

Application Type Renewal  
 Facility Type Non-Municipal  
 Major / Minor Minor

**NPDES PERMIT FACT SHEET  
INDIVIDUAL SEWAGE**

Application No. PA0060445  
 APS ID 18263  
 Authorization ID 1306688

**Applicant and Facility Information**

Applicant Name	<u>PA Historical &amp; Museum Comm</u>	Facility Name	<u>Eckley Miners Village</u>
Applicant Address	<u>2 Eckley Main Street</u> <u>Weatherly, PA 18255-5030</u>	Facility Address	<u>Eckley Road</u> <u>Foster Township, PA 18255</u>
Applicant Contact	<u>Bode Morin</u>	Facility Contact	<u>Bode Morin</u>
Applicant Phone	<u>(570) 636-2070</u>	Facility Phone	<u>(570) 636-2070</u>
Client ID	<u>95627</u>	Site ID	<u>241725</u>
Ch 94 Load Status		Municipality	<u>Foster Township</u>
Connection Status		County	<u>Luzerne</u>
Date Application Received	<u>February 12, 2020</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>February 12, 2020</u>	If No, Reason	
Purpose of Application	<u>Renewal of an existing NPDES Permit</u>		

**Summary of Review**

The Applicant is requesting the renewal of NPDES Permit No. PA0060445 to discharge up to 0.02 MGD of treated sewage from the Eckley Miners' Village wastewater treatment plant into an unnamed tributary to Black Creek, a cold water fishes (CWF) receiving stream in State Water Plan watershed 5-D. Per the Department's current existing use list, the receiving stream does not have an existing use classification that is more protective than the designated use. The discharge is not expected to affect public water supplies.

The effluent limits for CBOD5, TSS, pH, and Fecal Coliform are technology-based requirements. The Dissolved Oxygen, Ammonia and TRC limits are water quality based. Disinfectant is by UV but TRC Limits still apply as DMRs indicate monthly usage. The method of disinfection is ultraviolet (UV) radiation. The permit still contains TRC limitations which will be applied when the UV system is being cleaned/maintained and a special condition has been included to address the use of chlorine for general disinfection purposes. An average monthly limitation of 0.5 mg/L is applied in accordance with 92a.47(a)(8) and 92a.48(b), and an IMAX TRC limitation of 1.6 mg/L will continue.

The WMS Report query "Water Management System Inspections" was run. On 08/15/2019 a Compliance Evaluation was done with No Violations noted.

The WMS "Open Violations by Client Report" was run and there are No Open Violations.

The Existing Permit expired on 7/31/2000 January 31, XXXX and the renewal was submitted 2/12/2020.

Sludge use and disposal description and location(s): Other WWTP

Approve	Deny	Signatures	Date
X		Bernard Feist (signed) Bernard Feist, P.E. / Environmental Engineer	September 29, 2021
X		Amy M. Bellanca (signed) Amy M. Bellanca, P.E. / Environmental Engineer Manager	9-29-21

**Summary of Review**

**Extended Aeration WWTP; Flow (raw sewage) enters the treatment plant through the headworks consisting of a grinder it then enters the aeration tank to be mixed by aeration (blowers) with the existing mixed liquor suspended solids from there it then flows into a clarifier where it settles out (the settled sludge then is returned back the aeration tank, when too much sludge is in the treatment process, it is then “wasted” into an aerobic digester), the clear liquid from the clarifier continues out through UV lights where it is disinfected to a small effluent tank from there the effluent then flows out of the effluent tank through a weir to discharge.**

**There are 4 tanks in total: the digester tank, aeration tank, clarifier tank, and effluent tank.**

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.	<u>001</u>	Design Flow (MGD)	<u>.02</u>
Latitude	<u>40° 59' 38.27"</u>	Longitude	<u>-75° 53' 29.63"</u>
Quad Name	<u></u>	Quad Code	<u></u>
Wastewater Description: <u>Sewage Effluent</u>			
Receiving Waters	<u>Unnamed Tributary to Black Creek</u>	Stream Code	<u>28109</u>
NHD Com ID	<u>65639227</u>	RMI	<u>0.7</u>
Drainage Area	<u>1.47</u>	Yield (cfs/mi <sup>2</sup> )	<u>0.12</u>
Q <sub>7-10</sub> Flow (cfs)	<u>0.18</u>	Q <sub>7-10</sub> Basis	<u>USGS 01538000 DFlow</u>
Elevation (ft)	<u>1610</u>	Slope (ft/ft)	<u></u>
Watershed No.	<u>5-D</u>	Chapter 93 Class.	<u>CWF</u>
Existing Use	<u>na</u>	Existing Use Qualifier	<u></u>

Black Creek is listed as being impaired per the Pennsylvania Integrated Water Quality Monitoring and Assessment Report for Abandoned Mine Drainage (AMD) – Metals and low pH. However, Aluminum, Iron and Manganese are typically not parameters of concern in sewage treatment plants where there are no known sources discharging significant quantities of these pollutants into the sewerage system. A Total Maximum Daily Load (TMDL) report for Black Creek, Little Nescopeck Creek and UNT Little Nescopeck Watersheds was approved by EPA on September 20, 2006 and it identifies AMD as the primary cause of stream impairment. The TMDL addresses the following metals associated with AMD: Aluminum, Iron and Manganese; and low pH. This TMDL does not assign point source waste load allocations to any sewage treatment facilities and this discharge is not expected to contribute to the AMD impairment.

DFlow from Hydrologic Unit Code: 2050107

STATION.--01538000 WAPWALLOPEN CREEK NEAR WAPWALLOPEN, PA

LOCATION.--Lat 41° 03' 34", long 76° 05' 39", Luzerne County, Hydrologic Unit 02050107, on left bank 12 ft downstream from Harts Bridge on SR 3012, 2.2 mi southeast of Wapwallopen, and 3.7 mi upstream from mouth.

DRAINAGE AREA.--43.8 square miles.

PERIOD OF RECORD.--October 1919 to current year.

Gage	Period	7Q10
01538000 - Wapwallopen Creek near Wapwallopen, PA	1993/04/01 - 2018/04/01	5.60

**Q<sub>7-10</sub> LowFlowYield (cfs/mi<sup>2</sup>)= 5.60/43.8 = 0.12**

Outfall 001 RMI 0.7 Elevation 1610 ft

StreamStats Report

Region ID: PA  
 Workspace ID: PA20210927192933657  
 Clicked Point (Latitude, Longitude): 40.99433, -75.86894  
 Time: 2021-09-27 15:29:53 -0



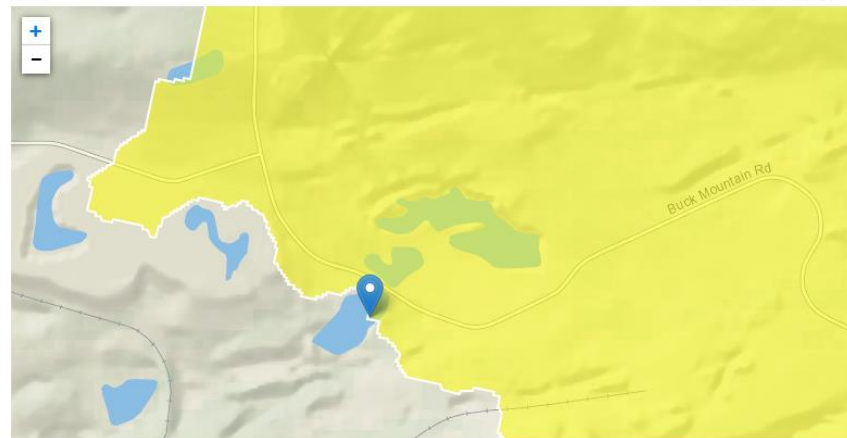
Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units
DRNAREA	Drainage Area	1.47	square miles

RMI 0.5 Elevation 1600

StreamStats Report

Region ID: PA  
 Workspace ID: PA202109272037440  
 Clicked Point (Latitude, Longitude): 40.99237, -75.87315  
 Time: 2021-09-27 16:38:03



Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units
DRNAREA	Drainage Area	1.75	square miles

**Development of Effluent Limitations**

<b>Outfall No.</b> <u>001</u>	<b>Design Flow (MGD)</b> <u>.02</u>
<b>Latitude</b> <u>40° 59' 36.00"</u>	<b>Longitude</b> <u>-75° 52' 0.00"</u>
<b>Wastewater Description:</b> <u>Sewage Effluent</u>	

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) and/or BPJ.

**Technology-Based Limitations**

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

Parameter	Minimum	Average Monthly	Average Weekly	IMAX	Basis
Flow (MGD)	XXX	Report	Report Max Daily	XXX	§§ 92a.27, 92a.61
CBOD5 (mg/L)	XXX	25	40	50	§ 92a.47
TSS (mg/L)	XXX	30	45	60	§ 92a.47
TRC (mg/L)	XXX	0.5	XXX	1.6	§§ 92a.47-48
NH3-N (mg/L)	XXX	25	XXX	50	BPJ
D.O. (mg/L)	5	XXX	XXX	XXX	BPJ
pH (SU)	6	XXX	XXX	9	§ 92a.47, § 95.2
Total N (mg/L)	XXX	Report	XXX	XXX	§ 92a.61
Total P (mg/L)	XXX	Report	XXX	XXX	§ 92a.61
Fecal Coliform (No./100 ml) (May-Sept)	XXX	200 Geo Mean	XXX	1,000	§ 92a.47
Fecal Coliform (No./100 ml) (Oct-April)	XXX	2,000 Geo Mean	XXX	10,000	§ 92a.47
E. Coli (No./100 ml)*	XXX	XXX	XXX	Report	§ 92a.61

\* 2021 update - Sewage discharges will include monitoring, at a minimum, for E. Coli, in new and reissued permits, with a monitoring frequency of 1/month for design flows >= 1 MGD, 1/quarter for design flows >= 0.05 and < 1 MGD, 1/year for design flows of 0.002 – 0.05 MGD.

**Water Quality-Based Limitations**

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
Ammonia	16.0	Avg Monthly	WQM 7.0
Ammonia	32.0	Daily Max	WQM 7.0
TRC	0.5	Avg Monthly	TRC Calc
TRC	1.6	IMax	TRC Calc

DMRs support these limits.

Analysis Results WQM 7.0

Hydrodynamics | NH3-N Allocations | D.O. Allocations | D.O. Simulation | **Effluent Limitations**

RMI: 0.70 | Discharge Name: Eckley | Permit Number: PA0060445 | Disc Flow (mgd): 0.0200

Parameter	Effluent Limit 30 Day Average (mg/L)	Effluent Limit Maximum (mg/L)	Effluent Limit Minimum (mg/L)
CBOD5	25		
NH3-N	15.92	31.84	
Dissolved Oxygen			3

Record: 1 of 1 | No Filter | Search

TRC EVALUATION			
Input appropriate values in A3:A9 and D3:D9			
0.18	= Q stream (cfs)	0.5	= CY Daily
0.02	= Q discharge (MGD)	0.5	= CY 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 = 1.875	1.3.2.iii WLA cfc = 1.820
PENTOXSD TRC	5.1a	LTAMULT afc = 0.373	5.1c LTAMULT cfc = 0.581
PENTOXSD TRC	5.1b	LTA_afc = 0.699	5.1d LTA_cfc = 1.058
Source	Reference	Effluent Limit Calculations	
PENTOXSD TRC	5.1f	AML MULT = 1.231	
PENTOXSD TRC	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	



Eckley WQM 7.pdf



Eckley%20TRC\_CALC.xlsx

Compliance History

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

Parameter	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20
Flow (MGD) Average Monthly	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001
Flow (MGD) Daily Maximum	0.003	0.003	0.003	0.003	0.005	0.003	0.003	0.022	0.002	0.003	0.003	0.005
pH (S.U.) Minimum	6.7	6.5	5.7	6.8	6.8	6.9	6.6	6.6	7.0	6.9	6.8	6.8
pH (S.U.) Maximum	7.1	7.1	7.2	7.3	7.2	7.2	7.3	7.4	7.4	7.4	7.5	7.1
DO (mg/L) Minimum	6.9	6.7	7.7	8.4	9.3	9.9	9.8	8.9	8.7	8.0	7.5	7.8
TRC (mg/L) Average Monthly	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
TRC (mg/L) Instantaneous Maximum	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
CBOD5 (mg/L) Average Monthly	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
TSS (mg/L) Average Monthly	5.0	6.4	6.0	5.0	9.0	5.0	8.0	7.0	7.0	13.0	9.0	6.0
Fecal Coliform (CFU/100 ml) Geometric Mean	156	31	1	1	1	1	1	1	131	2	9	187
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	2420	961	1	1	1	1	1	1	1011	6	12	517
Nitrate-Nitrite (lbs/day) Annual Average								0.17				
Nitrate-Nitrite (mg/L) Annual Average								28.60				
Total Nitrogen (lbs/day) Annual Average								0.174				
Total Nitrogen (mg/L) Annual Average								29.85				
Ammonia (mg/L) Average Monthly	0.003	0.20	0.20	0.2	0.39	0.20	0.30	0.20	0.20	0.56	0.20	0.007
TKN (lbs/day) Annual Average								0.008				
TKN (mg/L) Annual Average								1.35				
Total Phosphorus (lbs/day) Annual Average								0.015				
Total Phosphorus (mg/L) Annual Average								2.61				