pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0042170**
Facility Type	**Municipal**	APS ID	**717416**
Major / Minor	**Major**	Authorization ID	**1332176**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Schuylkill County Municipal Authority**	Facility Name	**Deer Lake WWTP**
Applicant Address	221 S. Centre Street	Facility Address	2382 Market Street
	Pottsville, PA 17901-3506		Orwigsburg, PA 17961
Applicant Contact	Patrick Caulfield	Facility Contact	Stephen Ulceski
Applicant Phone	(570) 622-8240	Facility Phone	(570) 622-8240
Client ID	5024	Site ID	449821
Ch 94 Load Status	Not Overloaded	Municipality	West Brunswick Township
Connection Status	No Prohibitions	County	Schuylkill
Date Application Received	October 27, 2020	EPA Waived?	No
Date Application Accepted	October 27, 2020	If No, Reason	Major Facility

Purpose of Application: Renewal of NPDES permit.

Summary of Review

The applicant is requesting renewal of an NPDES permit to discharge 1.0 MGD of treated sewage to Pine Creek, a CWF/MF designated receiving stream in state water plan basin 03-A (Upper Schuylkill River). As per the Department's current existing use list, the receiving stream does not have an existing use classification that is more protective than its designated use.

A Total Maximum Daily Load (TMDL) for the Upper Schuylkill River was approved by the EPA on April 7, 2007. The TMDL addresses metals (Iron, Manganese, and Aluminum) and depressed pH associated with acid mine drainage (AMD). The TMDL load allocations apply to nonpoint sources of pollution; there are no Waste Load Allocations (WLAs). Quarterly monitoring requirements for Total Iron, Total Manganese, and Total Aluminum are carried over from the previous permit to monitor these pollutants of concern.

All limitations from the previously issued permit are carried over in this renewal. The $CBOD_5$, Ammonia-Nitrogen, and Dissolved Oxygen limits are water quality-based. The pH and Fecal Coliform limits are technology-based. Technology-based IMAX limitations are added for Fecal Coliform during this permit renewal. The TSS limits are BPJ-based. The BPJ limit for TSS was established in the previous renewal since the Q_{7-10} stream flow to discharge ratio was less than one (using the 2010 Q_{7-10} estimate) and the $CBOD_5$ water quality-based limit of 8.7 mg/L will require a level of treatment such that a TSS limit of 10 mg/L is reasonable.

The facility utilizes ultraviolet (UV) disinfection prior to stream discharge. The water quality-based IMAX TRC limit of 0.53 mg/L is added to the permit in the event the permittee uses chlorine for backup disinfection, cleaning, or other purposes. Special condition Part C.I.D. is added to the permit that instructs the permittee to sample for TRC concentrations on each day in which Chlorine is used.

Approve	Deny	Signatures	Date
X		*Brian Burden* Brian Burden, E.I.T. / Project Manager	March 8, 2022
X		Amy M. Bellanca (signed) Amy M. Bellanca, P.E. / Environmental Engineer Manager	3-28-22

Summary of Review

USGS StreamStats was utilized to estimate the Q_{7-10} and low flow yield for the receiving stream at Outfall 002. Q_{7-10} = 1.65 cfs, LFY = 0.11 cfs/mi^2).

WQM 7.0 modeling did not recommend more stringent limitations for any parameters.

DEP's Toxics Management Spreadsheet did not recommend more stringent limitations for Total Copper. The spreadsheet recommended monitoring/reporting requirements for Total Zinc and Free Cyanide. The permittee was given the option of resampling several "non-detect" pollutants and analyzing them at lower QLs if the initial modeling results recommended monitoring or effluent limitations. Free Cyanide was one of the resampled pollutants, however, the sampling results utilized the same QL as the results submitted with the permit application. During the draft permit public notification period, the permittee may resample for Free Cyanide again at a lower QL in an effort to remove the monitoring requirements from the final permit. Three samples taken at least one week apart are required to remodel the discharge for Free Cyanide.

DRBC Docket No. D-2010-019 CP-3 (approved on 3/14/2018) did not include any additional parameters to incorporate into the NPDES permit. The 1,000 mg/L Total Dissolved Solids quarterly average limitation was added to the previous renewal because of requirements of DRBC Docket No. D-2010-019 CP-2 and is continued in this renewal.

Influent monitoring requirements for BOD_5 and TSS are carried over from the previous permit.

Weekly monitoring/reporting requirements for Total Nitrogen (Total Kjeldahl Nitrogen and NO_2+NO_3-Nitrogen) and Total Phosphorus are carried over from the previous permit.

Monthly monitoring/reporting requirements for E. Coli is added to the permit as per DEP guidance.

24-hour composite sampling requirements replace the 8-hour composite sampling requirements for all parameters from the previously issued permit.

The permittee was required to perform Whole Effluent Toxicity (WET) testing during the previous permit term. All reviewed results passed the T-Test between 2016 – 2021 with the exception of the 2/26/2018 test for chronic water flea reproduction. A subsequent test dated 4/10/2018 passed for chronic water flea reproduction. Since the last four WET tests passed for both species (including the re-test), reasonable potential has not been determined and WET limitations are not included in this renewal.

The standard Part C condition, Whole Effluent Toxicity – No Permit Limits, has been added to the permit. WET testing shall be conducted annually during the upcoming permit cycle, at a minimum. The WET Analysis Spreadsheet (results attached) was used to determine that the permittee must generate chronic survival and reproduction data for the cladoceran, *Ceriodaphnia dubia*, and chronic survival and growth data for the fathead minnow, *Pimephales promelas*. The permittee shall perform testing using the following dilution series: 12%, 24%, 48%, 74%, and 100% effluent, with a control, where 48% effluent is the facility-specific Target In-Stream Waste Concentration (TIWC). PENTOX modeling determined that both the acute and chronic Partial Mix Factors (PMFs) are equal to 1.

Monitoring requirements for stormwater Outfall 003 are updated to the latest PAG-03 Appendix J monitoring requirements. Semiannual monitoring/reporting for TSS and Oil & Grease replace the previous annual monitoring requirements for TSS, TKN and Total Iron. The last two years of DMRs indicate there was no stormwater discharge through Outfall 003.

One industry discharges wastewater to the WWTP that is not entirely domestic wastewater. Omnova Solutions is a plastic sheet manufacturer that discharges non-contact cooling water (approximately 7,000 gpd) in addition to domestic wastewater (approximately 2,000 gpd). There is no need for additional permit requirements for this type of discharge.

There are no current or projected overloads at the treatment plant as per the most recently submitted Chapter 94 report. No antidegradation analysis is required since the watershed is not high quality or exceptional value. There are no combined sewers in the collection system. None of the existing effluent limitations have been made less stringent; therefore, the antibacksliding requirement has been met.

The previously issued permit expired on June 30, 2021 and the application for permit renewal was submitted on time. There are no open violations for the client that would warrant withholding issuance of the permit.

Summary of Review

Sludge use and disposal description and location(s): The December 2021 Biosolids Production and Disposal report indicated 4.0 dry tons of sewage sludge was disposed of in a landfill via County Waste.

Docket 2010-019 CP-3.pdf
TMS PA0042170.pdf
TRC Calculation.pdf
WQM Modeling.pdf
StreamStats 1.pdf
StreamStats 2.pdf
Elevations RMIs.pdf
WET Spreadsheet.pdf

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.	002	Design Flow (MGD)	1.0
Latitude	40° 36’ 59”	Longitude	76° 3’ 37”
Quad Name	Auburn	Quad Code	1437
Wastewater Description:	Treated sewage.		

Receiving Waters	Pine Creek	Stream Code	2303
NHD Com ID	25960802	RMI	2.3
Drainage Area	15 mi^2	Yield (cfs/mi^2)	0.11 cfs/mi^2
Q_{7-10} Flow (cfs)	1.65	Q_{7-10} Basis	Gage 01572025
Elevation (ft)	470	Slope (ft/ft)	0.0025
Watershed No.	3-A	Chapter 93 Class.	CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	-		
Source(s) of Impairment	-		
TMDL Status	Final, 04/07/2007	Name	Upper Schuylkill River

Background/Ambient Data		Data Source
pH (SU)	-	-
Temperature (°F)	-	-
Hardness (mg/L)	-	-
Other:	-	-

Nearest Downstream Public Water Supply Intake	Pottstown Borough Water Authority		
PWS Waters	Schuylkill River	Flow at Intake (cfs)	105 (based on default 0.1 LFY)
PWS RMI	57	Distance from Outfall (mi)	>50

Treatment Facility Summary

Treatment Facility Name: SCMA Deer Lake WWTP

WQM Permit No.	Issuance Date
5410403	8/19/2010

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	3-Ring Oxidation Ditch	Ultraviolet	0.525 (2021)

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
1.0	2,406	No Current or Projected Overloads	Aerobic Digestion and Belt Filter Press	Hauled Away (Liquid) or Landfill (Dewatered)

Changes Since Last Permit Issuance: A septage receiving station was permitted to be installed at the WWTP on October 22, 2020 via WQM Permit No. 5410403 A-1.

Development of Effluent Limitations

Outfall No. 002 **Design Flow (MGD)** 1
Latitude 40º 36' 59" **Longitude** -76º 3' 37"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
	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)
	10,000 / 100 ml	IMAX	-	92a.47(a)(5)

Water Quality-Based Limitations

The following limitations were determined through water quality modeling:

Parameter	Limit (mg/l)	SBC	Model/Basis
$CBOD_5$	8.7	Average Monthly	2010 WQM 7.0
	14.0	Daily Maximum	
	17.0	IMAX	
Ammonia-Nitrogen (5/1 – 10/31)	2.6	Average Monthly	2010 WQM 7.0
	5.2	IMAX	
Ammonia-Nitrogen (11/1 – 4/30)	7.8	Average Monthly	2010 WQM 7.0 w/ 3x winter multiplier
	15.0	IMAX	
Dissolved Oxygen	5.0	Minimum	2010 WQM 7.0
Total Residual Chlorine	0.53	IMAX	2015 TRC Calculation Spreadsheet
Total Copper	18.5 (µg/L)	Average Monthly	2015 PENTOX
	28.9 (µg/L)	Daily Maximum	
Total Dissolved Solids	1,000 mg/L	Quarterly Average	DRBC Administrative Manual pt. III (rev. 2013)

Best Professional Judgment (BPJ) Limitations

Parameter	Limit (mg/l)	SBC	Model
Total Suspended Solids	10.0	Average Monthly	2010 BPJ
	15.0	Daily Maximum	
	20.0	IMAX	

Whole Effluent Toxicity (WET)

For Outfall 002, ☐ **Acute** ☒ **Chronic** WET Testing was completed:

☐ For the permit renewal application (4 tests).
☐ Quarterly throughout the permit term.
☐ Quarterly throughout the permit term and a TIE/TRE was conducted.
☒ Other: **Annually**

The dilution series used for the tests was: 100%, 74%, 48%, 24%, and 12%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 48%.

Summary of Four Most Recent Test Results

TST Data Analysis

(NOTE – In lieu of recording information below, the application manager may attach the DEP WET Analysis Spreadsheet).

Test Date	*Ceriodaphnia* Results (Pass/Fail)		*Pimephales* Results (Pass/Fail)	
	Survival	**Reproduction**	**Survival**	**Growth**
July 2021	Pass	Pass	Pass	Pass
June 2020	Pass	Pass	Pass	Pass
Oct/Dec 2019	Pass	Pass	Pass	Pass
November 2018	Pass	Pass	Pass	Pass

***** *A "passing" result is that in which the replicate data for the TIWC is not statistically significant from the control condition. This is exhibited when the calculated t value ("T-Test Result") is greater than the critical t value. A "failing" result is exhibited when the calculated t value ("T-Test Result") is less than the critical t value.*

Is there reasonable potential for an excursion above water quality standards based on the results of these tests? (*NOTE – In general, reasonable potential is determined anytime there is at least one test failure in the previous four tests).*

☐ **YES** ☒ **NO**

Evaluation of Test Type, IWC and Dilution Series for Renewed Permit

Acute Partial Mix Factor (PMFa): **1** Chronic Partial Mix Factor (PMFc): **1**

1. Determine IWC – Acute (IWCa):

$(Q_d \times 1.547) / ((Q_{7\text{-}10} \times PMFa) + (Q_d \times 1.547))$

[(1 MGD x 1.547) / ((1.65 cfs x 1) + (1 MGD x 1.547))] x 100 = **48%**

Is IWCa < 1%? ☐ **YES** ☒ **NO**

If the discharge is to the tidal portion of the Delaware River, indicate how the type of test was determined:

N/A

Type of Test for Permit Renewal: **Chronic**

2. Determine Target IWCc (If Chronic Tests Required)

$(Q_d \times 1.547) / (Q_{7\text{-}10} \times PMFc) + (Q_d \times 1.547)$

[(1 MGD x 1.547) / ((1.65 cfs x 1) + (1 MGD x 1.547))] x 100 = **48%**

3. Determine Dilution Series

(NOTE – check Attachment C of WET SOP for dilution series based on TIWCa or TIWCc, whichever applies).

Dilution Series = 100%, 74%, 48%, 24%, and 12%.

WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

Will WET limits be established in the permit? ☐ YES ☒ NO

If WET limits will be established, identify the species and the limit values for the permit (TU).

N/A

If WET limits will not be established, but reasonable potential was determined, indicate the rationale for not establishing WET limits:

N/A