pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0081591**
Facility Type	**Municipal**	APS ID	**274949**
Major / Minor	**Minor**	Authorization ID	**1315875**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Eastern York County Sewer Authority**	Facility Name	**Eastern York County STP**
Applicant Address	4 West Market Street PO Box 6202	Facility Address	400 Friendship Avenue
	Hellam, PA 17406		Hellam, PA 17406
Applicant Contact	Barry Miller	Facility Contact	Barry Miller
Applicant Phone	(717) 252-2797	Facility Phone	(717) 252-2797
Client ID	76423	Site ID	257984
Ch 94 Load Status	Not Overloaded	Municipality	Hallam Borough
Connection Status		County	York
Date Application Received	May 5, 2020	EPA Waived?	No
Date Application Accepted	June 15, 2020	If No, Reason	Significant CB Discharge

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)	September 28, 2021
x		Daniel W. Martin, P.E. / Environmental Engineer Manager Maria D. Bebenek for Daniel W. Martin	September 30, 2021
x		Maria D. Bebenek, P.E. / Environmental Program Manager Maria D. Bebenek	September 30, 2021

Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the Eastern York County STP located at 400 Friendship Avenue, Hallam, PA 17406 in York County, municipality of Hallam. The existing permit became effective on November 1, 2015 and expired on October 31, 2020. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on May 5, 2020.

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 0.50 MGD hydraulic design flow treatment facility. The applicant does not anticipate any proposed upgrades to the treatment facility will occur in the next five years. The NPDES application has been processed as a Minor Sewage Facility (Level 2) due to the type of sewage and the design flow rate for the facility. The applicant disclosed the Act 14 requirement to York County Planning Commission, Hellam Township, and Hallam Borough and the notice was received by the parties on March 2, 2020. 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 Kreutz Creek. The sequence of receiving streams that the Kreutz Creek discharges into is 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.

Kreutz Creek is a Category 4c and 5 stream listed in the 2020 Integrated List of All Waters (formerly 303d Listed Streams). The receiving stream is an impaired stream for aquatic life due to habitat alterations and siltation from habitat modifications. The receiving stream is also impaired for aquatic life due to siltation 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:

- **E.Coli shall be monitored 1x/quarter.**
- **Total copper and total zinc shall be monitored 1x/yr.**

Sludge use and disposal description and location(s): Sewage Sludge disposed at Capital Region Water in Harrisburg, Dauphin County as biosolids. Sewage Sludge also disposed at Lancaster Sewer Authority in Lancaster, Lancaster County as biosolids

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:	Eastern York County Sewer Authority
NPDES Permit #	PA0081591
Physical Address:	400 Friendship Avenue Hellam, PA 17406
Mailing Address:	4 West Market Street Hellam, PA 17406
Contact:	Barry Miller Chairman eycsa@comcast.net
Consultant:	Nathan Hardman C.S. Davidson, Inc. njh@csdavidson.com (717) 846-4805

1.2 Permit History

Permit submittal included the following information.

- NPDES Application
- Flow Diagrams

2.0 Treatment Facility Summary

2.1.1 Site location

The physical address for the facility is 400 Friendship Avenue, Hellam, PA 17406. 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

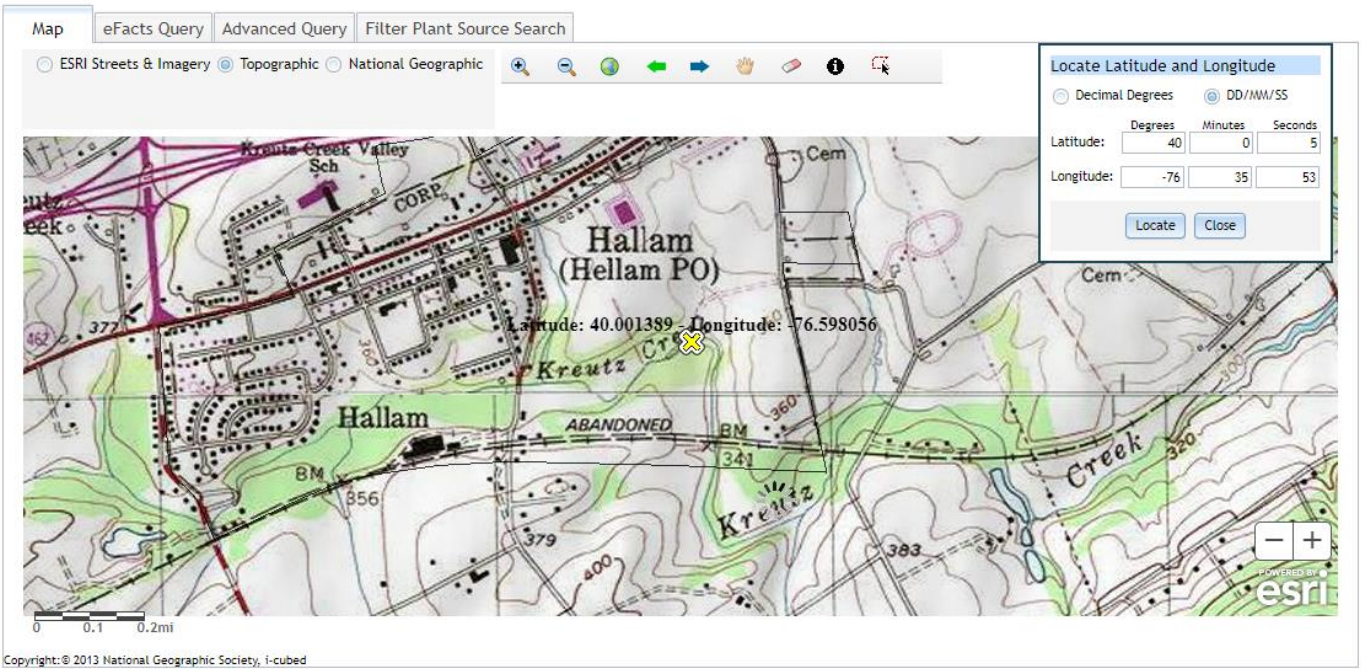
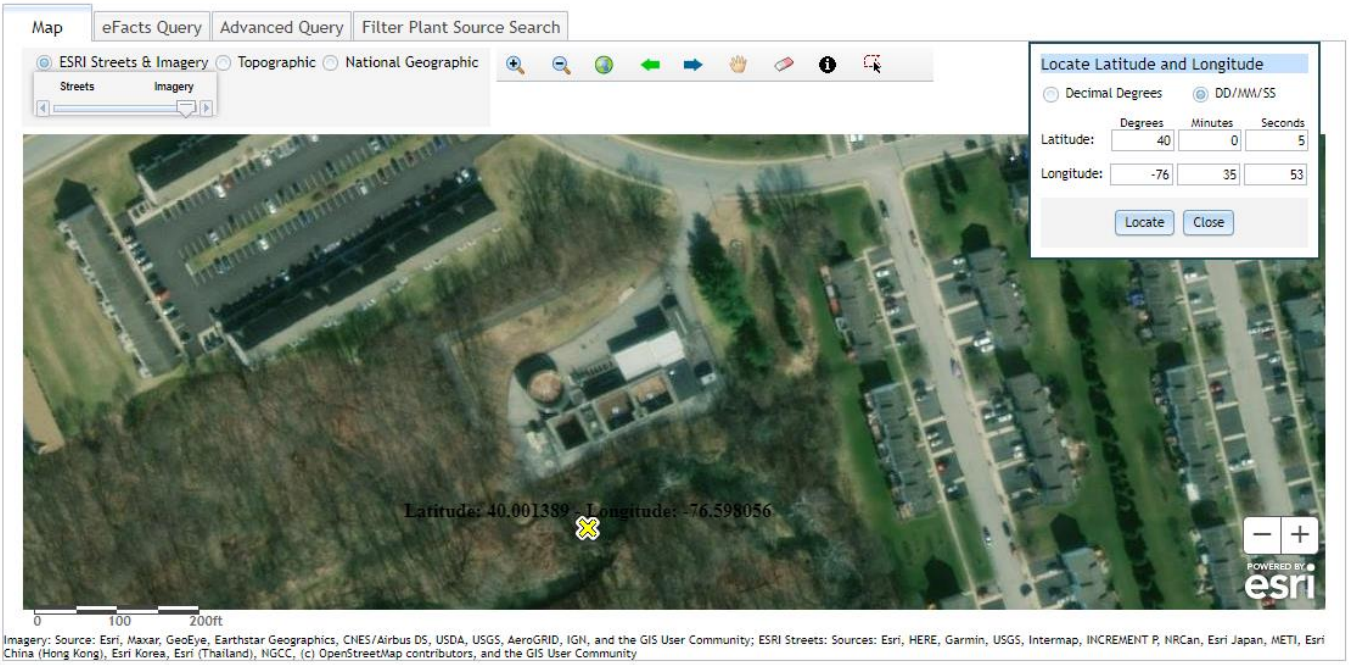


Figure 2: Aerial Photograph of the subject facility



2.1.2 Sources of Wastewater/Stormwater

The wastewater treatment plant receives contributions of sewage from the following municipalities:

Hellam Township	21%
Hellam Borough	79%

The facility receives commercial and industrial wastewater from the following customers.

Eastern York County Sewer Authority
Commercial Customers

		GPD
Mort Schmid LLT (Red Rock Café)	Restaurant/Bar	567
CHR Corp (Rutters)	Convenience Store	407
Hellam Ice Cream Co.	Restaurant	545
Gordon W. Bell, DDS	Dental office	86
George Martin (360 Market St.)	Auto Dealership	65
Linda Kline	Beauty Shop	170
Beaver Street Office Commons	Office & Alternative School	116
Kreutz Creek VFW Post 7045	Restaurant/bar	621
Kenneth Swartz	Bed & Breakfast	176
Kenneth Swartz	Inn	325
Gerald Snyder	York Valley Cheese Co.	30
Dean Mackley	Plumbing Business	20
John T. Frey	Auto Dealership	76
Vasil Damyanvo	Auto Dealership	112
Jack Helm	Tea Room/restaurant	220
Joanne Firestone	Restaurant	175
George Martin	Auto Dealership	70
Fulton Financial Corporation	Bank	58
Tourist Inn	Bar and hotel	1,273
JBG Investments	Equipment Rental Company	10
Wellspan Medical Group	Medical offices	644
Hellam Commons Condo Assoc.	Plumber, Tool company, Dentist & Physician	188
Wecker's Carpet	Flooring store	156
Ricke Bros. Inc.	Auto Dealership	72
Craig W. Adams	Excavating Company	58
Ricke Bros. Inc. (formerly AutoVentures)	Auto Dealership	75
Christopher Pinkerton	Furniture store	41
Lonnie L. Robinson	Recycling business	136
Frank Romano	Restaurant	123
Richard R. Amelotte	Pharmacy	146
Donald Kissinger, Sr.	Post office	108
Sharon Swope	Attorney's office	64
Donald Kissinger, Sr.	Motorcycle dealership	74
Jon Miller	Automobile Garage	25
Samuel Arnold	Beauty shop	93
Hellam Properties	Laundromat & retail clothing store	442
C & M Heating	Plumbing & heating business	20
Jump Start Garage	Automobile garage	25
Theresa Setzer	Drapery & upholstery business	78
Trammell Crow Co.	Office – State Representative	12
		7,702

Eastern York County Sewer Authority
Industrial Customers – Domestic Discharge Only

		GPD
Andrew Briceland, Jr.	Apparel Manufacturer	439
Simplex Paper Box Corp.	Box Manufacturer	200
Nelson Grossnickle	Hydraulic Equip. Distribution & Service	70
H & H Castings	Metal Castings Manufacturer	2,100
New Standard Corp. **	Metal Stamping & Assemblies	3,100
Flinchbaugh Engineering Inc **	Machine Shop	2,589
Pre-Mach Inc.	Machining & Fabrication	188
New Standard Corp. **	Metal Stamping & Assemblies	304
Delta Packaging	Corrugated Cardboard Manufacturing	313
Keith Billet	Tool Company	141
Roseland Development Inc.	Hydraulic Equip. Manufacturer	226
		9,670

Commercial:	**7,702**
Industrial:	**9,670**
TOTAL:	**17,372**

** Industrial waste is hauled offsite

The facility has not received hauled-in wastes in the past three years and does not anticipate hauled-in wastes over the next five years.

The facility reported that they do not have an EPA pretreatment program

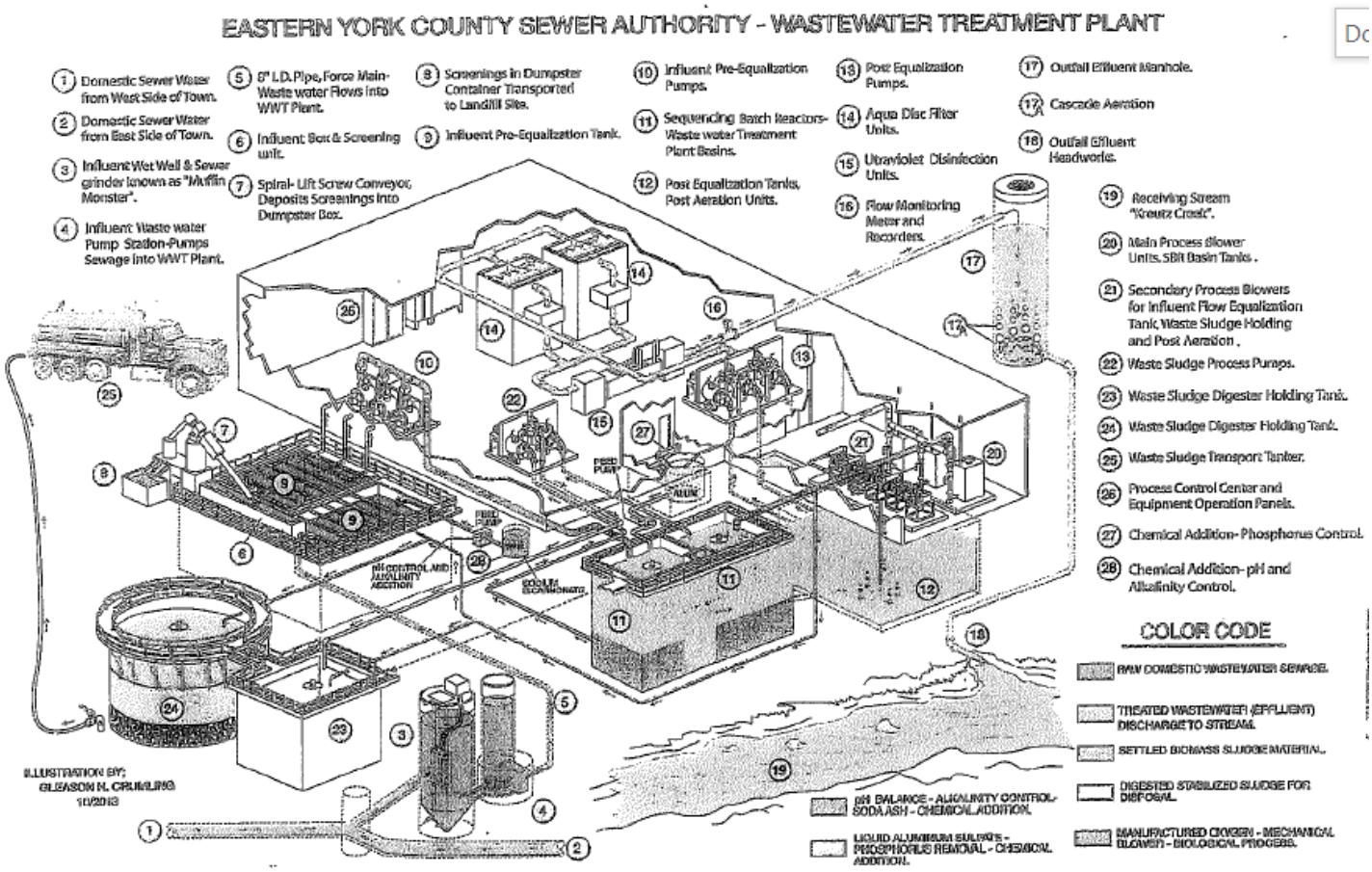
2.2 Description of Wastewater Treatment Process

The subject facility is a 0.50 MGD hydraulic design flow treatment facility. The subject facility treats wastewater using an equalization tank, a SBR(s), a post equalization tank, an Aqua Disc Filter(s), an ultraviolet disinfection prior to discharge through the outfall. The facility is being evaluated for flow, pH , dissolved oxygen, CBOD5, TSS, fecal coliform, UV intensity, nitrogen species, and 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: Eastern York Co. STP				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary	Sequencing Batch Reactor	Ultraviolet	0.5
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.5	1584	Not Overloaded	Aerobic Digestion	Other WWTP

A schematic of the process is shown in the figure.



2.3 Facility Outfall Information

The facility has the following outfall information for wastewater.

Outfall No.	001	**Design Flow (MGD)**	.5
Latitude	40º 0' 5.91"	**Longitude**	-76º 35' 52.43"
Wastewater Description:	Sewage Effluent		

The subject facility outfall is not within the 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.

- Sodium Bicarbonate for pH and alkalinity control
- Alum for Phosphorus removal

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** 40° 0' 5.91" , **Longitude** 76° 35' 52.42" , **River Mile Index** 8.22 , **Stream Code** 7881

Receiving Waters: Kreutz Creek

Type of Effluent: Treated Sewage

1. The permittee is authorized to discharge during the period from November 1, 2015 through October 31, 2020.
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	Weekly Average	Minimum	Average Monthly	Weekly Average	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
CBOD5 May 1 - Oct 31	60	90	XXX	15	22	XXX	1/week	8-Hr Composite
CBOD5 Nov 1 - Apr 30	100	165	XXX	25	40	60	1/week	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Total Suspended Solids	125	185	XXX	30	45	60	1/week	8-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	1/week	Grab

Outfall 001, Continued (from November 1, 2015 through October 31, 2020)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	1/week	Grab
UV Intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Ammonia-Nitrogen May 1 - Oct 31	20	XXX	XXX	5.0	XXX	10	2/week	8-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	60.0	XXX	XXX	15	XXX	30	2/week	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	2.0	XXX	XXX	2/week	8-Hr Composite

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

at Outfall 001

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

I. B. For Outfall 001, Latitude 40° 0' 5.91", Longitude 76° 35' 52.42", River Mile Index 8.22, Stream Code 7881

Receiving Waters: Kreutz Creek

Type of Effluent: Treated Sewage

1. The permittee is authorized to discharge during the period from November 1, 2015 through October 31, 2020.
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 [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	2/week	8-Hr Composite
Kjeldahl---N	Report	XXX	XXX	Report	XXX	2/week	8-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	2/week	8-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	2/week	8-Hr Composite
Net Total Nitrogen	Report	9,132	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	1,218	XXX	XXX	XXX	1/month	Calculation

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): Outfall 001.

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.

04/25/2019: There was nothing significant to report.

01/13/2020: eDMR submission and supplemental reports were reviewed. Discrepancies were noted for October 2018, February 2019, May 2019, June 2019, July 2019, August 2019, September 2019. The parameters discrepant were total phosphorus and total nitrogen.

03/09/2021: Lab results were compared with the Department's Chesapeake Bay Annual Nutrient Monitoring (Chesapeake Bay) supplemental form for the following months: February, May, July and September 2020. It was noted that the non-detect nitrite sample results were not included in the nitrate+nitrite calculation as well as in the total nitrogen calculation. This occurred in nearly all sample results review with a lowest detection level between 04.4-0.5 mg/L. The Department recommended that the Chesapeake Bay supplemental form be updated for Compliance Year 2020 to include the non-detect nitrite sample results. The monthly DMRs would also be impacted by the calculation changes. At this time, the monthly DMRs from Compliance Year 2020 need not be revised and DMRs beginning in Compliance Year 2021 (beginning October 1, 2020) should reflect the proper calculations and be revised to date, as necessary. The monthly DMRs would also be impacted by the calculation changes. At this time, the monthly DMRs from Compliance Year 2020 need not be revised and DMRs beginning in Compliance Year 2021 (beginning October 1, 2020) should reflect the proper calculations and be revised to date, as necessary.

No credits were purchased or sold during the Compliance Year and no offsets were applied. Eastern York County STP is in compliance with its Chesapeake Bay nutrient requirements.

On three occasions in December 2020 (3rd, 5th and 12th), the NH3-N reported on the Chesapeake Bay supplemental was greater than the TKN reported on the same days.

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 0.2307 MGD in March 2021. The design capacity of the treatment system is 0.5 MGD.

The off-site laboratory used for the analysis of the parameters was Labs, Inc located at 409 North Avenue, PO Box 836, East Berlin, PA 17316.

DMR Data for Outfall 001 (from August 1, 2020 to July 31, 2021)

Parameter	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20
Flow (MGD) Average Monthly	0.20577	0.20965	0.21821	0.22001	0.2307	0.22469	0.22027	0.22399	0.20566	0.19997	0.20046	0.20626
Flow (MGD) Daily Maximum	0.24004	0.26576	0.25679	0.26877	0.31117	0.2767	0.27301	0.31736	0.23842	0.24764	0.28367	0.28824
pH (S.U.) Minimum	7.1	7.15	7.22	7.14	7.14	7.22	7.1	7.01	7.05	7.23	7.15	7.14
pH (S.U.) Instantaneous Maximum	7.38	7.39	7.63	7.51	7.65	7.53	7.35	7.38	7.37	7.42	7.38	7.5
DO (mg/L) Minimum	6.43	6.41	6.72	6.33	8.13	8.52	7.45	6.98	6.24	6.83	5.62	4.85
CBOD5 (lbs/day) Average Monthly	< 4	< 5	6	7	7	< 7	< 6	< 5	< 5	< 5	< 5	< 5
CBOD5 (lbs/day) Weekly Average	< 4	8	8	13	8	12	8	6	< 5	< 5	< 5	< 5
CBOD5 (mg/L) Average Monthly	< 2.4	< 2.9	3.2	3.9	3.9	< 4.1	< 4	< 3	< 3	< 3	< 3	< 3
CBOD5 (mg/L) Weekly Average	< 2.4	4.4	4.3	7.3	4.7	7	5	3	3	3	3	3
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	227	257	291	272	276	315	227	225	212	210	197	239
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	299	296	334	325	334	406	271	253	243	225	234	257
BOD5 (mg/L) Raw Sewage Influent Average Monthly	138	153	164	155	149	181	132	124	129	133	127	143
TSS (lbs/day) Average Monthly	10	8	7	8	12	10	5	11	5	4	7	6
TSS (lbs/day) Raw Sewage Influent Average Monthly	79	142	92	98	129	163	115	114	101	83	107	113
TSS (lbs/day) Raw Sewage Influent Daily Maximum	96	305	123	107	188	352	123	138	111	104	149	158

TSS (lbs/day) Weekly Average	16	11	11	14	23	24	10	21	7	5	11	11
TSS (mg/L) Average Monthly	6	5	4	4	6	6	3	6	3	2	5	4
TSS (mg/L) Raw Sewage Influent Average Monthly	48	83	52	56	69	94	67	63	62	52	69	68
TSS (mg/L) Weekly Average	10	7	6	8	12	14	6	13	4	3	7	7
Fecal Coliform (CFU/100 ml) Geometric Mean	< 2	< 1	< 1	< 3	< 2	< 3	< 3	< 3	45	< 1	< 2	< 1
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	6	< 1	1	159	5	20	136	19	159	1	6	4
UV Intensity (µw/cm²) Minimum	1	0.9	0.8	0.8	0.7	0.6	0.4	0.8	1.2	1.1	1.8	1.9
Nitrate-Nitrite (mg/L) Average Monthly	< 7.99	4.33	2.9	2.85	3.21	4.28	6.92	9.06	10.8	10	10.4	11.22
Nitrate-Nitrite (lbs) Total Monthly	< 412	218	160	150	181	215	374	492	551	496	492	587
Total Nitrogen (mg/L) Average Monthly	< 9.02	5.9	5.5	5.07	9.68	10.82	9.17	10.65	< 12.25	< 10.97	< 11.14	< 12.5
Total Nitrogen (lbs) Effluent Net Total Monthly	< 465	298	302	267	551	542	495	580	< 624	< 542	< 528	< 654
Total Nitrogen (lbs) Total Monthly	< 465	298	302	267	551	542	495	580	< 624	< 542	< 528	< 654
Total Nitrogen (lbs) Effluent Net Total Annual											< 6698	
Total Nitrogen (lbs) Total Annual											< 6698	
Ammonia (lbs/day) Average Monthly	< 0.2	< 0.2	< 1	< 0.3	< 9.0	8.0	< 0.4	< 0.3	< 0.2	< 0.2	< 0.2	< 0.2
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.68	< 0.17	< 4.68	4.4	< 0.23	< 0.15	< 0.11	< 0.1	< 0.1	< 0.1
Ammonia (mg/L) Instantaneous Maximum	< 0.1	0.12	1.8	0.53	11	9.6	0.53	0.37	0.16	< 0.1	< 0.1	< 0.1
Ammonia (lbs) Total Monthly	< 5	< 5	< 37	< 9	< 269	220	< 12	< 8	< 6	< 5	< 5	< 5

Ammonia (lbs) Total Annual											< 1281	
TKN (mg/L) Average Monthly	< 1.03	1.57	2.6	2.2	6.5	6.5	2.3	1.6	< 1.44	< 0.94	< 0.76	< 1.28
TKN (lbs) Total Monthly	< 52	80	141	117	370	326	121	87	< 73	< 47	< 36	< 67
Total Phosphorus (mg/L) Average Monthly	0.88	0.69	1.2	1.64	0.66	0.58	1.21	1.21	1.6	1.22	0.95	1.4
Total Phosphorus (lbs) Effluent Net Total Monthly	45	35	66	87	37	29	65	66	82	60	45	71
Total Phosphorus (lbs) Total Monthly	45	35	66	87	37	29	65	66	82	60	45	71
Total Phosphorus (lbs) Effluent Net Total Annual											608	
Total Phosphorus (lbs) Total Annual											608	

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 November 1, 2015 to September 15, 2021, the following were observed effluent non-compliances.

Summary of Non-Compliance with NPDES Permit Limits
Beginning November 1, 2015 and Ending September 15, 2021

OUTFALL	STAGE	NON COMPLIANCE DATE	PARAMETER	SAMPLE VALUE	VIOLATION CONDITION	PERMIT VALUE	UNIT OF MEASURE	STATISTICAL BASE CODE
001	Final Effluent	09/19/2020	Dissolved Oxygen	4.85	<	5.0	mg/L	Minimum

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 November 1, 2015 to September 15, 2021, there were no observed enforcement actions.

3.4 Summary of Biosolids Disposal

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

2020/2021
Sewage Sludge / Biosolids Production Information

Hauled Off-Site			
2020/2021	Gallons	% Solids	Dry Tons
August	43200	1.435	2.585
September	64800	1.40	3.774
October	90000	1.835	6.819
November	48000	1.52	3.043
December	30000	2.3	2.877
January	72380	2.3	6.942
February	60400	2.19	5.516
March	65600	1.48	4.049
April	58629	1.83	4.474
May	0		
June	91829	1.53	5.859
July	89600	1.62	6.053

Notes:

Sewage Sludge disposed at Capital Region Water in Harrisburg, Dauphin County as biosolids

Sewage Sludge disposed at Lancaster Sewer Authority in Lancaster, Lancaster County as biosolids

3.5 Open Violations

No open violations existed as of September 2021.

4.0 Receiving Waters and Water Supply Information Detail Summary

4.1 Receiving Waters

The receiving waters has been determined to be Kreutz Creek. The sequence of receiving streams that the Kreutz Creek discharges into is 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 York Water Company (PWS ID #7670100) located approximately 12 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 4c and 5 waterbody. This stream is an impaired stream for aquatic life due to habitat alterations and siltation from habitat modifications. The receiving stream is also impaired for aquatic life due to siltation 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.

Consistent with the Fact Sheet dated for August 4, 2015, StreamStats was utilized to estimate low flow yield and Q710.

From StreamStats, the Q710 was 5.23 ft^3/s and the low flow yield was 0.2226 $ft^3/s/mi^2$. See calculations below.

Calculations			
The low flow yield using data from StreamStats is:			
Low Flow Yield (LFY) = Q710 / DA			
LFY =	(5.23 ft^3/sec / 23.5 mi^2)		
LFY =	0.2226	$ft^3/sec/mi^2$	

For WQM modeling, pH and stream water temperature data from the water quality network station was 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 $CaCO_3$.

4.6 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.5
Latitude	40º 0' 5.59"	Longitude	-76º 35' 52.36"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		

Receiving Waters	Kreutz Creek (WWF)	Stream Code	7881
NHD Com ID	57466745	RMI	7.6
Drainage Area	23.5	Yield (cfs/mi^2)	0.2226
Q_{7-10} Flow (cfs)	5.23	Q_{7-10} Basis	StreamStats
Elevation (ft)	325	Slope (ft/ft)	
Watershed No.	7-I	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	Habitat Alterations; Siltation		
Source(s) of Impairment	Habitat Modifications; Agriculture		
TMDL Status	Not appl.	Name	

Background/Ambient Data		Data Source
pH (SU)	8.1	WQN201; Median Jul to Oct
Temperature (°C)	25.5	WQN201; Median Jul to Oct
Hardness (mg/L)	84.5	WQN201; Historical Median
Other:		

Nearest Downstream Public Water Supply Intake		York Water Company	
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	38	Distance from Outfall (mi)	12

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)

5.2.2 Mass Based Limits

For publicly owned treatment works (POTW), mass loadings are calculated based upon design flow rate of the facility and the permit limit concentration. The generalized calculation for mass loadings is shown below:

$$Quantity\left(\frac{lb}{day}\right) = (MGD)(Concentration)(8.34)$$

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) 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 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 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 following pollutants: TDS, Chloride, Bromide, Sulfate, Total Copper, Total Lead, and Total Zinc.

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.

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 September 13, 2021.

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.

Cap Loads will be established in permits as Net Annual TN and TP loads (lbs/yr) that apply during the period of October 1 – September 30. For facilities that have received Cap Loads in any other form, the Cap Loads will be modified accordingly when the permits are renewed.

Offsets have been incorporated into Cap Loads in several permits issued to date. From this point forward, permits will be issued with the WLAs as Cap Loads and will identify Offsets separately to facilitate nutrient trading activities and compliance with the TMDL.

Based upon the supplement the subject facility has been categorized as a Sector A discharger. The supplement defines Sector A as a sewage facility that is considered significant if it has a design flow of at least 0.4 MGD.

Table 5 of the Phase 3 WIP (revised September 13, 2021) presents all NPDES permits for Significant Sewage dischargers with Cap Loads. The NPDES Permit No., phase, facility name, latest permit issuance date, expiration date, Cap Load compliance start date, TN and TP Cap Loads, and TN and TP Delivery Ratios are presented. In addition, if TN Offsets were incorporated into the TN Cap Loads when the permit was issued, the amount is shown; these Offsets will be removed from Cap Loads upon issuance of renewed permits to implement Section IV of this document (i.e., a facility may use Offsets for compliance but may not register them as credits).

The total nitrogen (TN) and total phosphorus (TP) cap loads itemized by Table 5 for the subject facility are as follows:

TN Cap Load (lbs/yr)	9,132
TN Delivery Ratio	0.961
TP Cap Load (lbs/yr)	1,218
TP Delivery Ratio	0.436

Expansions by any Significant Sewage discharger will not result in any increase in Cap Loads. Where non-significant facilities expand to a design flow of 0.4 MGD or greater, the lesser of baseline Cap Loads of 7,306 lbs/yr TN and 974 lbs/yr TP or existing performance will be used for permits, and the load will be moved from the Non-Significant sector load to the Significant Sewage sector load. If considered necessary for environmental protection, DEP may decide to move load from the Point Source Reserve to the Significant Sewage sector in the future.

The minimum monitoring frequency for TN species and TP in new or renewed NPDES permits for Significant Sewage dischargers is 2/week.

This facility is subject to Sector A monitoring requirements. Monitoring shall be required at least 2x/wk.

Reporting

Cap Loads will be established in permits as Net Annual TN and TP loads (lbs/yr) that apply during the period of October 1 – September 30.

Facilities with NPDES permits must use DEP's eDMR system for reporting, except small flow treatment facilities. An Annual DMR must be submitted by the end of the Truing Period, November 28. As attachments to the Annual DMR a facility must submit a completed Annual Chesapeake Bay Spreadsheet, available through DEP's Supplemental Reports website, which contains an Annual Nutrient Monitoring worksheet and an Annual Nutrient Budget worksheet. This Spreadsheet will be submitted once per Compliance Year only, and reflect all nutrient sample results (for the period October 1 – September 30), Credit transactions (including the Truing Period) and Offsets applied during the Compliance Year.

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
Eastern York County WWTP; PA0081591

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	Antibacksliding	Monitoring:	The monitoring frequency shall be 1x/wk as an 8-hr composite sample (Table 6-3).
		Effluent Limit:	During the months of May 1 to October 31, effluent limits shall not exceed 60 lbs/day and 15 mg/l as an average monthly. During the months of November 1 to April 30, effluent limits shall not exceed 100 lbs/day and 25 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 antibacksliding. WQM modeling recommended an effluent limit of 25 mg/l. However due to antibacksliding regulations, the more stringent limit of either the current limit or proposed limit is applicable. Thus, the current limit of 15 mg/l shall continue to the proposed permit.
TSS	TBEL	Monitoring:	The monitoring frequency shall be 1/wk as an 8-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 125 lbs/day and 30 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 Chapter 92a.47(a)(1).
UV disinfection	SOP	Monitoring:	The monitoring frequency is 1/day. The facility will be required to record the UV intensity.
		Effluent Limit:	No effluent requirements.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised January 10, 2019), the facility will be required to have routine monitoring for UV transmittance, UV dosage, or UV intensity.
Fecal Coliform	TBEL	Monitoring:	The monitoring frequency shall be 1x/wk as a grab sample (Table 6-3).
		Effluent Limit:	Summer effluent limits shall not exceed 200 No./100 mL as a geometric mean. Winter effluent limits shall not exceed 2000 No./100 mL 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).
E. Coli	SOP; Chapter 92a.61	Monitoring:	The monitoring frequency shall be 1x/quarter as a grab sample (SOP).
		Effluent Limit:	No effluent requirements.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised March 22, 2019) and under the authority of Chapter 92a.61, the facility will be required to monitor for E.Coli.

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 0.50 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

Eastern York County WWTP; PA0081591

Parameter	Permit Limitation Required by[1]:	Recommendation	
Ammonia-Nitrogen	Antibacksliding	Monitoring:	The monitoring frequency shall be 2x/wk as an 8-hr composite sample. Monitoring frequency is based upon the Chesapeake Bay WIP.
		Effluent Limit:	The current limit of 20 lbs/day and 5.0 mg/l during the months of May 1 to October 31 shall continue to the proposed permit. During the months of November 1 to April 30, the effluent limit shall not exceed 60 lbs/day and 15 mg/l.
		Rationale:	WQM modeling recommended an effluent limit of 5.84 mg/l. However due to antibacksliding regulations, the more stringent limit of either the current limit or proposed limit is applicable.
Nitrate-Nitrite as N	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 2x/wk as an 8-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 2x/wk.
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 2x/wk as an 8-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 2x/wk.
Total Phosphorus	Antibacksliding	Monitoring:	The monitoring frequency shall be 2x/wk as an 8-hr composite sample
		Effluent Limit:	Effluent limits shall not exceed 2.0 mg/l as an average monthly.
		Rationale:	Due to antibacksliding, the current permit limit of 2 mg/l shall continue to the proposed permit.
Net Total Nitrogen	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/yr as a calculation
		Effluent Limit:	The effluent loading shall not exceed 9,132 lbs/yr.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/yr.
Net Total Phosphorus	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/yr as a calculation
		Effluent Limit:	The effluent loading shall not exceed 1,218 lbs/yr.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/yr.
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 0.50 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

Summary of Proposed NPDES Parameter Details for Toxics

Eastern York County WWTP; PA0081591

Parameter	Permit Limitation Required by[1]:	Recommendation	
Total Copper	WQBEL	Monitoring:	Monitoring shall be 1x/yr as an 8-hr composite.
		Effluent Limit:	No effluent requirements.
		Rationale:	Toxics Management Spreadsheet recommends monitoring. Monitoring shall be 1x/yr. If favorable results are obtained through the sampling, future renewals may reduce or eliminate the monitoring.
Total Zinc	WQBEL	Monitoring:	Monitoring shall be 1x/yr as an 8-hr composite.
		Effluent Limit:	No effluent requirements.
		Rationale:	Toxics Management Spreadsheet recommends monitoring. Monitoring shall be 1x/yr. If favorable results are obtained through the sampling, future renewals may reduce or eliminate the monitoring.

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 0.50 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

6.2 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
E. Coli	There is no monitoring or effluent limits.	Due to the EPA Triennial review, monitoring shall be required 1x/quarter
Total Copper	There is no monitoring or effluent limits.	Toxics Management Spreadsheet recommends monitoring. Monitoring shall be 1x/yr. If favorable results are obtained through the sampling, future renewals may reduce or eliminate the monitoring.
Total Zinc	There is no monitoring or effluent limits.	Toxics Management Spreadsheet recommends monitoring. Monitoring shall be 1x/yr. If favorable results are obtained through the sampling, future renewals may reduce or eliminate the monitoring.

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** 40° 0' 5.91" , **Longitude** 76° 35' 52.43" , **River Mile Index** 7.6 , **Stream Code** 7881

Receiving Waters: Kreutz 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	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	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
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	100	165	XXX	25	40	60	1/week	8-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	60	90	XXX	15	22	XXX	1/week	8-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Total Suspended Solids	125	185	XXX	30	45	60	1/week	8-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab

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	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	Grab
Ultraviolet light intensity (µw/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Ammonia-Nitrogen Nov 1 - Apr 30	60.0	XXX	XXX	15	XXX	30	2/week	8-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	20	XXX	XXX	5.0	XXX	10	2/week	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	2.0	XXX	XXX	2/week	8-Hr Composite
Copper, Total	XXX	XXX	XXX	Report Appl Avg	XXX	XXX	1/year	8-Hr Composite
Zinc, Total	XXX	XXX	XXX	Report Appl Avg	XXX	XXX	1/year	8-Hr Composite

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

at Outfall 001

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

I. B. For Outfall 001 , **Latitude** 40° 0' 5.91" , **Longitude** 76° 35' 52.43" , **River Mile Index** 7.6 , **Stream Code** 7881

Receiving Waters: Kreutz 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
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Net Total Nitrogen	XXX	9132	XXX	XXX	XXX	XXX	1/year	Calculation
Net Total Phosphorus	XXX	1218	XXX	XXX	XXX	XXX	1/year	Calculation

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

at Outfall 001

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.

6.3.2 Summary of Proposed Permit Part C Conditions

The subject facility has the following Part C conditions.

- SBR Batch Discharge Condition
- Hauled-in Waste Restrictions
- Chesapeake Bay Nutrient Definitions
- Solids Management for Non-Lagoon Treatment Systems

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 Sewage Individual NPDES Permit Applications, revised October 11, 2013
☐	Other:

Attachment A

Stream Stats

StreamStats Report

Region ID: PA
Workspace ID: PA20210920180645598000
Clicked Point (Latitude, Longitude): 40.00157, -76.59750
Time: 2021-09-20 14:07:06 -0400

Eastern York County STP PA0081591 Modeling Point #1 September 2021

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	23.5	square miles
BSLOPD	Mean basin slope measured in degrees	4.78	degrees
ROCKDEP	Depth to rock	5.2	feet
URBAN	Percentage of basin with urban development	13.7323	percent

Low-Flow Statistics Parameters [Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	23.5	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	4.78	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5.2	feet	4.13	5.21
URBAN	Percent Urban	13.7323	percent	0	89

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

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

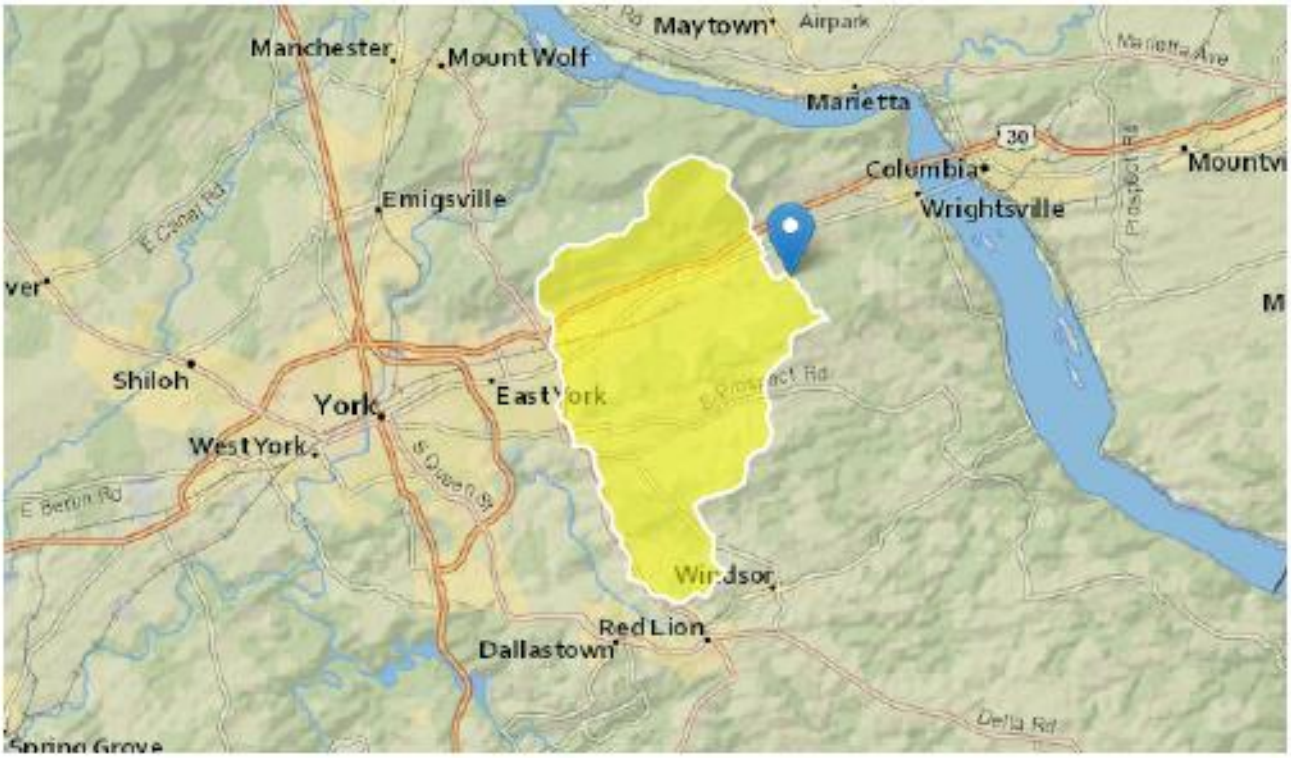
Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	9.23	ft^3/s	46	46
30 Day 2 Year Low Flow	11.2	ft^3/s	38	38
7 Day 10 Year Low Flow	5.23	ft^3/s	51	51
30 Day 10 Year Low Flow	6.32	ft^3/s	46	46
90 Day 10 Year Low Flow	8.8	ft^3/s	41	41

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/)

StreamStats Report

Region ID: PA
Workspace ID: PA20210920181220583000
Clicked Point (Latitude, Longitude): 40.00244, -76.57576
Time: 2021-09-20 14:12:40 -0400



Eastern York County STP PA0081591 Modeling Point #2 September 2021

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	26.8	square miles
BSLOPD	Mean basin slope measured in degrees	4.8861	degrees
ROCKDEP	Depth to rock	5.2	feet
URBAN	Percentage of basin with urban development	12.578	percent

Low-Flow Statistics Parameters [Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	26.8	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	4.8861	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5.2	feet	4.13	5.21
URBAN	Percent Urban	12.578	percent	0	89

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

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	10.6	ft^3/s	46	46
30 Day 2 Year Low Flow	12.8	ft^3/s	38	38
7 Day 10 Year Low Flow	6.06	ft^3/s	51	51
30 Day 10 Year Low Flow	7.29	ft^3/s	46	46
90 Day 10 Year Low Flow	10	ft^3/s	41	41

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/)

Attachment B

WQM 7.0 Modeling Output Values
Toxics Management Spreadsheet

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07I	7881	KREUTZ CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Eff. Limit 30-day Ave. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
7.600	Eastern Yor STP	PA0081591	0.500	CBOD5	25		
				NH3-N	5.84	11.68	
				Dissolved Oxygen			5

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	0.91	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.22	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07I	7881	KREUTZ CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
7.600	Eastern Yor STP	3.22	23.28	3.22	23.28	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
7.600	Eastern Yor STP	.62	5.84	.62	5.84	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)		
7.60	Eastern Yor STP	25	25	5.84	5.84	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
07I	7881	KREUTZ CREEK	7.600	325.00	23.50	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	0.223	0.00	5.29	0.000	0.000	0.0	0.00	0.00	25.50	8.10	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
Eastern Yor STP	PA0081591	0.5000	0.5000	0.5000	0.000	25.00	7.30

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
07I	7881	KREUTZ CREEK	**5.620**	303.00	26.80	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	0.223	0.00	6.06	0.000	0.000	0.0	0.00	0.00	25.50	8.10	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
07I	7881	KREUTZ CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
7.600	0.500	25.436	7.875
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
33.255	0.681	48.854	0.268
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
4.93	0.812	0.74	1.064
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.829	6.093	Tsivoglou	5
Reach Travel Time (days)			
0.452			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.045	4.71	0.71	7.48
0.090	4.49	0.68	7.29
0.136	4.28	0.64	7.14
0.181	4.09	0.61	7.04
0.226	3.90	0.59	6.99
0.271	3.72	0.56	6.96
0.316	3.55	0.53	6.96
0.361	3.39	0.51	6.97
0.407	3.23	0.48	7.00
0.452	3.08	0.46	7.03

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07I	7881	KREUTZ CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
7.600	5.29	0.00	5.29	.7735	0.00210	.681	33.25	48.85	0.27	0.452	25.44	7.88
Q1-10 Flow												
7.600	4.81	0.00	4.81	.7735	0.00210	NA	NA	NA	0.26	0.473	25.43	7.86
Q30-10 Flow												
7.600	6.45	0.00	6.45	.7735	0.00210	NA	NA	NA	0.30	0.409	25.45	7.90

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Eastern York County STP** NPDES Permit No.: **PA0081591** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Sewage effluent**

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
0.5	100	7.29						

					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											
	Chloride (PWS)	mg/L		66									
	Bromide	mg/L	<	0.58									
	Sulfate (PWS)	mg/L		62									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	mg/L	<	0.005									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	mg/L	<	0.001									
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	mg/L		0.058									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Eastern York County STP, NPDES Permit No. PA0081591, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Kreutz Creek**

No. Reaches to Model: 1

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	007881	7.6	325	23.5			Yes
End of Reach 1	007881	5.62	303	26.8			Yes

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

Location	RMI	LFY (cfs/mi²)*	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	7.6	0.2226	5.29									84.5	8.1		
End of Reach 1	5.62	0.2226	6.06									84.5	8.1		

Q_h

Location	RMI	LFY (cfs/mi²)	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	7.6														
End of Reach 1	5.62														

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Eastern York County STP, NPDES Permit No. PA0081591, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | ◉ All ○ Inputs ○ Results ○ Limits

☐ ***Hydrodynamics***

☐ ***Wasteload Allocations***

☑ ***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 Copper	Report	Report	Report	Report	Report	mg/L	0.039	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	mg/L	0.34	AFC	Discharge Conc > 10% WQBEL (no RP)

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Lead	N/A	N/A	Discharge Conc < TQL