pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0081884**
Facility Type	**Non-Municipal**	APS ID	**311055**
Major / Minor	**Minor**	Authorization ID	**1245188**

Applicant and Facility Information

Applicant Name	**Cuttin Co. LLC**	Facility Name	**Cuttin Co.**
Applicant Address	25 Sandoe Road	Facility Address	25 Sandoe Road
	Gettysburg, PA 17325-7561		Gettysburg, PA 17325-7561
Applicant Contact	Victor Fiorino	Facility Contact	Victor Fiorinio
Applicant Phone	(717) 337-1196	Facility Phone	(717) 337-1196
Client ID	139947	Site ID	451147
Ch 94 Load Status	Not Overloaded	Municipality	Straban Township
Connection Status	No Limitations	County	Adams
Date Application Received	September 14, 2018	EPA Waived?	Yes
Date Application Accepted	October 1, 2018	If No, Reason	

Adobe Acrobat Document

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

Summary of Review

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineering Specialist	February 12, 2019
		Daniel W. Martin, P.E. / Environmental Engineer Manager	
		Maria Bebenek, P.E. / Environmental Program Manager	

Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the Cuttin Company LLC located at 25 Sandoe Road, Gettysburg, PA 17325 in Adams County, municipality of Straban Township. The existing permit became effective on April 1, 2014 and expired on March 31, 2019. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on September 14, 2018.

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 0.01 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 a Minor Sewage Facility (Level 1) due to the type of sewage and the design flow rate for the facility. The applicant disclosed the Act 14 requirement to Adams County Commissioners and Straban Township Supervisors and the notice was received by the parties on September 7, 2018 and September 10, 2018. A planning approval letter was not necessary as the facility is neither new or expanding.

Utilizing the DEP's web-based Emap-PA information system, the receiving waters has been determined to be Tributary 09013 to Beaverdam Creek. The sequence of receiving streams that Tributary 09013 Beaverdam Creek discharges into are the Beaverdam Creek, the West Conewago Creek and the Susquehanna River which eventually drains 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.

Tributary 09013 to Beaverdam Creek is a Category 4a and 5 stream listed in the 2016 Integrated List of All Waters (formerly 303d Listed Streams). This stream is impaired for aquatic life due to siltation from agriculture. The receiving stream is also impaired for recreational purposes due to pathogens due to an unknown source. The receiving waters is subject to the Beaverdam Creek 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:

- Due to the facility discharging to an intermittent stream and the Chesapeake Bay watershed, the facility shall be required to monitor for nitrogen species and phosphorus on a 2/yr basis.
- Total Copper shall have be monitored on a 1/quarter.

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:	Cuttin Company, LLC.
NPDES Permit #	PA0081884
Physical Address:	25 Sandoe Road Gettysburg, PA 17325
Mailing Address:	25 Sandoe Road Gettysburg, PA 17325
Contact:	Troy A. Martin (troynsharon@embarqmail.com) Wastewater Treatment Plant Operator
Consultant:	Paul Fred Heerbrandt (fheerbrandt@wmfhillinc.com) Environmental Engineer Wm. F. Hill and Associates, Inc.

1.2 Permit History

Permit submittal included the following information.

- NPDES Application

2.0 Treatment Facility Summary

2.1.1 Site location

The physical address for the facility is 25 Sandoe Road, Gettysburg, PA 17325. 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

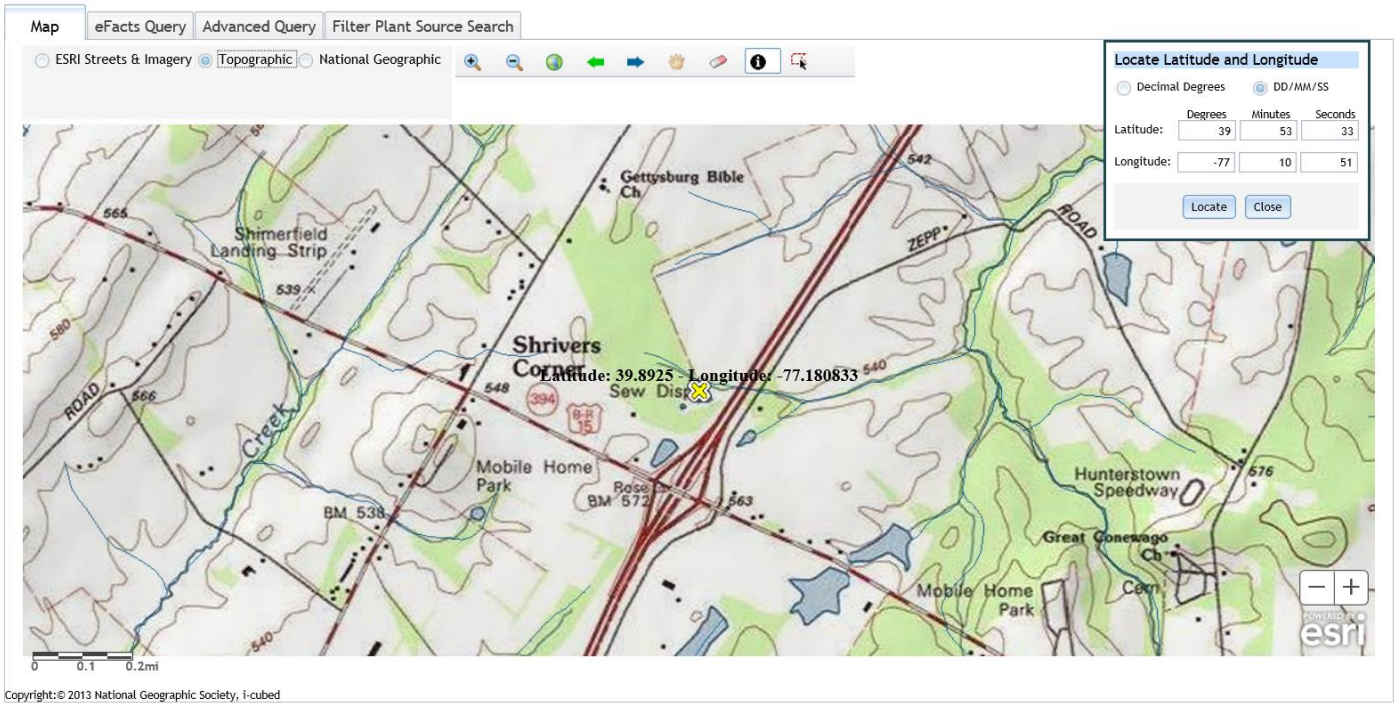
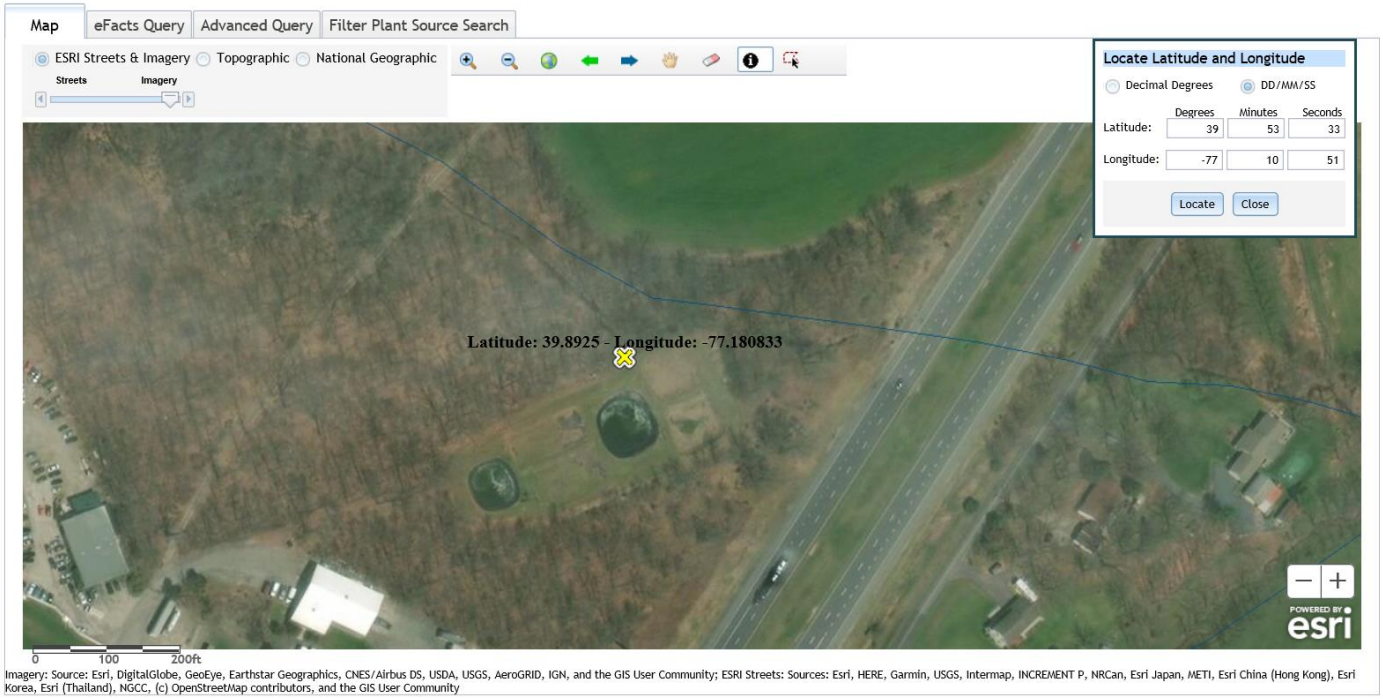


Figure 2: Aerial Photograph of the subject facility



2.1.2 Sources of Wastewater/Stormwater

The facility has the following commercial/industrial users:

Business Name	Type of Business	Average Wastewater Flow (MGD)
Gettysburg Travel Plaza	Restaurant/Convenience Store	0.001
Rick's Repair Service	Trailer Repair Shop	0.00025
Temple-Inland Corrugated Packaging	Packaging	0.00025

The facility did not have any hauled in wastes from the past three years.

2.2 Description of Wastewater Treatment Process

The subject facility is a 0.01 MGD (10,000 GPD) design flow facility. The wastewater treatment facility receives wastewater from a seasonal ice cream shop, an auto body repair shop, a truck repair shop, and a restaurant. The subject facility treats wastewater using a grease trap, a septic tank(s), a primary lagoon, a primary mixed media filter, a secondary lagoon, a secondary polishing filter, and a chlorine contact chamber for disinfection prior to discharge through the outfall. The facility is being evaluated for flow, dissolved oxygen, TRC, CBOD5, TSS, fecal coliform, ammonia-nitrogen, nitrogen species, and total phosphorus. The existing permits limits for the facility is summarized in Section 2.4.

The treatment process is summarized in the table.

Treatment Facility Summary				
Treatment Facility Name: Cuttin Company STP (Formerly Biggerstaff)				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary	Aerated Lagoon	Hypochlorite	0.01
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.01		Not Overloaded		

2.3 Facility Outfall Information

The facility has the following outfall information for wastewater.

Outfall No. 001 **Design Flow (MGD)** .01
Latitude 39º 53' 33.18" **Longitude** -77º 10' 48.70"
Wastewater Description: Sewage Effluent

The subject facility outfall is not within the general vicinity of another sewage/wastewater outfall.

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.

- Chlorine tablets for disinfection

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° 53' 33" , **Longitude** 77° 10' 48" , **River Mile Index** 0.55 , **Stream Code** 09013
Receiving Waters: Unnamed Tributary to Beaverdam Creek
Type of Effluent: Sewage

1. The permittee is authorized to discharge during the period from April 1, 2014 through March 31, 2019.

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	Total Annual	Minimum	Average Monthly		Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.21	XXX	0.68	1/day	Grab
CBOD5	XXX	XXX	XXX	10	XXX	20	2/month	8-Hr Composite
Total Suspended Solids	XXX	304.41	XXX	10	XXX	20	2/month	8-Hr Composite
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	1.5	XXX	3.0	2/month	8-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	4.5	XXX	9.0	2/month	8-Hr Composite

Outfall 001, Continued (from April 1, 2014 through March 31, 2019)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Total Annual	Minimum	Average Monthly		Instant. Maximum		
Total Kjeldahl Nitrogen (lbs/year)	XXX	Report	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Nitrate-Nitrite as N (lbs/year)	XXX	Report	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Nitrogen (lbs/year)	XXX	Report	XXX	Report Annl Avg	XXX	XXX	1/year	Calculation
Total Phosphorus (lbs/year)	XXX	Report	XXX	Report Annl Avg	XXX	XXX	1/year	Calculation

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

at discharge from facility

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.

08/12/2014:

- The facility was noted for moderate amount of duckweed in the secondary lagoon but it did not appear to negatively impact the treatment.
- The lagoon liners appeared to be in good condition.
- The facility added aeration in the final tank to improve effluent DO levels.

07/28/2015:

- The facility was noted for moderate amount of duckweed in the secondary lagoon but it did not appear to negatively impact the treatment.
- The lagoon liners appeared to be in good condition.
- The facility stated the grease trap and septic tanks were pumped out in July 2015.
- The facility was advised that herbicide is not recommended on the vegetation on the filter surface. Mowing or using a string trimmer on the vegetation is a better alternative than infiltration of any herbicide onto the filters.

10/17/2016:

- The facility was noted for moderate amount of duckweed in the secondary lagoon but it did not appear to negatively impact the treatment.
- The lagoon liners appeared to be in good condition.

11/29/2017:

- The facility was advised that the use of herbicide on the vegetation growth on the rock filters requires permitting approval from DEP. Alternate methods of vegetation control include string trimming and flame weeding.

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. The maximum average flow data for the DMR reviewed was 0.011309 MGD. The design capacity of the treatment system is 0.01 MGD.

DMR Data for Outfall 001 (from October 1, 2018 to September 30, 2019)

Parameter	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18
Flow (MGD) Average Monthly	0.00651	0.0065	0.00718	0.0068	0.00893	0.00733	0.011317	0.011309	0.00272 6	0.00112 3	0.00280 2	0.0012165
Flow (MGD) Daily Maximum	0.0091	0.0097	0.0122	0.0109	0.02423	0.0243	0.0523	0.0233	0.00988	0.00247 2	0.01318 4	0.00329 8
pH (S.U.) Minimum	6.5	6.6	6.3	6.1	6.4	6.5	6.8	6.8	6.9	6.8	6.6	6.6
pH (S.U.) Maximum	6.9	7.1	6.9	7.0	6.9	7.6	7.1	7.1	7.5	7.4	7.4	7.2
DO (mg/L) Minimum	6.4	6.2	6.2	6.0	6.0	6.6	7.4	7.0	7.0	7.1	6.4	6.5
TRC (mg/L) Average Monthly	0.14	0.13	0.10	0.09	0.08	0.08	0.09	0.08	0.10	0.09	0.08	0.08
TRC (mg/L) Instantaneous Maximum	0.22	0.20	0.24	0.21	0.14	0.17	0.18	0.14	0.14	0.17	0.12	0.19
CBOD5 (mg/L) Average Monthly	3.0	4.0	6.0	3	4.0	3.0	4	3.0	3.0	3.0	3.0	3
TSS (mg/L) Average Monthly	2.0	4.0	7.0	4	3.0	2.0	10	5.0	4.0	1.0	8	2
Fecal Coliform (CFU/100 ml) Geometric Mean	2.0	35	7.0	26	2.0	2.0	2.0	2.0	1.0	2	232	6
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	2.0	600	22.0	350	2.0	2.0	2.0	2.0	2.0	2	1080	18
Ammonia (mg/L) Average Monthly	0.1	0.2	0.2	0.2	0.5	0.1	0.7	0.7	0.10	0.1	0.1	0.1

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 April 1, 2014 to January 09, 2020, there were no observed effluent non-compliances.

3.3.2 Non-Compliance- Enforcement Actions

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

Summary of Enforcement Actions
Beginning April 1, 2014 and Ending November 17, 2019

ENF ID	ENF TYPE	ENF TYPE DESC	ENF CREATION DATE	EXECUTED DATE	VIOLATIONS	ENF FINALSTATUS	ENF CLOSED DATE
368952	NOV	Notice of Violation	11/01/2018	11/01/2018	302.202	Comply/Closed	11/13/2018

3.4 Summary of Biosolids Disposal

The facility reported in their NPDES application that they did not have any biosolids production or disposal in the last 12 months.

3.5 Open Violations

No open violations existed as of January 2020.

4.0 Receiving Waters and Water Supply Information Detail Summary

4.1 Receiving Waters

The receiving waters has been determined to be Tributary 09013 to Beaverdam Creek. The sequence of receiving streams that Tributary 09013 Beaverdam Creek discharges into are the Beaverdam Creek, the West Conewago Creek and 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 PP&L Bruner Island (PWS ID #7670802) located approximately 60 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 2016 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 2016 Pennsylvania Integrated Water Quality Monitoring and Assessment Report as a Category 4a and 5 waterbody. The surface waters is impaired for aquatic life due to siltation from agriculture. The stream is also impaired for recreational purposes due to pathogens from an unknown source. The designated use has been classified as protected waters for warm water fishes and migratory fishes.

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 to the subject facility is the West Conewago Creek station (WQN210). This WQN station is located approximately 56 miles downstream of the subject facility. The closest gauge station to the subject facility is the West Conewago Creek at Manchester, PA (USGS station number 1574000). The gauge station is located 56 miles downstream of the subject facility.

For WQM modeling, pH and stream water temperature data from the water quality network station was used. pH was estimated to be 7.88 and the stream water temperature was estimated to be 23.9 C. The low flow yield and the Q710 for the subject facility was estimated as shown below.

Gauge Station Data			
USGS Station Number	1574000		
Station Name	West Conewago Creek at Manchester, PA		
Q710	11.1	ft^3/sec	
Drainage Area (DA)	510	mi^2	
Calculations			
The low flow yield of the gauge station is:			
Low Flow Yield (LFY) = Q710 / DA			
LFY =	(11.1 ft^3/sec / 510 mi^2)		
LFY =	0.0218	$ft^3/sec/mi^2$	
The low flow at the subject site is based upon the DA of		0.13	mi^2
Q710 = (LFY@gauge station)(DA@Subject Site)			
Q710 = (0.0218 $ft^3/sec/mi^2$)(0.13 mi^2)			
Q710 =	0.003	ft^3/sec	

4.6 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.01
Latitude	39Âº 53' 33.26"	Longitude	-77Âº 10' 48.68"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		

Receiving Waters	Unnamed Tributary to Beaverdam Creek (WWF)	Stream Code	9013
NHD Com ID	57473073	RMI	0.55
Drainage Area	0.13	Yield (cfs/mi^2)	0.0218
Q_{7-10} Flow (cfs)	0.003	Q_{7-10} Basis	StreamStats/Streamgauge
Elevation (ft)	544	Slope (ft/ft)	
Watershed No.	7-F	Chapter 93 Class.	WWF, MF
Existing Use	Same as Chapter 93 class	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	None
Assessment Status	Impaired for aquatic life and recreational purposes		
Cause(s) of Impairment	Siltation for aquatic life; Pathogens for recreational purposes		
Source(s) of Impairment	Agriculture for aquatic life; Unknown source for recreational purposes		
TMDL Status	Final	Name	Beaverdam Creek TMDL

Background/Ambient Data		Data Source
pH (SU)	7.88	WQN210; median July to Sept
Temperature (°C)	23.995	WQN210; median July to Sept
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake	PP&L Bruner Island		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	54	Distance from Outfall (mi)	60

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)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

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 1.0 (WQM Model) and (3) PENTOXSD for Windows 2.0 (PENTOXSD) 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 input values utilized for the modeling are summarized in the table which can be found in Attachment B.

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

5.3.2 PENTOXSD Modeling

The PENTOXSD 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. PENTOXSD 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 PENTOXSD 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 input values utilized for the modeling are summarized in the table which can be found in Attachment B.

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

To determine if PENTOXSD modeling is necessary, DEP has developed a Toxics Screening Analysis worksheet 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 following pollutants- copper and lead.

The Toxics Screening Analysis- Water Quality Pollutants of Concern worksheet indicated PENTOXSD modeling was required since the concentrations measured in the effluent sample were not within the normal range for safe water quality protection.

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.

The laboratory results submitted in the NPDES renewal application for parameters copper and lead exceeded DEP target QL limits. Thus, the facility was offered the opportunity to resample. The facility was instructed to collect a total of three composite samples for each pollutant on separate weeks.

The data is summarized in the table.

Resample Data					
Parameter	**Units**	**12/6/2019**	**12/13/2019**	**12/23/2019**	**Max**
Copper	mg/l	0.007	0.007	0.005	0.007
Lead	mg/l	<0.00072	<0.00072	<0.00072	<0.00072

While the Toxics Screening Analysis/PENTOXSD recommended limits for copper, the facility will be required to sample on a 1/quarter basis for copper. The data will be reviewed after the 1st two years. Should the data warrant limits, then an effluent performance limit shall be instituted.

The Toxics Screening Analysis and the PENTOXSD output has been included in Attachment B.

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

5.3.3 Whole Effluent Toxicity (WET)

WET is not applicable to the subject facility.

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 discharges into the Beaverdam Creek TMDL. Beaverdam Creek is a tributary of the Susquehanna River in Adams County, South Central Pennsylvania (PA). A Total Maximum Daily Load (TMDL) for sediment was developed to address impairments noted in Pennsylvania's 2008 Section 303(d) and Integrated Lists. The impairments were documented during biological surveys of the aquatic life present in the watershed (6/06/2006). Excessive siltation resulting from agricultural activities has been identified as the cause of these impairments
in the basin.

The existing sediment loading in the Beaverdam Creek Watershed is 1,289,291 pounds per year (3,532 pounds per day). Based on a comparison to a similar, unimpaired watershed, Little Conewago Creek , the maximum sediment loading that should still allow water quality objectives to be met in the Beaverdam Creek Watershed is 1,111,570 pounds per year (3,045 pounds per day).

The waste load allocation (WLA) portion of the TMDL equation is the total loading of a pollutant that is assigned to point sources. There are two NPDES permitted discharges in the Beaverdam Creek Watershed and a bulk reserve allocation of 1.0% of the TMDL to account for the dynamic nature of permit activity. The permit limit for total suspended solids (TSS) for the Cuttin Company facility is 10 mg/L (monthly average) and a loading rate of 304.41 lbs/yr.

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 and II 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. The jurisdictions have developed or will develop WIPs over three Phases.

Phase I and Phase II WIPs were developed and submitted to EPA in 2010 and 2012 for objectives to be implemented by 2017 and 2025 to achieve applicable water quality standards. The Phase II WIPs build on the initial Phase I WIPs platform by providing more specific local actions. In 2018, Phase III WIPs will be developed to include further actions for jurisdictions to implement between 2018 and 2025.

Section 7 of the Phase II WIP describes Pennsylvania's strategy for reducing nutrients to the Chesapeake Bay from wastewater facilities. The supplement to Section 7 of the Phase II WIP provides an update on Chesapeake Bay TMDL implementation activities for point sources and DEP's current implementation strategy for wastewater. The supplement is updated periodically to reflect changes due to PA DEP's permit actions as well as changes to strategies in managing the wastewater sector's allocated loads under the TMDL. The latest revision of the supplement was October 14, 2016.

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 sewage facility is considered non-significant dischargers if it is a Phase 4 facility or Phase 5 facility having a specified flow rate (i.e. Phase 4 facility ≥ 0.2 MGD and < 0.4 MGD, Phase 5 facility > 0.002 MGD and < 0.2 MGD), a small flow/single residence sewage treatment facilities (≤ 0.002 MGD), or a non-significant IW facilities. These facilities may be covered by statewide general permits or may have individual NPDES permits.

Currently, there are approximately 1,000 Phase 4 and 5 sewage facilities and approximately 740 small flow sewage treatment facilities covered by the general permit. There are also approximately 600 non-significant IW facilities.

For Phase 5 sewage facilities with individual permits (average annual design flow on August 29, 2005 > 0.002 MGD and < 0.2 MGD), DEP will issue individual permits with monitoring and reporting for TN and TP throughout the permit term at a frequency no less than annually, unless (1) the facility has already conducted at least two years of nutrient monitoring and (2) a summary of the monitoring results are included in the next permit's fact sheet. If, however, Phase 5 facilities choose to expand, the renewed or amended permits will contain Cap Loads based on the lesser of (a) existing TN/TP concentrations at current design average annual flow or (b) 7,306 lbs/yr TN and 974 lbs/yr TP.

If no data are available to determine existing concentrations for expanding Phase 4 or 5 facilities, default concentrations of 25 mg/l TN and 4 mg/l TP may be used (these are the average estimated concentrations of all non-significant sewage facilities).

DEP will not issue permits to existing Phase 4 and 5 facilities containing Cap Loads unless it is done on a broad scale or unless the facilities are expanding.

For new Phase 4 and 5 sewage discharges, in general DEP will issue new permits containing Cap Loads of "0" and new facilities will be expected to purchase credits and/or apply offsets to achieve compliance, with the exception of small flow and single residence facilities.

A list of non-significant sewage and industrial waste dischargers with Cap Loads in NPDES permits is presented in Attachment B of the Phase 2 WIP.

This facility is subject to Sector C monitoring requirements. The facility will be required to monitor for nitrogen species and phosphorus on a 1x/yr basis. The facility is subject to more frequent monitoring for nitrogen and phosphorus due to the Chesapeake Bay WIP. The facility is not listed in Attachment B of the Phase 2 WIP.

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 Cuttin Company, PA0081884			
Parameter	**Permit Limitation Required by[1]:**	**Recommendation**	
pH (S.U.)	TBEL	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits may range from pH = 6.0 to 9.0
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 95.2(1).
Dissolved Oxygen	BPJ	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits shall be greater than 5.0 mg/l.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by best professional judgement.
CBOD	Intermittent Streams	Monitoring:	The monitoring frequency shall be 2x/month as an 8-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 10 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Policy and Procedure for Evaluating Wastewater Dischargers to Intermittent and Ephemeral Streams, Drainage Channels and Swales and Storm Sewers. WQM modeling indicates that the TBEL is more stringent than the WQBEL. Thus, the permit limit is confined to TBEL for intermittent streams.
TSS	Beaverdam Creek Watershed TMDL	Monitoring:	The monitoring frequency shall be 2x/month as an 8-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 10 mg/l as an average monthly and 304.41 lbs/yr.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by the Beaverdam Creek Watershed.
TRC	Antibacksliding	Monitoring:	The monitoring frequency shall be on a daily basis as a grab sample (Table 6-3).
		Effluent Limit:	The average monthly limit should not exceed 0.21 mg/l and/or 0.68 mg/l as an instantaneous maximum.
		Rationale: Chlorine in both combined (chloramine) and free form is extremely toxic to freshwater fish and other forms of aquatic life (Implementation Guidance Total Residual Chlorine 1). The TRC effluent limitations to be imposed on a discharger shall be the more stringent of either the WQBEL or TBEL requirements and shall be expressed in the NPDES permit as an average monthly and instantaneous maximum effluent concentration (Implementation Guidance Total Residual Chlorine 4). Based on the stream flow rate (lowest 7-day flow rate in 10 years) and the design flow rate of the subject facility, the TRC was calculated by the TRC Evaluation worksheet. As developed in previous fact sheets from August 20, 2001 and February 24, 2014, accounting was completed for the decay of the TRC from the discharge to the point of first use. The limits provided in the TRC evaluation worksheet were relaxed. The TRC limits were retained from the current permit to the proposed permit. The monitoring frequency has been assigned in accordance with Table 6-3.	
Fecal Coliform	TBEL	Monitoring:	The monitoring frequency shall be 2x/month as a grab sample (Table 6-3).
		Effluent Limit:	Summer effluent limits shall not exceed 200 mg/l as a geometric mean. Winter effluent limits shall not exceed 2000 mg/l as a geometric mean.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(4) and 92a.47(a)(5).
Notes:			
1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, (h) Other			
2 Monitoring frequency based on flow rate of 0.01 MGD.			
3 Table 6-3 (Self Monitoring Requirements for Sewage 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 Phase 2 Watershed Implementation Plan Wastewater Supplement, Revised September 6, 2017			

6.1.2 Nitrogen Species and Phosphorus

Summary of Proposed NPDES Parameter Details for Nitrogen Species and Phosphorus

Cuttin Company, PA0081884

Parameter	Permit Limitation Required by[1]:	Recommendation	
Ammonia-Nitrogen	Chesapeake Bay TMDL/WQBEL/Ant backsliding	Monitoring:	The monitoring frequency shall be 2x/mo as an 8-hr composite sample
		Effluent Limit:	During May 1 to Oct 31, effluent limits shall not exceed 1.5 mg/l as an average monthly. During Nov 1 to Apr 30, effluent limits shall not exceed 4.5 mg/l as an average monthly.
		Rationale:	WQM recommends that the performance effluent be 1.5 mg/l during the summer and 4.5 mg/l during the winter. Monitoring for nitrogen species is also required due to the Chesapeake Bay TMDL.
Nitrate-Nitrite as N	Chesapeake Bay TMDL/ Intermittent Stream	Monitoring:	The monitoring frequency shall be 2x/yr as an 8-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	The Policy and Procedure for Evaluating Wastewater Dischargers to Intermittent and Ephemeral Streams, Drainage Channels and Swales and Storm Sewers has a permit limit for TN. Since collection of TN values encompasses nitrogen species, this parameter shall be sampled on a 2x/yr basis. Monitoring for nitrogen species is also required due to the Chesapeake Bay TMDL.
Total Nitrogen	Chesapeake Bay TMDL/ Intermittent Stream	Monitoring:	The monitoring frequency shall be 2x/yr as an 8-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	The Policy and Procedure for Evaluating Wastewater Dischargers to Intermittent and Ephemeral Streams, Drainage Channels and Swales and Storm Sewers has a permit limit for TN. Since collection of TN values encompasses nitrogen species, this parameter shall be sampled on a 2x/yr basis. Monitoring for nitrogen species is also required due to the Chesapeake Bay TMDL.
TKN	Chesapeake Bay TMDL/ Intermittent Stream	Monitoring:	The monitoring frequency shall be 2x/yr as an 8-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	The Policy and Procedure for Evaluating Wastewater Dischargers to Intermittent and Ephemeral Streams, Drainage Channels and Swales and Storm Sewers has a permit limit for TN. Since collection of TN values encompasses nitrogen species, this parameter shall be sampled on a 2x/yr basis. Monitoring for nitrogen species is also required due to the Chesapeake Bay TMDL.
Total Phosphorus	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 2x/yr as an 8-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay TMDL, the facility will be required to monitor for phosphorus.
Notes:			

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

2 Monitoring frequency based on flow rate of 0.01 MGD.

3 Table 6-3 (Self Monitoring Requirements for Sewage 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 Phase 2 Watershed Implementation Plan Wastewater Supplement, Revised September 6, 2017

6.1.3 Toxics

PENTOXSD modeling is required to evaluate toxic pollutants. All sewage facilities with a design flow less than 0.1 MGD must report the concentration results of all effluent samples analyzed in the past two years for pH (Minimum and Maximum), Total Residual Chlorine (TRC), Fecal Coliform, Biochemical Oxygen Demand (BOD_5 or $CBOD_5$), TSS, NH_3-N, Total N, and Total P. Facilities with design flows less than 0.1 MGD must report at least one result per parameter. If the facility receives industrial or commercial contributions, at least one result is required for Total Copper, Total Lead, Total Zinc and any other parameters that are known or suspected to be present in effluent.

The facility reported receiving wastewater from commercial/industrial sources. The facility was offered the opportunity to re-sample lead and copper. See Section 5.3.2.1.

Monitoring or limits for the proposed permit are discussed in Sections 6.1.3.1 and 6.1.3.2.

6.1.3.1 Implementation of Regulation- Chapter 92a.61

Chapter 92a.61 provides provisions to DEP to monitor for pollutants that may have an impact on the quality of waters of the Commonwealth. Based upon DEP policy directives issued in January 2014 in conjunction with EPA, increased monitoring in NPDES permits for TDS, sulfate, chloride, and bromide have been recommended.

For point source discharges and upon issuance or reissuance of an individual NPDES permit, the following criteria triggers requirements for monitoring and reporting.

Discharges not exceeding 0.1 MGD should monitor and report for TDS, sulfate, chloride, and bromide if the concentration of TDS in the discharge exceeds 5,000 mg/l.

Since the facility does not trip the threshold for concentration or loading, the facility will not be required to monitor for TDS, sulfate, chloride and/or bromide.

6.1.3.2 Summary of Toxics Monitoring/Limits

Summary of Proposed NPDES Parameter Details for Toxics
Cuttin Company, PA0081884

Parameter	Permit Limitation Required by[1]:	Recommendation	
Total Copper	WQBEL	Monitoring:	The monitoring frequency shall be 1/quarter as an 8-hr composite sample (Table 6-3).
		Effluent Limit:	No effluent limits. The sampling data collected during the 1st two years of the permit will be evaluated. Should the data warrant an effluent performance limit, it shall be instituted subsequent to the 24 month time period.
		Rationale:	While performance limits are recommended by Toxics Screening Analysis/PENTOXSD, the facility will be evaluated over the next 24 months.

Notes:

1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, (h) Other
2 Monitoring frequency based on flow rate of 0.01 MGD.
3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent
4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)
5 Phase 2 Watershed Implementation Plan Wastewater Supplement, Revised September 6, 2017

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 Sheet
Nitrate-Nitrite as N	Monitoring is required 1x/yr	Since the facility discharges to a dry stream and the Chesapeake Bay watershed, monitoring shall be required 2x/yr
Total Nitrogen	Monitoring is required 1x/yr	Since the facility discharges to a dry stream and the Chesapeake Bay watershed, monitoring shall be required 2x/yr
TKN	Monitoring is required 1x/yr	Since the facility discharges to a dry stream and the Chesapeake Bay watershed, monitoring shall be required 2x/yr
Total Phosphorus	Monitoring is required 1x/yr	Since the facility discharges to a dry stream and the Chesapeake Bay watershed, monitoring shall be required 2x/yr
Total Copper	No monitoring or limits.	Monitoring shall be required 1/quarter

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** 39º 53' 33.18" , **Longitude** 77º 10' 48.70" , **River Mile Index** 0.55 , **Stream Code** 9013

Receiving Waters: Unnamed Tributary to Beaverdam Creek (WWF)

Type of Effluent: Sewage Effluent

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	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.21	XXX	0.68	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	10	XXX	20	2/month	8-Hr Composite
Total Suspended Solids	XXX	XXX	XXX	10	XXX	20	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Nitrate-Nitrite as N	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	2/year	8-Hr Composite
Nitrate-Nitrite as N (Total Load, lbs) (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	2/year	Calculation
Total Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	2/year	Calculation

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	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Total Nitrogen (Total Load, lbs) (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	2/year	Calculation
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	4.5	XXX	9	2/month	8-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	1.5	XXX	3	2/month	8-Hr Composite
Total Kjeldahl Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	2/year	8-Hr Composite
Total Kjeldahl Nitrogen (Total Load, lbs) (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	2/year	Calculation
Total Phosphorus	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	2/year	Calculation
Total Phosphorus (Total Load, lbs) (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	2/year	Calculation
Copper, Total	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-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 Part C conditions.

- Chlorine minimization
- Dry streams
- Chesapeake Bay nutrient definitions
- Solids Management for Non-Lagoon treatment system

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☒	PENTOXSD for Windows Model (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Toxics Screening Analysis 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 Sewage Individual NPDES Permit Applications, revised October 11, 2013
☐	Other:

Attachment A

Stream Stats/Gauge Data

Table 1. List of U.S. Geological Survey streamgage locations in and near Pennsylvania with updated streamflow statistics.—Continued

[Latitude and Longitude in decimal degrees; mi², square miles]

Streamgage number	Streamgage name	Latitude	Longitude	Drainage area (mi²)	Regulated[1]
01561000	Brush Creek at Gapsville, Pa.	39.956	-78.254	36.8	N
01562000	Raystown Branch Juniata River at Saxton, Pa.	40.216	-78.265	756	N
01562500	Great Trough Creek near Marklesburg, Pa.	40.350	-78.130	84.6	N
01563200	Raystown Branch Juniata River below Rays Dam nr Huntingdon, Pa.	40.429	-77.991	960	Y
01563500	Juniata River at Mapleton Depot, Pa.	40.392	-77.935	2,030	Y
01564500	Aughwick Creek near Three Springs, Pa.	40.213	-77.925	205	N
01565000	Kishacoquillas Creek at Reedsville, Pa.	40.655	-77.583	164	N
01565700	Little Lost Creek at Oakland Mills, Pa.	40.605	-77.311	6.52	N
01566000	Tuscarora Creek near Port Royal, Pa.	40.515	-77.419	214	N
01566500	Cocolamus Creek near Millerstown, Pa.	40.566	-77.118	57.2	N
01567000	Juniata River at Newport, Pa.	40.478	-77.129	3,354	Y
01567500	Bixler Run near Loysville, Pa.	40.371	-77.402	15.0	N
01568000	Sherman Creek at Shermans Dale, Pa.	40.323	-77.169	207	N
01568500	Clark Creek near Carsonville, Pa.	40.460	-76.751	22.5	LF
01569000	Stony Creek nr Dauphin, Pa.	40.380	-76.907	33.2	N
01569800	Letort Spring Run near Carlisle, Pa.	40.235	-77.139	21.6	N
01570000	Conodoguinet Creek near Hogestown, Pa.	40.252	-77.021	470	LF
01570500	Susquehanna River at Harrisburg, Pa.	40.255	-76.886	24,100	Y
01571000	Paxton Creek near Penbrook, Pa.	40.308	-76.850	11.2	N
01571500	Yellow Breeches Creek near Camp Hill, Pa.	40.225	-76.898	213	N
01572000	Lower Little Swatara Creek at Pine Grove, Pa.	40.538	-76.377	34.3	N
01572025	Swatara Creek near Pine Grove, Pa.	40.533	-76.402	116	N
01572190	Swatara Creek near Inwood, Pa.	40.479	-76.531	167	N
01573000	Swatara Creek at Harper Tavern, Pa.	40.403	-76.577	337	N
01573086	Beck Creek near Cleona, Pa.	40.323	-76.483	7.87	N
01573160	Quittapahilla Creek near Bellegrove, Pa.	40.343	-76.562	74.2	N
01573500	Manada Creek at Manada Gap, Pa.	40.397	-76.709	13.5	N
01573560	Swatara Creek near Hershey, Pa.	40.298	-76.668	483	N
01574000	West Conewago Creek near Manchester, Pa.	40.082	-76.720	510	N
01574500	Codorus Creek at Spring Grove, Pa.	39.879	-76.853	75.5	Y
01575000	South Branch Codorus Creek near York, Pa.	39.921	-76.749	117	Y
01575500	Codorus Creek near York, Pa.	39.946	-76.755	222	Y
01576000	Susquehanna River at Marietta, Pa.	40.055	-76.531	25,990	Y
01576085	Little Conestoga Creek near Churchtown, Pa.	40.145	-75.989	5.82	N
01576500	Conestoga River at Lancaster, Pa.	40.050	-76.277	324	N
01576754	Conestoga River at Conestoga, Pa.	39.946	-76.368	470	N
01578310	Susquehanna River at Conowingo, Md.	39.658	-76.174	27,100	Y
01578400	Bowery Run near Quarryville, Pa.	39.895	-76.114	5.98	N
01580000	Deer Creek at Rocks, Md.	39.630	-76.403	94.4	N
01581500	Bynum Run at Bel Air, Md.	39.541	-76.330	8.52	N
01581700	Winters Run near Benson, Md.	39.520	-76.373	34.8	N
01582000	Little Falls at Blue Mount, Md.	39.604	-76.620	52.9	N
01582500	Gunpowder Falls at Glencoe, Md.	39.550	-76.636	160	Y
01583000	Slade Run near Glyndon, Md.	39.495	-76.795	2.09	N
01583100	Piney Run at Dover, Md.	39.521	-76.767	12.3	N

Table 2. Selected low-flow statistics for streamgage locations in and near Pennsylvania.—Continued

[ft³/s; cubic feet per second; —, statistic not computed; <, less than]

Streamgage number	Period of record used in analysis[1]	Number of years used in analysis	1-day, 10-year (ft³/s)	7-day, 10-year (ft³/s)	7-day, 2-year (ft³/s)	30-day, 10-year (ft³/s)	30-day, 2-year (ft³/s)	90-day, 10-year (ft³/s)
01565000	1941–2008	37	17.6	18.6	28.6	20.3	32.4	24.4
01565700	1965–1981	17	.4	.4	.9	.5	1.1	.8
01566000	1913–2008	52	4.3	7.9	18.8	12.4	25.6	19.2
01566500	1932–1958	27	1.7	2.4	4.0	3.2	5.7	4.9
01567000	[2]1974–2008	35	504	534	725	589	857	727
01567000	[3]1901–1972	72	311	367	571	439	704	547
01567500	1955–2008	54	2.0	2.2	3.3	2.6	3.8	3.1
01568000	1931–2008	78	12.7	15.5	25.5	19.2	32.0	26.0
01568500	[2]1943–1997	55	1.8	2.3	4.3	2.7	5.0	3.1
01569000	1939–1974	14	2.6	4.0	7.4	5.1	9.4	7.8
01569800	1978–2008	31	15.9	17.0	24.4	18.4	26.1	20.3
01570000	[3]1913–1969	35	—	63.1	110	76.1	124	95.3
01570000	[2]1971–2008	38	63.1	69.3	109	78.3	125	97.8
01570500	[3]1901–1972	72	2,310	2,440	4,000	2,830	4,950	3,850
01570500	[2]1974–2008	35	3,020	3,200	5,180	3,690	6,490	4,960
01571000	1941–1995	16	.1	.2	.6	.3	1.2	.8
01571500	1911–2008	62	81.6	86.8	115	94.0	124	105
01572000	1921–1984	14	2.1	2.3	4.8	3.0	6.5	4.5
01572025	1990–2008	17	15.2	16.4	26.7	18.5	34.6	27.7
01572190	1990–2008	17	19.1	20.5	36.2	23.9	45.8	35.3
01573000	1920–2008	89	18.0	22.0	52.0	30.8	69.2	50.9
01573086	1965–1981	17	.5	.6	2.6	.8	3.3	1.1
01573160	1977–1994	18	26.9	29.6	46.4	33.6	51.9	39.5
01573500	1939–1958	20	1.3	1.4	2.5	1.8	3.2	2.6
01573560	1977–2008	30	50.3	62.0	104	76.9	131	108
01574000	1930–2008	79	8.0	11.1	32.0	17.7	47.0	33.9
01574500	[2]1968–2008	41	14.2	24.0	35.9	29.4	42.0	33.3
01574500	[3]1930–1966	34	2.3	7.1	11.5	9.3	14.8	12.7
01575000	[2]1973–1995	23	.7	1.4	6.7	3.2	12.0	9.3
01575000	[3]1929–1971	43	.1	.6	10.3	2.3	15.0	6.1
01575500	[2]1948–1996	49	12.1	18.7	41.3	23.9	50.0	33.8
01576000	[3]1933–1972	40	2,100	2,420	4,160	2,960	5,130	4,100
01576000	[2]1974–2008	35	2,990	3,270	5,680	3,980	7,180	5,540
01576085	1984–1995	12	.4	.5	.8	.7	1.2	1.2
01576500	1931–2008	78	27.2	38.6	79.4	49.1	97.3	66.1
01576754	1986–2008	23	74.2	84.9	151	106	189	147
[4]01578310	1969–2008	40	549	2,820	5,650	4,190	7,380	6,140
01578400	1964–1981	18	1.4	1.5	2.7	1.9	3.2	2.5
[4]01580000	1928–2008	81	19.7	22.8	48.1	28.1	51.8	35.4
[4]01581500	1946–2008	28	.2	.3	1.2	.8	1.7	1.5
[4]01581700	1969–2008	40	4.7	5.5	17.5	8.1	18.3	12.0
[4]01582000	1946–2008	63	11.3	12.5	25.0	15.5	28.0	20.3
[4]01582500	1979–2008	27	41.2	43.9	78.8	53.8	90.6	74.1
[4]01583000	1949–1981	33	.3	.3	.7	.3	1.0	.6
[4]01583100	1984–2008	15	2.1	2.4	5.5	3.2	6.0	4.2

Attachment B

Modeling Input Values
WQM 7.0 Modeling Output Values
Toxics Screening Analysis
PENTOXSD Modeling Output Values

Attachment C

TRC Evaluation