

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

**NPDES PERMIT FACT SHEET  
INDIVIDUAL SEWAGE**

Application No. PA0110931  
 APS ID 1059271  
 Authorization ID 1419877

**Applicant and Facility Information**

Applicant Name	<u>Daniel &amp; Diane Yoder</u>	Facility Name	<u>Shellbark Campground</u>
Applicant Address	<u>PO Box 333</u> <u>Manns Choice, PA 15550-0333</u>	Facility Address	<u>Shellbark Drive</u> <u>Manns Choice, PA 15550-8614</u>
Applicant Contact	<u>Daniel Yoder</u>	Facility Contact	<u>Daniel Yoder</u>
Applicant Phone	<u>(814) 479-2402</u>	Facility Phone	<u>(814) 479-2402</u>
Client ID	<u>368842</u>	Site ID	<u>444075</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Napier Township</u>
Connection Status		County	<u>Bedford</u>
Date Application Received	<u>November 29, 2022</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>December 13, 2022</u>	If No, Reason	
Purpose of Application	<u>This is an application for NPDES renewal.</u>		

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineer Nick Hong (via electronic signature)	December 16, 2022
X		Daniel W. Martin, P.E. / Environmental Engineer Manager Maria D. Bebenek for Daniel W. Martin	January 23, 2023
X		Maria D. Bebenek, P.E. / Environmental Program Manager Maria D. Bebenek	January 23, 2023

### Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the Shellbark Campground located at Shellbark Drive, Manns Choice, PA 15550 in Bedford County, municipality of Napier Township. The existing permit became effective on June 1, 2018 and expires(d) on May 31, 2023. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on November 29, 2022.

The purpose of this Fact Sheet is to present the basis of information used for establishing the proposed NPDES permit effluent limitations. The Fact Sheet includes a description of the facility, a description of the facility's receiving waters, a description of the facility's receiving waters attainment/non-attainment assessment status, and a description of any changes to the proposed monitoring/sampling frequency. Section 6 provides the justification for the proposed NPDES effluent limits derived from technology based effluent limits (TBEL), water quality based effluent limits (WQBEL), total maximum daily loading (TMDL), antidegradation, anti-backsliding, and/or whole effluent toxicity (WET). A brief summary of the outlined descriptions has been included in the Summary of Review section.

The subject facility is a 0.0042 MGD treatment facility. The applicant does not anticipate any proposed upgrades to the treatment facility in the next five years. The NPDES application has been processed as a Minor Sewage Facility (Level 1) due to the type of sewage and the design flow rate for the facility. The applicant disclosed the Act 14 requirement to Bedford County Commissioners and Napier Township and the notice was received by the parties on November 22, 2022. A planning approval letter was not necessary as the facility is neither new or expanding.

Utilizing the DEP's web-based Emap-PA information system, the receiving waters has been determined to be the Raystown Branch Juniata River. The sequence of receiving streams that the Raystown Branch Juniata River discharges into the Juniata River, and the Susquehanna River which eventually drains into the Chesapeake Bay. The subject site is subject to the Chesapeake Bay implementation requirements. The receiving water has protected water usage for trout stocking fishes (TSF) and migratory fishes (MF). No Class A Wild Trout fisheries are impacted by this discharge.

The Raystown Branch Juniata River is a Category 2 stream listed in the 2022 Integrated List of All Waters (formerly 303d Listed Streams). This stream is an attaining stream that supports aquatic life. The receiving waters is not subject to a total maximum daily load (TMDL) plan to improve water quality in the subject facility's watershed.

The existing permit and proposed permit differ as follows:

- **Due to the EPA triennial review, monitoring for E. Coli shall be required.**

Sludge use and disposal description and location(s): The facility did not report sewage sludge/biosolids disposal.

The proposed permit will expire five (5) years from the effective date.

Based on the review in this report, it is recommended that the permit be drafted. 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.

Any additional information or public review of documents associated with the discharge or facility may be available at PA DEP Southcentral Regional Office (SCRO), 909 Elmerton Avenue, Harrisburg, PA 17110. To make an appointment for file review, contact the SCRO File Review Coordinator at 717.705.4700.

**1.0 Applicant**

**1.1 General Information**

This fact sheet summarizes PA Department of Environmental Protection's review for the NPDES renewal for the following subject facility.

Facility Name: Shellbark Campground

NPDES Permit # PA0110931

Physical Address: Shellbark Drive  
Manns Choice, PA 15550

Mailing Address: PO Box 333  
Manns Choice, PA 15550

Contact: Daniel and Diane Yoder  
Owner  
shellbarkcampplc@gmail.com

Consultant: Jeffrey Carlson  
Project Engineer  
Weaver Consultants Group  
(610) 216-2277  
jcarlson@wcgrp.com

**1.2 Permit History**

Permit submittal included the following information.

- NPDES Application

**2.0 Treatment Facility Summary**

**2.1.1 Site location**

The physical address for the facility is Shellbark Drive, Manns Choice, PA 15550. A topographical and an aerial photograph of the facility are depicted as Figure 1 and Figure 2.

Figure 1: Topographical map of the subject facility

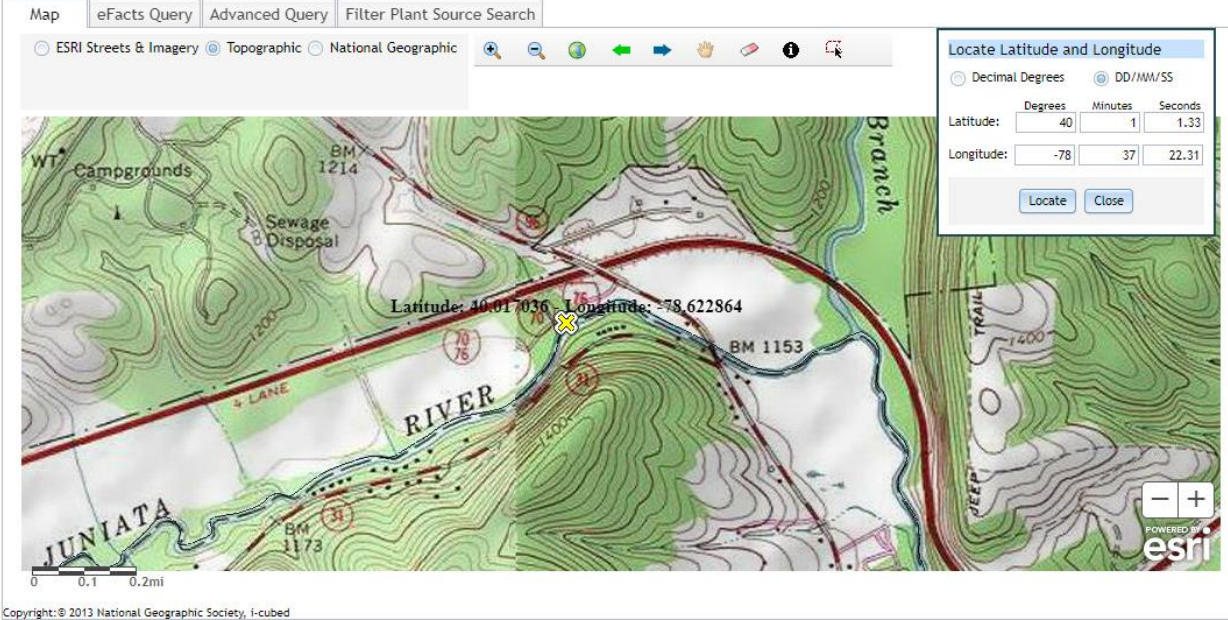
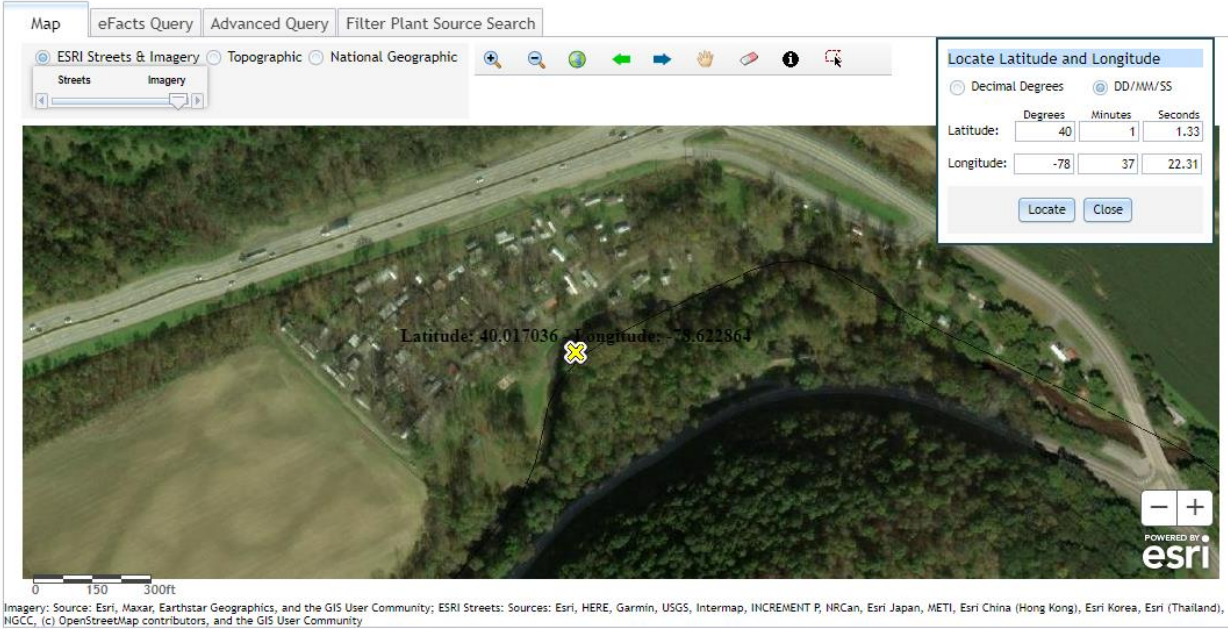


Figure 2: Aerial Photograph of the subject facility



**2.1.2 Sources of Wastewater/Stormwater**

The facility does not receive industrial/commercial wastewater and does not receive hauled-in wastes.

**2.2 Description of Wastewater Treatment Process**

The subject facility is a 0.0042 MGD (4,200 GPD) design flow facility. The subject facility treats wastewater using a septic tank, two sand filter (30' x 30'), and a chlorine contact chamber for disinfection. The facility is being evaluated for flow, pH, dissolved oxygen, TRC, CBOD, TSS, fecal coliform, nitrogen species, and phosphorus. The campground has historically been open from May to September.

The existing permits limits for the facility is summarized in Section 2.4.

The treatment process is summarized in the table.

Treatment Facility Summary				
Treatment Facility Name: Shellbark Campground				
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Septic Tank Sand Filter	Hypochlorite	
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0042		Not Overloaded		Other WWTP

**2.3 Facility Outfall Information**

The facility has the following outfall information for wastewater.

<b>Outfall No.</b>	001	<b>Design Flow (MGD)</b>	.0042
<b>Latitude</b>	40° 1' 1.15"	<b>Longitude</b>	-78° 37' 23.52"
<b>Wastewater Description:</b>	Sewage Effluent		

The subject facility outfall is within the vicinity of another sewage/wastewater outfall. The downstream outfall is Manns Choice Borough and Harrison Township Joint Sewer Authority (PA0085243) which is about 2.4 miles from the subject facility.

**2.3.1 Operational Considerations- Chemical Additives**

Chemical additives are chemical products introduced into a waste stream that is used for cleaning, disinfecting, or maintenance and which may be detected in effluent discharged to waters of the Commonwealth. Chemicals excluded are those used for neutralization of waste streams, the production of goods, and treatment of wastewater.

The subject facility utilizes the following chemicals as part of their treatment process.

- Hypochlorite for disinfection

**2.4 Existing NPDES Permits Limits**

The existing NPDES permit limits are summarized in the table.

**PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS**

I. A. For Outfall 001, Latitude 40° 1' 1.15", Longitude 78° 37' 23.52", River Mile Index 100, Stream Code 13349

Receiving Waters: Unnamed Tributary to ~~Raystown~~ Branch Juniata River

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from June 1, 2018 through May 31, 2023.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Annual Average	Average Weekly	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report Avg Mo	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.50 Geo Mean	XXX	1.6	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	25.0	40.0	50	2/month	8-Hr Composite
Total Suspended Solids	XXX	XXX	XXX	30.0	45.0	60	2/month	8-Hr Composite
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
Nitrate-Nitrite as N	Report	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Nitrogen	Report	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Calculation
Ammonia-Nitrogen Nov 1 - Apr 30	Report	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite

**Outfall 001, Continued (from June 1, 2018 through May 31, 2023)**

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Annual Average	Average Weekly	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ammonia-Nitrogen May 1 - Oct 31	Report	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Kjeldahl Nitrogen	Report	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Phosphorus	Report	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

### **3.0 Facility NPDES Compliance History**

#### **3.1 Summary of Inspections**

A summary of the most recent inspections during the existing permit review cycle is as follows.

The DEP inspector noted the following during the inspection.

07/31/2018:

- The RV park is usually open from May 15 to October 15.
- The plant discharges about once a week.
- The effluent supplemental form needs to be sent as an attachment to the eDMR

07/17/2019:

- Plant discharges to the receiving stream about once or twice per week.
- pH meter needs to be calibrated every day it is used. It's currently only being calibrating once a week
- A review of laboratory results showed a reporting error on the May 2019 DMR. The effluent supplemental form showed a fecal coliform result of 219.4 on May 28<sup>th</sup>. But the lab report had a result of 2419.6.
- New certified operator in charge of the plant is Bud Ratchford.

06/17/2020:

- A review of the discharge monitoring reports (DMRs) shows multiple reporting errors. On most of the reports reviewed for 2019 and May 2020 the value for the average weekly maximum concentrations for TSS and CBOD is not correct. The reported weekly maximums should be the highest recorded result for any one week. But the facility is currently reporting it with the same value as the monthly average. None of these reporting errors would result in an effluent violation. The facility needs to start reporting the correct values going forward.
- The effluent parameters contained in the NPDES permit requires the permittee to test for nutrients (TN, TP) once a year. Past reports in the electronic DMR did not include the nutrient parameters.

08/03/2022:

- Dan and Diane Yoder took over the campground operation earlier in the year. The campground is open from May through October.
- The dye tests currently used for pH and dissolve oxygen (DO) testing are not accepted methods and should not be used for reporting test results. Recommend purchasing pH and DO meters and using the certified operator's equipment until new meters are acquired.
- Effluent test results for pH, DO and TRC are recorded in a small notebook. Recommend recording results on a monthly bench sheet.
- A review of plant records and DMRs showed reporting errors on the May and June 2022 DMRs. The TSS and CBOD results were entered in the wrong columns the reported fecal coliform results were incorrect. The facility will need to revise the DMRs for both months and attached updated daily effluent supplemental forms. The actual fecal coliform test results show permit violations for May and June 2022.

10/06/2022:

- Reporting errors on the May and June DMRs have been corrected. There have been no effluent violations since June 2022. The effluent was sampled for nutrients this month.

#### **3.2 Summary of DMR Data**

A review of approximately 1-year of DMR data shows that the monthly average flow data for the facility below the design capacity of the treatment system. The maximum average flow data for the DMR reviewed was 0.00074 MGD. The design capacity of the treatment system is 0.0042 MGD.

The off-site laboratory used for the analysis of the parameters was Geochemical Testing located at 2005 N. Center Avenue, Somerset, PA 15501.



DMR Data for Outfall 001 (from November 1, 2021 to October 31, 2022)

Parameter	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22	APR-22	MAR-22	FEB-22	JAN-22	DEC-21	NOV-21
Flow (MGD) Average Monthly		0.00061	0.00062	0.00057	0.00073	0.00074						
Flow (MGD) Daily Maximum		0.00069	0.00086	0.00067	0.00091	0.00074						
pH (S.U.) Daily Minimum		6.9	6.2	7.0	7.1	7.2						
pH (S.U.) Daily Maximum		7.4	7.0	7.1	7.6	7.2						
DO (mg/L) Daily Minimum		5.9	6.0	5.8	5.0	6.08						
TRC (mg/L) Geometric Mean		0.50	0.304	0.55	0.48	0.40						
CBOD5 (mg/L) Average Monthly		1.6	1.55	8.0	2.25	3.0						
CBOD5 (mg/L) Weekly Average		1.7	1.6	8.0	3.0	3.0						
TSS (mg/L) Average Monthly		10.0	5.5	4.0	5.5	18.0						
TSS (mg/L) Weekly Average		14.0	6.0	5.0	6.0	18.0						
Fecal Coliform (No./100 ml) Geometric Mean		7	10	2.0	2074	3708						
Fecal Coliform (No./100 ml) Instantaneous Maximum		7.5	17.3	5.2	8150.5	3708						
Nitrate-Nitrite (lbs/day) Annual Average											< 1	
Nitrate-Nitrite (mg/L) Annual Average											12.0	
Total Nitrogen (lbs/day) Annual Average											< 1	
Total Nitrogen (mg/L) Annual Average											15.8	
Ammonia (lbs/day) Annual Average											< 1	
Ammonia (mg/L) Annual Average											2.61	

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Shellbark Campground**

**NPDES Permit No. PA0110931**

TKN (lbs/day) Annual Average												< 1	
TKN (mg/L) Annual Average												3.8	
Total Phosphorus (lbs/day) Annual Average												< 1	
Total Phosphorus (mg/L) Annual Average												1.45	

**3.3 Non-Compliance**

**3.3.1 Non-Compliance- NPDES Effluent**

A summary of the non-compliance to the permit limits for the existing permit cycle is as follows.

From the DMR data beginning in June 1, 2018 to December 2, 2022, the following were observed effluent non-compliances.

NON_COMPLIANCE_DATE	NON_COMPL_TYPE_DESC	NON_COMPL_CATEGORRY_DESC	PARAMETER	SAMPLE_VALUE	VIOLATION_CONDITION	PERMIT_VALUE	UNIT_OF_MEASURE	STAT_BASE_CODE
10/13/2018	Sample type not in accordance with permit	Other Violations	Fecal Coliform					
7/22/2019	Violation of permit condition	Effluent	Fecal Coliform	219.43	>	200	No./100 ml	Geometric Mean
7/22/2019	Violation of permit condition	Effluent	Fecal Coliform	2419.6	>	1000	No./100 ml	Instantaneous Maximum
10/12/2020	Violation of permit condition	Effluent	Carbonaceous Biochemical Oxygen Demand (CBOD5)	29.5	>	25.0	mg/L	Average Monthly
10/12/2020	Violation of permit condition	Effluent	Carbonaceous Biochemical Oxygen Demand (CBOD5)	54.0	>	40.0	mg/L	Weekly Average
6/21/2021	Sample collection less frequent than required	Other Violations	Total Suspended Solids					
6/21/2021	Violation of permit condition	Effluent	Fecal Coliform	< 2496	>	1000	No./100 ml	Instantaneous Maximum
6/21/2021	Violation of permit condition	Effluent	Fecal Coliform	1225	>	200	No./100 ml	Geometric Mean
7/13/2021	Violation of permit condition	Effluent	Total Suspended Solids	46.0	>	45.0	mg/L	Weekly Average
10/5/2021	Violation of permit condition	Effluent	Fecal Coliform	15531	>	1000	No./100 ml	Instantaneous Maximum
10/5/2021	Violation of permit condition	Effluent	pH	5.6	<	6.0	S.U.	Daily Minimum
10/5/2021	Violation of permit condition	Effluent	Total Suspended Solids	38.0	>	30.0	mg/L	Average Monthly
10/5/2021	Violation of permit condition	Effluent	Total Suspended Solids	58.5	>	45.0	mg/L	Weekly Average
8/8/2022	Violation of permit condition	Effluent	Fecal Coliform	3708	>	1000	No./100 ml	Instantaneous Maximum
8/8/2022	Violation of permit condition	Effluent	Fecal Coliform	3708	>	200	No./100 ml	Geometric Mean
8/8/2022	Violation of permit condition	Effluent	Fecal Coliform	2074	>	200	No./100 ml	Geometric Mean
8/8/2022	Violation of permit condition	Effluent	Fecal Coliform	8150.5	>	1000	No./100 ml	Instantaneous Maximum
8/8/2022	Violation of permit condition	Effluent	Total Residual Chlorine (TRC)	0.55	>	0.50	mg/L	Geometric Mean

**3.3.2 Non-Compliance- Enforcement Actions**

A summary of the non-compliance enforcement actions for the current permit cycle is as follows:

Beginning in September 1, 2018 to December 2, 2022, there were no observed enforcement actions.

**3.4 Summary of Biosolids Disposal**

A summary of the biosolids disposed of from the facility is as follows.

The facility did not report sewage sludge/biosolids disposal.

DEP Operations Section will contact the facility to submit supplemental forms including biosolids disposal.

**3.5 Open Violations**

The table summarizes current open violations with the facility.

**Summary of Open Violations**

VIOLATION ID	CATEGORY	DATE	VIOLATION CODE	VIOLATION
964405	PF	08/03/2022	92A.44	NPDES - Violation of effluent limits in Part A of permit

#### **4.0 Receiving Waters and Water Supply Information Detail Summary**

##### **4.1 Receiving Waters**

The receiving waters has been determined to be the Raystown Branch Juniata River. The sequence of receiving streams that the Raystown Branch Juniata River discharges into the Juniata River, and the Susquehanna River which eventually drains into the Chesapeake Bay.

##### **4.2 Public Water Supply (PWS) Intake**

The closest PWS to the subject facility is the Bedford Borough Water Authority (PWS ID # 4050002) located approximately 8 miles downstream of the subject facility on the Raytown Branch Juniata River. Based upon the distance and the flow rate of the facility, the PWS should not be impacted.

##### **4.3 Class A Wild Trout Streams**

Class A Wild Trout Streams are waters that support a population of naturally produced trout of sufficient size and abundance to support long-term and rewarding sport fishery. DEP classifies these waters as high-quality coldwater fisheries.

The information obtained from EMAP suggests that no Class A Wild Trout Fishery will be impacted by this discharge.

##### **4.4 2022 Integrated List of All Waters (303d Listed Streams)**

Section 303(d) of the Clean Water Act requires States to list all impaired surface waters not supporting uses even after appropriate and required water pollution control technologies have been applied. The 303(d) list includes the reason for impairment which may be one or more point sources (i.e. industrial or sewage discharges) or non-point sources (i.e. abandoned mine lands or agricultural runoff and the pollutant causing the impairment such as metals, pH, mercury or siltation).

States or the U.S. Environmental Protection Agency (EPA) must determine the conditions that would return the water to a condition that meets water quality standards. As a follow-up to listing, the state or EPA must develop a Total Maximum Daily Load (TMDL) for each waterbody on the list. A TMDL identifies allowable pollutant loads to a waterbody from both point and non-point sources that will prevent a violation of water quality standards. A TMDL also includes a margin of safety to ensure protection of the water.

The water quality status of Pennsylvania's waters uses a five-part categorization (lists) of waters per their attainment use status. The categories represent varying levels of attainment, ranging from Category 1, where all designated water uses are met to Category 5 where impairment by pollutants requires a TMDL for water quality protection.

**The receiving waters is listed in the 2022 Pennsylvania Integrated Water Quality Monitoring and Assessment Report as a Category 2 waterbody. The surface waters is an attaining stream that supports aquatic life. The designated use has been classified as protected waters for trout stocking fishes (TSF) and migratory fishes (MF).**

##### **4.5 Low Flow Stream Conditions**

Water quality modeling estimates are based upon conservative data inputs. The data are typically estimated using either a stream gauge or through USGS web based StreamStats program. The NPDES effluent limits are based upon the combined flows from both the stream and the facility discharge.

A conservative approach to estimate the impact of the facility discharge using values which minimize the total combined volume of the stream and the facility discharge. The volumetric flow rate for the stream is based upon the seven-day, 10-year low flow (Q710) which is the lowest estimated flow rate of the stream during a 7 consecutive day period that occurs once in 10 -year time period. The facility discharge is based upon a known design capacity of the subject facility.

The Q710 and low flow yield were estimated using StreamStats.

The Q710 is 0.931 ft<sup>3</sup>/s and the low flow yield is 0.018 ft<sup>3</sup>/mi<sup>2</sup>

For WQM modeling, default values for pH and stream water temperature data were utilized. pH was 7.0 and the stream water temperature was 20 C.

**4.6 Summary of Discharge, Receiving Waters and Water Supply Information**

Outfall No.	<u>001</u>	Design Flow (MGD)	<u>.0042</u>
Latitude	<u>40° 1' 1.33"</u>	Longitude	<u>-78° 37' 23.31"</u>
Quad Name	<u></u>	Quad Code	<u></u>
Wastewater Description: <u>Sewage Effluent</u>			
Receiving Waters	<u>Raystown Branch Juniata River</u>	Stream Code	<u>13349</u>
NHD Com ID	<u>65848193</u>	RMI	<u>100</u>
Drainage Area	<u>50.4</u>	Yield (cfs/mi <sup>2</sup> )	<u>0.018</u>
Q <sub>7-10</sub> Flow (cfs)	<u>0.931</u>	Q <sub>7-10</sub> Basis	<u>StreamStats</u>
Elevation (ft)	<u>1139</u>	Slope (ft/ft)	<u></u>
Watershed No.	<u>11-C</u>	Chapter 93 Class.	<u>TSF, MF</u>
Existing Use	<u>Same as Chapter 93 class</u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Attaining Use(s) supports aquatic life</u>		
Cause(s) of Impairment	<u>Not appl.</u>		
Source(s) of Impairment	<u>Not appl.</u>		
TMDL Status	<u>Not appl.</u>	Name	<u></u>
Background/Ambient Data		Data Source	
pH (SU)	<u>7</u>	<u>Default</u>	
Temperature (°C)	<u>20</u>	<u>Default</u>	
Hardness (mg/L)	<u>100</u>	<u>Default</u>	
Other:	<u></u>	<u></u>	
Nearest Downstream Public Water Supply Intake	<u>Bedford Boro Water Authority</u>		
PWS Waters	<u>Raystown Branch Juniata River</u>	Flow at Intake (cfs)	<u></u>
PWS RMI	<u>92</u>	Distance from Outfall (mi)	<u>8</u>

**5.0: Overview of Presiding Water Quality Standards**

**5.1 General**

There are at least six (6) different policies which determines the effluent performance limits for the NPDES permit. The policies are technology based effluent limits (TBEL), water quality based effluent limits (WQBEL), antidegradation, total maximum daily loading (TMDL), anti-backsliding, and whole effluent toxicity (WET) The effluent performance limitations enforced are the selected permit limits that is most protective to the designated use of the receiving waters. An overview of each of the policies that are applicable to the subject facility has been presented in Section 6.

**5.2.1 Technology-Based Limitations**

TBEL treatment requirements under section 301(b) of the Act represent the minimum level of control that must be imposed in a permit issued under section 402 of the Act (40 CFR 125.3). Available TBEL requirements for the state of Pennsylvania are itemized in PA Code 25, Chapter 92a.47.

The presiding sources for the basis for the effluent limitations are governed by either federal or state regulation. The reference sources for each of the parameters is itemized in the tables. The following technology-based limitations apply, subject to water quality analysis and best professional judgement (BPJ) where applicable:

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
CBOD <sub>5</sub>	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)

### 5.3 Water Quality-Based Limitations

WQBEL are based on the need to attain or maintain the water quality criteria and to assure protection of designated and existing uses (PA Code 25, Chapter 92a.2). The subject facility that is typically enforced is the more stringent limit of either the TBEL or the WQBEL.

Determination of WQBEL is calculated by spreadsheet analysis or by a computer modeling program developed by DEP. DEP permit engineers utilize the following computing programs for WQBEL permit limitations: (1) MS Excel worksheet for Total Residual Chlorine (TRC); (2) WQM 7.0 for Windows Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen Version 1.1 (WQM Model) and (3) Toxics using DEP Toxics Management Spreadsheet for Toxics pollutants.

The modeling point nodes utilized for this facility are summarized below.

General Data 1	(Modeling Point #1)	(Modeling Point #2)	(Modeling Point #3)	Units
Stream Code	13349	13349	13349	
River Mile Index	100	98.78	97.6	miles
Elevation	1139	1126	1118	feet
Latitude	40.016667	40.009699	40.006395	
Longitude	-78.623333	-78.609879	-78.594944	
Drainage Area	50.4	88.6	115	sq miles
Low Flow Yield	0.0018	0.0018	0.0018	cfs/sq mile

#### 5.3.1 Water Quality Modeling 7.0

The WQM Model is a computer model that is used to determine NPDES discharge effluent limitations for Carbonaceous BOD (CBOD<sub>5</sub>), Ammonia Nitrogen (NH<sub>3</sub>-N), and Dissolved Oxygen (DO) for single and multiple point source discharges scenarios. WQM Model is a complete-mix model which means that the discharge flow and the stream flow are assumed to instantly and completely mixed at the discharge node.

WQM recommends effluent limits for DO, CBOD<sub>5</sub>, and NH<sub>3</sub>-N in mg/l for the discharge(s) in the simulation.

Four types of limits may be recommended. The limits are

- (a) a minimum concentration for DO in the discharge as 30-day average;
- (b) a 30-day average concentration for CBOD<sub>5</sub> in the discharge;

- (c) a 30-day average concentration for the  $NH_3-N$  in the discharge;
- (d) 24-hour average concentration for  $NH_3-N$  in the discharge.

The WQM Model requires several input values for calculating output values. The source of data originates from either EMAP, the National Map, or Stream Stats. Data for stream gauge information, if any, was abstracted from USGS Low-Flow, Base-Flow, and Mean-Flow Regression Equations for Pennsylvania Streams authored by Marla H. Stuckey (Scientific Investigations Report 2006-5130).

**The applicable WQM Effluent Limit Type are discussed in Section 6 under the corresponding parameter which is either DO, CBOD, or ammonia-nitrogen.**

### **5.3.2 Toxics Modeling**

The facility is not subject to toxics modeling.

### **5.3.3 Whole Effluent Toxicity (WET)**

The facility is not subject to WET.

## **5.4 Total Maximum Daily Loading (TMDL)**

### **5.4.1 TMDL**

The goal of the Clean Water Act (CWA), which governs water pollution, is to ensure that all of the Nation's waters are clean and healthy enough to support aquatic life and recreation. To achieve this goal, the CWA created programs designed to regulate and reduce the amount of pollution entering United States waters. Section 303(d) of the CWA requires states to assess their waterbodies to identify those not meeting water quality standards. If a waterbody is not meeting standards, it is listed as impaired and reported to the U.S. Environmental Protection Agency. The state then develops a plan to clean up the impaired waterbody. This plan includes the development of a Total Maximum Daily Load (TMDL) for the pollutant(s) that were found to be the cause of the water quality violations. A Total Maximum Daily Load (TMDL) calculates the maximum amount of a specific pollutant that a waterbody can receive and still meet water quality standards.

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:

$$TMDL = \sum WLAs + \sum LAs + MOS$$

Pennsylvania has committed to restoring all impaired waters by developing TMDLs and TMDL alternatives for all impaired waterbodies. The TMDL serves as the starting point or planning tool for restoring water quality.

#### **5.4.1.1 Local TMDL**

The subject facility does not discharge into a local TMDL.

#### **5.4.1.2 Chesapeake Bay TMDL Requirement**

The Chesapeake Bay Watershed is a large ecosystem that encompasses approximately 64,000 square miles in Maryland, Delaware, Virginia, West Virginia, Pennsylvania, New York and the District of Columbia. An ecosystem is composed of interrelated parts that interact with each other to form a whole. All of the plants and animals in an ecosystem depend on each other in some way. Every living thing needs a healthy ecosystem to survive. Human activities affect the Chesapeake Bay ecosystem by adding pollution, using resources and changing the character of the land.

Most of the Chesapeake Bay and many of its tidal tributaries have been listed as impaired under Section 303(d) of the federal Water Pollution Control Act ("Clean Water Act"), 33 U.S.C. § 1313(d). While the Chesapeake Bay is outside the boundaries of Pennsylvania, more than half of the State lies within the watershed. Two major rivers in Pennsylvania are



part of the Chesapeake Bay Watershed. They are (a) the Susquehanna River and (b) the Potomac River. These two rivers total 40 percent of the entire Chesapeake Bay watershed.

The overall management approach needed for reducing nitrogen, phosphorus and sediment are provided in the Bay TMDL document and the Phase I, II, and III WIPs which is described in the Bay TMDL document and Executive Order 13508.

The Bay TMDL is a comprehensive pollution reduction effort in the Chesapeake Bay watershed identifying the necessary pollution reductions of nitrogen, phosphorus and sediment across the seven Bay watershed jurisdictions of Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia and the District of Columbia to meet applicable water quality standards in the Bay and its tidal waters.

The Watershed Implementation Plans (WIPs) provides objectives for how the jurisdictions in partnership with federal and local governments will achieve the Bay TMDL's nutrient and sediment allocations.

Phase 3 WIP provides an update on Chesapeake Bay TMDL implementation activities for point sources and DEP's current implementation strategy for wastewater. The latest revision of the supplement was September 13, 2021.

The Chesapeake Bay TMDL (Appendix Q) categorizes point sources into four sectors:

- Sector A- significant sewage dischargers;
- Sector B- significant industrial waste (IW) dischargers;
- Sector C- non-significant dischargers (both sewage and IW facilities); and
- Sector D- combined sewer overflows (CSOs).

All sectors contain a listing of individual facilities with NPDES permits that were believed to be discharging at the time the TMDL was published (2010). All sectors with the exception of the non-significant dischargers have individual wasteload allocations (WLAs) for TN and TP assigned to specific facilities. Non-significant dischargers have a bulk or aggregate allocation for TN and TP based on the facilities in that sector that were believed to be discharging at that time and their estimated nutrient loads.

Cap Loads will be established in permits as Net Annual TN and TP loads (lbs/yr) that apply during the period of October 1 – September 30. For facilities that have received Cap Loads in any other form, the Cap Loads will be modified accordingly when the permits are renewed.

Offsets have been incorporated into Cap Loads in several permits issued to date. From this point forward, permits will be issued with the WLAs as Cap Loads and will identify Offsets separately to facilitate nutrient trading activities and compliance with the TMDL.

Based upon the supplement the subject facility has been categorized as a Sector ABCD discharger. The supplement defines Sector C as a non-significant dischargers include sewage facilities (Phase 4 facilities:  $\geq 0.2$  MGD and  $< 0.4$  MGD and Phase 5 facilities:  $> 0.002$  MGD and  $< 0.2$  MGD), small flow/single residence sewage treatment facilities ( $\leq 0.002$  MGD), and non-significant IW facilities, all of which may be covered by statewide General Permits or may have individual NPDES permits.

At this time, there are approximately 850 Phase 4 and 5 sewage facilities, approximately 715 small flow sewage treatment facilities covered by a statewide General Permit, and approximately 300 non-significant IW facilities.

For Phase 5 sewage facilities with individual permits (average annual design flow on August 29, 2005  $> 0.002$  MGD and  $< 0.2$  MGD), DEP will issue individual permits with monitoring and reporting for TN and TP throughout the permit term at a frequency no less than annually, unless 1) the facility has already conducted at least two years of nutrient monitoring and 2) a summary of the monitoring results are included in the next permit's fact sheet. If, however, Phase 5 facilities choose to expand, the renewed or amended permits will contain Cap Loads based on the lesser of a) existing TN/TP concentrations at current design average annual flow or b) 7,306 lbs/yr TN and 974 lbs/yr TP.

If no data are available to determine existing concentrations for expanding Phase 4 or 5 facilities, default concentrations of 25 mg/l TN and 4 mg/l TP may be used (these are the average estimated concentrations of all non-significant sewage facilities).

DEP will not issue permits to existing Phase 4 and 5 facilities containing Cap Loads unless it is done on a broad scale or unless the facilities are expanding.

For new Phase 4 and 5 sewage discharges, in general DEP will issue new permits containing Cap Loads of "0" and new facilities will be expected to purchase credits and/or apply offsets to achieve compliance, with the exception of small flow and single residence facilities.

**This facility is subject to Sector C monitoring requirements. Monitoring for nitrogen and phosphorus shall be at least annually.**

### **5.5 Anti-Degradation Requirement**

Chapter 93.4a of the PA regulations requires that surface water of the Commonwealth of Pennsylvania may not be degraded below levels that protect the existing uses. The regulations specifically state that *Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected*. Antidegradation requirements are implemented through DEP's guidance manual entitled Water Quality Antidegradation Implementation Guidance (Document #391-0300-02).

The policy requires DEP to protect the existing uses of all surface waters and the existing quality of High Quality (HQ) and Exceptional Value (EV) Waters. Existing uses are protected when DEP makes a final decision on any permit or approval for an activity that may affect a protected use. Existing uses are protected based upon DEP's evaluation of the best available information (which satisfies DEP protocols and Quality Assurance/Quality Control (QA/QC) procedures) that indicates the protected use of the waterbody.

For a new, additional, or increased point source discharge to an HQ or EV water, the person proposing the discharge is required to utilize a nondischarge alternative that is cost-effective and environmentally sound when compared with the cost of the proposed discharge. If a nondischarge alternative is not cost-effective and environmentally sound, the person must use the best available combination of treatment, pollution prevention, and wastewater reuse technologies and assure that any discharge is nondegrading. In the case of HQ waters, DEP may find that after satisfaction of intergovernmental coordination and public participation requirements lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In addition, DEP will assure that cost-effective and reasonable best management practices for nonpoint source control in HQ and EV waters are achieved.

**The subject facility's discharge will be to a non-special protection waters and the permit conditions are imposed to protect existing instream water quality and uses. Neither HQ waters or EV waters is impacted by this discharge.**

### **5.6 Anti-Backsliding**

Anti-backsliding is a federal regulation which prohibits a permit from being renewed, reissued, or modified containing effluent limitations which are less stringent than the comparable effluent limitations in the previous permit (40 CFR 122.1.1 and 40 CFR 122.1.2). A review of the existing permit limitations with the proposed permit limitations confirm that the facility is consistent with anti-backsliding requirements. The facility has proposed effluent limitations that are as stringent as the existing permit.

### **6.0 NPDES Parameter Details**

The basis for the proposed sampling and their monitoring frequency that will appear in the permit for each individual parameter are itemized in this Section. The final limits are the more stringent of technology based effluent treatment (TBEL) requirements, water quality based (WQBEL) limits, TMDL, antidegradation, anti-degradation, or WET.

The reader will find in this section:

- a) a justification of recommended permit monitoring requirements and limitations for each parameter in the proposed NPDES permit;
- b) a summary of changes from the existing NPDES permit to the proposed permit; and
- c) a summary of the proposed NPDES effluent limits.

### **6.1 Recommended Monitoring Requirements and Effluent Limitations**

A summary of the recommended monitoring requirements and effluent limitations are itemized in the tables. The tables are categorized by (a) Conventional Pollutants and Disinfection and (b) Nitrogen Species and Phosphorus

6.1.1 Conventional Pollutants and Disinfection

Summary of Proposed NPDES Parameter Details for Conventional Pollutants and Disinfection			
Shellbark Campground, PA0110931			
Parameter	Permit Limitation Required by <sup>1</sup> :	Recommendation	
pH (S.U.)	TBEL	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits may range from pH = 6.0 to 9.0
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 95.2(1).
Dissolved Oxygen	BPJ	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits shall be greater than 5.0 mg/l.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by best professional judgement.
CBOD	TBEL	Monitoring:	The monitoring frequency shall be 2x/month as an 8-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 25 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(1). WQM modeling indicates that the TBEL is more stringent than the WQBEL. Thus, the permit limit is confined to TBEL.
TSS	TBEL	Monitoring:	The monitoring frequency shall be 2x/month as an 8-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 30 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(1). While there is no WQM modeling for this parameter, the permit limit for TSS is generally assigned similar effluent limits as CBOD or BOD.
TRC	TBEL	Monitoring:	The monitoring frequency shall be on a daily basis as a grab sample (Table 6-3).
		Effluent Limit:	The average monthly limit should not exceed 0.50 mg/l and/or 1.6 mg/l as an instantaneous maximum.
		Rationale:	Chlorine in both combined (chloramine) and free form is extremely toxic to freshwater fish and other forms of aquatic life (Implementation Guidance Total Residual Chlorine 1). The TRC effluent limitations to be imposed on a discharger shall be the more stringent of either the WQBEL or TBEL requirements and shall be expressed in the NPDES permit as an average monthly and instantaneous maximum effluent concentration (Implementation Guidance Total Residual Chlorine 4). Based on the stream flow rate (lowest 7-day flow rate in 10 years) and the design flow rate of the subject facility calculated by the TRC Evaluation worksheet, the TBEL is more stringent than the WQBEL. The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.48(b)(2)
Fecal Coliform	TBEL	Monitoring:	The monitoring frequency shall be 2x/month as a grab sample (Table 6-3).
		Effluent Limit:	Summer effluent limits shall not exceed 200 No./100 mL as a geometric mean. Winter effluent limits shall not exceed 2000 No./100 mL as a geometric mean.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(4) and 92a.47(a)(5).
E. Coli	SOP; Chapter 92a.61	Monitoring:	The monitoring frequency shall be 1x/yr as a grab sample (SOP).
		Effluent Limit:	No effluent requirements.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised March 22, 2019) and under the authority of Chapter 92a.61, the facility will be required to monitor for E.Coli.

Notes:

- 1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other
- 2 Monitoring frequency based on flow rate of 0.0042 MGD.
- 3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits (Document # 362-0400-001) Revised 10/97
- 4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)
- 5 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021

**6.1.2 Nitrogen Species and Phosphorus**

Summary of Proposed NPDES Parameter Details for Nitrogen Species and Phosphorus			
Shellbark Campground, PA0110931			
Parameter	Permit Limitation Required by <sup>1</sup> :	Recommendation	
Ammonia-Nitrogen	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/yr as an 8-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/yr.
Nitrate-Nitrite as N	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/yr as an 8-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/yr.
Total Nitrogen	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/yr as an 8-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/yr.
TKN	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/yr as an 8-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/yr.
Total Phosphorus	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/yr as an 8-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/yr.
Notes:			

1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other

2 Monitoring frequency based on flow rate of 0.0042 MGD.

3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97

4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)

5 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021

**6.1.3.1 Implementation of Regulation- Chapter 92a.61**

Chapter 92a.61 provides provisions to DEP to monitor for pollutants that may have an impact on the quality of waters of the Commonwealth. Based upon DEP policy directives issued on March 22, 2021 and in conjunction with EPA's 2017 Triennial Review, monitoring for E. Coli shall be required.

**6.2 Summary of Changes From Existing Permit to Proposed Permit**

A summary of how the proposed NPDES permit differs from the existing NPDES permit is summarized as follows.

- Due to the EPA triennial review, monitoring for E. Coli shall be required.

**6.3.1 Summary of Proposed NPDES Effluent Limits**

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.

The proposed NPDES effluent limitations are summarized in the table below.

**PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS**

I. A. For Outfall 001, Latitude 40° 1' 1.15", Longitude 78° 37' 23.52", River Mile Index 100, Stream Code 13349

Receiving Waters: Raystown Branch Juniata River (WWF)

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **Permit Effective Date** through **Permit Expiration Date**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.50 Geo Mean	XXX	1.6	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	25.0	40.0	50	2/month	8-Hr Composite
Total Suspended Solids	XXX	XXX	XXX	30.0	45.0	60	2/month	8-Hr Composite
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	Report Daily Max	XXX	1/year	Grab
Nitrate-Nitrite as N	Report Annl Avg	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Nitrogen	Report Annl Avg	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Calculation

**Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)**

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ammonia-Nitrogen Nov 1 - Apr 30	Report Annl Avg	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	Report Annl Avg	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Kjeldahl Nitrogen	Report Annl Avg	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Phosphorus	Report Annl Avg	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

**6.3.2 Summary of Proposed Permit Part C Conditions**

The subject facility has the following Part C conditions.

- Chlorine Minimization
- Hauled-in Waste Restrictions
- Chesapeake Bay Nutrient Definitions
- Solids Management for Non-Lagoon Treatment Systems

Tools and References Used to Develop Permit	
<input checked="" type="checkbox"/>	WQM for Windows Model (see Attachment [redacted])
<input type="checkbox"/>	Toxics Management Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	TRC Model Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input type="checkbox"/>	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
<input type="checkbox"/>	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
<input type="checkbox"/>	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
<input type="checkbox"/>	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
<input type="checkbox"/>	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
<input type="checkbox"/>	Pennsylvania CSO Policy, 385-2000-011, 9/08.
<input type="checkbox"/>	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
<input type="checkbox"/>	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
<input type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
<input type="checkbox"/>	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
<input type="checkbox"/>	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
<input type="checkbox"/>	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
<input type="checkbox"/>	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
<input type="checkbox"/>	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
<input type="checkbox"/>	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
<input type="checkbox"/>	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
<input type="checkbox"/>	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Design Stream Flows, 391-2000-023, 9/98.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
<input type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input checked="" type="checkbox"/>	SOP: New and Reissuance Sewage Individual NPDES Permit Applications, rev 2/3/2022
<input type="checkbox"/>	Other: [redacted]





# Attachment A

## Stream Stats/Gauge Data

### StreamStats Report

Region ID: PA  
 Workspace ID: PA20221214150359904000  
 Clicked Point (Latitude, Longitude): 40.01674, -78.62301  
 Time: 2022-12-14 10:04:20 -0500



Shellbark Campground PA0110931 Modeling Point #1 December 2022

[Collapse All](#)

#### Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	50.4	square miles
PRECIP	Mean Annual Precipitation	38	inches
ROCKDEP	Depth to rock	3.6	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.15	miles per square mile

#### Low-Flow Statistics

Low-Flow Statistics Parameters [100.0 Percent (50.3 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	50.4	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	38	inches	35	50.4
STRDEN	Stream Density	2.15	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	3.6	feet	3.32	5.65
CARBON	Percent Carbonate	0	percent	0	99

Low-Flow Statistics Flow Report [100.0 Percent (50.3 square miles) Low Flow Region 2]

PIl: 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	2.53	ft <sup>3</sup> /s	38	38
30 Day 2 Year Low Flow	3.79	ft <sup>3</sup> /s	33	33
7 Day 10 Year Low Flow	0.931	ft <sup>3</sup> /s	51	51
30 Day 10 Year Low Flow	1.46	ft <sup>3</sup> /s	46	46
90 Day 10 Year Low Flow	2.71	ft <sup>3</sup> /s	36	36

*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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Application Version: 4.11.1

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

### StreamStats Report

Region ID: PA  
 Workspace ID: PA20221214150715315000  
 Clicked Point (Latitude, Longitude): 40.00957, -78.60971  
 Time: 2022-12-14 10:07:36 -0500



Shellbark Campground PA0110931 Modeling Point #2 December 2022

Collapse All

#### > Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	88.6	square miles
PRECIP	Mean Annual Precipitation	38	inches
ROCKDEP	Depth to rock	3.6	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.17	miles per square mile

#### > Low-Flow Statistics

Low-Flow Statistics Parameters [100.0 Percent (88.6 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	88.6	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	38	inches	35	50.4
STRDEN	Stream Density	2.17	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	3.6	feet	3.32	5.65
CARBON	Percent Carbonate	0	percent	0	99

Low-Flow Statistics Flow Report [100.0 Percent (88.6 square miles) Low Flow Region 2]

PIl: 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	4.67	ft <sup>3</sup> /s	38	38
30 Day 2 Year Low Flow	6.93	ft <sup>3</sup> /s	33	33
7 Day 10 Year Low Flow	1.78	ft <sup>3</sup> /s	51	51
30 Day 10 Year Low Flow	2.76	ft <sup>3</sup> /s	46	46
90 Day 10 Year Low Flow	5.04	ft <sup>3</sup> /s	36	36

*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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USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

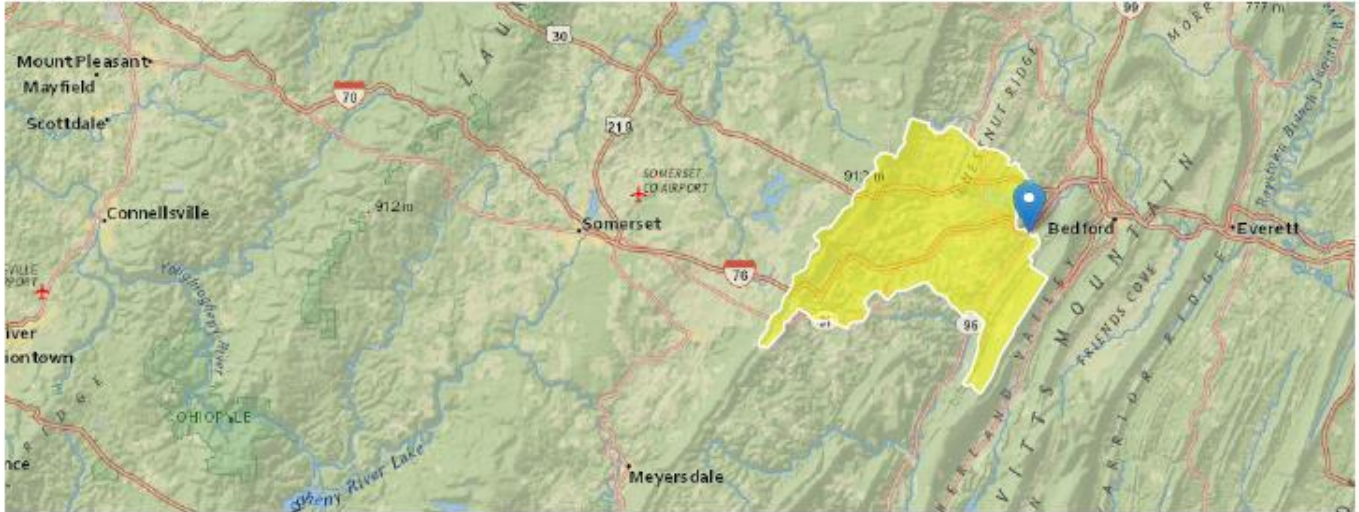
Application Version: 4.11.1

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

### StreamStats Report

Region ID: PA  
 Workspace ID: PA20221216133732954000  
 Clicked Point (Latitude, Longitude): 40.00658, -78.59478  
 Time: 2022-12-16 08:37:52 -0500



Shellbark Campground PA0110931 Modeling Point #3 December 2022

Collapse All

#### > Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0.54	percent
DRNAREA	Area that drains to a point on a stream	115	square miles
PRECIP	Mean Annual Precipitation	38	inches
ROCKDEP	Depth to rock	3.7	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.3	miles per square mile

#### > Low-Flow Statistics

Low-Flow Statistics Parameters [100.0 Percent (115 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	115	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	38	inches	35	50.4
STRDEN	Stream Density	2.3	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	3.7	feet	3.32	5.65
CARBON	Percent Carbonate	0.54	percent	0	99

Low-Flow Statistics Flow Report [100.0 Percent (115 square miles) Low Flow Region 2]

PIl: 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	6.26	ft <sup>3</sup> /s	38	38
30 Day 2 Year Low Flow	9.16	ft <sup>3</sup> /s	33	33
7 Day 10 Year Low Flow	2.49	ft <sup>3</sup> /s	51	51
30 Day 10 Year Low Flow	3.8	ft <sup>3</sup> /s	46	46
90 Day 10 Year Low Flow	6.73	ft <sup>3</sup> /s	36	36

*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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USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.11.1

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

# Attachment B

## Modeling Input Values

## WQM 7.0 Modeling Output Values





**WQM 7.0 Effluent Limits**

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>			
11D		13349		RAYSTOWN BRANCH JUNIATA RIVER			
RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
100.000	Shellbark	PA0110931	0.004	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			5

### WQM 7.0 Wasteload Allocations

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>
11D	13349	RAYSTOWN BRANCH JUNIATA RIVER

#### NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
100.000	Shellbark	16.08	50	16.08	50	0	0
98.780		NA	NA	16.35	NA	NA	NA

#### 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
100.000	Shellbark	1.86	25	1.86	25	0	0
98.780		NA	NA	1.87	NA	NA	NA

#### Dissolved Oxygen Allocations

RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
100.00	Shellbark	25	25	25	25	5	5	0	0
98.78		NA	NA	NA	NA	NA	NA	NA	NA



**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
11D	13349	RAYSTOWN BRANCH JUNIATA RIV	100.000	1139.00	50.40	0.00000	0.00	<input checked="" type="checkbox"/>

**Stream Data**

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary		Stream	
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.002	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

**Discharge Data**

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Shellbark	PA0110931	0.0042	0.0042	0.0042	0.000	25.00	7.00

**Parameter Data**

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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
11D	13349	RAYSTOWN BRANCH JUNIATA RIV	98.780	1126.00	88.60	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	Tributary pH	Stream Temp	Stream pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C)	
Q7-10	0.002	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

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

**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
11D	13349	RAYSTOWN BRANCH JUNIATA RIV	97.600	1118.00	115.00	0.00000	0.00	<input checked="" type="checkbox"/>

**Stream Data**

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary		Stream	
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.002	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data							
Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
MC Boro & HT	PA0085243	0.0700	0.0700	0.0700	0.000	25.00	7.00

Parameter Data				
Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

### WQM 7.0 D.O. Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>			
11D	13349	RAYSTOWN BRANCH JUNIATA RIVER			
<hr/>					
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>		<u>Analysis pH</u>	
100.000	0.004	20.334		7.000	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>		<u>Reach Velocity (fps)</u>	
10.276	0.424	24.225		0.022	
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>		<u>Reach Kn (1/days)</u>	
3.54	0.168	1.67		0.718	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>		<u>Reach DO Goal (mg/L)</u>	
8.026	8.361	Owens		5	
<u>Reach Travel Time (days)</u>					
3.343					
	<u>Subreach Results</u>				
	<u>TravTime</u>	<u>CBOD5</u>	<u>NH3-N</u>	<u>D.O.</u>	
	(days)	(mg/L)	(mg/L)	(mg/L)	
	0.334	3.34	1.31	8.19	
	0.669	3.16	1.03	8.19	
	1.003	2.98	0.81	8.19	
	1.337	2.82	0.64	8.19	
	1.672	2.66	0.50	8.19	
	2.006	2.51	0.40	8.19	
	2.340	2.37	0.31	8.19	
	2.675	2.24	0.24	8.19	
	3.009	2.12	0.19	8.19	
	3.343	2.00	0.15	8.19	
<hr/>					
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>		<u>Analysis pH</u>	
98.780	0.004	20.196		7.000	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>		<u>Reach Velocity (fps)</u>	
13.402	0.484	27.700		0.026	
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>		<u>Reach Kn (1/days)</u>	
2.00	0.000	0.09		0.711	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>		<u>Reach DO Goal (mg/L)</u>	
8.213	7.167	Owens		5	
<u>Reach Travel Time (days)</u>					
2.817					
	<u>Subreach Results</u>				
	<u>TravTime</u>	<u>CBOD5</u>	<u>NH3-N</u>	<u>D.O.</u>	
	(days)	(mg/L)	(mg/L)	(mg/L)	
	0.282	2.00	0.07	8.21	
	0.563	2.00	0.06	8.21	
	0.845	2.00	0.05	8.21	
	1.127	2.00	0.04	8.21	
	1.409	2.00	0.03	8.21	
	1.690	2.00	0.03	8.21	
	1.972	2.00	0.02	8.21	
	2.254	2.00	0.02	8.21	
	2.535	2.00	0.01	8.21	
	2.817	2.00	0.01	8.21	



### WQM 7.0 Hydrodynamic Outputs

<u>SWP Basin</u>		<u>Stream Code</u>				<u>Stream Name</u>						
11D		13349				RAYSTOWN BRANCH JUNIATA RIVER						
RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
<b>Q7-10 Flow</b>												
100.000	0.09	0.00	0.09	.0065	0.00202	.424	10.28	24.22	0.02	3.343	20.33	7.00
98.780	0.16	0.00	0.16	.0065	0.00128	.484	13.4	27.7	0.03	2.817	20.20	7.00
<b>Q1-10 Flow</b>												
100.000	0.06	0.00	0.06	.0065	0.00202	NA	NA	NA	0.02	4.205	20.50	7.00
98.780	0.10	0.00	0.10	.0065	0.00128	NA	NA	NA	0.02	3.573	20.30	7.00
<b>Q30-10 Flow</b>												
100.000	0.15	0.00	0.15	.0065	0.00202	NA	NA	NA	0.03	2.606	20.21	7.00
98.780	0.26	0.00	0.26	.0065	0.00128	NA	NA	NA	0.03	2.183	20.12	7.00

### WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.6	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	5		

# Attachment C

## TRC Evaluation

Shellbark Campground  
PA0110931

December 2022

1A	B	C	D	E	F	G
2	<b>TRC EVALUATION</b>					
3	Input appropriate values in B4:B8 and E4:E7					
4	0.0931	= Q stream (cfs)		0.5	= CV Daily	
5	0.0042	= Q discharge (MGD)		0.5	= CV Hourly	
6	30	= no. samples		1	= AFC_Partial Mix Factor	
7	0.3	= Chlorine Demand of Stream		1	= CFC_Partial Mix Factor	
8	0	= Chlorine Demand of Discharge		15	= AFC_Criteria Compliance Time (min)	
9	0.5	= BAT/BJ Value		720	= CFC_Criteria Compliance Time (min)	
	0	= % Factor of Safety (FOS)		0	= Decay Coefficient (K)	
10	Source	Reference	AFC Calculations	Reference	CFC Calculations	
11	TRC	1.3.2.iii	WLA <sub>afc</sub> = 4.590	1.3.2.iii	WLA <sub>cfc</sub> = 4.467	
12	PENTOXSD TRG	5.1a	LTAMULT <sub>afc</sub> = 0.373	5.1c	LTAMULT <sub>cfc</sub> = 0.581	
13	PENTOXSD TRG	5.1b	LTA <sub>afc</sub> = 1.710	5.1d	LTA <sub>cfc</sub> = 2.597	
14						
15	Source	Effluent Limit Calculations				
16	PENTOXSD TRG	5.1f	AML MULT = 1.231			
17	PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500		BAT/BJ	
18			INST MAX LIMIT (mg/l) = 1.635			
	WLA <sub>afc</sub>	$(.019/e^{-k \cdot AFC_{tc}}) + [(AFC_{Yc} \cdot Q_s \cdot .019 / Q_d \cdot e^{-k \cdot AFC_{tc}}) \dots + X_d + (AFC_{Yc} \cdot Q_s \cdot X_s / Q_d)] \cdot (1 - FOS / 100)$				
	LTAMULT <sub>afc</sub>	$EXP((0.5 \cdot LN(cvh^2 + 1)) - 2.326 \cdot LN(cvh^2 + 1)^{0.5})$				
	LTA <sub>afc</sub>	wla <sub>afc</sub> * LTAMULT <sub>afc</sub>				
	WLA <sub>cfc</sub>	$(.011/e^{-k \cdot CFC_{tc}}) + [(CFC_{Yc} \cdot Q_s \cdot .011 / Q_d \cdot e^{-k \cdot CFC_{tc}}) \dots + X_d + (CFC_{Yc} \cdot Q_s \cdot X_s / Q_d)] \cdot (1 - FOS / 100)$				
	LTAMULT <sub>cfc</sub>	$EXP((0.5 \cdot LN(cvd^2 / no\_samples + 1)) - 2.326 \cdot LN(cvd^2 / no\_samples + 1)^{0.5})$				
	LTA <sub>cfc</sub>	wla <sub>cfc</sub> * LTAMULT <sub>cfc</sub>				
	AML MULT	$EXP(2.326 \cdot LN((cvd^2 / no\_samples + 1)^{0.5}) - 0.5 \cdot LN(cvd^2 / no\_samples + 1))$				
	AVG MON LIMIT	MIN(BAT_BPJ, MIN(LTA <sub>afc</sub> , LTA <sub>cfc</sub> ) * AML_MULT)				
	INST MAX LIMIT	1.5 * ((av_mon_limit / AML_MULT) / LTAMULT <sub>afc</sub> )				

# Correspondence

**Hong, Nicholas**

---

**From:** Carlson, Jeffrey <jcarlson@wcgrp.com>  
**Sent:** Monday, December 5, 2022 11:29 AM  
**To:** Hong, Nicholas  
**Subject:** RE: [External] FW: [RECEIVED] Scanned Forms review - Reference ID: 77438

There is not, it is treatment for the entire campground. The nearest #'d house address is the pecan address previously mentioned.


**Jeff Carlson**

Project Engineer

 **Weaver Consultants Group**

State College, PA 16801

M: 610-216-2277

[jcarlson@wcgrp.com](mailto:jcarlson@wcgrp.com) | [www.wcgrp.com](http://www.wcgrp.com) 



**SAFETY FIRST, TRUSTED ADVISORS, 12d CULTURE**

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**From:** Hong, Nicholas <nhong@pa.gov>  
**Sent:** Monday, December 5, 2022 11:25 AM  
**To:** Carlson, Jeffrey <jcarlson@wcgrp.com>  
**Subject:** RE: [External] FW: [RECEIVED] Scanned Forms review - Reference ID: 77438

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Is there a house number

**Nick Hong, PE** | Environmental Engineer  
PA Department of Environmental Protection  
Clean Water Programs  
Southcentral Regional Office  
909 Elmerton Avenue | Harrisburg, PA 17110

Phone: 717.705.4824 | Fax: 717.705.4760  
[www.dep.pa.gov](http://www.dep.pa.gov)

**THE SOUTHCENTRAL REGIONAL OFFICE AFTER HOURS REPORTING & 24 HOUR EMERGENCY RESPONSE NUMBER IS 1-800-541-2050**

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From: Carlson, Jeffrey <[jcarlson@wcgrp.com](mailto:jcarlson@wcgrp.com)>  
Sent: Monday, December 5, 2022 11:23 AM  
To: Hong, Nicholas <[nhong@pa.gov](mailto:nhong@pa.gov)>  
Cc: jswin03 <[jswin03@gmail.com](mailto:jswin03@gmail.com)>  
Subject: RE: [External] FW: [RECEIVED] Scanned Forms review - Reference ID: 77438

Very well, the treatment units are located on Shellbark Road.

Jeff

**Jeff Carlson**  
Project Engineer

 **Weaver Consultants Group**  
State College, PA 16801  
M: 610-216-2277  
[jcarlson@wcgrp.com](mailto:jcarlson@wcgrp.com) | [www.wcgrp.com](http://www.wcgrp.com) 



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From: Hong, Nicholas <[nhong@pa.gov](mailto:nhong@pa.gov)>  
Sent: Monday, December 5, 2022 11:21 AM  
To: Carlson, Jeffrey <[jcarlson@wcgrp.com](mailto:jcarlson@wcgrp.com)>  
Cc: jswin03 <[jswin03@gmail.com](mailto:jswin03@gmail.com)>  
Subject: RE: [External] FW: [RECEIVED] Scanned Forms review - Reference ID: 77438

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We would like the official location. Is it on Pecan or Shellbark.

Reply via email and I will place it with the file.

**Nick Hong, PE** | Environmental Engineer  
PA Department of Environmental Protection  
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**THE SOUTHCENTRAL REGIONAL OFFICE AFTER HOURS REPORTING & 24 HOUR EMERGENCY RESPONSE NUMBER IS 1-800-541-2050**

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**From:** Carlson, Jeffrey <[jcarlson@wcgrp.com](mailto:jcarlson@wcgrp.com)>  
**Sent:** Monday, December 5, 2022 11:18 AM  
**To:** Hong, Nicholas <[nhong@pa.gov](mailto:nhong@pa.gov)>  
**Cc:** jswin03 <[jswin03@gmail.com](mailto:jswin03@gmail.com)>  
**Subject:** RE: [External] FW: [RECEIVED] Scanned Forms review - Reference ID: 77438

Would you like a revised application where the Site address simply says "Shellbark Road"? It is immediately adjacent to Pecan Road in the small campground area. If you were conducting a Site visit you would greet the occupants at the Pecan address. What is easiest for you?

Jeff

**Jeff Carlson**  
Project Engineer

 **Weaver Consultants Group**  
State College, PA 16801  
M: 610-216-2277  
[jcarlson@wcgrp.com](mailto:jcarlson@wcgrp.com) | [www.wcgrp.com](http://www.wcgrp.com) 



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**From:** Hong, Nicholas <[nhong@pa.gov](mailto:nhong@pa.gov)>  
**Sent:** Monday, December 5, 2022 11:01 AM  
**To:** Carlson, Jeffrey <[jcarlson@wcgrp.com](mailto:jcarlson@wcgrp.com)>



Cc: jswin03 <[jswin03@gmail.com](mailto:jswin03@gmail.com)>

Subject: RE: [External] FW: [RECEIVED] Scanned Forms review - Reference ID: 77438

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Jeff.

The application indicates that the site location is 121 Pecan Road, Manns Choice, PA. If the treatment units are located on Shellbark the application should reflect that.

Also confirm if the mailing address should be PO BOX 333, Manns Choice, PA.

**Nick Hong, PE** | Environmental Engineer  
PA Department of Environmental Protection  
Clean Water Programs  
Southcentral Regional Office  
909 Elmerton Avenue | Harrisburg, PA 17110  
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**THE SOUTHCENTRAL REGIONAL OFFICE AFTER HOURS REPORTING & 24 HOUR EMERGENCY RESPONSE NUMBER IS 1-800-541-2050**

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From: Carlson, Jeffrey <[jcarlson@wcgrp.com](mailto:jcarlson@wcgrp.com)>

Sent: Monday, December 5, 2022 10:56 AM

To: Hong, Nicholas <[nhong@pa.gov](mailto:nhong@pa.gov)>

Cc: jswin03 <[jswin03@gmail.com](mailto:jswin03@gmail.com)>

Subject: RE: [External] FW: [RECEIVED] Scanned Forms review - Reference ID: 77438

Hi Nick,

Back story is the old owner had a place on Shellbark Rd. The new owners have had a site on the campground for ~20 years before they took the campground over. They moved the office/ mailing address from the old owner's address to theirs. Nothing has changed in regards to the system or its location.

Jeff


**Jeff Carlson**

Project Engineer

 Weaver Consultants Group

State College, PA 16801

M: 610-216-2277

[jcarlson@wcgrp.com](mailto:jcarlson@wcgrp.com) | [www.wcgrp.com](http://www.wcgrp.com) 



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**From:** Hong, Nicholas <[nhong@pa.gov](mailto:nhong@pa.gov)>  
**Sent:** Monday, December 5, 2022 10:47 AM  
**To:** Carlson, Jeffrey <[jcarlson@wcgrp.com](mailto:jcarlson@wcgrp.com)>  
**Cc:** jswin03 <[jswin03@gmail.com](mailto:jswin03@gmail.com)>  
**Subject:** RE: [External] FW: [RECEIVED] Scanned Forms review - Reference ID: 77438

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Jeff,

I remember getting a call from Diane Yoder months back when they were doing transfer. They told me they wanted Pecan Road as the address of facility. If it is located on Shellbark we shall keep it that way.

**Nick Hong, PE** | Environmental Engineer  
PA Department of Environmental Protection  
Clean Water Programs  
Southcentral Regional Office  
909 Elmerton Avenue | Harrisburg, PA 17110  
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**THE SOUTHCENTRAL REGIONAL OFFICE AFTER HOURS REPORTING & 24 HOUR EMERGENCY RESPONSE NUMBER IS 1-800-541-2050**

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**From:** Carlson, Jeffrey <[jcarlson@wcgrp.com](mailto:jcarlson@wcgrp.com)>  
**Sent:** Monday, December 5, 2022 10:44 AM  
**To:** Hong, Nicholas <[nhong@pa.gov](mailto:nhong@pa.gov)>  
**Cc:** jswin03 <[jswin03@gmail.com](mailto:jswin03@gmail.com)>  
**Subject:** RE: [External] FW: [RECEIVED] Scanned Forms review - Reference ID: 77438

Hi Nick,

The treatment units are on Shellbark Drive and they discharge into the Raystown Branch Juniata River.

Thank you,


**Jeff Carlson**

Project Engineer

**W Weaver Consultants Group**

State College, PA 16801

M: 610-216-2277

[jcarlson@wcgrp.com](mailto:jcarlson@wcgrp.com) | [www.wcgrp.com](http://www.wcgrp.com) 



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**From:** Hong, Nicholas <[nhong@pa.gov](mailto:nhong@pa.gov)>

**Sent:** Friday, December 2, 2022 11:24 AM

**To:** Carlson, Jeffrey <[jcarlson@wcgrp.com](mailto:jcarlson@wcgrp.com)>

**Cc:** jswin03 <[jswin03@gmail.com](mailto:jswin03@gmail.com)>

**Subject:** RE: [External] FW: [RECEIVED] Scanned Forms review - Reference ID: 77438

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Jeff.

Please confirm the site location of the treatment units.

Is it located on Pecan Road or Shellbark Drive?

Is the discharge to UNT Raystown Branch Juniata River or Juniata River?

**Nick Hong, PE** | Environmental Engineer  
PA Department of Environmental Protection  
Clean Water Programs  
Southcentral Regional Office  
909 Elmerton Avenue | Harrisburg, PA 17110  
Phone: 717.705.4824 | Fax: 717.705.4760  
[www.dep.pa.gov](http://www.dep.pa.gov)

**THE SOUTHCENTRAL REGIONAL OFFICE AFTER HOURS REPORTING & 24 HOUR EMERGENCY RESPONSE NUMBER IS 1-800-541-2050**

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From: Carlson, Jeffrey <[jcarlson@wcgrp.com](mailto:jcarlson@wcgrp.com)>  
Sent: Tuesday, November 29, 2022 3:57 PM  
To: Hong, Nicholas <[nhong@pa.gov](mailto:nhong@pa.gov)>  
Cc: jswin03 <[jswin03@gmail.com](mailto:jswin03@gmail.com)>  
Subject: [External] FW: [RECEIVED] Scanned Forms review - Reference ID: 77438

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Hi Nick,

I just submitted the NPDES renewal application via OnBase noted below for the Shellbark Campground. It is also attached. We have not received green cards yet from our Act 14 notifications but expect them in the next couple of days and will forward them on to you once received.

Their tracking numbers are below:

<https://tools.usps.com/go/TrackConfirmAction?tRef=fullpage&tLc=2&text28777=&tLabels=9590940272461284597603%2C>

<https://tools.usps.com/go/TrackConfirmAction?tRef=fullpage&tLc=2&text28777=&tLabels=9590940272461284597610%2C>

Thank you,

Jeff

**Jeff Carlson**  
Project Engineer

 **Weaver Consultants Group**  
State College, PA 16801  
M: 610-216-2277  
[jcarlson@wcgrp.com](mailto:jcarlson@wcgrp.com) | [www.wcgrp.com](http://www.wcgrp.com) 



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From: [donotreply@pa.gov](mailto:donotreply@pa.gov) <[donotreply@pa.gov](mailto:donotreply@pa.gov)>  
Sent: Tuesday, November 29, 2022 3:53 PM

To: Carlson, Jeffrey <[jcarlson@wcgrp.com](mailto:jcarlson@wcgrp.com)>  
Cc: [RA-EP-ONBASENOT@pa.gov](mailto:RA-EP-ONBASENOT@pa.gov)  
Subject: [RECEIVED] Scanned Forms review - Reference ID: 77438

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Dear Jeffrey Carlson,

Thank you for submitting the MINOR SEWAGE FACILITY <0.05 MGD form to DEP.

Region: SOUTHCENTRAL REGIONAL OFFICE  
County: BEDFORD  
Municipality: NAPIER TOWNSHIP  
Permit #/Project #: 0110931  
RPCO Reference ID#:

**DEP Processing Comments (if any):**

"Permit Renewal Application for Shellbark Campground - NPDES APPLICATION FOR INDIVIDUAL PERMIT TO DISCHARGE SEWAGE EFFLUENT FROM MINOR SEWAGE FACILITIES. Will follow up with Act 14 Return Receipts once received but USPS documentation that they have been received and are en-route/delivered is included below:

<https://tools.usps.com/go/TrackConfirmAction?tRef=fullpage&tLc=2&text28777=&tLabels=9590940272461284597603%2C>  
<https://tools.usps.com/go/TrackConfirmAction?tRef=fullpage&tLc=2&text28777=&tLabels=9590940272461284597610%2C>"

We will review the document and associated information and notify you with any concerns.

Your form reference # is 77438. Please use this reference # for future inquiries to DEP and include on the check memo when remitting payment.

The DEP receipt date is 11/29/2022.



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