pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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

| | | | |
|---|---|---|---|
| Application Type | **Renewal** | Application No. | **PA0065013** |
| Facility Type | **Industrial** | APS ID | **547333** |
| Major / Minor | **Minor** | Authorization ID | **1167178** |

# NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

## Applicant and Facility Information

| | | | |
|---|---|---|---|
| Applicant Name | **Blythe Township Municipal Authority (MATB)** | Facility Name | **Silver Creek Water Filtration Plant (a.k.a. WTP)** |
| Applicant Address | 375 Valley Street | Facility Address | Silver Creek Road (no address #) |
| | New Philadelphia, PA 17959-1218 | | New Philadelphia, PA 17959 |
| Applicant Contact | Joseph Turnitza | Facility Contact | Michael Burda |
| Applicant Phone | (570) 277-6921 | Facility Phone | (570) 277-6921 |
| Client ID | 83009 | Site ID | 652049 |
| SIC Code | 4952 | Municipality | Blythe Township |
| SIC Description | Trans. & Utilities - Sewerage Systems | County | Schuylkill |
| Date Application Received | January 20, 2017 | EPA Waived? | Yes |
| Date Application Accepted | March 3, 2017 | If No, Reason | - |

Purpose of Application: IW NPDES Permit Renewal for Silver Creek Water Filtration PLT Backwash Discharge.

## Summary of Review

This is an 0.038 MGD NPDES Permit Renewal application for a Water Treatment (Filtration) Plant discharge to Silver Creek (CWF; Stream Code# 2367; impaired for siltation). **NPDES Permit basis flow is being adjusted to 0.050 MGD due to increased monthly average flows per EDMR (confirmed as accurate by applicant).**

Background:

- The WFP backwash cycle goes to a clarifier and then into Silver Creek. The wastewater is described as supernatant from the Clarifier/Thickener as a result of the filter and clarifier backwash and "filter to waste" cycles.
- Facility raw water comes from upstream Silver Creek Reservoir.
- The WTP process includes use of Soda Ash and Alum prior to filtration, with additional post-filtration potassium permanganate, chlorine (disinfection), and "Aqua Mag" (corrosion inhibitor) after filtration (i.e. should not be present in wastewater discharge per Line Drawing). TRC levels were non-detect in the wastewater discharge.
- Facility sludge (~30,000 gallons annually) is being sent to Moss Glen WFP drying beds.
- Previous NPDES Permit included DEP TBELs for aluminum, iron, and manganese.
- **The application indicated average flow during production at 0.02 MGD with maximum flow of 0.03 MGD, but EDMR data shows extended period of greater wastewater discharges (monthly average flows ~0.050 MGD range; Daily Max flows of 0.072 MGD. This permit will use 0.050 MGD monthly average flows to determine permit limits unless they provide other information.**

Part C Special Conditions:

- Part C.I.A through D: Updated Standard IW conditions (**Necessary property rights**; Residuals Management: **Relationship to WQMs; ELG/BAT**).

| Approve | Deny | Signatures | Date |
|---|---|---|---|
| X | | James D. Berger (signed)<br>James D. Berger, P.E. / Environmental Engineer | June 30, 2020 |
| X | | Amy M Bellanca (signed)<br>Amy M. Bellanca, P.E. / Environmental Engineer Manager | 7-16-20 |

**Summary of Review**

- **Part C.I.E: New Chlorine minimization condition (other usages, not used for wastewater disinfection)**
- Part C.I.F: Existing Stream/Discharge change condition
- Part C.II: Toxics WQBEL Conditions (Aluminum, Copper, Lead, and Zinc)
- **Part C.III: New Chemical Additive conditions to address potential use of chemical additives in the wastewater portion of the treatment plant only. Process water chemicals are excluded from definition.**

Public Participation

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

## Discharge, Receiving Waters and Water Supply Information

| | | | |
|---|---|---|---|
| Outfall No. | 001 | Design Flow (MGD) | .038 |
| Latitude | 40º 44' 45.84" | Longitude | -76º 8' 2.86" |
| Quad Name | Pottsville | Quad Code | 1336 |
| Wastewater Description: | Water Treatment Effluent | | |

| | | | |
|---|---|---|---|
| Receiving Waters | Silver Creek | Stream Code | 2367 |
| NHD Com ID | 25991122 | RMI | 1.5400 |
| Drainage Area | 1.67 square miles | Yield (cfs/mi$^2$) | 0.1329 |
| $Q_{7-10}$ Flow (cfs) | 0.2302 | $Q_{7-10}$ Basis | LFY Method using Schuylkill River at point of confluence. |
| Elevation (ft) | ~1290 | Slope (ft/ft) | - |
| Watershed No. | 3-A | Chapter 93 Class. | CWF, MF |
| Existing Use | - | Existing Use Qualifier | - |
| Exceptions to Use | - | Exceptions to Criteria | - |
| Assessment Status | Impaired | | |
| Cause(s) of Impairment | Siltation | | |
| Source(s) of Impairment | Abandoned Mine Drainage | | |
| TMDL Status | Final | Name | Upper Schuylkill River |

| Background/Ambient Data | | Data Source |
|---|---|---|
| Hardness (mg/L) | 20 mg/l | NPDES Renewal Application (2/28/2017 sample) at location upstream of Outfall No. 001. |
| pH (SU) with 3.9 alkalinity | 4.6 (2006)<br>5.6 (2015) | 12/6/2006 Silver Creek Reservoir sampling (Sample ID: 1194666, Sequence Number: 94; Monitoring Point ID: 92724.<br>9/26/2015: Sample ID: 1992282; Sequence Number: 13; Monitoring Point ID: 92724 |
| Aluminum (ug/l) | 150 | 5/16/2020 Application Update (raw and discharge sampling results), 4/8/2020 "Silver Creek – raw" sampling (i.e. reservoir sampling). NOTE: Because of historic Mine Drainage "seep" (Sampling point: SC-BH) between Silver Creek Reservoir & Outfall, Reservoir data might not representative of ambient conditions at Outfall in terms of cumulative AMD metals impacts. |
| Manganese (ug/l) | - | - |
| Total Iron (ug/l) | <20 | See above |
| Total Copper (ug/l) | 7 | See above |
| Total Lead (ug/l) | <1 | See above |
| Total Zinc (ug/l) | 12 | See above |

| | | | |
|---|---|---|---|
| Nearest Downstream Public Water Supply Intake | | PA AMER GLEN ALSACE EXETER WATER SYS (Berks County) | |
| PWS Waters | Schuylkill River | Flow at Intake (cfs) | - |
| PWS RMI | - | Distance from Outfall (mi) | - |

Changes Since Last Permit Issuance:

- **WTP and Outfall coordinates updated in 2017 NPDES Permit Application**. Outfall is downstream of the Blythe Municipal Authority Surface Water Intake (ID# 102016-001) on the Silver Creek Reservoir.
- **Facility discharge volumes have increased to require a 0.050 MGD NPDES Permit Basis flow.**

**Other Comments**:

Upstream:

- Big Creek (CWF; Stream Code# 2374; with orphan mine discharges – Brockton Mine "strip pool overflow") can flow into the Silver Creek reservoir (C1 Dam No. 54-023 with PWS Surface Water Withdrawal No. 102016-004).
- The upstream Silver Creek reaches (headwaters to Silver Creek Reservoir upstream of Intake) are Natural Trout Reproduction per E-maps.

**Schuylkill River and TMDL Considerations:**

- Silver Creek flows into the Schuylkill River at New Philadelphia. The (~2.4 miles) downstream Schuylkill River (CWF; Stream Code# 833) is a Natural Trout Reproduction stream, impaired life due to Urban Runoff/Storm Sewers (flow variability), Road runoff, channelization (other habitat changes) AMD siltation, AMD metals, pathogens (source unknown), and is subject to the Schuylkill River PCB TMDL and the 3/28/2007 Upper Schuylkill River (AMD metals).
- The March 28, 2007 Upper Schuylkill River TMDL (AMD) did not assign WLAs to this facility (or other Water Treatment Plants). The Schuylkill River is affected by pollution from AMD. This pollution has caused high levels of metals in the Schuylkill River. The TMDL sampling data for Schuylkill River in New Philadelphia (Sample Point SRNP) indicates that existing loads exceed the allowable loading for Total Iron and Manganese. Total Aluminum loading were not determined (either above or below the confluence) but available sampling data indicates <500 ug/l (i.e. there remains some assimilative capacity for Aluminum). Additional AMD metal loadings are directly adding to the stream impairment. The applicable TMDL WQS are:

| TMDL Parameter | Water Quality Criterion (mg/l) | Recoverable/Dissolved |
|---|---|---|
| Aluminum (Al) | 0.75 | Total Recoverable |
| Iron (Fe) | 1.50 | 30-day average; Total |
| Manganese (Mn) | 1.00 | Total Recoverable |
| pH* | 6.0-9.0 | NA |

*The pH values shown will be used when applicable. In the case of freestone streams with little or no buffering capacity, the TMDL endpoint for pH will be the natural background water quality. These values are typically as low as 5.4 (Pennsylvania Fish and Boat Commission).

**Treatment Facility Summary**

**Treatment Facility Name:** Silver Creek Water Filtration Plant

| WQM Permit No. | Issuance Date | Scope |
|---|---|---|
| 5483202 | 3/23/1993 | 76,000 gallon capacity Concrete clarifier/thickener. Original design assumed wastewater recirculation. |

| Waste Type | Degree of Treatment | Process Type | Disinfection | Avg Annual Flow (MGD) |
|---|---|---|---|---|
| Industrial | Physical | Wastewater clarification and settlement | None - wastewater is generated prior to chlorination in the WTP. | 0.050 |

| Hydraulic Capacity (MGD) | Organic Capacity (lbs/day) | Load Status | Sludge Treatment | Biosolids Use/Disposal |
|---|---|---|---|---|
| 0.038 | NA | NA | Shipped offsite to Moss Glen WFP Drying Beds per application. Quarterly removal, at ~30,000 gallons annual production. | NA |

Changes Since Last Permit Issuance: **Increase from 0.038 MGD to 0.050 MGD effluent discharge rates over extended period per EDMR.**

Other Comments:

- This WTP takes in 538,000 gallons of water and produces 500,000 gallons of potable water for public use.
- No chemical additives are presently in use.
- Chemical feed area drain, floor drains, sinks and toilet water go to 2,500 gallon Holding Tank onsite.

## Compliance History

**DMR Data for Outfall 001 (from May 1, 2019 to April 30, 2020)**

| Parameter | APR-20 | MAR-20 | FEB-20 | JAN-20 | DEC-19 | NOV-19 | OCT-19 | SEP-19 | AUG-19 | JUL-19 | JUN-19 | MAY-19 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Flow (MGD) Average Monthly** | 0.024 | 0.024 | 0.027 | 0.029 | 0.03 | 0.037 | 0.004 | 0.024 | 0.023 | 0.028 | 0.025 | 0.031 |
| **Flow (MGD) Daily Maximum** | 0.035 | 0.036 | 0.061 | 0.038 | 0.039 | 0.34 | 0.037 | 0.057 | 0.036 | 0.038 | 0.037 | 0.078 |
| **pH (S.U.) Minimum** | **5.9** | **5.8** | 6.1 | 6.1 | 6.1 | 6.0 | 6.0 | 6.1 | 6.1 | 6.1 | 6.1 | 6.2 |
| pH (S.U.) Maximum | 6.1 | 6.3 | 6.2 | 6.2 | 6.3 | 6.2 | 6.2 | 6.3 | 6.3 | 6.3 | 6.2 | 6.4 |
| TRC (mg/L) Average Monthly | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| TRC (mg/L) Daily Maximum | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | 0.01 | < 0.01 | < 0.01 |
| TSS (mg/L) Average Monthly | < 0.01 | 8.5 | 5.3 | 2.0 | 4.3 | 5.0 | 4.0 | 4.5 | 6.3 | 2.0 | 28 | < 0.01 |
| TSS (mg/L) Daily Maximum | < 0.01 | 8.5 | 5.3 | 2.0 | 4.3 | 5.0 | 4.0 | 4.5 | 6.3 | 2.0 | 28 | < 0.01 |
| **Total Aluminum (mg/L) Average Monthly** | 0.43 | **1.07** | **1.01** | 0.9 | **1.5** | **1.09** | **1.21** | **3.79** | 0.78 | 0.64 | **3.27** | 0.94 |
| Total Aluminum (mg/L) Daily Maximum | 0.43 | 1.07 | 1.01 | 0.9 | 1.5 | 1.09 | 1.21 | 3.79 | 0.78 | 0.64 | 5.66 | 0.94 |
| **Total Iron (mg/L) Average Monthly** | 0.06 | 0.09 | 0.08 | 0.07 | 0.12 | 0.58 | 0.71 | **2.7** | 0.81 | 0.16 | 0.61 | 0.14 |
| Total Iron (mg/L) Daily Maximum | 0.06 | 0.09 | 0.08 | 0.07 | 0.12 | 0.58 | 0.71 | 2.7 | 0.81 | 0.16 | 0.61 | 0.14 |
| Total Manganese (mg/L) Average Monthly | 0.029 | 0.035 | 0.037 | 0.036 | 0.032 | 0.038 | 0.043 | 0.085 | 0.051 | 0.035 | 0.042 | 0.064 |
| Total Manganese (mg/L) Daily Maximum | 0.029 | 0.035 | 0.037 | 0.036 | 0.032 | 0.038 | 0.043 | 0.085 | 0.051 | 0.035 | 0.042 | 0.064 |

**DMR Data for Outfall 001 (from May 1, 2018 to April 30, 2019)**

| Parameter | APR-19 | MAR-19 | FEB-19 | JAN-19 | DEC-18 | NOV-18 | OCT-18 | SEP-18 | AUG-18 | JUL-18 | JUN-18 | MAY-18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Flow (MGD) Average Monthly** | 0.024 | **0.042** | **0.038** | **0.038** | **0.038** | **0.042** | **0.043** | **0.044** | **0.050** | 0.036 | 0.028 | 0.030 |
| **Flow (MGD) Daily Maximum** | 0.065 | 0.065 | 0.050 | 0.047 | 0.045 | 0.047 | 0.047 | 0.072 | 0.075 | 0.070 | 0.047 | 0.047 |
| pH (S.U.) Minimum | 6.2 | 7.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.6 | 6.6 | 6.6 | 6.6 | 6.5 | 6.6 |
| pH (S.U.) Maximum | 6.6 | 7.2 | 6.0 | 6.1 | 6.3 | 6.3 | 6.7 | 6.7 | 6.7 | 6.6 | 6.6 | 6.7 |
| TRC (mg/L) Average Monthly | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | > 0.01 | < 0.01 | < 0.01 |
| TRC (mg/L) Daily Maximum | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | > 0.01 | < 0.01 | < 0.01 |
| TSS (mg/L) Average Monthly | < 0.01 | 2.7 | < 0.01 | < 0.01 | 10.3 | 10.0 | 17 | 4.7 | 3.7 | 6.5 | 17.2 | 12.8 |
| TSS (mg/L) Daily Maximum | < 0.01 | 2.7 | < 0.01 | < 0.01 | 10.3 | 10.0 | 17 | 4.7 | 3.7 | 6.5 | 17.2 | 12.8 |
| **Total Aluminum (mg/L) Average Monthly** | 0.55 | 0.93 | 0.50 | 0.08 | **1.31** | **1.32** | **2.05** | 0.45 | 0.42 | **1.73** | **4.97** | **2.05** |
| Total Aluminum (mg/L) Daily Maximum | 0.55 | 0.93 | 0.50 | 0.08 | 1.31 | 1.32 | 2.05 | 0.45 | 0.42 | 1.73 | 4.97 | 2.05 |
| **Total Iron (mg/L) Average Monthly** | 0.02 | 0.05 | 0.06 | 0.05 | 0.32 | 0.42 | 1.26 | 1.0 | 0.50 | 0.308 | 0.646 | 0.206 |
| Total Iron (mg/L) Daily Maximum | 0.02 | 0.05 | 0.06 | 0.05 | 0.32 | 0.42 | 1.26 | 1.0 | 0.50 | 0.308 | 0.646 | 0.206 |
| Total Manganese (mg/L) Average Monthly | 0.028 | 0.032 | 0.034 | 0.030 | 0.030 | 0.027 | 0.031 | 0.075 | 0.041 | 0.0331 | 0.0357 | 0.0326 |
| Total Manganese (mg/L) Daily Maximum | 0.028 | 0.032 | 0.034 | 0.030 | 0.030 | 0.027 | 0.031 | 0.075 | 0.041 | 0.0331 | 0.0357 | 0.0326 |

**DMR Data for Outfall 001 (from March 1, 2016 to February 28, 2017)**

| Parameter | FEB-17 | JAN-17 | DEC-16 | NOV-16 | OCT-16 | SEP-16 | AUG-16 | JUL-16 | JUN-16 | MAY-16 | APR-16 | MAR-16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flow (MGD) Daily Maximum | **0.045** | **0.044** | **0.047** | **0.042** | **0.044** | **0.044** | **0.044** | **0.050** | **0.049** | **0.045** | 0.047 | 0.048 |
| Flow (MGD) Daily Maximum | **0.045** | **0.044** | **0.047** | **0.042** | **0.044** | **0.044** | **0.044** | **0.050** | **0.049** | **0.045** | 0.047 | 0.048 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH (S.U.) Minimum | 6.5 | 6.4 | 6.4 | 6.4 | 6.4 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 6.2 |
| pH (S.U.) Maximum | 6.6 | 6.6 | 6.5 | 6.5 | 6.7 | 6.4 | 6.5 | 6.4 | 6.4 | 6.5 | 6.4 | 6.3 |
| TRC (mg/L) Average Monthly | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| TRC (mg/L) Daily Maximum | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| TSS (mg/L) Average Monthly | 5.0 | < 0.01 | 4.0 | 3.5 | 3.5 | 6.5 | 3.0 | < 0.01 | < 0.01 | 5.5 | 10.0 | 6.5 |
| TSS (mg/L) Daily Maximum | 5.0 | < 0.01 | 4.0 | 3.5 | 3.5 | 6.5 | 3.0 | < 0.01 | < 0.01 | 5.5 | 10.0 | 6.5 |
| Total Aluminum (mg/L) Average Monthly | 0.508 | 0.222 | 0.554 | 0.373 | 0.438 | 0.217 | < 0.01 | < 0.01 | < 0.01 | 0.639 | 1.11 | 1.3 |
| Total Aluminum (mg/L) Daily Maximum | 0.508 | 0.222 | 0.554 | 0.373 | 0.438 | 0.217 | < 0.01 | < 0.01 | < 0.01 | 0.639 | 1.11 | 1.3 |
| Total Iron (mg/L) Average Monthly | < 0.01 | < 0.01 | < 0.01 | < 0.01 | 0.203 | 0.339 | 0.558 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 1.00 |
| Total Iron (mg/L) Daily Maximum | < 0.01 | < 0.01 | < 0.01 | < 0.01 | 0.203 | 0.339 | 0.558 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 1.00 |
| Total Manganese (mg/L) Average Monthly | 0.0316 | 0.0289 | 0.0214 | 0.0221 | 0.0280 | 0.0382 | 0.0614 | 0.0316 | 0.0289 | 0.0458 | 0.0306 | 0.0319 |
| Total Manganese (mg/L) Daily Maximum | 0.0316 | 0.0289 | 0.0214 | 0.0221 | 0.0280 | 0.0382 | 0.0614 | 0.0316 | 0.0289 | 0.0458 | 0.0306 | 0.0319 |

## Compliance History

**Effluent Violations for Outfall 001, from: June 1, 2018 To: April 30, 2020**

| Parameter | Date | SBC | DMR Value | Units | Limit V |
|---|---|---|---|---|---|
| Total Aluminum | 06/30/18 | Avg Mo | 4.97 | mg/L | 4.0 |
| Total Iron | 09/30/19 | Avg Mo | 2.7 | mg/L | 2.0 |

Summary of Inspections:

| SITE NAME | INSP PROGRAM | INSP ID | INSPECTED DATE | INSP TYPE | INSPECTION RESULT DESC |
|---|---|---|---|---|---|
| BLYTHE TWP MUNI AUTH SILVER CREEK WTP | WPCNP | 2817649 | 11/14/2018 | Compliance Evaluation | No Violations Noted |
| BLYTHE TWP MUNI AUTH SILVER CREEK WTP | WPCNP | 2473252 | 02/23/2016 | Compliance Evaluation | Viol(s) Noted & Immediately Corrected |

Other Comments:

**Application was early (due July 4, 2017). Therefore, the permit was administratively extended past current expiration date of December 31, 2017.**

## Development of Effluent Limitations

**Outfall No.** 001 **Design Flow (MGD)** .050
**Latitude** 40º 44' 46.78" **Longitude** -76º 8' 2.63"
**Wastewater Description:** Water Treatment Effluent

**Permit Limits and/or Monitoring (Changes bolded): UPDATE TO SITE-SPECIFIC Limits.**

| Parameter | Limit (mg/l unless otherwise specified) | SBC | Model/Basis |
|---|---|---|---|
| TSS | **Report (lb/d)**<br>30.0<br>60.0<br>**75.0** | **Daily Max**<br>Monthly Average<br>Daily Max<br>**IMAX** | Existing Technology limit per 10/1/97 DEP Policy ID# 362-2183-003 (Technology-based control requirements for water treatment plant wastes) for filter backwash plants**.**<br>Application data: 22 mg/l max value with 4.19 mg/l LTA value (24 samples). |
| pH | 5.5 – 9.0 SU | **Inst. Min** - Max | Existing limits. The previous NPDES Permit allowed for 5.5 SU pH (Chapter 95.2 option when source stream has a very low pH. See 2015 sampling data. The Authority did not provide any stream pH data.<br>Application data: 6.1 – 6.4 SU (24 samples) |
| Total Iron<br>**(final limits effective in fourth year)** | **Report (lb/d)**<br>**Report**<br>**1.500**<br>**1.500** | **Monthly Average**<br>Monthly Average<br>Daily Max<br>**IMAX** | **Existing Technology limit (2.0 mg/l monthly average; 4.0 mg/l daily max, with new 4.0 mg/l IMAX) Interim Limits to be superseded by Final permit limits based on TMDL water quality considerations (downstream Schuylkill River has zero assimilative capacity). IMAX limit is added and set to daily max level to ensure EDMR reporting of violations. Mass reporting added to allow for updating of TMDL in future.**<br>Application data: **1.805 mg/l max** and 0.27 mg/l average (24 samples). See table below for 4 additional sample data, plus EDMR. |
| Total Manganese<br>**(final limits effective in fourth year)** | **Report (lb/d)**<br>Report<br>1.0<br>**1.0** | **Monthly Average**<br>Monthly Average<br>Daily Max<br>**IMAX** | **Existing Technology limit (1.0 mg/l monthly average; 2.0 mg/l daily max; new 2.0 mg/l IMAX limit) Interim Limits to be superseded by Final Permit limits based on TMDL water quality considerations (downstream Schuylkill River has zero assimilative capacity). IMAX limit is added and set to daily max level to ensure EDMR reporting of violations. Mass reporting added to allow for updating of TMDL in future.**<br>Application data: 0.171 mg/l max and 0.0408 mg/l average (24 samples). See EDMR for additional sampling data. |
| Total Aluminum<br>**(final limits effective in fourth year)** | **Report (lb/d)**<br>**0.750**<br>**1.500**<br>**1.500** | **Daily Max**<br>**Monthly Average**<br>**Daily Max**<br>**IMAX** | **Existing Technology limit (4.0 mg/l monthly average; 8.0 mg/l daily max; new 8.0 mg/l IMAX) Interim Limits to be superseded by Final Permit limits based on TMDL water quality considerations** |

| | | | |
|---|---|---|---|
| | | | **(downstream Schuylkill River has some assimilative capacity, resulting in use of daily max multiplier). Facility uses alum as a water treatment chemical IMAX limit is added and set to daily max level to ensure EDMR reporting of violations. Mass reporting added to allow for updating of TMDL in future.**<br>Application data: **1.51 mg/l** max and 0.48 mg/l average (24 samples). See table below for 4 additional sample data, plus EDMR. |
| **Total Residual Chlorine** | 0.5**0**<br>1.0**0**<br>**1.35** | Average Monthly<br>Daily Max<br>**IMAX** | **Existing limits retained, except for IMAX value added (TRC Spreadsheet water quality IMAX limit) and significant zero.**<br>Application data: 0.01 mg/l max and 0.02 mg/l average (24 samples). See EDMR for additional sample data. |
| **Total Dissolved Solids** | **Report (lb/d)**<br>**Report**<br>**Report** | **Monthly Average**<br>**Monthly Average**<br>**Daily Max** | **Monitoring per Chapter 92a.61 due to siltation impairments plus being a DRBC constituent of interest.**<br>Application data: 21.1 max and 20.23 mg/l average (3 samples) |
| **Total Cadmium (final limits effective in fourth year)** | **Report (lb/d)**<br>**0.0002**<br>**0.0004**<br>**0.0006** | **Monthly Average**<br>**Monthly Average**<br>**Daily Max**<br>**IMAX** | **Interim monitoring, with final limits effective in fourth year. See Reasonable Potential Analysis.**<br>Application data: 0.78 ug/l max, 0.387 ug/l average (3 samples). Four later samples were ND above DEP Target QL (0.0002 mg/l). |
| **Total Copper (final limits effective in fourth year)** | **Report (lb/d)**<br>**0.005**<br>**0.009**<br>**0.014** | **Monthly Average**<br>**Monthly Average**<br>**Daily Max**<br>**IMAX** | **Interim monitoring, with final limits effective in fourth year. See Reasonable Potential Analysis.**<br>Application data: **35.3 ug/l max, 13.13 ug/l** average (3 samples). Four later samples ranged from 8 to **17 ug/l**. |
| **Total Lead (final limits effective in fourth year)** | **Report (lb/d)**<br>**0.0011**<br>**0.0017**<br>**0.0028** | **Monthly Average**<br>**Monthly Average**<br>**Daily Max**<br>**IMAX** | **Interim monitoring, with final limits effective in fourth year. See Reasonable Potential Analysis.**<br>Application data: **1.9** ug/l max, 1.18 ug/l average (3 samples). Four later samples ranged from 1 to **4 ug/l**. |
| **Total Zinc (final limits effective in fourth year)** | **Report (lb/d)**<br>**0.061**<br>**0.095**<br>**0.153** | **Monthly Average**<br>**Monthly Average**<br>**Daily Max**<br>**IMAX** | **Interim monitoring, with final limits effective in fourth year. See Reasonable Potential Analysis.**<br>Application data: 31.1 ug/l max, 17.4 ug/l average (3 samples). Four later samples ranged from 15 – 22 ug/l. |
| Nutrients:<br>Total Nitrogen<br>Nitrate-Nitrite as N<br>Total Kjehldahl Nitrogen<br>Total Phosphorus | - | - | Available nutrient data indicates no need for monitoring.<br>TKN: <0.500 mg/l (3 samples)<br>Nitrate-Nitrite-N: <0.04 mg/l (3 samples)<br>Total Phosphorus: <0.05 mg/l (3 samples) |
| Chlorides, Sulfates | - | - | Not needed per Reasonable Potential Analysis. |

Comments:

**Monitoring Requirements**: Updated to meet current EDMR/ICIS reporting requirements.

- Due to variability of effluent quality and TMDL considerations, flow-proportional 24-hour composite sampling is being required to avoid potential biasing.

- Monitoring frequencies have been updated to reflect minimum WTP sampling frequencies for this size of facility, except for toxics (upon permit limit effective date).
- Mass loading reporting is being required. No additional sampling is required.
- Due to potential for exceedances, weekly monitoring is required for toxics (including Aluminum, and Total Iron).

**Reasonable Potential Analysis**: See Toxic Screening Spreadsheet and PENTOXSD water quality modeling output. The water quality modeling has been updated (0.277 mg/l LTA discharge Total hardness; site-specific upstream 20 mg/l hardness data; change in outfall location; increased NPDES permit basis flow due to increased site discharges; raw Silver Creek sampling data below). Additional sampling data was received (see below).

TMDL Considerations: Due to zero assimilative capacity (and no TMDL Waste Load Allocations), Total Iron and Manganese limits have been set to Water Quality Criterion for daily max and IMAX. Due to limited assimilative capacity (<500 ug/l insensitive NDs used in TMDL), the Total Aluminum monthly average limit has been set to the water quality criterion with a daily max multiplier used for the Daily Max and IMAX.

Additional Authority provided sampling data:

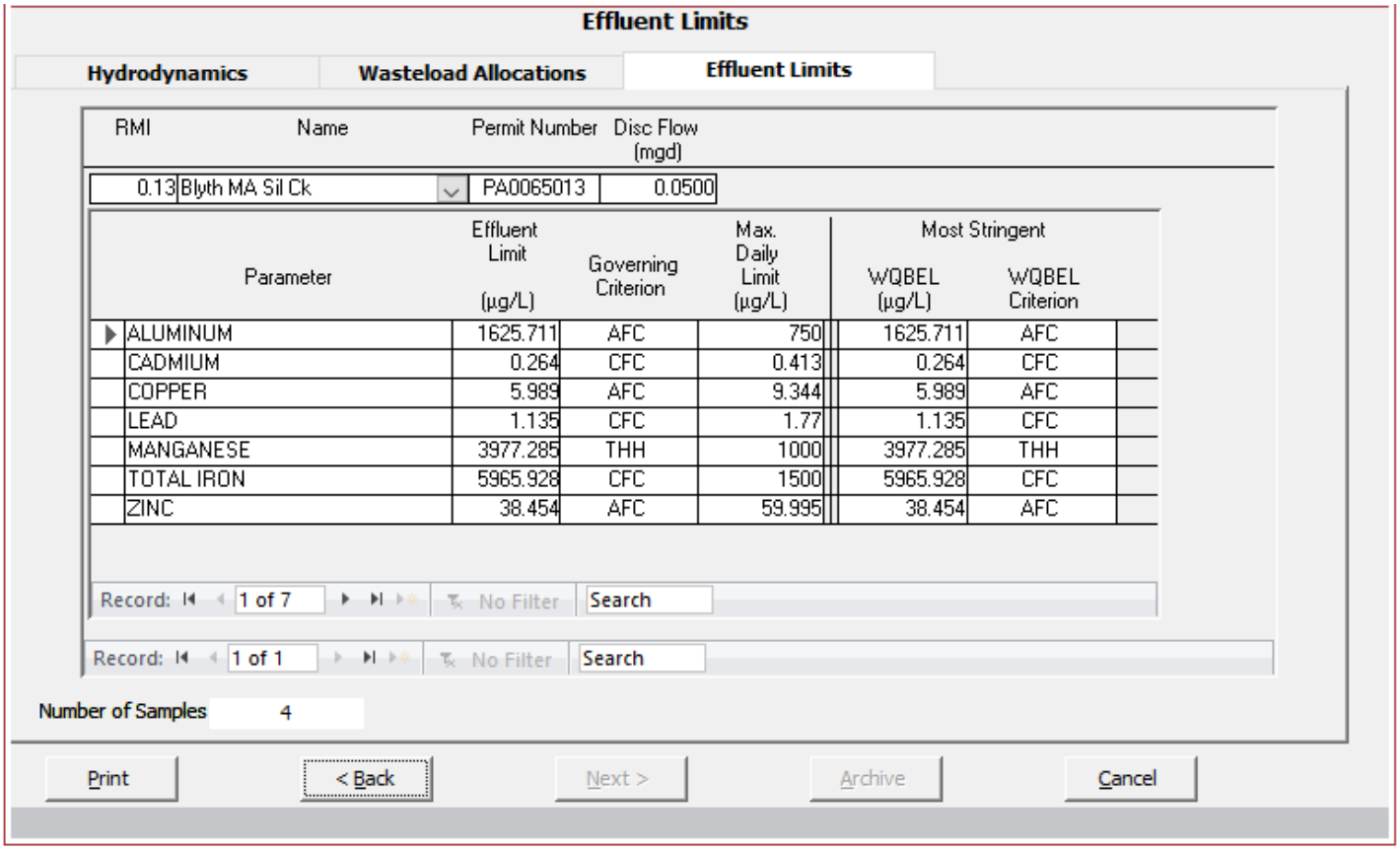
- Cadmium: The Authority did not supply additional sampling data meeting the DEP Target QL.
- pH: The Authority did not supply stream data to support a Chapter 95.2 request for lower pH Instantaneous Minimum limit.
- Raw Water Sampling: Silver Creek Raw sampling location not identified. (Because of Mine Drainage "seep" (Name: SC-BH) between Silver Creek Reservoir & Outfall, Reservoir data is not completely representative of ambient conditions at Outfall in that higher metal loadings might be present at the outfall location.)

| Constituent | 4/8/2020 Silver Creek Raw Sampling (ug/l) | RL (ug/l) | DEP Target QL (ug/l) |
|---|---|---|---|
| Aluminum | 150 | 20 | 10 |
| Cadmium | ND (<1.0) | 1.0 | 0.2 |
| Copper | 7 | 1 | 4.0 |
| Total Iron | ND (<20) | 20 | 20 |
| Lead | ND (<1) | 1 | 1.0 |
| Zinc | 12 | 5 | 5.0 |

| Constituent | 3/12/2020 Effluent Sampling (ug/l) | 3/19/2020 Effluent Sampling (ug/) | 3/24/2020 Effluent Sampling (ug/l) | 4/3/2020 Effluent Sampling (ug/l) | RL (ug/l) | DEP Target QL (ug/l) | Original Application Sampling Max Value (ug/l) | WQBEL (ug/l) |
|---|---|---|---|---|---|---|---|---|
| Aluminum | **820** | 730 | 540 | 400 | 20 | 10 | **1510** | 750 (TMDL WQC) |
| Cadmium | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<1.0) | 1.0 | **0.2** | **0.78** | |
| Copper | 17 | 11 | 15 | 8 | 1 | 4.0 | 35.3 | |
| Total Iron | 80 | 90 | 110 | 69 | 20 | 20 | **1805** | 1500 (TMDL WQC) |
| Lead | 4 | 2 | 3 | 1 | 1 | 1.0 | 1.9 | |
| Zinc | 20 | 15 | 22 | 19 | 5 | 5.0 | 31.1 | |

Facility: **Blythe MA Silver Creek WTP** NPDES Permit No.: **PA0065013** Outfall: **001**
Analysis Hardness (mg/L): **15.041** Discharge Flow (MGD): **0.05** Analysis pH (SU): **7**
Stream Flow, $Q_{7-10}$ (cfs): **0.2302**

| Parameter | Maximum Concentration in Application or DMRs (µg/L) | | Most Stringent Criterion (µg/L) | Candidate for PENTOXSD Modeling? | Most Stringent WQBEL (µg/L) | Screening Recommendation |
|---|---|---|---|---|---|---|
| Total Dissolved Solids | | 21100 | 500000 | No | | |
| Chloride | | 1500 | 250000 | No | | |
| Bromide | < | 15 | N/A | No | | |
| Sulfate | | 5700 | 250000 | No | | |
| Fluoride | | 58 | 2000 | No | | |
| Total Aluminum | | 4970 | 750 | Yes | 750 | Establish Limits |
| Total Antimony | < | 0.48 | 5.6 | No (Value < QL) | | |
| Total Arsenic | | 1.7 | 10 | No | | |
| Total Barium | | 8.4 | 2400 | No | | |
| Total Beryllium | | 0.16 | N/A | No | | |
| Total Boron | < | 8.3 | 1600 | No (Value < QL) | | |
| Total Cadmium | | 0.78 | 0.066 | Yes | 0.264 | Establish Limits |
| Total Chromium | < | 0.59 | N/A | No | | |
| Hexavalent Chromium | < | 0.015 | 10.4 | No (Value < QL) | | |
| Total Cobalt | | 0.62 | 19 | No | | |
| Total Copper | | 35.3 | 1.9 | Yes | 55.989 | Establish Limits |
| Total Cyanide | < | 5 | N/A | No | | |
| Total Iron | | 1260 | 1500 | Yes | 1500 | Establish Limits |
| Dissolved Iron | < | 33.7 | 300 | No | | |
| Total Lead | | 4 | 0.3 | Yes | 1.135 | Establish Limits |
| Total Manganese | | 75 | 1000 | No | 1000 | |
| Total Mercury | < | 0.05 | 0.05 | No (Value < QL) | | |
| Total Molybdenum | < | 0.23 | N/A | No | | |
| Total Nickel | | 1.8 | 10.5 | No | | |
| Total Phenols (Phenolics) | < | 15 | 5 | Yes | | |
| Total Selenium | < | 0.44 | 5.0 | No (Value < QL) | | |
| Total Silver | < | 0.12 | 0.2 | No (Value < QL) | | |
| Total Thallium | < | 0.16 | 0.24 | No (Value < QL) | | |
| Total Zinc | | 31.1 | 24.1 | Yes | 61.354 | Establish Limits |
| Acrolein | < | | 3 | | | |



**Effluent Limits**

Hydrodynamics | Wasteload Allocations | Effluent Limits

| RMI | Name | Permit Number | Disc Flow (mgd) |
|---|---|---|---|
| 0.13 | Blyth MA Sil Ck | PA0065013 | 0.0500 |

| Parameter | Effluent Limit (µg/L) | Governing Criterion | Max. Daily Limit (µg/L) | Most Stringent WQBEL (µg/L) | Most Stringent WQBEL Criterion |
|---|---|---|---|---|---|
| ALUMINUM | 1625.711 | AFC | 750 | 1625.711 | AFC |
| CADMIUM | 0.264 | CFC | 0.413 | 0.264 | CFC |
| COPPER | 5.989 | AFC | 9.344 | 5.989 | AFC |
| LEAD | 1.135 | CFC | 1.77 | 1.135 | CFC |
| MANGANESE | 3977.285 | THH | 1000 | 3977.285 | THH |
| TOTAL IRON | 5965.928 | CFC | 1500 | 5965.928 | CFC |
| ZINC | 38.454 | AFC | 59.995 | 38.454 | AFC |

Record: 1 of 7 | No Filter | Search

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Number of Samples 4

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