Pennsylvania Department of Environmental Protection

SOUTHWEST REGIONAL OFFICE
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0026034**
Facility Type	**Sewage**	APS ID	**1097783**
Major / Minor	**Major**	Authorization ID	**1456556**

NPDES PERMIT FACT SHEET ADDENDUM

Applicant and Facility Information

Applicant Name	**Johnstown Redevelopment Authority**	Facility Name	**Dornick Point WWTP**
Applicant Address	416 Main Street, Suite 200	Facility Address	241 Asphalt Road
	Johnstown, PA 15901-1828		Johnstown, PA 15906-1128
Applicant Contact	Michael Grandinetti	Facility Contact	Mike Sabo
Applicant Phone	(814) 535-6564	Facility Phone	(814) 539-4877
Client ID	226956	Site ID	263650
SIC Code	4952	Municipality	West Taylor Township
SIC Description	Trans. & Utilities - Sewerage Systems	County	Cambria
Date Published in PA Bulletin	August 23, 2025	EPA Waived?	No
Comment Period End Date	September 22, 2025	If No, Reason	Major Facility, Pretreatment

Purpose of Application: Application for a renewal of an NPDES permit for discharge of treated Sewage

Internal Review and Recommendations

The Draft Permit Notification was published in the PA Bulletin on Saturday, August 23m 2025, and the Comment Period End Date is Monday, September 22, 2025.

On August 21, 2025, US EPA Region III made the following statement:

“In accordance with our Memorandum of Agreement, the Environmental Protection Agency (EPA) Region III has received the draft National Pollutant Discharge Elimination System (NPDES) permit for:

Johnstown Redevelopment Authority – Dornick Point WWTP
NPDES Number: PA0026034
EPA Received: 8/13/2025
30-day response due date: 9/12/2025

This is a major permit that authorizes discharges to the Conemaugh River and is affected by the Kiskiminetas-Conemaugh River Watershed TMDL. EPA has chosen to perform a limited review of the draft permit based on the wasteload allocation requirements of the approved TMDL, the federal effluent requirements (secondary treatment) at 40 CFR §133, the whole effluent toxicity analysis, the reasonable potential analysis, and the pretreatment requirements. EPA has completed its review and has no comments.”

No changes have been made to the draft NPDES Permit or Fact Sheet as a result of the above statement.

On September 10, 2025, the Authority made the following statement:

Approve	Return	Deny	Signatures	Date
X			William C. Mitchell, E.I.T. / Project Manager	October 15, 2025
X			Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineering Manager	October 20, 2025

Internal Review and Recommendations

"On behalf of the JRA and the 22 municipalities served by the Johnstown Regional Sewage System, we request that you reconsider changes to the discharge concentration for ammonia-nitrogen. Simply stated, we object to the reduction in ammonia-nitrogen discharge and request no changes be made from the current permit to the ammonia-nitrogen discharge concentration.

A review of daily ammonia-nitrogen discharge data (from June 1, 2024, to present) indicates that the proposed reduction from 17.0 mg/l to 8.61 mg/l as unachievable by current plant design. The proposed reduction in discharge concentration from 17.0 mg/l to 8.61 mg/l will put discharges from the Dornick Point WWTP into immediate "Permitted Non-Compliance".

Dornick Point WWTP is a pure-oxygen plant and not designed for ammonia-nitrogen reduction to the levels proposed in your draft permit. Additionally, any major process changes necessary to achieve these discharge limits simply cannot be instituted within the 12-month grace period offered.

We thank you for agreeing to meet with us via TEAMS on September 17, 2025, at 10:30 a.m. to discuss this particularly prominent issue. We trust that you will fully explain the rationale behind these changes so that we may be in the best position possible to fully relay the need for major wastewater treatment plant upgrade to the balance of the Johnstown Regional Sewage System customers."

The Department later met with the Authority via TEAMS on September 17, 2025. During that call the Authority requested that the Department re-evaluate the NPDES Permit Limits using local USGS Gage Data to calculate Q7/10 stream flow instead of Q7/10 stream flow data obtained from USGS StreamStats.

Upon re-evaluation the Department determined it was appropriate to use gage data from USGS Station No. 03041500, Conemaugh River at Seward, PA (April 1, 1994 through March 31, 2024). Please note that this station is down stream of the discharge so the WWTP's annual average design flow (12 MGD or 18.566 cfs) was subtracted from the Q7/10 stream flow (Station No. 03041500) to establish the Q7/10 flow at the point of discharge (138.77 cfs).

Discharge pH has also been updated based upon 3 years of eDMR data (08/01/2022 through 07/31/2025).

The following changes have been made to the draft NPDES Permit and Fact Sheet:

- Effluent Limitations in Part A.1.B. and Part A.1.C. have been revised based upon updated modeling data.
- Part C.IV.A.3., Whole Effluent Toxicity (WET), has been updated, as the dilution series and TIWC were revised due to changes to Q7/10 flow.
- The Discharge, Receiving Waters and Water Supply Information Section of the fact sheet has been updated to document changes to Q7/10 flow of the receiving stream.
- The Development of Effluent Limitations Section of the Fact Sheet has been updated to reflect revised modeling results (Technology-Based & Water Quality-Based Limitations).
- The Whole Effluent Toxicity (WET) Section of the Fact Sheet has been updated based upon the recommendations of the Department's WET Analysis Spreadsheet.
- The Proposed Effluent Limitations and Monitoring Requirements Section of the Fact Sheet has been updated and added below.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	12.0
Latitude	40º 21' 52.00"	Longitude	-78º 57' 13.00"
Quad Name	Johnstown	Quad Code	1614
Wastewater Description:	Sewage Effluent		
Receiving Waters	Conemaugh River (WWF)	Stream Code	43832
NHD Com ID	123720366	RMI	48.86
Drainage Area	702	Yield (cfs/mi^2)	0.19768
			USGS StreamStats (Drainage Area), USGS Station No. 03041500, Conemaugh River at Seward, PA (Q7/10 Flow)
Q_{7-10} Flow (cfs)	138.774	Q_{7-10} Basis	
Elevation (ft)	1129	Slope (ft/ft)	0.001
Watershed No.	18-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use	NONE	Exceptions to Criteria	NONE
Assessment Status	Not Assessed		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	Final	Name	Kiskiminetas-Conemaugh River Watersheds TMDL

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

Nearest Downstream Public Water Supply Intake	Buffalo Township Municipal Authority - Freeport		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	29.4	Distance from Outfall (mi)	76

Changes Since Last Permit Issuance: Elevation, Slope, DA, updated with data taken from USGS StreamStats and Google Earth.

USGS Station No. 03041500 (April 1, 1994 through March 31, 2024), Conemaugh River at Seward, PA, was used to determine Q7/10 Flow and Yield (Attachment 1). Please note that this station is down stream of the discharge so the WWTP's annual average design flow (12 MGD or 18.566 cfs) was subtracted from the Q7/10 stream flow (Station No. 03041500) to establish the Q7/10 flow at the point of discharge (138.77 cfs). The Yield was calculated to be 138.774 cfs / 702 scf/sq mi = 0.19768.

The WQM 7.0 & TMS models have been revised to reflect a Discharge pH value that is based upon 3 years of eDMR data.

Other Comments:

Kiskiminetas-Conemaugh River Watershed TMDL

A TMDL for the Kiskiminetas-Conemaugh River Watershed ("Kiski-Conemaugh TMDL") was completed on January 29, 2010, for the control of acid mine drainage pollutants: aluminum, iron, manganese, sediment and pH. In accordance with 40 CFR § 122.44(d)(1)(vii)(B), when developing WQBELs, the permitting authority shall ensure that effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation (WLA) for the discharge prepared by the State and approved by EPA pursuant to 40 CFR §

130.7. The Dornick Point WWTP was assigned WLAs for aluminum, iron, and manganese by the Kiski-Conemaugh TMDL. Therefore, pursuant to § 122.44(d)(1)(vii)(B), WQBELs will be imposed at Outfall 001. Only aluminum, iron, and manganese WQBELs are imposed because the TMDL does not establish WLAs for sediment or pH. The TMDL used a surrogate approach for both of those constituents by which reductions of in-stream concentrations of aluminum, iron, and manganese would result in acceptable reductions of sediment and mitigation of acidic pH.

The TMDL's allocated concentrations for aluminum, iron, and manganese are equivalent to the most stringent water quality criteria for those pollutants and those criteria will be imposed as end-of-pipe limits at Outfall 001. The methods used to implement water quality criteria are described in 25 Pa. Code §§ 96.3 and 96.4. Also, DEP's *Water Quality Toxics Management Strategy* (Doc. No. 361-2000-003) addresses design conditions in detail (Table 1 in that document), including the appropriate durations to assign to water quality criteria. The design duration for Criteria Maximum Concentration (CMC) criteria is 1 hour (acute). The design duration for Criteria Continuous Concentration (CCC) criteria is 4 days (chronic). The design duration for Threshold Human Health (THH) criteria is 30 days (chronic). The design duration for Cancer Risk Level (CRL) criteria is 70 years (chronic).

The 750 µg/L aluminum criterion in 25 Pa. Code § 93.8c is a CMC (acute) criterion. Therefore, 750 µg/L is imposed as a maximum daily limit. There is no CCC criterion for aluminum necessitating the imposition of a more stringent average monthly limit. Imposing 750 µg/L as both a maximum daily and average monthly limit is protective of water quality uses.

The 1.5 mg/L iron criterion is given as a 30-day average in 25 Pa. Code § 93.7(a). Therefore, 1.5 mg/L is imposed as an average monthly limit and the maximum daily effluent limit is calculated using a multiplier of two times the average monthly limit based on DEP's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits* (Doc. No. 362-0400-001, Chapter 3, pp. 15 – 16).

The 1 mg/L potable water supply criterion for manganese in 25 Pa. Code § 93.7(a) is a human health criterion (chronic). Per Table 1 of the *Water Quality Toxics Management Strategy*, the duration for a THH criterion is 30 days. Therefore, an average monthly effluent limit of 1 mg/L is imposed, and the maximum daily effluent limit is calculated using a multiplier of two times the average monthly limit consistent with the technical guidance cited above for iron.

Since the allocated concentrations are equivalent to water quality criteria, the Dornick Point WWTP's compliance with concentration limits for aluminum, iron, and manganese will not result in excursions above water quality criteria and the permit will be consistent with the TMDL's WLAs. Consequently, the TMDL's load limits are not required. The TMDL's WLAs and the applicable WQBELs are summarized in the table below.

TMDL Effluent Limits for Outfall 001

Pollutant	Average Monthly (mg/L)	Maximum Daily (mg/L)
Aluminum, Total	0.75	0.75
Iron, Total	1.5	3.0
Manganese, Total	1.0	2.0

Effluent concentrations (as reported in the renewal application and eDMRs) for aluminum, iron and manganese were less than the proposed WQBELs found in the table above. The existing TMDL WQBELs will take effect upon permit issuance.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 12.0
Latitude 40º 21' 52.00" **Longitude** -78º 57' 13.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Comments: The discharge was evaluated using WQM 7.0 Version 1.1 (Attachment 2 & 3) and TRC_CALC (Attachment 6) to evaluate $CBOD_5$, Ammonia Nitrogen, Dissolved Oxygen, and TRC. The above technology based effluent limitations are appropriate for $CBOD_5$, TSS, pH, Fecal Coliform, and TRC.

Water Quality-Based Limitations

A "Reasonable Potential Analysis" (Attachment 4 - TMS Version 1.4) determined the following parameters were candidates for monitoring and/or limitations: Total Arsenic, Total Copper, Free Cyanide, Dissolved Iron, Total Iron, and Total Zinc.

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
Ammonia-Nitrogen May 1 - Oct 31	16.32	Average Monthly	WQM 7.0 Version 1.1

Comments:

The TMS Model recommended monitoring be established for Total Copper, Dissolved Iron, and Total Zinc, as the discharge concentration of these pollutants is greater than 10% of the governing WQBELs (no RP). Please note that monitoring was recommended for Total Arsenic, as application sampling did not meet the Department's TQL of 3.0 ug/L.

The TMS Model recommended monitoring be established for Free Cyanide, as the discharge concentration of this pollutant is greater than 25% of the governing WQBELs (no RP).

Since ammonia-nitrogen WQBELs are calculated for the summer period, winter limits are evaluated also. Pursuant to DEP's Ammonia Guidance, WQBELs for the winter period are set by multiplying the summer limits by three, unless modeling indicates that more stringent WQBELs are needed for winter. Winter period modeling indicates that a BPJ limit of 25 mg/L (default in model) is appropriate and will apply from Nov 1 through Apr 30.

DMR data confirms that the applicant cannot comply with the revised seasonal ammonia-nitrogen limits, which are based upon updated Ammonia Criteria and Q7/10 flow. The Authority will be given one year from the permit effective date to comply with new ammonia-nitrogen limits. In the interim the existing seasonal ammonia-nitrogen limit will be imposed. Part C.II., Schedule of Compliance – Ammonia-Nitrogen, has been added to the permit.

Best Professional Judgment (BPJ) Limitations

Comments: A minimum Dissolved Oxygen (DO) limit of 4.0 mg/L will be established based on BPJ to ensure adequate operation and maintenance (Section I.A, Note 6, SOP No. BCW-PMT-033, Establishing Effluent Limitations for Individual Sewage Permits).

A Seasonal Ammonia-Nitrogen (Nov 1 – Apr 30) limit of 25.0 mg/L will be established based on BPJ, as this number is more restrictive than using the summer limit multiplier of 3, discussed in the DEP's Ammonia Guidance.

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation 40 CFR 122.44 (l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued. Interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62). (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.

Due to anti-backsliding, the previously permitted limits seasonal ammonia-nitrogen limitations of 11 mg/L (summer) and 25.0 mg/L (winter) will be re-imposed. These limits were based upon regulations, guidance, and models that were valid at the time of permit issuance.

The facility is not seeking to revise the previously permitted effluent limits.

Per- and Polyfluoroalkyl Substances (PFAS)

In February 2024, DEP implemented a new monitoring initiative for PFAS consistent with an EPA memorandum that provides guidance to states for addressing PFAS discharges. PFAS are a family of thousands of synthetic organic chemicals that contain a chain of strong carbon-fluorine bonds. Many PFAS are highly stable, water- and oil-resistant, and exhibit other properties that make them useful in a variety of consumer products and industrial processes. PFAS are resistant to biodegradation, photooxidation, direct photolysis, and hydrolysis and do not readily degrade naturally; thus, many PFAS accumulate over time. According to the United States Department of Health and Human Services, Agency for Toxic Substances and Disease Registry (ATSDR), the environmental persistence and mobility of some PFAS, combined with decades of widespread use, have resulted in their presence in surface water, groundwater, drinking water, rainwater, soil, sediment, ice caps, outdoor and indoor air, plants, animal tissue, and human blood serum across the globe. ATSDR also reported that exposure to certain PFAS can lead to adverse human health impacts Due to their durability, toxicity, persistence, and pervasiveness, PFAS have emerged as potentially significant pollutants of concern.

In accordance with Section II.G of DEP's "Standard Operating Procedure (SOP) for Clean Water Program – Establishing Effluent Limitations for Individual Sewage Permits" [SOP No. BCW-PMT-033] and under the authority of 25 Pa. Code § 92a.61(b), DEP has determined that monitoring for a subset of common/well-studied PFAS including Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), Perfluorobutanesulfonic acid (PFBS), and Hexafluoropropylene oxide dimer acid (HFPO-DA) is necessary to help understand the extent of environmental contamination by PFAS in the Commonwealth and the extent to which point source dischargers are contributors. SOP BCW-PMT-033 directs permit writers to consider special monitoring requirements for PFOA, PFOS, PFBS, and HFPO-DA in the following instances:

a. If sampling that is completed as part of the permit renewal application reveals a detection of PFOA, PFOS, HFPO-DA or PFBS (any of these compounds), the application manager will establish a quarterly monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds) in the permit.

b. If sampling that is completed as part of the permit renewal application demonstrates non-detect values at or below the Target QLs for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds in a minimum of 3 samples), the

application manager will establish an annual monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS in the permit.

c. In all cases the application manager will include a condition in the permit that the permittee may cease monitoring for PFOA, PFOS, HFPO-DA and PFBS when the permittee reports non-detect values at or below the Target QL for four consecutive monitoring periods for each PFAS parameter that is analyzed. Use the following language: The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detects at or below Quantitation Limits of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS and 6.4 ng/L for HFPO-DA. When monitoring is discontinued, permittees should enter a No Discharge Indicator (NODI) Code of "GG" on DMRs.

The Authority's application was submitted before the NPDES permit application forms were updated to require sampling for PFOA, PFOS, PFBS, and HFPO-DA. Also, according to EPA's guidance, The Authority receives waste from one of the industries EPA expects to be a source for PFAS (landfill leachate), and therefore, quarterly reporting of PFOA, PFOS, PFBS, and HFPO-DA will be required consistent with Section II.G of SOP BCW-PMT-033 and under the authority of 25 Pa. Code § 92a.61(b).

As stated in Section II.G.3 of SOP BCW-PMT-0332, if non-detect values at or below DEP's Target QLs are reported for four consecutive monitoring periods (i.e., four consecutive quarterly results), then the monitoring may be discontinued. Footnote (3) has been added to Part A of the NPDES Permit, which further discusses monitoring and reporting requirements.

Pollutant Group 7 Parameters

In an email, Dated October 6, 2025, the Department made the following comment:

Per the "National Pollutant Discharge Elimination System (NPDES) Application for Individual Permit to Discharge Sewage Effluent for Major Sewage Facilities: Instructions" (3800-PM-BCW0009a), "Pollutant Group 7 must be analyzed if, during the three years prior to the submission of the application, the facility has received natural gas wastewaters, either hauled-in or through indirect discharges."

It has been reported to the Department that Westmoreland Sanitary Landfill accepts residual wastes that arise from natural gas drilling. Therefore, Dornick Point WWTP receives natural gas wastewaters through indirect discharges by accepting landfill leachate from Westmoreland Sanitary Landfill.

In an email, dated October 14, 2025, the Authority submitted the requested data (Pollutant Group 7 Sampling Results).

Gross Alpha, and Total Beta were detected in the effluent and were evaluated using the TMS (**Attachment 4**). No WQS exist for these two parameters and no monitoring will be established in this renewal permit. The discharge concentration of Gross Alpha was less than the TQL.

Total Radium 226/228, Total Strontium, and Total Uranium were listed as "Non-Detect"; No routine monitoring will be established for these pollutants in this renewal permit. No WQS exist for Total Radium & Total Uranium, and the discharge concentration of Total Strontium is less than the TQL.

If the Dornick Point WWTP continues to receive natural gas wastewaters through indirect discharges (landfill leachate) Pollutant Group 7 Pollutants will be re-evaluated during the next permit renewal review.

Additional Considerations

Monitoring frequency for the proposed effluent limits are based upon Table 6-3, Self-Monitoring Requirements for Sewage Dischargers, from the Departments Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits (Document No. 386-0400-001).

For POTWs, mass loading limits will be established for $CBOD_5$, TSS, NH_3-N, and where necessary Total P and Total N. In general, average monthly mass loading limits will be established for $CBOD_5$, TSS, NH_3-N, and where necessary Total P and Total N, and average weekly mass loading limits will be established for $CBOD_5$ and TSS. Mass loading limits will also be established for toxic pollutants with effluent concentration limits (Section IV, SOP No. BCW-PMT-033, Establishing Effluent Limitations for Individual Sewage Permits).

For POTWs with design flows greater than 2,000 GPD and for non-municipal sewage facilities that service municipalities or portions thereof, the application manager will establish influent BOD_5 and TSS monitoring in the permit using the same

frequency and sample type as is used for other effluent parameters (Section IV.E.8, SOP No BCW-PWT-002, New and Reissuance Sewage Individual NPDES Permit Applications).

Sewage discharges will include monitoring, at a minimum, for *E. Coli*, in new and reissued permits, with a monitoring frequency of 1/month for design flows >= 1 MGD per 25 Pa. Code § 92a.061 and Section I.A, Note 12, SOP No. BCW-PMT-033, Establishing Effluent Limitations for Individual Sewage Permits.

Nutrient monitoring is required to establish the nutrient load from the wastewater treatment facility and the impacts that load may have on the quality of the receiving stream(s). The discharge is to waters not impaired for nutrients. A 1/quarter monitoring requirement for Total N & Total P has been added to the permit per 25 Pa. Code § 92a.61 and Section I.A, Note 7 & 8, SOP No. BCW-PMT-033, Establishing Effluent Limitations for Individual Sewage Permits.

Whole Effluent Toxicity (WET)

For Outfall 001, ☐ **Acute** ☒ **Chronic** WET Testing was completed:

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

The dilution series used for the tests was: 100%, 60%, 30%, 10%, and 5%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 0.1.

Summary of Four Most Recent Test Results

TST Data Analysis

(NOTE – In lieu of recording information below, the application manager may attach the DEP WET Analysis Spreadsheet, Attachment 5).

Test Date	*Ceriodaphnia* Results (Pass/Fail)		*Pimephales* Results (Pass/Fail)	
	Survival	Reproduction	Survival	Growth
11/9/2020	PASS	PASS	PASS	PASS
5/18/2021	PASS	PASS	PASS	PASS
5/17/2022	PASS	PASS	PASS	PASS
10/31/2023	PASS	PASS	PASS	PASS

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

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

☐ **YES** ☒ **NO**

Comments: N/A

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

Acute Partial Mix Factor (PMFa): **0.14** Chronic Partial Mix Factor (PMFc): **0.968**

1. Determine IWC – Acute (IWCa):

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

[(12.0 MGD x 1.547) / ((138.774 cfs x 0.14) + (12 MGD x 1.547))] x 100 = **48.86%**

Is IWCa < 1%? ☐ **YES** ☒ **NO** **(YES - Acute Tests Required OR NO - Chronic Tests Required)**

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

N/A

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

2a. Determine Target IWCa (If Acute Tests Required)

TIWCa = IWCa / 0.3 = 100**%**

2b. Determine Target IWCc (If Chronic Tests Required)

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

[(12 MGD x 1.547) / ((138.774 cfs x 0.968) + (12 MGD x 1.547))] x 100 = **12.14%**

Please note that Department's WET Analysis Spreadsheet (Attachment 5) recommends a TIWCc of 12% Effluent be established in Part C of the permit.

3. Determine Dilution Series

Dilution Series = 100%, 56%, 12%, 6%, and 3%.

WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

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

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

N/A

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

N/A

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through End of 12th Month.

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		
Ammonia-Nitrogen Nov 1 - Apr 30	Report	XXX	XXX	Report	XXX	50	1/day	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	1700	XXX	XXX	17.0	XXX	34	1/day	24-Hr Composite

Compliance Sampling Location: 001

Other Comments: N/A

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Beginning of 13th Month 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		
Ammonia-Nitrogen Nov 1 - Apr 30	2500	XXX	XXX	25.0	XXX	50	1/day	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	1630	XXX	XXX	16.32	XXX	32.64	1/day	24-Hr Composite

Compliance Sampling Location: 001

Other Comments: N/A

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/shift	Grab
CBOD5	2500	4000	XXX	25.0	40.0 Wkly Avg	50	1/day	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	Report Wkly Avg	XXX	1/day	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	Report Wkly Avg	XXX	1/day	24-Hr Composite
TSS	3000	4500	XXX	30.0	45.0 Wkly Avg	60	1/day	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/day	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/day	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Total Aluminum	75	75 Daily Max	XXX	0.75	0.75	XXX	1/week	24-Hr Composite
Total Arsenic (ug/L)	Report	Report Daily Max	XXX	Report	Report	XXX	1/month	24-Hr Composite

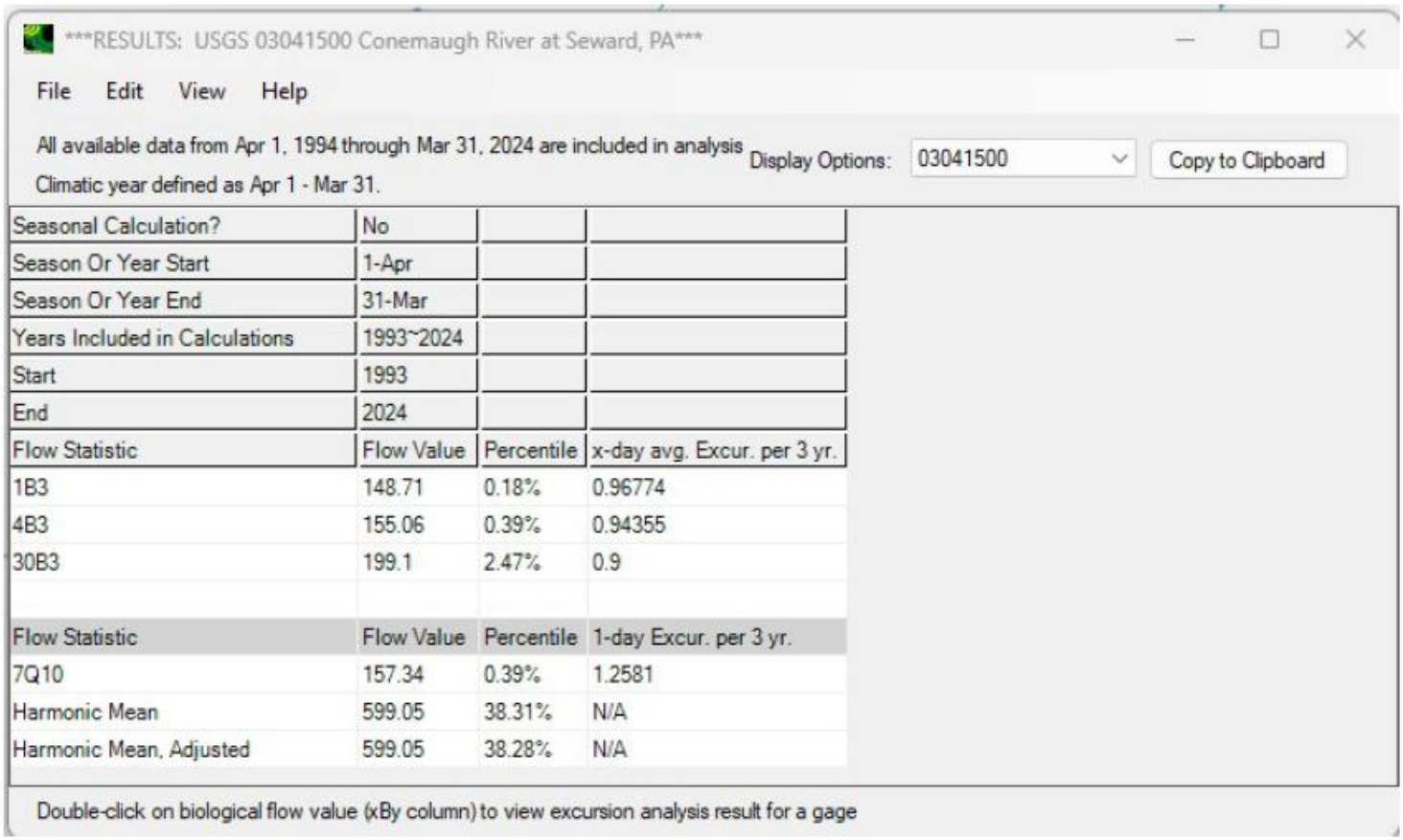
Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Copper (ug/L)	Report	Report Daily Max	XXX	Report	Report	XXX	1/month	24-Hr Composite
Free Cyanide (ug/L)	Report	Report Daily Max	XXX	Report	Report	XXX	1/month	24-Hr Composite
Dissolved Iron	Report	Report Daily Max	XXX	Report	Report	XXX	1/month	24-Hr Composite
Total Iron	150	300 Daily Max	XXX	1.5	3.0	XXX	1/week	24-Hr Composite
Total Manganese	100	200 Daily Max	XXX	1.0	2.0	XXX	1/week	24-Hr Composite
Total Zinc (ug/L)	Report	Report Daily Max	XXX	Report	Report	XXX	1/month	24-Hr Composite
PFOA (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
PFOS (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
PFBS (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
HFPO-DA (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab

Compliance Sampling Location: 001

Other Comments: N/A

Attachment 1 – USGS 03041500



RESULTS: USGS 03041500 Conemaugh River at Seward, PA

File Edit View Help

All available data from Apr 1, 1994 through Mar 31, 2024 are included in analysis
Climatic year defined as Apr 1 - Mar 31.

Display Options: 03041500 Copy to Clipboard

Seasonal Calculation?	No		
Season Or Year Start	1-Apr		
Season Or Year End	31-Mar		
Years Included in Calculations	1993~2024		
Start	1993		
End	2024		
Flow Statistic	Flow Value	Percentile	x-day avg. Excur. per 3 yr.
1B3	148.71	0.18%	0.96774
4B3	155.06	0.39%	0.94355
30B3	199.1	2.47%	0.9
Flow Statistic	Flow Value	Percentile	1-day Excur. per 3 yr.
7Q10	157.34	0.39%	1.2581
Harmonic Mean	599.05	38.31%	N/A
Harmonic Mean, Adjusted	599.05	38.28%	N/A

Double-click on biological flow value (xBy column) to view excursion analysis result for a gage

Attachment 2 – WQM 7.0 Version 1.1 – Summer Period

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
	18C	43832	CONEMAUGH RIVER	**48.860**	1129.00	702.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.198	0.00	0.00	0.000	0.000	10.0	186.30	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Dornick Point	PA0026034	12.0000	0.0000	0.0000	0.000	20.00	6.38

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	8.38	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
18C	43832	CONEMAUGH RIVER	**45.020**	1101.00	707.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.198	0.00	0.00	0.000	0.000	10.0	227.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	0.00	7.00

Parameter Data

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

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
18C	43832	CONEMAUGH RIVER	**43.860**	1090.00	717.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.198	0.00	0.00	0.000	0.000	10.0	203.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	0.00	7.00

Parameter Data

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

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
18C	43832	CONEMAUGH RIVER

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												
48.860	138.78	0.00	138.78	18.564	0.00138	1.188	186.3	156.78	0.71	0.330	24.41	6.86
45.020	139.77	0.00	139.77	18.564	0.00180	.965	227	235.25	0.72	0.098	24.41	6.86
Q1-10 Flow												
48.860	88.82	0.00	88.82	18.564	0.00138	NA	NA	NA	0.57	0.409	24.14	6.81
45.020	89.45	0.00	89.45	18.564	0.00180	NA	NA	NA	0.58	0.121	24.14	6.81
Q30-10 Flow												
48.860	188.74	0.00	188.74	18.564	0.00138	NA	NA	NA	0.83	0.283	24.55	6.89
45.020	190.08	0.00	190.08	18.564	0.00180	NA	NA	NA	0.84	0.084	24.56	6.89

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
18C	43832	CONEMAUGH RIVER

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
48.860	Dornick Point	13.77	50	13.77	50	0	0
45.020		NA	NA	13.76	NA	NA	NA

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
48.860	Dornick Point	1.46	16.32	1.46	16.32	0	0
45.020		NA	NA	1.46	NA	NA	NA

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)		
48.86	Dornick Point	25	25	16.32	16.32	3	3	0	0
45.02		NA	NA	NA	NA	NA	NA	NA	NA

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
18C	43832	CONEMAUGH RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
48.860	12.000	24.410	6.860
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
186.300	1.188	156.778	0.711
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
4.71	0.828	1.93	0.983
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.745	5.083	Tsivoglou	5
Reach Travel Time (days)			
0.330			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.033	4.56	1.86	7.38
0.066	4.41	1.80	7.09
0.099	4.26	1.75	6.86
0.132	4.12	1.69	6.68
0.165	3.99	1.64	6.54
0.198	3.86	1.58	6.44
0.231	3.73	1.53	6.36
0.264	3.61	1.48	6.31
0.297	3.49	1.44	6.28
0.330	3.37	1.39	6.27

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
45.020	12.000	24.414	6.861
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
227.000	0.965	235.249	0.723
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
3.36	0.679	1.38	0.983
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.277	6.724	Tsivoglou	5
Reach Travel Time (days)			
0.098			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.010	3.34	1.37	6.32
0.020	3.31	1.36	6.36
0.029	3.28	1.34	6.40
0.039	3.26	1.33	6.43
0.049	3.23	1.32	6.47
0.059	3.20	1.31	6.50
0.069	3.18	1.29	6.53
0.078	3.15	1.28	6.56
0.088	3.13	1.27	6.59
0.098	3.10	1.26	6.62

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
18C	43832	CONEMAUGH RIVER

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
48.860	Dornick Point	PA0026034	12.000	CBOD5	25		
				NH3-N	16.32	32.64	
				Dissolved Oxygen			3

Attachment 3 – WQM 7.0 Version 1.1 – Winter Period

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
	18C	43832	CONEMAUGH RIVER	**48.860**	1129.00	702.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.395	0.00	0.00	0.000	0.000	10.0	186.30	0.00	5.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Dornick Point	PA0026034	12.0000	0.0000	0.0000	0.000	15.00	6.38

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	12.80	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
18C	43832	CONEMAUGH RIVER	**45.020**	1101.00	707.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.395	0.00	0.00	0.000	0.000	10.0	227.00	0.00	5.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	0.00	7.00

Parameter Data

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

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
18C	43832	CONEMAUGH RIVER	**43.860**	1090.00	717.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.395	0.00	0.00	0.000	0.000	10.0	203.00	0.00	5.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

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

Parameter Data

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

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
18C	43832	CONEMAUGH RIVER

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												
48.860	277.53	0.00	277.53	18.564	0.00138	1.569	186.3	118.71	1.01	0.232	5.63	6.92
45.020	279.50	0.00	279.50	18.564	0.00180	1.275	227	178.09	1.03	0.069	5.62	6.92
Q1-10 Flow												
48.860	177.62	0.00	177.62	18.564	0.00138	NA	NA	NA	0.80	0.292	5.95	6.88
45.020	178.88	0.00	178.88	18.564	0.00180	NA	NA	NA	0.82	0.087	5.94	6.89
Q30-10 Flow												
48.860	377.44	0.00	377.44	18.564	0.00138	NA	NA	NA	1.19	0.197	5.47	6.94
45.020	380.12	0.00	380.12	18.564	0.00180	NA	NA	NA	1.21	0.058	5.47	6.94

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
18C	43832	CONEMAUGH RIVER

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
48.860	Dornick Point	26.45	50	26.45	50	0	0
45.020		NA	NA	26.44	NA	NA	NA

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
48.860	Dornick Point	4.46	25	4.46	25	0	0
45.020		NA	NA	4.46	NA	NA	NA

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)		
48.86	Dornick Point	25	25	25	25	3	3	0	0
45.02		NA	NA	NA	NA	NA	NA	NA	NA

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
18C	43832	CONEMAUGH RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
48.860	12.000	5.627	6.920
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
186.300	1.569	118.705	1.013
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
3.44	0.650	1.57	0.232
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
12.186	4.639	Tsivoglou	5
Reach Travel Time (days)			
0.232			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.023	3.42	1.56	11.27
0.046	3.39	1.55	11.27
0.070	3.36	1.54	11.27
0.093	3.34	1.53	11.27
0.116	3.31	1.53	11.27
0.139	3.29	1.52	11.27
0.162	3.26	1.51	11.27
0.185	3.23	1.50	11.27
0.209	3.21	1.49	11.27
0.232	3.18	1.49	11.27

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
45.020	12.000	5.623	6.921
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
227.000	1.275	178.089	1.030
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
3.18	0.605	1.48	0.232
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
11.251	6.137	Tsivoglou	5
Reach Travel Time (days)			
0.069			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.007	3.17	1.47	11.27
0.014	3.16	1.47	11.27
0.021	3.16	1.47	11.27
0.028	3.15	1.47	11.27
0.034	3.14	1.46	11.27
0.041	3.14	1.46	11.27
0.048	3.13	1.46	11.27
0.055	3.12	1.46	11.27
0.062	3.12	1.45	11.27
0.069	3.11	1.45	11.27

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
18C	43832	CONEMAUGH RIVER

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
48.860	Dornick Point	PA0026034	12.000	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			3

Attachment 4 – TMS Version 1.4

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Dornick Point WWTP** NPDES Permit No.: **PA0026034** Outfall No.: **001**

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

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
12	100	6.375						

					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		450									
	Chloride (PWS)	mg/L		115									
	Bromide	mg/L		0.802									
	Sulfate (PWS)	mg/L		65.9									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		33									
	Total Antimony	µg/L		0.7									
	Total Arsenic	µg/L	<	10									
	Total Barium	µg/L		28									
	Total Beryllium	µg/L	<	0.4									
	Total Boron	µg/L		485									
	Total Cadmium	µg/L	<	0.1									
	Total Chromium (III)	µg/L	<	5									
	Hexavalent Chromium	µg/L	<	0.1									
	Total Cobalt	µg/L		3									
	Total Copper	µg/L		4									
	Free Cyanide	µg/L		12									
	Total Cyanide	µg/L	<	5									
	Dissolved Iron	µg/L		1220									
	Total Iron	µg/L		1590									
	Total Lead	µg/L	<	0.3									
	Total Manganese	µg/L		162									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		0.001									
	Total Phenols (Phenolics) (PWS)	µg/L	<	2.94									
	Total Selenium	µg/L		1									
	Total Silver	µg/L	<	0.2									
	Total Thallium	µg/L	<	0.05									
	Total Zinc	µg/L		37									
	Total Molybdenum	µg/L		15									
	Acrolein	µg/L	<	1									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	0.5									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.5									
	Carbon Tetrachloride	µg/L	<	0.5									
	Chlorobenzene	µg/L	<	0.5									
	Chlorodibromomethane	µg/L	<	0.4									
	Chloroethane	µg/L	<	0.5									
	2-Chloroethyl Vinyl Ether	µg/L	<	0.5									

Group 3	Chloroform	µg/L		4									
	Dichlorobromomethane	µg/L	<	0.4									
	1,1-Dichloroethane	µg/L	<	0.5									
	1,2-Dichloroethane	µg/L	<	0.5									
	1,1-Dichloroethylene	µg/L	<	0.4									
	1,2-Dichloropropane	µg/L	<	0.5									
	1,3-Dichloropropylene	µg/L	<	0.5									
	1,4-Dioxane	µg/L	<	0.49									
	Ethylbenzene	µg/L	<	0.5									
	Methyl Bromide	µg/L	<	0.5									
	Methyl Chloride	µg/L	<	0.5									
	Methylene Chloride	µg/L	<	0.5									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5									
	Tetrachloroethylene	µg/L	<	0.5									
	Toluene	µg/L	<	0.5									
	1,2-trans-Dichloroethylene	µg/L	<	0.5									
	1,1,1-Trichloroethane	µg/L	<	0.5									
	1,1,2-Trichloroethane	µg/L	<	0.5									
	Trichloroethylene	µg/L	<	0.5									
	Vinyl Chloride	µg/L	<	0.5									
Group 4	2-Chlorophenol	µg/L	<	0.98									
	2,4-Dichlorophenol	µg/L	<	0.98									
	2,4-Dimethylphenol	µg/L	<	0.98									
	4,6-Dinitro-o-Cresol	µg/L	<	5.64									
	2,4-Dinitrophenol	µg/L	<	2.94									
	2-Nitrophenol	µg/L	<	0.98									
	4-Nitrophenol	µg/L	<	2.94									
	p-Chloro-m-Cresol	µg/L	<	1.2									
	Pentachlorophenol	µg/L	<	0.98									
	Phenol	µg/L	<	2.94									
	2,4,6-Trichlorophenol	µg/L	<	0.98									
Group 5	Acenaphthene	µg/L	<	0.98									
	Acenaphthylene	µg/L	<	0.98									
	Anthracene	µg/L	<	0.98									
	Benzidine	µg/L	<	4.9									
	Benzo(a)Anthracene	µg/L	<	0.98									
	Benzo(a)Pyrene	µg/L	<	0.98									
	3,4-Benzofluoranthene	µg/L	<	1.26									
	Benzo(ghi)Perylene	µg/L	<	0.98									
	Benzo(k)Fluoranthene	µg/L	<	0.98									
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.98									
	Bis(2-Chloroethyl)Ether	µg/L	<	0.98									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.98									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	2.94									
	4-Bromophenyl Phenyl Ether	µg/L	<	0.98									
	Butyl Benzyl Phthalate	µg/L	<	2.94									
	2-Chloronaphthalene	µg/L	<	0.98									
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.98									
	Chrysene	µg/L	<	0.98									
	Dibenzo(a,h)Anthrancene	µg/L	<	0.98									
	1,2-Dichlorobenzene	µg/L	<	0.98									
	1,3-Dichlorobenzene	µg/L	<	0.98									
	1,4-Dichlorobenzene	µg/L	<	0.98									
	3,3-Dichlorobenzidine	µg/L	<	0.98									
	Diethyl Phthalate	µg/L	<	0.98									
	Dimethyl Phthalate	µg/L	<	0.98									
	Di-n-Butyl Phthalate	µg/L	<	2.94									
	2,4-Dinitrotoluene	µg/L	<	0.98									
	2,6-Dinitrotoluene	µg/L	<	0.98									
	Di-n-Octyl Phthalate	µg/L	<	1.2									
	1,2-Diphenylhydrazine	µg/L	<	0.98									
	Fluoranthene	µg/L	<	0.98									
	Fluorene	µg/L	<	0.98									
	Hexachlorobenzene	µg/L	<	0.98									
	Hexachlorobutadiene	µg/L	<	0.5									
	Hexachlorocyclopentadiene	µg/L	<	0.98									
	Hexachloroethane	µg/L	<	0.98									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.98									

	Isophorone	µg/L	<	0.98										
	Naphthalene	µg/L	<	0.98										
	Nitrobenzene	µg/L	<	0.98										
	n-Nitrosodimethylamine	µg/L	<	0.98										
	n-Nitrosodi-n-Propylamine	µg/L	<	0.98										
	n-Nitrosodiphenylamine	µg/L	<	0.98										
	Phenanthrene	µg/L	<	0.98										
	Pyrene	µg/L	<	0.98										
	1,2,4-Trichlorobenzene	µg/L	<	0.5										
Group 6	Aldrin	µg/L	<	0.0072										
	alpha-BHC	µg/L	<	0.025										
	beta-BHC	µg/L	<	0.025										
	gamma-BHC	µg/L	<	0.025										
	delta BHC	µg/L		0.072										
	Chlordane	µg/L	<	0.012										
	4,4-DDT	µg/L	<	0.05										
	4,4-DDE	µg/L	<	0.05										
	4,4-DDD	µg/L	<	0.05										
	Dieldrin	µg/L	<	0.005										
	alpha-Endosulfan	µg/L	<	0.026										
	beta-Endosulfan	µg/L	<											
	Endosulfan Sulfate	µg/L	<	0.011										
	Endrin	µg/L	<	0.05										
	Endrin Aldehyde	µg/L	<	0.05										
	Heptachlor	µg/L	<	0.025										
	Heptachlor Epoxide	µg/L	<	0.011										
	PCB-1016	µg/L	<	0.25										
	PCB-1221	µg/L	<	0.25										
	PCB-1232	µg/L	<	0.25										
	PCB-1242	µg/L	<	0.25										
	PCB-1248	µg/L	<	0.25										
	PCB-1254	µg/L	<	0.25										
	PCB-1260	µg/L	<	0.25										
	PCBs, Total	µg/L	<											
	Toxaphene	µg/L	<	0.5										
	2,3,7,8-TCDD	ng/L	<											
Group 7	Gross Alpha	pCi/L		2.98										
	Total Beta	pCi/L		12.25										
	Radium 226/228	pCi/L	<	1.722										
	Total Strontium	µg/L	<	4.5										
	Total Uranium	µg/L	<	0.956										
	Osmotic Pressure	mOs/kg												

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Dornick Point WWTP, NPDES Permit No. PA0026034, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Conemaugh River**

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	043832	48.86	1129	702			Yes
End of Reach 1	043832	45.02	1101	707			Yes

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

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	48.86	0.197688			10	186.3						100	7		
End of Reach 1	45.02	0.197688			10	227						100	7		

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	48.86														
End of Reach 1	45.02														

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Dornick Point WWTP, NPDES Permit No. PA0026034, Outfall 001

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

☑ ***Hydrodynamics***

Q_{7-10}

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time	Complete Mix Time (min)
48.86	138.78		138.78	18.564	0.001	1.188	186.3	10.	0.711	0.33	768.806
45.02	139.77		139.765416					10.000			

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time	Complete Mix Time (min)
48.86	553.83		553.83	18.564	0.001	2.098	186.3	88.82	1.465	0.16	394.518
45.02	557.273		557.27								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.140 Analysis Hardness (mg/l): 100 Analysis pH: 6.59

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	1,533	
Total Antimony	0	0		0	1,100	1,100	2,249	
Total Arsenic	0	0		0	340	340	695	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	42,928	
Total Boron	0	0		0	8,100	8,100	16,558	
Total Cadmium	0	0		0	2.014	2.13	4.36	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	569.763	1,803	3,686	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	33.3	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	194	
Total Copper	0	0		0	13.439	14.0	28.6	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	45.0	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	

Total Lead	0	0		0	64.581	81.6	167	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	3.37	Chem Translator of 0.85 applied
Total Nickel	0	0		0	468.236	469	959	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	3.217	3.78	7.74	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	133	
Total Zinc	0	0		0	117.180	120	245	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	6.13	
Acrylonitrile	0	0		0	650	650	1,329	
Benzene	0	0		0	640	640	1,308	
Bromoform	0	0		0	1,800	1,800	3,680	
Carbon Tetrachloride	0	0		0	2,800	2,800	5,724	
Chlorobenzene	0	0		0	1,200	1,200	2,453	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	36,796	
Chloroform	0	0		0	1,900	1,900	3,884	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	30,663	
1,1-Dichloroethylene	0	0		0	7,500	7,500	15,331	
1,2-Dichloropropane	0	0		0	11,000	11,000	22,486	
1,3-Dichloropropylene	0	0		0	310	310	634	
Ethylbenzene	0	0		0	2,900	2,900	5,928	
Methyl Bromide	0	0		0	550	550	1,124	
Methyl Chloride	0	0		0	28,000	28,000	57,238	
Methylene Chloride	0	0		0	12,000	12,000	24,530	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	2,044	
Tetrachloroethylene	0	0		0	700	700	1,431	
Toluene	0	0		0	1,700	1,700	3,475	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	13,901	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	6,133	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	6,950	
Trichloroethylene	0	0		0	2,300	2,300	4,702	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	1,145	
2,4-Dichlorophenol	0	0		0	1,700	1,700	3,475	
2,4-Dimethylphenol	0	0		0	660	660	1,349	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	164	
2,4-Dinitrophenol	0	0		0	660	660	1,349	
2-Nitrophenol	0	0		0	8,000	8,000	16,354	
4-Nitrophenol	0	0		0	2,300	2,300	4,702	
p-Chloro-m-Cresol	0	0		0	160	160	327	
Pentachlorophenol	0	0		0	5.774	5.77	11.8	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	940	
Acenaphthene	0	0		0	83	83.0	170	

Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	613	
Benzo(a)Anthracene	0	0		0	0.5	0.5	1.02	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	61,326	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	9,199	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	552	
Butyl Benzyl Phthalate	0	0		0	140	140	286	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	1,676	
1,3-Dichlorobenzene	0	0		0	350	350	715	
1,4-Dichlorobenzene	0	0		0	730	730	1,492	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	8,177	
Dimethyl Phthalate	0	0		0	2,500	2,500	5,110	
Di-n-Butyl Phthalate	0	0		0	110	110	225	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	3,271	
2,6-Dinitrotoluene	0	0		0	990	990	2,024	
1,2-Diphenylhydrazine	0	0		0	15	15.0	30.7	
Fluoranthene	0	0		0	200	200	409	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	20.4	
Hexachlorocyclopentadiene	0	0		0	5	5.0	10.2	
Hexachloroethane	0	0		0	60	60.0	123	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	20,442	
Naphthalene	0	0		0	140	140	286	
Nitrobenzene	0	0		0	4,000	4,000	8,177	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	34,751	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	613	
Phenanthrene	0	0		0	5	5.0	10.2	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	266	
Aldrin	0	0		0	3	3.0	6.13	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	0.95	0.95	1.94	
Chlordane	0	0		0	2.4	2.4	4.91	
4,4-DDT	0	0		0	1.1	1.1	2.25	
4,4-DDE	0	0		0	1.1	1.1	2.25	

4,4-DDD	0	0		0	1.1	1.1	2.25	
Dieldrin	0	0		0	0.24	0.24	0.49	
alpha-Endosulfan	0	0		0	0.22	0.22	0.45	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.086	0.086	0.18	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.52	0.52	1.06	
Heptachlor Epoxide	0	0		0	0.5	0.5	1.02	
Toxaphene	0	0		0	0.73	0.73	1.49	
Total Strontium	0	0		0	N/A	N/A	N/A	

☑ ***CFC*** CCT (min): 720 PMF: 0.968 Analysis Hardness (mg/l): 100 Analysis pH: 6.86

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	1,812	
Total Arsenic	0	0		0	150	150	1,235	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	33,761	
Total Boron	0	0		0	1,600	1,600	13,175	
Total Cadmium	0	0		0	0.246	0.27	2.23	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.115	86.2	710	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	85.6	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	156	
Total Copper	0	0		0	8.956	9.33	76.8	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	42.8	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	12,713	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.517	3.18	26.2	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	7.46	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.007	52.2	430	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	41.1	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	107	
Total Zinc	0	0		0	118.139	120	987	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	24.7	
Acrylonitrile	0	0		0	130	130	1,070	
Benzene	0	0		0	130	130	1,070	
Bromoform	0	0		0	370	370	3,047	
Carbon Tetrachloride	0	0		0	560	560	4,611	
Chlorobenzene	0	0		0	240	240	1,976	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	28,820	
Chloroform	0	0		0	390	390	3,211	

Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	25,527	
1,1-Dichloroethylene	0	0		0	1,500	1,500	12,352	
1,2-Dichloropropane	0	0		0	2,200	2,200	18,116	
1,3-Dichloropropylene	0	0		0	61	61.0	502	
Ethylbenzene	0	0		0	580	580	4,776	
Methyl Bromide	0	0		0	110	110	906	
Methyl Chloride	0	0		0	5,500	5,500	45,289	
Methylene Chloride	0	0		0	2,400	2,400	19,763	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	1,729	
Tetrachloroethylene	0	0		0	140	140	1,153	
Toluene	0	0		0	330	330	2,717	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	11,528	
1,1,1-Trichloroethane	0	0		0	610	610	5,023	
1,1,2-Trichloroethane	0	0		0	680	680	5,599	
Trichloroethylene	0	0		0	450	450	3,705	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	906	
2,4-Dichlorophenol	0	0		0	340	340	2,800	
2,4-Dimethylphenol	0	0		0	130	130	1,070	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	132	
2,4-Dinitrophenol	0	0		0	130	130	1,070	
2-Nitrophenol	0	0		0	1,600	1,600	13,175	
4-Nitrophenol	0	0		0	470	470	3,870	
p-Chloro-m-Cresol	0	0		0	500	500	4,117	
Pentachlorophenol	0	0		0	4.430	4.43	36.5	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	749	
Acenaphthene	0	0		0	17	17.0	140	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	486	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.82	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	49,407	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	7,493	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	445	
Butyl Benzyl Phthalate	0	0		0	35	35.0	288	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	1,318	
1,3-Dichlorobenzene	0	0		0	69	69.0	568	
1,4-Dichlorobenzene	0	0		0	150	150	1,235	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	6,588	
Dimethyl Phthalate	0	0		0	500	500	4,117	

Di-n-Butyl Phthalate	0	0		0	21	21.0	173	
2,4-Dinitrotoluene	0	0		0	320	320	2,635	
2,6-Dinitrotoluene	0	0		0	200	200	1,647	
1,2-Diphenylhydrazine	0	0		0	3	3.0	24.7	
Fluoranthene	0	0		0	40	40.0	329	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	16.5	
Hexachlorocyclopentadiene	0	0		0	1	1.0	8.23	
Hexachloroethane	0	0		0	12	12.0	98.8	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	17,292	
Naphthalene	0	0		0	43	43.0	354	
Nitrobenzene	0	0		0	810	810	6,670	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	27,997	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	486	
Phenanthrene	0	0		0	1	1.0	8.23	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	214	
Aldrin	0	0		0	0.1	0.1	0.82	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	N/A	N/A	N/A	
Chlordane	0	0		0	0.0043	0.004	0.035	
4,4-DDT	0	0		0	0.001	0.001	0.008	
4,4-DDE	0	0		0	0.001	0.001	0.008	
4,4-DDD	0	0		0	0.001	0.001	0.008	
Dieldrin	0	0		0	0.056	0.056	0.46	
alpha-Endosulfan	0	0		0	0.056	0.056	0.46	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.036	0.036	0.3	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.0038	0.004	0.031	
Heptachlor Epoxide	0	0		0	0.0038	0.004	0.031	
Toxaphene	0	0		0	0.0002	0.0002	0.002	
Total Strontium	0	0		0	N/A	N/A	N/A	

☑ ***THH*** CCT (min): 720 PMF: 0.968 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	46.1	
Total Arsenic	0	0		0	10	10.0	82.3	
Total Barium	0	0		0	2,400	2,400	19,763	

Total Boron	0	0		0	3,100	3,100	25,527	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	4	4.0	32.9	
Dissolved Iron	0	0		0	300	300	2,470	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	8,234	
Total Mercury	0	0		0	0.050	0.05	0.41	
Total Nickel	0	0		0	610	610	5,023	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	1.98	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	24.7	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	823	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	46.9	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	272	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	560	
Methyl Bromide	0	0		0	100	100.0	823	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
Tetrachloroethylene	0	0		0	N/A	N/A	N/A	
Toluene	0	0		0	57	57.0	469	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	823	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	82,344	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	30	30.0	247	
2,4-Dichlorophenol	0	0		0	10	10.0	82.3	
2,4-Dimethylphenol	0	0		0	100	100.0	823	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	16.5	
2,4-Dinitrophenol	0	0		0	10	10.0	82.3	

2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	32,938	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	576	
Anthracene	0	0		0	300	300	2,470	
Benzidine	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	1,647	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	0.82	
2-Chloronaphthalene	0	0		0	800	800	6,588	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	8,234	
1,3-Dichlorobenzene	0	0		0	7	7.0	57.6	
1,4-Dichlorobenzene	0	0		0	300	300	2,470	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	4,941	
Dimethyl Phthalate	0	0		0	2,000	2,000	16,469	
Di-n-Butyl Phthalate	0	0		0	20	20.0	165	
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
Fluoranthene	0	0		0	20	20.0	165	
Fluorene	0	0		0	50	50.0	412	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	32.9	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	34	34.0	280	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	82.3	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	165	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.58	
Aldrin	0	0		0	N/A	N/A	N/A	
alpha-BHC	0	0		0	N/A	N/A	N/A	

beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	4.2	4.2	34.6	
Chlordane	0	0		0	N/A	N/A	N/A	
4,4-DDT	0	0		0	N/A	N/A	N/A	
4,4-DDE	0	0		0	N/A	N/A	N/A	
4,4-DDD	0	0		0	N/A	N/A	N/A	
Dieldrin	0	0		0	N/A	N/A	N/A	
alpha-Endosulfan	0	0		0	20	20.0	165	
Endosulfan Sulfate	0	0		0	20	20.0	165	
Endrin	0	0		0	0.03	0.03	0.25	
Endrin Aldehyde	0	0		0	1	1.0	8.23	
Heptachlor	0	0		0	N/A	N/A	N/A	
Heptachlor Epoxide	0	0		0	N/A	N/A	N/A	
Toxaphene	0	0		0	N/A	N/A	N/A	
Total Strontium	0	0		0	4,000	4,000	32,938	

☑ ***CRL*** CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	1.85	
Benzene	0	0		0	0.58	0.58	17.9	
Bromoform	0	0		0	7	7.0	216	

Carbon Tetrachloride	0	0		0	0.4	0.4	12.3	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	24.7	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	29.3	
1,2-Dichloroethane	0	0		0	9.9	9.9	305	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	27.8	
1,3-Dichloropropylene	0	0		0	0.27	0.27	8.33	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	617	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	6.17	
Tetrachloroethylene	0	0		0	10	10.0	308	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	17.0	
Trichloroethylene	0	0		0	0.6	0.6	18.5	
Vinyl Chloride	0	0		0	0.02	0.02	0.62	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	0.93	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	46.3	
Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.003	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.031	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.003	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.031	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.31	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.93	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	9.87	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	3.7	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.003	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	

1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	1.54	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	1.54	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	1.54	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.93	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.002	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.31	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	3.08	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.031	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.022	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.15	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	102	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	
Aldrin	0	0		0	0.0000008	8.00E-07	0.00002	
alpha-BHC	0	0		0	0.0004	0.0004	0.012	
beta-BHC	0	0		0	0.008	0.008	0.25	
gamma-BHC	0	0		0	N/A	N/A	N/A	
Chlordane	0	0		0	0.0003	0.0003	0.009	
4,4-DDT	0	0		0	0.00003	0.00003	0.0009	
4,4-DDE	0	0		0	0.00002	0.00002	0.0006	
4,4-DDD	0	0		0	0.0001	0.0001	0.003	
Dieldrin	0	0		0	0.000001	0.000001	0.00003	
alpha-Endosulfan	0	0		0	N/A	N/A	N/A	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	N/A	N/A	N/A	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.000006	0.000006	0.0002	
Heptachlor Epoxide	0	0		0	0.00003	0.00003	0.0009	
Toxaphene	0	0		0	0.0007	0.0007	0.022	
Total Strontium	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML	MDL	AML	MDL	IMAX	Units	Governing	WQBEL	Comments

Pollutants	(lbs/day)	(lbs/day)	AML	MDL	IMAX	Units	WQBEL	Basis	Comments
Total Arsenic	Report	Report	Report	Report	Report	µg/L	82.3	THH	Discharge Conc > 10% WQBEL (no RP)
Total Copper	Report	Report	Report	Report	Report	µg/L	18.3	AFC	Discharge Conc > 10% WQBEL (no RP)
Free Cyanide	Report	Report	Report	Report	Report	µg/L	28.8	AFC	Discharge Conc > 25% WQBEL (no RP)
Dissolved Iron	Report	Report	Report	Report	Report	µg/L	2,470	THH	Discharge Conc > 10% WQBEL (no RP)
Total Iron	Report	Report	Report	Report	Report	µg/L	12,713	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	157	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
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
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 Aluminum	983	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	46.1	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	19,763	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	10,613	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	2.23	µg/L	Discharge Conc < TQL
Total Chromium (III)	710	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	21.3	µg/L	Discharge Conc < TQL
Total Cobalt	124	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Total Lead	26.2	µg/L	Discharge Conc < TQL
Total Manganese	8,234	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.41	µg/L	Discharge Conc < TQL
Total Nickel	430	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	41.1	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	4.96	µg/L	Discharge Conc < TQL
Total Thallium	1.98	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	3.93	µg/L	Discharge Conc < TQL
Acrylonitrile	1.85	µg/L	Discharge Conc < TQL
Benzene	17.9	µg/L	Discharge Conc < TQL
Bromoform	216	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	12.3	µg/L	Discharge Conc < TQL
Chlorobenzene	823	µg/L	Discharge Conc < TQL
Chlorodibromomethane	24.7	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	23,584	µg/L	Discharge Conc < TQL

Chloroform	46.9	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	29.3	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	305	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	272	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	27.8	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	8.33	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	560	µg/L	Discharge Conc < TQL
Methyl Bromide	721	µg/L	Discharge Conc < TQL
Methyl Chloride	36,687	µg/L	Discharge Conc < TQL
Methylene Chloride	617	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	6.17	µg/L	Discharge Conc < TQL
Tetrachloroethylene	308	µg/L	Discharge Conc < TQL
Toluene	469	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	823	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	3,931	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	17.0	µg/L	Discharge Conc < TQL
Trichloroethylene	18.5	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.62	µg/L	Discharge Conc < TQL
2-Chlorophenol	247	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	82.3	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	823	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	16.5	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	82.3	µg/L	Discharge Conc < TQL
2-Nitrophenol	10,482	µg/L	Discharge Conc < TQL
4-Nitrophenol	3,014	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	210	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.93	µg/L	Discharge Conc < TQL
Phenol	32,938	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	46.3	µg/L	Discharge Conc < TQL
Acenaphthene	109	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	2,470	µg/L	Discharge Conc < TQL
Benzidine	0.003	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.031	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.003	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.031	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.31	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.93	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	1,647	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	9.87	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	354	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.82	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	6,588	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	3.7	µg/L	Discharge Conc < TQL

Dibenzo(a,h)Anthrancene	0.003	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	1,074	µg/L	Discharge Conc ≤ 25% WQBEL
1,3-Dichlorobenzene	57.6	µg/L	Discharge Conc ≤ 25% WQBEL
1,4-Dichlorobenzene	956	µg/L	Discharge Conc ≤ 25% WQBEL
3,3-Dichlorobenzidine	1.54	µg/L	Discharge Conc < TQL
Diethyl Phthalate	4,941	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	3,276	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	144	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	1.54	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	1.54	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.93	µg/L	Discharge Conc < TQL
Fluoranthene	165	µg/L	Discharge Conc < TQL
Fluorene	412	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.002	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.31	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	6.55	µg/L	Discharge Conc < TQL
Hexachloroethane	3.08	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.031	µg/L	Discharge Conc < TQL
Isophorone	280	µg/L	Discharge Conc < TQL
Naphthalene	183	µg/L	Discharge Conc ≤ 25% WQBEL
Nitrobenzene	82.3	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.022	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.15	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	102	µg/L	Discharge Conc < TQL
Phenanthrene	6.55	µg/L	Discharge Conc < TQL
Pyrene	165	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.58	µg/L	Discharge Conc < TQL
Aldrin	0.00002	µg/L	Discharge Conc < TQL
alpha-BHC	0.012	µg/L	Discharge Conc < TQL
beta-BHC	0.25	µg/L	Discharge Conc < TQL
gamma-BHC	1.24	µg/L	Discharge Conc < TQL
delta BHC	N/A	N/A	No WQS
Chlordane	0.009	µg/L	Discharge Conc < TQL
4,4-DDT	0.0009	µg/L	Discharge Conc < TQL
4,4-DDE	0.0006	µg/L	Discharge Conc < TQL
4,4-DDD	0.003	µg/L	Discharge Conc < TQL
Dieldrin	0.00003	µg/L	Discharge Conc < TQL
alpha-Endosulfan	0.29	µg/L	Discharge Conc < TQL
Endosulfan Sulfate	165	µg/L	Discharge Conc < TQL
Endrin	0.11	µg/L	Discharge Conc < TQL
Endrin Aldehyde	8.23	µg/L	Discharge Conc < TQL
Heptachlor	0.0002	µg/L	Discharge Conc < TQL
Heptachlor Epoxide	0.0009	µg/L	Discharge Conc < TQL
PCB-1016	N/A	N/A	No WQS
PCB-1221	N/A	N/A	No WQS
PCB-1232	N/A	N/A	No WQS
PCB-1242	N/A	N/A	No WQS
PCB-1248	N/A	N/A	No WQS

PCB-1254	N/A	N/A	No WQS
PCB-1260	N/A	N/A	No WQS
Toxaphene	0.002	µg/L	Discharge Conc < TQL
Gross Alpha	N/A	N/A	No WQS
Total Beta	N/A	N/A	No WQS
Radium 226/228	N/A	N/A	No WQS
Total Strontium	32,938	µg/L	Discharge Conc < TQL
Total Uranium	N/A	N/A	No WQS

Attachment 5 – WET Summary and Evaluation

WET Summary and Evaluation

Facility Name	Dornick Point WWTP
Permit No.	PA0026034
Design Flow (MGD)	12
Q_{7-10} Flow (cfs)	138.774
PMF_a	0.14
PMF_c	0.968

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	11/9/20	5/18/21	5/16/22	10/30/23
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	11/9/20	5/18/21	5/16/22	10/30/23
Ceriodaphnia	Reproduction	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	11/10/20	5/18/21	5/17/22	10/31/23
Pimephales	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	11/10/20	5/18/21	5/17/22	10/31/23
Pimephales	Growth	PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type	**Chronic**
TIWC	**12** % Effluent
Dilution Series	**3, 6, 12, 56, 100** % Effluent
Permit Limit	**None**
Permit Limit Species	

Attachment 6 – TRC_CALC

PA0026034_TRC_CALC_UPDATE

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

138.774	= Q stream (cfs)	0.5	= CV Daily
12	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 2.404	1.3.2.iii	WLA cfc = 2.336
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.896	5.1d	LTA_cfc = 1.358

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	

WLA afc	(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...
	...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...
	...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)