

Application Type Renewal  
 Facility Type Municipal  
 Major / Minor Minor

**NPDES PERMIT FACT SHEET  
INDIVIDUAL SEWAGE**

Application No. PA0023451  
 APS ID 1117236  
 Authorization ID 1491203 (Renewal)  
1494142 (Transfer)

**Applicant and Facility Information**

|                           |   |                  |  |
|---------------------------|---|------------------|--|
| Applicant Name            | <u>Mt Jewett Borough McKean County</u>                                  | Facility Name    | <u>Mt Jewett WWTP</u>  |
| Applicant Address         | <u>PO Box 680 1 Center Street</u><br><u>Mount Jewett, PA 16740-0680</u> | Facility Address | <u>1 Kinzua Street</u><br><u>Mount Jewett, PA 16740-0680</u> |
| Applicant Contact         | <u>Mike Wennerstrom</u>   | Facility Contact | <u>Jesse Wagner</u>  |
| Applicant Phone           | <u>(814) 558-2539</u>   | Facility Phone   | <u>(814) 762-8892</u>  |
| Client ID                 | <u>243898</u>   | Site ID          | <u>264330</u>  |
| Ch 94 Load Status         | <u>Not Overloaded</u>   | Municipality     | <u>Mount Jewett Borough</u>                                  |
| Connection Status         | <u>No Limitations</u>   | County           | <u>McKean</u>  |
| Date Application Received | <u>May 29, 2024</u>   | EPA Waived?      | <u>Yes</u>   |
| Date Application Accepted | <u>October 6, 2025</u>  | If No, Reason    | <u></u>  |
| Purpose of Application    | <u>This is an application for NPDES permit renewal</u>                  |                  |  |

**Summary of Review**

Mount Jewett Borough has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of an NPDES permit for Mt Jewett WWTP. The permit was last reissued on November 21, 2019, with an effective date of December 1, 2019, and an expiration date of November 30, 2024. The applicant submitted a timely NPDES permit renewal application to the Department and is currently operating under the terms and conditions in the existing permit.

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. This Fact Sheet provides the justification for the proposed NPDES effluent limits derived from technology based effluent limits (TBEL), water quality-based effluent limits (WQBEL), antidegradation, and anti-backsliding.

The subject facility is a 0.5 MGD treatment facility. The applicant does not anticipate upgrades to the treatment facility in the next five years. The NPDES application has been processed as a Minor Sewage Facility ( $\geq 0.05$  MGD and  $< 1$  MGD) due to the type of sewage and the design flow rate for the facility. The applicant disclosed the Act 14 requirement to McKean County Commissioners and Mount Jewett Borough.

The existing permit and the proposed permit differ as follows:

- Monitoring shall be required for E. Coli.
- New limits for Total Copper shall be imposed.
- Monitoring for Total Lead shall be imposed.
- More stringent limits for NH3-N shall be imposed.
- More stringent limits for TRC shall be imposed.

| Approve | Deny | Signatures  | Date             |
|---------|------|---|------------------|
| X       |      | Carlee Wilson<br>Carlee Wilson. / Environmental Engineering Specialist  | January 22, 2026 |
| X       |      | Adam Olesnanik<br>Adam Olesnanik, P.E. / Environmental Engineer Manager | January 28, 2026 |

**Summary of Review**

Transfer of Ownership

In conjunction with the application for NPDES permit renewal, DEP received an Application for NPDES or WQM Permit Transfer, dated May 29, 2024. The application is for transfer of the following permits:

1. NPDES Permit PA0023451
2. Water Quality Management (WQM) Permits: 4209402, 4209402 A-1, 4292405, and 4292405 A-1

from Existing Permittee: Mount Jewett Borough Regional Sewer Authority, P.O. Box 680, 1 Center Street, Mount Jewett, PA 16740

to: Proposed Permittee: Mount Jewett Borough, 1 Center Street, Mount Jewett, PA 16740

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.

Any additional information or public review of documents associated with the discharge or facility may be available at PA DEP Northwest Regional Office (NWRO), 230 Chestnut Street, Meadville, PA 16335. To make an appointment for file review, contact the NWRO File Review Coordinator at 814-332-6945.

**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: Mt Jewett WWTP

NPDES Permit # PA0023451

Physical Address: 1 Kinzua Street  
Meadville, PA 16335

Site Contact: Jesse Wagner  
1 Kinzua Street  
Mount Jewett, PA 16740-0680  
(724) 762-8992

Consultant: Beau Schettler - [bschettler@eadsgroup.com](mailto:bschettler@eadsgroup.com)  
Marty English - [menglish@eadsgroup.com](mailto:menglish@eadsgroup.com)  
The EADS Group, Inc.  
15392 Route 322  
Clarion, PA 16214

**Note:** Following correspondence with the permittee, the primary and site contacts have been updated from the previous renewal to Mike Wennerstrom and Jesse Wagner.

**2.0 Treatment Facility Summary**

**2.1.1 Site location**

A topographical map and aerial photographs of the facility area, and facility are depicted as Figures 1 - 3.

Figure 1: Topographical map of the subject facility

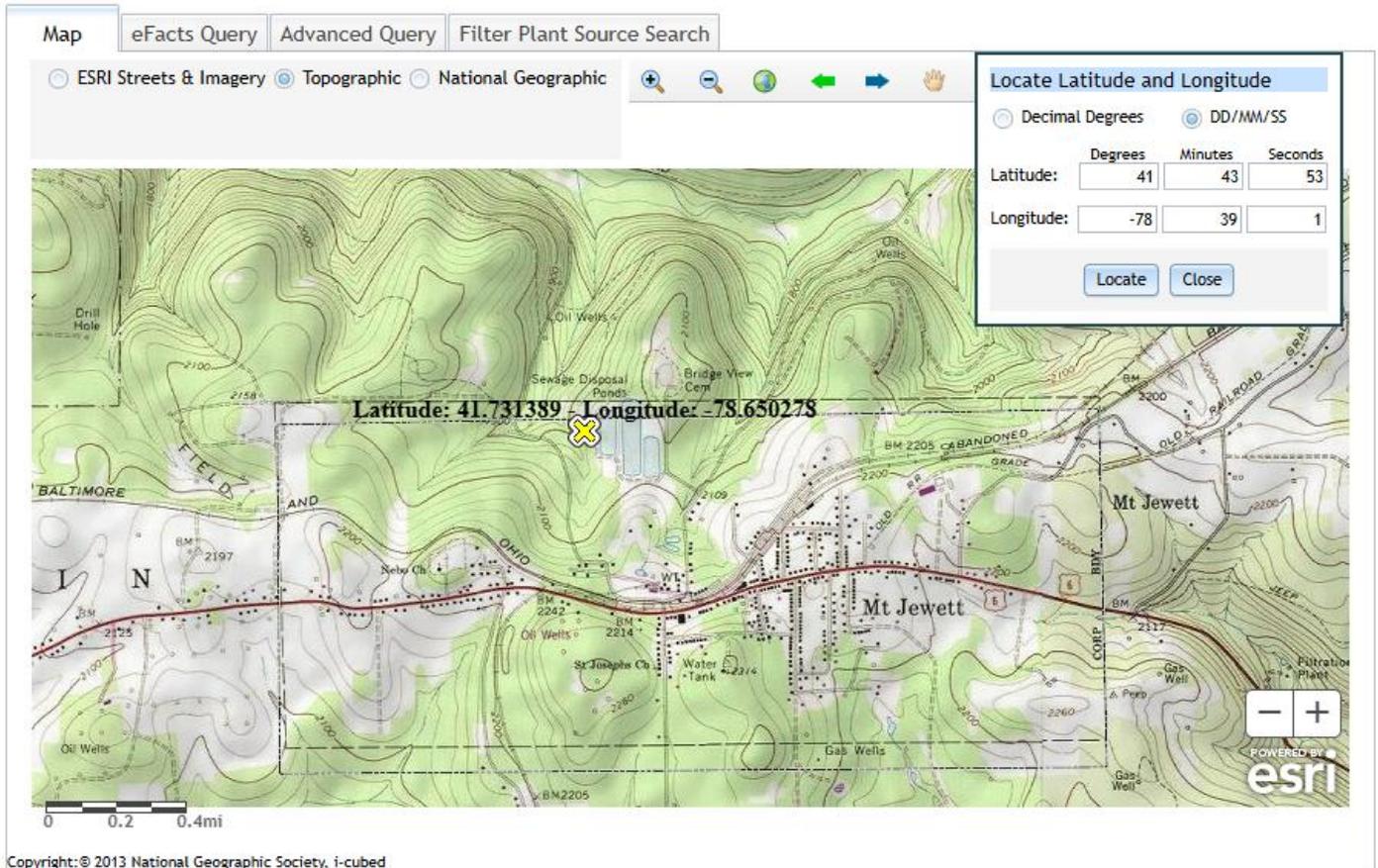


Figure 2: Receiving Stream Designation and Location

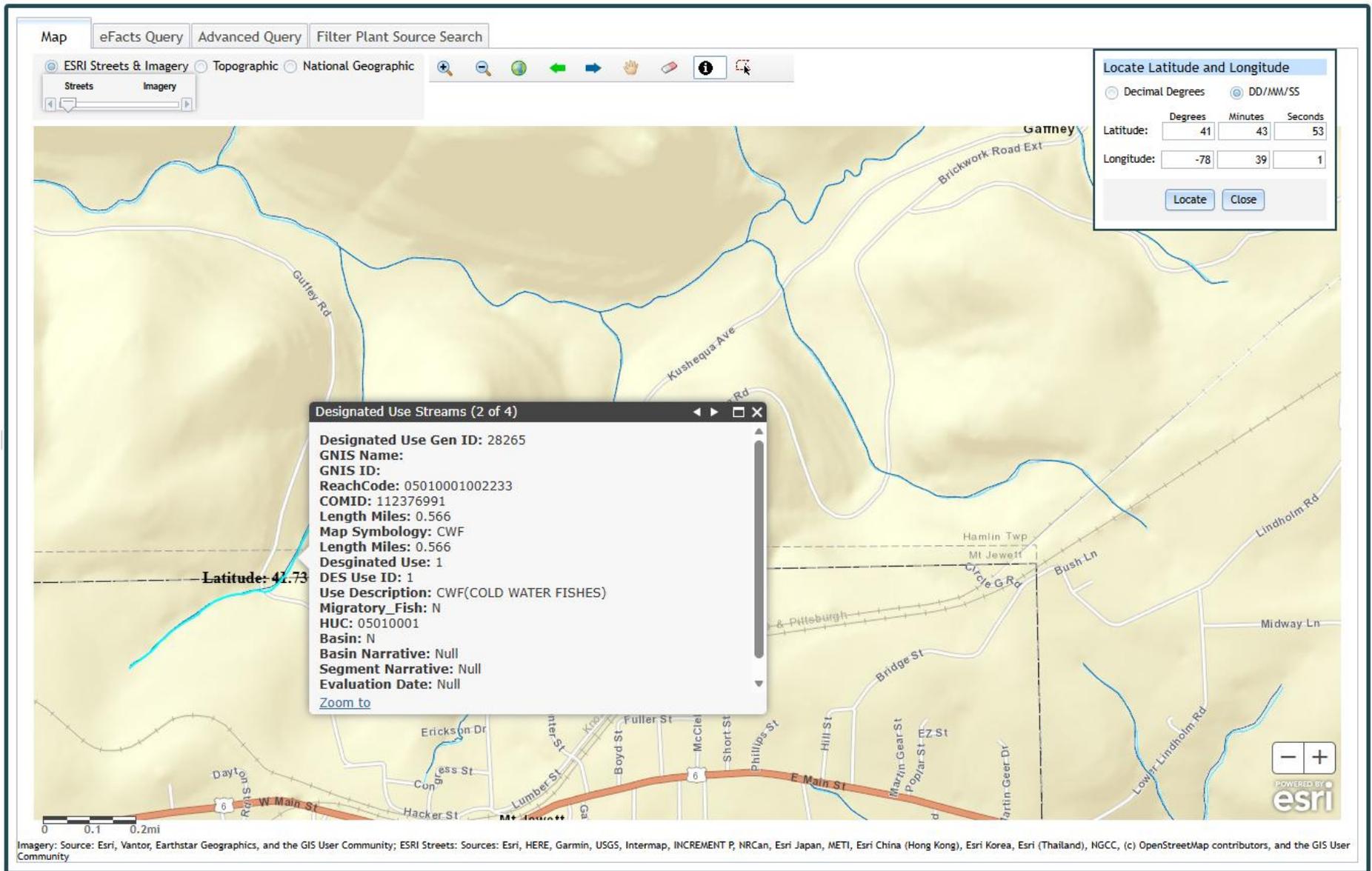


Figure 3: Aerial Photograph of the subject facility



**2.1.2 Sources of Wastewater**

The Mt Jewett WWTP receives 91.5% of its flow from the Mount Jewett Borough, 3.5% from the Hamlin Township, and the remaining 5.0% from the Sergeant Township. Mount Jewett Borough is 99.9% separate sewers, and the Hamlin and Sergeant Townships are 100% separate sewer systems.

**2.2 Description of Wastewater Treatment Process**

The subject facility has a hydraulic design capacity of 0.5 million gallons per day, and an organic design capacity of 834 lbs. BOD5 /day for the treatment facility. The facility is being evaluated for flow, pH, dissolved oxygen, TRC, CBOD5, TSS, fecal coliform, nitrogen species, and phosphorus. The existing permit limits for the facility are summarized in Section 2.4.

The treatment process is summarized in the table.

| Treatment Facility Summary                     |                                   |                      |                            |                               |
|--|-----------------------------------|----------------------|----------------------------|-------------------------------|
| <b>Treatment Facility Name:</b> Mt Jewett WWTP |                                   |                      |                            |                               |
| <b>WQM Permit No.</b>                          | <b>Issuance Date</b>              |                      |                            |                               |
| 4292405  | July 20, 1993                     |                      |                            |                               |
| 4292405 A-1                                    | July 5, 2012                      |                      |                            |                               |
| 4209402  | August 14, 2009                   |                      |                            |                               |
| 4209402 A-1                                    | July 11, 2013                     |                      |                            |                               |
| <b>Waste Type</b>                              | <b>Degree of Treatment</b>        | <b>Process Type</b>  | <b>Disinfection</b>        | <b>Avg Annual Flow (MGD)</b>  |
| Sewage   | Secondary With Ammonia Reduction  | Stabilization Lagoon | Hypochlorite               | 0.5                           |
| <b>Hydraulic Capacity (MGD)</b>                | <b>Organic Capacity (lbs/day)</b> | <b>Load Status</b>   | <b>Biosolids Treatment</b> | <b>Biosolids Use/Disposal</b> |
| 0.5  | 834                               | Not Overloaded       |                            |                               |

Changes Since Last Permit Issuance: N/A

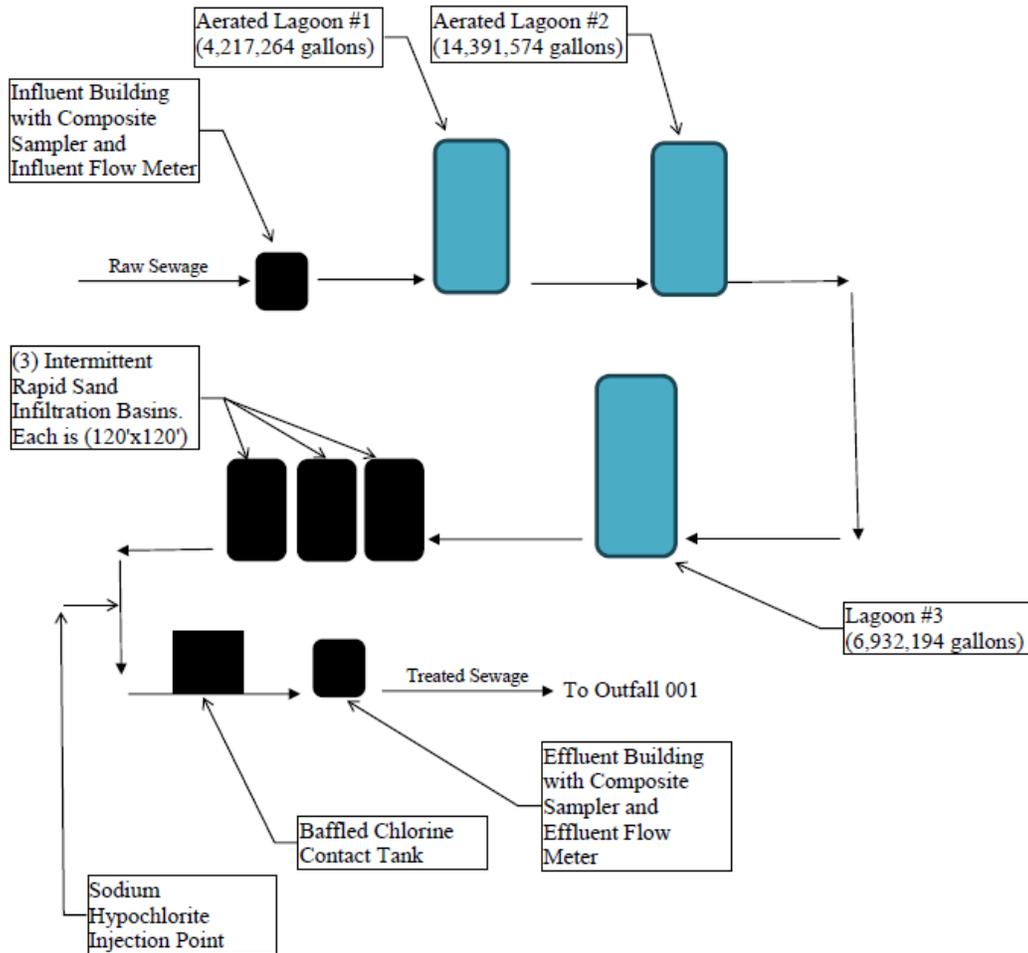
Permitted treatment (WQM Permit no. 4292405) consists of a 4,217,264-gallon aerated lagoon, a second 14,391,574-gallon aerated lagoon, and a 6,932,194-gallon third lagoon in series, three intermittent 14,400 square foot (120' X 120') rapid sand infiltration basins, and chlorine disinfection. 4292405 Amendment 1 approved modification/operation of sewage facilities consisting of: The original design included four, 3 HP aerators in Lagoon #1 and three, 3 HP aerators in Lagoon #2. These were replaced with one, 700 gpm solar-powered aerator in the first lagoon and two, 350 gpm aerators in the second lagoon. These new aerators all have an electric backup power source.

4209402 Amendment 1 approved modification of sewage facilities consisting of the elimination of Pump Station D by rerouting and deepening the gravity sewer in certain areas and running the sewers to Pump Station C, the relocation of Pump Station C to the rear of the property closer to the sewer line, and the increase in diameter of the force mains for Pump Stations A, B, and C from 4 inches to 6 inches to reduce the total head.

Sludge use and disposal description and location(s): The application indicates that no sludge has been removed from lagoons during the permit period. Additionally, the applicant reports 0 Dry Tons of sludge production for the facility for the previous year.

The treatment process is depicted below as shown in the application.

## Mount Jewett Borough WWTP – NPDES Permit Renewal Flow Schematic



### 2.2.1 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.

- Sodium Hypochlorite for disinfection

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

|  |  |                              |                                     |
|--|--|------------------------------|-------------------------------------|
| Outfall No.                                    | <u>001</u>   | Design Flow (MGD)            | <u>0.5</u>                          |
| Latitude                                       | <u>41° 43' 53.0"</u>                               | Longitude                    | <u>-78° 39' 1.0"</u>                |
| Quad Name                                      | <u>-</u>   | Quad Code                    | <u>-</u>                            |
| Wastewater Description: <u>Sewage Effluent</u> |  |                              |                                     |
| Receiving Waters                               | <u>Unnamed Tributary to the Kinzua Creek (CWF)</u> | Stream Code                  | <u>56711</u>                        |
| NHD Com ID                                     | <u>112376991</u>                                   | RMI                          | <u>0.75 (first perennial point)</u> |
| Drainage Area                                  | <u>0.56</u>  | Yield (cfs/mi <sup>2</sup> ) | <u>0.057</u>                        |
| Q <sub>7-10</sub> Flow (cfs)                   | <u>0.032</u>                                       | Q <sub>7-10</sub> Basis      | <u>calculated</u>                   |
| Elevation (ft)                                 | <u>1680</u>  | Slope (ft/ft)                | <u>0.002622</u>                     |
| Watershed No.                                  | <u>16-B</u>  | Chapter 93 Class.            | <u>CWF</u>                          |
| Existing Use                                   | <u>-</u>   | Existing Use Qualifier       | <u>-</u>                            |
| Exceptions to Use                              | <u>-</u>   | Exceptions to Criteria       | <u>-</u>                            |
| Assessment Status                              | <u>Attaining Use(s)</u>                            |                              |                                     |
| Cause(s) of Impairment                         | <u>-</u>   |                              |                                     |
| Source(s) of Impairment                        | <u>-</u>   |                              |                                     |
| TMDL Status                                    | <u>-</u>   | Name                         | <u>-</u>                            |
| Background/Ambient Data                        |  | Data Source                  |                                     |
| pH (SU)  | <u>-</u>   |                              | <u>-</u>                            |
| Temperature (°F)                               | <u>-</u>   |                              | <u>-</u>                            |
| Hardness (mg/L)                                | <u>-</u>   |                              | <u>-</u>                            |
| Other:   | <u>-</u>   |                              | <u>-</u>                            |
| Nearest Downstream Public Water Supply Intake  | <u>Aqua Pennsylvania, Inc. - Emlenton</u>          |                              |                                     |
| PWS Waters                                     | <u>Allegheny River</u>                             | Flow at Intake (cfs)         | <u>1,376</u>                        |
| PWS RMI  | <u>90.0</u>  | Distance from Outfall (mi)   | <u>128.0</u>                        |

Changes since the last permit issuance: None

**2.3.1 Water Supply Intake**

Other Comments: The nearest downstream potable water supply is the Aqua Pennsylvania, Inc. - Emlenton on the Allegheny River, located approximately 128 miles below the point of discharge. Due to the distance and dilution, no impact is expected from this discharge on the intake

**3.0 Facility NPDES Compliance History**

**3.1 Summary of Inspections and Open Violations**

A summary of Inspections and DMR data follows.

| <b>Compliance History</b>      |  |
|--------------------------------|--|
| <b>Summary of DMRs:</b>        | A summary of DMR data is presented on the next page covering the period from September 2024 through August 2025.                           |
| <b>Summary of Inspections:</b> | The facility has been 31 times during the previous permit cycle. See section 3.2.3 - Discussion of Inspections for additional information. |
| <b>Other Comments:</b>         | 1. DEP's database shows there are no open violations, or open enforcement actions associated with this facility or permittee.              |

**3.2.1 Summary of DMR Data**

A review of approximately 1-year of DMR data shows that the monthly average flow data for the facility of 0.271 MGD was below the design capacity of 0.5. The maximum average flow data for the DMR reviewed was 0.465 MGD in May 2025.

**3.2.2 DMR Data for Outfall 001 (from September 1, 2024, to August 31, 2025)**

| Parameter  | AUG-25 | JUL-25 | JUN-25 | MAY-25 | APR-25 | MAR-25 | FEB-25 | JAN-25 | DEC-24 | NOV-24 | OCT-24 | SEP-24 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Flow (MGD)<br>Average Monthly                                  | 0.090  | 0.109  | 0.369  | 0.465  | 0.339  | 0.442  | 0.319  | 0.241  | 0.347  | 0.293  | 0.119  | 0.122  |
| Flow (MGD)<br>Daily Maximum                                    | 0.162  | 0.192  | 1.428  | 1.119  | 0.606  | 1.138  | 0.941  | 0.497  | 1.324  | 3.815  | 0.336  | 0.398  |
| pH (S.U.)<br>Instantaneous<br>Minimum                          | 6.99   | 7.01   | 7.0    | 7.13   | 6.54   | 6.2    | 7.05   | 7.1    | 7.2    | 7.3    | 7.2    | 7.2    |
| pH (S.U.)<br>Instantaneous<br>Maximum                          | 7.22   | 7.31   | 7.27   | 7.52   | 8.87   | 7.61   | 7.81   | 7.3    | 7.5    | 7.6    | 7.8    | 7.4    |
| DO (mg/L)<br>Instantaneous<br>Minimum                          | 6.2    | 6.0    | 6.1    | 6.5    | 6.8    | 6.8    | 8.8    | 10.6   | 13.2   | 6.2    | 6.7    | 6.1    |
| TRC (mg/L)<br>Average Monthly                                  | 0.44   | 0.37   | 0.18   | 0.28   | 0.23   | 0.22   | 0.241  | 0.32   | 0.24   | 0.35   | 0.37   | 0.23   |
| CBOD5 (lbs/day)<br>Average Monthly                             | < 2.0  | < 2.0  | < 5.0  | < 7.0  | < 7.0  | < 22.0 | < 9.0  | < 5.0  | < 8.0  | < 3.0  | < 4.0  | < 2.0  |
| CBOD5 (lbs/day)<br>Weekly Average                              | < 3.0  | < 2.0  | 8.0    | 9.0    | 9.0    | 57.0   | 22.0   | 11.0   | 18.0   | < 6.0  | 8.0    | < 5.0  |
| CBOD5 (mg/L)<br>Average Monthly                                | < 2.0  | < 2.0  | < 2.0  | < 2.0  | < 3.0  | < 5.0  | < 3.0  | < 2.0  | < 2.0  | < 2.0  | < 4.0  | < 2.0  |
| CBOD5 (mg/L)<br>Weekly Average                                 | < 2.0  | < 2.0  | 8.0    | 2.0    | 4.0    | 6.0    | 7.0    | 3.0    | 3.0    | < 2.0  | 6.0    | < 2.0  |
| BOD5 (mg/L)<br>Raw Sewage Influent<br><br/> Average<br>Monthly | 188    | 170    | 72.0   | 52     | < 56   | 45     | 37     | 50.0   | 79.0   | < 145  | 194    | 112    |
| TSS (lbs/day)<br>Average Monthly                               | < 3.0  | < 3.0  | < 7.0  | < 11.0 | 12.0   | < 22.0 | < 15.0 | < 6.0  | < 11.0 | < 5.0  | < 4.0  | < 4.0  |
| TSS (lbs/day)<br>Weekly Average                                | < 4.0  | < 4.0  | < 10.0 | 17.0   | 26.0   | 57.0   | 25.0   | < 11.0 | 25.0   | < 9.0  | 5.0    | < 7.0  |
| TSS (mg/L)<br>Average Monthly                                  | < 3.0  | < 3.0  | < 3.0  | < 4.0  | 5.0    | < 5.0  | < 6.0  | < 2.0  | < 3.0  | < 4.0  | < 4.0  | < 3.0  |
| TSS (mg/L)<br>Raw Sewage Influent<br><br/> Average<br>Monthly  | 214    | 168    | 44.0   | < 53   | < 48   | 34     | < 28   | 34.0   | 112.0  | 242    | 193    | 108    |

**NPDES Permit Fact Sheet  
Mt Jewett WWTP**

**NPDES Permit No. PA0023451**

|  |       |       |        |        |        |      |      |       |        |       |        |       |
|--|-------|-------|--------|--------|--------|------|------|-------|--------|-------|--------|-------|
| TSS (mg/L)<br>Weekly Average                               | < 3.0 | 3.0   | < 10.0 | 4.0    | 9.0    | 6.0  | 8.0  | 3.0   | 4.0    | < 5.0 | 5.0    | < 3.0 |
| Fecal Coliform<br>(No./100 ml)<br>Geometric Mean           | < 1   | < 2   | 31     | 5      | < 1    | < 8  | 237  | < 3.0 | < 18.0 | < 2.0 | < 1.0  | < 3.0 |
| Fecal Coliform<br>(No./100 ml)<br>Instantaneous<br>Maximum | < 1   | 15    | 62     | 23     | 2      | 1300 | 1986 | 214   | > 2420 | 6.0   | 3.0    | 11    |
| Total Nitrogen (mg/L)<br>Average Monthly                   | 4.67  | 5.09  | 5.94   | 6.37   | 4.88   | 8.87 | 9.82 | 9.29  | 7.95   | 4.77  | 3.64   | 3.43  |
| Ammonia (lbs/day)<br>Average Monthly                       | < 0.5 | < 0.9 | < 4.0  | < 7.0  | < 3.0  | 21.0 | 12.0 | 9.0   | 12.0   | 2.0   | < 0.5  | < 0.6 |
| Ammonia (mg/L)<br>Average Monthly                          | < 0.6 | < 1.0 | < 1.76 | < 1.85 | < 1.28 | 4.21 | 4.69 | 4.6   | 3.86   | 1.3   | < 0.51 | < 0.5 |
| Total Phosphorus<br>(mg/L)<br>Average Monthly              | 0.97  | 0.78  | 0.53   | 0.62   | 0.53   | 0.87 | 1.31 | 1.09  | 0.68   | 0.38  | 0.39   | 0.49  |

**3.3 Non-Compliance**

**3.3.1 Effluent Violations for Outfall 001, from: October 1, 2024, To: August 31, 2025**

**Effluent Violations for Outfall 001, from: October 1, 2024, To: August 31, 2025**

| Parameter      | Date     | SBC    | DMR Value | Units      | Limit Value | Units      |
|----------------|----------|--------|-----------|------------|-------------|------------|
| Fecal Coliform | 12/31/24 | IMAX   | > 2420    | No./100 ml | 10000       | No./100 ml |
| Ammonia        | 05/31/25 | Avg Mo | < 7.0     | lbs/day    | 6.3         | lbs/day    |
| Ammonia        | 03/31/25 | Avg Mo | 21.0      | lbs/day    | 18.8        | lbs/day    |
| Ammonia        | 02/28/25 | Avg Mo | 4.69      | mg/L       | 4.5         | mg/L       |
| Ammonia        | 05/31/25 | Avg Mo | < 1.85    | mg/L       | 1.5         | mg/L       |
| Ammonia        | 06/30/25 | Avg Mo | < 1.76    | mg/L       | 1.5         | mg/L       |
| Ammonia        | 01/31/25 | Avg Mo | 4.6       | mg/L       | 4.5         | mg/L       |

**3.3.2 Summary of DMRs:**

DMRs review for the facility for the last 12 months of operation, presented on the table above in section 3.1.1 indicates permit limits have not been met consistently. Fecal Coliform and Ammonia effluent violations were noted during the period reviewed and presented in section 3.1.2. The violations appear as operations related which could be addressed with operational changes.

**3.3.3 Discussion of Inspections:**

The facility has been inspected 31 times during the previous permit cycle, covering the period from December 1, 2019, through May 2025. The quantities and types of inspection are provided as follows.

| Inspection Type              | Number of Inspections | Violation (s) Noted | Number of Violations |
|------------------------------|-----------------------|---------------------|----------------------|
| Administrative/File Review   | 1                     | No                  | 0                    |
| Chapter 94 Inspection        | 3                     | No                  | 0                    |
| Complaint Inspection         | 3                     | Yes                 | 5                    |
| Compliance Evaluation        | 1                     | No                  | 0                    |
| Follow-Up Inspection         | 2                     | See Note 1          | See Note 1           |
| Routine / Partial Inspection | 2                     | No                  | 0                    |
| Sanitary Sewage Overflow     | 19                    | Yes                 | 19                   |

Note 1. No violations resulted from a follow-up inspection of 4/22/2020. The final disposition of a 02/26/2025 follow up inspection is pending.

The majority of the inspections were triggered as a result of sanitary sewage overflows (SSOS) occurrences. Per Part B I.H of the NPDES Permit, SSOs are not authorized. The permittee shall immediately report any SSO to DEP in accordance with Part A III.C.4 of the permit.

### **3.3.4 Non-Compliance- Enforcement Actions**

There have been 24 violations beginning December 1, 2019, through October 10, 2025. Several operations, maintenance and sampling requirement violations were noted. Recommendations were made to address them. There are no open Clean Water violations currently.

Beginning December 1, 2019, through October 10, 2025, there was one enforcement action. A Notice of Violation was issued on February 5, 2025, based on the following findings.

1. The standard operating procedures (“SOP”) for the WWTP contained outdated information. In addition, the SOP did not contain the required details, which outlined the actions necessary to make process control decisions: and
2. Complete records were not available for each measurement or sampling event. There were no records logging the composite sampler use, calibration results, the individual collecting and analyzing samples, or process controls made.

This Notice of Violation was closed on May 2, 2025. There are no Clean Water open enforcement actions at this time.

### **3.4 Summary of Biosolids Disposal**

According to information provided in the application, the facility did not receive additional sludge from other sources during the permit period. No sludge has been removed from lagoons during the permit period. Additionally, the applicant reports 0 Dry Tons of sludge production for the facility for the previous year.

**4.0 Development of Effluent Limitations**

|   |                                       |
|---|---------------------------------------|
| <b>Outfall No.</b> <u>001</u>                         | <b>Design Flow (MGD)</b> <u>0.5</u>   |
| <b>Latitude</b> <u>41° 43' 53.00"</u>                 | <b>Longitude</b> <u>-78° 39' 1.00</u> |
| <b>Wastewater Description:</b> <u>Sewage Effluent</u> |                                       |

**4.1 Technology-Based Limitations**

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

| Pollutant                    | Limit (mg/l)    | SBC             | Federal Regulation | State Regulation |
|------------------------------|-----------------|-----------------|--------------------|------------------|
| CBOD <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)     |
| Total Nitrogen               | Report          | Average Monthly | -                  | 92a.61           |
| Total Phosphorous            | Report          | Average Monthly | -                  | 92a.61           |
| E. Coli                      | Report          | IMAX            | -                  | 92a.61           |

**4.2 Mass-Based Limits**

The federal regulation at 40 CFR 122.45(f) requires that effluent limits be expressed in terms of mass, if possible. The regulation at 40 CFR 122.45(b) requires that effluent limitations for POTWs be calculated based on the design flow of the facility. The mass-based limits are expressed in pounds per day and are calculated as follows: Mass based limit (lb/day) = concentration limit (mg/L) × design flow (mgd) × 8.34.

**4.3 Water Quality-Based Limitations**

**4.3.1 WQM 7.0 Stream Model**

WQM 7.0 is a water quality model DEP utilizes to establish appropriate effluent limits for CBOD<sub>5</sub>, NH<sub>3</sub>-N and DO in permits. The model simulates mixing and degradation of NH<sub>3</sub>-N in the stream and compares calculated instream NH<sub>3</sub>-N concentrations to NH<sub>3</sub>-N water quality criteria and simulates mixing and consumption of D.O. in the stream due to the degradation of CBOD<sub>5</sub> and NH<sub>3</sub>-N and compares calculated instream D.O. concentrations to D.O. water quality criteria and recommends effluent limits

**4.3.2 Stream and Waste Flows**

- Streamflow: Tributary 56711 to Kinzua Creek @ first perennial point:
  - Drainage Area: 0.56 sq. mi. (USGS StreamStats)
  - Yieldrate: 0.057 cfsm (default)
  - % of stream allocated: 100% Basis: No nearby discharges
  - Q<sub>7-10</sub>: 0.032 cfs

2. Wasteflow: Outfall 001

Maximum discharge: 0.5 MGD = 0.77 cfs

Runoff flow period: 24 hours Basis: Runoff flow for a Municipal STP (lagoons)

There is less than 3 parts stream flow (Q7-10) to 1 part effluent (design flow) due to the receiving stream being dry/intermittent. However, since this is an existing discharge, the more stringent treatment requirements cannot be achieved, and the receiving stream is not impaired by the discharge, the standards in DEP guidance (391-2000-014) will not be applied. Flow will be required to be monitored as authorized under Chapter 92a.61, and as recommended in the SOP.

**Note:**

A Point of First Use survey was conducted by DEP biologist Josh Grassi to establish the correct point of where the discharge meets protected waters. "Point of First Use" is defined as the first downstream point where a stream is capable of existing or designated uses. The survey found that this point was located on Tributary 56711 to Kinzua Creek rather than Kinzua Creek itself. This changed water-quality modeling parameters such as drainage area and Q<sub>7-10</sub> flow. WQM, TMS, and the TRC Spreadsheet reflect these changes.

**4.3.3 WQM and TMS Models**

The following data were used in the WQM and TMS models for water quality analysis of the stream:

**Discharge Inputs**

|                              |                    |
|------------------------------|--------------------|
| <b>Discharge pH</b>          | 7.1 (DMR median)   |
| <b>Discharge Temperature</b> | 25 ° C (Default)   |
| <b>Discharge Hardness</b>    | 100 mg/l (Default) |

**Stream Inputs**

|                    |                        |       |
|--------------------|------------------------|-------|
| <b>Outfall 001</b> | River Mile Index (RMI) | 0.75  |
|                    | Elevation (ft)         | 1925  |
|                    | Drainage Area          | 0.56  |
|                    | Yield                  | 0.057 |
|                    | Q7-10 Flow             | 0.032 |
| <b>Endpoint</b>    | River Mile Index (RMI) | 0     |
|                    | Elevation (ft)         | 1675  |
|                    | Drainage Area          | 0.85  |
|                    | Yield                  | 0.058 |
|                    | Q7-10 Flow             | 0.049 |

**WQM 7 Results**

| Parameter | Limit (mg/l) | SBC             | Model           |
|-----------|--------------|-----------------|-----------------|
| CBOD5     | 25           | Average Monthly | WQM 7           |
|           | 50           | IMAX            |                 |
| NH3 - N   | 1.4          | Average Monthly |                 |
|           | 2.8          | IMAX            |                 |
| DO        | 6.0          | Inst. Minimum   |                 |
| TRC       | 0.015        | Average Monthly |                 |
|           | 0.048        | IMX             | TRC Spreadsheet |

#### **4.3.4 CBOD<sub>5</sub>**

The attached results of the WQM 7.0 stream model (attachment A) indicate that a monthly average limit (AML) of 25 mg/L CBOD<sub>5</sub> for summer months is required to protect the water quality of the stream. The recommended limits are consistent with the existing permit limits, and the facility currently meets these limits. Mass limits are calculated for AMLs and AWLs following the formula listed in section 4.2 above.

#### **4.3.5 NH<sub>3</sub>-N**

The attached results of the WQM 7.0 stream model (Attachment A) are displayed above in the "WQM 7 Results" Table. As per the Department's Permit Writer's Manual rounding guidelines for conventional pollutants between 1.0 and 10.0 shall be rounded down to the nearest 0.5. Therefore, an average monthly limit (AML) of 1.0 mg/l and an IMAX limit of 2.5 mg/l are imposed in the permit. A seasonal multiplier of 3 is applied to find a winter AML of 3.0 mg/L and an IMAX of 7.5 mg/L. These limits are slightly more stringent than the existing limits, and DMR reports indicate the facility currently cannot meet the new limits consistently, therefore, a 3-year compliance schedule has been implemented into the permit. Associated mass limits are calculated following the formula listed in section 4.2 above.

#### **4.3.6 Total Suspended Solids (TSS):**

There is no water quality criteria for TSS. The existing limit of 30 mg/l AML based on the minimum level of effluent quality attainable by secondary treatment as defined in 40 CFR 133.102b(1) and 25 PA § 92a.47(a)(1) and an AWL of 45mg/L per 40CFR 133.102(b)(2) and 25 PA § 92a.47(a)(2) with their associated mass limit will remain in the permit with the existing sampling frequency of 1/week.

#### **4.3.7 Toxics**

A reasonable potential (RP) analysis was done using DEP's Toxics Management Spreadsheet (TMS) (Version 1.4) for Total Copper, Total Lead and Total Zinc using the sampling results provided in the application, and additional data provided by the applicant in November 2025. TMS modeling (Attachment B) recommended limits for Total Copper and monitoring for Total Lead. An average monthly limit (AML) of 0.02 mg/l and an instantaneous maximum limit (IMAX) of 0.051 mg/l for Total Copper, and monitoring for Total Lead has been imposed. According to the additional testing data, the permittee is capable of meeting these new Total Copper limits, therefore, a compliance schedule is not necessary.

The recommended limits follow the logic presented in DEPs SOP, to establish limits in the permit where the maximum reported concentration exceeds 50% of the WQBEL, or for non-conservative pollutants to establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL, or to establish monitoring requirements for conservative pollutants where the maximum reported concentration is between 10% - 50% of the WQBEL. The monitoring frequency and sample type is consistent with Table 6-3 and Table 6-4 of the Permit's Writer's Manual (*Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits 362-0400-001*).

#### **4.3.8 Total Residual Chlorine**

The attached TRC calculation results utilize the equations and calculations as presented in the Department's May 1, 2003, Implementation Guidance for Total Residual Chlorine (TRC) (ID No. 391-2000-015) for developing chlorine limitations. The results presented in Attachment C indicate a limit of 0.015 mg/l monthly average and instantaneous maximum limit of 0.048 mg/l be imposed. A 3-year compliance schedule has been implemented into the permit since the permittee does not currently demonstrate their ability to comply with these new limits.

The calculated limits for Total Residual Chlorine (TRC) as specified in Part A of this permit are the limits necessary to comply with state water quality standards. These effluent limits are lower than the Quantitation Limit (QL), as defined in 25 Pa. Code § 252.1, of the most sensitive existing EPA-approved (40 CFR Part 136) test method or other DEP-approved method. A Part C condition has been added into the permit where if the sensitivity of the specified method improves or a more sensitive test method becomes available, DEP may modify the permit to require use of the more sensitive method. For the purpose of compliance, a statistical value reported on the DMR that is less than the QL will be considered to be in compliance.

#### **4.3.9 Fecal Coliform and E. Coli**

The existing Fecal Coliform limit is consistent with the technology limits recommended in 92a.47(a)(4) and (a)(5) and will remain in the permit. In March of 2021, EPA approved DEP's Triennial Review of Water Quality Standards, which included a new swimming season criterion for E. coli. As a result, DEP is including monitoring requirements for E. Coli in new and renewed sewage permits above 2000gpd. Monitoring frequency is based on annual average flow as follows: 1/month for design flows  $\geq 1$  MGD, 1/quarter for design flows  $\geq 0.05$  and  $< 1$  MGD and 1/year for design flows of 0.002 and  $< 0.05$  MGD. The discharge of 0.5 MGD requires 1/quarter monitoring as included in the permit.

#### **4.3.10 Best Professional Judgment (BPJ) Limitations**

DEP's SOP no. BPNPSM-PMT-033 (Establishing Effluent Limitations for Individual Sewage Permits) recommends monitoring requirements for Total Phosphorus and Total Nitrogen for all sewage facilities. Therefore, the existing annual monitoring for Total Phosphorus and Total Nitrogen will be continued in the permit.

#### **4.3.11 Influent BOD and TSS Monitoring**

The existing influent BOD5 and TSS monitoring at the same frequency as is done for effluent will remain in order to implement Chapter 94.12 and assess percent removal requirements.

#### **4.3.12 Pretreatment Requirements**

The design annual average flow of the treatment plant is 0.5 MGD and the facility receives flow from no significant Industrial users. There is no approved pretreatment program for the facility, however, the permit contains standard conditions requiring the permittee to monitor and control industrial users if applicable.

Anti-backsliding

**Current Permit Effluent Limitations for Outfall 001**

| Parameter  | Effluent Limitations                |                     |                       |                    |                   |                     | Monitoring Requirements                            |                            |
|--|-------------------------------------|---------------------|-----------------------|--------------------|-------------------|---------------------|--|----------------------------|
|  | Mass Units (lbs/day) <sup>(1)</sup> |                     | Concentrations (mg/L) |                    |                   |                     | Minimum <sup>(2)</sup><br>Measurement<br>Frequency | Required<br>Sample<br>Type |
|  | Average<br>Monthly                  | Weekly<br>Average   | Minimum               | Average<br>Monthly | Weekly<br>Average | Instant.<br>Maximum |  |                            |
| Flow (MGD)   | Report                              | Report<br>Daily Max | XXX                   | XXX                | XXX               | XXX                 | Continuous   | Measured                   |
| pH (S.U.)  | XXX                                 | XXX                 | 6.0<br>Inst Min       | XXX                | XXX               | 9.0                 | 1/day  | Grab                       |
| Dissolved Oxygen   | XXX                                 | XXX                 | 6.0<br>Inst Min       | XXX                | XXX               | XXX                 | 1/day  | Grab                       |
| Total Residual Chlorine (TRC)                              | XXX                                 | XXX                 | XXX                   | 0.5                | XXX               | 1.6                 | 1/day  | Grab                       |
| Carbonaceous Biochemical<br>Oxygen Demand (CBOD5)          | 104.0                               | 167.0               | XXX                   | 25.0               | 40.0              | 50                  | 1/week   | 24-Hr<br>Composite         |
| Biochemical Oxygen Demand<br>(BOD5)<br>Raw Sewage Influent | XXX                                 | XXX                 | XXX                   | Report             | XXX               | XXX                 | 1/week   | 24-Hr<br>Composite         |
| Total Suspended Solids                                     | 125.0                               | 188.0               | XXX                   | 30.0               | 45.0              | 60                  | 1/week   | 24-Hr<br>Composite         |
| Total Suspended Solids<br>Raw Sewage Influent              | XXX                                 | XXX                 | XXX                   | Report             | XXX               | XXX                 | 1/week   | 24-Hr<br>Composite         |
| Fecal Coliform (No./100 ml)<br>Oct 1 - Apr 30              | XXX                                 | XXX                 | XXX                   | 2000<br>Geo Mean   | XXX               | 10000               | 1/week   | Grab                       |
| Fecal Coliform (No./100 ml)<br>May 1 - Sep 30              | XXX                                 | XXX                 | XXX                   | 200<br>Geo Mean    | XXX               | 1000                | 1/week   | Grab                       |
| Total Nitrogen   | XXX                                 | XXX                 | XXX                   | Report             | XXX               | XXX                 | 1/week   | 24-Hr<br>Composite         |
| Ammonia-Nitrogen<br>Nov 1 - Apr 30                         | 18.8                                | XXX                 | XXX                   | 4.5                | XXX               | 9                   | 1/week   | 24-Hr<br>Composite         |
| Ammonia-Nitrogen<br>May 1 - Oct 31                         | 6.3                                 | XXX                 | XXX                   | 1.5                | XXX               | 3                   | 1/week   | 24-Hr<br>Composite         |
| Total Phosphorus   | XXX                                 | XXX                 | XXX                   | Report             | XXX               | XXX                 | 1/week   | 24-Hr<br>Composite         |

Comments: More stringent limits are proposed for the highlighted items above. All other permit limitations, monitoring requirements, and conditions will be retained in the next permit with the addition of Total Copper limits, Total Lead monitoring, and E. Coli monitoring.

**Proposed Effluent Limitations and Monitoring Requirements**

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the “NPDES Permit Writer’s Manual” (362-0400-001), SOPs and/or BPJ.

**Outfall 001, Effective Period: Permit Effective Date through Three Years After Permit Effective Date**

| Parameter   | Effluent Limitations                |                     |                       |                    |                   |                     | Monitoring Requirements                            |                            |
|---|-------------------------------------|---------------------|-----------------------|--------------------|-------------------|---------------------|--|----------------------------|
|   | Mass Units (lbs/day) <sup>(1)</sup> |                     | Concentrations (mg/L) |                    |                   |                     | Minimum <sup>(2)</sup><br>Measurement<br>Frequency | Required<br>Sample<br>Type |
|   | Average<br>Monthly                  | Weekly<br>Average   | Minimum               | Average<br>Monthly | Weekly<br>Average | Instant.<br>Maximum |  |                            |
| Flow (MGD)  | Report                              | Report<br>Daily Max | XXX                   | XXX                | XXX               | XXX                 | Continuous   | Measured                   |
| pH (S.U.)   | XXX                                 | XXX                 | 6.0<br>Inst Min       | XXX                | XXX               | 9.0                 | 1/day  | Grab                       |
| Dissolved Oxygen                                  | XXX                                 | XXX                 | 6.0<br>Inst Min       | XXX                | XXX               | XXX                 | 1/day  | Grab                       |
| Total Residual Chlorine (TRC)                     | XXX                                 | XXX                 | XXX                   | 0.5                | XXX               | 1.6                 | 1/day  | Grab                       |
| Carbonaceous Biochemical<br>Oxygen Demand (CBOD5) | 104.0                               | 167.0               | XXX                   | 25.0               | 40.0              | 50                  | 1/week   | 24-Hr<br>Composite         |
| Total Suspended Solids                            | 125.0                               | 188.0               | XXX                   | 30.0               | 45.0              | 60                  | 1/week   | 24-Hr<br>Composite         |
| Fecal Coliform (No./100 ml)<br>Oct 1 - Apr 30     | XXX                                 | XXX                 | XXX                   | 2000<br>Geo Mean   | XXX               | 10000               | 1/week   | Grab                       |
| Fecal Coliform (No./100 ml)<br>May 1 - Sep 30     | XXX                                 | XXX                 | XXX                   | 200<br>Geo Mean    | XXX               | 1000                | 1/week   | Grab                       |
| Total Nitrogen                                    | XXX                                 | XXX                 | XXX                   | Report             | XXX               | XXX                 | 1/week   | 24-Hr<br>Composite         |
| Ammonia-Nitrogen<br>Nov 1 - Apr 30                | 18.8                                | XXX                 | XXX                   | 4.5                | XXX               | 9                   | 1/week   | 24-Hr<br>Composite         |
| Ammonia-Nitrogen<br>May 1 - Oct 31                | 6.3                                 | XXX                 | XXX                   | 1.5                | XXX               | 3                   | 1/week   | 24-Hr<br>Composite         |
| Total Phosphorus                                  | XXX                                 | XXX                 | XXX                   | Report             | XXX               | XXX                 | 1/week   | 24-Hr<br>Composite         |
| Copper, Total                                     | XXX                                 | XXX                 | XXX                   | 0.02               | XXX               | 0.051               | 1/week   | 24-Hr<br>Composite         |

Outfall 001, Continued (from Permit Effective Date through Three Years After Permit Effective Date)

| Parameter   | Effluent Limitations                |                   |                       |                    |                   |                     | Monitoring Requirements                            |                            |
|---|-------------------------------------|-------------------|-----------------------|--------------------|-------------------|---------------------|--|----------------------------|
|   | Mass Units (lbs/day) <sup>(1)</sup> |                   | Concentrations (mg/L) |                    |                   |                     | Minimum <sup>(2)</sup><br>Measurement<br>Frequency | Required<br>Sample<br>Type |
|   | Average<br>Monthly                  | Weekly<br>Average | Minimum               | Average<br>Monthly | Weekly<br>Average | Instant.<br>Maximum |  |                            |
| Biochemical Oxygen Demand (BOD5)<br>Raw Sewage Influent | XXX                                 | XXX               | XXX                   | Report             | XXX               | XXX                 | 1/week   | 24-Hr<br>Composite         |
| Total Suspended Solids<br>Raw Sewage Influent           | XXX                                 | XXX               | XXX                   | Report             | XXX               | XXX                 | 1/week   | 24-Hr<br>Composite         |
| E. Coli (No./100 ml)                                    | XXX                                 | XXX               | XXX                   | XXX                | XXX               | Report              | 1/quarter  | Grab                       |
| Lead, Total   | XXX                                 | XXX               | XXX                   | Report             | XXX               | XXX                 | 1/week   | 24-Hr<br>Composite         |

Compliance Sampling Location: Outfall 001, after disinfection

**Proposed Effluent Limitations and Monitoring Requirements**

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

**Outfall 001, Effective Period: Three Years After 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                     | Weekly Average   | 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<br>Inst Min       | XXX              | XXX            | 9.0              | 1/day  | Grab                 |
| Dissolved Oxygen                               | XXX                                 | XXX              | 6.0<br>Inst Min       | XXX              | XXX            | XXX              | 1/day  | Grab                 |
| Total Residual Chlorine (TRC)                  | XXX                                 | XXX              | XXX                   | 0.015            | XXX            | 0.048            | 1/day  | Grab                 |
| Carbonaceous Biochemical Oxygen Demand (CBOD5) | 104.0                               | 167.0            | XXX                   | 25.0             | 40.0           | 50               | 1/week                                       | 24-Hr Composite      |
| Total Suspended Solids                         | 125.0                               | 188.0            | XXX                   | 30.0             | 45.0           | 60               | 1/week                                       | 24-Hr Composite      |
| Fecal Coliform (No./100 ml)<br>Oct 1 - Apr 30  | XXX                                 | XXX              | XXX                   | 2000<br>Geo Mean | XXX            | 10000            | 1/week                                       | Grab                 |
| Fecal Coliform (No./100 ml)<br>May 1 - Sep 30  | XXX                                 | XXX              | XXX                   | 200<br>Geo Mean  | XXX            | 1000             | 1/week                                       | Grab                 |
| Total Nitrogen                                 | XXX                                 | XXX              | XXX                   | Report           | XXX            | XXX              | 1/week                                       | 24-Hr Composite      |
| Ammonia-Nitrogen<br>Nov 1 - Apr 30             | 12.5                                | XXX              | XXX                   | 3.0              | XXX            | 7.5              | 1/week                                       | 24-Hr Composite      |
| Ammonia-Nitrogen<br>May 1 - Oct 31             | 4.1                                 | XXX              | XXX                   | 1.0              | XXX            | 2.5              | 1/week                                       | 24-Hr Composite      |
| Total Phosphorus                               | XXX                                 | XXX              | XXX                   | Report           | XXX            | XXX              | 1/week                                       | 24-Hr Composite      |
| Copper, Total                                  | XXX                                 | XXX              | XXX                   | 0.02             | XXX            | 0.051            | 1/week                                       | 24-Hr Composite      |

Outfall 001, Continued (from Three Years After 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><br>Measurement<br>Frequency | Required<br>Sample<br>Type |
|   | Average<br>Monthly                  | Weekly<br>Average | Minimum               | Average<br>Monthly | Weekly<br>Average | Instant.<br>Maximum |  |                            |
| Biochemical Oxygen Demand (BOD5)<br>Raw Sewage Influent | XXX                                 | XXX               | XXX                   | Report             | XXX               | XXX                 | 1/week   | 24-Hr<br>Composite         |
| Total Suspended Solids<br>Raw Sewage Influent           | XXX                                 | XXX               | XXX                   | Report             | XXX               | XXX                 | 1/week   | 24-Hr<br>Composite         |
| E. Coli (No./100 ml)                                    | XXX                                 | XXX               | XXX                   | XXX                | XXX               | Report              | 1/quarter  | Grab                       |
| Lead, Total   | XXX                                 | XXX               | XXX                   | Report             | XXX               | XXX                 | 1/week   | 24-Hr<br>Composite         |

Compliance Sampling Location: Outfall 001, after disinfection

**The existing permit and the proposed permit differ as follows:**

- E. Coli monitoring has been included. Consistent with the SOP Establishing Effluent Limitations for Individual Sewage Permits and due to the regulatory change in the State Water Quality Standards, and consistent with the EPA triennial review, E. Coli monitoring has been included. The statutory basis for this requirement is found at PA Code Chapter 92a.61.
- New limits for Total Copper have been included per DEP's Toxic Management Spreadsheet
- Monitoring for Total Lead has been included per DEP's Toxic Management Spreadsheet
- More stringent limits for NH3-N have been included per DEP's WQM 7 model
- More stringent limits for TRC have been included per DEP's TRC Spreadsheet

| Tools and References Used to Develop Permit |  |
|---|--|
| <input checked="" type="checkbox"/>         | WQM for Windows Model (see Attachment A)   |
| <input checked="" type="checkbox"/>         | Toxics Management Spreadsheet (see Attachment B)   |
| <input checked="" type="checkbox"/>         | TRC Model Spreadsheet (see Attachment C)   |
| <input type="checkbox"/>                    | Temperature Model Spreadsheet (see Attachment)   |
| <input checked="" 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, 386-0400-001, 10/97.   |
| <input type="checkbox"/>                    | Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.  |
| <input type="checkbox"/>                    | Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.  |
| <input type="checkbox"/>                    | Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.   |
| <input type="checkbox"/>                    | Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.  |
| <input type="checkbox"/>                    | Pennsylvania CSO Policy, 386-2000-002, 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, 386-2000-008, 4/97.   |
| <input checked="" type="checkbox"/>         | Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.  |
| <input type="checkbox"/>                    | Implementation Guidance Design Conditions, 386-2000-007, 9/97.   |
| <input checked="" type="checkbox"/>         | Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.  |
| <input type="checkbox"/>                    | Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.   |
| <input type="checkbox"/>                    | Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.   |
| <input type="checkbox"/>                    | Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.  |
| <input checked="" type="checkbox"/>         | Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.  |
| <input type="checkbox"/>                    | Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.   |
| <input checked="" type="checkbox"/>         | Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.   |
| <input type="checkbox"/>                    | Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.  |
| <input checked="" type="checkbox"/>         | Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 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, 386-2000-020, 10/97.       |
| <input type="checkbox"/>                    | Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 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, 386-2000-010, 3/1999. |
| <input type="checkbox"/>                    | Design Stream Flows, 386-2000-003, 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, 386-2000-006, 10/98.                                     |
| <input type="checkbox"/>                    | Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.   |
| <input checked="" type="checkbox"/>         | Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.   |
| <input checked="" type="checkbox"/>         | SOP: Establishing effluent limitation for individual sewage permits.   |
| <input type="checkbox"/>                    | Other:   |

Attachment A - WQM for Windows Model Results

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                            |
|-----------|-------------|----------------------------|-------|----------------|-----------------------|---------------|----------------------|-------------------------------------|
| 16B       | 56711       | Trib 56711 to Kinzua Creek | 0.750 | 1925.00        | 0.56                  | 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        | 0.057  | 0.03      | 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 |
|-----------|---------------|--------------------------|---------------------------|------------------------|----------------|----------------|---------|
| Mt Jewett | PA0023451     | 0.5000                   | 0.5000                    | 0.5000                 | 0.000          | 25.00          | 7.10    |

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 | 6.00             | 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                            |
|-----------|-------------|----------------------------|-------|----------------|-----------------------|---------------|----------------------|-------------------------------------|
| 16B       | 56711       | Trib 56711 to Kinzua Creek | 0.000 | 1675.00        | 0.85                  | 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        | 0.058  | 0.05      | 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               |

**WQM 7.0 Hydrodynamic Outputs**

| SWP Basin          | Stream Code | Stream Name                |                 |                    |             |       |       |           |          |                 |               |             |
|--------------------|-------------|----------------------------|-----------------|--------------------|-------------|-------|-------|-----------|----------|-----------------|---------------|-------------|
| 16B                | 56711       | Trib 56711 to Kinzua Creek |                 |                    |             |       |       |           |          |                 |               |             |
| RMI                | Stream Flow | PWS With                   | Net Stream Flow | Disc Analysis Flow | Reach Slope | Depth | Width | W/D Ratio | Velocity | Reach Trav Time | Analysis Temp | Analysis pH |
|                    | (cfs)       | (cfs)                      | (cfs)           | (cfs)              | (ft/ft)     | (ft)  | (ft)  |           | (fps)    | (days)          | (°C)          |             |
| <b>Q7-10 Flow</b>  |             |                            |                 |                    |             |       |       |           |          |                 |               |             |
| 0.750              | 0.03        | 0.00                       | 0.03            | .7735              | 0.06313     | .555  | 5.56  | 10        | 0.26     | 0.176           | 24.80         | 7.10        |
| <b>Q1-10 Flow</b>  |             |                            |                 |                    |             |       |       |           |          |                 |               |             |
| 0.750              | 0.02        | 0.00                       | 0.02            | .7735              | 0.06313     | NA    | NA    | NA        | 0.26     | 0.177           | 24.87         | 7.10        |
| <b>Q30-10 Flow</b> |             |                            |                 |                    |             |       |       |           |          |                 |               |             |
| 0.750              | 0.04        | 0.00                       | 0.04            | .7735              | 0.06313     | NA    | NA    | NA        | 0.26     | 0.174           | 24.73         | 7.09        |

## WQM 7.0 Modeling Specifications

|                    |        |                                     |                                     |
|--------------------|--------|-------------------------------------|-------------------------------------|
| Parameters         | Both   | Use Inputted Q1-10 and Q30-10 Flows | <input checked="" 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 | 1.36   | Temperature Adjust Kr               | <input checked="" type="checkbox"/> |
| D.O. Saturation    | 90.00% | Use Balanced Technology             | <input checked="" type="checkbox"/> |
| D.O. Goal          | 5      |                                     |                                     |

## WQM 7.0 Wasteload Allocations

|                  |                    |                            |
|------------------|--------------------|----------------------------|
| <u>SWP Basin</u> | <u>Stream Code</u> | <u>Stream Name</u>         |
| 16B              | 56711              | Trib 56711 to Kinzua Creek |

### NH3-N Acute Allocations

| RMI   | Discharge Name | Baseline<br>Criterion<br>(mg/L) | Baseline<br>WLA<br>(mg/L) | Multiple<br>Criterion<br>(mg/L) | Multiple<br>WLA<br>(mg/L) | Critical<br>Reach | Percent<br>Reduction |
|-------|----------------|---------------------------------|---------------------------|---------------------------------|---------------------------|-------------------|----------------------|
| 0.750 | Mt Jewett      | 10.22                           | 10.49                     | 10.22                           | 10.49                     | 0                 | 0                    |

### NH3-N Chronic Allocations

| RMI   | Discharge Name | Baseline<br>Criterion<br>(mg/L) | Baseline<br>WLA<br>(mg/L) | Multiple<br>Criterion<br>(mg/L) | Multiple<br>WLA<br>(mg/L) | Critical<br>Reach | Percent<br>Reduction |
|-------|----------------|---------------------------------|---------------------------|---------------------------------|---------------------------|-------------------|----------------------|
| 0.750 | Mt Jewett      | 1.34                            | 1.41                      | 1.34                            | 1.41                      | 0                 | 0                    |

### Dissolved Oxygen Allocations

| RMI  | Discharge Name | <u>CBOD5</u>       |                    | <u>NH3-N</u>       |                    | <u>Dissolved Oxygen</u> |                    | Critical<br>Reach | Percent<br>Reduction |
|------|----------------|--------------------|--------------------|--------------------|--------------------|-------------------------|--------------------|-------------------|----------------------|
|      |                | Baseline<br>(mg/L) | Multiple<br>(mg/L) | Baseline<br>(mg/L) | Multiple<br>(mg/L) | Baseline<br>(mg/L)      | Multiple<br>(mg/L) |                   |                      |
| 0.75 | Mt Jewett      | 25                 | 25                 | 1.41               | 1.41               | 6                       | 6                  | 0                 | 0                    |

### WQM 7.0 D.O. Simulation

| <u>SWP Basin</u>                | <u>Stream Code</u>                | <u>Stream Name</u>               |                     |                             |  |
|---------------------------------|-----------------------------------|----------------------------------|---------------------|-----------------------------|--|
| 16B                             | 56711                             | Trib 56711 to Kinzua Creek       |                     |                             |  |
| <hr/>                           |                                   |                                  |                     |                             |  |
| <u>RMI</u>                      | <u>Total Discharge Flow (mgd)</u> | <u>Analysis Temperature (°C)</u> |                     | <u>Analysis pH</u>          |  |
| 0.750                           | 0.500                             | 24.801                           |                     | 7.096                       |  |
| <u>Reach Width (ft)</u>         | <u>Reach Depth (ft)</u>           | <u>Reach WDRatio</u>             |                     | <u>Reach Velocity (fps)</u> |  |
| 5.557                           | 0.555                             | 10.004                           |                     | 0.261                       |  |
| <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>    |  |
| 24.09                           | 1.494                             | 1.36                             |                     | 1.013                       |  |
| <u>Reach DO (mg/L)</u>          | <u>Reach Kr (1/days)</u>          | <u>Kr Equation</u>               |                     | <u>Reach DO Goal (mg/L)</u> |  |
| 6.089                           | 29.341                            | Owens                            |                     | 5                           |  |
| <u>Reach Travel Time (days)</u> | <b>Subreach Results</b>           |                                  |                     |                             |  |
| 0.176                           | <u>TravTime (days)</u>            | <u>CBOD5 (mg/L)</u>              | <u>NH3-N (mg/L)</u> | <u>D.O. (mg/L)</u>          |  |
|                                 | 0.018                             | 23.31                            | 1.33                | 6.03                        |  |
|                                 | 0.035                             | 22.56                            | 1.31                | 6.02                        |  |
|                                 | 0.053                             | 21.83                            | 1.29                | 6.05                        |  |
|                                 | 0.070                             | 21.13                            | 1.26                | 6.09                        |  |
|                                 | 0.088                             | 20.45                            | 1.24                | 6.15                        |  |
|                                 | 0.105                             | 19.79                            | 1.22                | 6.21                        |  |
|                                 | 0.123                             | 19.16                            | 1.20                | 6.27                        |  |
|                                 | 0.140                             | 18.54                            | 1.18                | 6.33                        |  |
|                                 | 0.158                             | 17.94                            | 1.16                | 6.39                        |  |
|                                 | 0.176                             | 17.37                            | 1.14                | 6.46                        |  |

### WQM 7.0 Effluent Limits

| <u>SWP Basin</u> | <u>Stream Code</u> | <u>Stream Name</u>         |                 |                  |                               |                           |                           |
|------------------|--------------------|----------------------------|-----------------|------------------|-------------------------------|---------------------------|---------------------------|
| 16B              | 56711              | Trib 56711 to Kinzua Creek |                 |                  |                               |                           |                           |
| <hr/>            |                    |                            |                 |                  |                               |                           |                           |
| 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) |
| 0.750            | Mt Jewett          | PA0023451                  | 0.500           | CBOD5            | 25                            |                           |                           |
|                  |                    |                            |                 | NH3-N            | 1.41                          | 2.82                      |                           |
|                  |                    |                            |                 | Dissolved Oxygen |                               |                           | 6                         |

Attachment B – Toxics Management Spreadsheet

Discharge Information

Instructions Discharge Stream

Facility: Mt Jewett WWTP NPDES Permit No.: PA0023451 Outfall No.: 001

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

| Discharge Characteristics |                  |          |                            |     |     |     |                          |                |
|---------------------------|------------------|----------|----------------------------|-----|-----|-----|--------------------------|----------------|
| Design Flow (MGD)*        | Hardness (mg/l)* | pH (SU)* | Partial Mix Factors (PMFs) |     |     |     | Complete Mix Times (min) |                |
|                           |                  |          | AFC                        | CFC | THH | CRL | Q <sub>7-10</sub>        | Q <sub>h</sub> |
| 0.5                       | 242              | 8.04     |                            |     |     |     |                          |                |

| Discharge Pollutant | Units                           | Max Discharge Conc | 0 if left blank |             | 0.5 if left blank |           | 0 if left blank |            |     | 1 if left blank |             |  |
|---------------------|---------------------------------|--------------------|-----------------|-------------|-------------------|-----------|-----------------|------------|-----|-----------------|-------------|--|
|                     |                                 |                    | Trib Conc       | Stream Conc | Daily CV          | Hourly CV | Stream CV       | Fate Coeff | FOS | Criteria Mod    | Chem Transl |  |
| Group 1             | Total Dissolved Solids (PWS)    | mg/L               | 416             |             |                   |           |                 |            |     |                 |             |  |
|                     | Chloride (PWS)                  | mg/L               | 131             |             |                   |           |                 |            |     |                 |             |  |
|                     | Bromide                         | mg/L               | < 0.1           |             |                   |           |                 |            |     |                 |             |  |
|                     | Sulfate (PWS)                   | mg/L               | 8.61            |             |                   |           |                 |            |     |                 |             |  |
|                     | Fluoride (PWS)                  | mg/L               | <               |             |                   |           |                 |            |     |                 |             |  |
| Group 2             | Total Aluminum                  | µg/L               |                 |             |                   |           |                 |            |     |                 |             |  |
|                     | Total Antimony                  | µg/L               |                 |             |                   |           |                 |            |     |                 |             |  |
|                     | Total Arsenic                   | µg/L               |                 |             |                   |           |                 |            |     |                 |             |  |
|                     | Total Barium                    | µg/L               |                 |             |                   |           |                 |            |     |                 |             |  |
|                     | Total Beryllium                 | µg/L               |                 |             |                   |           |                 |            |     |                 |             |  |
|                     | Total Boron                     | µg/L               |                 |             |                   |           |                 |            |     |                 |             |  |
|                     | Total Cadmium                   | µg/L               |                 |             |                   |           |                 |            |     |                 |             |  |
|                     | Total Chromium (III)            | µg/L               |                 |             |                   |           |                 |            |     |                 |             |  |
|                     | Hexavalent Chromium             | µg/L               |                 |             |                   |           |                 |            |     |                 |             |  |
|                     | Total Cobalt                    | µg/L               |                 |             |                   |           |                 |            |     |                 |             |  |
|                     | Total Copper                    | mg/L               | 0.025           |             |                   |           |                 |            |     |                 |             |  |
|                     | Free Cyanide                    | µg/L               |                 |             |                   |           |                 |            |     |                 |             |  |
|                     | Total Cyanide                   | µg/L               |                 |             |                   |           |                 |            |     |                 |             |  |
|                     | Dissolved Iron                  | µg/L               |                 |             |                   |           |                 |            |     |                 |             |  |
|                     | Total Iron                      | µg/L               |                 |             |                   |           |                 |            |     |                 |             |  |
|                     | Total Lead                      | mg/L               | 0.002           |             |                   |           |                 |            |     |                 |             |  |
|                     | Total Manganese                 | µg/L               |                 |             |                   |           |                 |            |     |                 |             |  |
|                     | Total Mercury                   | µg/L               |                 |             |                   |           |                 |            |     |                 |             |  |
|                     | Total Nickel                    | µg/L               | <               |             |                   |           |                 |            |     |                 |             |  |
|                     | Total Phenols (Phenolics) (PWS) | µg/L               |                 |             |                   |           |                 |            |     |                 |             |  |
| Total Selenium      | µg/L                            |                    |                 |             |                   |           |                 |            |     |                 |             |  |
| Total Silver        | µg/L                            |                    |                 |             |                   |           |                 |            |     |                 |             |  |
| Total Thallium      | µg/L                            |                    |                 |             |                   |           |                 |            |     |                 |             |  |
| Total Zinc          | mg/L                            | < 0.01             |                 |             |                   |           |                 |            |     |                 |             |  |
| Total Molybdenum    | µg/L                            |                    |                 |             |                   |           |                 |            |     |                 |             |  |
| Acrolein            | µg/L                            | <                  |                 |             |                   |           |                 |            |     |                 |             |  |
| Acrylamide          | µg/L                            | <                  |                 |             |                   |           |                 |            |     |                 |             |  |
| Acrylonitrile       | µg/L                            | <                  |                 |             |                   |           |                 |            |     |                 |             |  |
| Benzene             | µg/L                            | <                  |                 |             |                   |           |                 |            |     |                 |             |  |
| Bromoform           | µg/L                            | <                  |                 |             |                   |           |                 |            |     |                 |             |  |

Stream / Surface Water Information

Mt Jewett WWTP, NPDES Permit No. PA0023451, Outfall 001

Instructions Discharge Stream

Receiving Surface Water Name: Trib 56711 to Kinzua Creek No. Reaches to Model: 1

- Statewide Criteria
- Great Lakes Criteria
- ORSANCO Criteria

| Location           | Stream Code* | RMI* | Elevation (ft)* | DA (mi <sup>2</sup> )* | Slope (ft/ft) | PWS Withdrawal (MGD) | Apply Fish Criteria* |
|--------------------|--------------|------|-----------------|------------------------|---------------|----------------------|----------------------|
| Point of Discharge | 056711       | 0.75 | 1925            | 0.56                   |               |                      | Yes                  |
| End of Reach 1     | 056711       | 0    | 1675            | 0.85                   |               |                      | Yes                  |

Q<sub>7-10</sub>

| Location           | RMI  | LFY (cfs/mi <sup>2</sup> )* | Flow (cfs) |           | W/D Ratio | Width (ft) | Depth (ft) | Velocity (fps) | Travel Time (days) | Tributary |    | Stream    |     | Analysis |    |
|--------------------|------|-----------------------------|------------|-----------|-----------|------------|------------|----------------|--------------------|-----------|----|-----------|-----|----------|----|
|                    |      |                             | Stream     | Tributary |           |            |            |                |                    | Hardness  | pH | Hardness* | pH* | Hardness | pH |
| Point of Discharge | 0.75 | 0.057                       |            |           |           |            |            |                |                    |           |    | 100       | 7   |          |    |
| End of Reach 1     | 0    | 0.058                       |            |           |           |            |            |                |                    |           |    |           |     |          |    |

Q<sub>h</sub>

| Location           | RMI  | LFY (cfs/mi <sup>2</sup> )* | Flow (cfs) |           | W/D Ratio | Width (ft) | Depth (ft) | Velocity (fps) | Travel Time (days) | Tributary |    | Stream   |    | Analysis |    |
|--------------------|------|-----------------------------|------------|-----------|-----------|------------|------------|----------------|--------------------|-----------|----|----------|----|----------|----|
|                    |      |                             | Stream     | Tributary |           |            |            |                |                    | Hardness  | pH | Hardness | pH | Hardness | pH |
| Point of Discharge | 0.75 |                             |            |           |           |            |            |                |                    |           |    |          |    |          |    |
| End of Reach 1     | 0    |                             |            |           |           |            |            |                |                    |           |    |          |    |          |    |

Model Results

Mt Jewett WWTP, NPDES Permit No. PA0023451, Outfall 001

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

All  Inputs  Results  Limits

Hydrodynamics

Wasteload Allocations

AFC      CCT (min): 0.001      PMF: 1      Analysis Hardness (mg/l): 236.37      Analysis pH: 7.90

| Pollutants                   | Stream Conc (µg/l) | Stream CV | Trib Conc (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) | Comments                         |
|------------------------------|--------------------|-----------|------------------|-----------|------------|---------------|------------|----------------------------------|
| Total Dissolved Solids (PWS) | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |                                  |
| Chloride (PWS)               | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |                                  |
| Sulfate (PWS)                | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |                                  |
| Total Copper                 | 0                  | 0         |                  | 0         | 30.225     | 31.5          | 32.8       | Chem Translator of 0.96 applied  |
| Total Lead                   | 0                  | 0         |                  | 0         | 162.468    | 244           | 254        | Chem Translator of 0.666 applied |
| Total Zinc                   | 0                  | 0         |                  | 0         | 242.887    | 248           | 259        | Chem Translator of 0.978 applied |

CFC      CCT (min): 0.001      PMF: 1      Analysis Hardness (mg/l): 236.37      Analysis pH: 7.90

| Pollutants                   | Stream Conc (µg/l) | Stream CV | Trib Conc (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) | Comments                         |
|------------------------------|--------------------|-----------|------------------|-----------|------------|---------------|------------|----------------------------------|
| Total Dissolved Solids (PWS) | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |                                  |
| Chloride (PWS)               | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |                                  |
| Sulfate (PWS)                | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |                                  |
| Total Copper                 | 0                  | 0         |                  | 0         | 18.878     | 19.5          | 20.3       | Chem Translator of 0.96 applied  |
| Total Lead                   | 0                  | 0         |                  | 0         | 6.331      | 9.51          | 9.9        | Chem Translator of 0.666 applied |
| Total Zinc                   | 0                  | 0         |                  | 0         | 244.873    | 248           | 259        | Chem Translator of 0.986 applied |

THH      CCT (min): 0.001      PMF: 1      Analysis Hardness (mg/l): N/A      Analysis pH: N/A

| Pollutants                   | Stream Conc (µg/l) | Stream CV | Trib Conc (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) | Comments |
|------------------------------|--------------------|-----------|------------------|-----------|------------|---------------|------------|----------|
| Total Dissolved Solids (PWS) | 0                  | 0         |                  | 0         | 500,000    | 500,000       | N/A        |          |
| Chloride (PWS)               | 0                  | 0         |                  | 0         | 250,000    | 250,000       | N/A        |          |
| Sulfate (PWS)                | 0                  | 0         |                  | 0         | 250,000    | 250,000       | N/A        |          |

Model Results

1/22/2026

Page

|              |   |   |  |   |     |     |     |  |
|--------------|---|---|--|---|-----|-----|-----|--|
| Total Copper | 0 | 0 |  | 0 | N/A | N/A | N/A |  |
| Total Lead   | 0 | 0 |  | 0 | N/A | N/A | N/A |  |
| Total Zinc   | 0 | 0 |  | 0 | N/A | N/A | N/A |  |

CRL      CCT (min): 0.033      PMF: 1      Analysis Hardness (mg/l): N/A      Analysis pH: N/A

| Pollutants                   | Stream Conc (µg/l) | Stream CV | Trib Conc (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) | Comments |
|------------------------------|--------------------|-----------|------------------|-----------|------------|---------------|------------|----------|
| Total Dissolved Solids (PWS) | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |          |
| Chloride (PWS)               | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |          |
| Sulfate (PWS)                | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |          |
| Total Copper                 | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |          |
| Total Lead                   | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |          |
| Total Zinc                   | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |          |

Recommended WQBELs & Monitoring Requirements

No. Samples/Month: 4

| Pollutants   | Mass Limits   |               | Concentration Limits |        |        |       | Governing WQBEL | WQBEL Basis | Comments                           |
|--------------|---------------|---------------|----------------------|--------|--------|-------|-----------------|-------------|------------------------------------|
|              | AML (lbs/day) | MDL (lbs/day) | AML                  | MDL    | IMAX   | Units |                 |             |                                    |
| Total Copper | 0.084         | 0.13          | 0.02                 | 0.032  | 0.051  | mg/L  | 0.02            | CFC         | Discharge Conc ≥ 50% WQBEL (RP)    |
| Total Lead   | Report        | Report        | Report               | Report | Report | mg/L  | 0.01            | CFC         | Discharge Conc > 10% WQBEL (no RP) |

Other Pollutants without Limits or Monitoring

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., ≤ Target QL).

| Pollutants                   | Governing WQBEL | Units | Comments                   |
|------------------------------|-----------------|-------|----------------------------|
| Total Dissolved Solids (PWS) | N/A             | N/A   | PWS Not Applicable         |
| Chloride (PWS)               | N/A             | N/A   | PWS Not Applicable         |
| Bromide                      | N/A             | N/A   | No WQS                     |
| Sulfate (PWS)                | N/A             | N/A   | PWS Not Applicable         |
| Total Zinc                   | 0.25            | mg/L  | Discharge Conc ≤ 10% WQBEL |
|                              |                 |       |                            |

Attachment C - TRC Spreadsheet

| TRC EVALUATION |   |                               |                                      |                     |
|----------------|---|-------------------------------|--------------------------------------|---------------------|
| 0.032          | = Q stream (cfs)  | 0.5                           | = CV Daily                           |                     |
| 0.5            | = 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) |                     |
|                | = % Factor of Safety (FOS)  |                               | =Decay Coefficient (K)               |                     |
| Source         | Reference   | AFC Calculations              | Reference                            | CFC Calculations    |
| TRC            | 1.3.2.iii   | WLA_afc = 0.032               | 1.3.2.iii                            | WLA_cfc = 0.024     |
| PENTOXSD TRG   | 5.1a  | LTAMULT_afc = 0.373           | 5.1c                                 | LTAMULT_cfc = 0.581 |
| PENTOXSD TRG   | 5.1b  | LTA_afc = 0.012               | 5.1d                                 | LTA_cfc = 0.014     |
| Source         | Effluent Limit Calculations   |                               |                                      |                     |
| PENTOXSD TRG   | 5.1f  | AML_MULT = 1.231              |                                      |                     |
| PENTOXSD TRG   | 5.1g  | AVG_MON_LIMIT (mg/l) = 0.015  | AFC                                  |                     |
|                |   | INST_MAX_LIMIT (mg/l) = 0.048 |                                      |                     |
| WLA_afc        | $(.019/e^{-k \cdot AFC\_tc}) + [(AFC\_Yc \cdot Qs \cdot .019 / Qd \cdot e^{-k \cdot AFC\_tc}) \dots + Xd + (AFC\_Yc \cdot Qs \cdot Xs / Qd)] \cdot (1 - FOS / 100)$ |                               |                                      |                     |
| LTAMULT_afc    | $EXP((0.5 \cdot LN(cvh^2 + 1)) - 2.326 \cdot LN(cvh^2 + 1)^{0.5})$  |                               |                                      |                     |
| LTA_afc        | wla_afc * LTAMULT_afc   |                               |                                      |                     |
| WLA_cfc        | $(.011/e^{-k \cdot CFC\_tc}) + [(CFC\_Yc \cdot Qs \cdot .011 / Qd \cdot e^{-k \cdot CFC\_tc}) \dots + Xd + (CFC\_Yc \cdot Qs \cdot Xs / Qd)] \cdot (1 - FOS / 100)$ |                               |                                      |                     |
| LTAMULT_cfc    | $EXP((0.5 \cdot LN(cvd^2 / no\_samples + 1)) - 2.326 \cdot LN(cvd^2 / no\_samples + 1)^{0.5})$  |                               |                                      |                     |
| LTA_cfc        | wla_cfc * LTAMULT_cfc   |                               |                                      |                     |
| 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_afc, LTA_cfc) * AML_MULT)  |                               |                                      |                     |
| INST_MAX_LIMIT | 1.5 * ((av_mon_limit / AML_MULT) / LTAMULT_afc)   |                               |                                      |                     |

## Attachment D - StreamStats Report – Outfall 001

### StreamStats Report

Region ID:

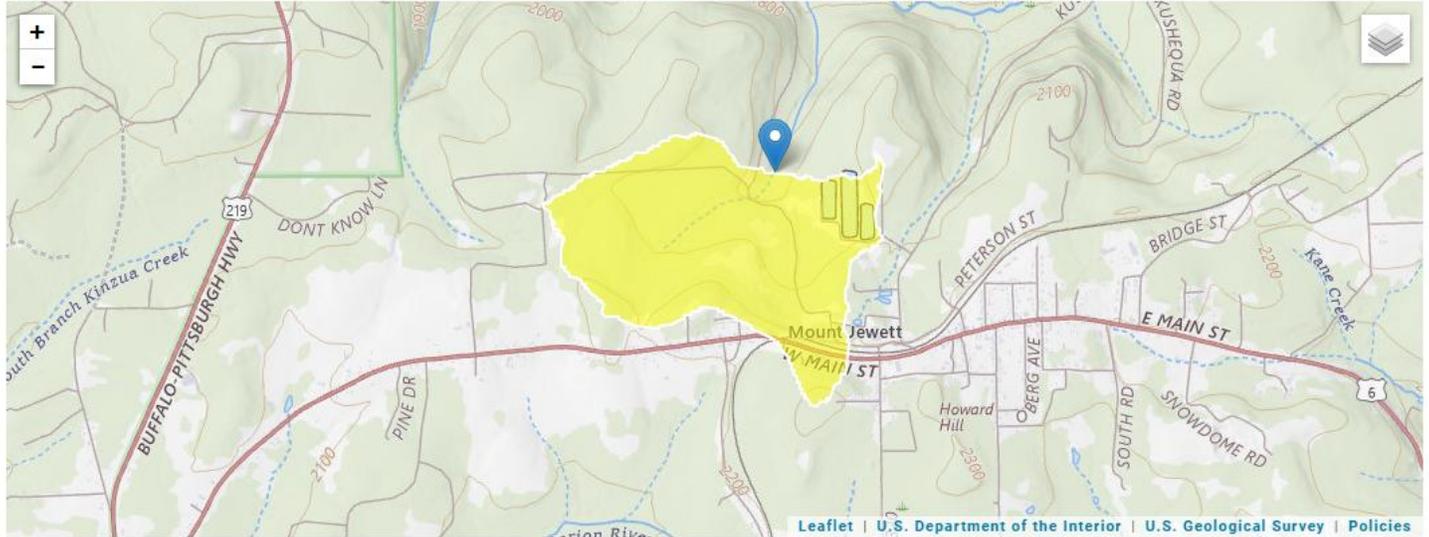
PA

Clicked Point (Latitude, Longitude):

41.73264, -78.65269

Time:

2026-01-22 08:37:17 -0500



#### Low-Flow Statistics

##### Low-Flow Statistics Parameters [Low Flow Region 3]

| Parameter Code | Parameter Name            | Value  | Units        | Min Limit | Max Limit |
|----------------|---------------------------|--------|--------------|-----------|-----------|
| DRNAREA        | Drainage Area             | 0.56   | square miles | 2.33      | 1720      |
| ELEV           | Mean Basin Elevation      | 2117.9 | feet         | 898       | 2700      |
| PRECIP         | Mean Annual Precipitation | 45     | inches       | 38.7      | 47.9      |

##### Low-Flow Statistics Disclaimers [Low Flow Region 3]

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

##### Low-Flow Statistics Flow Report [Low Flow Region 3]

| Statistic               | Value  | Unit               |
|-------------------------|--------|--------------------|
| 7 Day 2 Year Low Flow   | 0.0782 | ft <sup>3</sup> /s |
| 30 Day 2 Year Low Flow  | 0.116  | ft <sup>3</sup> /s |
| 7 Day 10 Year Low Flow  | 0.032  | ft <sup>3</sup> /s |
| 30 Day 10 Year Low Flow | 0.0444 | ft <sup>3</sup> /s |
| 90 Day 10 Year Low Flow | 0.0665 | ft <sup>3</sup> /s |

##### Low-Flow Statistics Citations

Stuckey, M.H., 2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.

## Attachment D – StreamStats Report – Endpoint

### StreamStats Report

Region ID:

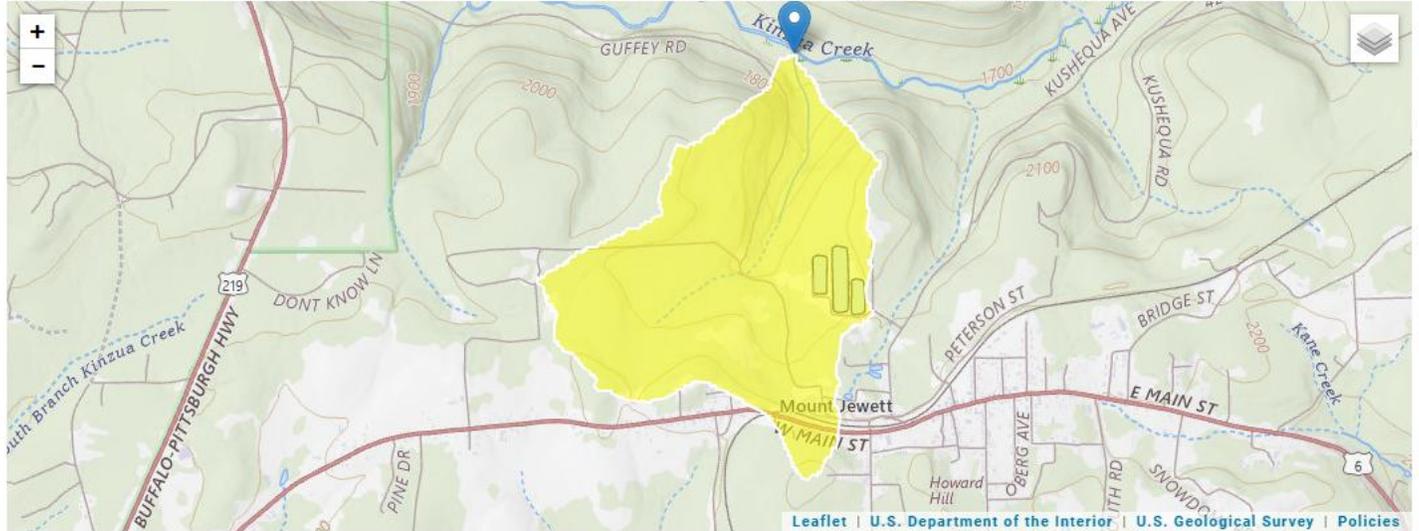
PA

Clicked Point (Latitude, Longitude):

41.74199, -78.65087

Time:

2026-01-22 08:46:44 -0500



#### Low-Flow Statistics

##### Low-Flow Statistics Parameters [Low Flow Region 3]

| Parameter Code | Parameter Name            | Value  | Units        | Min Limit | Max Limit |
|----------------|---------------------------|--------|--------------|-----------|-----------|
| DRNAREA        | Drainage Area             | 0.85   | square miles | 2.33      | 1720      |
| ELEV           | Mean Basin Elevation      | 2064.6 | feet         | 898       | 2700      |
| PRECIP         | Mean Annual Precipitation | 45     | inches       | 38.7      | 47.9      |

##### Low-Flow Statistics Disclaimers [Low Flow Region 3]

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

##### Low-Flow Statistics Flow Report [Low Flow Region 3]

| Statistic               | Value  | Unit               |
|-------------------------|--------|--------------------|
| 7 Day 2 Year Low Flow   | 0.117  | ft <sup>3</sup> /s |
| 30 Day 2 Year Low Flow  | 0.173  | ft <sup>3</sup> /s |
| 7 Day 10 Year Low Flow  | 0.049  | ft <sup>3</sup> /s |
| 30 Day 10 Year Low Flow | 0.0677 | ft <sup>3</sup> /s |
| 90 Day 10 Year Low Flow | 0.101  | ft <sup>3</sup> /s |

##### Low-Flow Statistics Citations

Stuckey, M.H., 2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.