pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0218448**
Facility Type	**Non-Municipal**	APS ID	**869835**
Major / Minor	**Minor**	Authorization ID	**1365217**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Whitethorn Homeowners Assoc**	Facility Name	**Whitethorn Subdivision Phase II**
Applicant Address	213 Shaw Court	Facility Address	213 Shaw Court
	New Alexandria, PA 15670-2614		New Alexandria, PA 15670-2614
Applicant Contact	Kelli Herrington	Facility Contact	Same as Applicant
Applicant Phone	(412) 849-4853	Facility Phone	Same as Applicant
Client ID	162400	Site ID	533150
Ch 94 Load Status	**Not Overloaded**	Municipality	Salem Township
Connection Status	**No Limitations**	County	Westmoreland
Date Application Received	July 28, 2021	EPA Waived?	Yes
Date Application Accepted	August 16, 2021	If No, Reason	

Purpose of Application: Application for renewal and transfer of an NPDES permit for treated sewage.

Summary of Review

The permittee has applied for a renewal and transfer of NPDES Permit No. PA0218448. PA0218448 was previously issued by the PA Department of Environmental Protection (DEP) on July 28, 2017 and expires on March 31, 2022.

Sewage from this facility is treated with 16 individual CA-5 Chromaglass package plants, one for each home, followed by a dosing tank, a free access sand filter, tablet chlorination, and tablet dechlorination before discharging to Trib 43304 of Whitehorn Creek through outfall 001. Trib 43304 is classified as a Warm Water Fishery per Chapter 93 Designate Use.

The permittee is currently enrolled in and will continue to use eDMR.

The permittee complied with Act 14 notifications and no comments were received.

The association needs to submit an amendment application for associated WQM Permit No. 6501403 to reflect the use of dechlorination in the treatment process.

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*

Approve	Deny	Signatures	Date
X		Stephanie Conrad / Environmental Engineering Specialist	April 6, 2022
x		Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineer Manager	July 7, 2022

Summary of Review
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)	.011
Latitude	40º 24' 40"	Longitude	-79º 28' 46"
Quad Name	Saltsburg	Quad Code	1510
Wastewater Description:	Sewage Effluent		
Receiving Waters	Trib 43304 of Whitethorn Creek (WWF)	Stream Code	43304
NHD Com ID	125292203	RMI	0.72
Drainage Area	0.96	Yield (cfs/mi^2)	0.026
Q_{7-10} Flow (cfs)	0.0252	Q_{7-10} Basis	USGS Stream Stats
Elevation (ft)	1040	Slope (ft/ft)	
Watershed No.	18-C	Chapter 93 Class.	WWF
Existing Use	Aquatic Life	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	Final	Name	Kiskiminetas-Conemaugh River Watersheds TMDL

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

Nearest Downstream Public Water Supply Intake	Buffalo TWP Mun Auth Freeport		
PWS Waters	Allegheny River	Flow at Intake (MGD)	1.25
PWS RMI	29.4	Distance from Outfall (mi)	39.68

Changes Since Last Permit Issuance: None

Other Comments: None

Treatment Facility Summary

Treatment Facility Name: Whitethorn Subdivision Phase II

WQM Permit No.	Issuance Date
6501403	July 27, 2001
6501403	April 15, 2002

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary with NH_3N Reduction	Chromaglass Units	Tablet Chlorination with dechlorination	0.011

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.011		No limit	Pumped and Hauled	Other WWTP

Changes Since Last Permit Issuance: None.

Other Comments:

Compliance History

Facility: Whitehorn Subdivision Phase II

NPDES Permit No.: PA0218448

Compliance Review Period: 2/2017 – 2/2022

Inspection Summary:

INSP ID	INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC
3078677	08/26/2020	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted
2610864	04/11/2017	Administrative/File Review	PA Dept of Environmental Protection	Violation(s) Noted

Violation Summary:

VIOL ID	VIOLATION DATE	VIOLATION TYPE	VIOLATION TYPE DESC	RESOLVED DATE
789840	04/11/2017	92A.61(G)	NPDES - Failure to use a format or process required by DEP for self-monitoring results	04/25/2017

Open Violations by Client ID:

No open violations for Client ID 162400

Enforcement Summary:

ENF ID	ENF TYPE	ENF CREATION DATE	ENF FINALSTATUS	ENF CLOSED DATE
354992	NOV	07/05/2017	Comply/Closed	04/25/2017

DMR Violation Summary:

MONITORING END DATE	OUTFALL	PARAMETER	STATISTICAL BASE CODE	PERMIT VALUE	SAMPLE VALUE	UNIT OF MEASURE
8/31/2021	1	Ammonia-Nitrogen	Average Monthly	7.5	7.55	mg/L
7/31/2021	1	Ammonia-Nitrogen	Average Monthly	7.5	8	mg/L
12/31/2020	1	Total Residual Chlorine (TRC)	Average Monthly	0.5	< 1.0	mg/L
11/30/2020	1	Total Residual Chlorine (TRC)	Average Monthly	0.5	< 1.0	mg/L
10/31/2020	1	Total Residual Chlorine (TRC)	Average Monthly	0.5	< 1.0	mg/L
9/30/2020	1	Ammonia-Nitrogen	Average Monthly	7.5	13.3	mg/L
9/30/2020	1	Ammonia-Nitrogen	Instantaneous Maximum	15	16.8	mg/L
7/31/2020	1	Ammonia-Nitrogen	Average Monthly	7.5	11.3	mg/L
6/30/2020	1	Ammonia-Nitrogen	Average Monthly	7.5	9	mg/L
5/31/2020	1	Ammonia-Nitrogen	Average Monthly	7.5	9.44	mg/L
9/30/2019	1	Total Suspended Solids	Instantaneous Maximum	60	100	mg/L
9/30/2019	1	Total Suspended Solids	Average Monthly	30	53.5	mg/L
8/31/2019	1	Ammonia-Nitrogen	Average Monthly	7.5	9.51	mg/L
7/31/2019	1	Ammonia-Nitrogen	Average Monthly	7.5	11.25	mg/L
6/30/2019	1	Ammonia-Nitrogen	Average Monthly	7.5	9.1	mg/L

Compliance Status:

Compliance status under review

Completed by: John Murphy

Completed date: 2/2/2022

Compliance History

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

Parameter	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20
Flow (MGD) Average Monthly	0.0041	0.0048	0.005	0.0064	0.0053	0.0051	0.0046	0.0046	0.006	0.0052	0.006	0.007
pH (S.U.) Minimum	6.2	6.25	6.7	6.8	6.9	6.69	6.89	6.9	6.79	6.69	6.76	6.91
pH (S.U.) Maximum	7.6	7.67	7.4	7.5	7.9	7.56	7.10	7.1	7.26	7.39	7.39	7.11
DO (mg/L) Minimum	5.1	6.15	6.0	6.1	6.1	6.0	4.7	4.5	4.79	5.50	4.81	6.41
TRC (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 1.0	< 1.0	< 1.0	0.1	0.1
TRC (mg/L) Instantaneous Maximum	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1	< 0.1	< 0.1	< 1.0	1.0	< 1.0	0.1	1.0
CBOD5 (mg/L) Average Monthly	< 3	< 3	4.35	< 3	< 3	< 3	3.25	< 3	< 3	< 3	< 3	1.5
CBOD5 (mg/L) Instantaneous Maximum	3	3	5.7	3	3	< 3	3.5	3	3	3	< 3	3
TSS (mg/L) Average Monthly	6.5	3.5	7.5	4	7	4	< 3	< 3	< 3	< 3	12	6.5
TSS (mg/L) Instantaneous Maximum	8	4	12	5	11	5	3	3	3	3	13	8
Fecal Coliform (No./100 ml) Geometric Mean	1	39	1.41	8.3	< 1	1	1	1	1	1	1	1
Total Nitrogen (mg/L) Daily Maximum								6.24				
Ammonia (mg/L) Average Monthly	8.0	4.8	1.25	8.01	5.62	5.85	6.56	5.08	1.37	0.19	13.3	6.65
Ammonia (mg/L) Instantaneous Maximum	8.24	6.27	1.7	9.07	6.3	6.61	6.65	5.29	2.18	0.19	16.8	12.7
Total Phosphorus (mg/L) Daily Maximum								3.15				

Total Aluminum (mg/L) Daily Maximum								< 0.10				
Total Iron (mg/L) Daily Maximum								0.22				
Total Manganese (mg/L) Daily Maximum								0.82				

Compliance History

Effluent Violations for Outfall 001, from: September 1, 2020 To: July 31, 2021

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TRC	12/31/20	Avg Mo	< 1.0	mg/L	0.5	mg/L
TRC	10/31/20	Avg Mo	< 1.0	mg/L	0.5	mg/L
TRC	11/30/20	Avg Mo	< 1.0	mg/L	0.5	mg/L
Ammonia	07/31/21	Avg Mo	8.0	mg/L	7.5	mg/L
Ammonia	09/30/20	Avg Mo	13.3	mg/L	7.5	mg/L
Ammonia	09/30/20	IMAX	16.8	mg/L	15.0	mg/L

Summary of Inspections: The facility was last inspected by PADEP as a Compliance Evaluation on August 26, 2020. There were no violations.

Other Comments:

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .011
Latitude 40º 24' 40.00" **Longitude** -79º 28' 46.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations (TBELs)

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

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

Water Quality-Based Limitations (WQBELs)

Pursuant to EPA's approval of Pennsylvania's 2017 Triennial Review of Water Quality Standards and corresponding regulatory changes published in the *Pennsylvania Bulletin* on July 11, 2020, new water quality criteria for ammonia-nitrogen apply to waters of the commonwealth. Therefore, WQBELs for Outfall 001 are being re-evaluated even though there have been no changes to the STP.

The effluent was modeled using WQM 7.0 to evaluate the $CBOD_5$, Ammonia-Nitrogen, and Dissolved Oxygen (DO) parameters. Modeling confirmed that technology based $CBOD_5$ limitations are appropriate. Modeling also determined that stricter Ammonia-Nitrogen limits are necessary to meet in-stream water quality criterion. In accordance with DEP's SOP-Establishing Effluent Limitations for Individual Sewage Permits (Version 1.9, March 24, 2021), a seasonal multiplier of three times the summertime average monthly limit should be established for the winter period. Winter Ammonia-Nitrogen limits were also modeled using WQM 7.0. By comparing the winter WQM 7.0 output value with the one calculated from the summer limit using a seasonal multiplier of three, the more restrictive of the two values is imposed. For this facility, the winter Ammonia-Nitrogen limit to be imposed is equal to the summer limit times a seasonal multiplier of three. WQM 7.0 output files are provided in Attachment A.

Total Residual Chlorine (TRC) was modeled with PA DEPs TRC Spreadsheet. Modeling determined that a stricter TRC limit is necessary to meet in-stream water quality criterion. TRC Spreadsheet output files are provided in Attachment B.

Ammonia-Nitrogen and TRC limits are becoming more restrictive. Based on eDMR data, the facility as currently operating should be able to meet the new, more restrictive TRC limits. The facility, however, is not able to consistently meet the new, more restrictive Ammonia-Nitrogen limits. A compliance period of three years for Ammonia-Nitrogen is therefore being established and a schedule has been added to the NPDES Draft Permit.

Parameter	Limit (mg/l)	SBC	Model
Total Residual Chlorine	0.2	Average Monthly	TRC Spreadsheet
Ammonia-Nitrogen (summer)	4.5	Average Monthly	WQM 7.0

Ammonia-Nitrogen (winter)	13.5	Average Monthly	WQM 7.0

Best Professional Judgment (BPJ) Limitations

A DO minimum limitation of 4.0 mg/L will be implemented based on the standard in 25 PA Code Chapter 93 and best professional judgement.

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

Pursuant to EPA's approval of Pennsylvania's Triennial Review of Water Quality Standards and corresponding regulatory changes published in the *Pennsylvania Bulletin* on July 11, 2020, sewage discharges will include monitoring, at a minimum for *E. coli,* in new and reissued permits with a monitoring frequency of 1/year for design flows of 0.002-0.05.

Annual sampling for Nitrogen and Phosphorus will be imposed per 25 PA Code §92a.61.

Monitoring frequency for the proposed effluent limits are based upon Table 6.3, Self-Monitoring Requirements for Sewage Dischargers, from the Department's *Technical Guidance for the Development and Specification of Effluent Limitations.*

For pH, DO, and TRC, a monitoring frequency of 1/day is required per Table 6.3 of Department's technical guidance document. Based on information supplied by the permittee, the Department is in agreement that the cost of upgrades, maintenance, and daily sampling constitutes a hardship to the residents of this subdivision at this time. The department is therefore granting a sample frequency for these parameters of 5/week. This is the least frequent sampling that can be allowed per Department policy for a facility that is discharging daily. During the next permit renewal (estimated to be 2027), the Department intends to impose a daily monitoring frequency for these parameters in accordance with Table 6.3. If at the time of renewal, the facility still feels that daily sampling constitutes a hardship, then as part of the renewal application , the permittee must submit a detailed annual maintenance cost estimate for the upgraded system, a detailed estimate of median household income for the facility, and a detailed cost estimate for daily sampling. The Department will review the submittals and make a determination regarding sampling frequency as part of the permit review process.

Kiskiminetas-Conemaugh River Watershed TMDL

Section 303(d) of the Clean Water Act and the U.S. Environmental Protection Agency's Water Quality Planning and Management Regulation (codified at Title 40 of the Code of Federal Regulations Part 130) requires states to develop a TMDL for impaired water bodies. A TMDL establishes the amount of a pollutant that a water body can assimilate without exceeding water quality criteria for the pollutant. TMDLs also provide a scientific basis for States to establish water quality-based controls for reducing pollution from both point and non-point sources in order to restore and maintain the

quality of the state's water resources (USEPA 1991a). Stream reaches within the Kiskiminetas-Conemaugh River Watershed are included in the state's 2008 Section 303(d) list because of various impairments including metals, pH, and sediment.

Whitethorn Subdivision Phase II (PA0218448) discharges to the Kiskiminetas-Conemaugh River Watershed for which a TMDL was finalized on January 29, 2010. The TMDL addresses metals, pH, and sediment impairments associated with abandoned mine drainage. This facility is listed as a negligible discharge in Appendix C of the approved TMDL and is covered under the aggregate WLA for negligible dischargers in Appendix G of the approved TMDL document. The WLA for this facility was based on a flow of 0.011 MGD and the in-stream water quality for each pollutant of concern (aluminum, iron, and manganese).

The previous permit imposed a monitor and report requirement for aluminum, iron, and manganese. The highest reported value for the last three years of eDMR data is reported below along with the in-stream water quality criteria for each pollutant of concern.

Parameter	Maximum Reported Value (mg/l)	Criteria (mg/L)
Aluminum, Total	<0.1	0.75
Iron, Total	0.22	1.5
Manganese, Total	0.82	1.0

In accordance with 25 PA Code §92a.61, a 1/year monitoring requirement for iron, manganese, and aluminum will again be imposed in the permit to continue verification that the sewage discharge is not contributing to stream impairment.

A "Reasonable Potential Analysis" was conducted using PADEP's Toxic Management Spreadsheet Version 1.3. The maximum reported value for each pollutant of concern during the last three years was input into the TMS Spreadsheet. The analysis determined that a monitoring and report requirement for Manganese is necessary on the basis that the reported discharge concentration is greater than 10% the Governing WQBEL based on the Threshold Human Health Criteria. Output file from the Toxic Management Spreadsheet are included in Attachment C

For the reasons discussed above, the Department will not impose more frequent monitoring for manganese, however, the permittee should be aware that if manganese continues to be above 10% of the governing WQBEL, then more frequent monitoring will be imposed during the next permit cycle.

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: Three Years Following Permit Issuance through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	13.5	XXX	27.0	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	4.5	XXX	9.0	2/month	Grab

Compliance Sampling Location: Outfall 001.

Other Comments: None.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit and reflect the previous permit limits which are being reimposed during the three-year compliance period following permit issuance. 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 Three Years Following Permit Issuance.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	22.5	XXX	45.0	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	7.5	XXX	15.0	2/month	Grab

Compliance Sampling Location: Outfall 001.

Other Comments: None.

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	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	0.011	XXX	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	5/week	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	5/week	Grab
TRC	XXX	XXX	XXX	0.2	XXX	0.7	5/week	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	Grab
TSS	XXX	XXX	XXX	30	XXX	60	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Total Aluminum	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Total Iron	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Total Manganese	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Compliance Sampling Location: Outfall 001.

Other Comments: None.

ATTACHMENT A

WQM 7.0 Modeling Results

Permit No. PA0218448

Summer

Permit No. PA0218448

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
18C	43304	Trib 43304 to Whitethorn Creek	0.720	1040.00	0.96	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.026	0.00	0.00	0.000	0.000	10.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Whitehorn Subdi	PA0218448	0.0110	0.0000	0.0000	0.000	20.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	8.24	0.00	0.00
NH3-N	7.50	0.00	0.00	0.70

Permit No. PA0218448

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
18C	43304	Trib 43304 to Whitethorn Creek	0.010	980.00	1.54	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.026	0.00	0.00	0.000	0.000	10.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

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

Parameter Data

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

Permit No. PA0218448

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
18C	43304	Trib 43304 to Whitethorn Creek

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
0.720	0.03	0.00	0.03	.017	0.01601	.303	3.52	11.61	0.04	1.094	22.98	7.00
Q1-10 Flow												
0.720	0.02	0.00	0.02	.017	0.01601	NA	NA	NA	0.03	1.252	22.43	7.00
Q30-10 Flow												
0.720	0.03	0.00	0.03	.017	0.01601	NA	NA	NA	0.04	0.981	23.34	7.00

Permit No. PA0218448

WQM 7.0 Modeling Specifications

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

Permit No. PA0218448

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
18C	43304	Trib 43304 to Whitethorn Creek

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.720	Whitehorn Subdi	8.11	15	8.11	15	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.720	Whitehorn Subdi	1.51	4.54	1.51	4.54	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
0.72	Whitehorn Subdi	25	25	4.54	4.54	4	4	0	0

Permit No. PA0218448

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
18C	43304	Trib 43304 to Whitethorn Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.720	0.011	22.985	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
3.515	0.303	11.612	0.040
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
11.27	1.131	1.83	0.881
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.533	24.452	Owens	5
Reach Travel Time (days)			
1.094			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.109	9.78	1.66	7.51
0.219	8.49	1.51	7.70
0.328	7.37	1.37	7.81
0.437	6.39	1.25	7.81
0.547	5.55	1.13	7.81
0.656	4.81	1.03	7.81
0.766	4.18	0.93	7.81
0.875	3.62	0.85	7.81
0.984	3.15	0.77	7.81
1.094	2.73	0.70	7.81

Permit No. PA0218448

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
18C	43304	Trib 43304 to Whitethorn Creek

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
0.720	Whitehorn Subdi	PA0218448	0.011	CBOD5	25		
				NH3-N	4.54	9.08	
				Dissolved Oxygen			4

Winter

Permit No. PA0218448

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
18C	43304	Trib 43304 to Whitethorn Creek	0.720	1040.00	0.96	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.053	0.00	0.00	0.000	0.000	10.0	0.00	0.00	5.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Whitehorn Subdl	PA0218448	0.0110	0.0000	0.0000	0.000	15.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	12.51	0.00	0.00
NH3-N	22.50	0.00	0.00	0.70

Permit No. PA0218448

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
18C	43304	Trib 43304 to Whitethorn Creek	0.010	980.00	1.54	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.053	0.00	0.00	0.000	0.000	10.0	0.00	0.00	5.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

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

Parameter Data

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

Permit No. PA0218448

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
18C	43304	Trib 43304 to Whitethorn Creek

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
0.720	0.05	0.00	0.05	.017	0.01601	.327	4	12.23	0.05	0.839	7.51	7.00
Q1-10 Flow												
0.720	0.03	0.00	0.03	.017	0.01601	NA	NA	NA	0.04	1.000	8.44	7.00
Q30-10 Flow												
0.720	0.07	0.00	0.07	.017	0.01601	NA	NA	NA	0.06	0.734	6.98	7.00

Permit No. PA0218448

WQM 7.0 Modeling Specifications

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

Permit No. PA0218448

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
18C	43304	Trib 43304 to Whitethorn Creek

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.720	Whitehorn Subdl	20.59	45	20.59	45	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.720	Whitehorn Subdl	4.08	20.64	4.08	20.64	0	0

Dissolved Oxygen Allocations

		CBOD5		NH3-N		Dissolved Oxygen			
RMI	Discharge Name	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Critical Reach	Percent Reduction
0.72	Whitehorn Subdl	25	25	20.64	20.64	4	4	0	0

Permit No. PA0218448

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
18C	43304	Trib 43304 to Whitethorn Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.720	0.011	7.510	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
4.004	0.327	12.234	0.052
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
7.77	1.116	5.18	0.268
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
10.374	17.512	Owens	5
Reach Travel Time (days)			
0.839			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.084	7.37	5.07	10.75
0.168	6.99	4.95	10.75
0.252	6.63	4.84	10.75
0.335	6.29	4.74	10.75
0.419	5.97	4.63	10.75
0.503	5.66	4.53	10.75
0.587	5.37	4.43	10.75
0.671	5.10	4.33	10.75
0.755	4.83	4.23	10.75
0.839	4.59	4.14	10.75

Permit No. PA0218448

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
18C	43304	Trib 43304 to Whitethorn Creek

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Eff. Limit 30-day Ave. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
0.720	Whitehorn Subdl	PA0218448	0.011	CBOD5	25		
				NH3-N	20.64	41.28	
				Dissolved Oxygen			4

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ATTACHMENT B

TRC Modeling Results

Permit No. PA0218448

Copy of TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.0252	= Q stream (cfs)	0.5	= CV Daily
0.011	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	1.3.2.iii	WLA afc =	0.491	1.3.2.iii	WLA cfc =	0.472
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	0.183	5.1d	LTA_cfc =	0.274

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.225	AFC
		INST MAX LIMIT (mg/l) =	0.737	

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

ATTACHMENT C
Toxics Management Spreadsheet Output Files

Permit No. PA0218448

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Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Whitehorn Subdivison Phase II** NPDES Permit No.: **PA0218448** 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
0.011	100	7						

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L	<	100									
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	µg/L											
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L		220									
	Total Lead	µg/L											
	Total Manganese	µg/L		820									
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	µg/L											
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

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

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	2,6-Dinitrotoluene	µg/L	<										
	Di-n-Octyl Phthalate	µg/L	<										
	1,2-Diphenylhydrazine	µg/L	<										
	Fluoranthene	µg/L	<										
	Fluorene	µg/L	<										
	Hexachlorobenzene	µg/L	<										
	Hexachlorobutadiene	µg/L	<										
	Hexachlorocyclopentadiene	µg/L	<										
	Hexachloroethane	µg/L	<										
	Indeno(1,2,3-cd)Pyrene	µg/L	<										
	Isophorone	µg/L	<										
	Naphthalene	µg/L	<										
	Nitrobenzene	µg/L	<										
	n-Nitrosodimethylamine	µg/L	<										
	n-Nitrosodi-n-Propylamine	µg/L	<										
	n-Nitrosodiphenylamine	µg/L	<										
	Phenanthrene	µg/L	<										
	Pyrene	µg/L	<										
	1,2,4-Trichlorobenzene	µg/L	<										
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											

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Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Whitehorn Subdivison Phase II, NPDES Permit No. PA0218448, 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 (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	043304	0.72	1040	0.96			Yes
End of Reach 1	043304	0.01	980	1.54			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	0.72	0.026				3.52	0.303	0.04				100	7		
End of Reach 1	0.01	0.026													

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	0.72														
End of Reach 1	0.01														

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Whitehorn Subdivison Phase II, NPDES Permit No. PA0218448, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 0.285 PMF: 1 Analysis Hardness (mg/l): 100 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 Aluminum	0	0		0	750	750	1,850	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	

☑ ***CFC*** CCT (min): 0.285 PMF: 1 Analysis Hardness (mg/l): 100 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 Aluminum	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	3,700	WQC = 30 day average; PMF = 1
Total Manganese	0	0		0	N/A	N/A	N/A	

☑ ***THH*** CCT (min): 0.285 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 Aluminum	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	2,467	

☑ ***CRL*** CCT (min): 0.191 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 Aluminum	0	0		0	N/A	N/A	N/A	

Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	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 Manganese	Report	Report	Report	Report	Report	µg/L	2,467	THH	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 Aluminum	1,186	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	3,700	µg/L	Discharge Conc ≤ 10% WQBEL

ATTACHMENT D

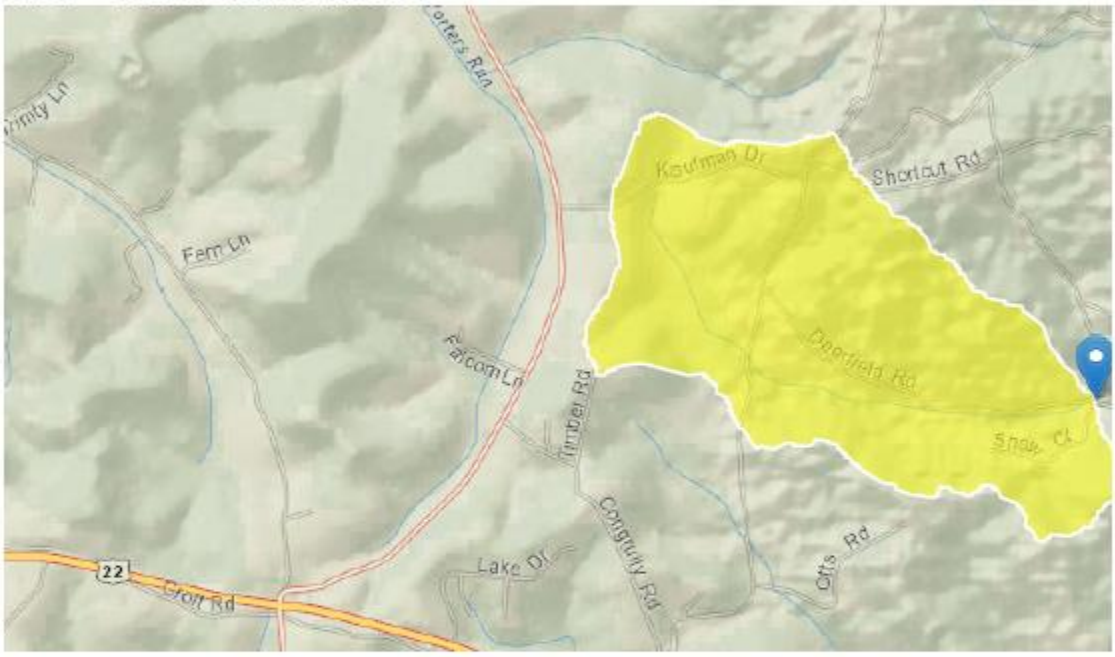
USGS Stream Stats Output

Permit No. PA0218448

Point of Discharge

StreamStats Report

Region ID: PA
Workspace ID: PA20210922115821057000
Clicked Point (Latitude, Longitude): 40.41121, -79.47922
Time: 2021-09-22 07:58:40 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.96	square miles
ELEV	Mean Basin Elevation	1197	feet
PRECIP	Mean Annual Precipitation	41	inches

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

Low-Flow Statistics Flow Report [Low Flow Region 3]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0706	ft^3/s
30 Day 2 Year Low Flow	0.106	ft^3/s
7 Day 10 Year Low Flow	0.0252	ft^3/s
30 Day 10 Year Low Flow	0.0391	ft^3/s
90 Day 10 Year Low Flow	0.0601	ft^3/s

Low-Flow Statistics Citations

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

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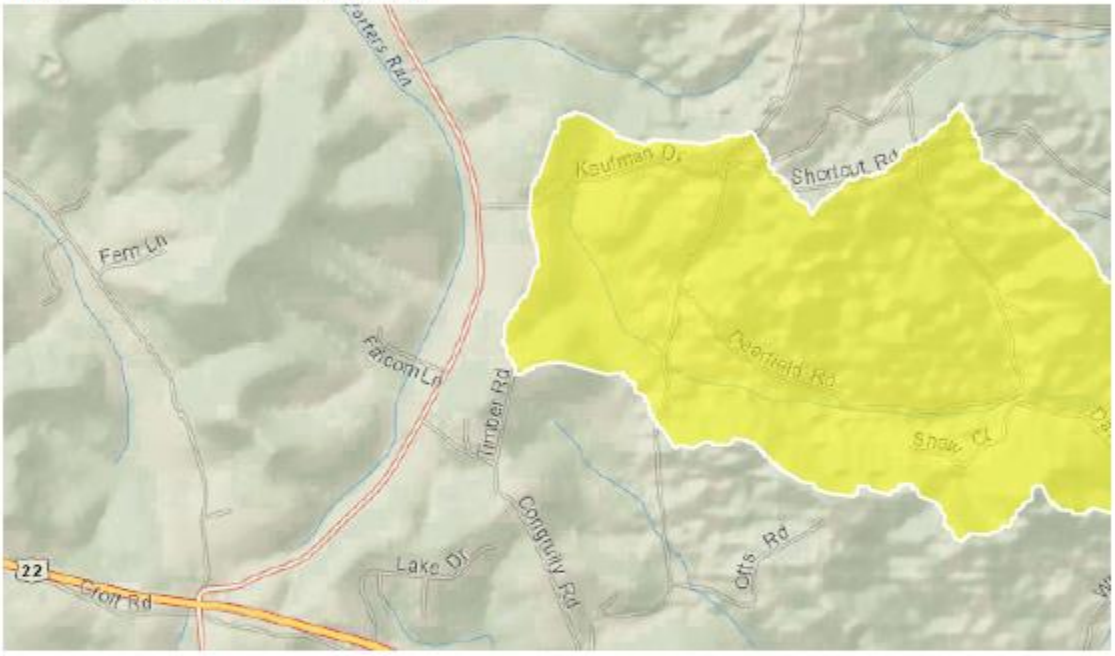
Downstream of Discharge

StreamStats Report

Region ID: PA
Workspace ID: PA20210922122012336000
Clicked Point (Latitude, Longitude): 40.40583, -79.46950
Time: 2021-09-22 08:20:31 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1.54	square miles
ELEV	Mean Basin Elevation	1178	feet
PRECIP	Mean Annual Precipitation	41	inches