pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0026778**
Facility Type	**Municipal**	APS ID	**802596**
Major / Minor	**Major**	Authorization ID	**1218237**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Windber Area Authority**	Facility Name	**Ingleside STP**
Applicant Address	1700 Stockholm Avenue	Facility Address	407 Old Walsall Road
	Windber, PA 15963-2059		Johnstown, PA 15904
Applicant Contact	Mr. Dennis Mash	Facility Contact	Same as Applicant
Applicant Phone	814.467.5574	Facility Phone	Same as Applicant
Client ID	62349	Site ID	450491
Ch 94 Load Status	Not Overloaded	Municipality	Richland Township
Connection Status		County	Cambria
Date Application Received	February 21, 2018	EPA Waived?	No
Date Application Accepted	February 24, 2018	If No, Reason	Major Facility

Purpose of Application: Application for a renewal of an existing NPDES Permit for the discharge of treated Sewage.

Summary of Review

The applicant has applied for a renewal of an existing NPDES Permit, Permit No. PA0026778. The permit was previously issued by the Department on August 27, 2013 and later amended on May 31, 2017. The permit expired on August 31, 2018.

WQM Permit Amendment No. 1169402 A-6 was issued on March 11, 2005, which authorized the construction of a new STP with a hydraulic design capacity of 4.0 MGD and an organic capacity of 6,338 lbs BOD_5 per day.

The Authority submitted an ACT 537 Special Study in December 2015. The study requested a STP re-rating from 4.0 to 4.95 MGD. On April 14, 2016, Department approved that plan. The hydraulic design capacity of the STP was increased to 4.95 MGD to accommodate wet weather flow resulting from I&I within the sanitary collection system. Effluent limitations were determined using the existing discharge rate of 4.0 MGD. The organic design capacity remained unchanged at 6,338 lbs BOD_5 per day.

The existing treatment process consists of four (4) SBRs, two (2) aerobic digester, UV disinfection and a belt filter press. Dewatered solids are disposed of at a sanitary landfill. Two of the original aerated lagoons were retained for use as wet weather basins providing storage capacity of 8.3 and 7.0 million gallons for a total storage capacity of 15.3 million gallons.

The receiving stream, Stonycreek River (WWF) and UNT to Stonycreek River (CWF), is located in State Watershed No.18-E.

Storm Water Outfalls 008 & 009 are again permitted for the discharge of un-contaminated storm water runoff from areas in

Approve	Deny	Signatures	Date
X		William C. Mitchell, E.I.T. / Project Manager	February 9, 2021
X		Christopher Kriley, P.E. / Clean Water Program Manager	February 9, 2021

Summary of Review

and around the treatment plant. These outfalls are subject to the Departments current storm water conditions listed in Part C.IV of the Permit.

The applicant has complied with Act 14 Notifications. No comments were received.

Public Participation

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

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	4.0
Latitude	40º 15' 39.00"	Longitude	-78º 53' 39.00"
Quad Name	Johnstown	Quad Code	1614
Wastewater Description:	Sewage Effluent		
Receiving Waters	Stonycreek River (WWF)	Stream Code	45084
NHD Com ID	123720409	RMI	8.84
Drainage Area	396	Yield (cfs/mi^2)	0.0353
Q_{7-10} Flow (cfs)	14.0	Q_{7-10} Basis	Low-Flow statistics for Pennsylvania Streams, Station #0304000
Elevation (ft)	1262.0	Slope (ft/ft)	0.005
Watershed No.	18-E	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use	NONE	Exceptions to Criteria	NONE
Assessment Status	Impaired		
Cause(s) of Impairment	CAUSE UNKNOWN		
Source(s) of Impairment	SOURCE UNKNOWN		
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	Saltsburg Borough		
PWS Waters	Conemaugh River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: None

Other Comments:

Kiskiminetas-Conemaugh River Watershed TMDL

A TMDL for the Kiskiminetas-Conemaugh River Watershed ("Kiski-Conemaugh TMDL")—of which the Stonycreek River is a part—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 Ingleside STP was assigned wasteload allocations (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 wasteload allocations 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 Ingleside STP'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 wasteload allocations and the applicable WQBELs are summarized in the table below.

Table 5. 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) for Aluminum, Iron and Manganese were significantly less than the proposed WQBELs found in Table 5 above. As a result, no schedule of compliance is needed and the new TMDL WQBELs will take effect upon permit issuance.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	006	Design Flow (MGD)	0
Latitude	40º 15' 36.00"	Longitude	-78º 53' 33.00"
Quad Name	Johnstown	Quad Code	1614
Wastewater Description:	Under drain leak detection system located beneath Equalization Basin No. 2.		
Receiving Waters	Stonycreek River (WWF)	Stream Code	45084
NHD Com ID		RMI	8.835
Drainage Area	396	Yield (cfs/mi^2)	0.0353
Q_{7-10} Flow (cfs)	14.00	Q_{7-10} Basis	Low-Flow statistics for Pennsylvania Streams, Station #0304000
Elevation (ft)	1261	Slope (ft/ft)	0.005
Watershed No.	18-E	Chapter 93 Class.	CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use	NONE	Exceptions to Criteria	NONE
Assessment Status	Impaired		
Cause(s) of Impairment	HABITAT ALTERATIONS, METALS		
Source(s) of Impairment	ACID MINE DRAINAGE, ACID MINE DRAINAGE		
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	Saltsburg Borough		
PWS Waters	Conemaugh River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: NONE

Other Comments: This Outfall is associated with an under drain leak detection system. The discharge is to Stonycreek River, which is part of the Kiskiminetas-Conemaugh River Watershed that has a Final TMDL and is impaired by metals and pH. The design flow from this outfall is 0 and it is not expected to contribute to the stream impairment for which abandoned mine drainage is source of such impairment. No monitoring for T. Iron, T. Manganese and T. Aluminum will be imposed on this outfall.

The Department will again impose quarterly monitoring for flow, pH, CBOD5, TSS and Fecal Coliform under the authority of §92a.61(b).

Discharge, Receiving Waters and Water Supply Information

Outfall No.	007	Design Flow (MGD)	0
Latitude	40º 15' 42.00"	Longitude	-78º 53' 40.00"
Quad Name	Johnstown	Quad Code	1614
Wastewater Description:	Under drain leak detection system located beneath Equalization Basin No. 1.		
Receiving Waters	UNT to Stonycreek River (CWF)	Stream Code	45218
NHD Com ID		RMI	0.11
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	18-E	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	CAUSE UNKNOWN		
Source(s) of Impairment	SOURCE UNKNOWN		
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	Saltsburg Borough		
PWS Waters	Conemaugh River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: NONE

Other Comments: This Outfall is associated with an under drain leak detection system. The discharge is to UNT to Stonycreek River, which is part of the Kiskiminetas-Conemaugh River Watershed that has a Final TMDL and is impaired by metals and pH. The design flow from this outfall is 0 and it is not expected to contribute to the stream impairment for which abandoned mine drainage is source of such impairment. No monitoring for T. Iron, T. Manganese and T. Aluminum will be imposed on this outfall.

The Department will again impose quarterly monitoring for flow, pH, CBOD5, TSS and Fecal Coliform under the authority of §92a.61(b).

Treatment Facility Summary

Treatment Facility Name: Ingleside STP

WQM Permit No.	Issuance Date
1169402	
1169402 A-6	March 11, 2005

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary with Ammonia Reduction	Sequencing Batch Reactor	Ultraviolet	2.422 (2017)

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
4.9	6,338	Not Overloaded		Landfill

Changes Since Last Permit Issuance: NONE

Other Comments: N/A

Compliance History

Operations Compliance Check Summary Report

Facility: Ingleside STP

NPDES Permit No.: PA0026778

Compliance Review Period: 1/2016 – 1/2021

Inspection Summary:

INSP ID	INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC
3088163	09/29/2020	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted
2976792	11/07/2019	Routine/Partial Inspection	PA Dept of Environmental Protection	No Violations Noted
2891300	04/11/2019	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted
2721159	03/14/2018	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted
2607238	06/19/2017	Routine/Partial Inspection	PA Dept of Environmental Protection	No Violations Noted
2600858	03/21/2017	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted
2504481	05/17/2016	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted

Violation Summary:

VIOL ID	VIOLATION DATE	VIOLATION TYPE	VIOLATION TYPE DESC	RESOLVED DATE
897183	09/29/2020	94.21	Wasteload Management - Failure to implement required measures for an existing overload	10/18/2020
852060	04/11/2019	92A.41(A)13B	NPDES - Unauthorized bypass occurred	06/10/2019
814351	03/14/2018	92A.41(A)13B	NPDES - Unauthorized bypass occurred	04/23/2018
787218	03/21/2017	92A.44	NPDES - Violation of effluent limits in Part A of permit	06/05/2017
787219	03/21/2017	92A.41(A)13B	NPDES - Unauthorized bypass occurred	06/05/2017
764677	05/17/2016	CSL201	CSL - Unauthorized, unpermitted discharge of sewage to waters of the Commonwealth	07/26/2016

Open Violations by Client ID:

No open violations for Client ID 62349

Enforcement Summary:

ENF ID	ENF TYPE	ENF TYPE DESC	EXECUTED DATE	ENF FINALSTATUS	ENF CLOSED DATE
389386	NOV	Notice of Violation	10/18/2020		
375922	NOV	Notice of Violation	06/10/2019		
363261	NOV	Notice of Violation	04/23/2018	Administrative Close Out	08/30/2019
353941	NOV	Notice of Violation	06/05/2017	Administrative Close Out	08/30/2019
345588	NOV	Notice of Violation	07/26/2016	Administrative Close Out	08/27/2019

DMR Violation Summary:

MONITORING START DATE	MONITORING END DATE	NON COMPLIANCE TYPE	PARAMETER	SAMPLE VALUE	PERMIT VALUE	STATISTICAL BASE CODE
09/01/2016	09/30/2016	Violation of permit condition	Fecal Coliform	2419.6	1000	Instantaneous Maximum

Compliance Status:

Completed by: John Murphy

Completed date: 1/5/2021

In an email dated February 4, 2021, Mr. John Murphy made the following comments pertaining to the above Violation Dated 09/29/2020, Violation Type - 94.21, Violation Description - Wasteload Management - Failure to implement required measures for an existing overload:

- According to the 2019 Chapter 94 Report they are not currently or projected to be hydraulically overloaded. In February 2016 they reported being organically overloaded for the month. The number reported that month appears to be an outlier and I would suspect a sampling error.

- Lisa issued them an NOV in September of 2020 because of an unpermitted bypass from one of the lagoons. The violation type she entered into eFacts was the 'Wasteload Management - Failure to implement required measures for an existing overload'. She may have entered this type of violation by mistake. I could change it to 'An Unauthorized Bypass Occurred", which is the violation type she used on previous bypasses from the lagoon.

- The Department may pursue a CACP because of these past violations.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 4.0
Latitude 40º 15' 39.00" **Longitude** -78º 53' 39.00"
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)
	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
Total Suspended Solids	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 attached WQAM63 Modeling Data confirms that the above Technology-Based Limitation for $CBOD_5$ is applicable.

Water Quality-Based Limitations

The discharge was previously modeled using WQAM63 to evaluate the $CBOD_5$, Ammonia Nitrogen and Dissolved Oxygen parameters. Because there have been no changes to the discharge or the receiving stream, the limits for those parameters are based on the previously approved modeling results (output files attached). It is unnecessary to remodel those three parameters using the current WQM 7.0.

A “Reasonable Potential Analysis” (Attachment Toxic Management Spreadsheet) was conducted. No limitations were determined through water quality modeling, using DEPs Toxic Management Spreadsheet Version 1.1. The TMS recommended Monitoring for total copper, total selenium and total zinc, because the discharge concentration is greater than 10% of the WQBEL.

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

Parameter	Limit (mg/l)	SBC	Model
Ammonia-Nitrogen (May 1 – Oct 31)	7.8	Average Monthly	WQAM63
Ammonia-Nitrogen (Nov 1 – Apr 30)	23.0	Average Monthly	WQAM63

Best Professional Judgment (BPJ) Limitations

Comments: A Dissolved Oxygen minimum limitation of 4.0 mg/L will be implemented based on the standard in 25 PA Code Chapter 93 and best professional judgment.

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.

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

Additional Considerations:

Ultraviolet (UV) disinfection is used therefore Total Residual Chlorine (TRC) limits are not applicable. Routine monitoring of UV Transmittance will be at the same monitoring frequency that is used for TRC.

For pH, Dissolved Oxygen (DO) and UV Transmittance, a monitoring frequency 1/day has been imposed. In general, less frequent monitoring may be established only when the permittee demonstrates that there will be no discharge on days where monitoring is not required.

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). A 1/quarter monitor and report requirement for Total N & Total P has been added to the permit as per Chapter 92.a.61.

Mass loading limits are applicable for publicly owned treatment works. Current policy requires average monthly mass loading limits be established for CBOD5, TSS, and NH_3-N and average weekly mass loading limits be established for CBOD5 and TSS. Average monthly mass loading limits (lbs/day) are based on the formula: design flow (MGD) x concentration limit (mg/L) x conversion factor (8.34).

For POTWs with design flows greater than 2,000 GPD influent BOD_5 and TSS monitoring must be established in the permit, and the monitoring should be consistent with the same frequency and sample type as is used for other effluent parameters.

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. Please note that Monitoring Requirements were changed for Flow to 2/week Metered to be consistent with the guidance.

Total Dissolved Solids (TDS) and its Major Constituents

Total Dissolved Solids (TDS) and its major constituents including sulfate, chloride, and bromide have emerged as pollutants of concern in several major watersheds in the Commonwealth. The conservative nature of these solids allows them to accumulate in surface waters and they may remain a concern even if the immediate downstream public water supply is not directly impacted. Bromide has been linked to formation of disinfection byproducts at increased levels in public water systems.

Based on these concerns and under the authority of §92a.61, DEP has determined it should implement increased monitoring in NPDES permits for these parameters: TDS, sulfate, chloride, bromide, and 1,4-dioxane.

Increased monitoring in NPDES permits will only occur when the following conditions are met:

- Where the concentration of TDS in the discharge exceeds 1,000 mg/L, or the net TDS load from a discharge exceeds 20,000 lbs/day, and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and

report for TDS, sulfate, chloride, and bromide. Discharges of 0.1 MGD or less should monitor and report for TDS, sulfate, chloride, and bromide if the concentration of TDS in the discharge exceeds 5,000 mg/L.

- Where the concentration of bromide in a discharge exceeds 1 mg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for bromide. Discharges of 0.1 MGD or less should monitor and report for bromide if the concentration of bromide in the discharge exceeds 10 mg/L.

- Where the concentration of 1,4-dioxane (CAS 123-91-1) in a discharge exceeds 10 µg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for 1,4-dioxane. Discharges of 0.1 MGD or less should monitor and report for 1,4-dioxane if the concentration of 1,4-dioxane in the discharge exceeds 100 µg/L.

Monitoring is not required for TDS, sulfate, chloride, bromide & 1,4-dioxane. Concentrations of bromide is less than 1 mg/L (application reports < 0.035 mg/L), TDS is less than 1000 mg/L (application reports 298 mg/L) & 1,4-dioxane is less than 10 ug/L (application reports < 3.9 ug/L).

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%, 66%, 31%, 16%, and 8%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 0.31.

Summary of Four Most Recent Test Results

TST Data Analysis

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

Test Date	*Ceriodaphnia* Results (Pass/Fail)		*Pimephales* Results (Pass/Fail)	
	Survival	Reproduction	Survival	Growth
10/28/2014	PASS	PASS	PASS	PASS
10/20/2015	PASS	PASS	PASS	PASS
11/22/2016	PASS	PASS	PASS	PASS
10/03/2017	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): **0.66** Chronic Partial Mix Factor (PMFc): **1.0**

1. Determine IWC – Acute (IWCa):

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

[(4.0 MGD x 1.547) / ((14.0 cfs x 0.66) + (4.0 MGD x 1.547))] x 100 = **40.1%**

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 Tests**

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

TIWCa = IWCa / 0.3 = 100.0**%**

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

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

[(4.0 MGD x 1.547) / ((14.0 cfs x 1.0) + (4.0 MGD x 1.547))] x 100 = **31.0%**

3. Determine Dilution Series

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

Dilution Series = 100%, 66%, 31%, 16%, and 8%.

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" (362-0400-001), 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	Daily Maximum	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/week	Metered
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0	XXX	XXX	XXX	1/day	Grab
CBOD5	830	1250 Wkly Avg	XXX	25.0	37.5	50	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS	1000	1500 Wkly Avg	XXX	30.0	45.0	60	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	765	XXX	XXX	23.0	XXX	46	2/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	260	XXX	XXX	7.8	XXX	15	2/week	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Aluminum	XXX	XXX	XXX	0.75	0.75 Daily Max	XXX	1/week	24-Hr Composite
Total Copper	Report	Report	XXX	Report	Report Daily Max	XXX	1/week	24-Hr Composite
Total Iron	XXX	XXX	XXX	1.5	3.0 Daily Max	XXX	1/week	24-Hr Composite
Total Manganese	XXX	XXX	XXX	1.0	2.0 Daily Max	XXX	1/week	24-Hr Composite
Total Selenium	Report	Report	XXX	Report	Report Daily Max	XXX	1/week	24-Hr Composite
Total Zinc	Report	Report	XXX	Report	Report Daily Max	XXX	1/week	24-Hr Composite

Compliance Sampling Location: Outfall # 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" (362-0400-001), SOPs and/or BPJ.

Outfall 006, 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	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	XXX	Report Daily Max	XXX	XXX	XXX	XXX	1/quarter	Measured
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
CBOD5	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
TSS	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab

Compliance Sampling Location: Outfall # 006

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" (362-0400-001), SOPs and/or BPJ.

Outfall 007, 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	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	XXX	Report Daily Max	XXX	XXX	XXX	XXX	1/quarter	Measured
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
CBOD5	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
TSS	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab

Compliance Sampling Location: Outfall # 007

Other Comments: N/A

Low-Flow Statistics for Pennsylvania Streams

Developed by the U.S. Geological Survey for the
Pennsylvania Department of Environmental Protection

Pennsylvania Low-Flow Statistics - Query Results

LOW-FLOW STATISTICS

[All flow statistics in cubic feet per second (ft^3/s)]
Query run on 06/17/02

Mouse over or click on table headings to view definition of statistic

STREAM NAME: Stony Creek **GAGE OR BRIDGE SITE:** bridge **REFERENCE GAGE:** 03040000	**COUNTY:** SOMERSET **USGS QUAD:** Johnstown **PERIOD OF RECORD[1]:** 1940-95	**LATITUDE:** 40° 16' 30" **LONGITUDE:** 78° 54' 16" **DRAINAGE AREA (sq. mi.):** 394

$Q_{1,10}$	$Q_{7,10}$	$Q_{30,10}$	MEAN	MEDIAN	HARMONIC MEAN
12	14	19	580.08	284.80	120.36

FLOW DURATION TABLE (Probability of Exceedance)										
P5	**P10**	**P20**	**P30**	**P40**	**P50**	**P60**	**P70**	**P80**	**P90**	**P95**
2087.94	1415.25	847.41	576.59	402.74	284.80	199.18	136.28	88.24	49.45	29.44

[1]Period of Record for climatic year, April 1 through March 31

** Statistic has not been computed

COMMONWEALTH OF PENNSYLVANIA
Department of Environmental Protection
Southwest Regional Office
July 7, 2000
8-412-442-5219

SUBJECT: First Use Survey
Stonycreek River
Richland Township, Cambria County
Stream Code: 45804
SWP: 18E

TO: Karen Crowley
Sanitary Engineer
Water Management

FROM: Abbey Falcone
Water Pollution Biologist
Water Management

On April 25, 2000, Water Pollution Biologist Abbey Falcone conducted a point of first use survey of Stonycreek River in Cambria County (see attached map). The objective of this survey was to determine at what point the stream supports an aquatic use. The surveys were performed using a D-net 0.3 m wide with 0.8 mm pores. The substrate was disturbed until an aquatic use was found.

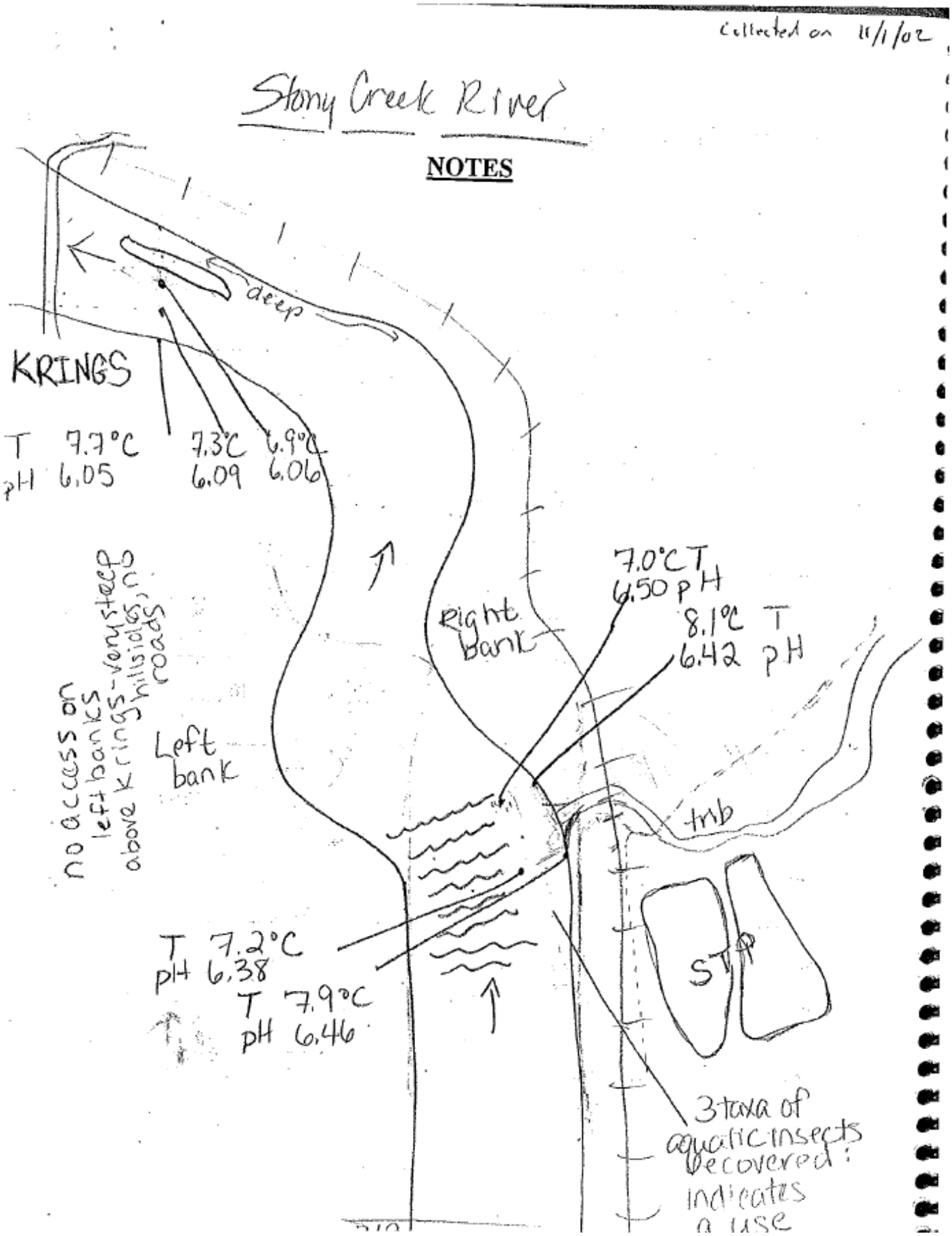
The first station is located at the Windber Sewage Treatment Plant, just upstream of its outfall pipe. The flow in this segment of Stonycreek is high and extremely fast. The main part of the stream channel is not wadeable, thereby making it difficult to sample the benthic community. The few shallow areas toward the stream bank were sampled with little success. No aquatic macroinvertebrates were recovered. The scouring effect of the rapid water flow does not allow for the colonization of aquatic insects. It is extremely difficult, if not impossible, for anything to adhere to the boulders that dominate the stream substrate. Water quality does not appear to be a limiting factor in the presence of an aquatic insect community but the hydrology does.

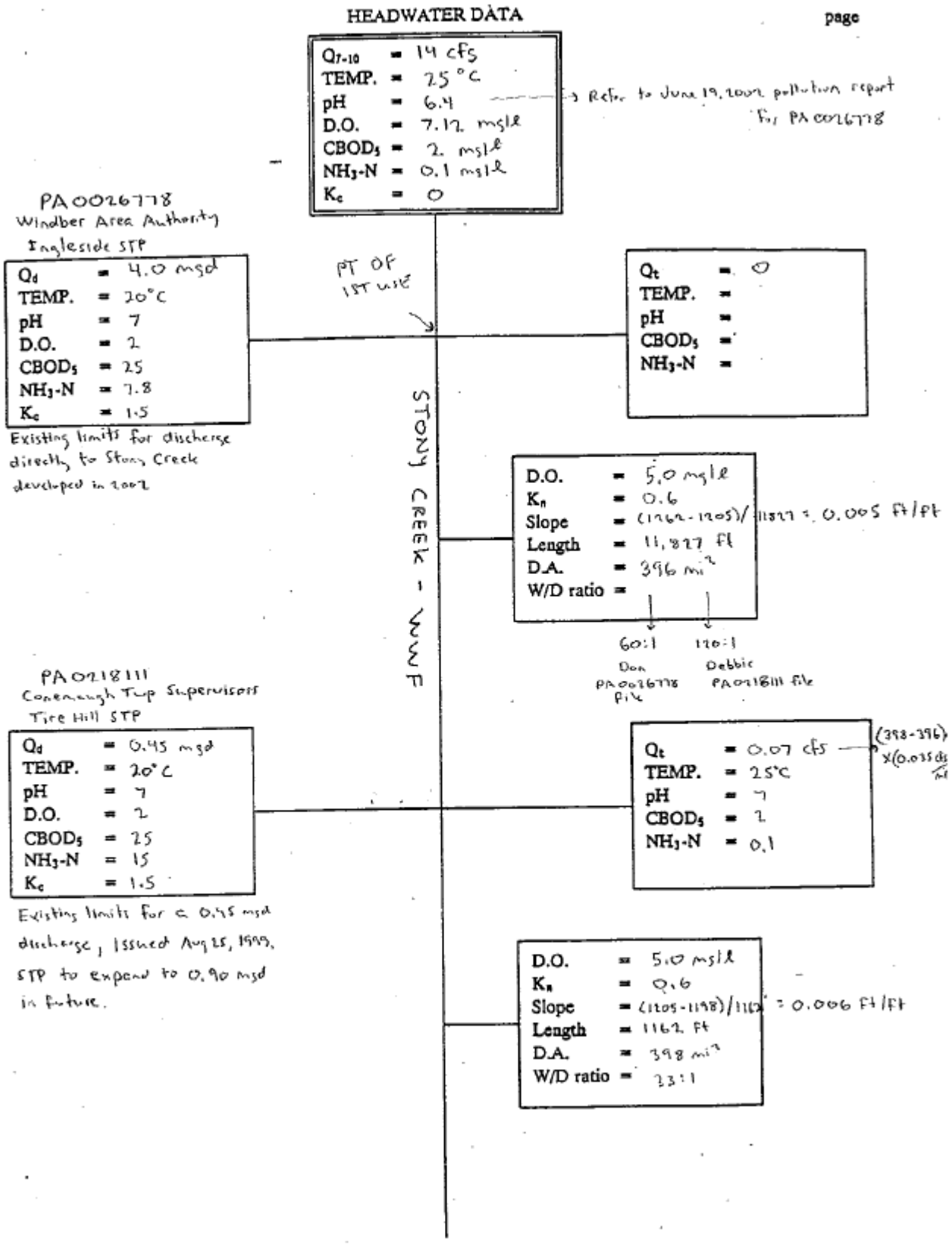
Approximately 1.5 miles downstream, Stonycreek becomes less rapid and easier to wade, although still impossible to get to the center of the stream channel. At this point, hydropsychidae (caddisflies) and macromiidae (dragonflies) were found, indicating an aquatic use to protect. Because this is the closest point that is wadeable and hydrologically suitable for the aquatic insects, it should be substituted as the point of first use for Windber Sewage Treatment Plant. The reason for this is the theory that the first station would also support these insects if it was hydrologically conducive to their colonization and

survival. It is the policy of this Department to determine whether a stream's aquatic use is compromised due to water quality and not on its natural hydrology. Therefore, the point of first use for Windber Sewage Treatment Plant is the Stonycreek River.

cc: T. Proch
File

AF:kld


Collected on 11/1/02
Stony Creek River
NOTES
deep
KRINGS
T 7.7°C 7.3°C 6.9°C
pH 6.05 6.09 6.06
no access on left banks above Krings-very steep hillsides, no roads
Left bank
Right bank
7.0°C T
6.50 pH
8.1°C T
6.42 pH
trib
STP
T 7.2°C
pH 6.38
T 7.9°C
pH 6.46
3 taxa of aquatic insects recovered: indicates a use


HEADWATER DATA
page
Q_{7-10} = 14 cfs
TEMP. = 25 °C
pH = 6.4
D.O. = 7.12 mg/l
$CBOD_5$ = 2. mg/l
NH_3-N = 0.1 mg/l
K_c = 0
Refer to June 19, 2002 pollution report for PA0026778
PA0026778
Windber Area Authority
Ingleside STP
Q_d = 4.0 mgd
TEMP. = 20°C
pH = 7
D.O. = 2
$CBOD_5$ = 25
NH_3-N = 7.8
K_c = 1.5
Existing limits for discharge directly to Stony Creek developed in 2002
PT OF 1ST USE
Q_t = 0
TEMP. =
pH =
$CBOD_5$ =
NH_3-N =
STONY CREEK - WWF
D.O. = 5.0 mg/l
K_n = 0.6
Slope = (1162-1205)/11827 = 0.005 Ft/Ft
Length = 11,827 Ft
D.A. = 396 mi²
W/D ratio =
60:1
Don PA0026778 file
120:1
Debbie PA0218111 file
PA0218111
Conemaugh Twp Supervisors
Tire Hill STP
Q_d = 0.45 mgd
TEMP. = 20°C
pH = 7
D.O. = 2
$CBOD_5$ = 25
NH_3-N = 15
K_c = 1.5
Existing limits for a 0.45 mgd discharge, issued Aug 25, 1999. STP to expand to 0.90 mgd in future.
Q_t = 0.07 cfs
(398-396) x(0.035 cfs/mi²)
TEMP. = 25°C
pH = 7
$CBOD_5$ = 2
NH_3-N = 0.1
D.O. = 5.0 mg/l
K_n = 0.6
Slope = (1205-1198)/1162 = 0.006 Ft/Ft
Length = 1162 Ft
D.A. = 398 mi²
W/D ratio = 23:1

FILE: c:\untitled.wqm

Default Data

a. Stream Values

1	Q1-10/Q7-10 ratio	.64
2	Q30-10/Q7-10 ratio	1.36
3	Temperature	25
4	pH	6.4
5	C-BOD5	2
6	NH3-N	0
7	D.O. Saturation (%)	.85
8	D.O. Goal	5
9	Width/Depth ratio	60
10	KC...(Headwaters only!)	0
11	KN	.6

b. Discharge Values (30-day avgs.)

12	C-BOD5	25
13	NH3-N	7.8
14	Effluent D.O.	2
15	Effluent Temp	20
16	KC	1.5
17	Balanced Technology(1=y 0=no)	0

FILE: c:\untitled.wqm

Ingleside STP - Tire Hill STP Evaluation Existing Flows and Limits Warm Period U
niform Treatment

REACH # 2
Headwaters and Tributary data

No. of Reaches : 2

Rh	Q7-10 (cfs)	T (c)	pH (su)	DO (mg/l)	CBOD5 (mg/l)	NH3-N (mg/l)
HW	14.0000	25	6.4	7.12	2	.1
1	0.0000					
2	0.0700	25	6.4	7.12	2	.1

(WQAM63.EXE) Release 1.2 06-12-2003 08:30:57

FILE: c:\untitled.wqm

Ingleside STP - Tire Hill STP Evaluation Existing Flows and Limits Warm Period U niform Treatment

Stream Characteristics

Rh	Q7-10 (cfs)	T (c)	pH (su)	DO (mg/l)	CBOD5 (mg/l)	NH3-N (mg/l)
1	14	25	6.4	7.12	2	.1
2	14.07	25	6.4	7.12	2	.1

Q 1-10/Q 7-10 = .64
Q 30-10/Q 7-10 = 1.36

FILE: c:\untitled.wqm

Ingleside STP - Tire Hill STP Evaluation Existing Flows and Limits Warm Period U niform Treatment

DISCHARGE # 2
Discharger Data
Q7-10 Design Conditions

Rh	FLOW (MGD)	T (c)	pH (su)	DO (mg/l)	CBOD5 (mg/l)	NH3-N (mg/l)	KC (1/days)
1	4.0000	20	7	2	25	7.8	1.5
2	0.4500	20	7	2	25	15	1.5

(WQAM63.EXE) Release 1.2 06-12-2003 08:31:41

FILE: c:\untitled.wqm

Ingleside STP - Tire Hill STP Evaluation Existing Flows and Limits Warm Period U
niform Treatment

REACH # 2
Reach Characteristics

Rh	D.O. GOAL	KN (/D)	RCH. SL. (FT/FT)	RCH. LEN. (FT.)	DRAIN AREA (MI^2)	W/D
1	5	.6	0.00500	11827	396	60
2	5	.6	0.00600	1162	398	33

FILE: c:\untitled.wqm

Ingleside STP - Tire Hill STP Evaluation Existing Flows and Limits Warm Period U
niform Treatment

REACH # 2
Reach Characteristics

Rh	KR (/D)	TT (Days)
1	0	0
2	0	0

(WQAM63.EXE) Release 1.2 06-12-2003 08:32:46

FILE: c:\untitled.wqm

Ingleside STP - Tire Hill STP Evaluation Existing Flows and Limits Warm Period Uniform Treatment

NH3-N Discharge Allocations at Q30-10 (Uniform)

DIS	Q (mgd)	BASE. CONC. (mg/l)	MULT. CONC. (mg/l)	CRIT. RCH.	PCT. RED. (%)	NH3-N CRIT. (mg/l)
1	4.0000	7.80	7.80	0	0	1.98
2	0.4500	15.00	15.00	0	0	1.98

FILE: c:\untitled.wqm

Ingleside STP - Tire Hill STP Evaluation Existing Flows and Limits Warm Period Uniform Treatment

NH3-N Discharge Allocations at Q1-10 (Uniform)

DIS	Q (mgd)	BASE. CONC. (mg/l)	MULT. CONC. (mg/l)	CRIT. RCH.	PCT. RED. (%)	NH3-N CRIT. (mg/l)
1	4.0000	15.60	15.60	0	0	9.53
2	0.4500	30.00	30.00	0	0	9.59

(WQAM63.EXE) Release 1.2 06-12-2003 08:33:05

FILE: c:\untitled.wqm

Ingleside STP - Tire Hill STP Evaluation Existing Flows and Limits Warm Period U
niform Treatment

D.O. Allocations (Uniform)

DIS #	Q (MGD)	---NH3-N--- IND. Conc. (mg/l)	CUM. Conc. (mg/l)	---CBOD5---- IND. Conc. (mg/l)	CUM. Conc. (mg/l)	CRIT. RCH.	PCT. REM. (%)
1	4.0000	7.8	7.8	25	25	0	0
2	0.4500	15	15	25	25	0	0

FILE: c:\untitled.wqm

Ingleside STP - Tire Hill STP Evaluation Existing Flows and Limits Warm Period U
niform Treatment

(Total) Discharge = 4 MGD

Temp	= 23.5	pH	= 6.5	Width	= 63.20
CBOD-5	= 9.05	NH3-N	= 2.46	Depth	= 1.05
D.O.	= 5.55	D.O. Goal	= 5	Velocity	= 0.303
KC'	= 1.178	KN	= .6	W/D RATIO	= 60
KR	= 10.349	(TSIVOGLOU)			

Dis. 1 Rch. 1 Trvl Time: .451

Tr.Tm. (Days)	CBOD-5 (mg/l)	NH3-N (mg/l)	D.O. (mg/l)
0.045	8.50	2.37	5.72
0.090	7.99	2.29	5.88
0.135	7.51	2.21	6.03
0.181	7.05	2.14	6.17
0.226	6.63	2.06	6.29
0.271	6.23	1.99	6.42
0.316	5.85	1.92	6.53
0.361	5.50	1.85	6.64
0.406	5.16	1.79	6.74
0.451	4.85	1.73	6.83

(WQAM63.EXE) Release 1.2 06-12-2003 08:33:22

FILE: c:\untitled.wqm

Ingleside STP - Tire Hill STP Evaluation Existing Flows and Limits Warm Period U
niform Treatment

(Total)Discharge = 4.45 MGD

Temp	= 23.4	pH	= 6.5	Width	= 46.93
CBOD-5	= 5.51	NH3-N	= 2.16	Depth	= 1.42
D.O.	= 6.67	D.O. Goal	= 5	Velocity	= 0.314
KC'	= 1.124	KN	= .6	W/D RATIO	= 33
KR	= 12.859	(TSIVOGLOU)			

Dis. 2 Rch. 2 Trvl Time: .043

Tr.Tm. (Days)	CBOD-5 (mg/l)	NH3-N (mg/l)	D.O. (mg/l)
0.004	5.48	2.16	6.70
0.009	5.45	2.15	6.73
0.013	5.42	2.14	6.75
0.017	5.39	2.13	6.78
0.021	5.36	2.13	6.80
0.026	5.33	2.12	6.82
0.030	5.30	2.11	6.84
0.034	5.27	2.11	6.86
0.039	5.24	2.10	6.88
0.043	5.21	2.09	6.90

FILE: c:\untitled.wqm

Ingleside STP - Tire Hill STP Evaluation Existing Flows and Limits Warm Period U
niform Treatment

DISCHARGE CHARACTERISTICS

END OF REACH 2

(TOTAL) FLOW-MGD.....: 4.45
TEMPERATURE.....: 20
pH.....: 7
DISSOLVED OXYGEN (mg/l)....: 6.5
C-BOD5 (mg/l).....: 11.8
NH3-N (mg/l).....: 6.2
KC (1/Day).....: 1.5

(WQAM63.EXE) Release 1.2 06-12-2003 08:33:33

FILE: c:\untitled.wqm

Ingleside STP - Tire Hill STP Evaluation Existing Flows and Limits Warm Period Uniform Treatment

Effluent Limitations Display

DIS #	Q MGD	NH3-N TOX. 1 DAY	NH3-N TOX. 30 DAY	DISS. OXYGEN C-BOD5 30-DAY	DISS. OXYGEN NH3-N 30-DAY	EFF. D.O.
1	4	15.6	7.8	25	7.8	2
2	.45	30	15	25	15	2

There were no reductions, existing limits OK. Evaluate using a discharge flow of 0.90 mgd for Tire Hill STP.

(WQAM63.EXE) Release 1.2 06-12-2003 08:33:58

FILE: a:\untitled.wqm

Default Data

a. Stream Values

1	Q1-10/Q7-10 ratio	.64
2	Q30-10/Q7-10 ratio	1.36
3	Temperature	25
4	pH	6.4
5	C-BOD5	2
6	NH3-N	.1
7	D.O. Saturation (%)	.85
8	D.O. Goal	5
9	Width/Depth ratio	60
10	KC...(Headwaters only!)	0
11	KN	.6

b. Discharge Values (30-day avgs.)

12	C-BOD5	25
13	NH3-N	7.8
14	Effluent D.O	2
15	Effluent Temp	20
16	KC	1.5
17	Balanced Technology(1=y 0=no)	0

FILE: a:\untitled.wqm
Tire Hill STP Expansion Warm Period Equal Marginal Percent

REACH # 2
Headwaters and Tributary data

No. of Reaches : 2

Rh	Q7-10 (cfs)	T (c)	pH (su)	DO (mg/l)	CBOD5 (mg/l)	NH3-N (mg/l)
HW	14.0000	25	6.4	7.12	2	.1
1	0.0000					
2	0.0700	25	6.4	7.12	2	.1

(WQAM63.EXE) Release 1.2 06-12-2003 08:51:45

FILE: a:\untitled.wqm
Tire Hill STP Expansion Warm Period Equal Marginal Percent

Stream Characteristics

Rh	Q7-10 (cfs)	T (c)	pH (su)	DO (mg/l)	CBOD5 (mg/l)	NH3-N (mg/l)
1	14	25	6.4	7.12	2	.1
2	14.07	25	6.4	7.12	2	.1

Q 1-10/Q 7-10 = .64
Q 30-10/Q 7-10 = 1.36

FILE: a:\untitled.wqm
Tire Hill STP Expansion Warm Period Equal Marginal Percent

DISCHARGE # 2
Discharger Data
Q7-10 Design Conditions

Rh	FLOW (MGD)	T (c)	pH (su)	DO (mg/l)	CBOD5 (mg/l)	NH3-N (mg/l)	KC (1/days)
1	4.0000	20	7	2	25	7.8	1.5
2	0.9000	20	7	2	25	15	1.5

Existing limits when
Ingleside STP = 4.0 mgd
Tire Hill STP = 0.45 mgd
Began with existing limits
to see how they would be
affected when Tire Hill STP
expands to 0.9 mgd

(WQAM63.EXE) Release 1.2 06-12-2003 08:52:44

FILE: a:\untitled.wqm
Tire Hill STP Expansion Warm Period Equal Marginal Percent

REACH # 2
Reach Characteristics

Rh	D.O. GOAL	KN (/D)	RCH. SL. (FT/FT)	RCH. LEN. (FT.)	DRAIN AREA (MI^2)	W/D
1	5	.6	0.00500	11827	396	60
2	5	.6	0.00600	1162	398	33

FILE: a:\untitled.wqm
Tire Hill STP Expansion Warm Period Equal Marginal Percent

REACH # 2
Reach Characteristics

Rh	KR (/D)	TT (Days)
1	0	0
2	0	0

(WQAM63.EXE) Release 1.2 06-12-2003 08:53:47

FILE: a:\Tire Hill Expansion Summer.wqm
Tire Hill STP Expansion Warm Period Equal Marginal Percent

NH3-N Discharge Allocations at Q30-10 (EMPR)

DIS	Q (mgd)	BASE. CONC. (mg/l)	MULT. CONC. (mg/l)	CRIT. RCH.	PCT. RED. (%)	NH3-N CRIT. (mg/l)
1	4.0000	7.76	7.12	2	8.2	1.98
2	0.9000	15.00	13.77	2	8.2	1.99

FILE: a:\Tire Hill Expansion Summer.wqm
Tire Hill STP Expansion Warm Period Equal Marginal Percent

NH3-N Discharge Allocations at Q1-10 (EMPR)

DIS	Q (mgd)	BASE. CONC. (mg/l)	MULT. CONC. (mg/l)	CRIT. RCH.	PCT. RED. (%)	NH3-N CRIT. (mg/l)
1	4.0000	15.60	15.60	0	0	9.53
2	0.9000	30.00	30.00	0	0	9.64

(WQAM63.EXE) Release 1.2 06-12-2003 08:54:26

FILE: a:\Tire Hill Expansion Summer.wqm
Tire Hill STP Expansion Warm Period Equal Marginal Percent

D.O. Allocations (EMPR)

DIS #	Q	---NH3-N--- IND. Conc. (mg/l)	CUM. Conc. (mg/l)	---CBOD5---- IND. Conc. (mg/l)	CUM. Conc. (mg/l)	CRIT. RCH.	PCT. REM. (%)
	(MGD)						
1	4.0000	7.1	7.1	25	25	0	0
2	0.9000	13.8	13.8	25	25	0	0

FILE: a:\Tire Hill Expansion Summer.wqm
Tire Hill STP Expansion Warm Period Equal Marginal Percent

(Total)Discharge = 4 MGD

Temp	=	23.5	pH	=	6.5	Width	= 63.20
CBOD-5	=	9.05	NH3-N	=	2.25	Depth	= 1.05
D.O.	=	5.55	D.O. Goal	=	5	Velocity	= 0.303
KC'	=	1.178	KN	=	.6	W/D RATIO	= 60
KR	=	10.349	(TSIVOGLOU)				

Dis. 1 Rch. 1 Trvl Time: .451

Tr.Tm. (Days)	CBOD-5 (mg/l)	NH3-N (mg/l)	D.O. (mg/l)
0.045	8.50	2.17	5.75
0.090	7.99	2.09	5.93
0.135	7.51	2.02	6.08
0.181	7.05	1.95	6.22
0.226	6.63	1.88	6.35
0.271	6.23	1.82	6.48
0.316	5.85	1.75	6.59
0.361	5.50	1.69	6.70
0.406	5.16	1.63	6.80
0.451	4.85	1.58	6.89

(WQAM63.EXE) Release 1.2 06-12-2003 08:54:37

FILE: a:\Tire Hill Expansion Summer.wqm
Tire Hill STP Expansion Warm Period Equal Marginal Percent

(Total)Discharge = 4.9 MGD

Temp	=	23.2	pH	=	6.5	Width	= 47.27
CBOD-5	=	6.14	NH3-N	=	2.36	Depth	= 1.43
D.O.	=	6.58	D.O. Goal	=	5	Velocity	= 0.320
KC'	=	1.173	KN	=	.6	W/D RATIO	= 33
KR	=	13.097	(TSIVOGLOU)				

Dis. 2 Rch. 2 Trvl Time: .042

Tr.Tm. (Days)	CBOD-5 (mg/l)	NH3-N (mg/l)	D.O. (mg/l)
0.004	6.10	2.35	6.60
0.008	6.07	2.34	6.63
0.013	6.03	2.34	6.65
0.017	6.00	2.33	6.67
0.021	5.96	2.32	6.69
0.025	5.93	2.31	6.71
0.029	5.90	2.31	6.73
0.034	5.86	2.30	6.75
0.038	5.83	2.29	6.77
0.042	5.80	2.28	6.79

FILE: a:\Tire Hill Expansion Summer.wqm
Tire Hill STP Expansion Warm Period Equal Marginal Percent

DISCHARGE CHARACTERISTICS

END OF REACH 2

(TOTAL) FLOW-MGD.....: 4.9
TEMPERATURE.....: 20
pH.....: 7
DISSOLVED OXYGEN (mg/l)....: 6.2
C-BOD5 (mg/l).....: 12.8
NH3-N (mg/l).....: 6.3
KC (1/Day).....: 1.5

(WQAM63.EXE) Release 1.2 06-12-2003 08:54:45

FILE: a:\Tire Hill Expansion Summer.wqm
Tire Hill STP Expansion Warm Period Equal Marginal Percent

D.O. Allocations (EMPR)

DIS #	Q	---NH3-N--- IND. Conc. (mg/l)	CUM. Conc. (mg/l)	---CBOD5---- IND. Conc. (mg/l)	CUM. Conc. (mg/l)	CRIT. RCH.	PCT. REM. (%)
1	4.0000	7.1	7.1	25	25	0	0
2	0.9000	13.8	13.8	25	25	0	0

(WQAM63.EXE) Release 1.2 06-12-2003 08:55:22

FILE: a:\untitled.wqm
Tire Hill Expansion Warm Period Uniform Treatment

Default Data

a. Stream Values

1	Q1-10/Q7-10 ratio	.64
2	Q30-10/Q7-10 ratio	1.36
3	Temperature	25
4	pH	6.4
5	C-BOD5	2
6	NH3-N	.1
7	D.O. Saturation (%)	.85
8	D.O. Goal	5
9	Width/Depth ratio	60
10	KC...(Headwaters only!)	0
11	KN	.6

b. Discharge Values (30-day avgs.)

12	C-BOD5	25
13	NH3-N	7.8
14	Effluent D.O	2
15	Effluent Temp	20
16	KC	1.5
17	Balanced Technology(1=y 0=no)	0

FILE: a:\untitled.wqm
Tire Hill Expansion Warm Period Uniform Treatment

REACH # 2
Headwaters and Tributary data

No. of Reaches : 2

Rh	Q7-10 (cfs)	T (c)	pH (su)	DO (mg/l)	CBOD5 (mg/l)	NH3-N (mg/l)
HW	14.0000	25	6.4	7.12	2	.1
1	0.0000					
2	0.0700	25	6.4	7.12	2	.1

(WQAM63.EXE) Release 1.2 06-12-2003 09:18:01

FILE: a:\untitled.wqm
Tire Hill Expansion Warm Period Uniform Treatment

Stream Characteristics

Rh	Q7-10 (cfs)	T (c)	pH (su)	DO (mg/l)	CBOD5 (mg/l)	NH3-N (mg/l)
1	14	25	6.4	7.12	2	.1
2	14.07	25	6.4	7.12	2	.1

Q 1-10/Q 7-10 = .64
Q 30-10/Q 7-10 = 1.36

FILE: a:\untitled.wqm
Tire Hill Expansion Warm Period Uniform Treatment

DISCHARGE # 2
Discharger Data
Q7-10 Design Conditions

Rh	FLOW (MGD)	T (c)	pH (su)	DO (mg/l)	CBOD5 (mg/l)	NH3-N (mg/l)	KC (1/days)
1	4.0000	20	7	2	25	7.8	1.5
2	0.9000	20	7	2	25	15	1.5

(WQAM63.EXE) Release 1.2 06-12-2003 09:18:50

FILE: a:\untitled.wqm
Tire Hill Expansion Warm Period Uniform Treatment

REACH # 2
Reach Characteristics

Rh	D.O. GOAL	KN (/D)	RCH. SL. (FT/FT)	RCH. LEN. (FT.)	DRAIN AREA (MI^2)	W/D
1	5	.6	0.00500	11827	396	60
2	5	.6	0.00600	1162	398	33

FILE: a:\untitled.wqm
Tire Hill Expansion Warm Period Uniform Treatment

REACH # 2
Reach Characteristics

Rh	KR (/D)	TT (Days)
1	0	0
2	0	0

(WQAM63.EXE) Release 1.2 06-12-2003 09:19:44

FILE: a:\a:\Tire Hill Expansion Summer.wqm
Tire Hill Expansion Warm Period Uniform Treatment

NH3-N Discharge Allocations at Q30-10 (Uniform)

DIS	Q (mgd)	BASE. CONC. (mg/l)	MULT. CONC. (mg/l)	CRIT. RCH.	PCT. RED. (%)	NH3-N CRIT. (mg/l)
1	4.0000	7.80	7.14	2	8.5	1.98
2	0.9000	15.00	13.73	2	8.5	1.99

FILE: a:\a:\Tire Hill Expansion Summer.wqm
Tire Hill Expansion Warm Period Uniform Treatment

NH3-N Discharge Allocations at Q1-10 (Uniform)

DIS	Q (mgd)	BASE. CONC. (mg/l)	MULT. CONC. (mg/l)	CRIT. RCH.	PCT. RED. (%)	NH3-N CRIT. (mg/l)
1	4.0000	15.60	15.60	0	0	9.53
2	0.9000	30.00	30.00	0	0	9.64

(WQAM63.EXE) Release 1.2 06-12-2003 09:20:53

FILE: a:\a:\Tire Hill Expansion Summer.wqm
Tire Hill Expansion Warm Period Uniform Treatment

D.O. Allocations (Uniform)

DIS #	Q	---NH3-N--- IND. Conc. (mg/l)	CUM. Conc. (mg/l)	---CBOD5---- IND. Conc. (mg/l)	CUM. Conc. (mg/l)	CRIT. RCH.	PCT. REM. (%)
1	4.0000	7.1	7.1	25	25	0	0
2	0.9000	13.7	13.7	25	25	0	0

FILE: a:\a:\Tire Hill Expansion Summer.wqm
Tire Hill Expansion Warm Period Uniform Treatment

(Total)Discharge = 4 MGD

Temp =	23.5	pH =	6.5	Width =	63.20
CBOD-5 =	9.05	NH3-N =	2.25	Depth =	1.05
D.O. =	5.55	D.O. Goal =	5	Velocity =	0.303
KC' =	1.178	KN =	.6	W/D RATIO =	60
KR =	10.349 (TSIVOGLOU)				

Dis. 1 Rch. 1 Trvl Time: .451

Tr.Tm. (Days)	CBOD-5 (mg/l)	NH3-N (mg/l)	D.O. (mg/l)
0.045	8.50	2.17	5.75
0.090	7.99	2.09	5.93
0.135	7.51	2.02	6.08
0.181	7.05	1.95	6.22
0.226	6.63	1.88	6.35
0.271	6.23	1.82	6.48
0.316	5.85	1.75	6.59
0.361	5.50	1.69	6.70
0.406	5.16	1.63	6.80
0.451	4.85	1.58	6.89

(WQAM63.EXE) Release 1.2 06-12-2003 09:21:16

```
   FILE: a:\a:\Tire Hill Expansion Summer.wqm
Tire Hill Expansion Warm Period Uniform Treatment

(Total)Discharge =  4.9  MGD
   Temp    =  23.2   pH         =  6.5   Width      =   47.27
   CBOD-5  =  6.14   NH3-N      =  2.35  Depth      =    1.43
   D.O.    =   6.58  D.O. Goal  =  5     Velocity   =    0.320
   KC'     =  1.173  KN         =  .6    W/D RATIO  =  33
   KR      =  13.097  (TSIVOGLOU)
          Dis.  2   Rch.  2   Trvl Time: .042

             Tr.Tm.   CBOD-5  NH3-N    D.O.
             (Days)   (mg/l)  (mg/l)  (mg/l)
             ------   ------  ------  ------
             0.004    6.10    2.34    6.60
             0.008    6.07    2.34    6.63
             0.013    6.03    2.33    6.65
             0.017    6.00    2.32    6.67
             0.021    5.96    2.31    6.69
             0.025    5.93    2.31    6.71
             0.029    5.90    2.30    6.73
             0.034    5.86    2.29    6.75
             0.038    5.83    2.28    6.77
             0.042    5.80    2.28    6.79

 FILE: a:\a:\Tire Hill Expansion Summer.wqm
Tire Hill Expansion Warm Period Uniform Treatment


       DISCHARGE CHARACTERISTICS


END OF REACH  2

(TOTAL) FLOW-MGD.....: 4.9
TEMPERATURE..........: 20
pH...................: 7
DISSOLVED OXYGEN (mg/l)....: 6.2
C-BOD5 (mg/l)..............: 12.8
NH3-N (mg/l)...............: 6.3
KC (1/Day).................: 1.5


(WQAM63.EXE)  Release 1.2     06-12-2003     09:21:23
```

FILE: a:\a:\Tire Hill Expansion Summer.wqm
Tire Hill Expansion Warm Period Uniform Treatment

Effluent Limitations Display

DIS #	Q MGD	NH3-N TOX. 1 DAY	30 DAY	DISS. OXYGEN C-BOD5 30-DAY	NH3-N 30-DAY	EFF. D.O.
1	4	14.3	7.1	25	7.1	2
2	.9	27.5	13.7	25	13.7	2

(WQAM63.EXE) Release 1.2 06-12-2003 09:21:39

```
   FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

              Default Data
 a. Stream Values
    1  Q1-10/Q7-10 ratio.....................: .64
    2  Q30-10/Q7-10 ratio....................: 1.36
    3  Temperature...........................: 25
    4  pH....................................: 6.4
    5  C-BOD5................................: 2
    6  NH3-N.................................: .1
    7  D.O. Saturation (%)...................: .85
    8  D.O. Goal.............................: 5
    9  Width/Depth ratio.....................: 60
   10  KC...(Headwaters only!)...............: 0
   11  KN....................................: .6
 b. Discharge Values (30-day avgs.)
   12  C-BOD5................................: 25
   13  NH3-N.................................: 7.8
   14  Effluent D.O..........................: 2
   15  Effluent Temp.........................: 20
   16  KC....................................: 1.5
   17  Balanced Technology(1=y 0=no).........: 0


  FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

              REACH #  2
      Headwaters and Tributary data

No. of Reaches :  2

Rh    Q7-10     T       pH      DO     CBOD5   NH3-N
      (cfs)     (c)     (su)    (mg/l) (mg/l)  (mg/l)
--    -------   -----   ----    ------ ------  ------
HW    14.0000    25     6.4     7.12     2       .1
 1     0.0000
 2     0.0700    25     6.4     7.12     2       .1


(WQAM63.EXE)  Release 1.2     06-12-2003     09:30:45
```

FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

Stream Characteristics

Rh	Q7-10 (cfs)	T (c)	pH (su)	DO (mg/l)	CBOD5 (mg/l)	NH3-N (mg/l)
1	14	25	6.4	7.12	2	.1
2	14.07	25	6.4	7.12	2	.1

Q 1-10/Q 7-10 = .64
Q 30-10/Q 7-10 = 1.36

FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

DISCHARGE # 2
Discharger Data
Q7-10 Design Conditions

Rh	FLOW (MGD)	T (c)	pH (su)	DO (mg/l)	CBOD5 (mg/l)	NH3-N (mg/l)	KC (1/days)
1	4.0000	20	7	2	25	7.8	1.5
2	0.9000	20	7	2	25	10	1.5

(WQAM63.EXE) Release 1.2 06-12-2003 09:31:54

FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

REACH # 2
Reach Characteristics

Rh	D.O. GOAL	KN (/D)	RCH. SL. (FT/FT)	RCH. LEN. (FT.)	DRAIN AREA (MI^2)	W/D
1	5	.6	0.00500	11827	396	60
2	5	.6	0.00600	1162	398	33

FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

REACH # 2
Reach Characteristics

Rh	KR (/D)	TT (Days)
1	0	0
2	0	0

(WQAM63.EXE) Release 1.2 06-12-2003 09:32:44

FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

NH3-N Discharge Allocations at Q30-10 (Uniform)

DIS	Q (mgd)	BASE. CONC. (mg/l)	MULT. CONC. (mg/l)	CRIT. RCH.	PCT. RED. (%)	NH3-N CRIT. (mg/l)
1	4.0000	7.80	7.80	0	0	1.98
2	0.9000	10.00	10.00	0	0	1.99

FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

NH3-N Discharge Allocations at Q1-10 (Uniform)

DIS	Q (mgd)	BASE. CONC. (mg/l)	MULT. CONC. (mg/l)	CRIT. RCH.	PCT. RED. (%)	NH3-N CRIT. (mg/l)
1	4.0000	15.60	15.60	0	0	9.53
2	0.9000	20.00	20.00	0	0	9.64

(WQAM63.EXE) Release 1.2 06-12-2003 09:33:14

FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

D.O. Allocations (Uniform)

DIS #	Q	---NH3-N--- IND. Conc. (mg/l)	CUM. Conc. (mg/l)	---CBOD5---- IND. Conc. (mg/l)	CUM. Conc. (mg/l)	CRIT. RCH.	PCT. REM. (%)
1	4.0000	7.8	7.8	25	25	0	0
2	0.9000	10	10	25	25	0	0

FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

(Total)Discharge = 4 MGD

Temp	= 23.5	pH	= 6.5	Width	= 63.20
CBOD-5	= 9.05	NH3-N	= 2.46	Depth	= 1.05
D.O.	= 5.55	D.O. Goal	= 5	Velocity	= 0.303
KC'	= 1.178	KN	= .6	W/D RATIO	= 60
KR	= 10.349	(TSIVOGLOU)			

Dis. 1 Rch. 1 Trvl Time: .451

Tr.Tm. (Days)	CBOD-5 (mg/l)	NH3-N (mg/l)	D.O. (mg/l)
0.045	8.50	2.37	5.72
0.090	7.99	2.29	5.88
0.135	7.51	2.21	6.03
0.181	7.05	2.14	6.17
0.226	6.63	2.06	6.29
0.271	6.23	1.99	6.42
0.316	5.85	1.92	6.53
0.361	5.50	1.85	6.64
0.406	5.16	1.79	6.74
0.451	4.85	1.73	6.83

(WQAM63.EXE) Release 1.2 06-12-2003 09:33:29

```
   FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

(Total)Discharge =  4.9  MGD
   Temp    =  23.2   pH         =  6.5   Width      =   47.27
   CBOD-5  =  6.14   NH3-N      =  2.25  Depth      =    1.43
   D.O.    =   6.52  D.O. Goal  =  5     Velocity   =    0.320
   KC'     =  1.173  KN         =  .6    W/D RATIO  =  33
   KR      =  13.097  (TSIVOGLOU)
          Dis.  2   Rch.  2   Trvl Time: .042

             Tr.Tm.   CBOD-5  NH3-N    D.O.
             (Days)   (mg/l)  (mg/l)  (mg/l)
             ------   ------  ------  ------
             0.004    6.10    2.25    6.55
             0.008    6.07    2.24    6.58
             0.013    6.03    2.23    6.61
             0.017    6.00    2.22    6.63
             0.021    5.96    2.22    6.66
             0.025    5.93    2.21    6.68
             0.029    5.90    2.20    6.71
             0.034    5.86    2.20    6.73
             0.038    5.83    2.19    6.75
             0.042    5.80    2.18    6.77

 FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

       DISCHARGE CHARACTERISTICS


END OF REACH  2

(TOTAL) FLOW-MGD.....: 4.9
TEMPERATURE.....: 20
pH.....: 7
DISSOLVED OXYGEN (mg/l)....: 6.1
C-BOD5 (mg/l).....: 12.8
NH3-N (mg/l).....: 6
KC (1/Day).....: 1.5




(WQAM63.EXE)  Release 1.2     06-12-2003     09:33:35
```

FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

Effluent Limitations Display

DIS #	Q MGD	NH3-N TOX. 1 DAY	30 DAY	DISS. OXYGEN C-BOD5 30-DAY	NH3-N 30-DAY	EFF. D.O.
1	4	15.6	7.8	25	7.8	2
2	.9	20	10	25	10	2

Try raising to 11 mg/l to see if allocation occurs

FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

D.O. Allocations (Uniform)

DIS #	Q (MGD)	---NH3-N--- IND. Conc. (mg/l)	CUM. Conc. (mg/l)	---CBOD5---- IND. Conc. (mg/l)	CUM. Conc. (mg/l)	CRIT. RCH.	PCT. REM. (%)
1	4.0000	7.8	7.8	25	25	0	0
2	0.9000	10	10	25	25	0	0

(WQAM63.EXE) Release 1.2 06-12-2003 09:33:49

FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

DISCHARGE # 2
Discharger Data
Q7-10 Design Conditions

Rh	FLOW (MGD)	T (c)	pH (su)	DO (mg/l)	CBOD5 (mg/l)	NH3-N (mg/l)	KC (1/days)
1	4.0000	20	7	2	25	7.8	1.5
2	0.9000	20	7	2	25	11	1.5

Tire Hill

FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

NH3-N Discharge Allocations at Q30-10 (Uniform)

DIS	Q (mgd)	BASE. CONC. (mg/l)	MULT. CONC. (mg/l)	CRIT. RCH.	PCT. RED. (%)	NH3-N CRIT. (mg/l)
1	4.0000	7.80	7.80	0	0	1.98
2	0.9000	11.00	11.00	0	0	1.99

(WQAM63.EXE) Release 1.2 06-12-2003 09:36:33

FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

NH3-N Discharge Allocations at Q1-10 (Uniform)

DIS	Q (mgd)	BASE. CONC. (mg/l)	MULT. CONC. (mg/l)	CRIT. RCH.	PCT. RED. (%)	NH3-N CRIT. (mg/l)
1	4.0000	15.60	15.60	0	0	9.53
2	0.9000	22.00	22.00	0	0	9.64

FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

D.O. Allocations (Uniform)

DIS #	Q (MGD)	---NH3-N--- IND. Conc. (mg/l)	CUM. Conc. (mg/l)	---CBOD5---- IND. Conc. (mg/l)	CUM. Conc. (mg/l)	CRIT. RCH.	PCT. REM. (%)
1	4.0000	7.8	7.8	25	25	0	0
2	0.9000	11	11	25	25	0	0

(WQAM63.EXE) Release 1.2 06-12-2003 09:36:47

FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

DISCHARGE # 2
Discharger Data
Q7-10 Design Conditions

Rh	FLOW (MGD)	T (c)	pH (su)	DO (mg/l)	CBOD5 (mg/l)	NH3-N (mg/l)	KC (1/days)
1	4.0000	20	7	2	25	7.8	1.5
2	0.9000	20	7	2	25	12	1.5

To maintain Ingleside's existing NH_3-N limit of 7.8 mg/l, the expanded Tire Hill STP's limit can be 11 mg/l without causing an allocation to occur.

FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

NH3-N Discharge Allocations at Q30-10 (Uniform)

DIS	Q (mgd)	BASE. CONC. (mg/l)	MULT. CONC. (mg/l)	CRIT. RCH.	PCT. RED. (%)	NH3-N CRIT. (mg/l)
1	4.0000	7.80	7.71	2	1.1	1.98
2	0.9000	12.00	11.87	2	1.1	1.99

(WQAM63.EXE) Release 1.2 06-12-2003 09:37:37

FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

NH3-N Discharge Allocations at Q1-10 (Uniform)

DIS	Q	BASE. CONC.	MULT. CONC.	CRIT. RCH.	PCT. RED.	NH3-N CRIT.
	(mgd)	(mg/l)	(mg/l)		(%)	(mg/l)
1	4.0000	15.60	15.60	0	0	9.53
2	0.9000	24.00	24.00	0	0	9.64

FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

D.O. Allocations (Uniform)

DIS	Q	---NH3-N---		---CBOD5----		CRIT.	PCT.
#		IND. Conc.	CUM. Conc.	IND. Conc.	CUM. Conc.	RCH.	REM.
	(MGD)	(mg/l)	(mg/l)	(mg/l)	(mg/l)		(%)
1	4.0000	7.7	7.7	25	25	0	0
2	0.9000	11.9	11.9	25	25	0	0

(WQAM63.EXE) Release 1.2 06-12-2003 09:37:45

FILE: c:\untitled.wqm
Maintain Ingleside Limits Reduce Tire Hill Ammonia UT Warm Period

Effluent Limitations Display

DIS #	Q MGD	NH3-N TOX. 1 DAY	30 DAY	DISS. OXYGEN C-BOD5 30-DAY	NH3-N 30-DAY	EFF. D.O.
1	4	15.4	7.7	25	7.7	2
2	.9	23.7	11.9	25	11.9	2

(WQAM63.EXE) Release 1.2 06-12-2003 09:38:00

FILE: c:\untitled.wqm
Ingleside STP and Tire Hill STP Cold Period UT

Default Data

a. Stream Values

1	Q1-10/Q7-10 ratio	.64
2	Q30-10/Q7-10 ratio	1.36
3	Temperature	5
4	pH	6.4
5	C-BOD5	2
6	NH3-N	.1
7	D.O. Saturation (%)	.85
8	D.O. Goal	5
9	Width/Depth ratio	60
10	KC...(Headwaters only!)	0
11	KN	.6

b. Discharge Values (30-day avgs.)

12	C-BOD5	25
13	NH3-N	23
14	Effluent D.O.	2
15	Effluent Temp	15
16	KC	1.5
17	Balanced Technology(1=y 0=no)	0

FILE: c:\untitled.wqm
Ingleside STP and Tire Hill STP Cold Period UT

REACH # 2
Headwaters and Tributary data

No. of Reaches : 2

Rh	Q7-10 (cfs)	T (c)	pH (su)	DO (mg/l)	CBOD5 (mg/l)	NH3-N (mg/l)
HW	28.0000	5	6.4	10.82	2	.1
1	0.0000					
2	0.1400	5	6.4	10.82	2	.1

(WQAM63.EXE) Release 1.2 06-12-2003 10:56:01

FILE: c:\untitled.wqm
Ingleside STP and Tire Hill STP Cold Period UT

Stream Characteristics

Rh	Q7-10 (cfs)	T (c)	pH (su)	DO (mg/l)	CBOD5 (mg/l)	NH3-N (mg/l)
1	28	5	6.4	10.82	2	.1
2	28.14	5	6.4	10.82	2	.1

Q 1-10/Q 7-10 = .64
Q 30-10/Q 7-10 = 1.36

FILE: c:\untitled.wqm
Ingleside STP and Tire Hill STP Cold Period UT

REACH # 2
Reach Characteristics

Rh	D.O. GOAL	KN (/D)	RCH. SL. (FT/FT)	RCH. LEN. (FT.)	DRAIN AREA (MI^2)	W/D
1	5	.6	0.00500	11827	396	60
2	5	.6	0.00600	1162	398	33

(WQAM63.EXE) Release 1.2 06-12-2003 10:56:55

FILE: c:\untitled.wqm
Ingleside STP and Tire Hill STP Cold Period UT

REACH # 2
Reach Characteristics

Rh	KR (/D)	TT (Days)
1	0	0
2	0	0

FILE: c:\untitled.wqm
Ingleside STP and Tire Hill STP Cold Period UT

DISCHARGE # 2
Discharger Data
Q7-10 Design Conditions

Rh	FLOW (MGD)	T (c)	pH (su)	DO (mg/l)	CBOD5 (mg/l)	NH3-N (mg/l)	KC (1/days)
1	4.0000	15	7	2	25	23	1.5
2	0.9000	15	7	2	25	25	1.5

(WQAM63.EXE) Release 1.2 06-12-2003 10:59:33

FILE: c:\untitled.wqm
Ingleside STP and Tire Hill STP Cold Period UT

REACH # 2
Reach Characteristics

Rh	D.O. GOAL	KN (/D)	RCH. SL. (FT/FT)	RCH. LEN. (FT.)	DRAIN AREA (MI^2)	W/D
1	5	.6	0.00500	11827	396	60
2	5	.6	0.00600	1162	398	33

FILE: c:\untitled.wqm
Ingleside STP and Tire Hill STP Cold Period UT

REACH # 2
Reach Characteristics

Rh	KR (/D)	TT (Days)
1	0	0
2	0	0

(WQAM63.EXE) Release 1.2 06-12-2003 10:59:50

FILE: c:\untitled.wqm
Ingleside STP and Tire Hill STP Cold Period UT

NH3-N Discharge Allocations at Q30-10 (Uniform)

DIS	Q (mgd)	BASE. CONC. (mg/l)	MULT. CONC. (mg/l)	CRIT. RCH.	PCT. RED. (%)	NH3-N CRIT. (mg/l)
1	4.0000	23.00	23.00	0	0	5.67
2	0.9000	25.00	25.00	0	0	5.64

FILE: c:\untitled.wqm
Ingleside STP and Tire Hill STP Cold Period UT

NH3-N Discharge Allocations at Q1-10 (Uniform)

DIS	Q (mgd)	BASE. CONC. (mg/l)	MULT. CONC. (mg/l)	CRIT. RCH.	PCT. RED. (%)	NH3-N CRIT. (mg/l)
1	4.0000	46.00	46.00	0	0	25.56
2	0.9000	50.00	50.00	0	0	25.46

(WQAM63.EXE) Release 1.2 06-12-2003 11:00:04

FILE: c:\untitled.wqm
Ingleside STP and Tire Hill STP Cold Period UT

D.O. Allocations (Uniform)

DIS #	Q	---NH3-N--- IND. Conc. (mg/l)	CUM. Conc. (mg/l)	---CBOD5---- IND. Conc. (mg/l)	CUM. Conc. (mg/l)	CRIT. RCH.	PCT. REM. (%)
1	4.0000	23	23	25	25	0	0
2	0.9000	25	25	25	25	0	0

FILE: c:\untitled.wqm
Ingleside STP and Tire Hill STP Cold Period UT

(Total)Discharge = 4 MGD

Temp	=	6.8	pH	=	6.5	Width	= 70.97
CBOD-5	=	6.16	NH3-N	=	4.24	Depth	= 1.18
D.O.	=	9.22	D.O. Goal	=	5	Velocity	= 0.407
KC'	=	1.059	KN	=	.6	W/D RATIO	= 60
KR	=	9.50100 (TSIVOGLOU)					

Dis. 1 Rch. 1 Trvl Time: .336

Tr.Tm. (Days)	CBOD-5 (mg/l)	NH3-N (mg/l)	D.O. (mg/l)
0.034	6.04	4.21	9.75
0.067	5.93	4.18	10.14
0.101	5.81	4.15	10.43
0.134	5.70	4.12	10.64
0.168	5.59	4.09	10.79
0.202	5.48	4.06	10.82
0.235	5.38	4.03	10.82
0.269	5.28	4.00	10.82
0.302	5.17	3.97	10.82
0.336	5.07	3.95	10.82

(WQAM63.EXE) Release 1.2 06-12-2003 11:00:12

```
   FILE: c:\untitled.wqm
Ingleside STP and Tire Hill STP Cold Period UT

(Total)Discharge =  4.9  MGD
   Temp   =  7.1    pH        =  6.5   Width      =   52.77
   CBOD-5 =  5.84   NH3-N     =  4.75  Depth      =    1.60
   D.O.   =   10.48 D.O. Goal =  5     Velocity   =    0.423
   KC'    =  1.091  KN        =  .6    W/D RATIO  =  33
   KR     =  11.85   (TSIVOGLOU)
          Dis.  2   Rch.  2   Trvl Time: .032

             Tr.Tm.   CBOD-5  NH3-N    D.O.
             (Days)   (mg/l)  (mg/l)  (mg/l)
             ------   ------  ------  ------
             0.003    5.83    4.75    10.50
             0.006    5.82    4.74    10.53
             0.010    5.81    4.74    10.55
             0.013    5.79    4.74    10.58
             0.016    5.78    4.73    10.60
             0.019    5.77    4.73    10.62
             0.022    5.76    4.73    10.65
             0.025    5.75    4.72    10.67
             0.029    5.74    4.72    10.69
             0.032    5.73    4.72    10.71

 FILE: c:\untitled.wqm
Ingleside STP and Tire Hill STP Cold Period UT

       DISCHARGE CHARACTERISTICS


END OF REACH  2

(TOTAL) FLOW-MGD.....: 4.9
TEMPERATURE.....: 15
pH.....: 7
DISSOLVED OXYGEN (mg/l)....: 10.3
C-BOD5 (mg/l).....: 19.6
NH3-N (mg/l).....: 21.9
KC (1/Day).....: 1.5


(WQAM63.EXE)  Release 1.2     06-12-2003     11:00:22
```

FILE: c:\untitled.wqm
Ingleside STP and Tire Hill STP Cold Period UT

Effluent Limitations Display

DIS #	Q MGD	NH3-N TOX. 1 DAY	30 DAY	DISS. OXYGEN C-BOD5 30-DAY	NH3-N 30-DAY	EFF. D.O.
1	4	46	23	25	23	2
2	.9	50	25	25	25	2

(WQAM63.EXE) Release 1.2 06-12-2003 11:00:32

Applicant:	Windber Area Authority
Name of plant:	Ingleside STP
Permit Number:	PA0026778
Municipality:	Richland Township
County:	Cambria County
Receiving stream:	Stonycreek River

The following program will calulate partial mix factors for acute and chronic conditions:

calculated fields

net stream flow (Qs cfs)=	14
discharge flow (Qd mgd)=	4
velocity (fps)=	0.303
width (feet) =	63.23
depth (feet) =	1.054
slope (ft/ft) =	0.005

complete mix time (min) = 34.40

FOR ACUTE CONDITIONS: IF COMPLETE MIX TIME < 15 MINUTES
THEN PMF = 1, IF > 15 MINUTES CALCULATE PMFa

PMFa = 0.660
or 66.03 %

FOR CHRONIC CONDITIONS: IF COMPLETE MIX TIME < 720 MINUTES
THEN PMF = 1, IF > 720 MINUTES CALCULATE PMFc

PMFc = 1.000
or 100.00 %

IWCc=[Qd * 1.547] / [(Qs*PMFc) + (Qd * 1.547)] = 0.3065

Target IWCc=IWCc/1= 0.307 **30.65 %**

IWCa=[Qd * 1.547] / [(Qs*PMFa) + (Qd * 1.547)] = 0.4010

Target IWCa=IWCa/0.3= 1.000 **or** **100.00 %**

WET tests should pass if percentage for C.dubia LC50 and P.promelas LC50 are greater than the target IWCa (acute) or NOEC > target IWCc (chronic).

Program written by David Ponchione on April 8, 1999

Program run by : **on** **January 12, 2021**

For Department use only

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.1, October 2020

Discharge Information

Instructions | Discharge | Stream

Facility: **Ingleside STP** NPDES Permit No.: **PA0026778** 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
4	89.07	7	0.66	1			14	

	Discharge Pollutant	Units	Max Discharge Conc		0 if left blank: Trib Conc	0 if left blank: Stream Conc	0.5 if left blank: Daily CV	0.5 if left blank: Hourly CV	0 if left blank: Strea m CV	0 if left blank: Fate Coeff	0 if left blank: FOS	1 if left blank: Criteri a Mod	1 if left blank: Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		298									
	Chloride (PWS)	mg/L		64.5									
	Bromide	mg/L	<	0.035									
	Sulfate (PWS)	mg/L	<	2.29									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		15.1									
	Total Antimony	µg/L		1									
	Total Arsenic	µg/L		1.1									
	Total Barium	µg/L		24									
	Total Beryllium	µg/L	<	0.24									
	Total Boron	µg/L		178									
	Total Cadmium	µg/L	<	0.067									
	Total Chromium (III)	µg/L	<	0.15									
	Hexavalent Chromium	µg/L	<	0.25									
	Total Cobalt	µg/L		0.69									
	Total Copper	µg/L		5.2									
	Free Cyanide	µg/L	<	2.4									
	Total Cyanide	µg/L	<	2.4									
	Dissolved Iron	µg/L		34.8									
	Total Iron	µg/L		60.3									
	Total Lead	µg/L		0.31									
	Total Manganese	µg/L		63									
	Total Mercury	µg/L	<	0.059									
	Total Nickel	µg/L		1.6									
	Total Phenols (Phenolics) (PWS)	µg/L		11									
	Total Selenium	µg/L		3.77									
	Total Silver	µg/L	<	0.07									
	Total Thallium	µg/L	<	0.028									
	Total Zinc	µg/L		64.4									
	Total Molybdenum	µg/L		2.8									
	Acrolein	µg/L	<	0.93									
	Acrylamide	µg/L											
	Acrylonitrile	µg/L	<	0.48									
	Benzene	µg/L	<	0.21									
	Bromoform	µg/L	<	0.43									

Group 3	Carbon Tetrachloride	µg/L	<	0.41										
	Chlorobenzene	µg/L	<	0.26										
	Chlorodibromomethane	µg/L	<	0.24										
	Chloroethane	µg/L	<	0.32										
	2-Chloroethyl Vinyl Ether	µg/L	<	5.29										
	Chloroform	µg/L	<	0.24										
	Dichlorobromomethane	µg/L	<	0.25										
	1,1-Dichloroethane	µg/L	<	0.3										
	1,2-Dichloroethane	µg/L	<	0.4										
	1,1-Dichloroethylene	µg/L	<	0.29										
	1,2-Dichloropropane	µg/L	<	0.37										
	1,3-Dichloropropylene	µg/L	<	0.41										
	1,4-Dioxane	µg/L	<	3.9										
	Ethylbenzene	µg/L	<	0.3										
	Methyl Bromide	µg/L	<	0.48										
	Methyl Chloride	µg/L	<	0.44										
	Methylene Chloride	µg/L	<	0.33										
	1,1,2,2-Tetrachloroethane	µg/L	<	0.45										
	Tetrachloroethylene	µg/L	<	0.37										
	Toluene	µg/L	<	0.19										
	1,2-trans-Dichloroethylene	µg/L	<	0.44										
	1,1,1-Trichloroethane	µg/L	<	0.42										
	1,1,2-Trichloroethane	µg/L	<	0.25										
	Trichloroethylene	µg/L	<	0.42										
	Vinyl Chloride	µg/L	<	0.29										
Group 4	2-Chlorophenol	µg/L	<	0.1										
	2,4-Dichlorophenol	µg/L	<	0.14										
	2,4-Dimethylphenol	µg/L	<	0.1										
	4,6-Dinitro-o-Cresol	µg/L	<	0.19										
	2,4-Dinitrophenol	µg/L	<	0.26										
	2-Nitrophenol	µg/L	<	0.11										
	4-Nitrophenol	µg/L	<	0.61										
	p-Chloro-m-Cresol	µg/L		0.15										
	Pentachlorophenol	µg/L	<	0.27										
	Phenol	µg/L		0.31										
	2,4,6-Trichlorophenol	µg/L	<	0.12										
Group 5	Acenaphthene	µg/L	<	0.31										
	Acenaphthylene	µg/L		0.06										
	Anthracene	µg/L		0.1										
	Benzidine	µg/L	<	0.22										
	Benzo(a)Anthracene	µg/L	<	0.18										
	Benzo(a)Pyrene	µg/L	<	0.13										
	3,4-Benzofluoranthene	µg/L	<	0.01										
	Benzo(ghi)Perylene	µg/L		0.12										
	Benzo(k)Fluoranthene	µg/L	<	0.17										
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.1										
	Bis(2-Chloroethyl)Ether	µg/L	<	0.1										
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.05										
	Bis(2-Ethylhexyl)Phthalate	µg/L		0.84										
	4-Bromophenyl Phenyl Ether	µg/L	<	0.1										
	Butyl Benzyl Phthalate	µg/L		0.33										
	2-Chloronaphthalene	µg/L		0.07										
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.11										
	Chrysene	µg/L	<	0.15										
	Dibenzo(a,h)Anthrancene	µg/L	<	0.13										
	1,2-Dichlorobenzene	µg/L	<	0.08										
	1,3-Dichlorobenzene	µg/L	<	0.1										
	1,4-Dichlorobenzene	µg/L		0.08										
	3,3-Dichlorobenzidine	µg/L	<	0.23										
	Diethyl Phthalate	µg/L		0.16										
	Dimethyl Phthalate	µg/L		0.07										
	Di-n-Butyl Phthalate	µg/L		0.41										
	2,4-Dinitrotoluene	µg/L	<	0.17										

	2,6-Dinitrotoluene	µg/L	<	0.24										
	Di-n-Octyl Phthalate	µg/L		0.2										
	1,2-Diphenylhydrazine	µg/L	<	0.19										
	Fluoranthene	µg/L		0.14										
	Fluorene	µg/L		0.08										
	Hexachlorobenzene	µg/L	<	0.18										
	Hexachlorobutadiene	µg/L	<	0.16										
	Hexachlorocyclopentadiene	µg/L	<	0.19										
	Hexachloroethane	µg/L	<	0.11										
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.15										
	Isophorone	µg/L		0.12										
	Naphthalene	µg/L		0.09										
	Nitrobenzene	µg/L	<	0.12										
	n-Nitrosodimethylamine	µg/L	<	0.43										
	n-Nitrosodi-n-Propylamine	µg/L	<	0.12										
	n-Nitrosodiphenylamine	µg/L	<	0.16										
	Phenanthrene	µg/L		0.15										
	Pyrene	µg/L		0.13										
	1,2,4-Trichlorobenzene	µg/L		0.1										
Group 6	Aldrin	µg/L	<											
	alpha-BHC	µg/L	<											
	beta-BHC	µg/L	<											
	gamma-BHC	µg/L	<											
	delta BHC	µg/L	<											
	Chlordane	µg/L	<											
	4,4-DDT	µg/L	<											
	4,4-DDE	µg/L	<											
	4,4-DDD	µg/L	<											
	Dieldrin	µg/L	<											
	alpha-Endosulfan	µg/L	<											
	beta-Endosulfan	µg/L	<											
	Endosulfan Sulfate	µg/L	<											
	Endrin	µg/L	<											
	Endrin Aldehyde	µg/L	<											
	Heptachlor	µg/L	<											
	Heptachlor Epoxide	µg/L	<											
	PCB-1016	µg/L	<											
	PCB-1221	µg/L	<											
	PCB-1232	µg/L	<											
	PCB-1242	µg/L	<											
	PCB-1248	µg/L	<											
	PCB-1254	µg/L	<											
	PCB-1260	µg/L	<											
	PCBs, Total	µg/L	<											
	Toxaphene	µg/L	<											
	2,3,7,8-TCDD	ng/L	<											
Group 7	Gross Alpha	pCi/L												
	Total Beta	pCi/L	<											
	Radium 226/228	pCi/L	<											
	Total Strontium	µg/L	<											
	Total Uranium	µg/L	<											
	Osmotic Pressure	mOs/kg												

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.1, October 2020

Stream / Surface Water Information

Ingleside STP, NPDES Permit No. PA0026778, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name:

No. Reaches to Model: 1

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	045084	8.84	1262	396	0.005		Yes
End of Reach 1	045084	6.66	1205	398	0.005		Yes

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

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	8.84	0.035	14			63.23	1.054	0.303				100	7		
End of Reach 1	6.66	0.035													

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	8.84														
End of Reach 1	6.66														

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.1, October 2020

Model Results

Ingleside STP, NPDES Permit No. PA0026778, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | (●) All ( ) Inputs ( ) Results ( ) Limits

☑ ***Hydrodynamics***

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

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 (days)	Complete Mix Time (min)
8.84	14		14	6.188	0.005	1.054	63.23	59.991	0.303	0.44	14.0
6.66	14.070		14.07								

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 (days)	Complete Mix Time (min)
8.84	74.59		74.59	6.188	0.005	1.94	63.23	32.592	0.659	0.202	24.453
6.66	74.92		74.92								

☑ ***Wasteload Allocations***

☑ *AFC* CCT (min): 14 PMF: 0.660 Analysis Hardness (mg/l): 95.616 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	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	1,870	
Total Antimony	0	0		0	1,100	1,100	2,743	
Total Arsenic	0	0		0	340	340	848	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	52,357	
Total Boron	0	0		0	8,100	8,100	20,195	
Total Cadmium	0	0		0	1.928	2.04	5.08	Chem Translator of 0.946 applied
Total Chromium (III)	0	0		0	549.224	1,738	4,333	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	40.6	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	237	
Total Copper	0	0		0	12.883	13.4	33.5	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	54.9	

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	61.503	77.1	192	Chem Translator of 0.798 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	4.11	Chem Translator of 0.85 applied
Total Nickel	0	0		0	450.810	452	1,126	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	2.978	3.5	8.74	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	162	
Total Zinc	0	0		0	112.813	115	288	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	7.48	
Acrylonitrile	0	0		0	650	650	1,621	
Benzene	0	0		0	640	640	1,596	
Bromoform	0	0		0	1,800	1,800	4,488	
Carbon Tetrachloride	0	0		0	2,800	2,800	6,981	
Chlorobenzene	0	0		0	1,200	1,200	2,992	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	44,878	
Chloroform	0	0		0	1,900	1,900	4,737	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	37,398	
1,1-Dichloroethylene	0	0		0	7,500	7,500	18,699	
1,2-Dichloropropane	0	0		0	11,000	11,000	27,425	
1,3-Dichloropropylene	0	0		0	310	310	773	
Ethylbenzene	0	0		0	2,900	2,900	7,230	
Methyl Bromide	0	0		0	550	550	1,371	
Methyl Chloride	0	0		0	28,000	28,000	69,810	
Methylene Chloride	0	0		0	12,000	12,000	29,919	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	2,493	
Tetrachloroethylene	0	0		0	700	700	1,745	
Toluene	0	0		0	1,700	1,700	4,238	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	16,954	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	7,480	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	8,477	
Trichloroethylene	0	0		0	2,300	2,300	5,734	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	1,396	
2,4-Dichlorophenol	0	0		0	1,700	1,700	4,238	
2,4-Dimethylphenol	0	0		0	660	660	1,646	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	199	
2,4-Dinitrophenol	0	0		0	660	660	1,646	
2-Nitrophenol	0	0		0	8,000	8,000	19,946	
4-Nitrophenol	0	0		0	2,300	2,300	5,734	
p-Chloro-m-Cresol	0	0		0	160	160	399	
Pentachlorophenol	0	0		0	8.723	8.72	21.7	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	1,147	

Acenaphthene	0	0		0	83	83.0	207	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	748	
Benzo(a)Anthracene	0	0		0	0.5	0.5	1.25	
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	74,796	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	11,219	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	673	
Butyl Benzyl Phthalate	0	0		0	140	140	349	
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	2,044	
1,3-Dichlorobenzene	0	0		0	350	350	873	
1,4-Dichlorobenzene	0	0		0	730	730	1,820	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	9,973	
Dimethyl Phthalate	0	0		0	2,500	2,500	6,233	
Di-n-Butyl Phthalate	0	0		0	110	110	274	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	3,989	
2,6-Dinitrotoluene	0	0		0	990	990	2,468	
1,2-Diphenylhydrazine	0	0		0	15	15.0	37.4	
Fluoranthene	0	0		0	200	200	499	
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	24.9	
Hexachlorocyclopentadiene	0	0		0	5	5.0	12.5	
Hexachloroethane	0	0		0	60	60.0	150	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	24,932	
Naphthalene	0	0		0	140	140	349	
Nitrobenzene	0	0		0	4,000	4,000	9,973	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	42,385	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	748	
Phenanthrene	0	0		0	5	5.0	12.5	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	324	

☑ *CFC* CCT (min): 14 PMF: 1 Analysis Hardness (mg/l): 96.65 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	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	718	
Total Arsenic	0	0		0	150	150	489	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	13,376	
Total Boron	0	0		0	1,600	1,600	5,220	
Total Cadmium	0	0		0	0.240	0.26	0.86	Chem Translator of 0.91 applied
Total Chromium (III)	0	0		0	72.075	83.8	273	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	33.9	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	62.0	
Total Copper	0	0		0	8.699	9.06	29.6	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	17.0	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	4,894	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.425	3.05	9.94	Chem Translator of 0.796 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	2.96	Chem Translator of 0.85 applied
Total Nickel	0	0		0	50.529	50.7	165	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	16.3	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	42.4	
Total Zinc	0	0		0	114.777	116	380	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	9.79	
Acrylonitrile	0	0		0	130	130	424	
Benzene	0	0		0	130	130	424	
Bromoform	0	0		0	370	370	1,207	
Carbon Tetrachloride	0	0		0	560	560	1,827	
Chlorobenzene	0	0		0	240	240	783	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	11,419	
Chloroform	0	0		0	390	390	1,272	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	10,114	
1,1-Dichloroethylene	0	0		0	1,500	1,500	4,894	
1,2-Dichloropropane	0	0		0	2,200	2,200	7,177	
1,3-Dichloropropylene	0	0		0	61	61.0	199	
Ethylbenzene	0	0		0	580	580	1,892	
Methyl Bromide	0	0		0	110	110	359	
Methyl Chloride	0	0		0	5,500	5,500	17,943	
Methylene Chloride	0	0		0	2,400	2,400	7,830	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	685	
Tetrachloroethylene	0	0		0	140	140	457	
Toluene	0	0		0	330	330	1,077	

1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	4,567	
1,1,1-Trichloroethane	0	0		0	610	610	1,990	
1,1,2-Trichloroethane	0	0		0	680	680	2,218	
Trichloroethylene	0	0		0	450	450	1,468	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	359	
2,4-Dichlorophenol	0	0		0	340	340	1,109	
2,4-Dimethylphenol	0	0		0	130	130	424	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	52.2	
2,4-Dinitrophenol	0	0		0	130	130	424	
2-Nitrophenol	0	0		0	1,600	1,600	5,220	
4-Nitrophenol	0	0		0	470	470	1,533	
p-Chloro-m-Cresol	0	0		0	30	30.0	97.9	
Pentachlorophenol	0	0		0	6.693	6.69	21.8	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	297	
Acenaphthene	0	0		0	17	17.0	55.5	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	192	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.33	
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	19,575	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	2,969	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	176	
Butyl Benzyl Phthalate	0	0		0	35	35.0	114	
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	522	
1,3-Dichlorobenzene	0	0		0	69	69.0	225	
1,4-Dichlorobenzene	0	0		0	150	150	489	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	2,610	
Dimethyl Phthalate	0	0		0	500	500	1,631	
Di-n-Butyl Phthalate	0	0		0	21	21.0	68.5	
2,4-Dinitrotoluene	0	0		0	320	320	1,044	
2,6-Dinitrotoluene	0	0		0	200	200	652	
1,2-Diphenylhydrazine	0	0		0	3	3.0	9.79	
Fluoranthene	0	0		0	40	40.0	130	
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	6.52	

Hexachlorocyclopentadiene	0	0		0	1	1.0	3.26	
Hexachloroethane	0	0		0	12	12.0	39.1	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	6,851	
Naphthalene	0	0		0	43	43.0	140	
Nitrobenzene	0	0		0	810	810	2,643	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	11,092	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	192	
Phenanthrene	0	0		0	1	1.0	3.26	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	84.8	

☐ ***THH*** CCT (min): 14 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	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	18.3	
Total Arsenic	0	0		0	10	10.0	32.6	
Total Barium	0	0		0	2,400	2,400	7,830	
Total Boron	0	0		0	3,100	3,100	10,114	
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	140	140	457	
Dissolved Iron	0	0		0	300	300	979	
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	3,262	
Total Mercury	0	0		0	0.050	0.05	0.16	
Total Nickel	0	0		0	610	610	1,990	
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	0.78	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	6	6.0	19.6	
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	130	130	424	
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	N/A	N/A	N/A	
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	108	
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	530	530	1,729	
Methyl Bromide	0	0		0	47	47.0	153	
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	1,300	1,300	4,241	
1,2-trans-Dichloroethylene	0	0		0	140	140	457	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
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	81	81.0	264	
2,4-Dichlorophenol	0	0		0	77	77.0	251	
2,4-Dimethylphenol	0	0		0	380	380	1,240	
4,6-Dinitro-o-Cresol	0	0		0	13	13.0	42.4	
2,4-Dinitrophenol	0	0		0	69	69.0	225	
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	10,400	10,400	33,929	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	670	670	2,186	
Anthracene	0	0		0	8,300	8,300	27,078	
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	1,400	1,400	4,567	
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	150	150	489	
2-Chloronaphthalene	0	0		0	1,000	1,000	3,262	
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	420	420	1,370	
1,3-Dichlorobenzene	0	0		0	420	420	1,370	
1,4-Dichlorobenzene	0	0		0	420	420	1,370	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	17,000	17,000	55,462	
Dimethyl Phthalate	0	0		0	270,000	270,000	880,860	
Di-n-Butyl Phthalate	0	0		0	2,000	2,000	6,525	
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	130	130	424	
Fluorene	0	0		0	1,100	1,100	3,589	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	40	40.0	130	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.0038	0.004	0.012	
Isophorone	0	0		0	35	35.0	114	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	17	17.0	55.5	
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	830	830	2,708	
1,2,4-Trichlorobenzene	0	0		0	35	35.0	114	

☑ *CRL* CCT (min): 24.453 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	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	0.051	0.051	0.67	
Benzene	0	0		0	1.2	1.2	15.7	
Bromoform	0	0		0	4.3	4.3	56.1	
Carbon Tetrachloride	0	0		0	0.23	0.23	3.0	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.4	0.4	5.22	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	74.4	
Dichlorobromomethane	0	0		0	0.55	0.55	7.18	
1,2-Dichloroethane	0	0		0	0.38	0.38	4.96	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	0.34	0.34	4.44	
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	4.6	4.6	60.1	
1,1,2,2-Tetrachloroethane	0	0		0	0.17	0.17	2.22	
Tetrachloroethylene	0	0		0	0.69	0.69	9.01	
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	0.59	0.59	7.7	
Trichloroethylene	0	0		0	2.5	2.5	32.6	
Vinyl Chloride	0	0		0	0.025	0.025	0.33	
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	0.270	0.27	3.52	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.4	1.4	18.3	
Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.000086	0.00009	0.001	
Benzo(a)Anthracene	0	0		0	0.0038	0.004	0.05	
Benzo(a)Pyrene	0	0		0	0.0038	0.004	0.05	
3,4-Benzofluoranthene	0	0		0	0.0038	0.004	0.05	
Benzo(k)Fluoranthene	0	0		0	0.0038	0.004	0.05	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.39	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	1.2	1.2	15.7	
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	0.0038	0.004	0.05	
Dibenzo(a,h)Anthrancene	0	0		0	0.0038	0.004	0.05	
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	0.021	0.021	0.27	
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	0.65	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.65	
1,2-Diphenylhydrazine	0	0		0	0.036	0.036	0.47	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00028	0.0003	0.004	
Hexachlorobutadiene	0	0		0	0.44	0.44	5.74	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	1.4	1.4	18.3	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
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	0.00069	0.0007	0.009	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.065	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	43.1	

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	

☑ ***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	µg/L	21.4	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Selenium	Report	Report	Report	Report	Report	µg/L	16.3	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	184	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	1,199	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	18.3	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	32.6	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	7,830	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	5,220	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	0.86	µg/L	Discharge Conc < TQL
Total Chromium (III)	273	µg/L	Discharge Conc < TQL
Hexavalent Chromium	26.0	µg/L	Discharge Conc < TQL
Total Cobalt	62.0	µg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	17.0	µg/L	Discharge Conc ≤ 25% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	979	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	4,894	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	9.94	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	3,262	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.16	µg/L	Discharge Conc < TQL
Total Nickel	165	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Silver	5.6	µg/L	Discharge Conc < TQL

Total Thallium	0.78	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	4.79	µg/L	Discharge Conc < TQL
Acrylonitrile	0.67	µg/L	Discharge Conc < TQL
Benzene	15.7	µg/L	Discharge Conc < TQL
Bromoform	56.1	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	3.0	µg/L	Discharge Conc < TQL
Chlorobenzene	424	µg/L	Discharge Conc < TQL
Chlorodibromomethane	5.22	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	11,419	µg/L	Discharge Conc ≤ 25% WQBEL
Chloroform	74.4	µg/L	Discharge Conc < TQL
Dichlorobromomethane	7.18	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	4.96	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	108	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	7,177	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	4.44	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	1,729	µg/L	Discharge Conc < TQL
Methyl Bromide	153	µg/L	Discharge Conc < TQL
Methyl Chloride	17,943	µg/L	Discharge Conc < TQL
Methylene Chloride	60.1	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	2.22	µg/L	Discharge Conc < TQL
Tetrachloroethylene	9.01	µg/L	Discharge Conc < TQL
Toluene	1,077	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	457	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	1,990	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	7.7	µg/L	Discharge Conc < TQL
Trichloroethylene	32.6	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.33	µg/L	Discharge Conc < TQL
2-Chlorophenol	264	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	251	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	424	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	42.4	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	225	µg/L	Discharge Conc < TQL
2-Nitrophenol	5,220	µg/L	Discharge Conc < TQL
4-Nitrophenol	1,533	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	97.9	µg/L	Discharge Conc ≤ 25% WQBEL
Pentachlorophenol	3.52	µg/L	Discharge Conc < TQL
Phenol	33,929	µg/L	Discharge Conc ≤ 25% WQBEL
2,4,6-Trichlorophenol	18.3	µg/L	Discharge Conc < TQL
Acenaphthene	55.5	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	27,078	µg/L	Discharge Conc ≤ 25% WQBEL

Benzidine	0.001	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.05	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.05	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.05	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.05	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.39	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	4,567	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	15.7	µg/L	Discharge Conc ≤ 25% WQBEL
4-Bromophenyl Phenyl Ether	176	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	114	µg/L	Discharge Conc ≤ 25% WQBEL
2-Chloronaphthalene	3,262	µg/L	Discharge Conc ≤ 25% WQBEL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	0.05	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.05	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	522	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	225	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	489	µg/L	Discharge Conc ≤ 25% WQBEL
3,3-Dichlorobenzidine	0.27	µg/L	Discharge Conc < TQL
Diethyl Phthalate	2,610	µg/L	Discharge Conc ≤ 25% WQBEL
Dimethyl Phthalate	1,631	µg/L	Discharge Conc ≤ 25% WQBEL
Di-n-Butyl Phthalate	68.5	µg/L	Discharge Conc ≤ 25% WQBEL
2,4-Dinitrotoluene	0.65	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	0.65	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.47	µg/L	Discharge Conc < TQL
Fluoranthene	130	µg/L	Discharge Conc ≤ 25% WQBEL
Fluorene	3,589	µg/L	Discharge Conc ≤ 25% WQBEL
Hexachlorobenzene	0.004	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	5.74	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	3.26	µg/L	Discharge Conc < TQL
Hexachloroethane	18.3	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.012	µg/L	Discharge Conc < TQL
Isophorone	114	µg/L	Discharge Conc ≤ 25% WQBEL
Naphthalene	140	µg/L	Discharge Conc ≤ 25% WQBEL
Nitrobenzene	55.5	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.009	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.065	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	43.1	µg/L	Discharge Conc < TQL
Phenanthrene	3.26	µg/L	Discharge Conc ≤ 25% WQBEL
Pyrene	2,708	µg/L	Discharge Conc ≤ 25% WQBEL
1,2,4-Trichlorobenzene	84.8	µg/L	Discharge Conc ≤ 25% WQBEL

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.31
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Ingleside STP / Windber Area Authority

Permit No.: PA0026778

Replicate No.	Test Completion Date: 10/28/2014 Control	TIWC
1	30	29
2	29	30
3	29	36
4	30	32
5	32	33
6	30	32
7	4	35
8	30	33
9	34	33
10	33	35
11		
12		
13		
14		
15		
Mean	28.100	32.800
Std Dev.	8.634	2.201
# Replicates	10	10
T-Test Result	5.4213	
Deg. of Freedom	15	
Critical T Value	0.8662	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 10/20/2015 Control	TIWC
1	42	24
2	45	34
3	37	36
4	39	40
5	37	35
6	37	45
7	39	39
8	41	36
9	35	39
10	37	37
11		
12		
13		
14		
15		
Mean	38.900	36.500
Std Dev.	2.998	5.401
# Replicates	10	10
T-Test Result	3.9596	
Deg. of Freedom	14	
Critical T Value	0.8681	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 11/22/2016 Control	TIWC
1	32	26
2	25	33
3	35	37
4	37	42
5	0	39
6	35	39
7	34	34
8	31	35
9	30	32
10	28	34
11		
12		
13		
14		
15		
Mean	28.700	35.100
Std Dev.	10.709	4.483
# Replicates	10	10
T-Test Result	4.6670	
Deg. of Freedom	17	
Critical T Value	0.8633	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 10/3/2017 Control	TIWC
1	31	15
2	31	24
3	32	33
4	31	27
5	31	22
6	33	28
7	30	28
8	26	29
9	0	29
10	30	28
11		
12		
13		
14		
15		
Mean	27.500	26.300
Std Dev.	9.835	4.945
# Replicates	10	10
T-Test Result	2.0208	
Deg. of Freedom	17	
Critical T Value	0.8633	
Pass or Fail	PASS	

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.31
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Ingleside STP / Windber Area Authority

Permit No.: PA0026778

Replicate No.	Test Completion Date: 10/28/2014 Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	0	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	0.900	1.000
Std Dev.	0.316	0.000
# Replicates	10	10
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 10/20/2015 Control	TIWC
1	1	1
2	1	1
3	1	0
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	0.900
Std Dev.	0.000	0.316
# Replicates	10	10
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 11/22/2016 Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	0	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	0.900	1.000
Std Dev.	0.316	0.000
# Replicates	10	10
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 10/3/2017 Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	0	1
10	1	1
11		
12		
13		
14		
15		
Mean	0.900	1.000
Std Dev.	0.316	0.000
# Replicates	10	10
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.31
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Ingleside STP / Windber Area Authority

Permit No.: PA0026778

Replicate No.	Test Completion Date: 10/28/2014 Control	TIWC
1	1	1
2	1	1
3	1	0.9
4	1	0.8
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	1.000	0.925
Std Dev.	0.000	0.096
# Replicates	4	4

T-Test Result	8.0674
Deg. of Freedom	3
Critical T Value	0.7649
Pass or Fail	PASS

Replicate No.	Test Completion Date: 10/20/2015 Control	TIWC
1	1	0.6
2	1	1
3	0.9	1
4	1	0.5
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.975	0.775
Std Dev.	0.050	0.263
# Replicates	4	4

T-Test Result	1.6259
Deg. of Freedom	3
Critical T Value	0.7649
Pass or Fail	PASS

Replicate No.	Test Completion Date: 11/22/2016 Control	TIWC
1	1	1
2	1	1
3	1	1
4	0.9	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.975	1.000
Std Dev.	0.050	0.000
# Replicates	4	4

T-Test Result	26.1497
Deg. of Freedom	3
Critical T Value	0.7649
Pass or Fail	PASS

Replicate No.	Test Completion Date: 10/3/2017 Control	TIWC
1	0.8	0.9
2	1	1
3	1	1
4	0.7	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.875	0.975
Std Dev.	0.150	0.050
# Replicates	4	4

T-Test Result	8.4970
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.31
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Ingleside STP / Windber Area Authority

Permit No.: PA0026778

Test Completion Date: 10/28/2014

Replicate No.	Control	TIWC
1	0.247	0.383
2	0.255	0.345
3	0.275	0.314
4	0.27889	0.302
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.264	0.336
Std Dev.	0.015	0.036
# Replicates	4	4

T-Test Result	7.2652
Deg. of Freedom	4
Critical T Value	0.7407
Pass or Fail	**PASS**

Test Completion Date: 10/20/2015

Replicate No.	Control	TIWC
1	0.39	0.375
2	0.38	0.264
3	0.33	0.297
4	0.304	0.41222
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.351	0.337
Std Dev.	0.041	0.068
# Replicates	4	4

T-Test Result	1.9696
Deg. of Freedom	4
Critical T Value	0.7407
Pass or Fail	**PASS**

Test Completion Date: 11/22/2016

Replicate No.	Control	TIWC
1	0.385	0.339
2	0.362	0.345
3	0.37	0.354
4	0.336	0.418
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.363	0.364
Std Dev.	0.021	0.037
# Replicates	4	4

T-Test Result	4.6205
Deg. of Freedom	4
Critical T Value	0.7407
Pass or Fail	**PASS**

Test Completion Date: 10/3/2017

Replicate No.	Control	TIWC
1	0.431	0.425
2	0.465	0.453
3	0.399	0.431
4	0.369	0.388
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.416	0.424
Std Dev.	0.041	0.027
# Replicates	4	4

T-Test Result	5.4615
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	**PASS**

WET Summary and Evaluation

Facility Name	Ingleside STP
Permit No.	PA0026778
Design Flow (MGD)	4
Q_{7-10} Flow (cfs)	14
PMF_a	0.66
PMF_c	1

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	10/28/14	10/20/15	11/22/16	10/3/17
Ceriodaphnia	Reproduction	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	10/28/14	10/20/15	11/22/16	10/3/17
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	10/28/14	10/20/15	11/22/16	10/3/17
Pimephales	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	10/28/14	10/20/15	11/22/16	10/3/17
Pimephales	Growth	PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type	Chronic
TIWC	31 % Effluent
Dilution Series	8, 16, 31, 66, 100 % Effluent
Permit Limit	None
Permit Limit Species	