pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

**Northcentral Regional Office**
**CLEAN WATER PROGRAM**

| | | | |
|---|---|---|---|
| Application Type | **Renewal** | Application No. | **PA0232751** |
| Facility Type | **Municipal** | APS ID | **1036243** |
| Major / Minor | **Minor** | Authorization ID | **1349669** |

# NPDES PERMIT FACT SHEET
# INDIVIDUAL SEWAGE

## Applicant and Facility Information

| | | | |
|---|---|---|---|
| Applicant Name | **Potter Township Centre County** | Facility Name | **Potters Mills Central Treatment System** |
| Applicant Address | 124 Short Road | Facility Address | Rt 144 |
| | Spring Mills, PA 16875-9326 | | Potters Mills, PA 16875 |
| Applicant Contact | Dick Decker, Chairman | Facility Contact | Dave Boliek |
| Applicant Phone | (814) 364-9176 | Facility Phone | (814) 364-9314 |
| Client ID | 35324 | Site ID | 814487 |
| Ch 94 Load Status | Not Overloaded | Municipality | Potter Township |
| Connection Status | No Limitations | County | Centre |
| Date Application Received | April 13, 2021 | EPA Waived? | No |
| Date Application Accepted | April 16, 2021 | If No, Reason | New Phase V Chesapeake Bay Discharge |
| Purpose of Application | Renewal of a NDPES Permit | | |

## Summary of Review

The subject permit is a Publicly Owned Treatment Works (POTW) serving the Potters Mills area of Potter Township, Centre County.

A map indicating the discharge location is attached.

Sludge use and disposal description and location(s): Septage is either transferred to other facilities for further processing or beneficially used.

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.

| Approve | Deny | Signatures | Date |
|---|---|---|---|
| ✓ | | *Keith C. Allison*<br>Keith C. Allison / Project Manager | June 22, 2021 |
| ✓ | | *Nicholas W. Hartranft*<br>Nicholas W. Hartranft, P.E. / Environmental Engineer Manager | June 23, 2021 |

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

| | | | |
|---|---|---|---|
| Outfall No. | 001 | Design Flow (MGD) | 0.014 |
| Latitude | 40º 48' 44.16" | Longitude | -77º 38' 16.65" |
| Quad Name | Centre Hall, PA | Quad Code | |
| Wastewater Description: | Sewage Effluent | | |
| Receiving Waters | Sinking Creek (CWF, MF) | Stream Code | 18377 |
| NHD Com ID | 54970197 | RMI | 6.8 |
| Drainage Area | 19.1 $mi^2$ | Yield ($cfs/mi^2$) | 0.0770 |
| $Q_{7-10}$ Flow (cfs) | 1.47 | $Q_{7-10}$ Basis | USGS StreamStats |
| Elevation (ft) | 1128.4 | Slope (ft/ft) | 0.00127 |
| Watershed No. | 6-A | Chapter 93 Class. | CWF, MF |
| Existing Use | N/A | Existing Use Qualifier | N/A |
| Exceptions to Use | None | Exceptions to Criteria | None |
| Assessment Status | Impaired | | |
| Cause(s) of Impairment | PATHOGENS | | |
| Source(s) of Impairment | SOURCE UNKNOWN | | |
| TMDL Status | | Name | |
| Nearest Downstream Public Water Supply Intake | Suez Water Pennsylvania | | |
| PWS Waters | Susquehanna River | Distance from Outfall (mi) | Approx. 100 |

Changes Since Last Permit Issuance: The above stream and drainage characteristics were determined for the previous review and remain adequate.

Other Comments:

The effluent is pumped approximately a mile northward along SR 144 to discharge to Sinking Creek. Potter Run is closer to the treatment facility, but it also has an existing use of HQ-CWF which would subject the discharge to the anti-degradation requirements of Chapter 93.

No downstream water supply is expected to be affected by this discharge at this time with the limitations and monitoring proposed.

The above-listed impairment from pathogens should not be exacerbated by this discharge which meets its fecal coliform limits which are equivalent to instream criteria. Also, malfunctioning septic systems, which were eliminated with the installation of this treatment facility, may have contributed to the impairment.

**Treatment Facility Summary**

**Treatment Facility Name:** Potters Mills Central Treatment System

| WQM Permit No. | Issuance Date |
|---|---|
| 1416404 | 4/6/2017 |

| Waste Type | Degree of Treatment | Process Type | Disinfection | Avg Annual Flow (MGD) |
|---|---|---|---|---|
| Sewage | Secondary | STEP | Ultraviolet | 0.014 |

| Hydraulic Capacity (MGD) | Organic Capacity (lbs/day) | Load Status | Biosolids Treatment | Biosolids Use/Disposal |
|---|---|---|---|---|
| 0.014 | 35 | Not Overloaded | None | Offsite |

Changes Since Last Permit Issuance: Discharge began in November 2019.

Other Comments: The treatment facility, as permitted by WQM Permit No. 1416404, consists of an ORENCO Septic Tank Effluent Pump (STEP) system consisting of a septic tank with Biotube Filter serving each home or business discharging by pump to an ORENCO AdvanTex AX-MAX treatment plant followed by Ultraviolet Light Disinfection. The ORENCO AdvanTex Ax-Max plant is a recirculating fixed media filter system.

**Hauled in Waste**

Per the application the facility has not received any hauled in waste and is not expected to receive any over the next permit term.

## Compliance History

**DMR Data for Outfall 001 (from May 1, 2020 to April 30, 2021)**

| Parameter | APR-21 | MAR-21 | FEB-21 | JAN-21 | DEC-20 | NOV-20 | OCT-20 | SEP-20 | AUG-20 | JUL-20 | JUN-20 | MAY-20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flow (MGD) Average Monthly | 0.00368 | 0.00344 | 0.00349 | 0.00333 | 0.00333 | 0.00325 | 0.00354 | 0.00359 | 0.00396 | 0.00328 | 0.00338 | 0.00376 |
| Flow (MGD) Daily Maximum | 0.00496 | 0.00460 | 0.00509 | 0.00552 | 0.00552 | 0.00456 | 0.00458 | 0.00491 | 0.00613 | 0.00408 | 0.00416 | 0.00691 |
| pH (S.U.) Instantaneous Minimum | 6.0 | 6.44 | 6.47 | 6.31 | 5.74 | 6.05 | 6.26 | 6.84 | 6.15 | 6.67 | 6.36 | 6.54 |
| pH (S.U.) Instantaneous Maximum | 6.8 | 6.94 | 6.73 | 6.76 | 6.85 | 6.65 | 7.21 | 7.2 | 7.24 | 7.11 | 6.92 | 6.96 |
| DO (mg/L) Instantaneous Minimum | 2.78 | 3.76 | 3.68 | 4.06 | 4.53 | 2.76 | 1.16 | 2.0 | 2.11 | 2.26 | 2.32 | 2.73 |
| CBOD5 (lbs/day) Average Monthly | < 0.100 | 0.100 | 0.200 | < 0.0900 | < 0.10 | < 0.070 | 2.90 | 0.090 | 0.10 | 0.0800 | 0.0800 | 0.100 |
| CBOD5 (mg/L) Average Monthly | < 3.0 | 5.0 | < 5.0 | < 3.0 | < 4.0 | < 3.00 | 3.0 | < 4.0 | 3.00 | 3.00 | 3.0 | 4.00 |
| CBOD5 (mg/L) Instantaneous Maximum | 4.0 | 7.0 | 6.0 | < 3.0 | 5.0 | < 3.0 | 3.0 | 4.0 | 3.00 | 3.00 | 3.0 | 4.00 |
| BOD5 (lbs/day) Raw Sewage Influent Average Monthly | 5.0 | 8.0 | 6.0 | 6.0 | 6.0 | 7.0 | < 162.0 | 8.0 | 8.0 | 7.0 | 8.0 | 227 |
| BOD5 (lbs/day) Raw Sewage Influent Daily Maximum | 5.0 | 8.0 | 7.0 | 7.0 | 7.0 | 7.0 | < 202.0 | 9.0 | 10.0 | 8.0 | 14.0 | 292 |
| BOD5 (mg/L) Raw Sewage Influent Average Monthly | 143 | 273.0 | 163 | 180.0 | 217 | 282.0 | < 5.0 | 297 | 294.0 | 262.0 | 330 | 227 |
| TSS (lbs/day) Average Monthly | 0.10 | 0.20 | 0.07 | 0.06 | 0.10 | 0.06 | 0.07 | 0.05 | < 0.10 | 0.08 | 0.70 | 0.20 |
| TSS (lbs/day) Raw Sewage Influent Average Monthly | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | < 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 42.0 |
| TSS (lbs/day) Raw Sewage Influent Daily Maximum | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 1.0 | 1.0 | 3.0 | 53.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TSS (mg/L) Average Monthly | 3.0 | 6.0 | 2.0 | 2.0 | 4.0 | < 2.0 | 2.0 | < 2.0 | < 3.0 | 3.0 | 22.0 | 6.00 |
| TSS (mg/L) Raw Sewage Influent Average Monthly | 37.0 | 31 | 40.0 | 37.0 | 47.0 | 30.0 | < 50 | 55.0 | 39.0 | 47.0 | 95.0 | 42.0 |
| TSS (mg/L) Instantaneous Maximum | 2.0 | 6.0 | 2.0 | 2.0 | 5.0 | 3.0 | 2.0 | < 2.0 | < 4.0 | 4.0 | 22.0 | 11.00 |
| Fecal Coliform (No./100 ml) Geometric Mean | < 4.0 | 5.0 | < 3.0 | < 1.0 | < 2.0 | < 2.0 | < 4.0 | < 4.0 | < 4.0 | 4.0 | 8.00 | < 4.00 |
| Fecal Coliform (No./100 ml) Instantaneous Maximum | 14.6 | 6.3 | 6.30 | 1.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | 4.0 | 16.40 | < 4.00 |
| UV Intensity (µw/cm²) Instantaneous Minimum | 73.0 | 72.0 | 75.0 | 78.0 | 78.0 | 81.0 | 81.0 | 80.0 | 75.0 | 75 | 81 | 77.0 |
| Nitrate-Nitrite (mg/L) Average Monthly | 47.756 | 32.25 | < 48.63 | < 53.70 | < 54.2 | 53.03 | 44.39 | < 29.05 | < 24.76 | < 27.36 | < 16.517 | 38.75 |
| Nitrate-Nitrite (lbs) Total Monthly | < 46.0 | 29.0 | < 47.0 | < 51.0 | < 44 | 39.0 | < 41 | < 22.0 | < 28.0 | < 22 | < 15.0 | 33.0 |
| Total Nitrogen (mg/L) Average Monthly | < 50.17 | 36.01 | < 49.88 | < 2.0 | < 56.8 | < 53.87 | < 45.49 | < 29.65 | < 25.57 | < 28.06 | < 20.397 | 40.706 |
| Total Nitrogen (lbs) Effluent Net Total Monthly | < 48.0 | 33.0 | < 48 | < 53.0 | < 46.0 | < 39.4 | < 41.0 | < 23.0 | < 29.0 | < 22.0 | < 18.0 | 35.00 |
| Total Nitrogen (lbs) Total Monthly | < 48.0 | 33.0 | < 48.0 | < 53.0 | < 46.0 | < 39.0 | < 41.0 | < 23.0 | < 29.0 | < 22 | < 18.0 | 35.0 |
| Total Nitrogen (lbs) Effluent Net Total Annual | | | | | | | | 00 | | | | |
| Total Nitrogen (lbs) Total Annual | | | | | | | | < 330 | | | | |
| Ammonia (lbs/day) Average Monthly | 2.0 | 0.1 | 1.0 | 0.03 | 0.06 | < 0.6 | 0.30 | 0.02 | 0.40 | < 0.01 | < 0.6 | 1.934 |
| Ammonia (mg/L) Average Monthly | 2.325 | 3.633 | 1.251 | 0.934 | 0.686 | < 0.838 | 0.33 | 0.60 | 0.354 | < 0.5 | < 0.72 | 1.934 |
| Ammonia (lbs) Total Monthly | 2.0 | 3.0 | 1.0 | 0.90 | 0.60 | < 0.6 | 0.30 | 0.50 | 0.40 | < 0.40 | 0.60 | 2.00 |
| Ammonia (lbs) Total Annual | | | | | | | | < 24 | | | | |
| TKN (mg/L) Average Monthly | < 1.387 | 3.75 | < 0.50 | < 1.838 | 2.60 | < 0.50 | < 0.50 | < 0.5 | < 0.81 | < 0.50 | < 3.878 | 1.753 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TKN (lbs)<br>Total Monthly | < 1.0 | 3.0 | < 0.50 | < 2.0 | 2.0 | < 0.40 | < 0.40 | < 0.40 | < 0.90 | < 0.40 | 3.0 | 2.00 |
| Total Phosphorus (mg/L)<br>Average Monthly | 8.52 | 8.52 | 5.74 | 6.10 | 6.32 | 6.5 | 7.0 | 6.67 | 6.56 | 6.95 | 5.74 | 4.08 |
| Total Phosphorus (lbs)<br>Effluent Net Total Monthly | 8.0 | 8.0 | 6.0 | 6.0 | 5.0 | 5.0 | 6.0 | 5.0 | 7.0 | 6.00 | 5.0 | 4.00 |
| Total Phosphorus (lbs)<br>Total Monthly | 8.0 | 8.0 | 6.0 | 6.0 | 5.0 | 5.0 | 6.0 | 5.0 | 7.00 | 6.00 | 5.0 | 4.00 |
| Total Phosphorus (lbs)<br>Effluent Net Total Annual | | | | | | | | 48.0 | | | | |
| Total Phosphorus (lbs)<br>Total Annual | | | | | | | | 48.0 | | | | |

| **Compliance History, Cont'd** | |
|---|---|
| | |
| **Summary of Inspections:** | The facility has been inspected by the Department since beginning operation in November 2019. The most recent Chesapeake Bay inspection on February 18, 2021 identified the failure to meet the phosphorus cap load. A routine partial inspection on July 27, 2020 identified the failure to take samples as required by the permit. |
| **Other Comments:** | A query in WMS found two open violations for Potter Township, Centre County in eFACTS:<br>• Violation ID No. 889734 for Violation of NPDES effluent limits, 7/28/20 and<br>• Violation ID No. 889735 for Failure to monitor pollutants as required by the NPDES Permit. |

| Existing Effluent Limitations and Monitoring Requirements | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| The limitations and **Parameter** | **Effluent Limitations** | | | | | | **Monitoring Requirements** | |
| | **Mass Units (lbs/day) (1)** | | **Concentrations (mg/L)** | | | | **Minimum (2) Measurement Frequency** | **Required Sample Type** |
| | **Average Monthly** | **Daily Maximum** | **Instantaneous Minimum** | **Average Monthly** | **Daily Maximum** | **Instant. Maximum** | | |
| Flow (MGD) | Report | Report | XXX | XXX | XXX | XXX | 1/week | Measured |
| pH (S.U.) | XXX | XXX | 6.0 | XXX | XXX | 9.0 | 1/day | Grab |
| Dissolved Oxygen | XXX | XXX | Report | XXX | XXX | XXX | 1/day | Grab |
| Carbonaceous Biochemical Oxygen Demand (CBOD5) | 2.91 | XXX | XXX | 25.0 | XXX | 50.0 | 2/month | Grab |
| Biochemical Oxygen Demand (BOD5) Raw Sewage Influent | Report | Report | XXX | Report | XXX | XXX | 2/month | Grab |
| Total Suspended Solids | 3.50 | XXX | XXX | 30.0 | XXX | 60.0 | 2/month | Grab |
| Total Suspended Solids Raw Sewage Influent | Report | Report | XXX | Report | XXX | XXX | 2/month | Grab |
| Fecal Coliform (No./100 ml) Oct 1 - Apr 30 | XXX | XXX | XXX | 2000 Geo Mean | XXX | 10000 | 2/month | Grab |
| Fecal Coliform (No./100 ml) May 1 - Sep 30 | XXX | XXX | XXX | 200 Geo Mean | XXX | 1000 | 2/month | Grab |
| E. Coli (No./100 ml) | XXX | XXX | XXX | XXX | Report | XXX | 1/year | Grab |
| Ultraviolet light intensity (µw/cm²) | XXX | XXX | Report | XXX | XXX | XXX | 1/day | Calculation |
| Ammonia-Nitrogen | Report | XXX | XXX | Report | XXX | XXX | 2/month | Grab |
| Total Phosphorus | XXX | XXX | XXX | Report | XXX | XXX | 2/month | Grab |

Compliance Sampling Location: Outfall 001

| Existing Effluent Limitations and Monitoring Requirements | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Parameter** | **Effluent Limitations** | | | | | | **Monitoring Requirements** | |
| | **Mass Units (lbs/day) (1)** | | **Concentrations (mg/L)** | | | | **Minimum (2) Measurement Frequency** | **Required Sample Type** |
| | **Monthly** | **Annual** | **Monthly** | **Monthly Average** | **Maximum** | **Instant. Maximum** | | |
| Ammonia--N | Report | Report | XXX | Report | XXX | XXX | 2/month | Grab |
| Kjeldahl--N | Report | XXX | XXX | Report | XXX | XXX | 2/month | Grab |
| Nitrate-Nitrite as N | Report | XXX | XXX | Report | XXX | XXX | 2/month | Grab |
| Total Nitrogen | Report | Report | XXX | Report | XXX | XXX | 2/month | Calculation |
| Total Phosphorus | Report | Report | XXX | Report | XXX | XXX | 2/month | Grab |
| Net Total Nitrogen | Report | 0 | XXX | XXX | XXX | XXX | 1/month | Calculation |
| Net Total Phosphorus | Report | 0 | XXX | XXX | XXX | XXX | 1/month | Calculation |

Compliance Sampling Location: Outfall 001

The permittee is authorized to use 975 lbs/year as Total Nitrogen (TN) Offsets toward compliance with the Annual Net TN mass load limitation (Cap Load), in accordance with Part C of the permit. These offsets may be applied through the Compliance Year or during the Truing Period. The application of Offsets must be reported to DEP as described in Part C. The offsets are authorized for the following pollutant load reduction activities.

- Connection of 39 EDUs to the public sewer system after January 1, 2003, in which 25 lbs/year of TN offsets are granted per EDU

## Development of Effluent Limitations

**Outfall No.** 001 **Design Flow (MGD)** 0.014
**Latitude** 40º 48' 44.35" **Longitude** -77º 38' 17.86"
**Wastewater Description:** Sewage Effluent

### Technology-Based Limitations

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

| Pollutant | Limit (mg/l) | SBC | Federal Regulation | State Regulation |
|---|---|---|---|---|
| $CBOD_5$ | 25 | Average Monthly | 133.102(a)(4)(i) | 92a.47(a)(1) |
| | 40 | Average Weekly | 133.102(a)(4)(ii) | 92a.47(a)(2) |
| Total Suspended Solids | 30 | Average Monthly | 133.102(b)(1) | 92a.47(a)(1) |
| | 45 | Average Weekly | 133.102(b)(2) | 92a.47(a)(2) |
| pH | 6.0 – 9.0 S.U. | Min – Max | 133.102(c) | 95.2(1) |
| Fecal Coliform (5/1 – 9/30) | 200 / 100 ml | Geo Mean | - | 92a.47(a)(4) |
| Fecal Coliform (5/1 – 9/30) | 1,000 / 100 ml | IMAX | - | 92a.47(a)(4) |
| Fecal Coliform (10/1 – 4/30) | 2,000 / 100 ml | Geo Mean | - | 92a.47(a)(5) |
| Fecal Coliform (10/1 – 4/30) | 10,000 / 100 ml | IMAX | - | 92a.47(a)(5) |

Comments: The above limitations are applicable and are included in the existing permit. In addition to the Fecal Coliform limitations listed above the permit will include e. coli bacteria monitoring consistent with current Department policy and recent changes to Chapter 93 of the Department's regulations.

### Water Quality-Based Limitations

#### DO, CBOD5 and NH3-N

The Department uses the WQM7.0 model to evaluate point source discharges of dissolved oxygen (DO), carbonaceous BOD ($CBOD_5$), and ammonia-nitrogen ($NH_3$-N) into free-flowing streams and rivers. To accomplish this, the model simulates two basic processes: the mixing and degradation of $NH_3$-N in the stream and the mixing and consumption of DO in the stream due to the degradation of $CBOD_5$ and $NH_3$-N. The model incorporates recent changes to the $NH_3$-N criteria in 25 PA Code §93. WQM7.0 modeling was performed of the discharge to the Sinking Creek and showed that no limitations are necessary beyond the technology-based secondary treatment limits listed above (see Attachment B). Due to minimum DO levels in the discharge being less than the typical assumption of 3 mg/L, the DO input into the model was 2.0 mg/L. The existing DO and ammonia monitoring will continue.

### Toxics Management

No additional reasonable potential analysis will be evaluated for this minor POTW with no significant industrial users.

### Best Professional Judgment (BPJ) Limitations

Comments: None needed besides the above technology and water quality-based limits.

### Chesapeake Bay/Nutrient Requirements

A portion of the Chesapeake Bay and many of its tidal tributaries have been listed as impaired under Section 303(d) of the Water Pollution Control Act, 33 U.S.C. §1313(d). Total Nitrogen and Total Phosphorus cap loads have been established for significant and new dischargers in Pennsylvania in order to reduce the total nutrient load to the Bay and meet State of Maryland Water Quality Standards. As a 0.014 MGD facility which was first permitted in 2016, the Potters Mills treatment facility is considered a new non-significant Phase 5, Significant Chesapeake Bay discharger. Nutrient cap loadings of 0 pounds for both Total Nitrogen and Total Phosphorus have previously been established for this discharge consistent with the Phase III Watershed Implementation Plan.

The discharge's cap loadings as well as the actual Total Nitrogen and Total Phosphorus loadings for the past cycle are listed in the table below. The permittee has failed to meet the TP cap load. Consistent with the Phase III WIP and a February 3, 2021 amendment to this NPDE Permit, the facility is afforded 975 lbs of TN Offsets which are listed specifically in the NPDES Permit as TN Offsets available to the Township for compliance with the Cap Load.

| **Nutrient** | Total Nitrogen | Total Phosphorus |
|---|---|---|
| **Nutrient Cap Loads for PA0114821** | 0 | 0 |
| **10/1/19 – 9/30/20 Total Loadings** | <330 | 48.0 |
| **Offsets Applied** | 330 | -- |
| **10/1/18 – 9/30/19 Net Loadings** | 0 | 48.0 |

**Anti-Backsliding**

No proposed limitations were made less stringent consistent with the anti-degradation requirements of the Clean Water Act and 40 CFR 122.44(l).

## Proposed Effluent Limitations and Monitoring Requirements

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

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

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Daily Maximum | Instantaneous Minimum | Average Monthly | Daily Maximum | Instant. Maximum | | |
| Flow (MGD) | Report | Report | XXX | XXX | XXX | XXX | 1/week | Measured |
| pH (S.U.) | XXX | XXX | 6.0 | XXX | XXX | 9.0 | 1/day | Grab |
| Dissolved Oxygen | XXX | XXX | Report | XXX | XXX | XXX | 1/day | Grab |
| Carbonaceous Biochemical Oxygen Demand (CBOD5) | 2.91 | XXX | XXX | 25.0 | XXX | 50.0 | 2/month | Grab |
| Biochemical Oxygen Demand (BOD5) Raw Sewage Influent | Report | Report | XXX | Report | XXX | XXX | 2/month | Grab |
| Total Suspended Solids | 3.50 | XXX | XXX | 30.0 | XXX | 60.0 | 2/month | Grab |
| Total Suspended Solids Raw Sewage Influent | Report | Report | XXX | Report | XXX | XXX | 2/month | Grab |
| Fecal Coliform (No./100 ml) Oct 1 - Apr 30 | XXX | XXX | XXX | 2000 Geo Mean | XXX | 10000 | 2/month | Grab |
| Fecal Coliform (No./100 ml) May 1 - Sep 30 | XXX | XXX | XXX | 200 Geo Mean | XXX | 1000 | 2/month | Grab |
| E. Coli (No./100 ml) | XXX | XXX | XXX | XXX | Report | XXX | 1/year | Grab |
| Ultraviolet light intensity (µw/cm²) | XXX | XXX | Report | XXX | XXX | XXX | 1/day | Calculation |
| Ammonia-Nitrogen | Report | XXX | XXX | Report | XXX | XXX | 2/month | Grab |
| Total Phosphorus | XXX | XXX | XXX | Report | XXX | XXX | 2/month | Grab |

Compliance Sampling Location: Outfall 001

Other Comments: The above limitations and monitoring are unchanged from the existing permit except for the inclusion of e. coli monitoring as mentioned above.

## Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, to comply with Pennsylvania's Chesapeake Bay Tributary Strategy.

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

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Monthly | Annual | Monthly | Monthly Average | Maximum | Instant. Maximum | | |
| Ammonia--N | Report | Report | XXX | Report | XXX | XXX | 2/month | Grab |
| Kjeldahl--N | Report | XXX | XXX | Report | XXX | XXX | 2/month | Grab |
| Nitrate-Nitrite as N | Report | XXX | XXX | Report | XXX | XXX | 2/month | Grab |
| Total Nitrogen | Report | Report | XXX | Report | XXX | XXX | 2/month | Calculation |
| Total Phosphorus | Report | Report | XXX | Report | XXX | XXX | 2/month | Grab |
| Net Total Nitrogen | XXX | 0 (3) | XXX | XXX | XXX | XXX | 1/month | Calculation |
| Net Total Phosphorus | XXX | 0 | XXX | XXX | XXX | XXX | 1/month | Calculation |

Compliance Sampling Location: Outfall 001

The permittee is authorized to use 975 lbs/year as Total Nitrogen (TN) Offsets toward compliance with the Annual Net TN mass load limitation (Cap Load), in accordance with Part C. These offsets may be applied through the Compliance Year or during the Truing Period. The application of Offsets must be reported to DEP as described in Part C. The offsets are authorized for the following pollutant load reduction activities.

- Connection of 39 EDUs to the public sewer system after January 1, 2003, in which 25 lbs/year of TN offsets are granted per EDU

Comments: Monthly reporting of Net Total Nitrogen and Net Total Phosphorus loads have been removed consistent with current standard Chesapeake Bay nutrient monitoring requirements.

| Tools and References Used to Develop Permit | |
|---|---|
| | |
| ☒ | WQM for Windows Model (see Attachment **B**) |
| ☐ | Toxics Management Spreadsheet (see Attachment ) |
| ☐ | TRC Model Spreadsheet (see Attachment ) |
| ☐ | Temperature Model Spreadsheet (see Attachment ) |
| ☐ | Water Quality Toxics Management Strategy, 361-0100-003, 4/06. |
| ☒ | Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97. |
| ☐ | Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98. |
| ☒ | Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96. |
| ☐ | Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97. |
| ☐ | Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97. |
| ☐ | Pennsylvania CSO Policy, 385-2000-011, 9/08. |
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| ☐ | Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004. |
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| ☐ | Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09. |
| ☐ | Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97. |
| ☐ | Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97. |
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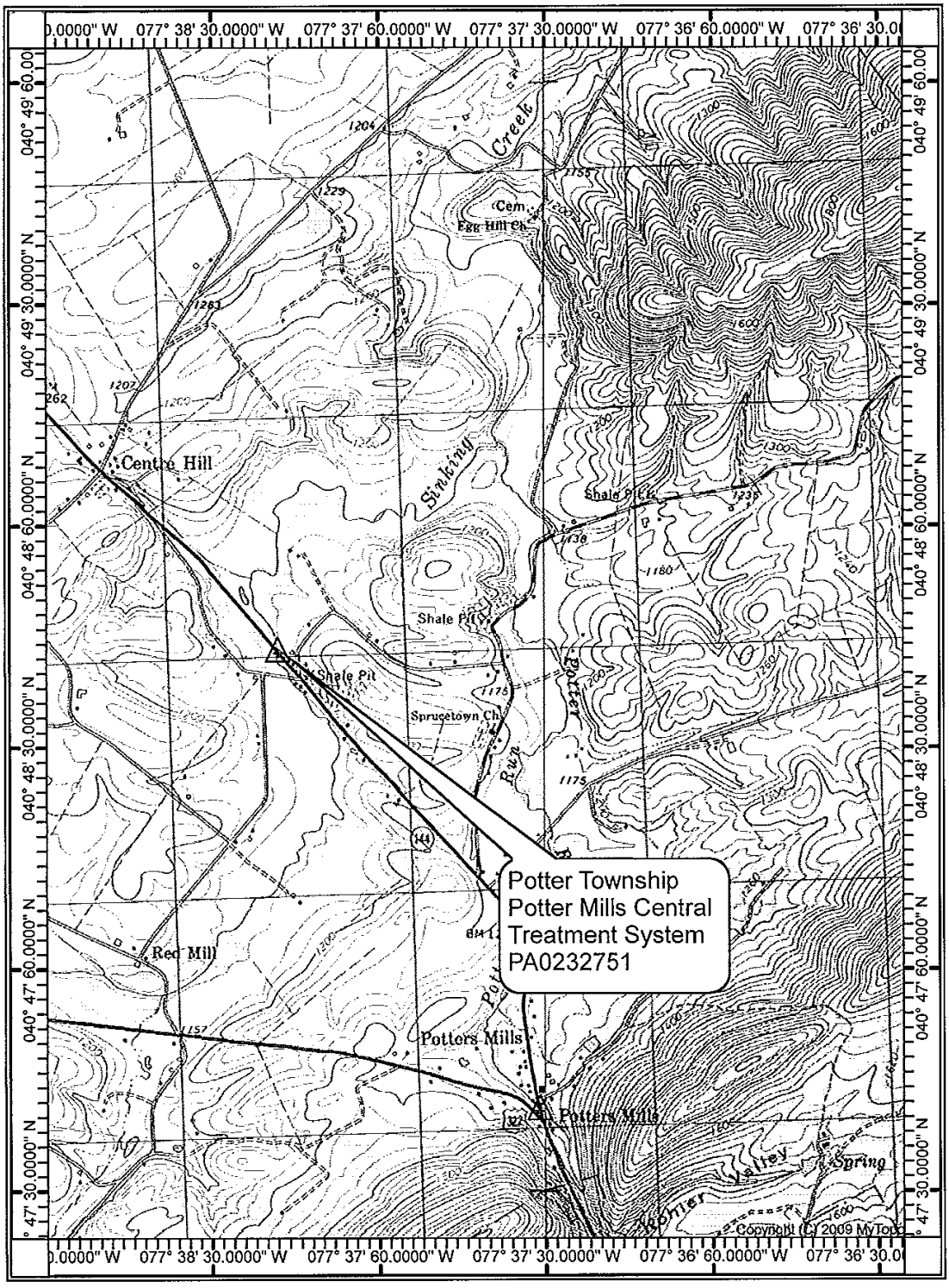
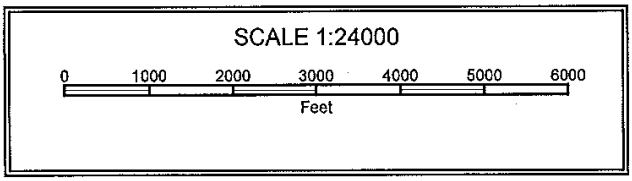
| ☒ | SOP: Establishing Effluent Limitations for Individual Sewage Permits, rev. 8/23/13 |
| ☐ | Other: |

Attachment:

A. Discharge Location Map
B. WQM7.0 Model


Potter Township
Potter Mills Central
Treatment System
PA0232751
Centre Hill
Red Mill
Potters Mills
Potters Mills
Egg Hill Ch
Sprucetown Ch
Shale Pit
Shale Pit
Shale Pit
Sinking Creek
Potter Run
Spring Valley
Copyright (C) 2009 MyTopo


SCALE 1:24000
0 1000 2000 3000 4000 5000 6000
Feet

## Input Data WQM 7.0

| SWP Basin | Stream Code | Stream Name | RMI | Elevation (ft) | Drainage Area (sq mi) | Slope (ft/ft) | PWS Withdrawal (mgd) | Apply FC |
|---|---|---|---|---|---|---|---|---|
| 06A | 18377 | SINKING CREEK | 6.810 | 1128.40 | 19.10 | 0.00000 | 0.00 | ☑ |

### Stream Data

| Design Cond. | LFY (cfsm) | Trib Flow (cfs) | Stream Flow (cfs) | Rch Trav Time (days) | Rch Velocity (fps) | WD Ratio | Rch Width (ft) | Rch Depth (ft) | Tributary Temp (°C) | Tributary pH | Stream Temp (°C) | Stream pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q7-10 | 0.077 | 0.00 | 0.00 | 0.000 | 0.000 | 0.0 | 0.00 | 0.00 | 20.00 | 7.00 | 0.00 | 0.00 |
| Q1-10 | | 0.00 | 0.00 | 0.000 | 0.000 | | | | | | | |
| Q30-10 | | 0.00 | 0.00 | 0.000 | 0.000 | | | | | | | |

### Discharge Data

| Name | Permit Number | Existing Disc Flow (mgd) | Permitted Disc Flow (mgd) | Design Disc Flow (mgd) | Reserve Factor | Disc Temp (°C) | Disc pH |
|---|---|---|---|---|---|---|---|
| Potter Twp | PA0232751 | 0.0140 | 0.0000 | 0.0000 | 0.000 | 25.00 | 7.00 |

### Parameter Data

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

## Input Data WQM 7.0

| SWP Basin | Stream Code | Stream Name | RMI | Elevation (ft) | Drainage Area (sq mi) | Slope (ft/ft) | PWS Withdrawal (mgd) | Apply FC |
|---|---|---|---|---|---|---|---|---|
| 06A | 18377 | SINKING CREEK | 5.560 | 1120.00 | 21.00 | 0.00000 | 0.00 | ☑ |

### Stream Data

| Design Cond. | LFY (cfsm) | Trib Flow (cfs) | Stream Flow (cfs) | Rch Trav Time (days) | Rch Velocity (fps) | WD Ratio | Rch Width (ft) | Rch Depth (ft) | Tributary Temp (°C) | Tributary pH | Stream Temp (°C) | Stream pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q7-10 | 0.077 | 0.00 | 0.00 | 0.000 | 0.000 | 0.0 | 0.00 | 0.00 | 20.00 | 7.00 | 0.00 | 0.00 |
| Q1-10 | | 0.00 | 0.00 | 0.000 | 0.000 | | | | | | | |
| Q30-10 | | 0.00 | 0.00 | 0.000 | 0.000 | | | | | | | |

### Discharge Data

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

### Parameter Data

| Parameter Name | Disc Conc (mg/L) | Trib Conc (mg/L) | Stream Conc (mg/L) | Fate Coef (1/days) |
|---|---|---|---|---|
| CBOD5 | 25.00 | 2.00 | 0.00 | 1.50 |
| Dissolved Oxygen | 3.00 | 8.24 | 0.00 | 0.00 |
| NH3-N | 25.00 | 0.00 | 0.00 | 0.70 |

## WQM 7.0 Modeling Specifications

| | | | |
|---|---|---|---|
| Parameters | Both | Use Inputted Q1-10 and Q30-10 Flows | ☑ |
| WLA Method | EMPR | Use Inputted W/D Ratio | ☐ |
| Q1-10/Q7-10 Ratio | 0.64 | Use Inputted Reach Travel Times | ☐ |
| Q30-10/Q7-10 Ratio | 1.36 | Temperature Adjust Kr | ☑ |
| D.O. Saturation | 90.00% | Use Balanced Technology | ☑ |
| D.O. Goal | 6 | | |

# WQM 7.0 Hydrodynamic Outputs

| SWP Basin | Stream Code | Stream Name |
|---|---|---|
| 06A | 18377 | SINKING CREEK |

| RMI | Stream Flow (cfs) | PWS With (cfs) | Net Stream Flow (cfs) | Disc Analysis Flow (cfs) | Reach Slope (ft/ft) | Depth (ft) | Width (ft) | W/D Ratio | Velocity (fps) | Reach Trav Time (days) | Analysis Temp (°C) | Analysis pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Q7-10 Flow** | | | | | | | | | | | | |
| 6.810 | 1.47 | 0.00 | 1.47 | .0217 | 0.00127 | .577 | 21.08 | 36.52 | 0.12 | 0.623 | 20.07 | 7.00 |
| **Q1-10 Flow** | | | | | | | | | | | | |
| 6.810 | 0.94 | 0.00 | 0.94 | .0217 | 0.00127 | NA | NA | NA | 0.10 | 0.796 | 20.11 | 7.00 |
| **Q30-10 Flow** | | | | | | | | | | | | |
| 6.810 | 2.00 | 0.00 | 2.00 | .0217 | 0.00127 | NA | NA | NA | 0.15 | 0.525 | 20.05 | 7.00 |

# WQM 7.0 Wasteload Allocations

| SWP Basin | Stream Code | Stream Name |
|---|---|---|
| 06A | 18377 | SINKING CREEK |

## NH3-N Acute Allocations

| RMI | Discharge Name | Baseline Criterion (mg/L) | Baseline WLA (mg/L) | Multiple Criterion (mg/L) | Multiple WLA (mg/L) | Critical Reach | Percent Reduction |
|---|---|---|---|---|---|---|---|
| 6.810 | Potter Twp | 16.6 | 50 | 16.6 | 50 | 0 | 0 |

## NH3-N Chronic Allocations

| RMI | Discharge Name | Baseline Criterion (mg/L) | Baseline WLA (mg/L) | Multiple Criterion (mg/L) | Multiple WLA (mg/L) | Critical Reach | Percent Reduction |
|---|---|---|---|---|---|---|---|
| 6.810 | Potter Twp | 1.88 | 25 | 1.88 | 25 | 0 | 0 |

## Dissolved Oxygen Allocations

| RMI | Discharge Name | CBOD5 | | NH3-N | | Dissolved Oxygen | | Critical Reach | Percent Reduction |
|---|---|---|---|---|---|---|---|---|---|
| | | Baseline (mg/L) | Multiple (mg/L) | Baseline (mg/L) | Multiple (mg/L) | Baseline (mg/L) | Multiple (mg/L) | | |
| 6.81 | Potter Twp | 25 | 25 | 25 | 25 | 2 | 2 | 0 | 0 |

# WQM 7.0 D.O.Simulation

| SWP Basin | Stream Code | Stream Name |
|---|---|---|
| 06A | 18377 | SINKING CREEK |

| RMI | Total Discharge Flow (mgd) | Analysis Temperature (°C) | Analysis pH |
|---|---|---|---|
| 6.810 | 0.014 | 20.073 | 7.000 |
| **Reach Width (ft)** | **Reach Depth (ft)** | **Reach WDRatio** | **Reach Velocity (fps)** |
| 21.081 | 0.577 | 36.520 | 0.123 |
| **Reach CBOD5 (mg/L)** | **Reach Kc (1/days)** | **Reach NH3-N (mg/L)** | **Reach Kn (1/days)** |
| 2.33 | 0.159 | 0.36 | 0.704 |
| **Reach DO (mg/L)** | **Reach Kr (1/days)** | **Kr Equation** | **Reach DO Goal (mg/L)** |
| 8.152 | 1.486 | Tsivoglou | 6 |
| **Reach Travel Time (days)** | | | |
| 0.623 | | | |

**Subreach Results**

| TravTime (days) | CBOD5 (mg/L) | NH3-N (mg/L) | D.O. (mg/L) |
|---|---|---|---|
| 0.062 | 2.31 | 0.35 | 8.14 |
| 0.125 | 2.29 | 0.33 | 8.13 |
| 0.187 | 2.27 | 0.32 | 8.13 |
| 0.249 | 2.24 | 0.30 | 8.12 |
| 0.311 | 2.22 | 0.29 | 8.13 |
| 0.374 | 2.20 | 0.28 | 8.13 |
| 0.436 | 2.18 | 0.27 | 8.14 |
| 0.498 | 2.16 | 0.26 | 8.15 |
| 0.561 | 2.13 | 0.24 | 8.16 |
| 0.623 | 2.11 | 0.23 | 8.17 |

# WQM 7.0 Effluent Limits

| SWP Basin | Stream Code | Stream Name |
|---|---|---|
| 06A | 18377 | SINKING 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) |
|---|---|---|---|---|---|---|---|
| 6.810 | Potter Twp | PA0232751 | 0.014 | CBOD5 | 25 | | |
| | | | | NH3-N | 25 | 50 | |
| | | | | Dissolved Oxygen | | | 2 |