Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0091243**
Facility Type	**Non-Municipal**	APS ID	**1103201**
Major / Minor	**Minor**	Authorization ID	**1466125**

Applicant and Facility Information

Applicant Name	**Laurel Highlands Council Boy Scouts of America**	Facility Name	**Heritage Reservation**
Applicant Address	1275 Bedford Avenue	Facility Address	300 Heritage Road
	Pittsburgh, PA 15219-3645		Farmington, PA 15437-1075
Applicant Contact	Dave Wilkins	Facility Contact	Sane as Applicant
Applicant Phone	(724)-329-8534	Facility Phone	Same as Applicant
Client ID	80604	Site ID	245403
Ch 94 Load Status	Not Overloaded	Municipality	Wharton Township
Connection Status		County	Fayette
Date Application Received	December 22, 2023	EPA Waived?	Yes
Date Application Accepted	January 5, 2024	If No, Reason	

Purpose of Application: Application for renewal of an NPDES Permit for treated sewage

Summary of Review

Laurel Highlands Council Boy Scouts of America has applied for a renewal of NPDES Permit No. PA0091243. PA0091243 was previously issued by the Pennsylvania Department of Environmental Protection (DEP) on December 21, 2018 and expired December 31, 2023.

Sewage from this facility is treated by flow equalization, screening, primary settling. Ammonia-nitrogen is reduced either in a rotating biological contactor or a sequencing batch reactor and then undergoes ultraviolet (UV) disinfection. The facility discharges to a dry swale draining to Tributary 42009 of Little Sandy Creek, which is classified as a HQ-CWF in State Watershed 19-G.

Settled biosolids are pumped from the secondary clarifiers, sludge thickening, and aerobic digestion. They are pumped from the digestion tank and hauled by Humbert Sanitation and disposed of at Franklin Township STP.

Laurel Highlands Council Boy Scouts of America is currently enrolled in and will continue to use eDMR.

The applicant has complied with Act 14 Notifications with undated letters and sent to Wharton Township and Fayette County.

At some point between January 2013 and May 2016, the ownership for this facility transferred from Allegheny Trails Council to Laurel Highlands Council Boy Scouts of America. The NPDES and WQM permits, however, were never transferred. Laurel Highlands Council Boy Scouts of America needs to submit transfer applications for both NPDES Permit No. PA0091243 and WQM Permit No. 2880403.

The following permit changes are being made during this permit cycle:

Approve	Deny	Signatures	Date
X		Stephanie Conrad / Environmental Engineer	January 16, 2025
X		Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineering Manager	January 16, 2025

Summary of Review

- The monitoring frequency for DO, pH, and UV percent transmittance have all changed to be consistent with DEP guidance.
- The instantaneous minimum limit for DO has been increased to 6.0 based on WQM 7.0 Modeling.
- *E. coli* monitoring was added in accordance with 25 Pa. Code 93.7(a).

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.***

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 30day 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)	0.017
Latitude	39º 45' 00"	Longitude	-79º 32' 29"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Tributary 42009 of Little Sandy Creek (HQ-CWF)	Stream Code	42009
NHD Com ID	64190896	RMI	0.8
Drainage Area	0.25	Yield (cfs/mi^2)	0.00832
Q_{7-10} Flow (cfs)	0.00208	Q_{7-10} Basis	USGS Stream Stats
Elevation (ft)	2100	Slope (ft/ft)	
Watershed No.	19-G	Chapter 93 Class.	HQ-CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake	Outside of Pennsylvania Border		
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: None

Other Comments: The facility discharges to a dry swale. The receiving water information above reflects stream information at the Point of First Use.

Treatment Facility Summary

Treatment Facility Name: Heritage Reservation STP

WQM Permit No.	Issuance Date	Purpose
2680403	January 19, 1981	Permit issued approving the construction of sewage treatment facility with a design flow of 0.014 including: • Equalization Basin • Rotating Batch Reactor • Chlorination
2880403	October 29, 1992	Permit issued approving the expansion of the sewage treatment facility by the addition of a sequencing batch reactor
2616400	October 25, 2016	Permit issued by PA DEP approving the installation of a Trojan UV3000 PTP UV unit.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Ammonia Reduction	Sequencing Batch Reactor	Ultraviolet	0.017

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.017		Not Overloaded	Dewatering	Other WWTP

Changes Since Last Permit Issuance: None

Other Comments: None

Compliance History

Operations Compliance Check Summary Report

Facility: HERITAGE RESERVATION STP

NPDES Permit No.: PA0091243

Compliance Review Period: 1/1/20-1/13/25

Inspection Summary:

INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC
06/24/2021	Administrative/File Review	PA Dept of Environmental Protection	No Violations Noted
12/20/2021	Administrative/File Review	PA Dept of Environmental Protection	Violation(s) Noted

Violation Summary:

VIOLATION DATE	VIOLATION TYPE	VIOLATION TYPE DESC	RESOLVED DATE
12/20/2021	302.202	Operator Certification - Failure to submit annual system fee	01/18/2022

Open Violations by Client ID:

No open violations for Client ID 80604

Enforcement Summary:

ENF TYPE	ENF TYPE DESC	EXECUTED DATE	VIOLATIONS	AMOUNT RECEIVED	ENF FINAL STATUS	ENF CLOSED DATE
NOV	Notice of Violation	12/20/2021	302.202		Comply/Closed	01/18/2022
CACP	Consent Assessment of Civil Penalty	02/19/2020	92A.44	$5,000.00	Comply/Closed	03/09/2020

Effluent Violation Summary:

MON_PD	PARAMETER	SAMPLE	PERMIT	UNIT	STAT_BASE_CODE
Dec-23	Nitrate-Nitrite as N	10.7	10	mg/L	Average Monthly
Feb-20	Nitrate-Nitrite as N	10.8	10	mg/L	Average Monthly

Compliance Status: Facility is generally in compliance with no open violations or pending enforcements.

Completed by: Amanda Illar **Completed date:** 1/13/25

Compliance History

DMR Data for Outfall 001 (from December 1, 2023 to November 30, 2024)

Parameter	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23
Flow (MGD) Average Monthly	0.006	0.002	0.002	0.004	0.0042	0.0041	0.0058	0.0059	0.0052	0.0064	0.0065	0.0034
pH (S.U.) Instantaneous Minimum	6.8	6.5	6.7	6.9	7.1	6.8	6.4	6.3	6.8	7.1	7.2	6.8
pH (S.U.) Instantaneous Maximum	8.1	8.6	7.6	7.6	7.7	7.6	7.4	7.4	7.7	7.6	7.59	7.3
DO (mg/L) Instantaneous Minimum	5.3	4.0	3.18	4.0	3.4	4.2	3.9	3.18	4.3	4.0	8.3	3.77
$CBOD_5$ (mg/L) Average Monthly	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	3.05	2.7	2.15	2.4	2.8
$CBOD_5$ (mg/L) Instantaneous Maximum	< 2.0	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	3.4	3.4	2.3	2.5	3.0
TSS (mg/L) Average Monthly	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	5.0	< 5.0
TSS (mg/L) Instantaneous Maximum	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	5.0	5.0
Fecal Coliform (No./100 ml) Geometric Mean	2	6	2	2	2	2	2	2	2	2	2	2
Fecal Coliform (No./100 ml) Instantaneous Maximum	2	18	2	2	2	2	2	2	2	2	2	2
UV Transmittance (%) Instantaneous Minimum	0.2	0.2	0.2	0.3	0.6	0.4	1.1	1.1	1.3	1.5	1.0	1.8
UV Transmittance (%) Average Monthly	0.3	0.3	0.3	0.5	0.8	1.5	1.6	2.3	2.4	2.5	2.2	2.4
Nitrate-Nitrite (mg/L) Average Monthly	9.0	4.9	5.9	9.75	8.55	6.8	4.0	4.8	1.4	4.8	7.0	10.7

Nitrate-Nitrite (mg/L) Instantaneous Maximum	9.87	5.9	6.0	13.2	9.25	8.6	4.91	4.9	2.19	5.28	7.79	11.8
Total Nitrogen (mg/L) Daily Maximum												14.14
Ammonia (mg/L) Average Monthly	0.15	0.7	0.2	< 0.1	< 0.1	0.1	< 0.1	0.9	< 0.1	1.55	0.1	0.15
Ammonia (mg/L) Instantaneous Maximum	0.2	0.7	0.2	< 0.1	< 0.1	0.1	< 0.1	1.7	< 0.1	1.7	0.1	0.2
Total Phosphorus (mg/L) Daily Maximum												1.3

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.017
Latitude 39º 45' 00" **Longitude** -79º 32' 29"
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
Flow (MGD)	**Report**	**Average Monthly**	**-**	**92a.27, 92a.61**
$CBOD_5$	**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)**
Total Residual Chlorine	**0.5**	**Average Monthly**	**-**	**92a.48(b)(2)**
Ammonia-Nitrogen	**25**	**Average Monthly**	**-**	**BPJ**
Dissolved Oxygen	**4.0**	**Min**	**-**	**BPJ**
pH	**6.0 – 9.0 S.U.**	**Min – Max**	**133.102(c)**	**95.2(1)**
Total Nitrogen	**Report**	**Average Monthly**	**-**	**92a.61**
Total Phosphorus	**Report**	**Average Monthly**	**-**	**92a.61**
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)**

Advanced Treatment Requirements

The Department issued the guidance document, *Implementation Guidance for Evaluating Discharges to Drainage Swales and Ditches,* on May 22, 1987 (*1987 Drainage Swales Guidance*). The guidance document established the following minimum treatment requirements for facilities that discharge to a dry swale:

Parameter	Advanced Treatment Requirements
	Average Monthly (mg/L)
$CBOD_5$	15.0
DO (instantaneous minimum)	3.0
Suspended Solids	25
NH_3-N (May 1 – Oct. 31)	3.0
NH_3-N (Nov. 1 – Apr. 30)	9.0
Fecal Coliform	Provide effective disinfection as defined in the State Regulations.
Total Residual Chlorine	Monitor and Report
pH	Not less than 6.0 nor greater than 9.0
Other parameters, as needed	*If a MCL has been promulgated for the parameter in question, then it will be imposed as a limit. If no MCL has been promulgated, then the effluent limit will be set equal to human health criteria defined for ground water by the Division of Water Quality.*

The Department issued a subsequent dry swales guidance document titled *Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers* [Doc. No. 391-2000-014] on April 12, 2008. The guidance document amended Advanced Treatment Requirements by making

$CBOD_5$ and TSS more restrictive while removing the remaining contaminants of concern and adding Dissolved Oxygen (DO), Total Nitrogen, and Total Phosphorus. Heritage Reservation was originally permitted with WQM Permit No. 2680403 on January 19, 1981. The plant was expanded with WQM Permit No. 2680403 on October 29, 1992. The facility predates the 2008 guidance and is therefore considered to be an "existing discharge." In accordance with the Department's SOP for *Establishing Effluent Limitations for Individual Sewage Permits* [SOP No. BCW-PMT-033], when evaluating an existing discharge, if the advanced treatment requirements cannot be achieved, the standards in DEP guidance document number 391-2000-014 do not apply unless the receiving stream is impaired and the point source discharge contributes to the impairment. The POFU occurs on Tributary 42009 of Little Sandy Creek, which is not impaired. Therefore, the 2008 advanced treatment requirements will not be imposed on this facility.

In addition to the conventional sewage pollutant and ammonia nitrogen advanced treatment requirements defined above, an effluent limitation for nitrate-nitrite as N will be imposed in accordance with the *1987 Dry Swales Guidance*. DEP's *Maximum Contaminant Levels, Maximum Residual Disinfectant Levels, and Treatment Technique Requirements* [Doc. No. 3930-FS-DEP5286] defines a maximum contamination level for nitrate as N of 10 mg/L. Therefore, a limit of 10 mg/L for nitrate-nitrite as N will again be imposed for this permit.

Point of First use (POFU)

A site visit was conducted by DEP aquatic biologist Russel Stutzman in 1992. The site visit confirmed that this facility discharges to a dry swale. It also determined that the point of first use occurred at the location with the drainage swale intersects Tributary 42009 of Little Sandy Creek, which occurs at a RMI of 0.8. Water quality-based effluent limitations were evaluated at the POFU.

Antidegradation Considerations

The POFU for Heritage Reservation occurs on Tributary 42009 of Little Sandy Creek, which is classified as a HQ-CWF.

The following Antidegradation Best Available Combination of Technologies (ABACT) effluent limits, at a minimum, will be established based on the requirements of DEP's *Water Quality Antidegradation Implementation Guidance* [Doc. No. 391-0300-002].

Parameter	Treatment Process Performance Expectations (mg/L)		
	<2,000 gpd	2,000-50,000 gpd	>50,000 gpd
$CBOD_5$ (May 1 – Oct. 31)	10	10	10
$CBOD_5$ (Nov. 1 – Apr. 30)	20	20	10
Suspended Solids	20	10	10
NH_3-N (May 1 – Oct. 31)	5.0	3.0	1.5
NH_3-N (Nov. 1 – Apr. 30)	15.0	9.0	4.5
Effective disinfection	Disinfection should be accomplished using a method that leaves no detectable residual. Disinfection using ultra-violet light or other non-chlorine based systems is encouraged and must be considered.		
Other parameters, as needed	*Determined by the size and characteristics of the proposed discharge, may include – NO_2/NO_3-N, Total Phosphorus, Copper, Lead, Zinc*		

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 treatment plant. Water quality-based limits were evaluated at the POFU.

WQM 7.0 Water Quality Modeling

DEP's WQM 7.0 version 1.1 model is a Microsoft Access Program used for sewage dischargers to determine whether TBELs are sufficient to meet in-stream water quality criteria for ammonia-nitrogen, carbonaceous biochemical oxygen demand ($CBOD_5$), and dissolved oxygen (DO). To accomplish this, the model simultaneously simulates mixing and degradation of ammonia-nitrogen and mixing and consumption of DO through $CBOD_5$ and ammonia-nitrogen degradation.

WQM 7.0 determines the highest pollutant loadings that the stream can assimilate while still meeting water quality criteria under design conditions.

The model is a two-step process. The discharge is first modeled for the summer period (May through October) because warm temperatures are more likely to result in critical loading conditions. Reduced DO levels likely also play a role in ammonia toxicity and solubility of DO decreases at increased water temperature. If summer modeling determines that WQBELs are appropriate for the summer period, then modeling is completed for the winter period (November through April). This is in accordance with DEP's *Implementation Guidance of Section 93.7 Ammonia Criteria* [Do. No. 391-2000-013] (Ammonia Guidance).

River Mile Index (RMI) was measured in eMAP PA as the distance from the point of first use to the mouth of Tributary 42009 of Little Sandy Creek. Elevation was determined using Google Earth Pro. Discharge point and downstream drainage areas was well as Q7-10 were generated by USGS Stream Stats. USGS Stream Stats output files are included in Attachment A. In the absence of site-specific data, discharge temperature, stream temperature, and stream pH were assumed to be 20, 25, and 7 in accordance with the Ammonia Guidance. Stream width to depth was assumed to be 10 in accordance with DEP's *Technical Reference Guide (TRG) WQM 7.0 for Windows Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen Version 1* [Doc. No. 391-2000-007]. Effluent ammonia-nitrogen, $CBOD_5$, and DO concentrations were set equal to the 2018 permit.

WQM 7.0 modeling summer inputs are documented in the table below:

Discharge Characteristics		Basin/Stream Characteristics	
Parameter	**Value**	**Parameter**	**Value**
River Mile Index (RMI)	0.8	Drainage Area	0.25
Discharge Flow (MGD)	0.017	Q_{7-10} (cfs)	0.00208
Discharge Temp (^oC)	20	Low-flow yield (cfs/mi^2)	0.00832
Ammonia-Nitrogen (mg/L)	2.0	Elevation (ft)	800
$CBOD_5$ (mg/L)	10	Stream Width/Depth	10
Dissolved Oxygen (mg/L)	3.0	Stream Temp (^oC)	25
		Stream pH (s.u.)	7

The discharge was modeled using WQM 7.0 to evaluate limits for ammonia-nitrogen, $CBOD_5$, and DO. Modeling confirmed that that water quality-based effluent limits are necessary for ammonia-nitrogen, $CBOD_5$, and DO. In accordance with DEP's SOP for *Establishing Effluent Limitations for Individual Sewage Permits* [SOP No. BCW-PMT-033 revised March 24, 2021 Version 1.9], winter ammonia-nitrogen limits are assessed by comparing winter WQM 7.0 output value with one calculated by multiplying the summer limit by a multiplier of three. The more restrictive limit is then imposed. For this facility, the more restrictive limit comes from the winter model. WQM 7.0 output files are included in Attachment B.

A new instantaneous effluent limit of 6.0 for DO is being imposed based on WQM 7.0 modeling. Based on eDMR data, the treatment plant as currently operating is not able to meet the new limit. At the request of the applicant, the facility is being given until January 1, 2027 to comply with the new limit. Part C.II has been added to the permit documenting interim compliance milestones.

Permit Limits

Modeling determined that a combination of ABACT, advanced treatment requirements, and TBELS are appropriate for this permit. The limits provided below will be imposed for this permit cycle.

Parameter	Limit (mg/l)	SBC	Model	Basis
Dissolved Oxygen	6.0	Instantaneous Minimum	WQM 7.0	WQBEL
$CBOD_5$ (Summer)	10	Average Monthly	N/A	ABACT
$CBOD_5$ (Summer)	10	Average Monthly	WQM 7.0	WQBEL

Ammonia-Nitrogen (Summer)	2.0	Average Monthly	WQM 7.0	WQBEL
Ammonia-Nitrogen (Winter)	3.5	Average Monthly	WQM 7.0	WQBEL
Total Suspended Solids	10	Average Monthly	N/A	ABACT
Fecal Coliform (May 1 - Oct 31)	200/100 mL as a geometric mean	Average Monthly	N/A	TBEL
Fecal Coliform (Oct 1 - Apr 30)	2000/100 mL as a geometric mean	Average Monthly	N/A	TBEL

Please note, because summer and winter $CBOD_5$ have the same limit, they are included in Part A of the permit as a year-round limit of 10 mg/L.

Additional Considerations

In accordance with Section I.A. of DEP's SOP for *Establishing Effluent Limitations for Individual Sewage Permits* [SOP No. BCW-PMT-033 Version 1.9], 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 and under the authority of 25 Pa. Code § 93.7(a) and § 92.a.61, sewage dischargers will include monitoring for *E. coli*. For new and reissued permit, a monitoring frequency of 1/year will be imposed for design flows ≥ 0.002 MGD and < 0.05 MGD.

In accordance with Section I.A of the DEP's SOP for *Establishing Effluent Limitations for Individual Sewage Permits* [SOP No. BCW-PMT-033 Version 1.9], and under the authority of 25 Pa. Code § 92a.61(b), nutrient monitoring for total nitrogen and total phosphorus will be imposed for sewage facilities with a design flow greater than 2,000 GPD. The intent of this monitoring is to establish the nutrient load of the wastewater and evaluate the impact that load may have on the quality of the receiving stream. During the last permit cycle, total nitrogen monitoring resulted in five samples ranging from 3.87 to 42.6 mg/L. Total phosphorus was also sampled five times with results ranging from 0.8 to 7.76 mg/L. The SOP states that if the receiving stream is not impaired for nutrients, then discretion may be used in setting the monitoring frequency. Tributary 42009 of Little Sandy Creek is not impaired for nitrogen or phosphorus; therefore, a monitoring frequency of 1/year will again be imposed.

Conventional concentration limits are rounded in accordance with the guidelines in Chapter 5 Section C.2. of DEP's *Technical Guidance for the Development and Specification of Effluent Limitations* [Doc. No. 362-0400-001].

Monitoring frequency for the proposed effluent limits are based on Table 6-3, Self -Monitoring Requirements for Sewage Dischargers, from DEP's *Technical Guidance for the Development and Specification of Effluent Limitations* [Doc. No. 362-0400-001]. Please note that the monitoring frequency for DO, pH, and UV percent transmittance have all changed to be consistent with this guidance.

Heritage Reservation utilized UV disinfection. In accordance with Section 1.A. Note 4 of DEP's SOP for *Establishing Effluent Limitations for Individual Sewage Permits* [SOP No. BCW-PMT-033 Version 1.9], when UV disinfection is used, total residual chlorine limits are not applicable. Monitoring for UV percent transmittance has been added to the permit at the same frequency as would have been imposed for TRC. Part C.I.F. is being added to the permit requiring daily operation reporting.

Proposed Effluent Limitations and Monitoring Requirements

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

Outfall 001, Effective Period: January 1, 2027 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		
DO	XXX	XXX	6.0 Inst Min	XXX	XXX	XXX	1/day	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" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through December 31, 2026.

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		
DO	XXX	XXX	3.0 Inst Min	XXX	XXX	XXX	1/day	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" (386-0400-001), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Average Monthly	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	0.017	XXX	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
$CBOD_5$	XXX	XXX	10.0	XXX	XXX	20.0	2/month	Grab
TSS	XXX	XXX	10.0	XXX	XXX	20.0	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	Report Daily Max	XXX	XXX	1/year	Grab
UV Transmittance (%)	XXX	XXX	Report Inst Min	Report	XXX	XXX	1/day	Measured
Nitrate-Nitrite	XXX	XXX	10.0	XXX	XXX	20.0	2/month	Grab
Total Nitrogen	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	3.5	XXX	XXX	7.0	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	2.0	XXX	XXX	4.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab

Compliance Sampling Location: Outfall 001

Other Comments: None

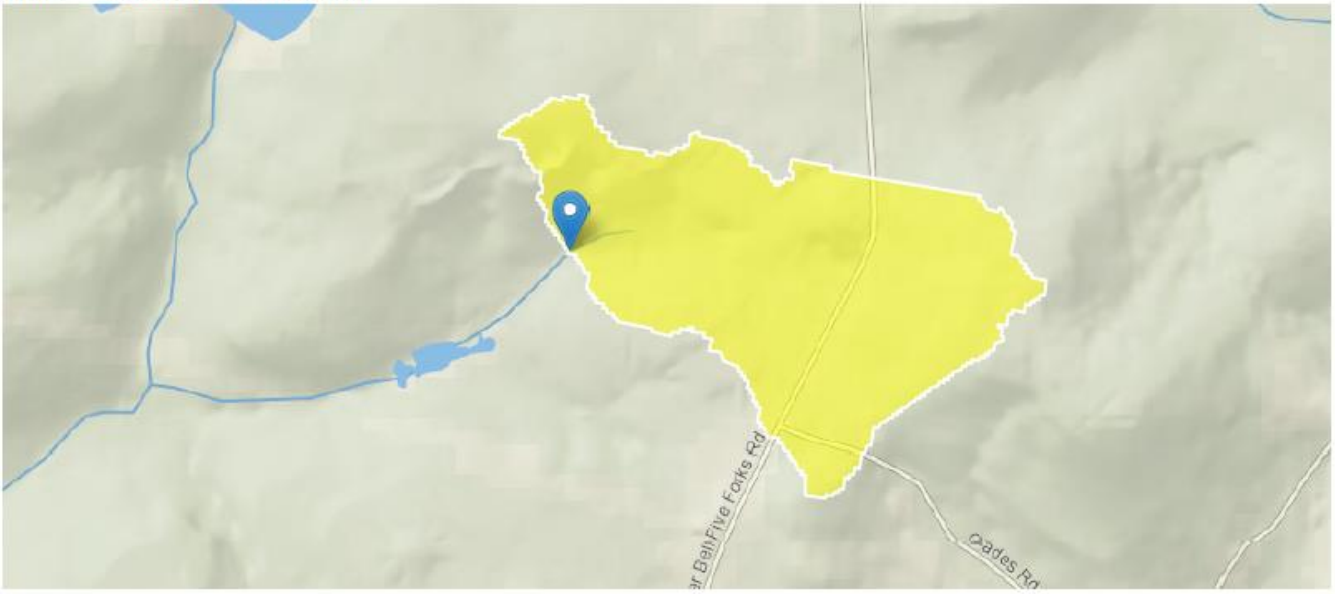
ATTACHMENT A

USGS Stream Stats Output Files

Point of First Use

StreamStats Report

Region ID: PA
Workspace ID: PA20250111150424697000
Clicked Point (Latitude, Longitude): 39.74750, -79.54207
Time: 2025-01-11 10:04:45 -0500



Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.25	square miles	2.26	1400
ELEV	Mean Basin Elevation	2184	feet	1050	2580

Low-Flow Statistics Disclaimers [Low Flow Region 4]

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 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.00954	ft^3/s
30 Day 2 Year Low Flow	0.0203	ft^3/s
7 Day 10 Year Low Flow	0.00208	ft^3/s
30 Day 10 Year Low Flow	0.00523	ft^3/s
90 Day 10 Year Low Flow	0.0131	ft^3/s

Low-Flow Statistics Citations

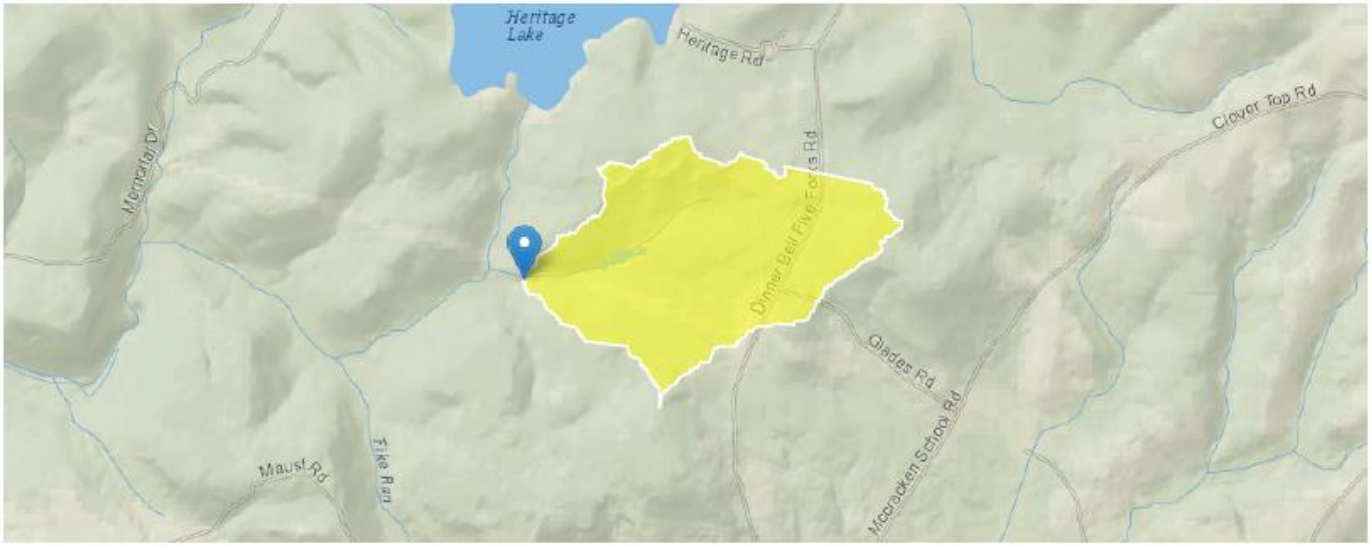
Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.25.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

End of Reach

StreamStats Report

Region ID: PA
Workspace ID: PA20250111150650524000
Clicked Point (Latitude, Longitude): 39.74401, -79.55228
Time: 2025-01-11 10:07:11 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.61	square miles
ELEV	Mean Basin Elevation	2159	feet

ATTACHMENT B

WQM 7.0 Modeling Results

Summer Modeling

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
19G	42009	Trib 42009 to Little Sandy Creek	0.800	2100.00	0.25	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	0.008	0.00	0.00	0.000	0.000	10.0	0.00	0.00	20.00	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
Heritage Reserv	PA0091243	0.0000	0.0170	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	10.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	9.01	0.00	0.00
NH3-N	2.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
19G	42009	Trib 42009 to Little Sandy Creek	0.600	2080.00	0.51	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	0.008	0.00	0.00	0.000	0.000	10.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

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

Parameter Data

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

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19G	42009	Trib 42009 to Little Sandy 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												
0.800	0.00	0.00	0.00	.0263	0.01894	.29	2.26	7.79	0.04	0.282	20.00	7.00
Q1-10 Flow												
0.800	0.00	0.00	0.00	.0263	0.01894	NA	NA	NA	0.04	0.286	20.00	7.00
Q30-10 Flow												
0.800	0.00	0.00	0.00	.0263	0.01894	NA	NA	NA	0.04	0.278	20.00	7.00

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	6		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19G	42009	Trib 42009 to Little Sandy 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
0.800	Heritage Reserv	16.76	4	16.76	4	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
0.800	Heritage Reserv	1.89	2	1.89	2	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)		
0.80	Heritage Reserv	10	10	2	2	6	6	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19G	42009	Trib 42009 to Little Sandy Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.800	0.017	20.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2.259	0.290	7.787	0.043
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
9.41	1.471	1.85	0.700
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.221	26.136	Owens	6
Reach Travel Time (days)			
0.282			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.028	9.03	1.82	7.23
0.056	8.66	1.78	7.73
0.085	8.31	1.75	7.99
0.113	7.97	1.71	8.13
0.141	7.65	1.68	8.22
0.169	7.34	1.65	8.24
0.198	7.04	1.61	8.24
0.226	6.75	1.58	8.24
0.254	6.48	1.55	8.24
0.282	6.22	1.52	8.24

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19G	42009	Trib 42009 to Little Sandy 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)
0.800	Heritage Reserv	PA0091243	0.000	CBOD5	10		
				NH3-N	2	4	
				Dissolved Oxygen			6

Winter Modeling

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
19G	42009	Trib 42009 to Little Sandy Creek	0.800	2100.00	0.25	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	0.017	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
Heritage Reserv	PA0091243	0.0000	0.0170	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	10.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	12.51	0.00	0.00
NH3-N	3.50	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19G	42009	Trib 42009 to Little Sandy 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												
0.800	0.00	0.00	0.00	.0263	0.01894	.294	2.3	7.83	0.05	0.271	13.63	7.00
Q1-10 Flow												
0.800	0.00	0.00	0.00	.0263	0.01894	NA	NA	NA	0.04	0.279	14.08	7.00
Q30-10 Flow												
0.800	0.01	0.00	0.01	.0263	0.01894	NA	NA	NA	0.05	0.264	13.23	7.00

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	6		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19G	42009	Trib 42009 to Little Sandy 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
0.800	Heritage Reserv	24.1	7	24.1	7	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
0.800	Heritage Reserv	2.92	3.5	2.92	3.5	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)		
0.80	Heritage Reserv	10	10	3.5	3.5	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19G	42009	Trib 42009 to Little Sandy Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.800	0.017	13.634	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2.301	0.294	7.834	0.045
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
8.91	1.447	3.02	0.429
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.026	22.550	Owens	6
Reach Travel Time (days)			
0.271			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.027	8.65	2.99	7.62
0.054	8.40	2.95	8.49
0.081	8.16	2.92	8.97
0.109	7.92	2.88	9.25
0.136	7.69	2.85	9.36
0.163	7.47	2.82	9.36
0.190	7.26	2.79	9.36
0.217	7.05	2.75	9.36
0.244	6.84	2.72	9.36
0.271	6.65	2.69	9.36

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19G	42009	Trib 42009 to Little Sandy 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)
0.800	Heritage Reserv	PA0091243	0.000	CBOD5	10		
				NH3-N	3.5	7	
				Dissolved Oxygen			5