pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

**Northeast Regional Office**
**CLEAN WATER PROGRAM**

# NPDES PERMIT FACT SHEET
# INDIVIDUAL SEWAGE

| | | | |
|---|---|---|---|
| Application Type | **Renewal** | Application No. | **PA0064114** |
| Facility Type | **Non-Municipal** | APS ID | **568966** |
| Major / Minor | **Minor** | Authorization ID | **1380527** |

## Applicant and Facility Information

| | | | |
|---|---|---|---|
| Applicant Name | **Jim Thorpe Area School District** | Facility Name | **K-8 School Kidder Township STP** |
| Applicant Address | 1 Olympian Way | Facility Address | Route 534 And Route 903 |
| | Jim Thorpe, PA 18229-1705 | | Albrightsville, PA 18210 |
| Applicant Contact | Ted Larizzo, Director of Maintenance | Facility Contact | David Sholtz, Operator |
| Applicant Phone | (570) 325-3663 | Facility Phone | (570) 629-2981 |
| Client ID | 117513 | Site ID | 542731 |
| Ch 94 Load Status | - | Municipality | Kidder Township |
| Connection Status | - | County | Carbon |
| Date Application Received | December 23, 2021 | EPA Waived? | Yes |
| Date Application Accepted | January 4, 2022 | If No, Reason | - |

Purpose of Application: Renewal of NPDES permit for discharge of treated sewage.

## Summary of Review

The applicant is requesting the renewal of an NPDES permit to discharge up to 0.070 MGD of treated sewage into Dilldown Creek, a High Quality, Cold-Water Fishery, Migratory Fish (HQ-CWF, MF) receiving stream in State Water Plan Basin 2-A (Upper Lehigh River). As per the Department's current existing use list, the receiving stream does not have an existing use classification that is more protective than its designated use. This stream segment is designated as a naturally reproducing trout stream as per PA Fish & Boat Commission. This discharge is not expected to affect public water supplies.

Limitations for pH, Dissolved Oxygen (DO), and Fecal Coliform are technology-based and carried over from the previous permit.

Limitations for CBOD5, Total Suspended Solids (TSS), Ammonia-Nitrogen, and Total Phosphorous are water quality-based and carried over from the previous permit.

The annual monitoring and reporting for Total Nitrogen, Total Kjeldahl Nitrogen, and Nitrate-Nitrite as N has been maintained in this permit.

WQM 7.0 modeling did not recommend stricter limits.

The facility utilizes ultraviolet light for disinfection. In the event the facility uses chlorine for cleaning purposes or as a back-up disinfection option, the IMAX technology-based limitation (1.6 mg/L) has been maintained in the permit and is to be sampled "daily when discharging" (see requirements under Part C.I.E). The Total Residual Chlorine (TRC) Calculation Spreadsheet does not recommend stricter limitations than the previous permit.

Sewage discharges now require monitoring and reporting for E. Coli. 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 will be utilized.

| Approve | Deny | Signatures | Date |
|---|---|---|---|
| X | | /s/<br>Allison Seyfried / Project Manager | February 7, 2023 |
| X | | /s/<br>Amy M. Bellanca, P.E. / Acting Program Manager | 2-8-23 |

**Summary of Review**

A final Total Maximum Daily Load (TMDL) exists for the Lehigh River Watershed. The TMDL addresses metals (iron, manganese, and aluminum) and pH associated with acid mine drainage (AMD). There are no approved Waste Load Allocations (WLA) for this facility. Since this is a sewage discharge with no industrial contributors, no appreciable quantities of these metals are expected to be present in the effluent.

For this permit renewal, all monitoring frequencies for parameters with limitations are consistent with the Department's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits* (document no. 362-0400-001).

Stream gage 1448500 (Dilldown Creek near Long Pond, PA) is located upstream of Outfall 001. However, the stream gage appears to have stopped recording data in 1996. Therefore, the default Low Flow Yield (LFY) of 0.1 cfs/mi$^2$ was used to model the discharge. For modeling inputs, RMI values were obtained using the "PA Historic Streams" feature of eMapPA, drainage areas were delineated using USGS's StreamStats Interactive Map, and elevations were obtained using the elevation profile feature of StreamStats. USGS StreamStats was also used to provide a $Q_{7\text{-}10}$ flow and calculate a LFY. The state-wide default had the smallest LFY.

The existing permit expired on July 31, 2022 and the application for renewal was received on time.

A Water Management System Inspection query indicated that on July 21, 2022 a Routine/Partial Inspection was performed.

There are currently no open violations for this client that warrant withholding issuance of this permit.

Sludge use and disposal description and location(s): As per the permittee's Sewage Sludge and Biosolids Supplemental Report forms, sludge is hauled to the Greater Hazelton WWTF in Hazelton, PA by Newhart Septic.

Public Participation

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

**Discharge, Receiving Waters and Water Supply Information**

| | | | |
|---|---|---|---|
| Outfall No. | 001 | Design Flow (MGD) | 0.07 |
| Latitude | 41º 1' 21.00" | Longitude | -75º 34' 58.00" |
| Quad Name | Blakeslee | Quad Code | 1041 |
| Wastewater Description: | Sewage Effluent | | |
| Receiving Waters | Dilldown Creek | Stream Code | 4188 |
| NHD Com ID | 26282947 | RMI | 0.180 |
| Drainage Area | 5.53 $mi^2$ | Yield ($cfs/mi^2$) | 0.1 |
| $Q_{7-10}$ Flow (cfs) | 0.553 | $Q_{7-10}$ Basis | State-wide default |
| Elevation (ft) | 1,537.25 | Slope (ft/ft) | - |
| Watershed No. | - | Chapter 93 Class. | - |
| Existing Use | - | Existing Use Qualifier | - |
| Exceptions to Use | - | Exceptions to Criteria | - |
| Assessment Status | Attaining Use(s) | | |
| Cause(s) of Impairment | METALS (IRON, MANGANESE, ALUMINUM) | | |
| Source(s) of Impairment | ACID MINE DRAINAGE | | |
| TMDL Status | Final | Name | Lehigh River TMDL |
| Nearest Downstream Public Water Supply Intake | HCA Road Filter Plant | | |
| PWS Waters | Lehigh River | Flow at Intake (cfs) | - |
| PWS RMI | 62.9 | Distance from Outfall (mi) | ~ 11.39 |

**Treatment Facility Summary**

**Treatment Facility Name:** K-8 School Kidder Township STP

| Waste Type | Degree of Treatment | Process Type | Disinfection | Avg Annual Flow (MGD) |
|---|---|---|---|---|
| Sewage | Secondary | Aeration, clarifiers, sand filters | Ultraviolet | 0.0046 (2018-2020) |

| Hydraulic Capacity (MGD) | Organic Capacity (lbs/day) | Load Status | Biosolids Treatment | Biosolids Use/Disposal |
|---|---|---|---|---|
| 0.07 | - | - | Holding Tank | Hauled |

## Compliance History

**Effluent Violations for Outfall 001, from: December 1, 2021 To: October 31, 2022**

| Parameter | Date | SBC | DMR Value | Units | Limit Value | Units |
|---|---|---|---|---|---|---|
| pH | 04/30/22 | IMAX | 9.1 | S.U. | 9.0 | S.U. |
| TSS | 10/31/22 | Avg Mo | < 18 | mg/L | 10 | mg/L |
| Ammonia | 05/31/22 | Avg Mo | < 2.8 | mg/L | 1.5 | mg/L |

## Development of Effluent Limitations

**Outfall No.** 001 **Design Flow (MGD)** 0.07
**Latitude** 41º 1' 36.00" **Longitude** -75º 35' 6.00"
**Wastewater Description:** Sewage Effluent

### Technology-Based Limitations

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

| Pollutant | Limit (mg/l) | SBC | Federal Regulation | State Regulation |
|---|---|---|---|---|
| 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 | 1.6 | IMAX | - | 92a.48(b)(2) |
| E. Coli | Report | IMAX | - | 92a.61 |
| Dissolved Oxygen | 5.0 | Minimum | - | BPJ |

### Water Quality-Based Limitations

The following limitations were determined through water quality modeling:

| Parameter | Limit (mg/l) | SBC | Model |
|---|---|---|---|
| $CBOD_5$ | 10.0 | Average Monthly | Previous Modeling |
| | 20.0 | IMAX | |
| Total Suspended Solids | 10.0 | Average Monthly | |
| | 20.0 | IMAX | |
| Ammonia-Nitrogen Nov 1 - Apr 30 | 4.5 | Average Monthly | |
| | 9.0 | IMAX | |
| Ammonia-Nitrogen May 1 - Oct 31 | 1.5 | Average Monthly | |
| | 3.0 | IMAX | |
| Total Phosphorous | 2.0 | Average Monthly | Previously recommended by Regional Biologist |
| | 4.0 | IMAX | |

### Anti-Backsliding

No limitations were made less stringent.

## Modeling with State-Wide default LFY:

$$\frac{0.1\ ft^3/sec}{mi^2} \times 5.53\ mi^2 = \frac{\mathbf{0.553\ ft^3}}{\mathbf{sec}}$$

## Modeling Using StreamStats:

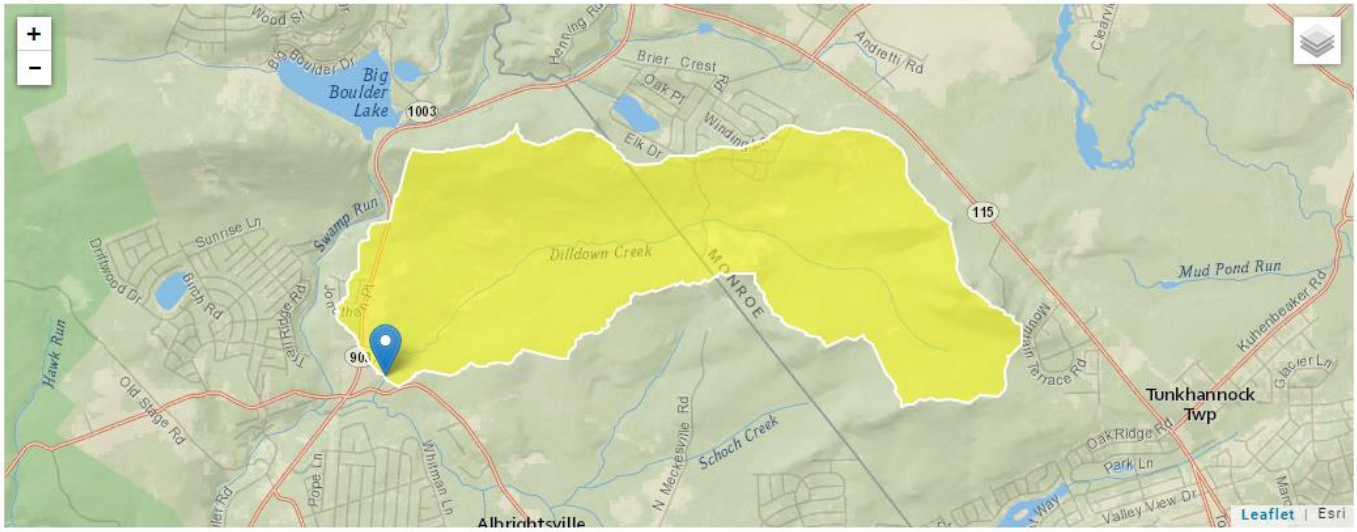
**At Outfall 001 on Dilldown Creek:**

| RMI | Elevation (ft) | Drainage Area (mi²) | $Q_{7\text{-}10}$ Flow (cfs) |
|---|---|---|---|
| 0.180 | 1,537.25 | 5.53 | 0.922 |

$$Low\ Flow\ Yield\ using\ StreamStats = \frac{0.922\ ft^3/sec}{5.53\ mi^2} = \mathbf{0.167}\ \frac{\mathbf{ft^3/sec}}{\mathbf{mi^2}}$$

StreamStats Report

**Region ID:** PA
**Workspace ID:** PA20221220183253568000
**Clicked Point (Latitude, Longitude):** 41.01993, -75.58481
**Time:** 2022-12-20 13:33:15 -0500




Low-Flow Statistics Parameters [Low Flow Region 2]

| Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit |
|---|---|---|---|---|---|
| DRNAREA | Drainage Area | 5.53 | square miles | 4.93 | 1280 |

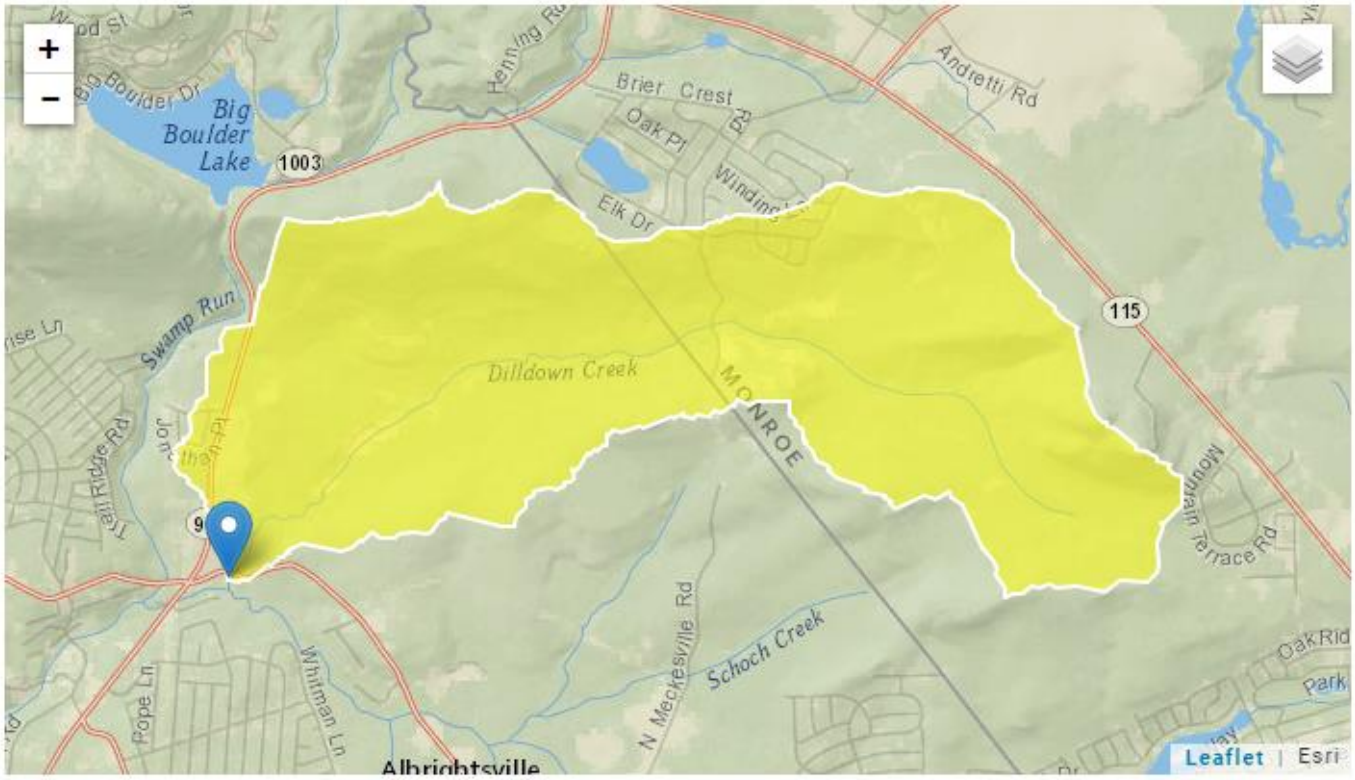
| Statistic | Value | Unit | SE | ASEp |
|---|---|---|---|---|
| 7 Day 2 Year Low Flow | 1.79 | ft^3/s | 38 | 38 |
| 30 Day 2 Year Low Flow | 2.27 | ft^3/s | 33 | 33 |
| 7 Day 10 Year Low Flow | 0.922 | ft^3/s | 51 | 51 |

**At confluence with Mud Run (4176):**

| RMI | Elevation (ft) | Drainage Area ($mi^2$) |
|---|---|---|
| 0.00 (8.24) | 1,529.86 | 5.56 |

# StreamStats Report

**Region ID:** PA
**Workspace ID:** PA20221221134027209000
**Clicked Point (Latitude, Longitude):** 41.01818, -75.58645
**Time:** 2022-12-21 08:40:48 -0500




| Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit |
|---|---|---|---|---|---|
| DRNAREA | Drainage Area | 5.56 | square miles | 4.93 | 1280 |

## WQM 7.0 Effluent Limits

| SWP Basin | Stream Code | Stream Name |
|---|---|---|
| 02A | 4188 | DILLDOWN CREEK |

| RMI | Name | Permit Number | Disc Flow (mgd) | Parameter | Eff. Limit 30-day Ave. (mg/L) | Eff. Limit Maximum (mg/L) | Eff. Limit Minimum (mg/L) |
|---|---|---|---|---|---|---|---|
| 0.180 | Jim Thorpe SD | PA0064114 | 0.070 | CBOD5 | 25 | | |
| | | | | NH3-N | 14.55 | 29.1 | |
| | | | | Dissolved Oxygen | | | 3 |

## TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

| | | | |
|---|---|---|---|
| 0.553 | = Q stream (cfs) | 0.5 | = CV Daily |
| 0.07 | = Q discharge (MGD) | 0.5 | = CV Hourly |
| 30 | = no. samples | 1 | = AFC_Partial Mix Factor |
| 0.3 | = Chlorine Demand of Stream | 1 | = CFC_Partial Mix Factor |
| 0 | = Chlorine Demand of Discharge | 15 | = AFC_Criteria Compliance Time (min) |
| 0.5 | = BAT/BPJ Value | 720 | = CFC_Criteria Compliance Time (min) |
| 0 | = % Factor of Safety (FOS) | | =Decay Coefficient (K) |

| Source | Reference | AFC Calculations | Reference | CFC Calculations |
|---|---|---|---|---|
| TRC | 1.3.2.iii | WLA afc = 1.648 | 1.3.2.iii | WLA cfc = 1.599 |
| PENTOXSD TRG | 5.1a | LTAMULT afc = 0.373 | 5.1c | LTAMULT cfc = 0.581 |
| PENTOXSD TRG | 5.1b | LTA_afc= 0.614 | 5.1d | LTA_cfc = 0.930 |

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

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