

Application Type New  
Facility Type Non-Municipal  
Major / Minor Minor

**NPDES PERMIT FACT SHEET  
INDIVIDUAL SEWAGE**

Application No. PA0255416  
APS ID 1050381  
Authorization ID 1374019

**Applicant and Facility Information**

Applicant Name	<u>Empire Realty Homes LLC</u>	Facility Name	<u>Rolling Hills Village MHP STP</u>
Applicant Address	<u>1 Oak Drive</u> <u>Buena Vista, PA 15018-9534</u>	Facility Address	<u>1 Oak Drive</u> <u>Buena Vista, PA 15018</u>
Applicant Contact	<u>Aman Gulati</u>	Facility Contact	<u>Same as Applicant</u>
Applicant Phone	<u>(484) 498-4000</u>	Facility Phone	<u>Same as Applicant</u>
Client ID	<u>366366</u>	Site ID	<u>238039</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Elizabeth Township</u>
Connection Status	<u>No Limitations</u>	County	<u>Allegheny</u>
Date Application Received	<u>December 15, 2017</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>October 27, 2021</u>	If No, Reason	<u></u>
Purpose of Application	<u>Application for renewal and transfer of an NPDES Permit for treated sewage effluent</u>		

**Summary of Review**

This facility was previously permitted by PA0095346, however, that permit was terminated by central office in 2012 due to the previous owner's refusal to renew the permit.

The permittee has applied for New NPDES Permit No PA0255416. Along with the permit number, the permittee is changing during this renewal. The previous permittee was David Fiore and the new permittee is Empire Realty Homes LLC.

Associated WQM Permit No. 0278405 is pending transfer upon approval from the Department.

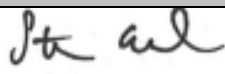

Sewage from this facility is treated with activated sludge, secondary clarification, and gas chlorination before discharging through Outfall 001 to the Youghiogheny River (ID 37456). The Youghiogheny River is classified as a Warm Water Fishery (WWF) per Chapter 93 designated use.

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

Sludge produced at this facility is disposed of in a local landfill.

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-

Approve	Deny	Signatures	Date
X		 Stephanie Conrad / Environmental Engineering Specialist	March 16, 2021
x		 Mahbuba Iasmin, Ph.D., PE / Environmental Engineering Manager	September 2, 2022

Summary of Review

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.	<u>001</u>	Design Flow (MGD)	<u>.035</u>
Latitude	<u>40° 17' 34"</u>	Longitude	<u>-79° 47' 49"</u>
Quad Name	<u>McKeesport</u>	Quad Code	<u>1607</u>
Wastewater Description: <u>Sewage Effluent</u>			
Receiving Waters	<u>Youghiogheny River (WWF)</u>	Stream Code	<u>37456</u>
NHD Com ID	<u>69912357</u>	RMI	<u>8.67</u>
Drainage Area	<u>1740</u>	Yield (cfs/mi <sup>2</sup> )	<u>0.293</u>
Q <sub>7-10</sub> Flow (cfs)	<u>510</u>	Q <sub>7-10</sub> Basis	<u>US Army Corp of Engineers</u>
Elevation (ft)	<u>740</u>	Slope (ft/ft)	<u></u>
Watershed No.	<u>19-D</u>	Chapter 93 Class.	<u>WWF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Not Assessed</u>		
Cause(s) of Impairment	<u></u>		
Source(s) of Impairment	<u></u>		
TMDL Status	<u></u>	Name	<u></u>
Background/Ambient Data		Data Source	
pH (SU)	<u></u>		<u></u>
Temperature (°F)	<u></u>		<u></u>
Hardness (mg/L)	<u></u>		<u></u>
Other:	<u></u>		<u></u>
Nearest Downstream Public Water Supply Intake	<u>West County Municipal Authority-McKeesport</u>		
PWS Waters	<u>Youghiogheny River</u>	Flow at Intake (MGD)	<u>12</u>
PWS RMI	<u>1.38</u>	Distance from Outfall (mi)	<u>7.29</u>

Changes Since Last Permit Issuance: New permit.

Other Comments:

Treatment Facility Summary				
<b>Treatment Facility Name:</b> Rolling Hills Village MHP STP				
<b>WQM Permit No.</b>		<b>Issuance Date</b>		
0278405		February 2, 1989		
<b>Waste Type</b>	<b>Degree of Treatment</b>	<b>Process Type</b>	<b>Disinfection</b>	<b>Avg Annual Flow (MGD)</b>
Sewage	Secondary	Activated Sludge	Hypochlorite	0.035
<b>Hydraulic Capacity (MGD)</b>	<b>Organic Capacity (lbs/day)</b>	<b>Load Status</b>	<b>Biosolids Treatment</b>	<b>Biosolids Use/Disposal</b>
0.035	58	Not Overloaded	Holding Tank	Other WWTP

Changes Since Last Permit Issuance: None

Other Comments: None

<b>Compliance History</b>
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The permit is being processed as a new permit; therefore, the compliance history of the previous owner is not applicable.

**Development of Effluent Limitations**

Outfall No.	001	Design Flow (MGD)	.035
Latitude	40° 17' 34"	Longitude	-79° 47' 49"
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 <sub>5</sub>	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)

This permit was last issued in 2001 and there have been numerous updates to the guidance and water quality criteria since that time.

**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, the 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<sub>5</sub>, ammonia-nitrogen, and Dissolved Oxygen (DO) parameters. Modeling confirmed that technology based effluent limitations for CBOD<sub>5</sub>, ammonia-nitrogen, and DO are adequate to meet in-stream water quality criterion.

WQM 7.0 output files are provided in Attachment A.

Total Residual Chlorine (TRC) was modeled with the TRC Spreadsheet, and it was determined that Best Available Technology (BAT) TRC limits are appropriate to meet in-stream water quality criterion.

Due to a lack of eDMR data, the facility will initially receive the BAT limits that were in effect prior to October 10, 2010. Following a six-month compliance period, the facility will have the best available technology limits that are in accordance with PA Code Section 92a.48(b)(2).

The compliance schedule end date is based on a proposed estimated timeline provided by the facility's design engineer which is provided in Attachment D.

**Best Professional Judgment (BPJ) Limitations**

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

**Additional Considerations**

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, 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 MGD.

For pH, DO, and TRC, 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.

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

Monitoring frequency for the proposed effluent limits were based on Table 6-3, Self-Monitoring Requirements for Sewage Dischargers, from the Department'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: Six Months Following Permit Issuance through Permit Expiration Date.**

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab

Compliance Sampling Location: Outfall #001

Other Comments:



**Proposed Effluent Limitations and Monitoring Requirements**

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect technology based effluent limits that are or were in effect at the time the last permit was issued. 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 Six Months Following Permit Issuance.**

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
TRC	XXX	XXX	XXX	1.4	XXX	3.3	1/day	Grab

Compliance Sampling Location: Outfall #001

Other Comments:

**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) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TSS	XXX	XXX	XXX	30.0	XXX	60.0	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	XXX	XXX	Report	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab
Total Phosphorus	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab
CBOD <sub>5</sub>	XXX	XXX	XXX	25.0	XXX	50.0	2/month	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	Report	XXX	Report	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	25.0	XXX	50.0	2/month	Grab

Compliance Sampling Location: Outfall #001

Other Comments:

# ATTACHMENT A

## WQM 7.0 Modeling Results

Permit No. PA0255416

Summer

Permit No. PA0255416

### 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	37456	YOUGHIOGHENY RIVER	8.670	740.00	1740.00	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data												
Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary		Stream	
	(cfsm)	(cfs)	(cfs)						Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.293	0.00	510.00	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
Rolling Hills M	PA0025416	0.0000	0.0350	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	4.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Permit No. PA0255416

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	37456	YOUGHIOGHENY RIVER	0.010	719.00	1760.00	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data												
Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary		Stream	
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.293	0.00	515.68	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. PA0255416

### WQM 7.0 Hydrodynamic Outputs

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>								
19D		37456		YOUGHIOGHENY RIVER								
RMI	Stream Flow	PWS With	Net Stream Flow	Disc Analysis Flow	Reach Slope	Depth	Width	W/D Ratio	Velocity	Reach Trav Time	Analysis Temp	Analysis pH
	(cfs)	(cfs)	(cfs)	(cfs)	(ft/ft)	(ft)	(ft)		(fps)	(days)	(°C)	
<b>Q7-10 Flow</b>												
8.670	510.00	0.00	510.00	.0541	0.00046	1.141	398.34	347.4	1.13	0.489	25.00	7.00
<b>Q1-10 Flow</b>												
8.670	326.40	0.00	326.40	.0541	0.00046	NA	NA	NA	0.88	0.602	25.00	7.00
<b>Q30-10 Flow</b>												
8.670	693.60	0.00	693.60	.0541	0.00046	NA	NA	NA	1.34	0.395	25.00	7.00

Permit No. PA0255416

### WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	5		



Permit No. PA0255416

### WQM 7.0 Wasteload Allocations

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>							
19D	37456	YOUGHIOGHENY RIVER							
NH3-N Acute Allocations									
RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction		
8.670	Rolling Hills M	11.07	50	11.07	50	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		
8.670	Rolling Hills M	1.37	25	1.37	25	0	0		
Dissolved Oxygen Allocations									
RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
8.67	Rolling Hills M	25	25	25	25	4	4	0	0

Permit No. PA0255416

WQM 7.0 D.O.Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>			
19D	37456	YOUGHIOGHENY RIVER			
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>		<u>Analysis pH</u>	
8.670	0.035	25.000		7.000	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>		<u>Reach Velocity (fps)</u>	
396.339	1.141	347.395		1.128	
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>		<u>Reach Kn (1/days)</u>	
2.00	0.001	0.00		1.029	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>		<u>Reach DO Goal (mg/L)</u>	
8.243	2.721	Tsivoglou		5	
<u>Reach Travel Time (days)</u>	<u>Subreach Results</u>				
0.469	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>	
	0.047	2.00	0.00	7.54	
	0.094	2.00	0.00	7.54	
	0.141	2.00	0.00	7.54	
	0.188	2.00	0.00	7.54	
	0.235	2.00	0.00	7.54	
	0.282	2.00	0.00	7.54	
	0.328	2.00	0.00	7.54	
	0.375	2.00	0.00	7.54	
	0.422	2.00	0.00	7.54	
	0.469	2.00	0.00	7.54	

Permit No. PA0255416

### WQM 7.0 Effluent Limits

<u>SWP Basin</u>		<u>Stream Code</u>	<u>Stream Name</u>				
19D		37456	YOUGHIOGHENY RIVER				
RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
8.670	Rolling Hills M	PA0025416	0.000	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4

Permit No. PA0255416

Winter

Permit No. PA0255416

### 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	37456	YOUGHIOGHENY RIVER	8.670	740.00	1740.00	0.00000	0.00	<input checked="" type="checkbox"/>

#### 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)	pH	Stream Temp (°C)	pH
Q7-10	0.586	0.00	1020.00	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
Rolling Hills M	PA0025416	0.0000	0.0350	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	4.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Permit No. PA0255416

### 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	37456	YOUGHIOGHENY RIVER	0.010	719.00	1760.00	0.00000	0.00	<input checked="" type="checkbox"/>

#### Stream Data

Design Cond.	LFY (cfs)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Stream pH	Stream Temp (°C)	Stream pH
Q7-10	0.586	0.00	1031.36	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. PA0255416

WQM 7.0 Hydrodynamic Outputs

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>								
19D		37456		YOUGHIOGHENY RIVER								
RMI	Stream Flow	PWS With	Net Stream Flow	Disc Analysis Flow	Reach Slope	Depth	Width	W/D Ratio	Velocity	Reach Trav Time	Analysis Temp	Analysis pH
	(cfs)	(cfs)	(cfs)	(cfs)	(ft/ft)	(ft)	(ft)		(fps)	(days)	(°C)	
Q7-10 Flow												
8.670	1020.00	0.00	1020.00	.0541	0.00046	1.056	579.14	546.78	1.66	0.318	25.00	7.00
Q1-10 Flow												
8.670	652.80	0.00	652.80	.0541	0.00046	NA	NA	NA	1.30	0.409	25.00	7.00
Q30-10 Flow												
8.670	1387.20	0.00	1387.20	.0541	0.00046	NA	NA	NA	1.98	0.268	25.00	7.00

Permit No. PA0255416

### WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	5		



Permit No. PA0255416

### WQM 7.0 Wasteload Allocations

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>
19D	37456	YOUGHIOGHENY RIVER

#### NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
	8.670 Rolling Hills M	11.07	50	11.07	50	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
	8.670 Rolling Hills M	1.37	25	1.37	25	0	0

#### Dissolved Oxygen Allocations

RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
	8.67 Rolling Hills M	25	25	25	25	4	4	0	0

Permit No. PA0255416

### WQM 7.0 D.O.Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>			
19D	37456	YOUGHIOGHENY RIVER			
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>		
8.670	0.035	25.000	7.000		
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>		
579.139	1.059	546.781	1.663		
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>	<u>Reach Kn (1/days)</u>		
2.00	0.001	0.00	1.029		
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>		
8.243	4.011	Tsivoglou	5		
<u>Reach Travel Time (days)</u>	<u>Subreach Results</u>				
0.318	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>	
	0.032	2.00	0.00	7.54	
	0.064	2.00	0.00	7.54	
	0.095	2.00	0.00	7.54	
	0.127	2.00	0.00	7.54	
	0.159	2.00	0.00	7.54	
	0.191	2.00	0.00	7.54	
	0.223	2.00	0.00	7.54	
	0.255	2.00	0.00	7.54	
	0.286	2.00	0.00	7.54	
	0.318	2.00	0.00	7.54	

Permit No. PA0255416

### WQM 7.0 Effluent Limits

<u>SWP Basin</u>		<u>Stream Code</u>	<u>Stream Name</u>				
19D		37456	YOUGHIOGHENY RIVER				
RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
8.670	Rolling Hills M	PA0025416	0.000	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4

# ATTACHMENT B

## TRC Modeling Results

Permit No. PA0255416

TRC EVALUATION					
Input appropriate values in A3:A9 and D3:D9					
510	= Q stream (cfs)	0.5	= CV Daily		
0.035	= 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 = 3004.729		1.3.2.iii	WLA cfc = 2929.367
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373		5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 1119.634		5.1d	LTA_cfc = 1702.997
Source	Effluent Limit Calculations				
PENTOXSD TRG	5.1f	AML MULT = 1.231			
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500		BAT/BPJ	
		INST MAX LIMIT (mg/l) = 1.635			
WLA_afc	$(.019/e(-k^{*}AFC\_tc)) + [(AFC\_Yc^{*}Qs^{*}.019/Qd^{*}e(-k^{*}AFC\_tc))... \\ ...+ Xd + (AFC\_Yc^{*}Qs^{*}Xs/Qd)]^{*}(1-FOS/100)$				
LTAMULT_afc	$EXP((0.5^{*}LN(cvh^{*}2+1)))-2.326^{*}LN(cvh^{*}2+1)^{*}0.5)$				
LTA_afc	wla_afc^{*}LTAMULT_afc				
WLA_cfc	$(.011/e(-k^{*}CFC\_tc)) + [(CFC\_Yc^{*}Qs^{*}.011/Qd^{*}e(-k^{*}CFC\_tc))... \\ ...+ Xd + (CFC\_Yc^{*}Qs^{*}Xs/Qd)]^{*}(1-FOS/100)$				
LTAMULT_cfc	$EXP((0.5^{*}LN(cvd^{*}2/no\_samples+1)))-2.326^{*}LN(cvd^{*}2/no\_samples+1)^{*}0.5)$				
LTA_cfc	wla_cfc^{*}LTAMULT_cfc				
AML MULT	$EXP(2.326^{*}LN((cvd^{*}2/no\_samples+1)^{*}0.5)-0.5^{*}LN(cvd^{*}2/no\_samples+1))$				
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)^{*}AML_MULT)				
INST MAX LIMIT	$1.5^{*}((av\_mon\_limit/AML\_MULT)/LTAMULT\_afc)$				

# ATTACHMENT C

## USGS Stream Stats Output

Permit No. PA0255416

Discharge Point

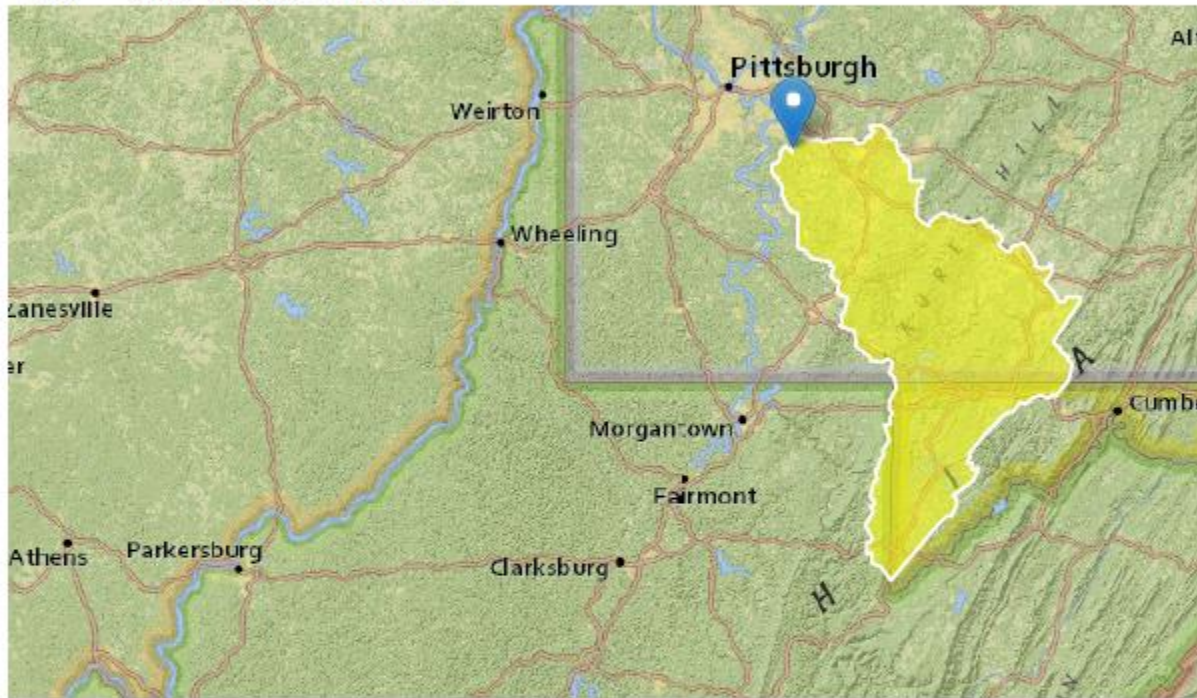
## StreamStats Report

Region ID: PA

Workspace ID: PA20211208111748032000

Clicked Point (Latitude, Longitude): 40.29370, -79.79778

Time: 2021-12-08 06:18:10 -0500



### Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1740	square miles
ELEV	Mean Basin Elevation	2007	feet

**Permit No. PA0255416**

Low-Flow Statistics Flow Report [99.9 Percent (1740 square miles) Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	212	ft <sup>3</sup> /s
30 Day 2 Year Low Flow	298	ft <sup>3</sup> /s
7 Day 10 Year Low Flow	109	ft <sup>3</sup> /s
30 Day 10 Year Low Flow	139	ft <sup>3</sup> /s
90 Day 10 Year Low Flow	223	ft <sup>3</sup> /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/>)



Permit No. PA0255416

Down Stream of Discharge

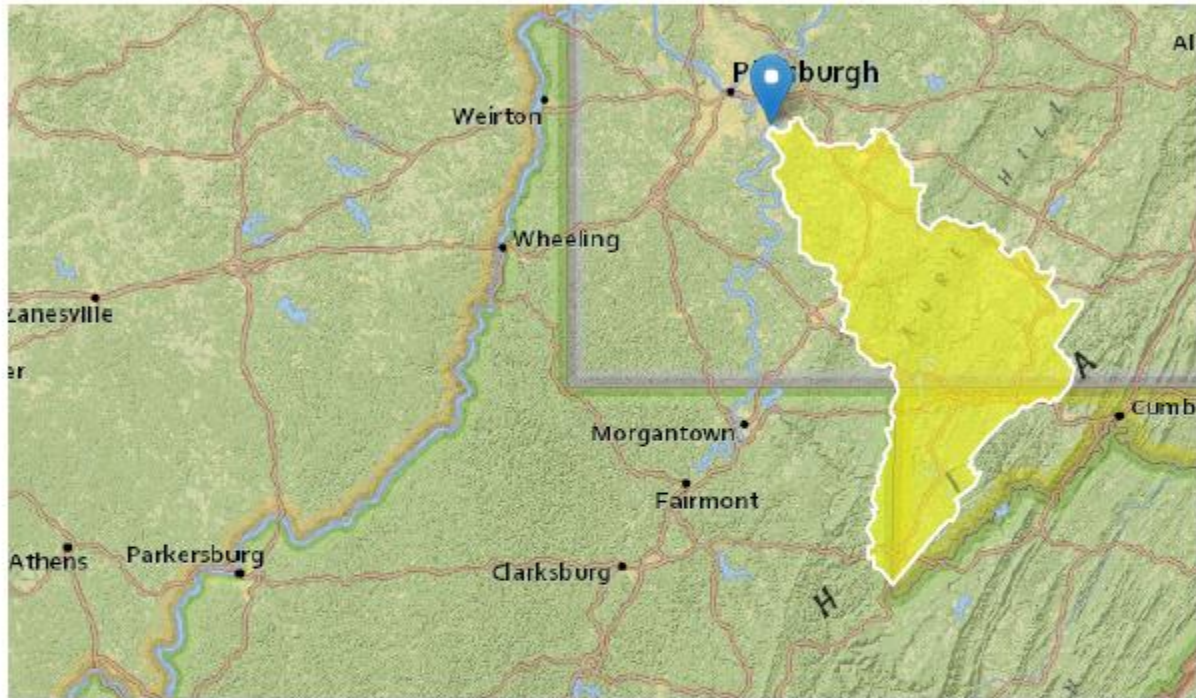
## StreamStats Report

Region ID: PA

Workspace ID: PA20211208112113463000

Clicked Point (Latitude, Longitude): 40.35384, -79.87035

Time: 2021-12-08 06:21:35 -0500



### Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1760	square miles
ELEV	Mean Basin Elevation	1993	feet

Permit No. PA0255416

# ATTACHMENT D

## Proposed Compliance Schedule

**Permit No. PA0255416**

Feasibility study completion	<u>12/31/2022</u>
Final plan completion	<u>12/31/2023</u>
Start construction	<u>01/01/2024</u>
Construction progress report(s)	<u>02/02/2024 through 09/02/2024</u>
End construction	<u>10/01/2024</u>
Compliance with effluent limitations	<u>12/31/2024</u>