

Application Type Renewal  
Facility Type Municipal  
Major / Minor Minor

## NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application No. PA0263851  
APS ID 1068637  
Authorization ID 1405263

### Applicant and Facility Information

|  |   |
|--|---|
| Applicant Name <u>Keating Township</u>   | Facility Name <u>Keating Township Cyclone STP</u>   |
| Applicant Address <u>7160 Route 46</u>   | Facility Address <u>83 Peach Drive</u>  |
| <u>Smethport, PA 16749-4700</u>  | <u>Cyclone, PA 16726</u>  |
| Applicant Contact <u>David McClain, Chairman</u><br><u>(keatingtwp@gmail.com)</u>                                  | Facility Contact <u>Amy Sipes, Stiffler, McGraw and Associates, Inc.</u><br><u>(asipes@stiffler-mcgraw.com)</u> |
| Applicant Phone <u>(814) 887-9921</u>  | Facility Phone <u>(814) 696-6280</u>  |
| Client ID <u>63228</u>   | Site ID <u>746168</u>   |
| Ch 94 Load Status <u>Not Overloaded</u>  | Municipality <u>Keating Township</u>  |
| Connection Status <u>No Limitations</u>  | County <u>McKean</u>  |
| Date Application Received <u>August 1, 2022</u>  | EPA Waived? <u>Yes</u>  |
| Date Application Accepted <u>August 4, 2022</u>  | If No, Reason <u>-</u>  |
| Purpose of Application <u>Renewal of an NPDES Permit for an existing discharge of treated sanitary wastewater.</u> |   |

### Summary of Review

Act 14 - Proof of Notification was submitted and received.

A Part II Water Quality Management permit is not required at this time.

The applicant should be able to meet the limits of this permit, which will protect the uses of the receiving stream.

**I. OTHER REQUIREMENTS:**

- A. Stormwater into Sewers
- B. Right of Way
- C. Solids Handling
- D. Effluent Chlorine Optimization and Minimization
- E. Little or No Assimilative Capacity or Dilution

**SPECIAL CONDITIONS:**

- II. Solids Management

There are no open violations in efacts associated with the subject Client ID (63228) as of 11/29/2023. *CWY 12/15/2023*

| Approve | Deny | Signatures   | Date       |
|---------|------|--|------------|
| X       |      | Stephen A. McCauley  | 11/29/2023 |
|         |      | Stephen A. McCauley, E.I.T. / Environmental Engineering Specialist |            |
| X       |      | Chad W. Yurisc   | 12/15/2023 |
|         |      | Chad W. Yurisc, P.E. / Environmental Engineer Manager              |            |

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

|  |   |                              |                     |
|--|---|------------------------------|---------------------|
| Outfall No.                                    | <u>001</u>  | Design Flow (MGD)            | <u>0.085</u>        |
| Latitude                                       | <u>41° 49' 06"</u>  | Longitude                    | <u>-78° 35' 07"</u> |
| Quad Name                                      | <u>-</u>  | Quad Code                    | <u>-</u>            |
| Wastewater Description: <u>Sewage Effluent</u> |   |                              |                     |
|  |   |                              |                     |
| Receiving Waters                               | <u>Kinzua Creek</u>   | Stream Code                  | <u>56522</u>        |
| NHD Com ID                                     | <u>112372123</u>  | RMI                          | <u>34.0</u>         |
| Drainage Area                                  | <u>0.738</u>  | Yield (cfs/mi <sup>2</sup> ) | <u>0.08</u>         |
| Q <sub>7-10</sub> Flow (cfs)                   | <u>0.059</u>  | Q <sub>7-10</sub> Basis      | <u>calculated</u>   |
| Elevation (ft)                                 | <u>2100</u>   | Slope (ft/ft)                | <u>0.00631</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>Impaired*</u>  |                              |                     |
| Cause(s) of Impairment                         | <u>Cause Unknown, Metals, Siltation</u>                         |                              |                     |
| Source(s) of Impairment                        | <u>Abandoned Mine Drainage, Natural Sources, Source Unknown</u> |                              |                     |
| TMDL Status                                    | <u>Scheduled for 2019</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>147</u>          |

\* The aquatic life in the Kinzua Creek is impaired by metals due to Abandoned Mine Drainage (AMD) and siltation. The Kinzua Creek is listed on the PA 303(d) list for metals, but a TMDL has not been developed for it yet. This discharge consists of treated non-municipal sewage only. However, since the stream is impaired for AMD metals, per the SOP, monitoring for Total Aluminum, Total Iron, and Total Manganese will be added with this renewal.

Sludge use and disposal description and location(s): All sludge is disposed of at an approved landfill.

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.

Narrative: This Fact Sheet details the determination of draft NPDES permit limits for an existing discharge of 0.085 MGD of treated sewage from a municipal STP in Keating Township, McKean County.

Treatment permitted under WQM Permit 4212401 consists of the following: A manually cleaned bar screen with bypass, an aerated 23,590 gallon surge tank with duplex grinder pumps, a 42,885 gallon anoxic tank, dual 24,770 gallon aeration tanks, dual 9,788 gallon hopper style clarifiers, and ultraviolet (UV) light disinfection. Sludge is digested in a 15,260 gallon aerobic tank and dried using two 2,232 square foot open access reed sludge drying beds.

### 1. Streamflow:

Potato Creek at Smethport, PA (USGS Gage No. 03009680):

|                     |             |         |                    |
|---------------------|-------------|---------|--------------------|
| Q <sub>7-10</sub> : | <u>13.4</u> | cfs     | (USGS StreamStats) |
| Drainage Area:      | <u>160</u>  | sq. mi. | (USGS StreamStats) |
| Yieldrate:          | <u>0.08</u> | cfs/mi  | (Calculated)       |

Kinzua Creek at Outfall 001:

|                        |              |         |                             |
|------------------------|--------------|---------|-----------------------------|
| Yieldrate:             | <u>0.08</u>  | cfs/mi  | (Calculated above)          |
| Drainage Area:         | <u>0.738</u> | sq. mi. | (USGS StreamStats)          |
| % of stream allocated: | <u>100%</u>  | Basis:  | <u>No nearby discharges</u> |
| Q <sub>7-10</sub> :    | <u>0.059</u> | cfs     | (Calculated)                |

### 2. Wasteflow:

Maximum discharge: 0.085 MGD = 0.131 cfs

Runoff flow period: 24 hours Basis: Runoff flow for municipal STPs

The calculated stream flow (Q<sub>7-10</sub>) is less than 3 times the permitted discharge flow. In accordance with the SOP, since this is an existing discharge, the treatment requirements in document number 391-2000-014, titled, "Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers", dated April 12, 2008, were not evaluated for this facility.

Flow will be required to be monitored as authorized under Chapter 92a.61, and as recommended in the SOP.

### 3. Parameters:

The following parameters were evaluated: pH, Total Suspended Solids, Fecal Coliform, E. Coli, Total Phosphorus, Total Nitrogen, NH<sub>3</sub>-N, CBOD<sub>5</sub>, Dissolved Oxygen, and Disinfection.

#### a. pH

Between 6.0 and 9.0 at all times

Basis: Application of Chapter 93.7 technology-based limits.

The measurement frequency was increased from 5/week to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001).

#### b. Total Suspended Solids

Limits are 30.0 mg/l as a monthly average and 60.0 as an instantaneous maximum.

Basis: Application of Chapter 92a47 technology-based limits.

c. Fecal Coliform

05/01 - 09/30: 200/100ml (monthly average geometric mean)  
1,000/100ml (instantaneous maximum)  
10/01 - 04/30: 2,000/100ml (monthly average geometric mean)  
10,000/100ml (instantaneous maximum)

Basis: Application of Chapter 92a47 technology-based limits

d. E. Coli

Monitoring was added for E. Coli at a frequency of 1/quarter.

Basis: Application of Chapter 92a.61 as recommended by the SOP for flows greater than 0.05 MGD and less than 1.0 MGD.

e. Phosphorus

Chapter 96.5 does not apply. However, the previous monitoring for Total Phosphorus will be retained in accordance with the SOP, based on Chapter 92a.61.

f. Total Nitrogen

The previous monitoring for Total Nitrogen will be retained in accordance with the SOP, based on Chapter 92a.61.

g. Ammonia-Nitrogen (NH<sub>3</sub>-N)

Median discharge pH to be used: 7.6 Standard Units (S.U.)

Basis: eDMR data from previous 12 months

Discharge temperature: 25°C (default value used in the absence of data)

Median stream pH to be used: 7.0 Standard Units (S.U.)

Basis: default value used in the absence of data

Stream Temperature: 20°C (default value used for CWF modeling)

Background NH<sub>3</sub>-N concentration: 0.0 mg/l

Basis: Default value

Calculated NH<sub>3</sub>-N Summer limits: 2.1 mg/l (monthly average)  
4.2 mg/l (instantaneous maximum)

Calculated NH<sub>3</sub>-N Winter limits: 6.3 mg/l (monthly average)  
12.6 mg/l (instantaneous maximum)

Result: WQ modeling resulted in the summer NH<sub>3</sub>-N limits above (see Attachment 1). The winter limits are calculated as three times the summer limits. The calculated limits are more restrictive than the

previous permit. Based on eDMR data, the more restrictive limits are attainable so they will be added with this renewal without a compliance schedule.

h. CBOD<sub>5</sub>

Median discharge pH to be used: 7.6 Standard Units (S.U.)

Basis: eDMR data from previous 12 months

Discharge temperature: 25°C (default value used in the absence of data)

Median stream pH to be used: 7.0 Standard Units (S.U.)

Basis: default value used in the absence of data

Stream Temperature: 20°C (default value used for CWF modeling)

Background CBOD<sub>5</sub> concentration: 2.0 mg/l

Basis: Default value

Calculated CBOD<sub>5</sub> limits: 25.0 mg/l (monthly average)

50.0 mg/l (instantaneous maximum)

Result: WQ modeling resulted in the calculated CBOD<sub>5</sub> limits above (see Attachment 1). These limits are the same as in the previous permit and will be retained.

i. Influent Total Suspended Solids and BOD<sub>5</sub>

Monitoring for these two parameters will be retained as recommended in the SOP for POTWs, as authorized under Chapter 92a.61.

j. Dissolved Oxygen (DO)

The technology-based minimum of 5.0 mg/l is recommended by the WQ Model (see Attachment 1) and the SOP based on Chapter 93.7, under the authority of Chapter 92a.61. This minimum replaces the previous 4.0 mg/l that was set in the previous NPDES Permit. Based on the eDMR data, the new minimum is achievable, so a compliance schedule is not necessary.

The measurement frequency was increased from 5/week to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001).

k. Disinfection

☒ Ultraviolet (UV) light monitoring

☐ Total Residual Chlorine (TRC) limits: \_\_\_\_\_ mg/l (monthly average)  
\_\_\_\_\_ mg/l (instantaneous maximum)

Basis: Monitoring for UV Intensity ( $\mu\text{W}/\text{cm}^2$ ) will be retained with this renewal.

The measurement frequency was increased from 5/week to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001).

#### 4. Reasonable Potential Analysis for Receiving Stream:

A Reasonable Potential Analysis was performed in accordance with State practices for Outfall 001 using the Department's Toxics Management Spreadsheet (see Attachment 2).

Result: The discharge concentrations for the following parameters were found to be greater than 10% of the calculated WQBELs:

| Parameter      | Discharge Conc. (µg/l) | WQBEL (µg/l) | %WQBEL |
|----------------|------------------------|--------------|--------|
| Total Aluminum | 120                    | 750          | >10%   |
| Total Copper   | 11.2                   | 13.5         | >50%   |
| Total Iron     | 858                    | 2,175        | >10%   |
| Total Lead     | 0.7                    | 4.61         | >10%   |
| Total Zinc     | 87                     | 120          | >50%   |

Per the SOP, since the maximum discharge concentrations for Total Copper and Total Zinc were greater than 50% of the calculated WQBEL, new limits were added.

Also per the SOP, since the maximum discharge concentrations for Total Aluminum, Total Iron, and Total Lead were greater than 10% of the calculated WQBELs, 1/quarter monitoring will be set with the NPDES Permit renewal.

#### 5. Reasonable Potential for Downstream Public Water Supply (PWS):

The Department's Toxics Management Spreadsheet does not calculate limits for parameters that are based on PWS criteria (TDS, Chloride, Bromide, and Sulfate). However, since no sample data was provided, mass-balance calculations were not performed.

Nearest Downstream potable water supply (PWS): Aqua Pennsylvania, Inc. - Emlenton

Distance downstream from the point of discharge: 147.0 miles (approximate)

Result: No limits are necessary as significant dilution is available

#### 6. Flow Information:

The Keating Township Cyclone STP receives flow from the Villages of Ormsby, Cyclone, Gifford, and Aiken in the Keating Township in McKean County. All the sewers are separate sewers.

#### 7. Anti-Backsliding:

A WQBEL for Total Iron was set in the previous permit. Based on the most recent sampling results for Total Iron, the previous limit is no longer required. Monitoring for Total Iron will replace the previous limits based on 40 CFR §122.44(l)(i)(B)(1).

All other permit limits in this renewal are the same or more restrictive than the previous NPDES Permit.

#### 8. Attachment List:

Attachment 1 - WQ Modeling Printouts

Attachment 2 - Toxics Management Spreadsheet

(The Attachments above can be found at the end of this document)

Compliance History

DMR Data for Outfall 001 (from October 1, 2022 to September 30, 2023)

| Parameter  | SEP-23  | AUG-23  | JUL-23  | JUN-23  | MAY-23  | APR-23  | MAR-23  | FEB-23  | JAN-23  | DEC-22  | NOV-22  | OCT-22  |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Flow (MGD)<br>Average Monthly                        | 0.0216  | 0.02271 | 0.02235 | 0.02189 | 0.02210 | 0.02180 | 0.02256 | 0.02138 | 0.02332 | 0.02405 | 0.02329 | 0.02217 |
| Flow (MGD)<br>Daily Maximum                          | 0.0224  | 0.02416 | 0.02407 | 0.03063 | 0.02706 | 0.02940 | 0.02926 | 0.02849 | 0.02855 | 0.03331 | 0.03468 | 0.02794 |
| pH (S.U.)<br>Instantaneous Minimum                   | 7.3     | 7.2     | 7.43    | 7.52    | 7.55    | 7.54    | 7.47    | 7.53    | 7.36    | 7.31    | 7.28    | 7.32    |
| pH (S.U.)<br>Instantaneous Maximum                   | 7.91    | 7.6     | 8.4     | 7.94    | 8.03    | 8.33    | 7.92    | 7.92    | 7.89    | 7.72    | 7.90    | 7.87    |
| DO (mg/L)<br>Instantaneous Minimum                   | 5.13    | 6.4     | 6.04    | 6.82    | 9.53    | 8.33    | 9.9     | 6.32    | 7.41    | 9.07    | 9.25    | 6.81    |
| CBOD5 (lbs/day)<br>Average Monthly                   | 0.8     | 0.9     | 0.6     | < 0.7   | 1.1     | 1.7     | 1.6     | 2.9     | 0.9     | 1.2     | 0.6     | 0.7     |
| CBOD5 (lbs/day)<br>Weekly Average                    | 1.0     | 1.0     | 0.9     | 0.9     | 1.7     | 2.7     | 2.1     | 7.6     | 1.1     | 2.2     | 0.7     | 1.1     |
| CBOD5 (mg/L)<br>Average Monthly                      | 4.45    | 4.4     | 3.7     | < 4.0   | 6.4     | 10.0    | 8.3     | 15.1    | 4.3     | 6.4     | 3.1     | 3.8     |
| CBOD5 (mg/L)<br>Weekly Average                       | 7.15    | 5.37    | 6.1     | 5.0     | 10.0    | 15.0    | 10.0    | 38.0    | 5.0     | 11.0    | 4.0     | 5.0     |
| BOD5 (lbs/day)<br>Influent Average Monthly           | < 26.0  | 49.0    | 24.0    | 22      | 27      | 40      | 40      | 31      | 37      | 33      | 34      | 20      |
| BOD5 (mg/L)<br>Influent Average Monthly              | < 144.0 | 232.8   | 142.0   | 129     | 154     | 237     | 208     | 172     | 48      | 169     | 177     | 107     |
| TSS (lbs/day)<br>Average Monthly                     | < 0.8   | 2.0     | 0.7     | 1.2     | 2.5     | 1.9     | 2.1     | 1.7     | 1.4     | 2.2     | 0.9     | 1.6     |
| TSS (lbs/day)<br>Influent Average Monthly            | 20.0    | 40.0    | 27.0    | 42      | 27      | 32      | 29      | 37      | 19      | 23      | 25      | 23      |
| TSS (lbs/day)<br>Weekly Average                      | 1.0     | 3.0     | 0.9     | 1.4     | 5.5     | 3.4     | 3.6     | 2.8     | 1.6     | 3.4     | 1.2     | 3.9     |
| TSS (mg/L)<br>Average Monthly                        | < 4.4   | 8.5     | 4.3     | 7       | 15      | 11      | 11      | 10.0    | 7       | 11.0    | 5.0     | 9.0     |
| TSS (mg/L)<br>Influent Average Monthly               | 111.0   | 191.0   | 155.0   | 254     | 33      | 192     | 151     | 208     | 31      | 123     | 130     | 122     |
| TSS (mg/L)<br>Weekly Average                         | 7.5     | 13.0    | 5.0     | 8       | 34      | 22      | 19      | 17.0    | 8       | 16.0    | 6.0     | 22.0    |
| Fecal Coliform (No./100 ml)<br>Geometric Mean        | 7.0     | 18.0    | 27.0    | 86      | 415     | 21      | < 1     | 9       | 4       | 2       | 6       | 8       |
| Fecal Coliform (No./100 ml)<br>Instantaneous Maximum | 8.5     | 25.6    | 34.1    | 93.2    | 2419.6  | 88      | 1       | 13.2    | 8.5     | 3.1     | 16      | 20.1    |

**NPDES Permit Fact Sheet**  
**Keating Township Cyclone STP**

**NPDES Permit No. PA0263851**

|   |        |        |       |        |        |       |        |        |        |        |        |         |
|---|--------|--------|-------|--------|--------|-------|--------|--------|--------|--------|--------|---------|
| UV Intensity ( $\mu\text{w}/\text{cm}^2$ )<br>Average Monthly       | 71.0   | 75.0   | 174.0 | 73     | 44     | 38    | 50     | 46     | 52     | 69     | 74     | 79      |
| UV Intensity ( $\mu\text{w}/\text{cm}^2$ )<br>Instantaneous Maximum | 120.0  | 90.0   | 174.0 | 137    | 144    | 42    | 76     | 75     | 95     | 98     | 99     | 125     |
| Total Nitrogen (lbs/day)<br>Average Quarterly                       | 9.0    |        |       | 0.803  |        |       | 2.73   |        |        | 5.866  |        |         |
| Total Nitrogen (mg/L)<br>Average Quarterly                          | 39.19  |        |       | 4.47   |        |       | 13.8   |        |        | 33.385 |        |         |
| Ammonia (lbs/day)<br>Average Monthly                                | < 0.02 | < 0.02 | < 0.2 | < 0.3  | < 0.03 | 0.1   | 0.07   | < 0.03 | < 0.02 | < 0.04 | < 0.02 | < 0.02  |
| Ammonia (mg/L)<br>Average Monthly                                   | < 0.1  | < 0.1  | < 0.1 | < 2.3  | < 0.2  | 0.6   | 0.4    | < 0.2  | < 0.10 | < 0.2  | < 0.10 | < 0.10  |
| Total Phosphorus (lbs/day)<br>Average Quarterly                     | 0.5    |        |       | 0.2552 |        |       | 0.3809 |        |        | 0.421  |        |         |
| Total Phosphorus (mg/L)<br>Average Quarterly                        | 2.7    |        |       | 1.42   |        |       | 1.92   |        |        | 2.40   |        |         |
| Total Iron (lbs/day)<br>Average Monthly                             | < 0.04 | 0.06   | 0.05  | 0.1    | 0.06   | 0.06  | 0.08   | 0.09   | 0.04   | 0.05   | 0.04   | < 0.04  |
| Total Iron (mg/L)<br>Average Monthly                                | < 0.2  | 0.364  | 0.275 | 0.857  | 0.31   | 0.343 | 0.422  | 0.478  | 0.224  | 0.252  | 0.226  | < 0.219 |
| Total Iron (mg/L)<br>Instantaneous Maximum                          | < 0.2  | 0.377  | 0.325 | 0.858  | 0.346  | 0.444 | 0.602  | 0.575  | 0.238  | 0.263  | 0.249  | 0.238   |



**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" (386-0400-001), SOPs and/or BPJ.

**Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.**

| Parameter                                     | Effluent Limitations                |                     |                       |                     |                   |                     | Monitoring Requirements                            |                            |
|---|-------------------------------------|---------------------|-----------------------|---------------------|-------------------|---------------------|--|----------------------------|
|   | Mass Units (lbs/day) <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                 | 1/week   | Measured                   |
| pH (S.U.)                                     | XXX                                 | XXX                 | 6.0<br>Daily Min      | XXX                 | 9.0<br>Daily Max  | XXX                 | 1/day  | Grab                       |
| DO  | XXX                                 | XXX                 | 5.0<br>Daily Min      | XXX                 | XXX               | XXX                 | 1/day  | Grab                       |
| CBOD5   | 17.7                                | 26.5                | XXX                   | 25.0                | 37.5              | 50                  | 1/week   | 24-Hr<br>Composite         |
| BOD5<br>Raw Sewage Influent                   | Report                              | XXX                 | XXX                   | Report              | XXX               | XXX                 | 1/week   | 24-Hr<br>Composite         |
| TSS   | 21.2                                | 31.9                | XXX                   | 30.0                | 45.0              | 60                  | 1/week   | 24-Hr<br>Composite         |
| TSS<br>Raw Sewage Influent                    | Report                              | 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               | 2/month  | Grab                       |
| Fecal Coliform (No./100 ml)<br>May 1 - Sep 30 | XXX                                 | XXX                 | XXX                   | 200<br>Geo Mean     | XXX               | 1000                | 2/month  | Grab                       |
| E. Coli (No./100 ml)                          | XXX                                 | XXX                 | XXX                   | XXX                 | XXX               | Report              | 1/quarter  | Grab                       |
| UV Intensity (µw/cm²)                         | XXX                                 | XXX                 | XXX                   | Report              | XXX               | Report              | 1/day  | Grab                       |
| Total Nitrogen                                | XXX                                 | Report<br>Daily Max | XXX                   | Report<br>Daily Max | XXX               | XXX                 | 1/quarter  | Grab                       |
| Ammonia<br>Nov 1 - Apr 30                     | 4.4                                 | XXX                 | XXX                   | 6.3                 | XXX               | 12.6                | 2/month  | 24-Hr<br>Composite         |
| Ammonia<br>May 1 - Oct 31                     | 1.4                                 | XXX                 | XXX                   | 2.1                 | XXX               | 4.2                 | 2/month  | 24-Hr<br>Composite         |

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

| Parameter             | Effluent Limitations                |                     |                       |                     |                   |                     | Monitoring Requirements                            |                            |
|-----------------------|-------------------------------------|---------------------|-----------------------|---------------------|-------------------|---------------------|--|----------------------------|
|                       | Mass Units (lbs/day) <sup>(1)</sup> |                     | Concentrations (mg/L) |                     |                   |                     | Minimum <sup>(2)</sup><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 |  |                            |
| Total Phosphorus      | XXX                                 | Report<br>Daily Max | XXX                   | Report<br>Daily Max | XXX               | XXX                 | 1/quarter  | Grab                       |
| Total Aluminum (ug/L) | XXX                                 | Report<br>Daily Max | XXX                   | Report<br>Daily Max | XXX               | XXX                 | 1/quarter  | Grab                       |
| Total Copper (ug/L)   | 0.0095                              | XXX                 | XXX                   | 13.5                | XXX               | 33.7                | 2/month  | 24-Hr<br>Composite         |
| Total Iron (ug/L)     | XXX                                 | Report<br>Daily Max | XXX                   | Report<br>Daily Max | XXX               | XXX                 | 1/quarter  | Grab                       |
| Total Lead (ug/L)     | XXX                                 | Report<br>Daily Max | XXX                   | Report<br>Daily Max | XXX               | XXX                 | 1/quarter  | Grab                       |
| Total Manganese       | XXX                                 | Report<br>Daily Max | XXX                   | Report<br>Daily Max | XXX               | XXX                 | 1/quarter  | Grab                       |
| Total Zinc (ug/L)     | 0.085                               | XXX                 | XXX                   | 120.0               | XXX               | 300                 | 2/month  | 24-Hr<br>Composite         |

Compliance Sampling Location: at Outfall 001, after Ultraviolet (UV) light disinfection.

Flow is monitor only based on Chapter 92a.61. The limits for pH and Dissolved Oxygen are technology-based on Chapter 93.7. The limits for CBOD<sub>5</sub>, Total Suspended Solids, and Fecal Coliforms are technology-based on Chapter 92a.47. Monitoring for influent BOD<sub>5</sub> and influent TSS is based on Chapter 92a.61. Monitoring for E. Coli, UV Intensity, Total Nitrogen, Total Phosphorus, Total Aluminum, Total Iron, Total Manganese, and Total Iron is based on Chapter 92a.61. The limits for Ammonia-Nitrogen are water quality-based on Chapter 93.7. The limits for Total Copper and Total Zinc are water quality-based on Chapter 16.

Attachment 1

### WQM 7.0 Effluent Limits

| <u>SWP Basin</u> |             | <u>Stream Code</u> | <u>Stream Name</u> |                  |                                |                            |                            |
|------------------|-------------|--------------------|--------------------|------------------|--------------------------------|----------------------------|----------------------------|
| 16B              |             | 56522              | KINZUA CREEK       |                  |                                |                            |                            |
| RMI              | Name        | Permit Number      | Disc Flow (mgd)    | Parameter        | Effl. Limit 30-day Ave. (mg/L) | Effl. Limit Maximum (mg/L) | Effl. Limit Minimum (mg/L) |
| 34.000           | Cyclone STP | PA0263851          | 0.085              | CBOD5            | 25                             |                            |                            |
|                  |             |                    |                    | NH3-N            | 2.18                           | 4.36                       |                            |
|                  |             |                    |                    | Dissolved Oxygen |                                |                            | 5                          |

**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          | 6      |                                     |                                     |

### WQM 7.0 D.O.Simulation

| <u>SWP Basin</u>                | <u>Stream Code</u>                | <u>Stream Name</u>               |                             |                |
|---------------------------------|-----------------------------------|----------------------------------|-----------------------------|----------------|
| 16B                             | 56522                             | KINZUA CREEK                     |                             |                |
| <u>RMI</u>                      | <u>Total Discharge Flow (mgd)</u> | <u>Analysis Temperature (°C)</u> | <u>Analysis pH</u>          |                |
| 34.000                          | 0.085                             | 23.448                           | 7.315                       |                |
| <u>Reach Width (ft)</u>         | <u>Reach Depth (ft)</u>           | <u>Reach WDRatio</u>             | <u>Reach Velocity (fps)</u> |                |
| 5.374                           | 0.392                             | 13.703                           | 0.090                       |                |
| <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>    |                |
| 17.86                           | 1.338                             | 1.50                             | 0.913                       |                |
| <u>Reach DO (mg/L)</u>          | <u>Reach Kr (1/days)</u>          | <u>Kr Equation</u>               | <u>Reach DO Goal (mg/L)</u> |                |
| 6.007                           | 26.605                            | Owens                            | 6                           |                |
| <u>Reach Travel Time (days)</u> | <b>Subreach Results</b>           |                                  |                             |                |
| 1.216                           | TravTime<br>(days)                | CBOD5<br>(mg/L)                  | NH3-N<br>(mg/L)             | D.O.<br>(mg/L) |
|                                 | 0.122                             | 14.76                            | 1.35                        | 6.97           |
|                                 | 0.243                             | 12.20                            | 1.20                        | 7.26           |
|                                 | 0.365                             | 10.08                            | 1.08                        | 7.48           |
|                                 | 0.486                             | 8.33                             | 0.96                        | 7.67           |
|                                 | 0.608                             | 6.89                             | 0.86                        | 7.74           |
|                                 | 0.729                             | 5.69                             | 0.77                        | 7.74           |
|                                 | 0.851                             | 4.71                             | 0.69                        | 7.74           |
|                                 | 0.973                             | 3.89                             | 0.62                        | 7.74           |
|                                 | 1.094                             | 3.21                             | 0.55                        | 7.74           |
|                                 | 1.216                             | 2.66                             | 0.50                        | 7.74           |

### Input Data WQM 7.0

| SWP<br>Basin | Stream<br>Code | Stream Name  | RMI    | Elevation<br>(ft) | Drainage<br>Area<br>(sq mi) | Slope<br>(ft/ft) | PWS<br>Withdrawal<br>(mgd) | Apply<br>FC                         |
|--------------|----------------|--------------|--------|-------------------|-----------------------------|------------------|----------------------------|-------------------------------------|
| 16B          | 56522          | KINZUA CREEK | 34.000 | 2100.00           | 0.74                        | 0.00000          | 0.00                       | <input checked="" type="checkbox"/> |

#### Stream Data

| Design<br>Cond. | LFY    | Trib<br>Flow | Stream<br>Flow | Rch<br>Trav<br>Time<br>(days) | Rch<br>Velocity<br>(fps) | WD<br>Ratio | Rch<br>Width<br>(ft) | Rch<br>Depth<br>(ft) | Tributary<br>Temp<br>(°C) | pH   | Stream<br>Temp<br>(°C) | pH   |
|-----------------|--------|--------------|----------------|-------------------------------|--------------------------|-------------|----------------------|----------------------|---------------------------|------|------------------------|------|
|                 | (cfsm) | (cfs)        | (cfs)          |                               |                          |             |                      |                      |                           |      |                        |      |
| Q7-10           | 0.080  | 0.00         | 0.00           | 0.000                         | 0.000                    | 0.0         | 0.00                 | 0.00                 | 20.00                     | 7.00 | 0.00                   | 0.00 |
| Q1-10           |        | 0.00         | 0.00           | 0.000                         | 0.000                    |             |                      |                      |                           |      |                        |      |
| Q30-10          |        | 0.00         | 0.00           | 0.000                         | 0.000                    |             |                      |                      |                           |      |                        |      |

#### Discharge Data

| Name        | Permit Number | Existing<br>Disc<br>Flow<br>(mgd) | Permitted<br>Disc<br>Flow<br>(mgd) | Design<br>Disc<br>Flow<br>(mgd) | Reserve<br>Factor | Disc<br>Temp<br>(°C) | Disc<br>pH |
|-------------|---------------|-----------------------------------|------------------------------------|---------------------------------|-------------------|----------------------|------------|
| Cyclone STP | PA0263851     | 0.0850                            | 0.0000                             | 0.0000                          | 0.000             | 25.00                | 7.60       |

#### Parameter Data

| Parameter Name   | Disc<br>Conc<br>(mg/L) | Trib<br>Conc<br>(mg/L) | Stream<br>Conc<br>(mg/L) | Fate<br>Coef<br>(1/days) |
|------------------|------------------------|------------------------|--------------------------|--------------------------|
| CBOD5            | 25.00                  | 2.00                   | 0.00                     | 1.50                     |
| Dissolved Oxygen | 4.00                   | 8.24                   | 0.00                     | 0.00                     |
| NH3-N            | 25.00                  | 0.00                   | 0.00                     | 0.70                     |

### Input Data WQM 7.0

| SWP<br>Basin | Stream<br>Code | Stream Name  | RMI    | Elevation<br>(ft) | Drainage<br>Area<br>(sq mi) | Slope<br>(ft/ft) | PWS<br>Withdrawal<br>(mgd) | Apply<br>FC                         |
|--------------|----------------|--------------|--------|-------------------|-----------------------------|------------------|----------------------------|-------------------------------------|
| 16B          | 56522          | KINZUA CREEK | 32.200 | 2040.00           | 3.59                        | 0.00000          | 0.00                       | <input checked="" type="checkbox"/> |

#### Stream Data

| Design<br>Cond. | LFY    | Trib<br>Flow | Stream<br>Flow | Rch<br>Trav<br>Time<br>(days) | Rch<br>Velocity<br>(fps) | WD<br>Ratio | Rch<br>Width<br>(ft) | Rch<br>Depth<br>(ft) | Tributary    |      | Stream       |      |
|-----------------|--------|--------------|----------------|-------------------------------|--------------------------|-------------|----------------------|----------------------|--------------|------|--------------|------|
|                 | (cfsm) | (cfs)        | (cfs)          |                               |                          |             |                      |                      | Temp<br>(°C) | pH   | Temp<br>(°C) | pH   |
| Q7-10           | 0.080  | 0.00         | 0.00           | 0.000                         | 0.000                    | 0.0         | 0.00                 | 0.00                 | 20.00        | 7.00 | 0.00         | 0.00 |
| Q1-10           |        | 0.00         | 0.00           | 0.000                         | 0.000                    |             |                      |                      |              |      |              |      |
| Q30-10          |        | 0.00         | 0.00           | 0.000                         | 0.000                    |             |                      |                      |              |      |              |      |

#### Discharge Data

| Name | Permit Number | Existing<br>Disc<br>Flow<br>(mgd) | Permitted<br>Disc<br>Flow<br>(mgd) | Design<br>Disc<br>Flow<br>(mgd) | Reserve<br>Factor | Disc<br>Temp<br>(°C) | Disc<br>pH |
|------|---------------|-----------------------------------|------------------------------------|---------------------------------|-------------------|----------------------|------------|
|      |               | 0.0000                            | 0.0000                             | 0.0000                          | 0.000             | 25.00                | 7.00       |

#### Parameter Data

| Parameter Name   | Disc<br>Conc<br>(mg/L) | Trib<br>Conc<br>(mg/L) | Stream<br>Conc<br>(mg/L) | Fate<br>Coef<br>(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 Wasteload Allocations

| <u>SWP Basin</u>                    |                | <u>Stream Code</u>              |                           | <u>Stream Name</u>              |                           |                         |                      |                   |                      |
|-------------------------------------|----------------|---------------------------------|---------------------------|---------------------------------|---------------------------|-------------------------|----------------------|-------------------|----------------------|
| 16B                                 |                | 56522                           |                           | KINZUA CREEK                    |                           |                         |                      |                   |                      |
|                                     |                |                                 |                           |                                 |                           |                         |                      |                   |                      |
| <b>NH3-N Acute Allocations</b>      |                |                                 |                           |                                 |                           |                         |                      |                   |                      |
| 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 |                   |                      |
| 34.000                              | Cyclone STP    | 7.97                            | 10.26                     | 7.97                            | 10.26                     | 0                       | 0                    |                   |                      |
|                                     |                |                                 |                           |                                 |                           |                         |                      |                   |                      |
| <b>NH3-N Chronic Allocations</b>    |                |                                 |                           |                                 |                           |                         |                      |                   |                      |
| 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 |                   |                      |
| 34.000                              | Cyclone STP    | 1.35                            | 2.18                      | 1.35                            | 2.18                      | 0                       | 0                    |                   |                      |
|                                     |                |                                 |                           |                                 |                           |                         |                      |                   |                      |
| <b>Dissolved Oxygen Allocations</b> |                |                                 |                           |                                 |                           |                         |                      |                   |                      |
| 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)   |                   |                      |
| 34.00                               | Cyclone STP    | 25                              | 25                        | 2.18                            | 2.18                      | 5                       | 5                    | 0                 | 0                    |



### WQM 7.0 Hydrodynamic Outputs

| <u>SWP Basin</u>   |             | <u>Stream Code</u> |                 | <u>Stream Name</u> |             |       |       |           |          |                 |               |             |
|--------------------|-------------|--------------------|-----------------|--------------------|-------------|-------|-------|-----------|----------|-----------------|---------------|-------------|
| 16B                |             | 56522              |                 | 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>  |             |                    |                 |                    |             |       |       |           |          |                 |               |             |
| 34.000             | 0.06        | 0.00               | 0.06            | .1315              | 0.00631     | .392  | 5.37  | 13.7      | 0.09     | 1.216           | 23.45         | 7.32        |
| <b>Q1-10 Flow</b>  |             |                    |                 |                    |             |       |       |           |          |                 |               |             |
| 34.000             | 0.04        | 0.00               | 0.04            | .1315              | 0.00631     | NA    | NA    | NA        | 0.08     | 1.299           | 23.88         | 7.38        |
| <b>Q30-10 Flow</b> |             |                    |                 |                    |             |       |       |           |          |                 |               |             |
| 34.000             | 0.08        | 0.00               | 0.08            | .1315              | 0.00631     | NA    | NA    | NA        | 0.10     | 1.146           | 23.10         | 7.27        |

Attachment 2



Toxics Management Spreadsheet  
Version 1.4, May 2023

## Discharge Information

Instructions Discharge Stream

Facility: **Keating Township Cyclone STP** NPDES Permit No.: **PA0263851** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **POTW sewage discharge**

| 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> |
| 0.085                     | 100              | 7.6      |                            |     |     |     |                          |                |

|         |                                 |      |      | 0 if left blank |                | 0.5 if left blank |              | 0 if left blank |               |     | 1 if left blank  |                |
|---------|---------------------------------|------|------|-----------------|----------------|-------------------|--------------|-----------------|---------------|-----|------------------|----------------|
|         |                                 |      |      | Trib<br>Conc    | Stream<br>Conc | Daily<br>CV       | Hourly<br>CV | Strea<br>m CV   | Fate<br>Coeff | FOS | Criteri<br>a Mod | Chem<br>Transf |
| Group 1 | Total Dissolved Solids (PWS)    | mg/L |      |                 |                |                   |              |                 |               |     |                  |                |
|         | Chloride (PWS)                  | mg/L |      |                 |                |                   |              |                 |               |     |                  |                |
|         | Bromide                         | mg/L |      |                 |                |                   |              |                 |               |     |                  |                |
|         | Sulfate (PWS)                   | mg/L |      |                 |                |                   |              |                 |               |     |                  |                |
|         | Fluoride (PWS)                  | mg/L |      |                 |                |                   |              |                 |               |     |                  |                |
| Group 2 | Total Aluminum                  | µg/L | 120  |                 |                |                   |              |                 |               |     |                  |                |
|         | 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                    | µg/L | 11.2 |                 |                |                   |              |                 |               |     |                  |                |
|         | Free Cyanide                    | µg/L |      |                 |                |                   |              |                 |               |     |                  |                |
|         | Total Cyanide                   | µg/L |      |                 |                |                   |              |                 |               |     |                  |                |
|         | Dissolved Iron                  | µg/L |      |                 |                |                   |              |                 |               |     |                  |                |
|         | Total Iron                      | µg/L | 858  |                 |                |                   |              |                 |               |     |                  |                |
|         | Total Lead                      | µg/L | 0.7  |                 |                |                   |              |                 |               |     |                  |                |
|         | Total Manganese                 | µg/L | 60   |                 |                |                   |              |                 |               |     |                  |                |
|         | 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                      | µg/L | 87   |                 |                |                   |              |                 |               |     |                  |                |
|         | Total Molybdenum                | µg/L |      |                 |                |                   |              |                 |               |     |                  |                |
|         | Acrolein                        | µg/L | <    |                 |                |                   |              |                 |               |     |                  |                |
|         | Acrylamide                      | µg/L | <    |                 |                |                   |              |                 |               |     |                  |                |
|         | Acrylonitrile                   | µg/L | <    |                 |                |                   |              |                 |               |     |                  |                |
|         | Benzene                         | µg/L | <    |                 |                |                   |              |                 |               |     |                  |                |
|         | Bromoform                       | µg/L | <    |                 |                |                   |              |                 |               |     |                  |                |

|         |                             |      |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------|-----------------------------|------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Group 3 | Carbon Tetrachloride        | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Chlorobenzene               | µg/L |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Chlorodibromomethane        | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Chloroethane                | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 2-Chloroethyl Vinyl Ether   | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Chloroform                  | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Dichlorobromomethane        | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 1,1-Dichloroethane          | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 1,2-Dichloroethane          | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 1,1-Dichloroethylene        | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 1,2-Dichloropropane         | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 1,3-Dichloropropylene       | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 1,4-Dioxane                 | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Ethylbenzene                | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Methyl Bromide              | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Methyl Chloride             | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Methylene Chloride          | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 1,1,2,2-Tetrachloroethane   | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Tetrachloroethylene         | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Toluene                     | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 1,2-trans-Dichloroethylene  | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 1,1,1-Trichloroethane       | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 1,1,2-Trichloroethane       | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Trichloroethylene           | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Vinyl Chloride              | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Group 4 | 2-Chlorophenol              | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 2,4-Dichlorophenol          | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 2,4-Dimethylphenol          | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 4,6-Dinitro-o-Cresol        | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 2,4-Dinitrophenol           | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 2-Nitrophenol               | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 4-Nitrophenol               | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | p-Chloro-m-Cresol           | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Pentachlorophenol           | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Phenol                      | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Group 5 | 2,4,6-Trichlorophenol       | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Acenaphthene                | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Acenaphthylene              | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Anthracene                  | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Benzidine                   | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Benzo(a)Anthracene          | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Benzo(a)Pyrene              | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 3,4-Benzofluoranthene       | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Benzo(ghi)Perylene          | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Benzo(k)Fluoranthene        | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Bis(2-Chloroethoxy)Methane  | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Bis(2-Chloroethyl)Ether     | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Bis(2-Chloroisopropyl)Ether | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Bis(2-Ethylhexyl)Phthalate  | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 4-Bromophenyl Phenyl Ether  | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Butyl Benzyl Phthalate      | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 2-Chloronaphthalene         | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 4-Chlorophenyl Phenyl Ether | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Chrysene                    | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Dibenzo(a,h)Anthracene      | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 1,2-Dichlorobenzene         | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 1,3-Dichlorobenzene         | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 1,4-Dichlorobenzene         | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 3,3-Dichlorobenzidine       | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Diethyl Phthalate           | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Dimethyl Phthalate          | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Di-n-Butyl Phthalate        | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 2,4-Dinitrotoluene          | µg/L | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



|         |                           |        |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------|---------------------------|--------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|         | 2,6-Dinitrotoluene        | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Di-n-Octyl Phthalate      | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 1,2-Diphenylhydrazine     | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Fluoranthene              | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Fluorene                  | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Hexachlorobenzene         | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Hexachlorobutadiene       | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Hexachlorocyclopentadiene | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Hexachloroethane          | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Indeno(1,2,3-cd)Pyrene    | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Isophorone                | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Naphthalene               | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Nitrobenzene              | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | n-Nitrosodimethylamine    | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | n-Nitrosodi-n-Propylamine | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | n-Nitrosodiphenylamine    | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Phenanthrene              | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Pyrene                    | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 1,2,4-Trichlorobenzene    | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Group 6 | Aldrin                    | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | alpha-BHC                 | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | beta-BHC                  | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | gamma-BHC                 | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | delta BHC                 | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Chlordane                 | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 4,4-DDT                   | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 4,4-DDE                   | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 4,4-DDD                   | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Dieldrin                  | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | alpha-Endosulfan          | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | beta-Endosulfan           | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Endosulfan Sulfate        | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Endrin                    | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Endrin Aldehyde           | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Heptachlor                | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Heptachlor Epoxide        | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | PCB-1016                  | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | PCB-1221                  | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | PCB-1232                  | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Group 7 | PCB-1242                  | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | PCB-1248                  | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | PCB-1254                  | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | PCB-1260                  | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | PCBs, Total               | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Toxaphene                 | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | 2,3,7,8-TCDD              | ng/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Gross Alpha               | pCi/L  | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Total Beta                | pCi/L  | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Radium 226/228            | pCi/L  | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Total Strontium           | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Total Uranium             | µg/L   | < |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         | Osmotic Pressure          | mOs/kg |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         |                           |        |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         |                           |        |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         |                           |        |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         |                           |        |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         |                           |        |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         |                           |        |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|         |                           |        |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



## Stream / Surface Water Information

Keating Township Cyclone STP, NPDES Permit No. PA0263851, Outfall 001

Instructions Discharge **Stream**

Receiving Surface Water Name: **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 | 056522       | 34   | 2100            | 0.74                   |               |                      | Yes                  |
| End of Reach 1     | 056522       | 32.2 | 2040            | 3.59                   |               |                      | 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 | 34   | 0.08                        |            |           |           |            |            |                |                    |           |    | 100       | 7   |          |    |
| End of Reach 1     | 32.2 | 0.08                        |            |           |           |            |            |                |                    |           |    |           |     |          |    |

**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 | 34   |                             |            |           |           |            |            |                |                    |           |    |           |     |          |    |
| End of Reach 1     | 32.2 |                             |            |           |           |            |            |                |                    |           |    |           |     |          |    |



Toxics Management Spreadsheet  
Version 1.4, May 2023

## Model Results

Keating Township Cyclone STP, NPDES Permit No. PA0263851, Outfall 001

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

☒ All

☐ Inputs

☐ Results

☐ Limits

### ☒ Hydrodynamics

$Q_{7-10}$

| RMI  | Stream Flow (cfs) | PWS Withdrawal (cfs) | Net Stream Flow (cfs) | Discharge Analysis Flow (cfs) | Slope (ft/ft) | Depth (ft) | Width (ft) | W/D Ratio | Velocity (fps) | Travel Time (days) | Complete Mix Time (min) |
|------|-------------------|----------------------|-----------------------|-------------------------------|---------------|------------|------------|-----------|----------------|--------------------|-------------------------|
| 34   | 0.06              |                      | 0.06                  | 0.131                         | 0.006         | 0.392      | 5.374      | 13.703    | 0.09           | 1.216              | 0.195                   |
| 32.2 | 0.29              |                      | 0.287                 |                               |               |            |            |           |                |                    |                         |

$Q_h$

| RMI  | Stream Flow (cfs) | PWS Withdrawal (cfs) | Net Stream Flow (cfs) | Discharge Analysis Flow (cfs) | Slope (ft/ft) | Depth (ft) | Width (ft) | W/D Ratio | Velocity (fps) | Travel Time (days) | Complete Mix Time (min) |
|------|-------------------|----------------------|-----------------------|-------------------------------|---------------|------------|------------|-----------|----------------|--------------------|-------------------------|
| 34   | 0.63              |                      | 0.63                  | 0.131                         | 0.006         | 0.72       | 5.374      | 7.46      | 0.196          | 0.561              | 0.557                   |
| 32.2 | 2.497             |                      | 2.50                  |                               |               |            |            |           |                |                    |                         |

### ☒ Wasteload Allocations

#### ☒ AFC

CCT (min): 0.195

PMF: 1

Analysis Hardness (mg/l): 100

Analysis pH: 7.32

| 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 Aluminum  | 0                  | 0         |                  | 0         | 750        | 750           | 1,088      |                                  |
| Total Copper    | 0                  | 0         |                  | 0         | 13.439     | 14.0          | 20.3       | Chem Translator of 0.96 applied  |
| Total Iron      | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |                                  |
| Total Lead      | 0                  | 0         |                  | 0         | 64.581     | 81.6          | 118        | Chem Translator of 0.791 applied |
| Total Manganese | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |                                  |
| Total Zinc      | 0                  | 0         |                  | 0         | 117.180    | 120           | 174        | Chem Translator of 0.978 applied |

#### ☒ CFC

CCT (min): 0.195

PMF: 1

Analysis Hardness (mg/l): 100

Analysis pH: 7.32

| 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 Aluminum | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |                                 |
| Total Copper   | 0                  | 0         |                  | 0         | 8.956      | 9.33          | 13.5       | Chem Translator of 0.96 applied |

Model Results

11/29/2023

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|                 |   |   |  |   |         |       |       |                                  |
|-----------------|---|---|--|---|---------|-------|-------|----------------------------------|
| Total Iron      | 0 | 0 |  | 0 | 1,500   | 1,500 | 2,175 | WQC = 30 day average; PMF = 1    |
| Total Lead      | 0 | 0 |  | 0 | 2,517   | 3.18  | 4.61  | Chem Translator of 0.791 applied |
| Total Manganese | 0 | 0 |  | 0 | N/A     | N/A   | N/A   |                                  |
| Total Zinc      | 0 | 0 |  | 0 | 118,139 | 120   | 174   | Chem Translator of 0.986 applied |

☒ **THH** CCT (min):  PMF:  Analysis Hardness (mg/l):  Analysis pH:

| 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 Aluminum  | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |          |
| Total Copper    | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |          |
| Total Iron      | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |          |
| Total Lead      | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |          |
| Total Manganese | 0                  | 0         |                  | 0         | 1,000      | 1,000         | 1,450      |          |
| Total Zinc      | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |          |

☒ **CRL** CCT (min):  PMF:  Analysis Hardness (mg/l):  Analysis pH:

| 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 Aluminum  | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |          |
| Total Copper    | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |          |
| Total Iron      | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |          |
| Total Lead      | 0                  | 0         |                  | 0         | N/A        | N/A           | N/A        |          |
| Total Manganese | 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:

| Pollutants     | Mass Limits   |               | Concentration Limits |        |        |       | Governing WQBEL | WQBEL Basis | Comments                           |
|----------------|---------------|---------------|----------------------|--------|--------|-------|-----------------|-------------|------------------------------------|
|                | AML (lbs/day) | MDL (lbs/day) | AML                  | MDL    | IMAX   | Units |                 |             |                                    |
| Total Aluminum | Report        | Report        | Report               | Report | Report | µg/L  | 750             | AFC         | Discharge Conc > 10% WQBEL (no RP) |
| Total Copper   | 0.01          | 0.014         | 13.5                 | 20.3   | 20.3   | µg/L  | 13.5            | CFC         | Discharge Conc ≥ 50% WQBEL (RP)    |
| Total Iron     | Report        | Report        | Report               | Report | Report | µg/L  | 2,175           | CFC         | Discharge Conc > 10% WQBEL (no RP) |
| Total Lead     | Report        | Report        | Report               | Report | Report | µg/L  | 4.61            | CFC         | Discharge Conc > 10% WQBEL (no RP) |
| Total Zinc     | 0.085         | 0.12          | 120                  | 174    | 174    | µg/L  | 120             | AFC         | Discharge Conc ≥ 50% WQBEL (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<br>WQBEL | Units | Comments                   |
|-----------------|--------------------|-------|----------------------------|
| Total Manganese | 1,450              | µg/L  | Discharge Conc ≤ 10% WQBEL |
|                 |                    |       |                            |
|                 |                    |       |                            |
|                 |                    |       |                            |
|                 |                    |       |                            |