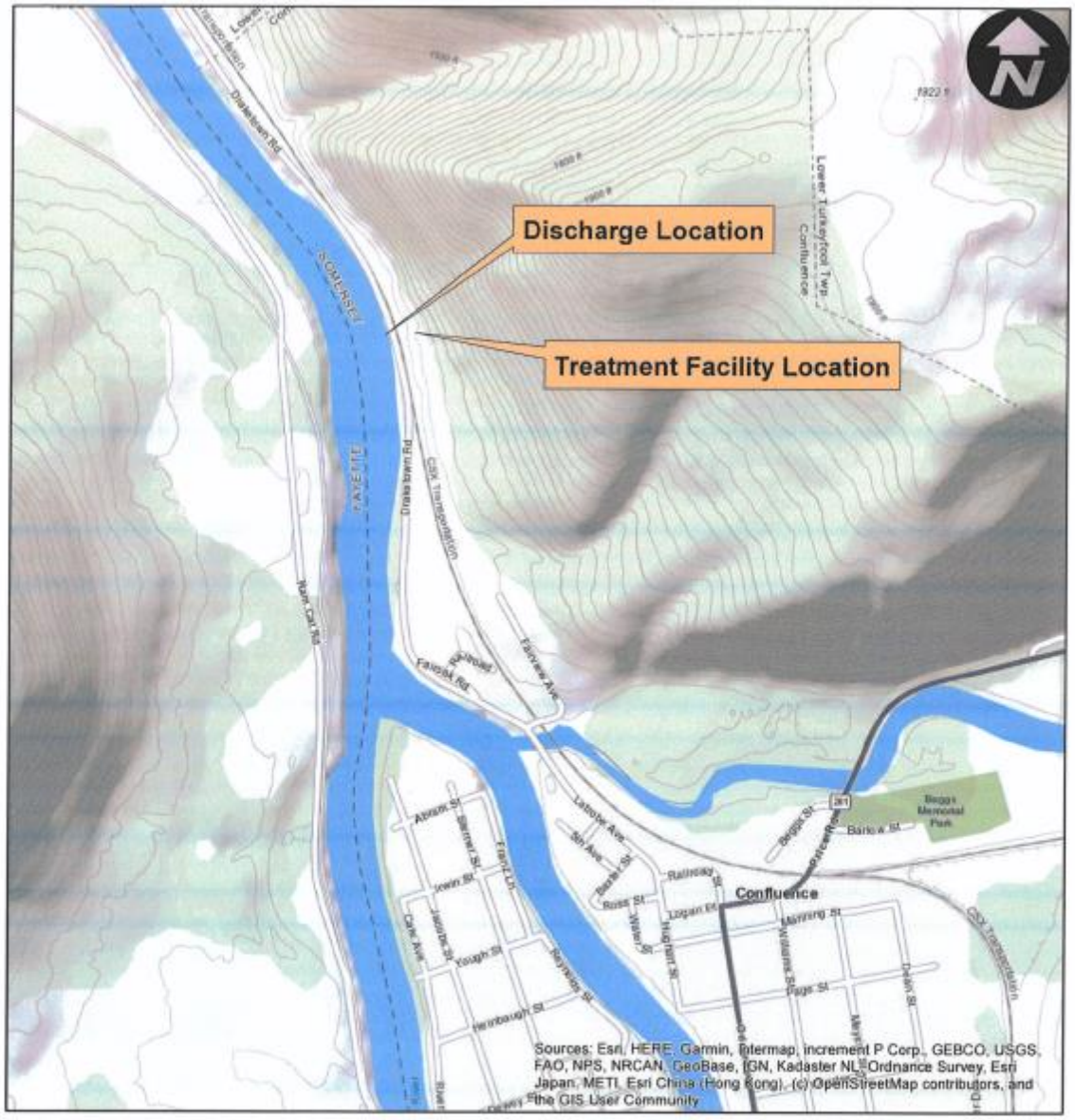
The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). 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	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	0.137	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	1/day	Grab
DO	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	28.5	42.8	XXX	25	38	50	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	1/week	24-Hr Composite
TSS	34.3	51.4	XXX	30.0	45.0	60	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	Report Avg Qrtly	Report Daily Max	XXX	1/quarter	Grab
Total Nitrogen	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	24-Hr Composite
Ammonia	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	24-Hr Composite

Compliance Sampling Location: At Outfall 001

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: BCW-PMT-033
☐	Other:



Location Map

Confluence Borough Municipal Authority

NPDES PERMIT RENEWAL

0 500 1,000 2,000 3,000 4,000 Feet

1 inch = 1,000 feet

Date: 9/27/2021

CME

ENGINEERING

CME ENGINEERING LP
165 E. Union Street, Somerset, PA 15501
Phone: 814-443-3344 Fax: 724-672-4801

Document Path: W:\Client\0329 Confluence Borough Mun Auth\00 (S) NPDES Renewal\2021 NPDES Permit App\CAD\0-LiveLocation Map.mxd

Permit No. PA0038164

PA0038164 at DP

Region ID: PA
Workspace ID: PA20211103014903852000
Clicked Point (Latitude, Longitude): 39.81722, -79.36547
Time: 2021-11-02 21:49:25 -0400

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1030	square miles
ELEV	Mean Basin Elevation	2370	feet

Low-Flow Statistics Parameters [99.9 Percent (1030 square miles) Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1030	square miles	2.26	1400
ELEV	Mean Basin Elevation	2370	feet	1050	2580

Low-Flow Statistics Flow Report [99.9 Percent (1030 square miles) Low Flow Region 4]

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

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	134	ft^3/s	43	43
30 Day 2 Year Low Flow	195	ft^3/s	38	38
7 Day 10 Year Low Flow	62.6	ft^3/s	66	66
30 Day 10 Year Low Flow	84.7	ft^3/s	54	54
90 Day 10 Year Low Flow	144	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/)

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Permit No. PA0038164

PA0038164 at Node 2

Region ID: PA
Workspace ID: PA20211103020018565000
Clicked Point (Latitude, Longitude): 39.82762, -79.37644
Time: 2021-11-02 22:00:40 -0400

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1030	square miles
ELEV	Mean Basin Elevation	2367	feet

Low-Flow Statistics Parameters [99.9 Percent (1030 square miles) Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1030	square miles	2.26	1400
ELEV	Mean Basin Elevation	2367	feet	1050	2580

Low-Flow Statistics Flow Report [99.9 Percent (1030 square miles) Low Flow Region 4]

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

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	134	ft^3/s	43	43
30 Day 2 Year Low Flow	195	ft^3/s	38	38
7 Day 10 Year Low Flow	62.6	ft^3/s	66	66
30 Day 10 Year Low Flow	84.7	ft^3/s	54	54
90 Day 10 Year Low Flow	144	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/)

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Permit No. PA0038164

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
19D	37456	YOUGHIOGHENY RIVER	73.500	1311.25	1029.00	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	0.275	16.41	0.00	0.000	0.000	0.0	0.00	0.00	17.20	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
Confluence Boro	PA0038164	0.1370	0.1370	0.1370	0.000	14.00	6.74

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

Permit No. PA0038164

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
19D	37456	YOUGHIOGHENY RIVER	72.100	1307.40	1030.00	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	0.275	0.00	0.00	0.000	0.000	0.0	0.00	0.00	17.20	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	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	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Permit No. PA0038164

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19D	37456	YOUGHIOGHENY 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												
73.500	16.41	0.00	16.41	.2119	0.00052	1.023	89.96	87.95	0.18	0.474	17.16	7.00
Q1-10 Flow												
73.500	13.92	0.00	13.92	.2119	0.00052	NA	NA	NA	0.16	0.519	17.15	6.99
Q30-10 Flow												
73.500	20.84	0.00	20.84	.2119	0.00052	NA	NA	NA	0.21	0.415	17.17	7.00

Permit No. PA0038164

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	0.848	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.27	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

Tuesday, November 16, 2021 Version 1.0b Page 1 of 1

Permit No. PA0038164

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19D	37456	YOUGHIOGHENY 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
73.500	Confluence Boro	11.97	50	11.97	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
73.500	Confluence Boro	2.37	25	2.37	25	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)		
73.50	Confluence Boro	25	25	25	25	5	5	0	0

Permit No. PA0038164

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19D	37456	YOUGHIOGHENY RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
73.500	0.137	17.159	6.995
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
89.956	1.023	87.948	0.181
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.29	0.160	0.32	0.563
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.202	0.600	Tsivoglou	5
Reach Travel Time (days)			
0.474			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.047	2.28	0.31	8.18
0.095	2.26	0.30	8.17
0.142	2.25	0.29	8.15
0.189	2.23	0.29	8.14
0.237	2.22	0.28	8.12
0.284	2.20	0.27	8.11
0.332	2.19	0.26	8.10
0.379	2.17	0.26	8.09
0.426	2.16	0.25	8.08
0.474	2.15	0.24	8.08

Permit No. PA0038164

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19D	37456	YOUGHIOGHENY 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)
73.500	Confluence Boro	PA0038164	0.137	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			5

Permit No. PA0038164

TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

16.41	= Q stream (cfs)	0.5	= CV Daily
0.137	= 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 =	24.719	1.3.2.iii	WLA cfc =	24.091
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	9.211	5.1d	LTA_cfc =	14.005

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)

Permit No. PA0038164

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Confluence Borough STP** NPDES Permit No.: **PA0038164** Outfall No.: **001**

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

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
0.137	100	6.74						

	Discharge Pollutant	Units	Max Discharge Conc		0 if left blank: Trib Conc	0 if left blank: Stream Conc	0.5 if left blank: Daily CV	0.5 if left blank: Hourly CV	0 if left blank: Stream CV	0 if left blank: Fate Coeff	0 if left blank: FOS	1 if left blank: Criteria Mod	1 if left blank: Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		478									
	Chloride (PWS)	mg/L											
	Bromide	mg/L	<	0.2									
	Sulfate (PWS)	mg/L		25.4									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	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	µg/L											
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L											
	Total Manganese	µg/L											
	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	µg/L											
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Confluence Borough STP, NPDES Permit No. PA0038164, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Youghiogheny River**

No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	037456	73.5	1310.33	1029			Yes
End of Reach 1	037456	72.1	1307.43	1030			Yes

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

Location	RMI	LFY (cfs/mi²)*	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	73.5	0.275										30	7		
End of Reach 1	72.1	0.275										30	7		

Q_h

Location	RMI	LFY (cfs/mi²)	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	73.5														
End of Reach 1	72.1														

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Confluence Borough STP, NPDES Permit No. PA0038164, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | (●) All ( ) Inputs ( ) Results ( ) Limits

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.058 Analysis Hardness (mg/l): 30.894 Analysis pH: 7.00

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	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	

☑ ***CFC*** CCT (min): 720 PMF: 0.401 Analysis Hardness (mg/l): 30.13 Analysis pH: 7.00

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	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	

☑ ***THH*** CCT (min): 720 PMF: 0.401 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	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	

☑ ***CRL*** CCT (min): 720 PMF: 0.614 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	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	

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

Permit No. PA0038164

No. Samples/Month: 4

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

☑ ***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
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable