pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0098396**
Facility Type	**Non-Municipal**	APS ID	**1082360**
Major / Minor	**Minor**	Authorization ID	**1429257**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Mt. Pleasant MHP LLC**	Facility Name	**Laurel View Manor MHP STP**
Applicant Address	PO Box 457	Facility Address	600 Laurel View Drive
	Cedaredge, CO 81413		Mt Pleasant, PA 15666
Applicant Contact	Lorie Schnars	Facility Contact	David Lee
Applicant Phone	614-395-8918	Facility Phone	330-705-9946
Client ID	332581	Site ID	4891
Ch 94 Load Status	Not Overloaded	Municipality	Bullskin Township
Connection Status	No Limitations	County	Fayette
Date Application Received	February 23, 2023	EPA Waived?	Yes
Date Application Accepted	March 14, 2023	If No, Reason	

Purpose of Application: Renewal of NPDES permit for the discharge of treated sewage.

Summary of Review

The applicant has applied for the renewal of NPDES Permit PA0098396. The previous permit was issued on October 5, 2018 and will expire on October 31, 2023. The applicant concurrently applied to amend WQM Permit 2670409. Permit 2670409 A-1 was issued on June 29, 2023 and approved the following modifications to the STP:

- Demolition of existing 13,000 gpd steel tank plant and replacement with a 13,000 gpd precast concrete plant.
- Installation of Or-Tec MB290 micro screen.
- Construction of a 10,000-gallon flow equalization tank.
- Conversion of existing clarifier to one (1) 3,000-gallon aerobic sludge holding tank.
- Construction of a 4,444-gallon clarifier.
- Installation of Trojan UV 3000 PTP disinfection system.

Per application and CH94 reports, no industrial or commercial users are served by this facility.

No hydraulic or organic overloads are projected to occur within the next five years per CH94 report for 2022.

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

The Act 14-PL 834 Municipal Notification was provided by the February 13, 2023 letters and no comments were received.

Permit issuance is recommended.

Approve	Deny	Signatures	Date
X		Hazim Aldalli / Environmental Engineering Specialist	November 2, 2023
x		Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineer Manager	February 16, 2024

Summary of Review
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)	0.03
Latitude	40º 5' 59.55"	Longitude	-79º 32' 48.70"
Quad Name	Connellsville	Quad Code	40079A5
Wastewater Description:	Sewage Effluent		
Receiving Waters	Tributary 37940 to Jacobs Creek	Stream Code	37940
NHD Com ID	69915117	RMI	0.71
Drainage Area	0.59 sq. mi.	Yield (cfs/mi^2)	0.007085
Q_{7-10} Flow (cfs)	0.00418	Q_{7-10} Basis	USGS StreamStats (Attachment B)
Elevation (ft)	1058	Slope (ft/ft)	0.065
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use	None.	Exceptions to Criteria	None.
Assessment Status	Impaired		
Cause(s) of Impairment	ORGANIC ENRICHMENT, PH, SILTATION		
Source(s) of Impairment	ACID MINE DRAINAGE, ACID MINE DRAINAGE, ON-SITE TREATMENT SYSTEMS (SEPTIC SYSTEMS AND SIMILAR DECENTRALIZED SYSTEMS)		
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake		Westmoreland County Municipal Authority - McKeesport	
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	510
PWS RMI	1.8	Distance from Outfall (mi)	42.8

Changes Since Last Permit Issuance:

- Receiving stream has been updated based on the results of a Point of First Use (POFU) Survey. See below.
- UV disinfection is proposed by WQM No. 2670409 A-1.
- Annual *E. Coli* monitoring has been imposed.
- DEP updated its WQM 7.0 criteria for Ammonia-Nitrogen (NH_3-N) in 2019. Limits and conditions of this permit need to be redeveloped to an adequate level to protect water quality.

Other Comments: While the latitude and the longitude for the Outfall are listed above, a POFU Survey was conducted at the site on November 22, 2022 by DEP personnel. The results of the POFU Survey can be found in Attachment A. The results of the POFU found that the UNT to Jacobs Creek did not have an aquatic life use but Tributary 37940 to Jacobs Creek does have an aquatic life use. Therefore, data for Tributary 37940 to Jacobs Creek at 40° 6’ 18.03”, -79° 32’ 52.43” will be used to fill out the above data for the receiving stream and will be used for the subsequent water quality modeling.

Treatment Facility Summary

Treatment Facility Name: Laurel View Manor MHP STP

WQM Permit No.	Issuance Date	Purpose
2670409 A-1	June 29, 2023	Modification of existing facilities including: installation of a new bar screen, installation of flow equalization tank, conversion of existing clarifier to sludge holding tank, construction of new clarifier, installation of UV disinfection system, removal of chlorine disinfection system, demolition of steel tank, installation of precast concrete tank
2670409 T-2	August 14, 2018	Transfer of ownership from Oak Estates, Inc. to Mt. Pleasant MHP, LLC
2670409 T-1	June 28, 1999	Transfer of ownership to Oak Estates, Inc.
2670409 A-1	April 9, 1990	Authorization of plant expansion from 0.0125 MGD to 0.03 MGD
2670409	September 9, 1979	Construction of original STP

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary with Ammonia Reduction	Extended Aeration	Chlorine with Dechlorination	0.03

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.03	71.4	Not Overloaded	Dewatering	Other WWTP

Changes Since Last Permit Issuance: Issue the amendment to WQM permit No. 2670409 on June 29, 2023 as described above.

Other Comments: None.

Compliance History

Facility: Laurel View Manor MHP STP
NPDES Permit No.: PA0098396
Compliance Review Period: 3/2018 – 3/2023

Inspection Summary:

INSP ID	INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC	INSPECTION COMMENT
3177872	03/22/2021	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted	
3177871	03/22/2021	Administrative/File Review	PA Dept of Environmental Protection	No Violations Noted	DMR Review for 2019-2020 - NOV issued with CEI report
2953625	10/16/2019	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted	

Violation Summary:

VIOL ID	VIOLATION DATE	VIOLATION TYPE	VIOLATION TYPE DESC	RESOLVED DATE
913965	03/22/2021	92A.44	NPDES - Violation of effluent limits in Part A of permit	04/16/2021
866986	10/16/2019	92A.44	NPDES - Violation of effluent limits in Part A of permit	11/04/2019

Open Violations by Client ID:
No open violations for Client ID 135388 or 332581 (new client)

Enforcement Summary:

ENF ID	ENF TYPE	ENF CREATION DATE	ENF FINALSTATUS	ENF CLOSED DATE
393714	NOV	04/16/2021	Administrative Close Out	07/12/2022
380442	NOV	11/04/2019	Comply/Closed	07/05/2022

DMR Violation Summary:

START	END	PARAMETER	SAMPLE	PERMIT	UNIT	STATISTICAL BASE CODE
01/01/2022	01/31/2022	Total Residual Chlorine (TRC)	0.03	0.02	mg/L	Average Monthly
11/01/2021	11/30/2021	Total Residual Chlorine (TRC)	0.03	0.02	mg/L	Average Monthly
04/01/2021	04/30/2021	Ammonia-Nitrogen	12.5	3.5	mg/L	Average Monthly
04/01/2021	04/30/2021	Ammonia-Nitrogen	14.8	7.0	mg/L	Instantaneous Maximum
03/01/2021	03/31/2021	Ammonia-Nitrogen	4.3	3.5	mg/L	Average Monthly
08/01/2020	08/31/2020	Ammonia-Nitrogen	2.5	2.0	mg/L	Average Monthly
08/01/2020	08/31/2020	Ammonia-Nitrogen	4.89	4.0	mg/L	Instantaneous Maximum
07/01/2020	07/31/2020	Ammonia-Nitrogen	5.04	2.0	mg/L	Average Monthly
07/01/2020	07/31/2020	Ammonia-Nitrogen	7.02	4.0	mg/L	Instantaneous Maximum

06/01/2020	06/30/2020	Ammonia-Nitrogen	2.97	2.0	mg/L	Average Monthly
06/01/2020	06/30/2020	Ammonia-Nitrogen	5.84	4.0	mg/L	Instantaneous Maximum
05/01/2020	05/31/2020	Ammonia-Nitrogen	4.2	2.0	mg/L	Average Monthly
05/01/2020	05/31/2020	Ammonia-Nitrogen	5.63	4.0	mg/L	Instantaneous Maximum
11/01/2019	11/30/2019	Ammonia-Nitrogen	10.65	3.5	mg/L	Average Monthly
11/01/2019	11/30/2019	Ammonia-Nitrogen	21.2	7.0	mg/L	Instantaneous Maximum

Compliance Status:
Will recommend Operations issue a CACP to address effluent violations. Permit issuance is suggested.

Completed by: John Murphy

Completed date: 3/23/2023

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.03
Latitude 40º 5' 59.55" **Longitude** -79º 32' 48.70"
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
Flow (MGD)	Report	Average Monthly	-	92a.27, 92a.61
	Report Max Daily	Average Weekly	-	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 (TSS)	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 (TRC)	0.5	Average Monthly	-	92a.48(b)(2)
Ammonia-Nitrogen (NH_3-N)	25	Average Monthly	-	92a.61
	50	IMAX	-	92a.61
Dissolved Oxygen (DO)	4.0	Instantaneous Minimum	-	93.6, 92a.61
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Total N	Report	Average Monthly	-	92a.61
Total P	Report	Average Monthly	-	92a.61
Fecal Coliform (No./100mL) (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (No./100mL) (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (No./100mL) (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (No./100mL) (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
E. Coli (No./100mL)	Report	IMAX	-	92a.61

Water Quality-Based Limitations

WQM7.0

WQM7.0 is a water quality modeling program for Windows that determines Waste Load Allocations ("WLAs") and effluent limitations for carbonaceous biochemical oxygen demand ("$CBOD_5$"), ammonia-nitrogen, and dissolved oxygen for single and multiple point-source discharge scenarios. To accomplish this, the model simulates two basic processes. In the ammonia-nitrogen module, the model simulates the mixing and degradation of ammonia-nitrogen in the stream and compares calculated instream ammonia-nitrogen concentrations to ammonia-nitrogen water quality criteria. In the dissolved oxygen module, the model simulates the mixing and consumption of dissolved oxygen in the stream due to the degradation of $CBOD_5$ and ammonia-nitrogen and compares calculated instream dissolved oxygen concentrations to dissolved oxygen water quality criteria. WQM 7.0 then determines the highest pollutant loadings that the stream can assimilate while still meeting water quality criteria under design conditions.

DEP's modeling for sewage discharges is a two-step process. First, a discharge is modeled for the summer period (May through October) using warm temperatures for the discharge and the receiving stream. Modeling for the summer period is done first because allowable ammonia-nitrogen concentrations in a discharge are lower at higher temperatures (i.e., warm temperatures are more likely to result in critical loading conditions). Reduced dissolved oxygen levels also appear to increase ammonia toxicity and the maximum concentration of dissolved oxygen in water is lower at higher temperatures.

The second step is to evaluate WQBELs for the winter period, but only if modeling shows that WQBELs are needed for the summer period.

The model inputs used to model the discharge from Laurel View Manor MHP STP are shown below:

Stream Parameters			
Reach 1		**Reach 2**	
Stream Code	37940	Stream Code	37940
RMI	0.71	RMI	0.61
Elevation (ft)	1058	Elevation (ft)	1054
Drainage Area (mi^2)	0.59	Drainage Area (mi^2)	0.62
Q_{7-10} Flow (cfs)	0.00418	Q_{7-10} Flow (cfs)	0.00443

Facility/Design Parameters	
Discharge Flow (MGD)	0.03
LFY (cfs/mi^2) [for use in summer modeling]	0.00709
2*LFY (cfs/mi^2) [for use in winter modeling]	0.0142

Summer Modeling Inputs			
Tributary		**Discharge**	
Temperature (°C)	25	Temperature (°C)	20
pH (S.U.)	7	pH (S.U.)	7
DO (mg/L)	8.24	DO (mg/L)	4
$CBOD_5$ (mg/L)	2	$CBOD_5$ (mg/L)	25
NH_3-N (mg/L)	0	NH_3-N (mg/L)	25
DO Goal (mg/L)	5	DO Goal (mg/L)	5
Winter Modeling Inputs			
Tributary		**Discharge**	
Temperature (°C)	5	Temperature (°C)	15
pH (S.U.)	7	pH (S.U.)	7
DO (mg/L)	12.51	DO (mg/L)	4
$CBOD_5$ (mg/L)	2	$CBOD_5$ (mg/L)	25
NH_3-N (mg/L)	0	NH_3-N (mg/L)	25
DO Goal (mg/L)	5	DO Goal (mg/L)	5

The modeling results (output files can be found in Attachments C and D) show that technology based effluent limitations for $CBOD_5$ are appropriate but WQBELs are recommended for DO and Ammonia-Nitrogen.

Parameter	Limit (mg/l)	SBC	Model
Dissolved Oxygen	5	Minimum	WQM7.0
$CBOD_5$	25	Average Monthly	WQM7.0
*Ammonia Nitrogen (May 1 – Oct. 31)	2.0	Average Monthly	WQM 6.3
Ammonia Nitrogen (Nov 1 – Apr. 30)	3.1	Average Monthly	WQM7.0

*This value was produced from the previous factsheet review signed on August 15, 2018 using WQM 6.3.

The summer effluent limitations for Ammonia-Nitrogen in the previous permit are more stringent than the values modeled in Attachment C so the previous summer effluent limitations will be re-imposed. The winter effluent limitations for Ammonia Nitrogen modeled in Attachment D are more stringent than the previous permit cycle. Checking on the last two years reported eDMRs shows that the permittee was in compliance with the Ammonia-Nitrogen limits and has achieved lower than the newly imposed limits; no compliance schedule needed.

Total Residual Chlorine

Total Residual Chlorine (TRC) limits are updated based on the new Q_{7-10} flow and using DEP TRC spreadsheet; the generated limits of AML (0.022 mg/l), and IMAX of (0.06 mg/l) are same as the current permit limits and will be reimposed. Checking on the eDMRs for TRC, the facility will be able to achieve the re-imposed limits.

The WQM permit no. 2670409 A-1 issued on June 29, 2023 authorized the installation of a UV disinfection system. the new TRC limits will be imposed and in place till the permittee inform DEP that the UV unit is operational, and records can be verified over eDMR and Operations inspection reports. The permit reviewer will ask Operations to have an inspection as soon as the permittee informed DEP about the date of the UV unit operation.

Best Professional Judgment (BPJ) Limitations

Based on best professional judgment and the standard in 25 PA Code Chapter 93, a dissolved oxygen minimum limitation of 4.0 mg/L would normally be implemented. However, WQM7.0 modeling results indicate that a dissolved oxygen minimum limitation of 5.0 mg/L is appropriate. The more stringent of the values will be imposed during this permit cycle.

A minimum Dissolved Oxygen (DO) limit of 5.0 mg/L should be maintained from the current permit based on DEP water quality model WQM 7.0 Version 1.1 (Appendix C) and on Best Professional Judgment (BPJ) to ensure adequate operation and maintenance as listed in the table under Technology-Based Limitations section.

Ultraviolet (UV) Disinfection

WQM Permit 2670409 A-1 issued on June 29, 2023 authorized the installation of a UV disinfection system. Communication with the permittee confirming that the UV system will be online by February 16, 2024 can be found in Attachment E. The permit reviewer will coordinate with Operations to have an inspection as soon as the permittee informed DEP about the date of the UV unit operation. Per DEP SOP-BCW-PMT-033 and according to the internal Memo on May 2, 2018, a daily UV transmittance reporting requirement will be imposed for this renewal. Part C133 will be added to the renewal permit.

Additional Considerations

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 between 0.002 and 0.05 MGD.

The receiving stream is not impaired for nutrients, therefore, annual sampling requirement for nitrogen and phosphorus will again be imposed per 25 PA Code §92.61b.

Monitoring frequency for the proposed effluent limits are based upon Table 6-3 “Self-Monitoring Requirements for Sewage Dischargers” and Table 6-4 “Self-Monitoring Requirements for Industrial Dischargers”, from the Departments Technical Guidance for the Development and Specification of Effluent Limitations.

Mass Loadings

Mass loading limits are applicable for publicly owned treatment works. Current policy requires average monthly mass loading limits be established for $CBOD_5$, TSS, and NH_3-N and average weekly mass loading limits be established for $CBOD_5$ and TSS.

Average monthly mass loading limits (lbs/day) are determined based on the formula: design flow (MGD) x concentration limit (mg/L) x conversion factor (8.34).

Monitoring Frequency Considerations

For pH, TRC, and Dissolved Oxygen (DO), a monitoring frequency of 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. The permittee may remain in compliance with the permit by using a No Discharge Indicator (NODI) code on the “Daily Effluent Monitoring” supplemental form to identify the lack of a discharge on a particular day.

The daily monitoring frequencies and other frequencies justified above are consistent with current policy and Table 6-3 of DEP’s Technical Guidance for the Development and Specification of Effluent Limitations.

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)	Report	XXX	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	1/day	Grab
DO	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
Ultraviolet light transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	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	Report Daily Max	XXX	XXX	1/year	Grab
Ammonia-Nitrogen (NH_3-N) Nov 1 - Apr 30	XXX	XXX	XXX	3.1	XXX	6.2	2/month	Grab
Ammonia-Nitrogen (NH_3-N) May 1 - Oct 31	XXX	XXX	XXX	2.0	XXX	4.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab

Compliance Sampling Location: Outfall # 001.

ATTACHMENT A:
POFU Survey Memo

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

MEMO

TO Grace Polakoski
Environmental Engineering Specialist
Clean Water Program

FROM Jamie Detweiler
Aquatic Biologist 2
Clean Water Program

DATE December 1, 2022

RE Point of First Use Survey
Unnamed and Undocumented Tributary to Tributary 37940 to Jacobs Creek and Tributary 37940 to Jacobs Creek
State Water Plan: 19D
Hydrologic Unit Code: 05020006
Stream Code: 37940
Aquatic Use Designation: WWF
Bullskin Township, Fayette County

INTRODUCTION

On November 22, 2022, at the request of Grace Polakoski of the Clean Water Program, a Point of First Surface Water Use (POFU) survey was conducted along the drainage path of the Oak Estates Mobile Home Park (MHP) Sewage Treatment Plant (STP) discharge, located in Bullskin Township, Fayette County (Figures 1 and 2). The objective of the survey was to determine if the Unnamed and Undocumented Tributary to Tributary 37940 to Jacobs Creek was capable of supporting an Aquatic Life Use as defined in 25 Pennsylvania Code §93.9q in the vicinity of the existing discharge (Latitude: 40.099875, Longitude: -79.546861).

The survey began at the end of the Oak Estates STP discharge pipe. We followed the Unnamed and Undocumented Tributary to Tributary 37940 to Jacobs Creek that carried the discharge downslope, between two farm fields before the tributary's confluence with Tributary 37940 to Jacobs Creek. Approximately 750 meters downstream from the confluence, an Aquatic Life Use Survey had been performed in 2020. In that survey, long-lived taxa, such as Caenidae, Elmidae, and Hydropsychidae, were found.

According to USGS StreamStats, the drainage area to the Unnamed and Undocumented Tributary to Tributary 37940 to Jacobs Creek at the location of the discharge is less than 0.05 square miles, and the drainage area of Tributary 37940 to Jacobs Creek, just below the confluence with the channel is 0.6 square miles (Figure 3). Tributary 37942 to Jacobs Creek is in the Sewickley and Jacobs Creeks, Youghiogheny River, State Water Plan (19D), and the Youghiogheny Hydrologic Unit (Hydrologic Unit Code 05020006). This stream is listed as not attaining its designated Aquatic Life Use for Warm Water Fishes (WWF).

SAMPLING PROTOCOLS

The point of first aquatic life use is the location at which a body of water is capable of supporting aquatic life as defined in 25 Pennsylvania Code §93. Guidance for determining the point of first aquatic life use is in the Department's guidance document #391-2000-014, Policy and Procedures for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers (revised April 12, 2008). Specifically, Appendix B of the guidance document provides additional guidance when making a point of first use determination.

On November 22, 2022, macroinvertebrates were examined below the STP discharge. Since no long-lived taxa were found, we continued downstream, searching for long-lived taxa each time the channel characteristics changed. The survey location was established approximately 610 meters downstream from the point where the STP discharge enters the channel (Figures 4, 5). Macroinvertebrates at the survey location were collected according to the Department's Qualitative Benthic Macroinvertebrate Data Collection Protocol, found in the Water Quality Monitoring Protocols for Streams and Rivers 2021 (Monitoring Book), which can be found by accessing the following website:
http://files.dep.state.pa.us/Water/Drinking%20Water%20and%20Facility%20Regulation/WaterQualityPortalFiles/Technical%20Documentation/MONITORING_BOOK.pdf

RESULTS

On the day of the survey, the wetted width of the Unnamed and Undocumented Tributary to Tributary 37940 to Jacobs Creek was approximately 0.5 meters at the point of the STP discharge. A short (approximately 4 meter) channel led from the pipe to the Unnamed and Undocumented Tributary to Tributary 37940 to Jacobs Creek. While there was a defined bed and bank and substrate in the tributary, the banks were highly eroded, indicating that the channel was formed by flashy flows and not constant flow. Approximately 610 meters downstream, after the channel's confluence with Tributary 37940 to Jacobs Creek, ten aquatic invertebrate taxa were found and identified. Of the macroinvertebrate taxa identified, Psephenidae, Tipula, Philopotomidae, Hydropsychidae, and Heptageneiidae are considered to be long-lived.

DISCUSSION AND CONCLUSIONS

The objective of this study was to examine aquatic life in the Unnamed and Undocumented Tributary to Tributary 37940 to Jacobs Creek in the vicinity of the Oak Estates MHP STP discharge to determine if and where the stream is capable of supporting an aquatic life use as defined in 25 Pennsylvania Code §93.9q, where water quality standards must be met.

Findings from this study suggest that the Unnamed and Undocumented Tributary to Tributary 37940 to Jacobs Creek does not have an Aquatic Life Use. However, Tributary 37940 to Jacobs Creek is capable of supporting aquatic life (Lat: 40.1050087; Long:-79.5478965) and should be considered the POFU along the path of the discharge. Five long-lived taxa were identified in the macroinvertebrate sample, and the stream exhibited defined bed and bank and substrate.

cc: Stream File – Tributary 37940 to Jacobs Creek
Mahbuba Iasmin – SWRO, Environmental Group Manager
Stacey Greenwald – SWRO, Environmental Group Manager
Christopher Kriley – SWRO, Environmental Program Manager
Erika Arnold – CO, Environmental Group Manager

Figure 1. USGS Topographical map showing the survey location and Tributary 37940 to Jacobs Creek.

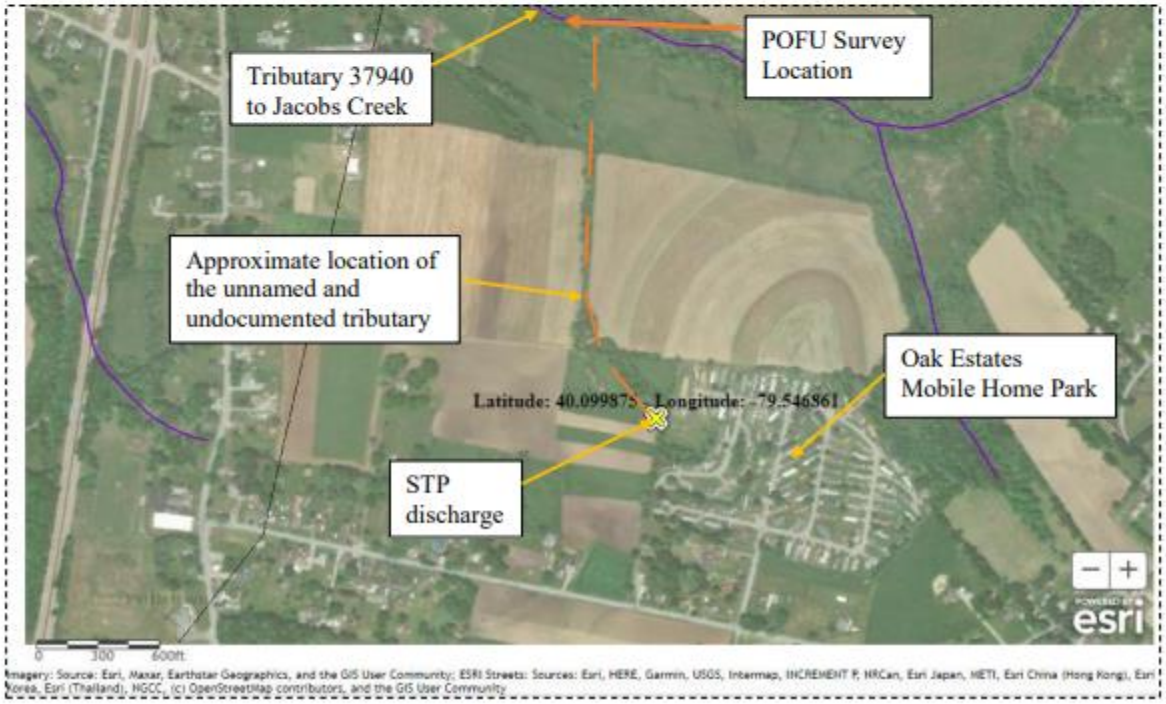
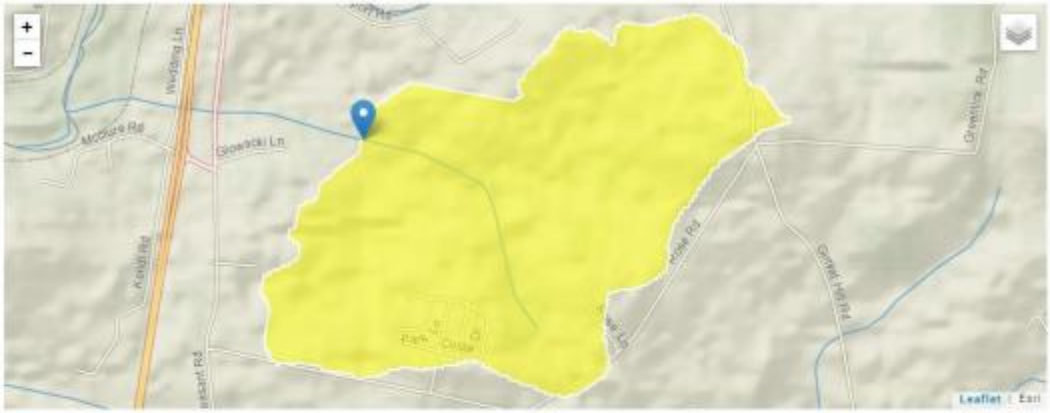


Figure 2. Aerial map showing Tributary 37940 to Jacobs Creek and the survey location.

StreamStats Report

Region ID:	PA
Workspace ID:	PA20221201144510924000
Clicked Point (Latitude, Longitude):	40.10522, -79.54831
Time:	2022-12-01 09:45:33 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	0.6	square miles
ELEV	Mean Basin Elevation	1146	feet
FOREST	Percentage of area covered by forest	20.0039	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	5.8812	percent

Figure 3. USGS Streamstats report for POFU survey location.

Table 1. Macroinvertebrates observed in Tributary 37940 to Jacobs Creek.

Taxa	Abundance in sample	Long lived taxa
Chironomidae (Non-biting Midge)	Common	No
Tipulidae (Crane Fly)	Common	Yes
Psephenidae (Water Penny)	Common	Yes
Philopotamidae (Finger-Net Caddisfly)	Abundant	Yes
Hydropsychidae (Net-Spinning Caddisfly)	Rare	Yes
Heptageniidae (Cookie-Headed Mayfly)	Common	Yes
Asellidae (Aquatic Sow Bug)	Rare	No
Physidae (Bladder Snail)	Rare	No
Clitellata (Segmented Worm)	Rare	No
Platyhelminthes (Flatworms)	Rare	No

Figure 4. POFU survey location, facing upstream.

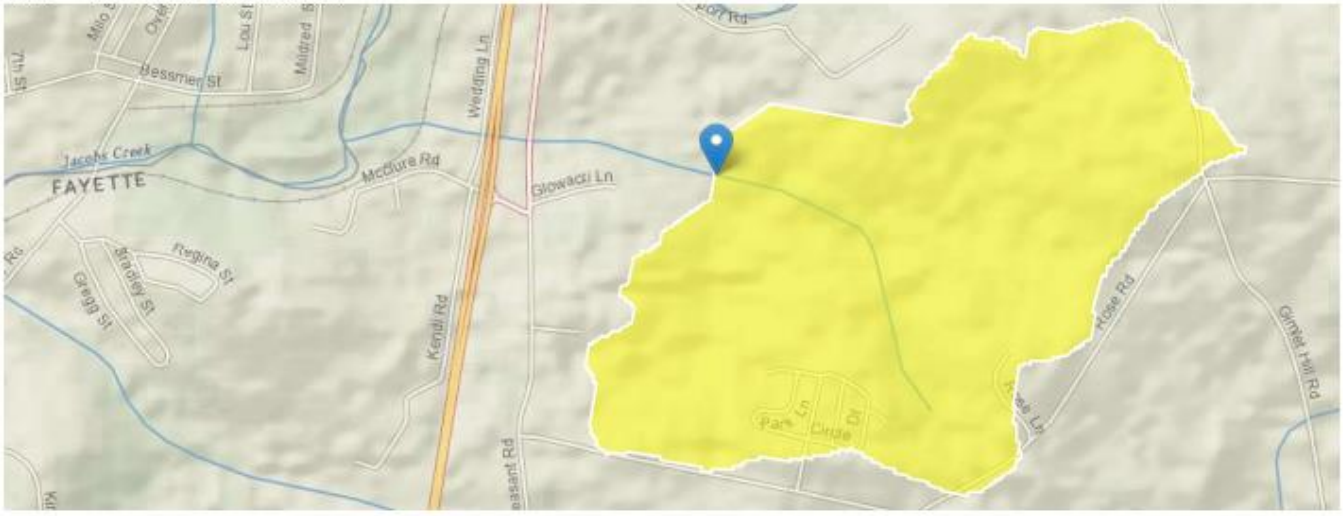
Figure 5. POFU survey location.

ATTACHMENT B:
USGS StreamStats

Permit No. PA0098396

StreamStats Report

Region ID: PA
Workspace ID: PA20230323171928398000
Clicked Point (Latitude, Longitude): 40.10524, -79.54818
Time: 2023-03-23 13:19:48 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.59	square miles
ELEV	Mean Basin Elevation	1147	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.59	square miles	2.26	1400
ELEV	Mean Basin Elevation	1147	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	0.0148	ft^3/s
30 Day 2 Year Low Flow	0.0292	ft^3/s
7 Day 10 Year Low Flow	0.00418	ft^3/s
30 Day 10 Year Low Flow	0.00927	ft^3/s
90 Day 10 Year Low Flow	0.0193	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: 4.13.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

ATTACHMENT C:
WQM7.0 Model Results (Summer)

Permit No. PA0098396

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
19D	37940	Trib 37940 to Jacobs Creek	**0.710**	1058.00	0.59	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	0.007	0.00	0.00	0.000	0.000	0.0	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
Laurel View	PA0098396	0.0000	0.0000	0.0300	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	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
19D	37940	Trib 37940 to Jacobs Creek	**0.610**	1054.00	0.62	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	0.007	0.00	0.00	0.000	0.000	0.0	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. PA0098396

WQM 7.0 Modeling Specifications

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

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19D	37940	Trib 37940 to Jacobs 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												
0.710	0.00	0.00	0.00	.0464	0.00758	.315	3.5	11.1	0.05	0.133	20.41	7.00
Q1-10 Flow												
0.710	0.00	0.00	0.00	.0464	0.00758	NA	NA	NA	0.05	0.135	20.27	7.00
Q30-10 Flow												
0.710	0.01	0.00	0.01	.0464	0.00758	NA	NA	NA	0.05	0.131	20.55	7.00

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19D	37940	Trib 37940 to Jacobs Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.710	0.030	20.413	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
3.496	0.315	11.099	0.046
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
23.10	1.488	1.88	0.723
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.268	23.570	Owens	5
Reach Travel Time (days)			
0.133			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.013	22.64	1.86	5.63
0.027	22.19	1.84	5.91
0.040	21.74	1.82	6.13
0.053	21.31	1.81	6.30
0.067	20.88	1.79	6.43
0.080	20.47	1.77	6.54
0.093	20.06	1.75	6.64
0.106	19.66	1.74	6.72
0.120	19.26	1.72	6.78
0.133	18.88	1.70	6.84

Permit No. PA0098396

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19D	37940	Trib 37940 to Jacobs 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
0.710	Laurel View	16.39	17.33	16.39	17.33	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
0.710	Laurel View	1.82	2.04	1.82	2.04	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)		
0.71	Laurel View	25	25	2.04	2.04	5	5	0	0

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19D	37940	Trib 37940 to Jacobs 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)
0.710	Laurel View	PA0098396	0.000	CBOD5	25		
				NH3-N	2.04	4.08	
				Dissolved Oxygen			5

ATTACHMENT D:
WQM7.0 Model Results (Winter)

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
19D	37940	Trib 37940 to Jacobs Creek	**0.710**	1058.00	0.59	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	0.014	0.00	0.00	0.000	0.000	0.0	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
Laurel View	PA0098396	0.0000	0.0000	0.0300	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	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
19D	37940	Trib 37940 to Jacobs Creek	**0.610**	1054.00	0.62	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	0.041	0.00	0.00	0.000	0.000	0.0	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	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. PA0098396

WQM 7.0 Modeling Specifications

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

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19D	37940	Trib 37940 to Jacobs 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												
0.710	0.00	0.00	0.00	.0464	0.00758	.315	3.5	11.1	0.05	0.133	14.17	7.00
Q1-10 Flow												
0.710	0.00	0.00	0.00	.0464	0.00758	NA	NA	NA	0.05	0.135	14.45	7.00
Q30-10 Flow												
0.710	0.01	0.00	0.01	.0464	0.00758	NA	NA	NA	0.05	0.131	13.91	7.00

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19D	37940	Trib 37940 to Jacobs Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.710	0.030	14.174	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
3.496	0.315	11.099	0.046
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
23.10	1.488	2.88	0.447
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.621	20.328	Owens	5
Reach Travel Time (days)			
0.133			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.013	22.75	2.86	6.20
0.027	22.41	2.84	6.65
0.040	22.07	2.83	7.00
0.053	21.74	2.81	7.27
0.067	21.41	2.79	7.49
0.080	21.09	2.78	7.66
0.093	20.77	2.76	7.80
0.106	20.46	2.74	7.91
0.120	20.15	2.73	8.00
0.133	19.85	2.71	8.08

Permit No. PA0098396

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19D	37940	Trib 37940 to Jacobs 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
0.710	Laurel View	24.1	25.49	24.1	25.49	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
0.710	Laurel View	2.79	3.14	2.79	3.14	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)		
0.71	Laurel View	25	25	3.14	3.14	5	5	0	0

WQM 7.0 Effluent Limits

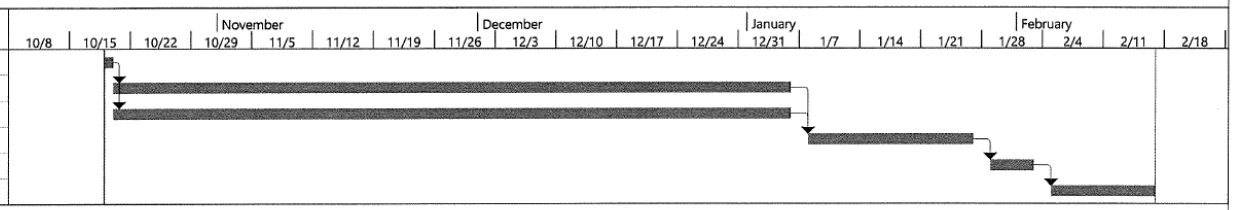
SWP Basin	Stream Code	Stream Name
19D	37940	Trib 37940 to Jacobs Creek

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)
0.710	Laurel View	PA0098396	0.000	CBOD5	25		
				NH3-N	3.14	6.28	
				Dissolved Oxygen			5

ATTACHMENT E:
Ultra-Violet Installation Schedule

MACKINDUSTRIES,INC.
PE1059 OAK ESTATES/LAURELVIEW

ID	Task Mode	Task Name	Duration	Start	Finish
1		Engineering Approval Packet	1 day	Thu 10/19/23	Thu 10/19/23
2		Precast Production	56 days	Fri 10/20/23	Fri 1/5/24
3		Equipment Orders/Delivery	56 days	Fri 10/20/23	Fri 1/5/24
4		Shop Preassemblies	15 days	Mon 1/8/24	Fri 1/26/24
5		Install Precast Tanks	5 days	Mon 1/29/24	Fri 2/2/24
6		Install Eqp & Mechanicals	10 days	Mon 2/5/24	Fri 2/16/24



Project: PE1059 Oak Estates
Date: 10-19-23 Baseline

Task | Split | Milestone | Summary
Project Summary | Inactive Task | Inactive Milestone | Inactive Summary
Manual Task | Duration-only | Manual Summary Rollup | Manual Summary
Start-only | Finish-only | External Tasks | External Milestone
Deadline | Progress | Manual Progress

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