pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0043486**
Facility Type	**Industrial**	APS ID	**2366**
Major / Minor	**Minor**	Authorization ID	**1152871**

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

Applicant and Facility Information

Applicant Name	**Lancaster County SWMA**	Facility Name	**Cresswell Landfill**
Applicant Address	PO Box 4425 1299 Harrisburg Pike	Facility Address	3049 River Road
	Lancaster, PA 17604-4425		Conestoga, PA 17516-9328
Applicant Contact	Daniel Brown	Facility Contact	Daniel Brown
Applicant Phone	(717) 553-5864	Facility Phone	(717) 553-5864
Client ID	4660	Site ID	248683
SIC Code	4953	Municipality	Manor Township
SIC Description	Trans. & Utilities - Refuse Systems	County	Lancaster
Date Application Received	July 1, 2016	EPA Waived?	Yes
Date Application Accepted	November 29, 2016	If No, Reason	

Purpose of Application: This is an application for NPDES renewal.

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineer Nick Hong (via electronic signature)	November 19, 2021
x		Daniel W. Martin, P.E. / Environmental Engineer Manager Maria D. Bebenek for Daniel W. Martin	November 30, 2021
x		Maria Bebenek, P.E. / Environmental Program Manager Maria D. Bebenek	November 30, 2021

Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the Lancaster County SWMA located at 3049 River Road, Conestoga, PA 17516 in Lancaster County, municipality of Manor Township. The existing permit became effective on January 1, 2012 and expired on December 31, 2016. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on July 1, 2016.

The purpose of this Fact Sheet is to present the basis of information used for establishing the proposed NPDES permit effluent limitations. The Fact Sheet includes a description of the facility, a description of the facility's receiving waters, a description of the facility's receiving waters attainment/non-attainment assessment status, and a description of any changes to the proposed monitoring/sampling frequency. Section 6 provides the justification for the proposed NPDES effluent limits derived from technology based effluent limits (TBEL), water quality based effluent limits (WQBEL), total maximum daily loading (TMDL), antidegradation, anti-backsliding, and/or whole effluent toxicity (WET). A brief summary of the outlined descriptions has been included in the Summary of Review section.

The subject facility is a 0.288 MGD treatment facility. The applicant does not anticipate any proposed upgrades to the treatment facility in the next five years. The NPDES application has been processed as an Industrial Wastewater Facility due to the type of wastewater and the design flow rate for the facility. The applicant disclosed the Act 14 requirement to Lancaster County Planning Commission and Manor Township Supervisors and the notice was received by the parties on June 20, 2016.

Utilizing the DEP's web-based Emap-PA information system, the receiving waters has been determined to be Manns Run. Manns Run discharges into the Susquehanna River and then eventually into the Chesapeake Bay. The subject site is subject to the Chesapeake Bay implementation requirements. The receiving water has protected water usage for warm water fishes (WWF) and migratory fishes (MF). No Class A Wild Trout fisheries are impacted by this discharge. The absence of high quality and/or exceptional value surface waters removes the need for an additional evaluation of anti-degradation requirements.

Manns Run is a Category 5 stream listed in the 2020 Integrated List of All Waters (formerly 303d Listed Streams). This stream is an impaired stream for aquatic life due to siltation/sediment/nutrients from agriculture. The receiving waters is not subject to a total maximum daily load (TMDL) plan to improve water quality in the subject facility's watershed.

The existing permit and proposed permit differ as follows:

- **Monitoring and limits will be required for boron and dissolved iron.**

Sludge use and disposal description and location(s): Biosolids disposed at Pottstown Wastewater Treatment Plant in Montgomery County under DEP Permit Number PA26786

The proposed permit will expire five (5) years from the effective date.

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

Any additional information or public review of documents associated with the discharge or facility may be available at PA DEP Southcentral Regional Office (SCRO), 909 Elmerton Avenue, Harrisburg, PA 17110. To make an appointment for file review, contact the SCRO File Review Coordinator at 717.705.4700.

1.0 Applicant

1.1 General Information

This fact sheet summarizes PA Department of Environmental Protection's review for the NPDES renewal for the following subject facility.

Facility Name:	Lancaster County SWMA
NPDES Permit #	PA0043486
Physical Address:	3049 River Road Conestoga, PA 17516
Mailing Address:	PO Box 4425 Lancaster, PA 17604
Contact:	Daniel Brown Environmental Compliance Manager (717) 553-5864 dbrown@lcswma.org
Consultant:	There was not a consultant utilized for this NPDES renewal.

1.2 Permit History

Description of Facility

The Creswell Landfill is owned and maintained by the Lancaster County Solid Waste Management Authority (LCSWMA). The Landfill was used for the disposal of municipal and residual wastes. It was opened in 1968 and has been capped since 1989. The treated wastewater is discharged to Mann's Run approximately 3,900 feet before Mann's Run discharges in to the Susquehanna River.

Leachate generated mostly as precipitation percolates through the in-place wastes is collected and transported via a gravity pipe system to an influent pump station. The leachate is then pumped to a lagoon treatment system. Additionally, several pumping wells are utilized to directly remove groundwater to the treatment system. The Creswell treatment plant consists of an aerated lagoon #1 with both intermediate and final settling ponds.

- Aerated Lagoon #1 (A1) has a capacity of 2.96 MG.
- Aerated Lagoon #2 (A2) has a capacity of 2.63 MG.
- Aerated Lagoon #3 (A3) has a capacity of 2.78 MG.
- Intermediate Settling Ponds (IS1 and IS2) have a capacity of 0.115 MG each.
- The Final Settling Ponds (FS1 and FS2) have a capacity of 0.345 MG).

Flow passes through a chlorine contact basin but is not disinfected because no fecal coliform exists in the discharge.

Manns Run has a very little drainage area but was determined to be perennial with the point of first use at the point of discharge.

As of November 2021, ongoing discussions with the Governor's Office continues for requirements to collect samples for radium. In an effort to further protect Pennsylvania's waterways and drinking water, the Wolf Administration announced today that it will soon require all Pennsylvania landfills – including those that accept unconventional oil and gas waste – to conduct quarterly testing of leachate for radiological contaminants.

Landfills are currently required to test leachate – or liquid generated during waste decomposition – for various contaminants before this liquid is either treated by an on-site leachate treatment facility or sent to wastewater treatment facilities. This additional step of including radium in the list of contaminants to be measured will allow the Department of Environmental Protection (DEP) to evaluate the presence of radium in landfills.

DEP has begun the process of updating its reporting document to include radium-226 and radium-228 , which has been projected for implementation in late 2021. All landfills, including those that accept oil and gas wastes, will be required to test for these radiological contaminants.

Should this transpire as a requirement from the Governor's Office, the NPDES permit will immediately be amended to include the radium samples for monitoring.

Permit submittal included the following information.

- NPDES Application
- Flow Diagrams
- Supplementary Pollutant Groups 1-6 sampling data (received in November 2021)

2.0 Treatment Facility Summary

2.1.1 Site location

The physical address for the facility is 3049 River Road, Conestoga, PA 17516. A topographical and an aerial photograph of the facility are depicted as Figure 1 and Figure 2.

Figure 1: Topographical map of the subject facility

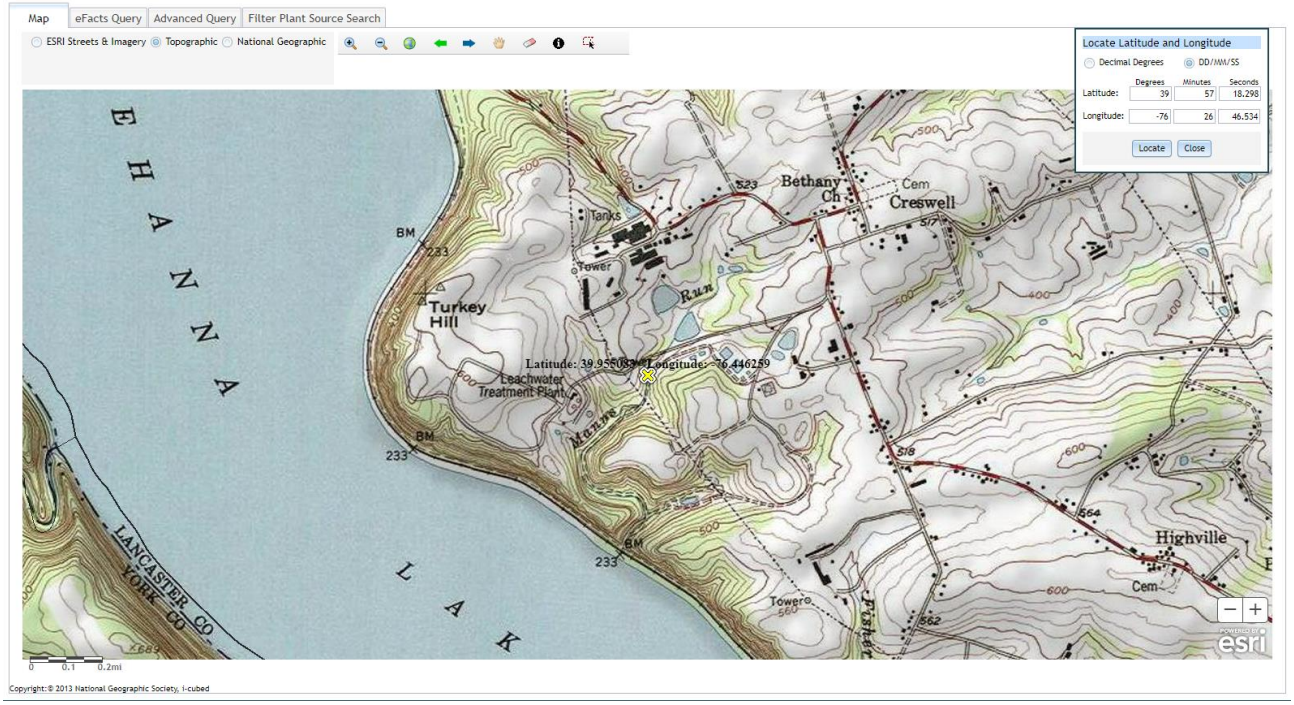
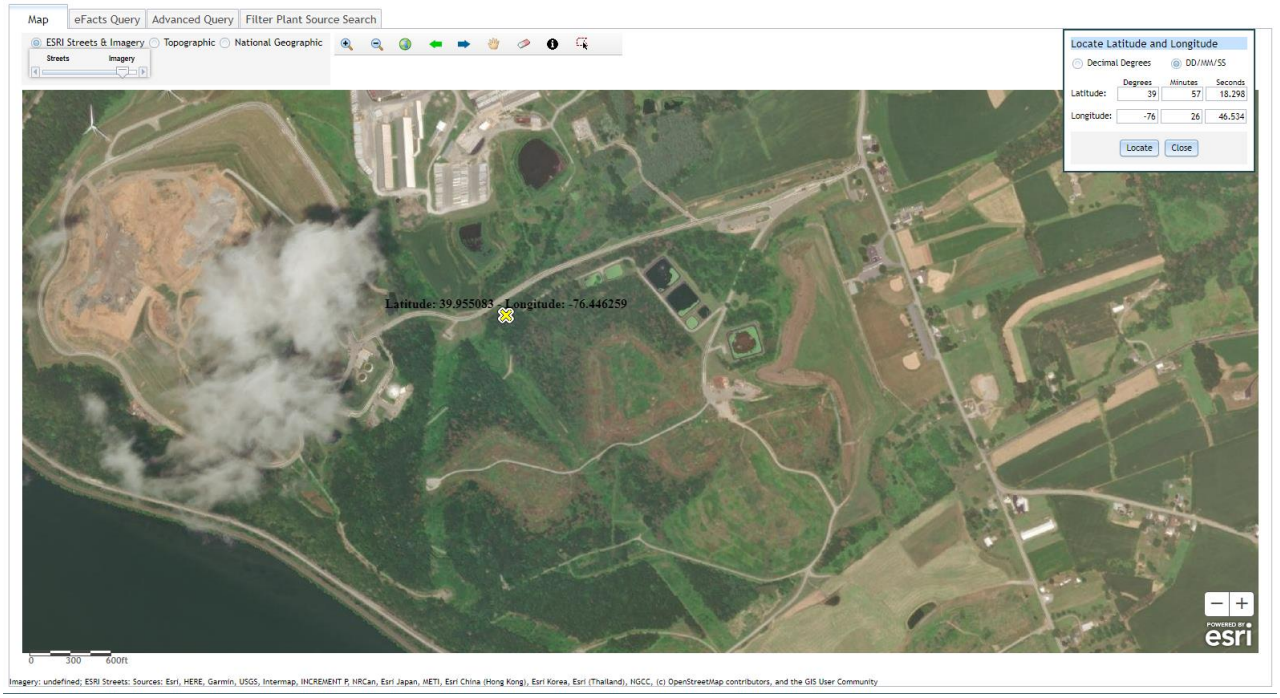


Figure 2: Aerial Photograph of the subject facility



2.2 Description of Wastewater Treatment Process

The subject facility is a 0.288 MGD design flow facility. The subject facility treats wastewater using a series of Lagoons.

Flow meters are installed at the influent (at the Control Building) and effluent (at the chlorine contact basins). Additional flow meters are placed near groundwater pumping locations. The main aeration supply is from a triplex system of motor blowers. Air supply is connected to lagoons A1, A2, and A3 with the LTP operator having the option to reduce or shutoff flow to any lagoon whenever operational conditions warrant.

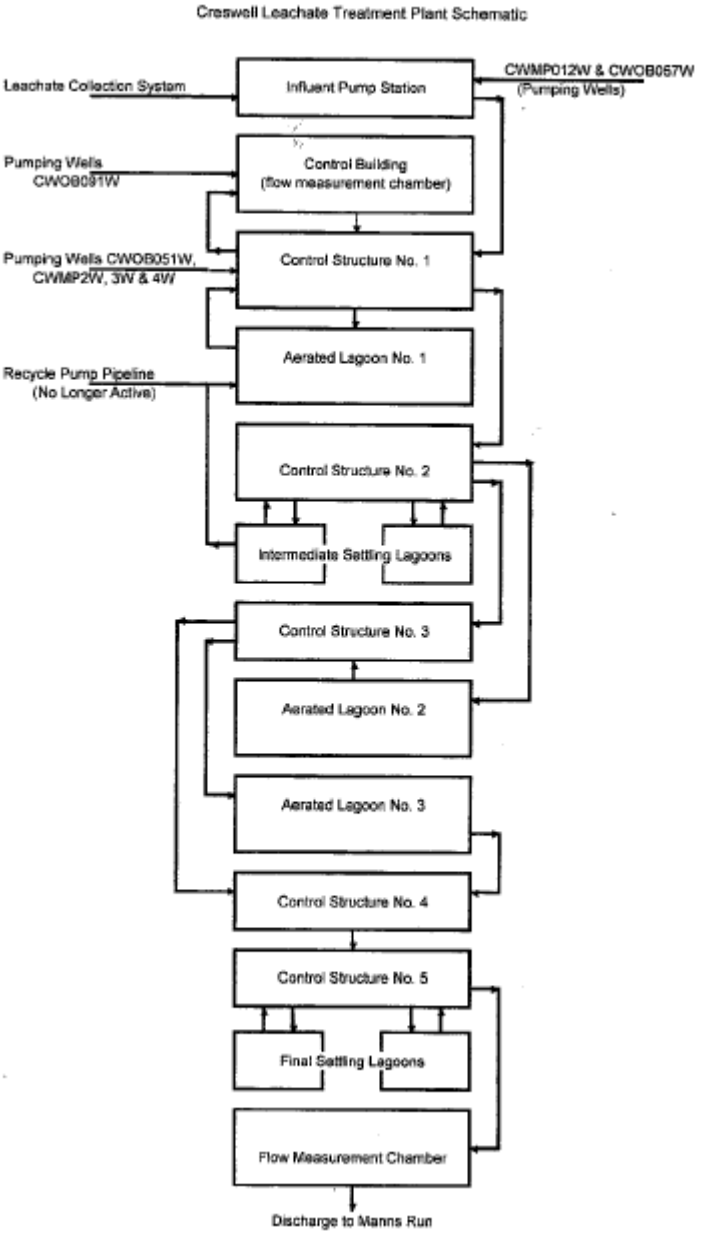
Control structures include a hand wheel adjusted slide gate which can be raised or lowered to adjust the volume of water in the corresponding lagoon.

The facility is being evaluated for flow, pH, dissolved oxygen, CBOD5, TSS, ammonia-nitrogen, total phosphorus, total iron, total zinc, phenol, a-terpineol, benzoic acid, p-cresol, nitrogen species, and phosphorus.

Total zinc, phenol, a-terpineol, benzoic acid, p-cresol were present in the permit due to the federal ELG. However, the monitoring requirements and permit limits were granted a sampling waiver per 40 CFR 122.44.

The existing permits limits for the facility is summarized in Section 2.4.

A schematic of the treatment process is shown in the diagram.



2.3 Facility Outfall Information

The facility has the following outfall information for wastewater.

Outfall No.	001	**Design Flow (MGD)**	.288
Latitude	39º 57' 18.17"	**Longitude**	-76º 26' 46.37"

Wastewater Description: IW Process Effluent with ELG

2.3.1 Operational Considerations- Chemical Additives

Chemical additives are chemical products introduced into a waste stream that is used for cleaning, disinfecting, or maintenance and which may be detected in effluent discharged to waters of the Commonwealth. Chemicals excluded are those used for neutralization of waste streams, the production of goods, and treatment of wastewater.

The subject facility utilizes the following chemicals as part of their treatment process.

- **The facility did not report chemical additives usages for their treatment process.**

2.4 Existing NPDES Permits Limits

The existing NPDES permit limits are summarized in the table.

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 001 , **Latitude** 39° 57' 18" , **Longitude** 76° 26' 47" , **River Mile Index** 0.75 , **Stream Code** 07834

Discharging to Manns Run

which receives wastewater from the Creswell Landfill IWTP

1. The permittee is authorized to discharge during the period from January 1, 2012 through December 31, 2016.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements, Footnotes and Supplemental Information).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	5/week	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	5/week	Grab
CBOD5	60	120	XXX	25	50	62.5	1/month	24-Hr Composite
Total Suspended Solids	65	211	XXX	27	88	110	1/month	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	3.6	7.2	XXX	1.5	3.0	3.75	1/week	24-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	10.8	21.6	XXX	4.5	9.0	11.25	1/week	24-Hr Composite
Total Phosphorus	XXX	Report	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Total Iron	4.3	8.6	XXX	1.8	3.6	4.5	2/month	24-Hr Composite

Outfall 001, Continued (from January 1, 2012 through December 31, 2016)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Zinc[3]	0.26	0.48	XXX	0.11	0.2	0.28	2/month	24-Hr Composite
Phenol[3]	0.036	0.06	XXX	0.015	0.026	0.038	2/month	24-Hr Composite
a-Terpineol[3]	0.04	0.08	XXX	0.016	0.033	0.04	2/month	24-Hr Composite
Benzoic Acid[3]	0.17	0.29	XXX	0.071	0.12	0.18	2/month	Composite
p-Cresol[3]	0.033	0.06	XXX	0.014	0.025	0.037	2/month	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):at discharge from the facility

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. B. For Outfall 001, Latitude 39° 57' 18", Longitude 76° 26' 47", River Mile Index 0.75, Stream Code 07834

Discharging to Manns Run

which receives wastewater from the Creswell Landfill IWTP

1. The permittee is authorized to discharge during the period from January1 2012 through December 31, 2016.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements, Footnotes and Supplemental Information).

Parameter [1]	Effluent Limitations					Monitoring Requirements	
	Mass Units (lbs)		Concentrations (mg/L)			Minimum [2] Measurement Frequency	Required Sample Type
	Monthly	Annual	Minimum	Monthly Average	Maximum		
Ammonia---N	Report	Report	XXX	Report	XXX	1/week	24-Hr Composite
Kjeldahl---N	Report	XXX	XXX	XXX	Report	1/month	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	XXX	Report	1/month	24-Hr Composite
Total Nitrogen	Report	Report	XXX	XXX	Report	1/month	Calculation
Total Phosphorus	Report	Report	XXX	XXX	Report	1/month	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at discharge from the facility

Footnotes:
(1) See Part C for Chesapeake Bay Requirements.
(2) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events required.

3.0 Facility NPDES Compliance History

3.1 Summary of Inspections

A summary of the most recent inspections during the existing permit review cycle is as follows.

The DEP inspector noted the following during the inspection.

03/27/2019:

- Lagoon contained a small number of cattails on eastern side.
- Approximately 5% of surface was covered with algae and duckweed.
- Eastern lagoon had approximately 10% coverage of algae and surface scum.
- Western lagoon had some erosion on northeastern side.
- A notice of violation was issued on May 1, 2019 for effluent violations.
- Turkey Hill Dairy hauls approximately 6,000 gallons of sludge each weekday.
- Groundwater discharge from springs located along River Road enter system after A1.
- A1 liner was replaced in 1995.
- Liner repairs were completed in 2015 by Chesapeake Containment.
- Facility is no longer adding any chemical additions.

3.2 Summary of DMR Data

A review of approximately 1-year of DMR data shows that the monthly average flow data for the facility below the design capacity of the treatment system. The maximum average flow data for the DMR reviewed was 0.20329 MGD in April 2021. The design capacity of the treatment system is 0.288 MGD.

The off-site laboratory used for the analysis of the parameters was ALS Environmental located at 34 Dogwood Lane, Middletown, PA 17057.

DMR Data for Outfall 001 (from October 1, 2020 to September 30, 2021)

Parameter	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20
Flow (MGD) Average Monthly	0.15081	0.11334	0.10384	0.11938	0.14775	0.20329	0.18910	0.13853	0.13152	0.14892	0.08663	0.08157
Flow (MGD) Daily Maximum	0.43690	0.31550	0.16610	0.24680	0.25590	0.47170	0.46500	0.26810	0.27350	0.47310	0.19790	0.22160
pH (S.U.) Minimum	7.3	7.5	7.5	7.5	7.4	7.6	7.9	7.7	7.7	7.5	7.4	7.1
pH (S.U.) Maximum	7.7	7.9	7.7	8.0	7.6	8.5	8.3	8.1	7.8	7.8	7.6	7.5
DO (mg/L) Minimum	5.2	5.2	7.2	5.4	6.6	8.6	10.4	12.2	11.9	11.2	9.7	7.6
CBOD5 (lbs/day) Average Monthly	2.21	2.27	2.37	2.94	< 4.27	6.86	11.55	< 2.26	5.09	< 4.44	< 1.52	1.41
CBOD5 (lbs/day) Daily Maximum	2.21	2.27	2.37	2.94	< 4.27	6.86	11.55	< 2.26	5.09	< 4.44	< 1.52	1.41
CBOD5 (mg/L) Average Monthly	2.70	3.30	5.10	2.20	< 2.0	5.8	4.20	< 2.0	2.90	< 2.0	< 2.0	2.40
CBOD5 (mg/L) Daily Maximum	2.70	3.30	5.10	2.20	< 2.0	5.8	4.20	< 2.0	2.90	< 2.0	< 2.0	2.40
TSS (lbs/day) Average Monthly	4.90	10.33	< 2.32	< 6.68	17.07	8.28	22.0	12.44	8.78	11.10	3.79	< 2.93
TSS (lbs/day) Daily Maximum	4.90	10.33	< 2.32	< 6.68	17.07	8.28	22.0	12.44	8.78	11.10	3.79	< 2.93
TSS (mg/L) Average Monthly	6.00	15.00	< 5.0	< 5	8.00	7	8.00	11.0	5.00	5.00	5.00	< 5.0
TSS (mg/L) Daily Maximum	6.00	15.00	< 5.0	< 5	8.00	7	8.00	11.0	5.00	5.00	5.00	< 5.0
Nitrate-Nitrite (mg/L) Daily Maximum	4.6	7.4	12.8	19.3	21.1	21.9	15.8	22.1	17.6	16.6	14.1	10.6
Nitrate-Nitrite (lbs) Total Monthly	113.0	158.0	184.3	774.1	1396.0	777.5	1347.2	699.8	958.3	1142.5	321.0	192.7
Total Nitrogen (mg/L) Daily Maximum	6.6	9.5	14.7	21.7	23.0	< 22.9	23.1	25.1	19.1	18.5	16.1	12.5
Total Nitrogen (lbs) Total Monthly	162.1	202.9	211.7	870.3	1521.7	< 813	1969.7	794.8	1040.0	1273.2	366.6	227.2
Ammonia (lbs/day) Average Monthly	0.221	< 0.243	< 0.129	< 0.192	< 0.379	< 0.457	6.295	2.236	0.869	< 0.128	< 0.089	< 0.075
Ammonia (lbs/day) Daily Maximum	0.281	0.462	0.168	0.343	0.841	1.08	11.360	4.681	1.122	0.222	0.145	0.127
Ammonia (mg/L) Average Monthly	0.300	< 0.265	< 0.165	< 0.141	< 0.253	< 0.301	3.053	2.306	0.890	< 0.105	< 0.123	< 0.133

Ammonia (mg/L) Daily Maximum	0.344	0.471	0.200	0.236	0.394	0.765	4.920	4.430	1.360	0.126	0.191	0.216
Ammonia (lbs) Total Monthly	6.6	< 7.943	< 4.009	< 4.913	< 11.737	< 13.718	161.796	62.6	26.9	< 3.975	< 2.674	< 2.327
TKN (mg/L) Daily Maximum	2.0	2.1	1.9	2.4	1.9	< 1.0	7.3	3.0	1.5	1.9	2.0	1.9
TKN (lbs) Total Monthly	49.0	44.8	27.4	96.3	125.7	< 35.5	622.4	95.0	81.7	130.8	45.5	34.5
Total Phosphorus (lbs/day) Daily Maximum	0.10	0.14	0.12	0.16	0.34	0.14	0.72	0.38	0.33	0.38	0.14	0.13
Total Phosphorus (mg/L) Daily Maximum	0.12	0.20	0.26	0.12	0.16	0.12	0.26	0.34	0.19	0.17	0.19	0.22
Total Phosphorus (lbs) Total Monthly	2.94	4.27	3.74	4.81	10.59	4.26	22.17	10.77	10.35	11.70	4.33	4.00
Total Iron (lbs/day) Average Monthly	0.231	0.252	0.112	0.075	0.342	0.366	1.502	0.964	0.947	0.618	0.111	0.101
Total Iron (lbs/day) Daily Maximum	0.314	0.290	0.155	0.092	0.512	0.519	2.558	1.244	1.282	0.688	0.144	0.135
Total Iron (mg/L) Average Monthly	0.290	0.285	0.155	0.061	0.190	0.17	0.640	0.970	0.665	0.480	0.153	0.171
Total Iron (mg/L) Daily Maximum	0.400	0.310	0.160	0.069	0.240	0.18	0.930	1.100	0.730	0.650	0.190	0.230

3.3 Non-Compliance

3.3.1 Non-Compliance- NPDES Effluent

A summary of the non-compliance to the permit limits for the existing permit cycle is as follows.

From the DMR data beginning in January 1, 2012 to November 6, 2021, the following were observed effluent non-compliances.

Summary of Non-Compliance NPDES with NPDES Permit Limits
Beginning January 1, 2012 and Ending November 6, 2021

NON COMPLIANCE DATE	PARAMETER	SAMPLE VALUE	VIOLATION CONDITION	PERMIT VALUE	UNIT OF MEASURE	STATISTICAL BASE CODE
03/26/2018	Carbonaceous Biochemical Oxygen Demand (CBOD5)	39.1	>	25	mg/L	Average Monthly
11/27/2018	Ammonia-Nitrogen	3.91	>	3.0	mg/L	Daily Maximum
01/24/2019	Iron, Total	4.696	>	4.3	lbs/day	Average Monthly
02/25/2019	Ammonia-Nitrogen	11.008	>	10.8	lbs/day	Average Monthly
02/25/2019	Ammonia-Nitrogen	23.55	>	21.6	lbs/day	Daily Maximum
03/26/2019	Ammonia-Nitrogen	11.03	>	4.5	mg/L	Average Monthly
03/26/2019	Ammonia-Nitrogen	12.6	>	9.0	mg/L	Daily Maximum
03/26/2019	Ammonia-Nitrogen	30.344	>	10.8	lbs/day	Average Monthly
03/26/2019	Ammonia-Nitrogen	34.03	>	21.6	lbs/day	Daily Maximum
04/22/2019	Ammonia-Nitrogen	10.0	>	4.5	mg/L	Average Monthly
04/22/2019	Ammonia-Nitrogen	12.1	>	9.0	mg/L	Daily Maximum
04/22/2019	Ammonia-Nitrogen	27.195	>	10.8	lbs/day	Average Monthly
04/22/2019	Ammonia-Nitrogen	29.64	>	21.6	lbs/day	Daily Maximum

3.3.2 Non-Compliance- Enforcement Actions

A summary of the non-compliance enforcement actions for the current permit cycle is as follows:

Beginning in January 1, 2012 to November 6, 2021, the following were observed enforcement actions.

Summary of Enforcement Actions
Beginning January 1, 2012 and Ending November 6, 2021

ENF ID	ENF TYPE DESC	ENF CREATION DATE	VIOLATIONS	ENF FINALSTATUS	ENF CLOSED DATE
375820	Notice of Violation	06/07/2019	92A.44	Comply/Closed	05/17/2019

3.4 Summary of Solids Disposal

A summary of the solids disposed of from the facility is as follows.

The facility anticipates solids disposal later in 2021.

3.5 Open Violations

No open violations existed as of November 2021.

4.0 Receiving Waters and Water Supply Information Detail Summary

4.1 Receiving Waters

The receiving waters has been determined to be the Manns Run. Manns Run discharges into the Susquehanna River which eventually drains into the Chesapeake Bay.

4.2 Public Water Supply (PWS) Intake

The closest PWS to the subject facility is Safe Harbor Power Corporation (PWS ID #7360136) located approximately 4.5 miles downstream of the subject facility on the Susquehanna River. Based upon the distance and the flow rate of the facility, the PWS should not be impacted.

4.3 Class A Wild Trout Streams

Class A Wild Trout Streams are waters that support a population of naturally produced trout of sufficient size and abundance to support long-term and rewarding sport fishery. DEP classifies these waters as high-quality coldwater fisheries.

The information obtained from EMAP suggests that no Class A Wild Trout Fishery will be impacted by this discharge.

4.4 2020 Integrated List of All Waters (303d Listed Streams)

Section 303(d) of the Clean Water Act requires States to list all impaired surface waters not supporting uses even after appropriate and required water pollution control technologies have been applied. The 303(d) list includes the reason for impairment which may be one or more point sources (i.e. industrial or sewage discharges) or non-point sources (i.e. abandoned mine lands or agricultural runoff and the pollutant causing the impairment such as metals, pH, mercury or siltation).

States or the U.S. Environmental Protection Agency (EPA) must determine the conditions that would return the water to a condition that meets water quality standards. As a follow-up to listing, the state or EPA must develop a Total Maximum Daily Load (TMDL) for each waterbody on the list. A TMDL identifies allowable pollutant loads to a waterbody from both point and non-point sources that will prevent a violation of water quality standards. A TMDL also includes a margin of safety to ensure protection of the water.

The water quality status of Pennsylvania's waters uses a five-part categorization (lists) of waters per their attainment use status. The categories represent varying levels of attainment, ranging from Category 1, where all designated water uses are met to Category 5 where impairment by pollutants requires a TMDL for water quality protection.

The receiving waters is listed in the 2020 Pennsylvania Integrated Water Quality Monitoring and Assessment Report as a Category 5 waterbody. The surface waters is impaired for aquatic life due to siltation/sediment/nutrients from agriculture. The designated use has been classified as protected waters for warm water fishes (WWF) and migratory fishes (MF).

4.5 Low Flow Stream Conditions

Water quality modeling estimates are based upon conservative data inputs. The data are typically estimated using either a stream gauge or through USGS web based StreamStats program. The NPDES effluent limits are based upon the combined flows from both the stream and the facility discharge.

A conservative approach to estimate the impact of the facility discharge using values which minimize the total combined volume of the stream and the facility discharge. The volumetric flow rate for the stream is based upon the seven-day, 10-year low flow (Q710) which is the lowest estimated flow rate of the stream during a 7 consecutive day period that occurs once in 10 -year time period. The facility discharge is based upon a known design capacity of the subject facility.

The closest WQN station to the subject facility is the Susquehanna River station at Marietta, PA (WQN201). This WQN station is located approximately 7 miles upstream of the subject facility.

For WQM modeling, an option to use pH and stream water temperature data from the water quality network station could be used. pH was estimated to be 8.1 and the stream water temperature was estimated to be 25.5 C.

The hardness of the stream was estimated from the water quality network to be 84.5 mg/l $CaCO_3$.

The low flow yield and the Q710 for the subject facility was estimated using StreamStats.

The low flow yield is 0.166 $ft^3/s/mi^2$.

The Q710 was 0.103 ft^3/s.

4.6.2 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.288
Latitude	39º 57' 18.28"	Longitude	-76º 26' 46.86"
Quad Name		Quad Code	
Wastewater Description:	IW Process Effluent with ELG		

Receiving Waters	Manns Run (WWF)	Stream Code	7834
NHD Com ID	57467495	RMI	0.75
Drainage Area	0.62	Yield (cfs/mi^2)	0.166
Q_{7-10} Flow (cfs)	0.103	Q_{7-10} Basis	StreamStats
Elevation (ft)	403	Slope (ft/ft)	
Watershed No.	7-J	Chapter 93 Class.	WWF, MF
Existing Use	Same as Chapter 93 class	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired for aquatic life		
Cause(s) of Impairment	NUTRIENTS, SILTATION		
Source(s) of Impairment	AGRICULTURE, AGRICULTURE		
TMDL Status	Not appl.	Name	

Background/Ambient Data		Data Source
pH (SU)	8.1	WQN201; median July to Sept
Temperature (°F)	25.5	WQN201; median July to Sept
Hardness (mg/L)	84.5	WQN201; Historical median
Other:		

Nearest Downstream Public Water Supply Intake		Safe Harbor Power Corporation	
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	4.5

5.0: Overview of Presiding Water Quality Standards

5.1 General

There are at least six (6) different policies which determines the effluent performance limits for the NPDES permit. The policies are technology based effluent limits (TBEL), water quality based effluent limits (WQBEL), antidegradation, total maximum daily loading (TMDL), anti-backsliding, and whole effluent toxicity (WET) The effluent performance limitations enforced are the selected permit limits that is most protective to the designated use of the receiving waters. An overview of each of the policies that are applicable to the subject facility has been presented in Section 6.

5.2.1 Technology-Based Limitations

TBEL treatment requirements under section 301(b) of the Act represent the minimum level of control that must be imposed in a permit issued under section 402 of the Act (40 CFR 125.3). Available TBEL requirements for the state of Pennsylvania are itemized in PA Code 25, Chapter 92a.47.

The presiding sources for the basis for the effluent limitations are governed by either federal or state regulation. The reference sources for each of the parameters is itemized in the tables. The following technology-based limitations apply, subject to water quality analysis and best professional judgement (BPJ) where applicable:

Parameter	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)

Industrial facilities are commonly restricted to effluent limitations established by federal effluent limitation guidelines (ELG). The applicable ELG for this type of industrial facility is the Landfill Subcategory (i.e. 40 CFR 445). The facility will be subject to the parameters itemized by the ELG.

Leachate is pumped into the lagoon treatment system.

The current permit had ELG parameters that were granted a sampling waiver under 40 CFR 122.44. On November 18, 2021, Lancaster County Solid Waste Management Authority submitted a waiver for the ELG parameters for the proposed permit. The facility claims that the facility pre-dates the standards for a Sub-Title D facility. The landfill opened in 1968 and closed in 1989. The facility also stated there are no production processes that occur at the treatment plant. The ELG parameters were collected at both the influent and effluent with non-detect results in 2016.

For the proposed permit, the ELG parameters will be present but noted for sampling waiver under 40 CFR 122.44.

5.3 Water Quality-Based Limitations

WQBEL are based on the need to attain or maintain the water quality criteria and to assure protection of designated and existing uses (PA Code 25, Chapter 92a.2). The subject facility that is typically enforced is the more stringent limit of either the TBEL or the WQBEL.

Determination of WQBEL is calculated by spreadsheet analysis or by a computer modeling program developed by DEP. DEP permit engineers utilize the following computing programs for WQBEL permit limitations: (1) MS Excel worksheet for Total Residual Chorine (TRC); (2) WQM 7.0 for Windows Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen Version 1.1 (WQM Model) and (3) Toxics using DEP Toxics Management Spreadsheet for Toxics pollutants.

5.3.1 Water Quality Modeling 7.0

The WQM Model is a computer model that is used to determine NPDES discharge effluent limitations for Carbonaceous BOD (CBOD5), Ammonia Nitrogen (NH3-N), and Dissolved Oxygen (DO) for single and multiple point source discharges

scenarios. WQM Model is a complete-mix model which means that the discharge flow and the stream flow are assumed to instantly and completely mixed at the discharge node.

WQM recommends effluent limits for DO, CBOD5, and NH_3-N in mg/l for the discharge(s) in the simulation.

Four types of limits may be recommended. The limits are

(a) a *minimum concentration for DO in the discharge as 30-day average;*
(b) *a 30-day average concentration for CBOD5 in the discharge;*
(c) *a 30-day average concentration for the NH_3-N in the discharge;*
(d) *24-hour average concentration for NH_3-N in the discharge*.

The WQM Model requires several input values for calculating output values. The source of data originates from either EMAP, the National Map, or Stream Stats. Data for stream gauge information, if any, was abstracted from USGS Low-Flow, Base-Flow, and Mean-Flow Regression Equations for Pennsylvania Streams authored by Marla H. Stuckey (Scientific Investigations Report 2006-5130).

The modeling point nodes utilized for this facility are summarized below.

General Data 1 (Modeling Point #1)	***Input Value***	***Units***
Stream Code	7834	
River Mile Index	0.75	miles
Elevation	403	feet
Latitude	39.952714	
Longitude	-76.448941	
Drainage Area	0.62	sq miles
Reach Slope	Default	ft/ft
Low Flow Yield	0.166	cfs/sq mile
Potable Water Supply Withdrawal	Default	mgd
General Data 2 (Modeling Point #2)	***Input Value***	***Units***
Stream Code	7834	
River Mile Index	0	miles
Elevation	262	feet
Latitude	39.94778	
Longitude	-76.447954	
Drainage Area	1.24	sq miles
Reach Slope	Default	ft/ft
Low Flow Yield	0.166	cfs/sq mile
Potable Water Supply Withdrawal	Default	mgd

Two sets of modeling runs were conducted for WQM modeling.

Run #1 utilized the water quality network (WQN #201) pH value of 8.1 and a temperature value of 25.5 C. This resulted in an ammonia-nitrogen limit of 1.31 mg/l for the summer months and 3x that value for winter months.

Run #2 utilized default pH value of 7 and a temperature value of 25 C. This resulted in an ammonia-nitrogen limit of 1.93 mg/l. Since modeling results from Run #2 were more favorable to the facility, DEP accepted these results.

Due to anti-backsliding, the limit shall continue at 1.5 mg/l during the summer months and 4.5 mg/l during the winter months.

The applicable WQM Effluent Limit Type are also discussed in Section 6 under the corresponding parameter which is either DO, CBOD, or ammonia-nitrogen.

5.3.2 Toxics Modeling

The Toxics Management Spreadsheet model is a computer model that is used to determine effluent limitations for toxics (and other substances) for single discharge wasteload allocations. This computer model uses a mass-balance water quality analysis that includes consideration for mixing, first-order decay, and other factors used to determine recommended water quality-based effluent limits. Toxics Management Spreadsheet does not assume that all discharges completely mix with the stream. The point of compliance with water quality criteria are established using criteria compliance times (CCTs). The available CCTs are either acute fish criterion (AFC), chronic fish criterion (CFC), or human health criteria (THH & CRL).

Acute Fish Criterion (AFC) measures the criteria compliance time as either the maximum criteria compliance time (i.e.15 minutes travel time downstream of the current discharge) or the complete mix time whichever comes first. AFC is evaluated at Q710 conditions.

Chronic Fish Criterion (CFC) measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the complete mix time whichever comes first. CFC is evaluated at Q710 conditions.

Threshold Human Health (THH) measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the estimated travel time downstream to the nearest potable water supply intake whichever comes first. THH is evaluated at Q710 conditions.

Cancer Risk Level (CRL) measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the complete mix time whichever comes first. CRL is evaluated at Qh (harmonic mean or normal flow) conditions.

The Toxics Model requires several input values for calculating output values. The source of data originates from either EMAP, the National Map, or Stream Stats. Data for stream gauge information, if any, was abstracted from USGS Low-Flow, Base-Flow, and Mean-Flow Regression Equations for Pennsylvania Streams authored by Marla H. Stuckey (Scientific Investigations Report 2006-5130).

5.3.2.1 Determining if NPDES Permit Will Require Monitoring/Limits in the Proposed Permit for Toxic Pollutants

To determine if Toxics modeling is necessary, DEP has developed a Toxics Management Spreadsheet to identify toxics of concern. Toxic pollutants whose maximum concentrations as reported in the permit application or on DMRs are greater than the most stringent applicable water quality criterion are pollutants of concern. A Reasonable Potential Analysis was utilized to determine (a) if the toxic parameters modeled would require monitoring or (b) if permit limitations would be required for the parameters. The toxics reviewed for reasonable potential were the pollutants in Groups 1 through 6.

Based upon the SOP- Establishing Water Quality-Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants (Revised January 10, 2019), monitoring and/or limits will be established as follows.

(a) When reasonable potential is demonstrated, establish limits where the maximum reported concentration equals or exceeds 50% of the WQBEL.

(b) For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.
(c) For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10% - 50% of the WQBEL.

Two sets of sampling data were reviewed using the Toxics Management Spreadsheet.

Data Set #1 was the sampling data submitted with the NPDES application in June 2016. These results had many pollutants analyzed by the laboratory above DEP target QL. Thus, DEP requested that the effluent be re-sampled.

Data Set #2 was the sampling data submitted as a revised NPDES application for Pollutant Groups 1 - 6 in November 2021.

The sampling results from both data sets were used to recommend monitoring and effluent permit limits for the proposed permit. Since Data Set #2 was more recent, this data set was used for Toxics Management Spreadsheet. Data Set #1 was used as supplementary data set to resolve questionable data in Data Set #2.

Parameters acrolein, carbon tetrachloride, 1,3-dichloropropylene, hexachlorobutadiene, and 1,2,4-trichlorobenzene were sampled by the facility above recommended Target QL. Both Data Set #1 and #2 reported results of either 3, 4 or 5 rounds of sampling with all the sample results as non-detect results.

Daniel Brown of Lancaster County Solid Waste Management Authority (LCSWMA) suggested on November 9, 2021 that acrolein, carbon tetrachloride, 1,3-dichloropropylene, hexachlorobutadiene, and 1,2,4-trichlorobenzene had sample results as non-detect at or above the method detection limit. This suggests that there was no detection at or above DEP target QL.

For the aforementioned parameters, the lab method detection limits were populated in the Toxics Management Spreadsheet. The calculation sheet did not observe reasonable potential. Thus, no monitoring or effluent limits shall be required in the draft permit.

Based upon the sampling results from Data Set #2, Toxics Management Spreadsheet recommends limits for boron and dissolved iron.

Data Set #1 had a boron result of 1200 ug/l. Data Set #2 had a boron result of 1100 ug/l.

Data Set #1 did not have a sample result was provided for dissolved iron. Data Set #2 had a sample result of 280 ug/l.

Applicable monitoring or permit limits for toxics are summarized in Section 6.

The Toxics Management Spreadsheet output has been included in Attachment B.

5.3.3 Whole Effluent Toxicity (WET)

The facility is not subject to WET.

5.4 Total Maximum Daily Loading (TMDL)

5.4.1 TMDL

The goal of the Clean Water Act (CWA), which governs water pollution, is to ensure that all of the Nation's waters are clean and healthy enough to support aquatic life and recreation. To achieve this goal, the CWA created programs designed to regulate and reduce the amount of pollution entering United States waters. Section 303(d) of the CWA requires states to assess their waterbodies to identify those not meeting water quality standards. If a waterbody is not meeting standards, it is listed as impaired and reported to the U.S. Environmental Protection Agency. The state then develops a plan to clean up the impaired waterbody. This plan includes the development of a Total Maximum Daily Load (TMDL) for the pollutant(s) that were found to be the cause of the water quality violations. A Total Maximum Daily Load (TMDL) calculates the maximum amount of a specific pollutant that a waterbody can receive and still meet water quality standards.

Pennsylvania has committed to restoring all impaired waters by developing TMDLs and TMDL alternatives for all impaired waterbodies. The TMDL serves as the starting point or planning tool for restoring water quality.

5.4.1.1 Local TMDL

The subject facility does not discharge into a local TMDL.

5.4.1.2 Chesapeake Bay TMDL Requirement

The Chesapeake Bay Watershed is a large ecosystem that encompasses approximately 64,000 square miles in Maryland, Delaware, Virginia, West Virginia, Pennsylvania, New York and the District of Columbia. An ecosystem is composed of interrelated parts that interact with each other to form a whole. All of the plants and animals in an ecosystem depend on each other in some way. Every living thing needs a healthy ecosystem to survive. Human activities affect the Chesapeake Bay ecosystem by adding pollution, using resources and changing the character of the land.

Most of the Chesapeake Bay and many of its tidal tributaries have been listed as impaired under Section 303(d) of the federal Water Pollution Control Act ("Clean Water Act"), 33 U.S.C. § 1313(d). While the Chesapeake Bay is outside the boundaries of Pennsylvania, more than half of the State lies within the watershed. Two major rivers in Pennsylvania are part of the Chesapeake Bay Watershed. They are (a) the Susquehanna River and (b) the Potomac River. These two rivers total 40 percent of the entire Chesapeake Bay watershed.

The overall management approach needed for reducing nitrogen, phosphorus and sediment are provided in the Bay TMDL document and the Phase I, II, and III WIPs which is described in the Bay TMDL document and Executive Order 13508.

The Bay TMDL is a comprehensive pollution reduction effort in the Chesapeake Bay watershed identifying the necessary pollution reductions of nitrogen, phosphorus and sediment across the seven Bay watershed jurisdictions of Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia and the District of Columbia to meet applicable water quality standards in the Bay and its tidal waters.

The Watershed Implementation Plans (WIPs) provides objectives for how the jurisdictions in partnership with federal and local governments will achieve the Bay TMDL's nutrient and sediment allocations.

Phase 3 WIP provides an update on Chesapeake Bay TMDL implementation activities for point sources and DEP's current implementation strategy for wastewater. The latest revision of the supplement was December 17, 2019.

The Chesapeake Bay TMDL (Appendix Q) categorizes point sources into four sectors:

- Sector A- significant sewage dischargers;
- Sector B- significant industrial waste (IW) dischargers;
- Sector C- non-significant dischargers (both sewage and IW facilities); and
- Sector D- combined sewer overflows (CSOs).

All sectors contain a listing of individual facilities with NPDES permits that were believed to be discharging at the time the TMDL was published (2010). All sectors with the exception of the non-significant dischargers have individual wasteload allocations (WLAs) for TN and TP assigned to specific facilities. Non-significant dischargers have a bulk or aggregate allocation for TN and TP based on the facilities in that sector that were believed to be discharging at that time and their estimated nutrient loads.

Based upon the supplement the subject facility has been categorized as a Sector C discharger. The supplement defines Sector C as a non-significant discharger that includes sewage facilities (Phase 4 facilities: ≥ 0.2 MGD and < 0.4 MGD and Phase 5 facilities: > 0.002 MGD and < 0.2 MGD), small flow/single residence sewage treatment facilities (≤ 0.002 MGD), and non-significant IW facilities, all of which may be covered by statewide General Permits or may have individual NPDES permits.

At this time, there are approximately 850 Phase 4 and 5 sewage facilities, approximately 715 small flow sewage treatment facilities covered by a statewide General Permit, and approximately 300 non-significant IW facilities.

For non-significant IW facilities, monitoring and reporting of TN and TP will be required throughout the permit term in renewed or amended permits anytime the facility has the potential to introduce a net TN or TP increase to the load contained within the intake water used in processing.

Non-significant IW facilities that propose expansion or production increases and as a result will discharge at least 75 lbs/day TN or 25 lbs/day TP (on an annual average basis), will be classified as Significant IW dischargers and receive Cap Loads in their permits based on existing performance (existing TN/TP concentrations at current average annual flow).

In general, for new non-significant IW discharges (including existing facilities discharging without a permit), DEP will issue permits containing Cap Loads of "0" and these facilities will be expected to purchase credits and/or apply offsets to achieve compliance.

This facility is subject to Sector C monitoring requirements. For nitrogen species and phosphorus, monitoring shall be required 1x/month.

5.5 Anti-Degradation Requirement

Chapter 93.4a of the PA regulations requires that surface water of the Commonwealth of Pennsylvania may not be degraded below levels that protect the existing uses. The regulations specifically state that *Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected*. Antidegradation requirements are implemented through DEP's guidance manual entitled Water Quality Antidegradation Implementation Guidance (Document #391-0300-02).

The policy requires DEP to protect the existing uses of all surface waters and the existing quality of High Quality (HQ) and Exceptional Value (EV) Waters. Existing uses are protected when DEP makes a final decision on any permit or approval for an activity that may affect a protected use. Existing uses are protected based upon DEP's evaluation of the best available information (which satisfies DEP protocols and Quality Assurance/Quality Control (QA/QC) procedures) that indicates the protected use of the waterbody.

For a new, additional, or increased point source discharge to an HQ or EV water, the person proposing the discharge is required to utilize a nondischarge alternative that is cost-effective and environmentally sound when compared with the cost of the proposed discharge. If a nondischarge alternative is not cost-effective and environmentally sound, the person must use the best available combination of treatment, pollution prevention, and wastewater reuse technologies and assure that any discharge is nondegrading. In the case of HQ waters, DEP may find that after satisfaction of intergovernmental coordination and public participation requirements lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In addition, DEP will assure that cost-effective and reasonable best management practices for nonpoint source control in HQ and EV waters are achieved.

The subject facility's discharge will be to a non-special protection waters and the permit conditions are imposed to protect existing instream water quality and uses. Neither HQ waters or EV waters is impacted by this discharge.

5.6 Anti-Backsliding

Anti-backsliding is a federal regulation which prohibits a permit from being renewed, reissued, or modified containing effluent limitations which are less stringent than the comparable effluent limitations in the previous permit (40 CFR 122.l.1 and 40 CFR 122.l.2). A review of the existing permit limitations with the proposed permit limitations confirm that the facility is consistent with anti-backsliding requirements. The facility has proposed effluent limitations that are as stringent as the existing permit.

6.0 NPDES Parameter Details

The basis for the proposed sampling and their monitoring frequency that will appear in the permit for each individual parameter are itemized in this Section. The final limits are the more stringent of technology based effluent treatment (TBEL) requirements, water quality based (WQBEL) limits, TMDL, antidegradation, anti-degradation, or WET.

The reader will find in this section:

a) a justification of recommended permit monitoring requirements and limitations for each parameter in the proposed NPDES permit;
b) a summary of changes from the existing NPDES permit to the proposed permit; and
c) a summary of the proposed NPDES effluent limits.

6.1 Recommended Monitoring Requirements and Effluent Limitations

A summary of the recommended monitoring requirements and effluent limitations are itemized in the tables. The tables are categorized by (a) Conventional Pollutants and Disinfection, (b) Nitrogen Species and Phosphorus, and (c) Toxics.

6.1.1 Conventional Pollutants and Disinfection

Summary of Proposed NPDES Parameter Details for Conventional Pollutants and Disinfection Lancaster County Creswell Landfill, PA0043486			
Parameter	**Permit Limitation Required by[1]:**	**Recommendation**	
pH (S.U.)	TBEL	Monitoring:	The monitoring frequency shall be 5x/wk as a grab sample (Table 6-4).
		Effluent Limit:	Effluent limits may range from pH = 6.0 to 9.0
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-4 and the effluent limits assigned by Chapter 95.2(1).
Dissolved Oxygen	BPJ	Monitoring:	The monitoring frequency shall be 5x/wk as a grab sample (Table 6-4).
		Effluent Limit:	Effluent limits shall be greater than 5.0 mg/l.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-4 and the effluent limits assigned by best professional judgement.
CBOD	ELG; Title 40; Subpart 445	Monitoring:	The monitoring frequency shall be 1x/month as a 24-hr composite sample (Table 6-4).
		Effluent Limit:	Effluent limits shall not exceed 60 lbs/day and 25 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-4 and the effluent limits assigned by Chapter 92a.47(a)(1). WQM modeling indicates that the TBEL is more stringent than the WQBEL. Thus, the permit limit is confined to TBEL.
TSS	ELG	Monitoring:	The monitoring frequency shall be 1x/month as a 24-hr composite sample (Table 6-4).
		Effluent Limit:	Effluent limits shall not exceed 65 lbs/day and 27 mg/l as an average monthly and a daily maximum of 88 mg/l.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-4 and the effluent limits assigned by the federal ELG standards.
Notes:			
1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other			
2 Monitoring frequency based on flow rate of 0.288 MGD.			
3 Table 6-4 (Self Monitoring Requirements for Industrial Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97			
4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)			
5 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021			

6.1.2 Nitrogen Species and Phosphorus

Summary of Proposed NPDES Parameter Details for Nitrogen Species and Phosphorus

Lancaster County Creswell Landfill, PA0043486

Parameter	Permit Limitation Required by[1]:	Recommendation	
Ammonia-Nitrogen	Antibacksliding	Monitoring:	The monitoring frequency shall be 1x/wk as a 24-hr composite sample
		Effluent Limit:	During the months of May 1 to October 31, the effluent requirements should not exceed 3.6 lbs/day and 1.5 mg/l as an average monthly. During the months of November 1 to April 30, the effluent requirements should not exceed 10.8 lbs/day and 4.5 mg/l as an average monthly.
		Rationale:	Due to anti-backsliding regulations, the current permit limit shall continue to the proposed permit.
Nitrate-Nitrite as N	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/mo as a 24-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/mo.
Total Nitrogen	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/mo as a calculation
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/mo.
TKN	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/mo as a 24-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/mo.
Total Phosphorus	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/mo as a 24-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/mo.
Notes:			

1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other

2 Monitoring frequency based on flow rate of 0.288 MGD.

3 Table 6-4 (Self Monitoring Requirements for Industrial Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97

4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)

5 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021

6.1.3 Toxics

Summary of Proposed NPDES Parameter Details for Toxics

Lancaster County Creswell Landfill, PA0043486

Parameter	Permit Limitation Required by[1]:	Recommendation	
Total Boron	WQBEL	Monitoring:	The monitoring frequency shall be 2x/mo as an 24-hr composite sample (Table 6-4).
		Effluent Limit:	Effluent limits shall not exceed 4.73 lbs/day and 1.97 mg/l as an average monthly and 3.07 mg/l as a maximum daily.
		Rationale:	Toxics Management Spreadsheet recommends water quality based effluent limits
Dissolved Iron	WQBEL	Monitoring:	The monitoring frequency shall be 2x/mo as an 24-hr composite sample (Table 6-4).
		Effluent Limit:	Effluent limits shall not exceed 0.89 lbs/day and 0.36 mg/l as an average monthly and 0.57 mg/l as a maximum daily.
		Rationale:	Toxics Management Spreadsheet recommends water quality based effluent limits
Total Iron	Anti-backsliding	Monitoring:	The monitoring frequency shall be 2x/mo as an 24-hr composite sample (Table 6-4).
		Effluent Limit:	Effluent limits shall not exceed 4.3 lbs/day and 1.8 mg/l as an average monthly and 3.6 mg/l as a maximum daily.
		Rationale:	Due to anti-backsliding regulations, the current permit limit shall continue to the proposed permit
Total Zinc	ELG; Title 40; Subpart 445	Monitoring:	The monitoring frequency shall be 2x/month as an 24-hr composite sample (Table 6-4).
		Effluent Limit:	Effluent limits shall not exceed 0.26 lbs/day and 0.11 mg/l as an average monthly and 0.20 mg/l as a maximum daily.
		Rationale:	Effluent limits are prescribed by federal ELG standards
Phenol	ELG; Title 40; Subpart 445	Monitoring:	The monitoring frequency shall be 2x/month as an 24-hr composite sample (Table 6-4).
		Effluent Limit:	Effluent limits shall not exceed 0.036 lbs/day and 0.015 mg/l as an average monthly and 0.026 mg/l as a maximum daily.
		Rationale:	Effluent limits are prescribed by federal ELG standards
a-Terpineol	ELG; Title 40; Subpart 445	Monitoring:	The monitoring frequency shall be 2x/month as an 24-hr composite sample (Table 6-4).
		Effluent Limit:	Effluent limits shall not exceed 0.04 lbs/day and 0.016 mg/l as an average monthly and 0.033 mg/l as a maximum daily.
		Rationale:	Effluent limits are prescribed by federal ELG standards
Benzoic Acid	ELG; Title 40; Subpart 445	Monitoring:	The monitoring frequency shall be 2x/month as an 24-hr composite sample (Table 6-4).
		Effluent Limit:	Effluent limits shall not exceed 0.17 lbs/day and 0.071 mg/l as an average monthly and 0.12 mg/l as a maximum daily.
		Rationale:	Effluent limits are prescribed by federal ELG standards
p-Cresol	ELG; Title 40; Subpart 445	Monitoring:	The monitoring frequency shall be 2x/month as an 24-hr composite sample (Table 6-4).
		Effluent Limit:	Effluent limits shall not exceed 0.033 lbs/day and 0.014 mg/l as an average monthly and 0.025 mg/l as a maximum daily.
		Rationale:	Effluent limits are prescribed by federal ELG standards

Notes:

1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other

2 Monitoring frequency based on flow rate of 0.288 MGD.

3 Table 6-4 (Self Monitoring Requirements for Industrial Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97

4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)

5 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021

6.2 Summary of Changes From Existing Permit to Proposed Permit

A summary of how the proposed NPDES permit differs from the existing NPDES permit is summarized as follows.

Changes in Permit Monitoring or Effluent Quality

Parameter	Existing Permit	Draft Permit
Boron	No monitoring or effluent requirements.	Monitoring shall be 2x/mo. Effluent limits shall not exceed 4.73 lbs/day and 1.97 mg/l as an average monthly.
Dissolved Iron	No monitoring or effluent requirements.	Monitoring shall be 2x/mo. Effluent limits shall not exceed 0.89 lbs/day and 0.369 mg/l as an average monthly.

6.3.1 Summary of Proposed NPDES Effluent Limits

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.

The proposed NPDES effluent limitations are summarized in the table below.

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 001 , **Latitude** 39° 57' 18.17" , **Longitude** 76° 26' 46.37" , **River Mile Index** 0.75 , **Stream Code** 7834

Receiving Waters: Manns Run (WWF)

Type of Effluent: IW Process Effluent with ELG

1. The permittee is authorized to discharge during the period from **Permit Effective Date** through **Permit Expiration Date**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	5/week	Grab
Dissolved Oxygen	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	5/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	60	120	XXX	25	50	62.5	1/month	24-Hr Composite
Total Suspended Solids	65	211	XXX	27	88	110	1/month	24-Hr Composite
Nitrate-Nitrite as N	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Nitrate-Nitrite as N (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/month	Calculation
Total Nitrogen (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia-Nitrogen Nov 1 - Apr 30	10.8	21.6	XXX	4.5	9.0	11.25	1/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	3.6	7.2	XXX	1.5	3.0	3.75	1/week	24-Hr Composite

Outfall 001, Continued (from 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	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Ammonia-Nitrogen (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Kjeldahl Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Total Kjeldahl Nitrogen (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	XXX	Report	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Total Phosphorus (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Boron, Total	4.73	7.38	XXX	1.97	3.07	4.92	2/month	24-Hr Composite
Iron, Dissolved	0.89	1.38	XXX	0.36	0.57	0.92	2/month	24-Hr Composite
Iron, Total	4.3	8.6	XXX	1.8	3.6	4.5	2/month	24-Hr Composite
Zinc, Total	0.26	0.48	XXX	0.11	0.2	0.28	2/month	24-Hr Composite
Phenol	0.036	0.06	XXX	0.015	0.026	0.038	2/month	24-Hr Composite
a-Terpineol	0.04	0.08	XXX	0.016	0.033	0.04	2/month	24-Hr Composite
Benzoic Acid	0.17	0.29	XXX	0.071	0.12	0.18	2/month	24-Hr Composite
p-Cresol	0.033	0.06	XXX	0.014	0.025	0.037	2/month	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

6.3.2 Summary of Proposed Permit Part C Conditions

The subject facility has the following Part C conditions.

- Chesapeake Bay Nutrient Definitions
- Solids Management for Lagoons
- Leachate

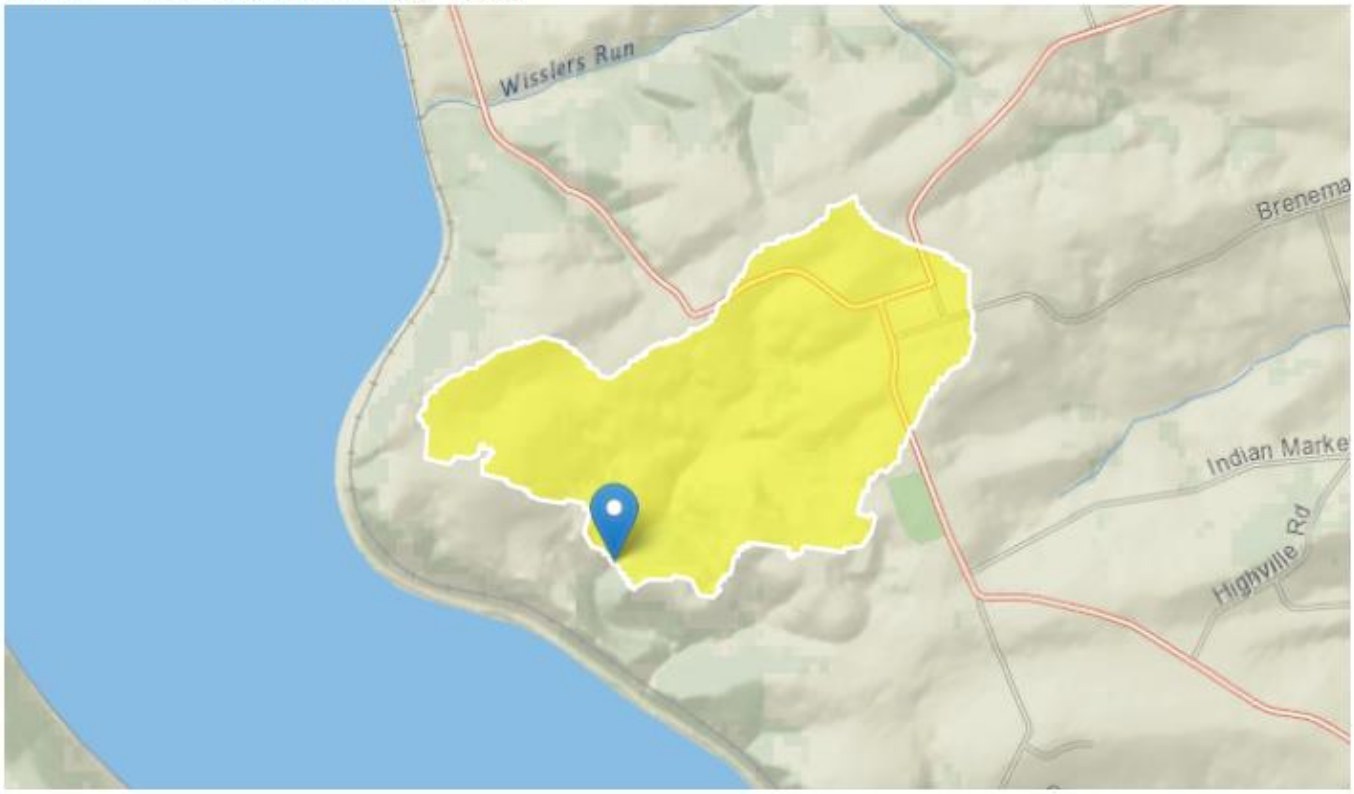
Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical 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.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	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.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	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.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: New and Reissuance Industrial Waste and Industrial Stormwater; Revised, October 11, 2013
☐	Other:

Attachment A

Stream Stats/Gauge Data

StreamStats Report

Region ID: PA
Workspace ID: PA20210804151126955000
Clicked Point (Latitude, Longitude): 39.95260, -76.44903
Time: 2021-08-04 11:11:42 -0400



Lancaster County Solid Waste Management PA0043486 Modeling Point #1 August 2021

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.62	square miles
BSLOPD	Mean basin slope measured in degrees	5.4578	degrees
ROCKDEP	Depth to rock	5.2	feet
URBAN	Percentage of basin with urban development	0.2067	percent

Low-Flow Statistics Parameters [Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.62	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	5.4578	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5.2	feet	4.13	5.21
URBAN	Percent Urban	0.2067	percent	0	89

Low-Flow Statistics Disclaimers [Low Flow Region 1]

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

Low-Flow Statistics Flow Report [Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.218	ft^3/s
30 Day 2 Year Low Flow	0.263	ft^3/s
7 Day 10 Year Low Flow	0.103	ft^3/s
30 Day 10 Year Low Flow	0.129	ft^3/s
90 Day 10 Year Low Flow	0.183	ft^3/s

Low-Flow Statistics Citations

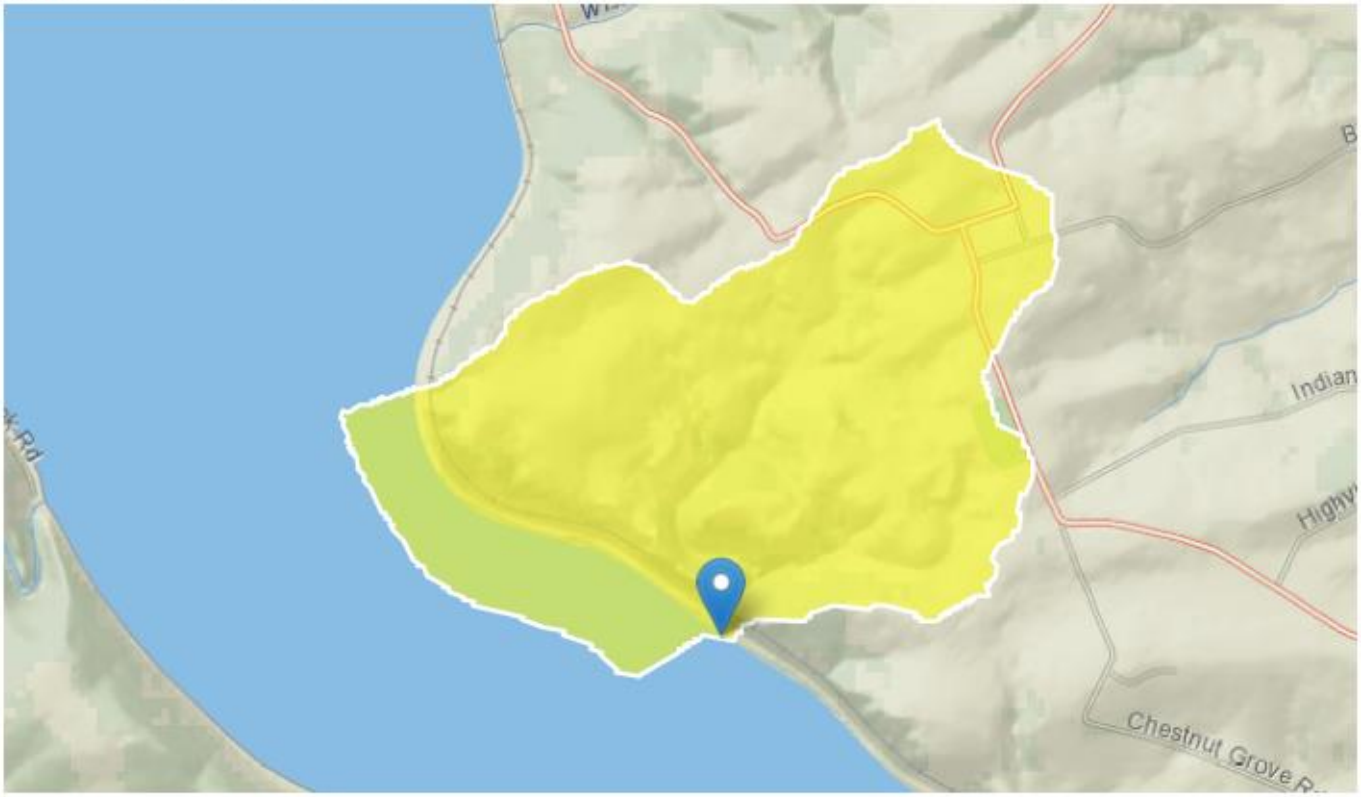
Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.6.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

StreamStats Report

Region ID: PA
Workspace ID: PA20210804151603585000
Clicked Point (Latitude, Longitude): 39.94763, -76.44796
Time: 2021-08-04 11:16:19 -0400



Lancaster County Solid Waste Management PA0043486 Modeling Point #2 August 2021

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1.24	square miles
BSLOPD	Mean basin slope measured in degrees	7.5416	degrees
ROCKDEP	Depth to rock	4.7	feet
URBAN	Percentage of basin with urban development	0.4193	percent

Low-Flow Statistics Parameters [Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.24	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	7.5416	degrees	1.7	6.4
ROCKDEP	Depth to Rock	4.7	feet	4.13	5.21
URBAN	Percent Urban	0.4193	percent	0	89

Low-Flow Statistics Disclaimers [Low Flow Region 1]

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

Low-Flow Statistics Flow Report [Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.43	ft^3/s
30 Day 2 Year Low Flow	0.511	ft^3/s
7 Day 10 Year Low Flow	0.214	ft^3/s
30 Day 10 Year Low Flow	0.265	ft^3/s
90 Day 10 Year Low Flow	0.339	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.6.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

Attachment B

Modeling Input Values
WQM 7.0 Modeling Output Values
Toxics Management Spreadsheet Output Values

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07J	7834	MANNS RUN

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)
0.750	LCSWA Creswell	PA0043486	0.288	CBOD5	25		
				NH3-N	1.93	3.86	
				Dissolved Oxygen			5

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07J	7834	MANNS RUN

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
0.750	LCSWA Creswell	8.58	9.85	8.58	9.85	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
0.750	LCSWA Creswell	1.41	1.93	1.41	1.93	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)		
0.75	LCSWA Creswell	25	25	1.93	1.93	5	5	0	0

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
07J	7834	MANNS RUN	0.750	403.00	0.62	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	0.166	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	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
LCSWA Creswell	PA0043486	0.2680	0.2680	0.2680	0.000	20.00	7.69

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	5.00	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
07J	7834	MANNS RUN	**0.000**	262.00	1.24	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	0.166	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	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	0.00	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 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07J	7834	MANNS RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.750	0.288	20.938	7.452
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
5.767	0.485	11.900	0.196
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
20.68	1.467	1.57	0.752
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.609	28.463	Owens	5
Reach Travel Time (days)			
0.234			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.023	19.96	1.54	6.37
0.047	19.26	1.51	6.79
0.070	18.58	1.49	7.04
0.093	17.93	1.46	7.19
0.117	17.30	1.44	7.30
0.140	16.69	1.41	7.38
0.163	16.10	1.39	7.44
0.187	15.54	1.36	7.50
0.210	14.99	1.34	7.55
0.234	14.46	1.31	7.60

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07J	7834	MANNS RUN

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												
0.750	0.10	0.00	0.10	.4455	0.03561	.485	5.77	11.9	0.20	0.234	20.94	7.45
Q1-10 Flow												
0.750	0.07	0.00	0.07	.4455	0.03561	NA	NA	NA	0.19	0.243	20.64	7.51
Q30-10 Flow												
0.750	0.16	0.00	0.16	.4455	0.03561	NA	NA	NA	0.21	0.220	21.35	7.38

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	1.6	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Lancaster County SWMA Creswell Landfill** NPDES Permit No.: **PA0043486** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Landfill Leachate**

Discharge Characteristics									
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.288	360	7.69						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		944									
	Chloride (PWS)	mg/L		214									
	Bromide	mg/L		1.7									
	Sulfate (PWS)	mg/L		7.3									
	Fluoride (PWS)	mg/L	<	0.5									
Group 2	Total Aluminum	µg/L	<	10									
	Total Antimony	µg/L	<	1									
	Total Arsenic	µg/L	<	1.5									
	Total Barium	µg/L		58									
	Total Beryllium	µg/L	<	0.5									
	Total Boron	µg/L		1100									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	0.91									
	Hexavalent Chromium	µg/L		0.22									
	Total Cobalt	µg/L		2.8									
	Total Copper	µg/L		3.1									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	5									
	Dissolved Iron	µg/L		280									
	Total Iron	µg/L		340									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		540									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		25									
	Total Phenols (Phenolics) (PWS)	µg/L	<	5									
	Total Selenium	µg/L	<	1.2									
	Total Silver	µg/L	<	0.5									
	Total Thallium	µg/L	<	0.5									
	Total Zinc	µg/L	<	2.5									
	Total Molybdenum	µg/L		160									
	Acrolein	µg/L	<	1.3									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	5									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.5									

Group 3	Carbon Tetrachloride	µg/L	<	0.23									
	Chlorobenzene	µg/L	<	0.5									
	Chlorodibromomethane	µg/L	<	0.5									
	Chloroethane	µg/L	<	1									
	2-Chloroethyl Vinyl Ether	µg/L	<	5									
	Chloroform	µg/L	<	0.5									
	Dichlorobromomethane	µg/L	<	0.5									
	1,1-Dichloroethane	µg/L	<	0.5									
	1,2-Dichloroethane	µg/L	<	0.5									
	1,1-Dichloroethylene	µg/L	<	0.5									
	1,2-Dichloropropane	µg/L	<	0.5									
	1,3-Dichloropropylene	µg/L	<	0.47									
	1,4-Dioxane	µg/L		79.1									
	Ethylbenzene	µg/L	<	0.5									
	Methyl Bromide	µg/L	<	1									
	Methyl Chloride	µg/L	<	1									
	Methylene Chloride	µg/L	<	1									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5									
	Tetrachloroethylene	µg/L	<	0.5									
	Toluene	µg/L	<	0.5									
	1,2-trans-Dichloroethylene	µg/L	<	0.5									
	1,1,1-Trichloroethane	µg/L	<	0.5									
	1,1,2-Trichloroethane	µg/L	<	0.5									
	Trichloroethylene	µg/L	<	0.5									
	Vinyl Chloride	µg/L	<	0.5									
Group 4	2-Chlorophenol	µg/L	<	2.9									
	2,4-Dichlorophenol	µg/L	<	2.9									
	2,4-Dimethylphenol	µg/L	<	2.9									
	4,6-Dinitro-o-Cresol	µg/L	<	5.7									
	2,4-Dinitrophenol	µg/L	<	5.7									
	2-Nitrophenol	µg/L	<	2.9									
	4-Nitrophenol	µg/L	<	2.9									
	p-Chloro-m-Cresol	µg/L	<	2.9									
	Pentachlorophenol	µg/L	<	5.7									
	Phenol	µg/L	<	7.7									
	2,4,6-Trichlorophenol	µg/L	<	2.9									
Group 5	Acenaphthene	µg/L	<	1.4									
	Acenaphthylene	µg/L	<	1.4									
	Anthracene	µg/L	<	1.4									
	Benzidine	µg/L	<	3.8									
	Benzo(a)Anthracene	µg/L	<	1.4									
	Benzo(a)Pyrene	µg/L	<	1.4									
	3,4-Benzofluoranthene	µg/L	<	1.4									
	Benzo(ghi)Perylene	µg/L	<	1.4									
	Benzo(k)Fluoranthene	µg/L	<	1.4									
	Bis(2-Chloroethoxy)Methane	µg/L	<	2.9									
	Bis(2-Chloroethyl)Ether	µg/L	<	2.9									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	2.9									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	2.9									
	4-Bromophenyl Phenyl Ether	µg/L	<	2.9									
	Butyl Benzyl Phthalate	µg/L	<	2.9									
	2-Chloronaphthalene	µg/L	<	2.9									
	4-Chlorophenyl Phenyl Ether	µg/L	<	2.9									
	Chrysene	µg/L	<	1.4									
	Dibenzo(a,h)Anthrancene	µg/L	<	1.4									
	1,2-Dichlorobenzene	µg/L	<	1									
	1,3-Dichlorobenzene	µg/L	<	1									
	1,4-Dichlorobenzene	µg/L	<	1									
	3,3-Dichlorobenzidine	µg/L	<	2.9									
	Diethyl Phthalate	µg/L	<	2.9									
	Dimethyl Phthalate	µg/L	<	2.9									
	Di-n-Butyl Phthalate	µg/L	<	2.9									
	2,4-Dinitrotoluene	µg/L	<	2.9									

	2,6-Dinitrotoluene	µg/L	<	2.9									
	Di-n-Octyl Phthalate	µg/L	<	2.9									
	1,2-Diphenylhydrazine	µg/L	<	2.9									
	Fluoranthene	µg/L	<	1.4									
	Fluorene	µg/L	<	1.4									
	Hexachlorobenzene	µg/L	<	2.9									
	Hexachlorobutadiene	µg/L	<	0.45									
	Hexachlorocyclopentadiene	µg/L	<	2.9									
	Hexachloroethane	µg/L	<	2.9									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	1.4									
	Isophorone	µg/L	<	2.9									
	Naphthalene	µg/L	<	1.4									
	Nitrobenzene	µg/L	<	2.9									
	n-Nitrosodimethylamine	µg/L	<	2.9									
	n-Nitrosodi-n-Propylamine	µg/L	<	2.9									
	n-Nitrosodiphenylamine	µg/L	<	2.9									
	Phenanthrene	µg/L	<	1.4									
	Pyrene	µg/L	<	1.4									
	1,2,4-Trichlorobenzene	µg/L	<	0.39									
Group 6	Aldrin	µg/L	<	0.02									
	alpha-BHC	µg/L	<	0.02									
	beta-BHC	µg/L	<	0.02									
	gamma-BHC	µg/L	<	0.02									
	delta BHC	µg/L	<	0.02									
	Chlordane	µg/L	<	0.2									
	4,4-DDT	µg/L	<	0.02									
	4,4-DDE	µg/L	<	0.02									
	4,4-DDD	µg/L	<	0.02									
	Dieldrin	µg/L	<	0.02									
	alpha-Endosulfan	µg/L	<	0.02									
	beta-Endosulfan	µg/L	<	0.02									
	Endosulfan Sulfate	µg/L	<	0.02									
	Endrin	µg/L	<	0.02									
	Endrin Aldehyde	µg/L	<	0.02									
	Heptachlor	µg/L	<	0.02									
	Heptachlor Epoxide	µg/L	<	0.02									
	PCB-1016	µg/L	<	0.5									
	PCB-1221	µg/L	<	0.5									
	PCB-1232	µg/L	<	0.5									
	PCB-1242	µg/L	<	0.5									
	PCB-1248	µg/L	<	0.5									
	PCB-1254	µg/L	<	0.5									
	PCB-1260	µg/L	<	0.5									
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<	0.5									
	2,3,7,8-TCDD	ng/L	<										
Group 7	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											

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Lancaster County SWMA Creswell Landfill, NPDES Permit No. PA0043486, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Manns Run**

No. Reaches to Model: 1

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	007834	0.75	403	0.62			Yes
End of Reach 1	007834	0	262	1.24			Yes

$Q_{7\text{-}10}$

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	0.75	0.166										84.5	8.1		
End of Reach 1	0	0.166										84.5	8.1		

Q_h

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

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Boron	4.73	7.38	1,970	3,073	4,924	µg/L	1,970	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Cobalt	Report	Report	Report	Report	Report	µg/L	23.4	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	Report	Report	Report	Report	Report	µg/L	30.1	CFC	Discharge Conc > 10% WQBEL (no RP)
Dissolved Iron	0.89	1.38	369	576	923	µg/L	369	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Iron	Report	Report	Report	Report	Report	µg/L	1,847	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Manganese	Report	Report	Report	Report	Report	µg/L	1,231	THH	Discharge Conc > 10% WQBEL (no RP)
Total Nickel	Report	Report	Report	Report	Report	µg/L	166	CFC	Discharge Conc > 10% WQBEL (no RP)

Attachment C

Federal EPA 40 CFR Part 445

Displaying title 40, up to date as of 11/04/2021. Title 40 was last amended 11/04/2021.

Title 40

PART 445 - LANDFILLS POINT SOURCE CATEGORY

Authority: Secs. 301, 304, 306, 307, 308, 402 and 501 of the Clean Water Act, as amended (33 U.S.C. 1311, 1314, 1316, 1317, 1318, 1342 and 1361)

Source: 65 FR 3048, Jan. 19, 2000, unless otherwise noted.

§ 445.1 General applicability.

(a) As defined more specifically in each subpart and except as provided in paragraphs (b) through (h) of this section, this part applies to discharges of wastewater from landfill units.

(b) The provisions of this part do not apply to wastewater discharges from land application or land treatment units, surface impoundments, underground injection wells, waste piles, salt dome formations, salt bed formations, underground mines or caves as these terms are defined in 40 CFR 257.2 and 260.10.

(c) The provisions of this part do not apply to wastewater generated off-site of a landfill facility, including wastewater generated off-site from washing vehicles or from waste transfer stations.

(d) The provisions of this part do not apply to discharges of contaminated ground water or wastewater from recovery pumping wells.

(e) This part does not apply to discharges of landfill wastewater from landfills operated in conjunction with other industrial or commercial operations when the landfill only receives wastes generated by the industrial or commercial operation directly associated with the landfill.

(f) This part does not apply to discharges of landfill wastewater from landfills operated in conjunction with other industrial or commercial operations when the landfill receives wastes generated by the industrial or commercial operation directly associated with the landfill and also receives other wastes provided the other wastes received for disposal are generated by a facility that is subject to the same provisions in 40 CFR subchapter N as the industrial or commercial operation or the other wastes received are of similar nature to the wastes generated by the industrial or commercial operation.

(g) This part does not apply to landfills operated in conjunction with Centralized Waste Treatment (CWT) facilities subject to 40 CFR part 437 so long as the CWT facility commingles the landfill wastewater with other non-landfill wastewater for discharge. A landfill directly associated with a CWT facility is subject to this part if the CWT facility discharges landfill wastewater separately from other CWT wastewater or commingles the wastewater from its landfill only with wastewater from other landfills.

(h) This part does not apply to landfills operated in conjunction with other industrial or commercial operations when the landfill receives wastes from public service activities so long as the company owning the landfill does not receive a fee or other remuneration for the disposal service.

§ 445.2 General definitions.

In addition to the definitions set forth in 40 CFR 122.2, 257.2, 258.2, 264.10, 265.10, 401.11, and 403.3 the following definitions apply to this part:

(a) *Contaminated ground water* means water below the land surface in the zone of saturation which has been contaminated by activities associated with waste disposal.

(b) *Contaminated storm water* means storm water which comes in direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater as defined in paragraph (f) of this section. Some specific areas of a landfill that may produce contaminated storm water include (but are not limited to): the open face of an active landfill with exposed waste (no cover added); the areas around wastewater treatment operations; trucks, equipment or machinery that has been in direct contact with the waste; and waste dumping areas.

(c) *Landfill* directly associated with an industrial or commercial operation means:

(1) A landfill located on the same site as industrial or commercial operations; and

(2) A landfill not located on the same site as the industrial or commercial operations (off-site), but "wholly-owned" by the industrial or commercial facility and primarily dedicated to receiving waste from the related industrial or commercial facility.

(d) *Facility* means all contiguous property owned, operated, leased or under the control of the same person or entity.

(e) *Landfill unit* means an area of land or an excavation in which wastes are placed for permanent disposal, that is not a land application or land treatment unit, surface impoundment, underground injection well, waste pile, salt dome formation, a salt bed formation, an underground mine or a cave as these terms are defined in 40 CFR 257.2, 258.2 and 264.10.

(f) *Landfill wastewater* means all wastewater associated with, or produced by, landfilling activities except for sanitary wastewater, non-contaminated storm water, contaminated ground water, and wastewater from recovery pumping wells. Landfill wastewater includes, but is not limited to, leachate, gas collection condensate, drained free liquids, laboratory derived wastewater, contaminated storm water and contact washwater from washing truck, equipment, and railcar exteriors and surface areas which have come in direct contact with solid waste at the landfill facility.

(g) *Non-contaminated storm water* means storm water which does not come in direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater that is defined in paragraph (f) of this section. Non-contaminated storm water includes storm water which flows off the cap, cover, intermediate cover, daily cover, and/or final cover of the landfill.

(h) *Off-site* means outside the boundaries of a facility.

(i) *On-site* means within the boundaries of a facility.

(j) *Public service* means the provision of landfill waste disposal services to individual members of the general public, publicly-owned organizations (schools, universities, government agencies, municipalities) and not-for-profit organizations for which the landfill does not receive a fee or other remuneration.

(k) The regulated parameters for this part, numbered (P) and listed with approved methods of analysis in Table 1B at 40 CFR 136.3, are defined as follows:

(1) *Ammonia (as N)* means ammonia reported as nitrogen. P4.

(2) *BOD_5* means 5-day biochemical oxygen demand. P9.

(3) *Arsenic* means total arsenic. P6.

(4) *Chromium* means total chromium. P19.

(5) *Zinc* means total zinc. P75.

(l) The regulated parameters for this part, numbered (P) and listed with approved methods of analysis in Table 1C at 40 CFR 136.3, are as follows:

(1) Naphthalene. P68.

(2) Phenol. P85.

(m) The regulated parameters for this part listed with approved methods of analysis in the attachments to Methods 625 and 1625B in appendix A at 40 CFR part 136 are as follows:

(1) Aniline.

(2) Benzoic acid.

(3) p-Cresol.

(4) Pyridine.

(5) a-Terpineol.

§ 445.3 General pretreatment standards.

Any source subject to this part that introduces wastewater pollutants into a publicly owned treatment works (POTW) must comply with 40 CFR part 403.

Subpart A - RCRA Subtitle C Hazardous Waste Landfill

§ 445.10 Applicability.

Except as provided in § 445.1, this subpart applies to discharges of wastewater from landfills subject to the provisions of 40 CFR part 264, *Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities, Subpart N-(Landfills);* and 40 CFR part 265, *Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities, Subpart N-(Landfills).*

§ 445.11 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations which represent the application of BPT:

Effluent Limitations

Regulated parameter	Maximum daily[1]	Maximum monthly avg.[1]
BOD_5	220	56
TSS	88	27
Ammonia (as N)	10	4.9
α-Terpineol	0.042	0.019
Aniline	0.024	0.015
Benzoic acid	0.119	0.073
Naphthalene	0.059	0.022
p-Cresol	0.024	0.015
Phenol	0.048	0.029
Pyridine	0.072	0.025
Arsenic	1.1	0.54
Chromium	1.1	0.46
Zinc	0.535	0.296
pH	(2)	(2)

[1] Milligrams per liter (mg/L, ppm).

[2] Within the range 6 to 9.

[65 FR 3048, Jan. 19, 2000; 65 FR 14344, Mar. 16, 2000]

§ 445.12 Effluent limitations attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations which represent the application of BCT: Limitations for BOD_5, TSS and pH are the same as the corresponding limitations specified in § 445.11.

§ 445.13 Effluent limitations representing the degree of effluent reduction attainable by the application of best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations which represent the application of BAT: Limitations for ammonia (as N), a-terpineol, aniline, benzoic acid, naphthalene, p-cresol, phenol, pyridine, arsenic, chromium and zinc are the same as the corresponding limitations specified in § 445.11.

§ 445.14 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following performance standards: Standards are the same as those specified in § 445.11.

Subpart B - RCRA Subtitle D Non-Hazardous Waste Landfill

§ 445.20 Applicability.

Except as provided in § 445.1, this subpart applies to discharges of wastewater from landfills subject to the provisions of 40 CFR part 258, *Criteria for Municipal Solid Waste Landfills;* and 40 CFR part 257, *Criteria for Classification of Solid Waste Disposal Facilities and Practices.*

§ 445.21 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations which represent the application of BPT:

Effluent Limitations

Regulated parameter	Maximum daily[1]	Maximum monthly avg.[1]
BOD	140	37
TSS	88	27
Ammonia (as N)	10	4.9
α-Terpineol	0.033	0.016
Benzoic acid	0.12	0.071
p-Cresol	0.025	0.014
Phenol	0.026	0.015
Zinc	0.20	0.11

Attachment D

Correspondence

Hong, Nicholas

From: Daniel Brown <dbrown@lcswma.org>
Sent: Wednesday, August 11, 2021 10:46 AM
To: Hong, Nicholas
Subject: [External] RE: LCSWMA Creswell Landfill PA0043486
Attachments: 01_APPLICATION_INSTRUCTIONS Industrial WW.pdf

***ATTENTION**: This email message is from an external sender. Do not open links or attachments from unknown sources. To report suspicious email, forward the message as an attachment to CWOPA_SPAM@pa.gov.*

Nick,

Thank you for providing this update on the NPDES renewal application for Creswell Landfill PA0043486.

Please update your contact information to include myself as your primary contact for this permit. My contact information is in below:

Daniel Brown
LCSWMA
Environmental Compliance Manager
Email: dbrown@lcswma.org
Office Phone: 717-553-5864

Follow-up clarifications/questions:

1. In regards to your request to provide a narrative that explains the purpose of "Outfall 731," LCSWMA, in the renewal application, only provided one outfall at this facility, labeled "001". Please clarify.

2. In regards to your request for the resampling, LCSWMA originally submitted sample results for pollutant groups 1-6, as required. Is pollutant group 6 not required in this resampling? If the QL is not below the Target, I will instruct the laboratory to use estimated "J".

3. Once LCSWMA has the sampling results, what format and logistics do we submit these results?

Thanks,
Dan

LCSWMA
Rethink. Recover. Renew.

Daniel Brown
Environmental Compliance Manager
Phone: 717-553-5864

From: Daniel Brown
To: Hong, Nicholas
Subject: RE: [External] RE: LCSWMA Creswell Landfill PA0043486
Date: Tuesday, November 9, 2021 3:25:59 PM
Attachments: Renewal_APPLICATION 2021.pdf

Nick,

I am still waiting on the final version of the lab reports, but we have the data from the lab. I will forward the final PDFs of the lab reports so you can see the RDL's and MDL's. Attached is the updated application with the Endrin Aldehyde results.

We received clarification from the lab:

I have added the lab's MDL for each parameter to the table. The RDL used by the lab was higher than the DEP QL, however the MDL was under the DEP QL for each respective parameter. Therefore, if there was a detection between the MDL and the RDL it would have been reported as a "J" value. If the result was reported as "ND" there was no detection above the MDL. All of the results for these 5 parameters were reported as ND, meaning there was no detection at or above the MDL. This means there is also no detection at or above the DEP target QL.

Pollutants	Target QL (ug/l)	Lab MDL	NPDES app (ug/l)	
Acrolein	2	1.3	<	2.5
Carbon Tetrachloride	0.5	0.23	<	1
1,3-Dichloropropylene	0.5	0.47	<	1
Hexachlorobutadiene	0.5	0.45	<	2.9
1,2,4- Trichlorobenzene	0.5	0.39	<	2.9

Let me know if you have any additional questions.
Thanks,
Dan

LCSWMA
Rethink. Recover. Renew.
Daniel Brown
Environmental Compliance Manager
Phone: 717-553-5864

Hong, Nicholas

From: Daniel Brown <dbrown@lcswma.org>
Sent: Friday, November 12, 2021 3:23 PM
To: Hong, Nicholas
Subject: RE: [External] RE: LCSWMA Creswell Landfill PA0043486

Hello Nick,

We have not removed any biosolids during 2021, but our biosolids removal is scheduled for later this year. We have reported our biosolids removal in the submitted DMRs in previous years, and will provide that data in the DMR for 2021.

Our treatment system is a series of lagoons. Leachate enters the first aerated lagoon and is mixed with activated sludge for nutrient removal. From there it goes through a series of settling basins and aerated lagoons that provide solids removal. After the final settling basins, the effluent enters our effluent structure where it is monitored as it is discharged into Manns Run.

Our biosolids are disposed either at Lancaster Area Sewer Authority WWTP or Pottstown WWTP.

Thanks,
Dan

LCSWMA
Rethink. Recover. Renew.

Daniel Brown
Environmental Compliance Manager
Phone: 717-553-5864

From: Hong, Nicholas <nhong@pa.gov>
Sent: Friday, November 12, 2021 5:43 AM
To: Daniel Brown <dbrown@lcswma.org>
Subject: RE: [External] RE: LCSWMA Creswell Landfill PA0043486

Dan:

Please summarize biosolids disposal for 2021. We are interested in the gallons disposed, the percentage solids, and the dry tons.

Also indicate the location the biosolids is disposed.

Nick Hong, PE | Environmental Engineer
PA Department of Environmental Protection
Clean Water Programs
Southcentral Regional Office
909 Elmerton Avenue | Harrisburg, PA 17110
Phone: 717.705.4824 | Fax: 717.705.4760
www.dep.pa.gov

1

[External] RE: [EXTERNAL]PA0043486 / Lancaster County Creswell Landfill

Daniel Brown <dbrown@lcswma.org>
To Hong, Nicholas

Reply | Reply All | Forward | ...
Thu 11/18/2021 12:47 PM

ATTENTION: *This email message is from an external sender. Do not open links or attachments from unknown sources. To report suspicious email, forward the message as an attachment to CWOPA_SPAM@pa.gov.*

Nick,

LCSWMA requests a waiver for ELG as with previous permits. The Creswell landfill, which opened in 1968 and closed in 1989, pre-dates the standards which are applicable to a Sub-Title D Facility. Additionally, there are no production processes that occur at this treatment plant. This language was also submitted in previous permit applications.

LCSWMA has provided lab results for the ELGs in previous NPDES renewal applications, please see the sampling results below (both influent and effluent have non-detects at the corresponding RDLs):

Influent

Sample Date	Lab	Location	Parameter	Value	RDL	Unit	Qualifier
4/22/2016	ALS	CWLEINFS	ZINC, TOTAL	0.02	0.02	mg/l	ND
1/20/2016	ALS	CWLEINFS	PHENOL	7.5	7.5	ug/l	ND
4/22/2016	ALS	CWLEINFS	ALPHA-TERPINEOL	2.8	2.8	ug/l	ND
4/22/2016	ALS	CWLEINFS	BENZOIC ACID	5.6	5.6	ug/l	ND
4/22/2016	ALS	CWLEINFS	p-CRESOL (2-METHYLPHENOL	2.8	2.8	ug/l	ND

Effluent

Sample Date	Lab	Location	Parameter	Value	RDL	Unit	Qualifier
1/21/2016	ALS	CWLEEFFS	ZINC, TOTAL	0.01	0.01	mg/l	ND
1/21/2016	ALS	CWLEEFFS	PHENOL	7.8	7.8	ug/l	ND
1/21/2016	ALS	CWLEEFFS	ALPHA-TERPINEOL	2.9	2.9	ug/l	ND
1/21/2016	ALS	CWLEEFFS	BENZOIC ACID	5.9	5.9	ug/l	ND
1/21/2016	ALS	CWLEEFFS	p-CRESOL (2-METHYLPHENOL	2.9	2.9	ug/l	ND

Please let me know if you need anything else with our permit renewal.

Thanks,
Dan

LCSWMA
Rethink. Recover. Renew.

Daniel Brown
Environmental Compliance Manager
Phone: 717-553-5864

40 CFR Section 122.44

§ 122.44 Establishing limitations, standards, and other permit conditions (applicable to State NPDES programs, see § 123.25).
In addition to the conditions established under § 122.43(a), each NPDES permit shall include conditions meeting the following requirements when applicable.

(a)

(1) ***Technology-based effluent limitations and standards*** based on: effluent limitations and standards promulgated under section 301 of the CWA, or new source performance standards promulgated under section 306 of CWA, on case-by-case effluent limitations determined under section 402(a)(1) of CWA, or a combination of the three, in accordance with § 125.3 of this chapter. For new sources or new dischargers, these technology based limitations and standards are subject to the provisions of § 122.29(d) (protection period).

(2) ***Monitoring waivers for certain guideline-listed pollutants.***

(i) The Director may authorize a discharger subject to technology-based effluent limitations guidelines and standards in an NPDES permit to forego sampling of a pollutant found at 40 CFR Subchapter N of this chapter if the discharger has demonstrated through sampling and other technical factors that the pollutant is not present in the discharge or is present only at background levels from intake water and without any increase in the pollutant due to activities of the discharger.

(ii) This waiver is good only for the term of the permit and is not available during the term of the first permit issued to a discharger.

(iii) Any request for this waiver must be submitted when applying for a reissued permit or modification of a reissued permit. The request must demonstrate through sampling or other technical information, including information generated during an earlier permit term that the pollutant is not present in the discharge or is present only at background levels from intake water and without any increase in the pollutant due to activities of the discharger.

(iv) Any grant of the monitoring waiver must be included in the permit as an express permit condition and the reasons supporting the grant must be documented in the permit's fact sheet or statement of basis.

(v) This provision does not supersede certification processes and requirements already established in existing effluent limitations guidelines and standards.

(b)

(1) ***Other effluent limitations and standards*** under sections 301, 302, 303, 307, 318 and 405 of CWA. If any applicable toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under section 307(a) of CWA for a toxic pollutant and that standard or prohibition is more stringent than any limitation on the pollutant in the permit, the Director shall institute proceedings under these regulations to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition. See also § 122.41(a).

(2) ***Standards for sewage sludge use or disposal*** under section 405(d) of the CWA unless those standards have been included in a permit issued under the appropriate provisions of subtitle C of the Solid Waste Disposal Act, Part C of Safe Drinking Water Act, the Marine Protection, Research, and Sanctuaries Act of 1972, or the Clean Air Act, or under State permit programs approved by the Administrator. When there are no applicable standards for sewage sludge use or disposal, the permit may include requirements developed on a case-by-case basis to protect public health and the environment from any adverse effects which may occur from toxic pollutants in sewage sludge. If any applicable standard for sewage sludge use or disposal is promulgated under section 405(d) of the CWA and that standard is more stringent than any limitation on the pollutant or practice in the permit, the Director may initiate proceedings under these regulations to modify or revoke and reissue the permit to conform to the standard for sewage sludge use or disposal.

(3) Requirements applicable to cooling water intake structures under section 316(b) of the CWA, in accordance with part 125, subparts I, J, and N of this chapter.

(c) ***Reopener clause:*** For any permit issued to a treatment works treating domestic sewage (including "sludge-only facilities"), the Director shall include a reopener clause to incorporate any applicable standard for sewage sludge use or disposal promulgated under section 405(d) of the CWA. The Director may promptly modify or revoke and reissue any permit containing the reopener clause required by this paragraph if the standard for sewage sludge use or disposal is

more stringent than any requirements for sludge use or disposal in the permit, or controls a pollutant or practice not limited in the permit.

(d) ***Water quality standards and State requirements:*** any requirements in addition to or more stringent than promulgated effluent limitations guidelines or standards under sections 301, 304, 306, 307, 318 and 405 of CWA necessary to:

(1) Achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality.

(i) Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.

(ii) When determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water.

(iii) When the permitting authority determines, using the procedures in paragraph (d)(1)(ii) of this section, that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the allowable ambient concentration of a State numeric criteria within a State water quality standard for an individual pollutant, the permit must contain effluent limits for that pollutant.

(iv) When the permitting authority determines, using the procedures in paragraph (d)(1)(ii) of this section, that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the numeric criterion for whole effluent toxicity, the permit must contain effluent limits for whole effluent toxicity.

(v) Except as provided in this subparagraph, when the permitting authority determines, using the procedures in paragraph (d)(1)(ii) of this section, toxicity testing data, or other information, that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative criterion within an applicable State water quality standard, the permit must contain effluent limits for whole effluent toxicity. Limits on whole effluent toxicity are not necessary where the permitting authority demonstrates in the fact sheet or statement of basis of the NPDES permit, using the procedures in paragraph (d)(1)(ii) of this section, that chemical-specific limits for the effluent are sufficient to attain and maintain applicable numeric and narrative State water quality standards.

(vi) Where a State has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits using one or more of the following options:

(A) Establish effluent limits using a calculated numeric water quality criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and will fully protect the designated use. Such a criterion may be derived using a proposed State criterion, or an explicit State policy or regulation interpreting its narrative water quality criterion, supplemented with other relevant information which may include: EPA's Water Quality Standards Handbook, October 1983, risk assessment data, exposure data, information about the pollutant from the Food and Drug Administration, and current EPA criteria documents; or

(B) Establish effluent limits on a case-by-case basis, using EPA's water quality criteria, published under section 304(a) of the CWA, supplemented where necessary by other relevant information; or

(C) Establish effluent limitations on an indicator parameter for the pollutant of concern, provided:

(1) The permit identifies which pollutants are intended to be controlled by the use of the effluent limitation;

(2) The fact sheet required by § 124.56 sets forth the basis for the limit, including a finding that compliance with the effluent limit on the indicator parameter will result in controls on the pollutant of concern which are sufficient to attain and maintain applicable water quality standards;

(3) The permit requires all effluent and ambient monitoring necessary to show that during the term of the permit the limit on the indicator parameter continues to attain and maintain applicable water quality standards; and

(4) The permit contains a reopener clause allowing the permitting authority to modify or revoke and reissue the permit if the limits on the indicator parameter no longer attain and maintain applicable water quality standards.

(vii) When developing water quality-based effluent limits under this paragraph the permitting authority shall ensure that:

(A) The level of water quality to be achieved by limits on point sources established under this paragraph is derived from, and complies with all applicable water quality standards; and

(B) Effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 CFR 130.7.

(2) Attain or maintain a specified water quality through water quality related effluent limits established under section 302 of CWA;

(3) Conform to the conditions to a State certification under section 401 of the CWA that meets the requirements of § 124.53 when EPA is the permitting authority. If a State certification is stayed by a court of competent jurisdiction or an appropriate State board or agency, EPA shall notify the State that the Agency will deem certification waived unless a finally effective State certification is received within sixty days from the date of the notice. If the State does not forward a finally effective certification within the sixty day period, EPA shall include conditions in the permit that may be necessary to meet EPA's obligation under section 301(b)(1)(C) of the CWA;

(4) Conform to applicable water quality requirements under section 401(a)(2) of CWA when the discharge affects a State other than the certifying State;

(5) Incorporate any more stringent limitations, treatment standards, or schedule of compliance requirements established under Federal or State law or regulations in accordance with section 301(b)(1)(C) of CWA;

(6) Ensure consistency with the requirements of a Water Quality Management plan approved by EPA under section 208(b) of CWA;

(7) Incorporate section 403(c) criteria under part 125, subpart M, for ocean discharges;

(8) Incorporate alternative effluent limitations or standards where warranted by "fundamentally different factors," under 40 CFR part 125, subpart D;

(9) Incorporate any other appropriate requirements, conditions, or limitations (other than effluent limitations) into a new source permit to the extent allowed by the National Environmental Policy Act, 42 U.S.C. 4321 *et seq.* and section 511 of the CWA, when EPA is the permit issuing authority. (See § 122.29(c)).

(e) ***Technology-based controls for toxic pollutants.*** Limitations established under paragraphs (a), (b), or (d) of this section, to control pollutants meeting the criteria listed in paragraph (e)(1) of this section. Limitations will be established in accordance with paragraph (e)(2) of this section. An explanation of the development of these limitations shall be included in the fact sheet under § 124.56(b)(1)(i).

(1) Limitations must control all toxic pollutants which the Director determines (based on information reported in a permit application under § 122.21(g)(7) or in a notification under § 122.42(a)(1) or on other information) are or may be discharged at a level greater than the level which can be achieved by the technology-based treatment requirements appropriate to the permittee under § 125.3(c) of this chapter; or

(2) The requirement that the limitations control the pollutants meeting the criteria of paragraph (e)(1) of this section will be satisfied by:

(i) Limitations on those pollutants; or

(ii) Limitations on other pollutants which, in the judgment of the Director, will provide treatment of the pollutants under paragraph (e)(1) of this section to the levels required by § 125.3(c).

(f) ***Notification level.*** A "notification level" which exceeds the notification level of § 122.42(a)(1)(i), (ii) or (iii), upon a petition from the permittee or on the Director's initiative. This new notification level may not exceed the level which can be achieved by the technology-based treatment requirements appropriate to the permittee under § 125.3(c)

(g) ***Twenty-four hour reporting.*** Pollutants for which the permittee must report violations of maximum daily discharge limitations under § 122.41(1)(6)(ii)(C) (24-hour reporting) shall be listed in the permit. This list shall include any toxic pollutant or hazardous substance, or any pollutant specifically identified as the method to control a toxic pollutant or hazardous substance.

(h) ***Durations*** for permits, as set forth in § 122.46.

(i) ***Monitoring requirements.*** In addition to § 122.48, the following monitoring requirements:

(1) To assure compliance with permit limitations, requirements to monitor:

(i) The mass (or other measurement specified in the permit) for each pollutant limited in the permit;

(ii) The volume of effluent discharged from each outfall;

(iii) Other measurements as appropriate including pollutants in internal waste streams under § 122.45(i); pollutants in intake water for net limitations under § 122.45(f); frequency, rate of discharge, etc., for noncontinuous discharges under § 122.45(e); pollutants subject to notification requirements under § 122.42(a); and pollutants in sewage sludge or other monitoring as specified in 40 CFR part 503; or as determined to be necessary on a case-by-case basis pursuant to section 405(d)(4) of the CWA.

(iv) According to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR part 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O.

(A) For the purposes of this paragraph, a method is "sufficiently sensitive" when:

(1) The method minimum level (ML) is at or below the level of the effluent limit established in the permit for the measured pollutant or pollutant parameter; or

(2) The method has the lowest ML of the analytical methods approved under 40 CFR part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter.

NOTE TO PARAGRAPH (I)(1)(IV)(A):
Consistent with 40 CFR part 136, applicants or permittees have the option of providing matrix or sample specific minimum levels rather than the published levels. Further, where an applicant or permittee can demonstrate that, despite a good faith effort to use a method that would otherwise meet the definition of "sufficiently sensitive", the analytical results are not consistent with the QA/QC specifications for that method, then the Director may determine that the method is not performing adequately and the Director should select a different method from the remaining EPA-approved methods that is sufficiently sensitive consistent with 40 CFR 122.44(i)(1)(iv)(A). Where no other EPA-approved methods exist, the Director should select a method consistent with 40 CFR 122.44(i)(1)(iv)(B).

(B) In the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR part 136 or methods are not otherwise required under 40 CFR chapter I, subchapter N or O, monitoring shall be conducted according to a test procedure specified in the permit for such pollutants or pollutant parameters.

(2) Except as provided in paragraphs (i)(4) and (5) of this section, requirements to report monitoring results shall be established on a case-by-case basis with a frequency dependent on the nature and effect of the discharge, but in no case less than once a year. For sewage sludge use or disposal practices, requirements to monitor and report results shall be established on a case-by-case basis with a frequency dependent on the nature and effect of the sewage sludge use or disposal practice; minimally this shall be as specified in 40 CFR part 503 (where applicable), but in no case less than once a year. All results must be electronically reported in compliance with 40 CFR part 3 (including, in all cases, subpart D to part 3), § 122.22, and 40 CFR part 127.

(3) Requirements to report monitoring results for storm water discharges associated with industrial activity which are subject to an effluent limitation guideline shall be established on a case-by-case basis with a frequency dependent on the nature and effect of the discharge, but in no case less than once a year.

(4) Requirements to report monitoring results for storm water discharges associated with industrial activity (other than those addressed in paragraph (i)(3) of this section) shall be established on a case-by-case basis with a frequency dependent on the nature and effect of the discharge. At a minimum, a permit for such a discharge must require:

(i) The discharger to conduct an annual inspection of the facility site to identify areas contributing to a storm water discharge associated with industrial activity and evaluate whether measures to reduce pollutant loadings identified in a storm water pollution prevention plan are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed;

(ii) The discharger to maintain for a period of three years a record summarizing the results of the inspection and a certification that the facility is in compliance with the plan and the permit, and identifying any incidents of non-compliance;

(iii) Such report and certification be signed in accordance with § 122.22; and

(iv) Permits for storm water discharges associated with industrial activity from inactive mining operations may, where annual inspections are impracticable, require certification once every three years by a Registered Professional Engineer that the facility is in compliance with the permit, or alternative requirements.

(5) Permits which do not require the submittal of monitoring result reports at least annually shall require that the permittee report all instances of noncompliance not reported under § 122.41(l) (1), (4), (5), and (6) at least annually.

(j) ***Pretreatment program for POTWs.*** Requirements for POTWs to:

(1) Identify, in terms of character and volume of pollutants, any Significant Industrial Users discharging into the POTW subject to Pretreatment Standards under section 307(b) of CWA and 40 CFR part 403.

(2)

(i) Submit a local program when required by and in accordance with 40 CFR part 403 to assure compliance with pretreatment standards to the extent applicable under section 307(b). The local program shall be incorporated into the permit as described in 40 CFR part 403. The program must require all indirect dischargers to the POTW to comply with the reporting requirements of 40 CFR part 403.

(ii) Provide a written technical evaluation of the need to revise local limits under 40 CFR 403.5(c)(1), following permit issuance or reissuance.

(3) For POTWs which are "sludge-only facilities," a requirement to develop a pretreatment program under 40 CFR part 403 when the Director determines that a pretreatment program is necessary to assure compliance with Section 405(d) of the CWA.

(k) ***Best management practices (BMPs)*** to control or abate the discharge of pollutants when:

(1) Authorized under section 304(e) of the CWA for the control of toxic pollutants and hazardous substances from ancillary industrial activities;

(2) Authorized under section 402(p) of the CWA for the control of storm water discharges;

(3) Numeric effluent limitations are infeasible; or

(4) The practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.