pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0216925**
Facility Type	**Non-Municipal**	APS ID	**1062965**
Major / Minor	**Minor**	Authorization ID	**1395616**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Monongalia County Coal Resources Inc.**	Facility Name	**Blacksville #2 Kuhntown Portal**
Applicant Address	46226 National Road	Facility Address	701 Oak Forest Road
	Saint Clairsville, OH 43950-8742		Kuhntown, PA 15366
Applicant Contact	Kimberly Betcher	Facility Contact	Kimberly Betcher
Applicant Phone	(740) 338-3241	Facility Phone	(740) 338-3241
Client ID	357639	Site ID	262195
Ch 94 Load Status	Not Overloaded	Municipality	Wayne Township
Connection Status		County	Greene
Date Application Received	March 2, 2022	EPA Waived?	Yes
Date Application Accepted	June 15, 2022	If No, Reason	
Purpose of Application	NPDES permit transfer and renewal.		

Summary of Review

The PA Department of Environmental Protection (PADEP/Department) received an NPDES permit renewal application from The Monongalia County Coal Company (MCCC) on March 2, 2022 for their Kuhntown Portal WWTP (facility-old name). Soon after, on April 7, 2022, the Department received a transfer application for the same facility to transfer from pervious permittee, MCCC, to Monongalia County Coal Resources, Inc. (MCCR/permittee). The new facility name is Blacksville #2 Kuhntown Portal (facility) that is in Wayne Township, Greene County. The facility discharges treated effluent through Outfall 001 into UNT to Hoovers Run (WWF) in state watershed 19-G. The current permit will expire on August 31, 2022. The terms and conditions of the current permit is automatically extended since the renewal application was received at least 180 days prior to the 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: Ammonia-N and TRC limits more stringent, E. Coli monitoring added

Sludge use and disposal description and location(s): Aerobically digested sludge hauled off.

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	June 22, 2022
X		Pravin Patel Pravin C. Patel, P.E. / Environmental Engineer Manager	06/23/2022

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.014
Latitude	39º 45' 42"	Longitude	-80º 16' 46"
Quad Name	Holbrook	Quad Code	2003
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Hoovers Run (WWF)	Stream Code	41731
NHD Com ID	99419102	RMI	0.3
Drainage Area	0.25 mi^2	Yield (cfs/mi^2)	0.006
Q_{7-10} Flow (cfs)	0.00154	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	1054	Slope (ft/ft)	
Watershed No.	19-G	Chapter 93 Class.	WWF
Existing Use	**WWF**	Existing Use Qualifier	Ch. 93
Exceptions to Use	None	Exceptions to Criteria	N/A
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	Final	Name	Dunkard Creek

Background/Ambient Data		Data Source
pH (SU)	7.0	Default per 391-2000-007
Temperature (°C)	25	Default per 391-2000-007
Hardness (mg/L)	100	Default
Other:		

Nearest Downstream Public Water Supply Intake		Dunkard Valley Joint Municipal Authority, Monongahela TWP, Greene County	
PWS Waters	Monongahela River	Flow at Intake (cfs)	
PWS RMI	83.89	Distance from Outfall (mi)	42.95

Changes Since Last Permit Issuance: None

Other Comments:

Streamflow:

Streamflow will be correlated with the USGS's web-based GIS application (https://streamstats.usgs.gov/ss/) accessed on June 15, 2022. Q_{7-10} and Q_{30-10} values at Outfall 001 were found to be 0.00154 cfs and 0.00367 cfs respectively. The drainage area at Outfall 001 was found to be 0.25 mi^2 from StreamStats.

Q_{7-10} runoff rate = 0.00154 cfs/ 0.25 mi^2 = 0.006 cfs/mi^2
Q_{30-10}/Q_{7-10} = 0.00367 cfs/0.00154 cfs = 2.38
Default Q_{1-10}: Q_{7-10} of 0.64 from 391-2000-007 will be used in modeling, if needed.

PWS Intake:

The nearest downstream public water supply is Dunkard Valley Joint Municipal Authority on Monongahela River at RMI 83.89 which is approximately 42.95 miles downstream of the Outfall 001. Because of the distance, dilution with much larger stream, and effluent limits, the discharge is expected not to affect the intake. The distance is calculated as follows:

+ Outfall 001 RMI at UNT to Hoovers Run ---------- 0.3 mi
+ RMI on Hoovers Run at confluence with UNT 41731 ---------- 3.02 mi

+ RMI on Dunkard Creek at confluence with Hoovers Run ---------- 35.76 mi
+ RMI on Monongahela River at confluence with Dunkard Creek ---------- 87.76 mi
- PWS RMI at Monongahela River ---------- 83.89 mi

Total 42.95 miles

Wastewater Characteristics:
A median pH of 7.71 from daily DMR during dry months July through September 2021 and a default temperature of 20^0C (per 391-2000-013) will be used for modeling, if needed.

Background data:
The nearby downstream Water Quality Network Station 21PA_WQX-WQN0714 is located on SR 2012 Bridge (Bobtown Hill Road) near Bobtown, Greene County which is approximately 35 miles downstream of the outfall 001 and is not considered as representative. In absence of site-specific temperature data, a default temperature of 25°C and pH of 7.0 (per 391-2000-007) will be used in modeling, if needed.

303d Listed Streams:
The discharge from this facility is in UNT to Hoovers Run in state watershed 19-G at RMI 0.3, which is attaining its designated uses. There is an approved TMDL for the receiving watershed (Dunkard Creek TMDL, April 4, 2007) for AMD. No WLA was assigned to this facility.

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 Warm-Water Fishes (WWF). No Special Protection watershed is impacted by this discharge.

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

Biosolids Management: Aerobically digested biosolids are hauled off from site.

Treatment Facility Summary

Treatment Facility Name: Blacksville 2 Mine Kuhntown Portal WWTP

WQM Permit No.	Issuance Date

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	No Disinfection	0.014

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.014	25	Not Overloaded	Aerobic digestion	Hauled off

Changes Since Last Permit Issuance: The facility is idled and the discharge pipe at Outfall 001 was capped since December 29, 2021. However, the permittee wants to keep the NPDES permit active in case the facility is reactivated in future.

Other Comments: The source of wastewater to the treatment plant was the bathhouse in the mine. It is a minor non-municipal sewage treatment plant with design flow of 0.014 MGD. The treated sewage was discharging into an UNT to Hoovers Run, classified as WWF. The permit renewal application indicated the treatment plant consists of flow equalization, aeration, clarification, sand filtration, chlorination, and aerobic digester (aerated sludge holding tank).

Compliance History

DMR Data for Outfall 001 (from May 1, 2021 to April 30, 2022)

Parameter	APR-22	MAR-22	FEB-22	JAN-22	DEC-21	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21
Flow (MGD) Average Monthly					0.00001	0.00001	0.0001	0.004	0.007	0.007	0.006	0.005
pH (S.U.) Minimum					7.66	6.80	7.07	7.50	7.23	7.06	7.11	7.60
pH (S.U.) Maximum					8.77	8.13	8.15	8.31	8.15	8.10	7.80	8.01
DO (mg/L) Minimum					9.7	6.80	5.2	5.0	5.0	5.5	5.8	6.0
TRC (mg/L) Average Monthly					0.02	0.03	0.02	0.02	0.01	0.03	0.02	0.03
TRC (mg/L) IMAX					0.05	0.09	0.05	0.06	0.04	0.09	0.06	0.07
CBOD5 (mg/L) Average Monthly					2.025	5.10	4.865	2.655	2.915	1.28	< 1.265	< 1.0
CBOD5 (mg/L) IMAX					2.87	5.28	5.34	2.83	3.01	1.42	1.53	< 1.0
TSS (mg/L) Average Monthly					< 4.5	10.5	< 9.0	< 4.5	< 3.0	< 4.5	< 4.5	< 3.0
TSS (mg/L) IMAX					6.0	14.0	12.0	< 6.0	3.0	< 6.0	< 6.0	< 6.0
Fecal Coliform (No./100 ml) Geometric Mean					166.91	113.24	23.40	13.9524	188.4	93.62	20.65	< 2.72
Fecal Coliform (No./100 ml) IMAX					1333	160.7	547.5	30.9	740	816.4	67.7	7.4
Total Nitrogen (mg/L) Daily Maximum					< 0.72							
Ammonia (mg/L) Average Monthly					< 0.22	< 0.22	< 0.22	< 1.055	< 0.22	< 0.22	< 0.22	< 0.15
Ammonia (mg/L) IMAX					< 0.22	< 0.22	< 0.22	1.89	< 0.22	< 0.22	< 0.22	< 0.15
Total Phosphorus (mg/L) Daily Maximum					0.071							

Compliance History

There are no DMR violation noted during last 12 months period. An Administrative review on the facility was conducted on July 22, 2020. No violation noted during the review.

Existing Limits

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	0.014	XXX	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	9.0	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.05	XXX	0.11	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	25	XXX	50	2/month	Grab
Total Suspended Solids	XXX	XXX	XXX	30	XXX	60	2/month	Grab
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	3.5	XXX	7.0	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	2.0	XXX	4.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.014
Latitude 39º 45' 42.00" **Longitude** -80º 16' 46.00"
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:
The following data were used in the attached computer model (WQM 7.0) of the stream:

- Discharge pH 7.71 (median July-Sep, 2021, eDMR data)
- Discharge Temperature 20°C (Default)
- Discharge Hardness 100 mg/l (Default)
- Stream pH 7.0 (Default)
- Stream Temperature 25°C (Default)
- Stream Hardness 100 mg/l (Default)

The following two nodes were used in modeling:

Node 1: At Outfall 001 on UNT to Hoovers Run (41731) at RMI 0.3
Elevation: 1054 ft (USGS TNM 2.0 viewer, 06/15/2022)
Drainage Area: 0.25 mi^2 (StreamStat Version 3.0, 06/15/2022)
River Mile Index: 0.3 (PA DEP eMapPA)
Low Flow Yield: 0.006 cfs/mi^2
Discharge Flow: 0.014 MGD

Node 2: At confluence with Hoovers Run (41731)
Elevation: 1010 ft (USGS TNM 2.0 viewer, 06/15/2022)
Drainage Area: 7.53 mi^2 (StreamStat Version 3.0, 06/15/2022)
River Mile Index: 0.0 (PA DEP eMapPA)
Low Flow Yield: 0.006 cfs/mi^2
Discharge Flow: 0.0 MGD

Ammonia (NH_3-N), Carbonaceous Biochemical Oxygen Demand (CBOD5), & Dissolved Oxygen (DO):
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. The model was utilized for this permit renewal by using Q_{7-10} and current background water quality levels of the stream.

NH_3-N:
WQM 7.0 suggested NH_3-N limit of 1.58 mg/l as monthly average and 3.16 mg/l as IMAX limit during summer to protect water quality standards. These values are more stringent compared to the existing permitted limits. Recent DMR data show that the plant will not meet the more stringent limits consistently. However, the facility is idled now and is not planned to resume operation in near future. Therefore, the more stringent limits will be applied from the effective date of the permit. The permittee will be required to evaluate the treatment plant's design to demonstrate that the facility will be meeting the applicable limits prior to resuming operation.

$CBOD_5$:
The WQM 7.0 model confirmed existing average monthly limit of 25 mg/l is still protective.

Dissolved Oxygen (DO):
WQM 7.0 model verified that the existing DO limit of 5 mg/l is still protective.

Toxics:
Minor sewage facilities with design flow less than 0.1 MGD aren't required to report metals unless there are any industrial or commercial contributors to the treatment plant. This is a minor facility with design flow of 0.014 MGD and the facility doesn't receive any industrial or commercial discharges. Due to the lack of toxics data, no reasonable potential analysis was conducted.

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 requirements are still applicable to this facility and current limits will be carried over since the current limits are the same as existing requirements.

E. Coli:
DEP's SOP titled "Establishing Effluent Limitations for Individual Sewage Permits (BCW-PMT-033, revised March 24, 2021) recommends annual E. Coli monitoring for sewage dischargers with design flows of 0.002-0.05 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 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).

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 0.02 mg/l would be needed to prevent toxicity concerns at the discharge point for Outfall 001. The Instantaneous Maximum (IMAX) limit is 0.063 mg/l. The current permit has an average monthly limit of 0.05 mg/l and IMAX of 0.11 mg/l. The proposed limits are more stringent. An addition of dechlorination system may be necessary to meet the more stringent limit, since the current eDMR data indicates that the facility may not meet the more stringent limits. Similar to the Ammonia-N, the facility must demonstrate that it can meet the more stringent TRC limits before resuming operation.

Flow reporting Requirement:
The requirement to monitor the volume of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii).

Best Professional Judgement (BPJ):

Total Phosphorus:

The current permit has annual monitoring requirement for Total Phosphorus which is also supported by BCW-PMT-033's recommendation. Monitoring requirement will be carried over.

Total Nitrogen:

The current permit has annual monitoring requirement for Total Nitrogen which is also supported by BCW-PMT-033's recommendation. Monitoring requirement 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	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	0.014	XXX	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC*	XXX	XXX	XXX	0.02	XXX	0.063	1/day	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	Grab
TSS	XXX	XXX	XXX	30	XXX	60	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	3.5	XXX	7.0	2/month	Grab
Ammonia May 1 - Oct 31*	XXX	XXX	XXX	1.58	XXX	3.16	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

* See Part C for instruction
Compliance Sampling Location: At Outfall 001

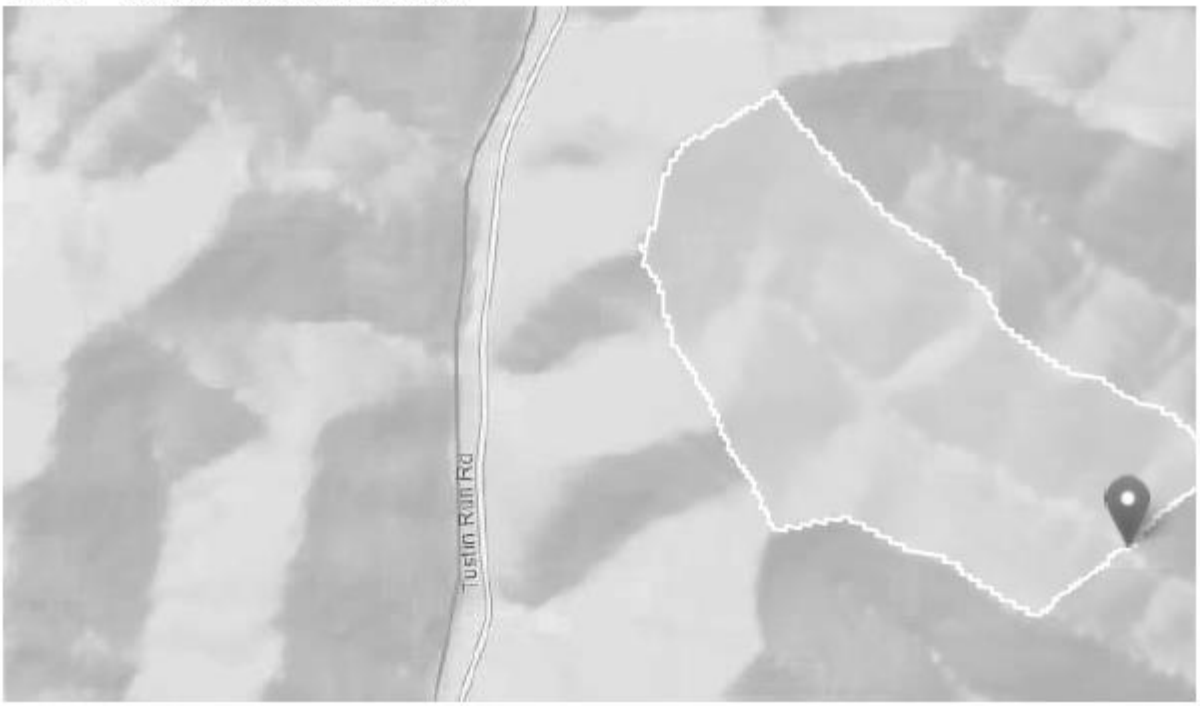
Other Comments: None

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:

Permit No. PA0216925

PA0216925 at Outfall 001

Region ID: PA
Workspace ID: PA20220616031601490000
Clicked Point (Latitude, Longitude): 39.76207, -80.27910
Time: 2022-06-15 23:16:21 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.25	square miles
ELEV	Mean Basin Elevation	1272	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.25	square miles	2.26	1400
ELEV	Mean Basin Elevation	1272	feet	1050	2580

Low-Flow Statistics Disclaimers [Low Flow Region 4]

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

Low-Flow Statistics Flow Report [Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.00608	ft^3/s
30 Day 2 Year Low Flow	0.0125	ft^3/s
7 Day 10 Year Low Flow	0.00154	ft^3/s
30 Day 10 Year Low Flow	0.00367	ft^3/s
90 Day 10 Year Low Flow	0.00814	ft^3/s

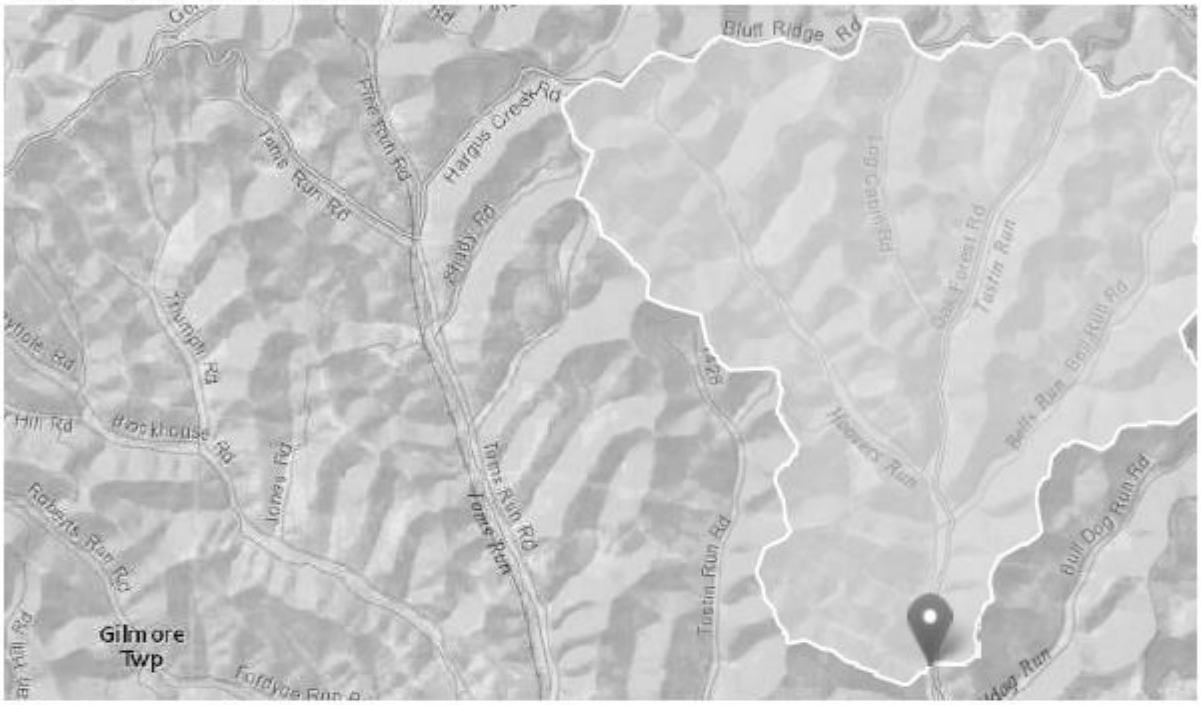
Low-Flow Statistics Citations

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/)

Permit No. PA0216925

PA0216925 at Node 2

Region ID: PA
Workspace ID: PA20220616031824385000
Clicked Point (Latitude, Longitude): 39.76077, -80.27399
Time: 2022-06-15 23:18:43 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	7.53	square miles
ELEV	Mean Basin Elevation	1267	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	7.53	square miles	2.26	1400
ELEV	Mean Basin Elevation	1267	feet	1050	2580

Low-Flow Statistics Flow Report [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	0.293	ft^3/s	43	43
30 Day 2 Year Low Flow	0.516	ft^3/s	38	38
7 Day 10 Year Low Flow	0.102	ft^3/s	66	66
30 Day 10 Year Low Flow	0.189	ft^3/s	54	54
90 Day 10 Year Low Flow	0.355	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: 4.9.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.0

Permit No. PA0216925

TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.00154	= Q stream (cfs)	0.5	= CV Daily
0.014	= 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 = 0.042	1.3.2.iii	WLA cfc = 0.033
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.016	5.1d	LTA_cfc = 0.019

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.019	AFC
		INST MAX LIMIT (mg/l) = 0.063	

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. PA0216925

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
19G	41731	Trib 41731 to Hoovers Run	0.300	1054.00	0.25	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	0.006	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Kuhnstown Porta	PA0216925	0.0140	0.0140	0.0140	0.000	20.00	7.71

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	2.00	0.00	0.00	0.70

Permit No. PA0216925

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
19G	41731	Trib 41731 to Hoovers Run	0.000	1010.00	7.53	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	0.006	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

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

Permit No. PA0216925

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19G	41731	Trib 41731 to Hoovers Run

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
0.300	Kuhnstown Porta	4.72	4	4.72	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
0.300	Kuhnstown Porta	1.35	1.58	1.35	1.58	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)		
0.30	Kuhnstown Porta	25	25	1.58	1.58	5	5	0	0

Permit No. PA0216925

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19G	41731	Trib 41731 to Hoovers Run

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.300	0.014	20.324	7.607
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2.064	0.281	7.337	0.040
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
23.51	1.488	1.48	0.718
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.210	26.393	Owens	5
Reach Travel Time (days)			
0.460			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.046	21.93	1.43	6.46
0.092	20.46	1.38	6.93
0.138	19.09	1.34	7.15
0.184	17.81	1.29	7.30
0.230	16.62	1.25	7.43
0.276	15.50	1.21	7.54
0.322	14.46	1.17	7.64
0.368	13.49	1.13	7.73
0.414	12.59	1.10	7.82
0.460	11.74	1.06	7.90

Permit No. PA0216925

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	2.38	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

Permit No. PA0216925

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19G	41731	Trib 41731 to Hoovers Run

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												
0.300	0.00	0.00	0.00	.0217	0.02778	.281	2.06	7.34	0.04	0.460	20.32	7.61
Q1-10 Flow												
0.300	0.00	0.00	0.00	.0217	0.02778	NA	NA	NA	0.04	0.466	20.21	7.64
Q30-10 Flow												
0.300	0.00	0.00	0.00	.0217	0.02778	NA	NA	NA	0.04	0.438	20.71	7.51

Permit No. PA0216925

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19G	41731	Trib 41731 to Hoovers Run

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)
0.300	Kuhnstown Porta	PA0216925	0.014	CBOD5	25		
				NH3-N	1.58	3.16	
				Dissolved Oxygen			5