pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0096211**
Facility Type	**Municipal**	APS ID	**1074687**
Major / Minor	**Major**	Authorization ID	**1415837**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Municipal Authority of Westmoreland County**	Facility Name	**Darragh STP**
Applicant Address	124 Park and Pool Road New Stanton, PA 15672	Facility Address	Route 136 & Evanstown Road Darragh, PA 15625
Applicant Contact	Norman Stout	Facility Contact	Norman Stout
Applicant Phone	(724) 755-5800	Facility Phone	(724) 755-5800
Client ID	64197	Site ID	3335
Ch 94 Load Status	Not Overloaded	Municipality	Hempfield Township
Connection Status	No Limitations	County	Westmoreland
Date Application Received	October 28, 2022	EPA Waived?	No
Date Application Accepted	November 16, 2022	If No, Reason	Major Facility
Purpose of Application	NPDES permit renewal.		

Summary of Review

The PA Department of Environmental Protection (PADEP/Department) received an NPDES permit renewal application from Gibson-Thomas Engineering on behalf of Municipal Authority of Westmoreland County (MAWC/Permittee) on October 28, 2022 for permittee's Darragh STP (facility), located in Hempfield Township, Westmoreland County. This is a major sewage facility with design flow of 1.12 MGD that discharges into Little Sewickley Creek (TSF) in state watershed 19-D. The current permit will expire on April 30, 2023. The terms and conditions of the current permit is automatically extended since the renewal application was received at least 180 days prior to the expiration date. Renewal NPDES permit applications under Clean Water program are not covered by PADEP's PDG per 021-2100-001.

This fact sheet is developed in accordance with 40 CFR §124.56.

Changes in this renewal: Added: quarterly Total Copper and Total Zinc monitoring, mass limit for NH3-N, E-Coli, UV Imin. Removed: Total Cobalt limit, Total Bromide monitoring, UV AML and MDL monitoring

Sludge use and disposal description and location(s): Thickened biosolids are sent to Greenridge Reclamation landfill in Scottdale, PA.

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 circulataion within the geographical area of the discharge.

Approve	Deny	Signatures	Date
√		Reza H Chowdhury, E.I.T. / Project Manager	March 9, 2023
X		*Pravin Patel* Pravin C Patel, P.E. / Environmental Engineer Manager	03/13/2023

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	1.12
Latitude	40º 15' 51"	Longitude	-79º 40' 47
Quad Name	Irwin	Quad Code	1608
Wastewater Description:	Sewage Effluent		
Receiving Waters	Little Sewickley Creek (TSF)	Stream Code	37557
NHD Com ID	69912693	RMI	6.91
Drainage Area	14.9 mi^2	Yield (cfs/mi^2)	0.193
Q_{7-10} Flow (cfs)	2.88	Q_{7-10} Basis	Please see below
Elevation (ft)	933.73	Slope (ft/ft)	
Watershed No.	19-D	Chapter 93 Class.	TSF
Existing Use	**TSF**	Existing Use Qualifier	Ch. 93
Exceptions to Use	None	Exceptions to Criteria	N/A
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	Final	Name	Sewickley Creek Watershed

Background/Ambient Data		Data Source
pH (SU)	7.2	WQN # 0706, median Jul-Sep, 1962-2019
Temperature (°C)	22.95	WQN # 0706, median Jul-Sep, 1962-2019
Hardness (mg/L)	95.5	WQN # 0706, median Jul-Sep, 1962-2019
Other:		

Nearest Downstream Public Water Supply Intake		WCMA McKeesport, McKeesport City, Allegheny County	
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	
PWS RMI	1.37	Distance from Outfall (mi)	24.97

Changes Since Last Permit Issuance: None

Other Comments:

Streamflow:

The nearest USGS StreamGage (gage number 03083500) data was analyzed to determine the low flow statistics at the discharge point. USGS's web based watershed delineation tool StreamStats (accessible at https://streamstats.usgs.gov/ss/, accessed on January 18, 2023) was utilized to determine the drainage area at discharge point. The StreamStats report shows the drainage area at the discharge point is 14.9 mi^2. Data from the streamgage shows Q_{7-10}, Q_{1-10}, and Q_{30-10} to be 332 cfs, 262 cfs, and 416 cfs, respectively for the reporting year 1925-2008. The drainage area at this streamgage was found to be 1,715 mi^2. These values were obtained from the latest USGS streamflow report (1).

Q_{7-10} runoff rate (low flow yield): 332 cfs/1,715 mi^2 or 0.193 cfs/mi^2
Q_{7-10} at Outfall 001: 0.193 * 14.9 or 2.88 cfs
Q_{30-10}:Q_{7-10}: 416/332 or 1.25
Q_{1-10}:Q_{7-10}: 262/332 or 0.79

(1) Stuckey, M.H., Roland, M.A., 2011, Selected streamflow statistics for streamgage locations in and near Pennsylvania: U.S. Geological Survey Scientific Investigations Report 2011-1070, PP 18, PP 31.

PWS Intake:
The nearby downstream PWS intake is Westmoreland County Municipal Authority on Youghiogheny River in McKeesport City, which is approximately 24.97 miles downstream of discharge point. Due to the distance, dilution of Youghiogheny River, and effluent limitations, it is expected that the discharge will not adversely impact the PWS intake.

Wastewater Characteristics:
A pH of 6.5 (daily eDMR data, median July- September 2021-2022), default temperature of 25^0C (Default per 391-2000-007), and Hardness value of 134 mg/l (application data) will be used for modeling, if needed.

Background data:
The nearby WQN station is WQN0706 on Youghiogheny River at Sutersville. Stream data was analyzed from this station for the reporting period 1962 through 2019 during July-September. This resulted in a median pH of 7.2, stream temperature of 22.95°C, and stream hardness of 95.5 mg/l.

Sewickley Creek Watershed TMDL:
The receiving watershed, Sewickley Creek Watershed, has an EPA approved TMDL for AMD. The current permit has quarterly monitoring requirements for AMD parameters (Total Aluminum, Total Iron, and Total Manganese). The existing monitoring requirements will be carried over unless there is a numeric limit warranted from modeling efforts.

Antidegradation (93.4):
The effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. The receiving streams are designated as Trout Stocking (TSF.) No High-Quality stream or Exceptional Value water is impacted by this discharge; therefore, no Antidegradation Analysis is performed for the discharge.

Treatment Facility Summary

Treatment Facility Name: Darragh STP

WQM Permit No.	Issuance Date
6586217 T	11/17/2017
6586407 A	11/04/2010
6568407	5/1/1987

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Sequencing Batch Reactor W/Sol Removal	Ultraviolet	1.12

Hydraulic Capacity (MGD)	Organic Capacity (lbs./day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
1.12	2335	Not Overloaded	Other WWTP	Landfill

Changes Since Last Permit Issuance: None

Treatment Plant Description

The Municipal Authority of Westmoreland County (MAWC) owns and operates a Major wastewater treatment plant named Darragh STP, located in Hempfield Township, Westmoreland County. The facility has tertiary SBR treatment with UV disinfection. The treated effluent is discharged into Little Sewickley Creek (TSF) through Outfall 001. Per the application, flow passes through bar screen and grit removal, then enters the one of 4 SBR units each consisting of an aeration tank and a sludge tank, then flow passes through UV unit for disinfection prior to discharge. There is no stormwater outfall from this facility. The ownership of the STP was transferred from Hempfield Township Municipal Authority to MAWC during the last renewal. The average annual design flow and hydraulic design capacity is 1.12 MGD and organic loading capacity is 2,335 lbs./day based on 250 mg/l influent BOD5 concentration. The facility receives flows from the below contributing municipalities:

TRIBUTARY INFORMATION				
		Type of Sewer System		
Municipalities Served	Flow Contribution (%)	Separate (%)	Combined (%)	Population
Hempfield Township	92	100	0	5396
Borough of Arona	7	100	0	414
Sewickley Township	1	100	0	76

There is no industrial/commercial significant or categorical industrial waste being discharge into MAWC's collection system that ends up in Darragh STP. The facility, however, is implementing an approved pretreatment program administered by EPA and most recent approval of local limits is July 14, 2020.

The facility uses caustic soda if needed for pH control.

Biosolids management: Sludge is gravity thickened then sent to the centrifuge for dewatering prior to disposal at Greenridge Reclamation landfill in Scottdale, PA.

Compliance History

DMR Data for Outfall 001 (from December 1, 2021 to November 30, 2022)

Parameter	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22	APR-22	MAR-22	FEB-22	JAN-22	DEC-21
Flow (MGD) Average Monthly	0.468	0.37	0.376	0.416	0.413	0.455	0.724	0.611	0.54	0.925	0.608	0.528
Flow (MGD) Daily Maximum	1.349	0.867	0.554	0.722	0.758	0.899	3.55	1.331	0.755	3.368	1.836	1.096
pH (S.U.) Minimum	6.09	6.24	6.3	6.25	6.14	6.14	6.37	6.48	6.56	6.37	6.33	6.31
pH (S.U.) Maximum	6.64	6.79	6.95	6.7	6.63	6.89	7.16	6.98	7.12	7.21	7.09	6.78
DO (mg/L) Minimum	9.98	8.91	7.38	6.33	7.43	6.82	7.48	8.33	9.23	8.03	6.49	7.43
CBOD5 (lbs/day) Average Monthly	< 10.2	< 6.9	< 6.7	< 6.8	7.7	13.5	13.5	15.2	14.6	< 29.2	< 13.6	< 10.7
CBOD5 (lbs/day) Weekly Average	16.0	< 8.3	8.1	< 7.7	9.0	21.0	30.5	26.4	18.9	60.6	26.0	22.6
CBOD5 (mg/L) Average Monthly	< 2.8	< 2.4	< 2.2	< 2.0	2.2	3.0	2.5	2.5	3.2	< 3.1	< 3.1	< 2.3
CBOD5 (mg/L) Weekly Average	3.6	< 2.6	2.7	< 2.0	2.3	4.0	3.7	3.0	4.2	4.3	5.8	3.1
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	685	607	573	645	993	1011	673	775	793	1242	621	723
BOD5 (lbs/day) Raw Sewage Influent Weekly Average	1005	697	703	1222	1631	2362	1694	1350	1030	5255	807	1075
BOD5 (mg/L) Raw Sewage Influent Average Monthly	196	209	192	190	284	244	141	138	176	130	148	178
BOD5 (mg/L) Raw Sewage Influent Weekly Average	263	255	244	370	462	392	232	221	205	187	216	257
TSS (lbs/day) Average Monthly	10.0	6.1	< 3.1	< 7.1	< 6.5	< 4.9	9.8	< 50.0	< 8.3	< 44.6	< 14.0	< 13.2
TSS (lbs/day) Raw Sewage Influent Average Monthly	817	715	767	999	1331	1639	714	1125	1030	1280	527	838
TSS (lbs/day) Raw Sewage Influent Weekly Average	1205	1107	1273	1955	2644	3208	1044	1954	1717	4607	940	1225

TSS (lbs/day) Weekly Average	< 16.9	11.5	6.0	18.3	< 16.8	10.7	16.4	< 177.9	13.5	111.5	< 25.7	< 38.6
TSS (mg/L) Average Monthly	2.8	2.1	< 1.0	< 2.1	< 1.9	< 1.1	2.0	< 5.2	< 1.8	< 5.0	< 3.0	< 2.6
TSS (mg/L) Raw Sewage Influent Average Monthly	240	247	259	298	368	373	156	199	228	152	129	215
TSS (mg/L) Raw Sewage Influent Weekly Average	408	388	436	592	540	616	232	320	332	228	264	292
TSS (mg/L) Weekly Average	< 4.1	4.0	2.0	5.5	< 5.6	2.5	3.0	< 16.1	3.0	10.0	< 5.0	< 5.5
Fecal Coliform (No./100 ml) Geometric Mean	< 3.0	< 2.0	< 2	< 2	< 2	< 3	< 3	< 2	< 4	< 7	< 2	< 3
Fecal Coliform (No./100 ml) IMAX	26	6	5	4.0	5	62	10	9	19	21	7	10
UV Transmittance (%) Average Monthly	74.5	73.3	72.4	73.5	72.9	74.1	76.1	77.6	80.2	81.1	78.8	75.9
UV Transmittance (%) Daily Maximum	79.4	78.6	74.7	76.5	75.1	78.1	84.5	82.4	86.6	87.1	86.2	81.3
Total Nitrogen (lbs/day) Daily Maximum			33.0			29.0			33			40
Total Nitrogen (mg/L) Daily Maximum			8.7			6.17			7.37			11.6
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.3	< 0.3	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.5	< 0.3
Ammonia (mg/L) IMAX	0.16	< 0.1	0.1	1.73	1.27	0.34	0.16	0.12	0.28	0.22	< 0.8	0.8
Total Phosphorus (lbs/day) Daily Maximum			11.0			7.0			5			18
Total Phosphorus (mg/L) Daily Maximum			3.0			1.4			1.1			5.4
Total Aluminum (lbs/day) Daily Maximum			0.06			0.2			0.2			0.1
Total Aluminum (mg/L) Daily Maximum			0.015			0.051			0.035			0.038
Total Cobalt (lbs/day) Average Monthly	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.03	< 0.03	< 0.02	< 0.03	< 0.02	< 0.02
Total Cobalt (lbs/day) Daily Maximum	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.03	< 0.04	< 0.03	< 0.03	< 0.04	< 0.02	< 0.04
Total Cobalt (mg/L) Average Monthly	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005

Total Cobalt (mg/L) Daily Maximum	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Total Iron (lbs/day) Daily Maximum			0.09			0.2			0.2			0.3
Total Iron (mg/L) Daily Maximum			0.025			0.051			0.0352			0.0825
Total Manganese (lbs/day) Daily Maximum			0.02			0.02			0.04			0.02
Total Manganese (mg/L) Daily Maximum			0.005			0.005			0.009			0.006
Bromide (lbs/day) Average Monthly	< 0.4	< 0.3	< 0.3	< 0.4	< 0.3	< 0.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.4	< 0.5
Bromide (lbs/day) Daily Maximum	< 0.5	< 0.3	< 0.3	< 0.4	< 0.4	< 0.6	< 0.9	< 0.6	< 0.5	< 0.8	< 0.5	< 0.8
Bromide (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromide (mg/L) Daily Maximum	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Existing Effluent Limits and Monitoring Requirements

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Max	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	6.0	XXX	XXX	XXX	1/day	Grab
CBOD5 Nov 1 - Apr 30	233.5	355.0	XXX	25.0	38.0	50	2/week	24-Hr Composite
CBOD5 May 1 - Oct 31	140.1	214.8	XXX	15.0	23.0	30	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	2/week	24-Hr Composite
Total Suspended Solids	280.2	420.3	XXX	30.0	45.0	60	2/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	2/week	24-Hr Composite

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
Ultraviolet light transmittance (%)	XXX	XXX	XXX	Report	Report Daily Max	XXX	1/day	Measured
Total Nitrogen	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	6.0	XXX	12.0	2/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	2.0	XXX	4.0	2/week	24-Hr Composite
Total Phosphorus	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Aluminum, Total	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Cobalt, Total	0.24	0.49 Daily Max	XXX	0.026	0.052 Daily Max	XXX	1/week	24-Hr Composite
Iron, Total	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Manganese, Total	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Bromide	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	1/week	24-Hr Composite

Summary of inspection:
August 9, 2022: CEI conducted. No violation noted. The facility appeared well maintained and operated efficiently. The effluent appeared clear at time of inspection. Equipment updates include two new composite samplers, new blower, new DO probes, effluent #2 pump out for repair, VFDs ordered, new lights, digester #4 out, SBR cleaning etc.

April 22, 2021: CEI conducted. No violation identified. The facility appeared to be well maintained.

July 3, 2019: CEI conducted. No violation noted. The facility appeared to be well maintained.

July 10, 2018: CEI conducted. No violation noted. The facility appeared to be well maintained.

May 12, 2017: CEI conducted. No violation noted. The facility appeared to be well maintained and in good operating condition.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 1.12
Latitude 40º 15' 51.00" **Longitude** -79º 40' 47.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

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

Water Quality-Based Limitations

WQM 7.0:
The following data were used in the attached computer model (WQM 7.0) of the stream:

- Discharge pH 6.5 (median July-Sep, 2021-22, eDMR data)
- Discharge Temperature 25°C (Default)
- Discharge Hardness 134 mg/l (Application data)
- Stream pH 7.2 (WQN0706, median Jul-Sep 1962-2019)
- Stream Temperature 22.95°C (WQN0706, median Jul-Sep 1962-2019)
- Stream Hardness 95.5 mg/l (WQN0706, median Jul-Sep 1962-2019)

The following two nodes were used in modeling:

Node 1: At the outfall 001 on Little Sewickley Creek (37557)
Elevation: 933.73 ft (USGS TNM 2.0 viewer, 1/18/2023)
Drainage Area: 14.9 mi^2 (StreamStat Version 3.0, 1/18/2023)
River Mile Index: 6.93 (PA DEP eMapPA)
Low Flow Yield: 0.193 cfs/mi^2
Discharge Flow: 1.12 MGD

Node 2: At confluence with Andrews Run (37575)
Elevation: 901.45 ft (USGS TNM 2.0 viewer, 1/18/2023)
Drainage Area: 20.0 mi^2 (StreamStat Version 3.0, 1/18/2023)
River Mile Index: 4.5 (PA DEP eMapPA)
Low Flow Yield: 0.193 cfs/mi^2
Discharge Flow: 0.0 MGD

Ammonia (NH_3-N), Carbonaceous Biochemical Oxygen Demand (CBOD5), & Dissolved Oxygen (DO):
WQM 7.0 version 1.0b is a water quality model designed to assist DEP to determine appropriate effluent limits for $CBOD_5$, NH_3-N and DO. The model simulates two basic processes. In the NH_3-N module, the model simulates the mixing and degradation of NH_3-N in the stream and compares calculated instream NH_3-N concentrations to NH_3-N water

quality criteria. In the D.O. module, the model simulates the mixing and consumption of D.O. in the stream due to the degradation of $CBOD_5$ and NH_3N and compares calculated instream D.O. concentrations to D.O. water quality criteria. The model was utilized for this permit renewal by using Q_{7-10} and current background water quality levels of the stream.

NH_3-N:
WQM 7.0 suggested NH_3-N limit of 2.0 mg/l as monthly average and 4.0 mg/l as IMAX limit during summer to protect water quality standards. These values are the same as existing permitted limits. The existing winter season limits of 6.0 mg/l as average monthly and 12 mg/l as IMAX limit will be carried over in this renewal. The current permit doesn't have mass-based limits. 40 CFR 122.45(f) requires that effluent limitations be expressed in terms of mass, if possible. DEP's SOP (BCW-PMT-033, V 1.9) clarifies that POTWs are subjected to mass limits for ammonia-N. 40 CFR 122.45(b) requires that effluent limitations for POTWs be calculated based on the design flow of the facility. The mass-based limits are expressed in pounds per day and are calculated as follows:

Mass based limits (lbs./day) = concentration limit (mg/l) * Average Annual Design Flow (MGD) * 8.34

Based on above discussion, the calculated summer season's average monthly mass limit is 18.68 lbs./day and winter season's average monthly mass limit is 56 lbs./day.

$CBOD_5$:
The WQM 7.0 model suggests a monthly average $CBOD_5$ limit of 15 mg/l which suggests the existing limits are still protective. The existing concentration-based and mass-based limits will be carried over. The current permit has seasonal limits. Seasonal limit for $CBOD_5$ is allowed in PADEP's technical guidance (362-0400-001, page 30).

Dissolved Oxygen (DO):
A minimum of 6.0 mg/L for D.O. is necessary to protect the designated use of the receiving stream and is supported by the output from WQM 7.0 modeling and consistent with Ch. 93.7. This limit will be applied in the draft permit.

Toxics:
Based on the available data, PADEP utilizes Toxics Management Spreadsheet (TMS) to (1) evaluate reasonable potential for toxic pollutants to cause or contribute to an excursion above the water quality standards and (2) develop WQBELs for those such toxic pollutants (i.e., 40 CFR § 122.44(d)(1)(i)). It is noteworthy that some of these pollutants that may be reported as "non-detect", but still exceeded the criteria, were determined to be candidates for modeling because the method detection levels used to analyze those pollutants were higher than target QLs and/or the most stringent Chapter 93 criteria. The model then recommended the appropriate action for the Pollutants of Concerns based on the following logic:

1. In general, establish limits in the draft permit where the effluent concentration determined in B.1 or B.2 equals or exceeds 50% of the WQBEL (i.e., RP is demonstrated). Use the average monthly, maximum daily and instantaneous maximum (IMAX) limits for the permit as recommended by the TMS (or, if appropriate, use a multiplier of 2 times the average monthly limit for the maximum daily limit and 2.5 times the average monthly limit for IMAX).

2. For non-conservative pollutants, in general, establish monitoring requirements where the effluent concentration determined in B.1 or B.2 is between 25% - 50% of the WQBEL.

3. For conservative pollutants, in general, establish monitoring requirements where the effluent concentration determined in B.1 or B.2 is between 10% - 50% of the WQBEL.

NOTE 4 – If the effluent concentration determined in B.1 or B.2 is "non-detect" at or below the target quantitation limit (TQL) for the pollutant as specified in the TMS and permit application, the pollutant may be eliminated as a candidate for WQBELs or monitoring requirements unless 1) a more sensitive analytical method is available for the pollutant under 40 CFR Part 136 where the quantitation limit for the method is less than the applicable water quality criterion and 2) a detection at the more sensitive method may lead to a determination that an effluent limitation is necessary, considering available dilution at design conditions.

NOTE 5 – If the effluent concentration determined in B.1 or B.2 is a detection below the TQL but above or equal to the applicable water quality criterion, WQBELs or monitoring may be established for the pollutant.

4. Application managers may, on a site- and pollutant-specific basis, deviate from these guidelines where there is specific rationale that is documented in the fact sheet.

Output from TMS is provided below:

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	Report	Report	Report	Report	Report	µg/L	25.8	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	218	AFC	Discharge Conc > 10% WQBEL (no RP)

Each of the parameters are discussed below:

Total Copper: TMS suggests monitoring for Total Copper based on model input concentration of 9 ug/l. A quarterly monitoring requirement will provide sufficient effluent results for a Reasonable Potential analysis during next permit term.

Total Zinc: TMS suggests monitoring for Total Zinc based on model input concentration of 42.9 ug/l. A quarterly monitoring requirement will provide sufficient effluent results for a Reasonable Potential analysis during next permit term.

Existing Parameters without RP demonstration:

Total Cobalt: Current permit has limits on Total Cobalt which was an RP demonstration in the past and continued due to anti-backsliding prohibition. TMS modeling didn't identify Total Cobalt as pollutant of concern, even at maximum discharge concentration out of 52 sample results. 40 CFR 402(o)(2) lists acceptable exceptions for backsliding. Specifically, 402(o)(2)(B)(ii) states *"information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance"* The submitted sample results are considered as new information which was not available during the time when the numeric limit was imposed. Under the authority of the stated regulation, it is recommended that the limits requirement for Total Cobalt be removed.

Total Aluminum, Total Iron, and Total Manganese: As stated in page 3 of this report, existing monitoring for these three TMDL pollutants will be continued unless TMS suggests numeric limit. Since no RP is demonstrated, existing monitoring will be continued.

Total Bromide: Current permit has monitoring requirement. Since no RP is demonstrated, existing monitoring requirement will be removed.

Additional Considerations

Fecal Coliform:
The recent coliform guidance in 25 Pa. code § 92a.47.(a)(4) requires a summer technology limit of 200/100 ml as a geometric mean and an instantaneous maximum not greater than 1,000/100ml and § 92a.47.(a)(5) requires a winter limit of 2,000/100ml as a geometric mean and an instantaneous maximum not greater than 10,000/100ml. These are existing limits and will be carried over.

E. Coli:
Pa Code 25 § 92a. 61 requires monitoring of E. Coli. DEP's SOP titled "Establishing Effluent Limitations for Individual Sewage Permits (BCW-PMT-033, revised March 24, 2021) recommends monthly E. Coli monitoring for major sewage dischargers. This requirement will be applied from this permit term.

pH:
The TBEL for pH is above 6.0 and below 9.0 S.U. (40 CFR §133.102(c) and Pa Code 25 §§ 95.2(1), 92a.47) which are existing limits and will be carried over.

Total Suspended Solids (TSS):
There is no water quality criterion for TSS. The existing limits of 30 mg/L average monthly, 45 mg/l average weekly, and 60 mg/L instantaneous maximum will remain in the permit based on the minimum level of effluent quality attainable by secondary treatment, 25 Pa. Code § 92a.47 and 40CFR 133.102(b). The mass based average monthly and weekly

average limits are calculated to be 280.2 lbs./day and 420.3 lbs./day respectively, which are the same as were in existing permit and will be carried over.

UV Disinfection:
PADEP's SOP BCW-PMT-033 recommends UV parameter monitoring where UV is used as a method of disinfection, with the same frequency as would be if Chlorine is used for disinfection. The current permit has UV Transmittance monitoring in % as average monthly and daily maximum. The Domestic Wastewater Facilities Manual (draft, dated August 2017) states "The (UV) system should be designed based on the treated wastewater maximum suspended solids concentration, minimum UV transmittance and peak instantaneous flow rate…." And "In absence of more information on required inactivation, the minimum design UV dose for activated sludge secondary effluents with an effluent fecal coliform concentration of 200/100 ml is 30 mJ/cm2 MS2 at a UVT of 65% per 1 cm." This translates to the necessity of reporting minimum transmittance rather than average monthly or daily maximum UVT values. Therefore, the current average monthly and daily maximum values will be replaced by instantaneous minimum UVT as %. The sampling type is also changed from "measured" to "recorded".

Flow and Influent BOD_5, $CBOD_5$, and TSS Monitoring Requirement:
The requirement to monitor the volume of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii). Influent BOD_5 and TSS monitoring requirements are established in the permit per the requirements set in Pa Code 25 Chapter 94.

Best Professional Judgement (BPJ):
Total Phosphorus:
The current permit has monitoring requirements for Total Phosphorus which is consistent with Pa Code 25 Ch. 92a.61 and will be carried over.

Total Nitrogen: Pa Code 25 § 92a.61 requires monitoring, at a minimum, for all sewage facilities. Current monitoring requirement will be continued.

Monitoring Frequency and Sample Types:
Otherwise specified above, the monitoring frequency and sample type of compliance monitoring for existing parameters are recommended by DEP's SOP and Permit Writers Manual and/or on a case-by-case basis using best professional judgment (BPJ).

Anti-Backsliding
The proposed limits are at least as stringent as are in existing permit, unless otherwise stated; therefore, anti-backsliding is not applicable.

Whole Effluent Toxicity (WET)

For Outfall ___, ☐ **Acute** ☒ **Chronic** WET Testing was completed:

☐ For the permit renewal application (4 tests).
☐ Quarterly throughout the permit term.
☐ Quarterly throughout the permit term and a TIE/TRE was conducted.
☒ Other: **4 quarterly for 1st year, annually thereafter, Phase 1 TRE conducted.**

The dilution series used for the tests was: 100%, 87%, 73%, 37%, and 18%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 73%.

Summary of Four Most Recent Test Results

(NOTE – Enter results into one table, depending on which data analysis method was used).

TST Data Analysis

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

Test Date	*Ceriodaphnia* Results (Pass/Fail)		*Pimephales* Results (Pass/Fail)	
	Survival	Reproduction	Survival	Growth
5/22/2018	Pass	Pass	Pass	Pass
8/7/2018	Pass	Pass	Pass	Pass
11/6/2018	Pass	Pass	Pass	Pass
3/4/2019	Pass	Pass	Pass	Pass
5/21/2019	Pass	Fail	Fail	Fail
7/2/2019	Pass	Pass	Fail	Fail
9/3/2019	Pass	Pass	Pass	Pass
11/26/2019	Pass	Pass	Pass	Pass
3/9/2020	Pass	Pass	Pass	Pass
5/25/2020	Pass	Pass	Pass	Pass
5/24/2021	Pass	Pass	Pass	Pass
5/23/2022	Pass	Pass	Pass	Pass

***** *A "passing" result is that in which the replicate data for the TIWC is not statistically significant from the control condition. This is exhibited when the calculated t value ("T-Test Result") is greater than the critical t value. A "failing" result is exhibited when the calculated t value ("T-Test Result") is less than the critical t value.*

Is there reasonable potential for an excursion above water quality standards based on the results of these tests? (*NOTE – In general, reasonable potential is determined anytime there is at least one test failure in the previous four tests).*

☐ **YES** ☒ **NO**

Comments: A Phase 1 TRE was triggered due to retest failure on 3rd Q 2019. The Phase 1 TRE required quarterly testing. All 4 quarterly tests passed, and the test frequency reduced to annually. Phase 1 TRE report was submitted to PADEP on June 2020. A TIE was also initiated concurrently. The TRE trigger immediately resulted in an in-plant survey to identify possible causes of toxicity related to changes in process or chemicals used. The Plant Operations indicated there were no changes to plant chemicals or operational procedures. In conjunction with the biological testing laboratory, the permittee instituted an accelerated testing schedule of once every two weeks for three months, in addition to their existing testing frequency, to identify additional samples exhibiting toxicity to perform TIE procedures. All additional tests till date (June 2020) showed no aquatic toxicity. The lack of toxicity in retesting indicates that the original toxicity was an isolated incident which is also evident from later annual testings.

Evaluation of Test Type, IWC and Dilution Series for Renewed Permit

Acute Partial Mix Factor (PMFa): **0.975** Chronic Partial Mix Factor (PMFc): **1**

1. Determine IWC – Acute (IWCa):

(Q_d x 1.547) / ((Q_{7-10} x PMFa) + (Q_d x 1.547))

[(1.12 MGD x 1.547) / ((2.88 cfs x 0.975) + (1.12 MGD x 1.547))] x 100 = **38.16%**

Is IWCa < 1%? ☐ **YES** ☒ **NO** **(YES - Acute Tests Required OR NO - Chronic Tests Required)**

If the discharge is to the tidal portion of the Delaware River, indicate how the type of test was determined:

Type of Test for Permit Renewal: **Chronic**

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

TIWCa = IWCa / 0.3 = **%**

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

(Q_d x 1.547) / (Q_{7-10} x PMFc) + (Q_d x 1.547)

[(1.12 MGD x 1.547) / ((2.88 cfs x 1) + (1.12 MGD x 1.547))] x 100 = **37.56%**

3. Determine Dilution Series

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

Dilution Series = 100%, 69%, 38%, 19%, and 10%.

WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

Will WET limits be established in the permit? ☐ YES ☒ NO

If WET limits will be established, identify the species and the limit values for the permit (TU).

If WET limits will not be established, but reasonable potential was determined, indicate the rationale for not establishing WET limits:

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	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	6.0 Daily Min	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	233.5	355.0	XXX	25.0	38.0	50	2/week	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	140.1	214.8	XXX	15.0	23.0	30	2/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	2/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5)	Report	Report	XXX	Report	Report	XXX	2/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	2/week	24-Hr Composite
Total Suspended Solids	280.2	420.3	XXX	30.0	45.0	60	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
Ultraviolet light transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded

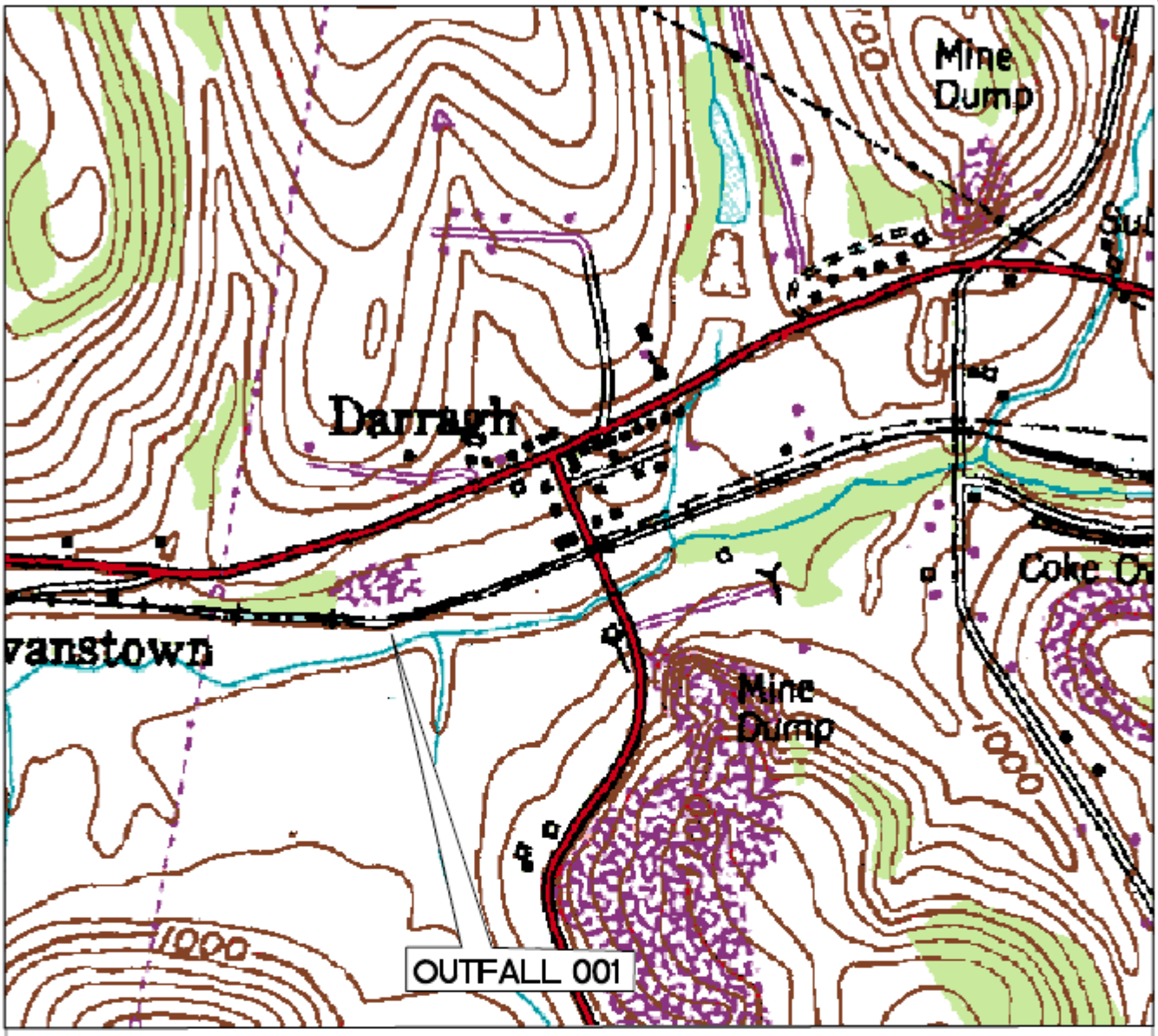
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Nitrogen	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	56.0	XXX	XXX	6.0	XXX	12	2/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	18.68	XXX	XXX	2.0	XXX	4	2/week	24-Hr Composite
Total Phosphorus	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Zinc, Total (ug/L)	XXX	XXX	XXX	Report	Report	XXX	1/quarter	24-Hr Composite
Aluminum, Total	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Copper, Total (ug/L)	XXX	XXX	XXX	Report Avg Qrtly	Report Daily Max	XXX	1/quarter	24-Hr Composite
Iron, Total	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Manganese, Total	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite

Compliance Sampling Location: At Outfall 001

Other Comments: None

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:

Permit No. PA0096211



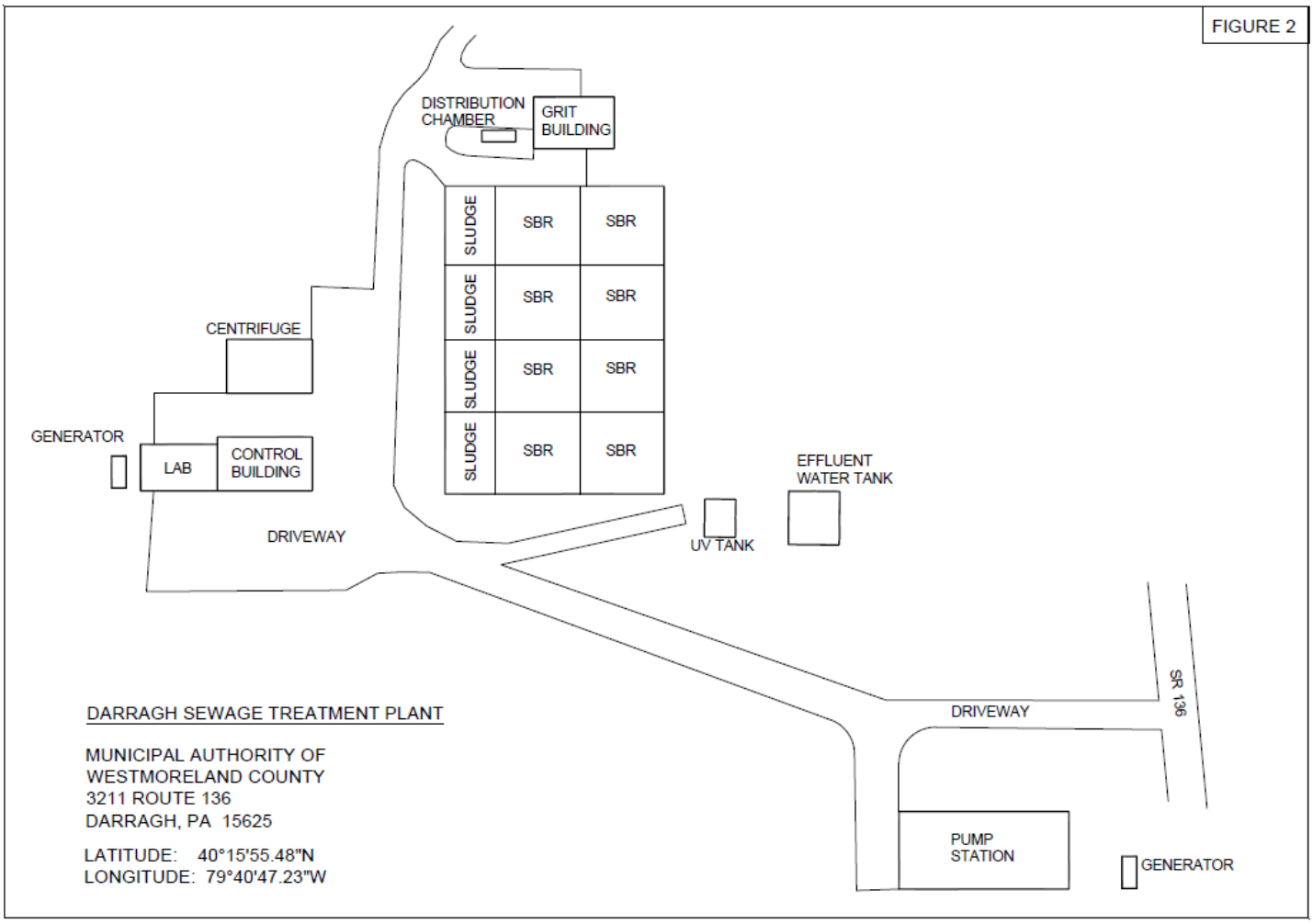
USGS MAPPING

DATE		SCALE
10-20-2022	DARRAGH STP NPDES PERMIT RENEWAL FOR MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY WESTMORELAND COUNTY, PA.	NTS

REVISIONS	FIELD BOOK	FILE
	DRAWN BY: DJG	CHECKED BY:

GIBSON THOMAS ENGINEERING COMPANY

Permit No. PA0096211



Permit No. PA0096211

PA0096211 at 001

Region ID: PA
Workspace ID: PA20230119005302692000
Clicked Point (Latitude, Longitude): 40.26433, -79.67976
Time: 2023-01-18 19:53:23 -0500

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	14.9	square miles
ELEV	Mean Basin Elevation	1165	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	14.9	square miles	2.26	1400
ELEV	Mean Basin Elevation	1165	feet	1050	2580

Low-Flow Statistics Flow Report [Low Flow Region 4]

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	0.595	ft^3/s	43	43
30 Day 2 Year Low Flow	1.01	ft^3/s	38	38
7 Day 10 Year Low Flow	0.226	ft^3/s	66	66
30 Day 10 Year Low Flow	0.394	ft^3/s	54	54
90 Day 10 Year Low Flow	0.702	ft^3/s	41	41

Low-Flow Statistics Citations

Permit No. PA0096211

PA0096211 at node 2

Region ID: PA
Workspace ID: PA20230119010032514000
Clicked Point (Latitude, Longitude): 40.26404, -79.70671
Time: 2023-01-18 20:00:53 -0500

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	20	square miles
ELEV	Mean Basin Elevation	1145	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	20	square miles	2.26	1400
ELEV	Mean Basin Elevation	1145	feet	1050	2580

Low-Flow Statistics Flow Report [Low Flow Region 4]

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	0.82	ft^3/s	43	43
30 Day 2 Year Low Flow	1.37	ft^3/s	38	38
7 Day 10 Year Low Flow	0.322	ft^3/s	66	66
30 Day 10 Year Low Flow	0.548	ft^3/s	54	54
90 Day 10 Year Low Flow	0.959	ft^3/s	41	41

Low-Flow Statistics Citations

Permit No. PA0096211

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	37557	LITTLE SEWICKLEY CREEK	6.930	933.73	14.90	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	0.193	0.00	0.00	0.000	0.000	0.0	0.00	0.00	22.95	7.20	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
Darragh STP	PA0096211	1.1200	1.1200	1.1200	0.000	25.00	6.50

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	15.00	2.00	0.00	1.50
Dissolved Oxygen	6.00	8.24	0.00	0.00
NH3-N	2.00	0.00	0.00	0.70

Permit No. PA0096211

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	37557	LITTLE SEWICKLEY CREEK	4.500	901.45	20.00	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	0.193	0.00	0.00	0.000	0.000	0.0	0.00	0.00	22.95	7.50	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. PA0096211

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19D	37557	LITTLE SEWICKLEY 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												
6.930	2.88	0.00	2.88	1.7326	0.00252	.645	27.71	42.94	0.26	0.576	23.72	6.80
Q1-10 Flow												
6.930	2.27	0.00	2.27	1.7326	0.00252	NA	NA	NA	0.24	0.623	23.84	6.76
Q30-10 Flow												
6.930	3.59	0.00	3.59	1.7326	0.00252	NA	NA	NA	0.28	0.531	23.62	6.84

Permit No. PA0096211

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	0.79	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.25	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

Permit No. PA0096211

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19D	37557	LITTLE SEWICKLEY 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
6.930	Darragh STP	8.35	4	8.35	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
6.930	Darragh STP	1.63	2	1.63	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)		
6.93	Darragh STP	15	15	2	2	6	6	0	0

Permit No. PA0096211

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19D	37557	LITTLE SEWICKLEY CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
6.930	1.120	23.721	6.801
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
27.711	0.645	42.944	0.258
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
6.89	1.089	0.75	0.932
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.400	6.729	Tsivoglou	6
Reach Travel Time (days)			
0.576			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.058	6.39	0.71	7.01
0.115	5.93	0.68	6.80
0.173	5.51	0.64	6.71
0.230	5.11	0.61	6.69
0.288	4.75	0.57	6.71
0.346	4.41	0.54	6.77
0.403	4.09	0.52	6.85
0.461	3.80	0.49	6.93
0.519	3.52	0.46	7.02
0.576	3.27	0.44	7.11

Permit No. PA0096211

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19D	37557	LITTLE SEWICKLEY 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)
6.930	Darragh STP	PA0096211	1.120	CBOD5	15		
				NH3-N	2	4	
				Dissolved Oxygen			6

Permit No. PA0096211

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Darragh STP** NPDES Permit No.: **PA0096211** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Treated sewage**

Discharge Characteristics									
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
1.12	134	6.5						

	Discharge Pollutant	Units	Max Discharge Conc		0 if left blank: Trib Conc		0.5 if left blank: Daily CV	Hourly CV	0 if left blank: Strea m CV	Fate Coeff	FOS	1 if left blank: Criteri a Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		393									
	Chloride (PWS)	mg/L		95.5									
	Bromide	mg/L	<	0.065									
	Sulfate (PWS)	mg/L		58.5									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		11									
	Total Antimony	µg/L		0.431									
	Total Arsenic	µg/L		0.754									
	Total Barium	µg/L		38									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L		233									
	Total Cadmium	µg/L	<	0.12									
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L	<	0.1									
	Total Cobalt	µg/L		0.521									
	Total Copper	µg/L		9									
	Free Cyanide	µg/L		1									
	Total Cyanide	µg/L	<	3									
	Dissolved Iron	µg/L	<	15									
	Total Iron	µg/L		15.5									
	Total Lead	µg/L		0.19									
	Total Manganese	µg/L		5									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		4									
	Total Phenols (Phenolics) (PWS)	µg/L		2.8									
	Total Selenium	µg/L		0.695									
	Total Silver	µg/L	<	0.0619									
	Total Thallium	µg/L	<	0.0601									
	Total Zinc	µg/L		42.9									
	Total Molybdenum	µg/L	<	4									
	Acrolein	µg/L	<	0.9									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	0.3									
	Benzene	µg/L	<	0.04									
	Bromoform	µg/L	<	0.1									

Permit No. PA0096211

Group 3	Carbon Tetrachloride	µg/L	<	0.1										
	Chlorobenzene	µg/L		0.07										
	Chlorodibromomethane	µg/L	<	0.08										
	Chloroethane	µg/L	<	0.06										
	2-Chloroethyl Vinyl Ether	µg/L	<	0.1										
	Chloroform	µg/L		0.1										
	Dichlorobromomethane	µg/L	<	0.08										
	1,1-Dichloroethane	µg/L	<	0.06										
	1,2-Dichloroethane	µg/L	<	0.08										
	1,1-Dichloroethylene	µg/L	<	0.07										
	1,2-Dichloropropane	µg/L	<	0.1										
	1,3-Dichloropropylene	µg/L	<	0.6										
	1,4-Dioxane	µg/L		0.1										
	Ethylbenzene	µg/L	<	0.06										
	Methyl Bromide	µg/L	<	0.1										
	Methyl Chloride	µg/L	<	0.09										
	Methylene Chloride	µg/L	<	0.1										
	1,1,2,2-Tetrachloroethane	µg/L	<	0.1										
	Tetrachloroethylene	µg/L	<	0.09										
	Toluene	µg/L	<	0.06										
	1,2-trans-Dichloroethylene	µg/L	<	0.1										
	1,1,1-Trichloroethane	µg/L	<	0.06										
	1,1,2-Trichloroethane	µg/L	<	0.08										
	Trichloroethylene	µg/L	<	0.1										
	Vinyl Chloride	µg/L	<	0.1										
Group 4	2-Chlorophenol	µg/L	<	0.164										
	2,4-Dichlorophenol	µg/L	<	0.204										
	2,4-Dimethylphenol	µg/L	<	0.344										
	4,6-Dinitro-o-Cresol	µg/L	<	1.11										
	2,4-Dinitrophenol	µg/L	<	1.72										
	2-Nitrophenol	µg/L	<	0.21										
	4-Nitrophenol	µg/L	<	0.129										
	p-Chloro-m-Cresol	µg/L	<	0.236										
	Pentachlorophenol	µg/L	<	0.456										
	Phenol	µg/L	<	0.183										
	2,4,6-Trichlorophenol	µg/L	<	0.208										
Group 5	Acenaphthene	µg/L	<	0.321										
	Acenaphthylene	µg/L	<	0.319										
	Anthracene	µg/L	<	0.299										
	Benzidine	µg/L	<	0.558										
	Benzo(a)Anthracene	µg/L	<	0.248										
	Benzo(a)Pyrene	µg/L	<	0.228										
	3,4-Benzofluoranthene	µg/L	<	0.248										
	Benzo(ghi)Perylene	µg/L	<	0.376										
	Benzo(k)Fluoranthene	µg/L	<	0.306										
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.214										
	Bis(2-Chloroethyl)Ether	µg/L	<	0.247										
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.247										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	0.145										
	4-Bromophenyl Phenyl Ether	µg/L	<	0.361										
	Butyl Benzyl Phthalate	µg/L	<	0.954										
	2-Chloronaphthalene	µg/L	<	0.322										
	4-Chlorophenyl Phenyl Ether	µg/L	<	311										
	Chrysene	µg/L	<	0.467										
	Dibenzo(a,h)Anthrancene	µg/L	<	0.378										
	1,2-Dichlorobenzene	µg/L	<	0.178										
	1,3-Dichlorobenzene	µg/L	<	0.39										
	1,4-Dichlorobenzene	µg/L	<	0.427										
	3,3-Dichlorobenzidine	µg/L	<	0.681										
	Diethyl Phthalate	µg/L	<	0.777										
	Dimethyl Phthalate	µg/L	<	0.468										
	Di-n-Butyl Phthalate	µg/L	<	2.47										
	2,4-Dinitrotoluene	µg/L	<	0.425										

Permit No. PA0096211

	2,6-Dinitrotoluene	µg/L	<	0.41										
	Di-n-Octyl Phthalate	µg/L		1.39										
	1,2-Diphenylhydrazine	µg/L	<	0.482										
	Fluoranthene	µg/L	<	0.573										
	Fluorene	µg/L	<	0.284										
	Hexachlorobenzene	µg/L	<	0.382										
	Hexachlorobutadiene	µg/L	<	0.243										
	Hexachlorocyclopentadiene	µg/L	<	0.369										
	Hexachloroethane	µg/L	<	0.433										
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.358										
	Isophorone	µg/L	<	0.234										
	Naphthalene	µg/L	<	0.234										
	Nitrobenzene	µg/L	<	0.222										
	n-Nitrosodimethylamine	µg/L	<	0.219										
	n-Nitrosodi-n-Propylamine	µg/L	<	0.386										
	n-Nitrosodiphenylamine	µg/L	<	0.338										
	Phenanthrene	µg/L	<	0.385										
	Pyrene	µg/L	<	0.539										
	1,2,4-Trichlorobenzene	µg/L	<	0.25										
Group 6	Aldrin	µg/L	<											
	alpha-BHC	µg/L	<											
	beta-BHC	µg/L	<											
	gamma-BHC	µg/L	<											
	delta BHC	µg/L	<											
	Chlordane	µg/L	<											
	4,4-DDT	µg/L	<											
	4,4-DDE	µg/L	<											
	4,4-DDD	µg/L	<											
	Dieldrin	µg/L	<											
	alpha-Endosulfan	µg/L	<											
	beta-Endosulfan	µg/L	<											
	Endosulfan Sulfate	µg/L	<											
	Endrin	µg/L	<											
	Endrin Aldehyde	µg/L	<											
	Heptachlor	µg/L	<											
	Heptachlor Epoxide	µg/L	<											
	PCB-1016	µg/L	<											
	PCB-1221	µg/L	<											
	PCB-1232	µg/L	<											
	PCB-1242	µg/L	<											
	PCB-1248	µg/L	<											
	PCB-1254	µg/L	<											
	PCB-1260	µg/L	<											
	PCBs, Total	µg/L	<											
	Toxaphene	µg/L	<											
	2,3,7,8-TCDD	ng/L	<											
Group 7	Gross Alpha	pCi/L												
	Total Beta	pCi/L	<											
	Radium 226/228	pCi/L	<											
	Total Strontium	µg/L	<											
	Total Uranium	µg/L	<											
	Osmotic Pressure	mOs/kg												

Permit No. PA0096211

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Darragh STP, NPDES Permit No. PA0096211, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: Little Sewickley Creek

No. Reaches to Model: 1

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	037557	6.93	933.73	14.9			Yes
End of Reach 1	037557	4.5	901.45	20			Yes

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

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	6.93	0.193										95.5	7.2		
End of Reach 1	4.5	0.193										95.5	7.2		

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	6.93														
End of Reach 1	4.5														

Permit No. PA0096211

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Darragh STP, NPDES Permit No. PA0096211, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ *AFC* CCT (min): 15 PMF: 0.975 Analysis Hardness (mg/l): 110.2 Analysis pH: 6.80

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	1,964	
Total Antimony	0	0		0	1,100	1,100	2,881	
Total Arsenic	0	0		0	340	340	890	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	55,000	
Total Boron	0	0		0	8,100	8,100	21,214	
Total Cadmium	0	0		0	2.213	2.35	6.17	Chem Translator of 0.94 applied
Hexavalent Chromium	0	0		0	16	16.3	42.7	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	249	
Total Copper	0	0		0	14.727	15.3	40.2	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	57.6	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	71.774	92.4	242	Chem Translator of 0.777 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	4.31	Chem Translator of 0.85 applied
Total Nickel	0	0		0	508.336	509	1,334	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	3.802	4.47	11.7	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	170	
Total Zinc	0	0		0	127.232	130	341	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	7.86	
Acrylonitrile	0	0		0	650	650	1,702	

Permit No. PA0096211

Benzene	0	0		0	640	640	1,676	
Bromoform	0	0		0	1,800	1,800	4,714	
Carbon Tetrachloride	0	0		0	2,800	2,800	7,333	
Chlorobenzene	0	0		0	1,200	1,200	3,143	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	47,143	
Chloroform	0	0		0	1,900	1,900	4,976	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	39,285	
1,1-Dichloroethylene	0	0		0	7,500	7,500	19,643	
1,2-Dichloropropane	0	0		0	11,000	11,000	28,809	
1,3-Dichloropropylene	0	0		0	310	310	812	
Ethylbenzene	0	0		0	2,900	2,900	7,595	
Methyl Bromide	0	0		0	550	550	1,440	
Methyl Chloride	0	0		0	28,000	28,000	73,333	
Methylene Chloride	0	0		0	12,000	12,000	31,428	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	2,619	
Tetrachloroethylene	0	0		0	700	700	1,833	
Toluene	0	0		0	1,700	1,700	4,452	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	17,809	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	7,857	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	8,905	
Trichloroethylene	0	0		0	2,300	2,300	6,024	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	1,467	
2,4-Dichlorophenol	0	0		0	1,700	1,700	4,452	
2,4-Dimethylphenol	0	0		0	660	660	1,729	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	210	
2,4-Dinitrophenol	0	0		0	660	660	1,729	
2-Nitrophenol	0	0		0	8,000	8,000	20,952	
4-Nitrophenol	0	0		0	2,300	2,300	6,024	
p-Chloro-m-Cresol	0	0		0	160	160	419	
Pentachlorophenol	0	0		0	7.110	7.11	18.6	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	1,205	
Acenaphthene	0	0		0	83	83.0	217	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	786	
Benzo(a)Anthracene	0	0		0	0.5	0.5	1.31	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	78,571	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	11,786	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	707	
Butyl Benzyl Phthalate	0	0		0	140	140	367	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	

Permit No. PA0096211

Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	2,148	
1,3-Dichlorobenzene	0	0		0	350	350	917	
1,4-Dichlorobenzene	0	0		0	730	730	1,912	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	10,476	
Dimethyl Phthalate	0	0		0	2,500	2,500	6,548	
Di-n-Butyl Phthalate	0	0		0	110	110	288	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	4,190	
2,6-Dinitrotoluene	0	0		0	990	990	2,593	
1,2-Diphenylhydrazine	0	0		0	15	15.0	39.3	
Fluoranthene	0	0		0	200	200	524	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	26.2	
Hexachlorocyclopentadiene	0	0		0	5	5.0	13.1	
Hexachloroethane	0	0		0	60	60.0	157	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	26,190	
Naphthalene	0	0		0	140	140	367	
Nitrobenzene	0	0		0	4,000	4,000	10,476	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	44,524	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	786	
Phenanthrene	0	0		0	5	5.0	13.1	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	340	

☑ *CFC* CCT (min): 15.763 PMF: 1 Analysis Hardness (mg/l): 109.98 Analysis pH: 6.80

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	585	
Total Arsenic	0	0		0	150	150	399	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	10,905	
Total Boron	0	0		0	1,600	1,600	4,256	
Total Cadmium	0	0		0	0.263	0.29	0.77	Chem Translator of 0.905 applied
Hexavalent Chromium	0	0		0	10	10.4	27.6	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	50.5	
Total Copper	0	0		0	9.714	10.1	26.9	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	13.8	
Dissolved Iron	0	0		0	N/A	N/A	N/A	

Permit No. PA0096211

Total Iron	0	0		0	1,500	1,500	3,990	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.791	3.59	9.55	Chem Translator of 0.777 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	2.41	Chem Translator of 0.85 applied
Total Nickel	0	0		0	56.363	56.5	150	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	13.3	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	34.6	
Total Zinc	0	0		0	128.051	130	345	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	7.98	
Acrylonitrile	0	0		0	130	130	346	
Benzene	0	0		0	130	130	346	
Bromoform	0	0		0	370	370	984	
Carbon Tetrachloride	0	0		0	560	560	1,489	
Chlorobenzene	0	0		0	240	240	638	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	9,309	
Chloroform	0	0		0	390	390	1,037	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	8,245	
1,1-Dichloroethylene	0	0		0	1,500	1,500	3,990	
1,2-Dichloropropane	0	0		0	2,200	2,200	5,851	
1,3-Dichloropropylene	0	0		0	61	61.0	162	
Ethylbenzene	0	0		0	580	580	1,543	
Methyl Bromide	0	0		0	110	110	293	
Methyl Chloride	0	0		0	5,500	5,500	14,628	
Methylene Chloride	0	0		0	2,400	2,400	6,383	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	559	
Tetrachloroethylene	0	0		0	140	140	372	
Toluene	0	0		0	330	330	878	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	3,724	
1,1,1-Trichloroethane	0	0		0	610	610	1,622	
1,1,2-Trichloroethane	0	0		0	680	680	1,809	
Trichloroethylene	0	0		0	450	450	1,197	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	293	
2,4-Dichlorophenol	0	0		0	340	340	904	
2,4-Dimethylphenol	0	0		0	130	130	346	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	42.6	
2,4-Dinitrophenol	0	0		0	130	130	346	
2-Nitrophenol	0	0		0	1,600	1,600	4,256	
4-Nitrophenol	0	0		0	470	470	1,250	
p-Chloro-m-Cresol	0	0		0	500	500	1,330	
Pentachlorophenol	0	0		0	5.455	5.46	14.5	

Permit No. PA0096211

Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	242	
Acenaphthene	0	0		0	17	17.0	45.2	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	157	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.27	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	15,958	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	2,420	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	144	
Butyl Benzyl Phthalate	0	0		0	35	35.0	93.1	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	426	
1,3-Dichlorobenzene	0	0		0	69	69.0	184	
1,4-Dichlorobenzene	0	0		0	150	150	399	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	2,128	
Dimethyl Phthalate	0	0		0	500	500	1,330	
Di-n-Butyl Phthalate	0	0		0	21	21.0	55.9	
2,4-Dinitrotoluene	0	0		0	320	320	851	
2,6-Dinitrotoluene	0	0		0	200	200	532	
1,2-Diphenylhydrazine	0	0		0	3	3.0	7.98	
Fluoranthene	0	0		0	40	40.0	106	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	5.32	
Hexachlorocyclopentadiene	0	0		0	1	1.0	2.66	
Hexachloroethane	0	0		0	12	12.0	31.9	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	5,585	
Naphthalene	0	0		0	43	43.0	114	
Nitrobenzene	0	0		0	810	810	2,154	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	9,043	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	157	
Phenanthrene	0	0		0	1	1.0	2.66	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	69.2	

☑ ***THH*** CCT (min): 15.763 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Permit No. PA0096211

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	14.9	
Total Arsenic	0	0		0	10	10.0	26.6	
Total Barium	0	0		0	2,400	2,400	6,383	
Total Boron	0	0		0	3,100	3,100	8,245	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	4	4.0	10.6	
Dissolved Iron	0	0		0	300	300	798	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	2,660	
Total Mercury	0	0		0	0.050	0.05	0.13	
Total Nickel	0	0		0	610	610	1,622	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	0.64	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	7.98	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	266	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	15.2	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	87.8	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	181	
Methyl Bromide	0	0		0	100	100.0	266	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	

Permit No. PA0096211

1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
Tetrachloroethylene	0	0		0	N/A	N/A	N/A	
Toluene	0	0		0	57	57.0	152	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	266	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	26,597	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	30	30.0	79.8	
2,4-Dichlorophenol	0	0		0	10	10.0	26.6	
2,4-Dimethylphenol	0	0		0	100	100.0	266	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	5.32	
2,4-Dinitrophenol	0	0		0	10	10.0	26.6	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	10,639	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	186	
Anthracene	0	0		0	300	300	798	
Benzidine	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	532	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	0.27	
2-Chloronaphthalene	0	0		0	800	800	2,128	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	2,660	
1,3-Dichlorobenzene	0	0		0	7	7.0	18.6	
1,4-Dichlorobenzene	0	0		0	300	300	798	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	1,596	
Dimethyl Phthalate	0	0		0	2,000	2,000	5,319	
Di-n-Butyl Phthalate	0	0		0	20	20.0	53.2	
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
Fluoranthene	0	0		0	20	20.0	53.2	

Permit No. PA0096211

Fluorene	0	0		0	50	50.0	133	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	10.6	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	34	34.0	90.4	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	26.6	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	53.2	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.19	

☑ *CRL* CCT (min): 12.687 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	

Permit No. PA0096211

Acrylonitrile	0	0		0	0.06	0.06	0.71	
Benzene	0	0		0	0.58	0.58	6.84	
Bromoform	0	0		0	7	7.0	82.6	
Carbon Tetrachloride	0	0		0	0.4	0.4	4.72	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	9.44	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	11.2	
1,2-Dichloroethane	0	0		0	9.9	9.9	117	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	10.6	
1,3-Dichloropropylene	0	0		0	0.27	0.27	3.18	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	236	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	2.36	
Tetrachloroethylene	0	0		0	10	10.0	118	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	6.49	
Trichloroethylene	0	0		0	0.6	0.6	7.08	
Vinyl Chloride	0	0		0	0.02	0.02	0.24	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	0.35	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	17.7	
Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.001	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.012	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.001	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.012	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.12	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.35	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	

Permit No. PA0096211

Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	3.77	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	1.42	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.001	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	0.59	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	0.59	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.59	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.35	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.0009	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.12	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	1.18	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.012	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.008	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.059	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	38.9	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	Report	Report	Report	Report	Report	µg/L	25.8	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	218	AFC	Discharge Conc > 10% WQBEL (no RP)

☑ ***Other Pollutants without Limits or Monitoring***

Permit No. PA0096211

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	1,259	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	14.9	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	26.6	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	6,383	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	4,256	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	0.77	µg/L	Discharge Conc < TQL
Hexavalent Chromium	27.4	µg/L	Discharge Conc < TQL
Total Cobalt	50.5	µg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	10.6	µg/L	Discharge Conc ≤ 25% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	798	µg/L	Discharge Conc < TQL
Total Iron	3,990	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	9.55	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	2,660	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.13	µg/L	Discharge Conc < TQL
Total Nickel	150	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	13.3	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	7.51	µg/L	Discharge Conc < TQL
Total Thallium	0.64	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	5.04	µg/L	Discharge Conc < TQL
Acrylonitrile	0.71	µg/L	Discharge Conc < TQL
Benzene	6.84	µg/L	Discharge Conc < TQL
Bromoform	82.6	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	4.72	µg/L	Discharge Conc < TQL
Chlorobenzene	266	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorodibromomethane	9.44	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	9,309	µg/L	Discharge Conc < TQL
Chloroform	15.2	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	11.2	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	117	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	87.8	µg/L	Discharge Conc < TQL

Permit No. PA0096211

1,2-Dichloropropane	10.6	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	3.18	µg/L	Discharge Conc ≤ 25% WQBEL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	181	µg/L	Discharge Conc < TQL
Methyl Bromide	266	µg/L	Discharge Conc < TQL
Methyl Chloride	14,628	µg/L	Discharge Conc < TQL
Methylene Chloride	236	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	2.36	µg/L	Discharge Conc < TQL
Tetrachloroethylene	118	µg/L	Discharge Conc < TQL
Toluene	152	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	266	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	1,622	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	6.49	µg/L	Discharge Conc < TQL
Trichloroethylene	7.08	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.24	µg/L	Discharge Conc < TQL
2-Chlorophenol	79.8	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	26.6	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	266	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	5.32	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	26.6	µg/L	Discharge Conc < TQL
2-Nitrophenol	4,256	µg/L	Discharge Conc < TQL
4-Nitrophenol	1,250	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	269	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.35	µg/L	Discharge Conc < TQL
Phenol	10,639	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	17.7	µg/L	Discharge Conc < TQL
Acenaphthene	45.2	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	798	µg/L	Discharge Conc < TQL
Benzidine	0.001	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.012	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.001	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.012	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.12	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.35	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	532	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	3.77	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	144	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.27	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	2,128	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	1.42	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.001	µg/L	Discharge Conc < TQL

Permit No. PA0096211

1,2-Dichlorobenzene	426	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	18.6	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	399	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	0.59	µg/L	Discharge Conc < TQL
Diethyl Phthalate	1,596	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	1,330	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	53.2	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	0.59	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	0.59	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.35	µg/L	Discharge Conc < TQL
Fluoranthene	53.2	µg/L	Discharge Conc < TQL
Fluorene	133	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.0009	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.12	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	2.66	µg/L	Discharge Conc < TQL
Hexachloroethane	1.18	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.012	µg/L	Discharge Conc < TQL
Isophorone	90.4	µg/L	Discharge Conc < TQL
Naphthalene	114	µg/L	Discharge Conc < TQL
Nitrobenzene	26.6	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.008	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.059	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	38.9	µg/L	Discharge Conc < TQL
Phenanthrene	2.66	µg/L	Discharge Conc < TQL
Pyrene	53.2	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.19	µg/L	Discharge Conc < TQL

Permit No. PA0096211

WET Summary and Evaluation

Facility Name	Darragh STP
Permit No.	PA0096211
Design Flow (MGD)	1.12
Q_{7-10} Flow (cfs)	2.88
PMF_a	0.975
PMF_c	1

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	5/22/18	8/7/18	11/6/18	3/4/19
Ceriodaphnia	Reproduction	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	3/22/18	8/7/18	11/6/18	3/4/19
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	5/22/18	8/7/18	11/20/18	3/5/19
Pimephales	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	5/22/18	8/7/18	11/20/18	3/5/19
Pimephales	Growth	PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type	**Chronic**
TIWC	**38** % Effluent
Dilution Series	**10, 19, 38, 69, 100** % Effluent
Permit Limit	**None**
Permit Limit Species	

Permit No. PA0096211

WET Summary and Evaluation

Facility Name	Darragh STP
Permit No.	PA0096211
Design Flow (MGD)	1.12
Q_{7-10} Flow (cfs)	2.88
PMF_a	0.975
PMF_c	1

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	5/21/19	7/2/19	9/3/19	11/26/19
Ceriodaphnia	Reproduction	FAIL	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	5/21/19	7/2/19	9/3/19	11/26/19
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	5/21/19	7/2/19	9/3/19	11/26/19
Pimephales	Survival	FAIL	FAIL	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	5/21/19	7/2/19	9/3/19	11/26/19
Pimephales	Growth	FAIL	FAIL	PASS	PASS

Reasonable Potential? YES

Permit Recommendations

Test Type	**Chronic**
TIWC	**38** % Effluent
Dilution Series	**10, 19, 38, 69, 100** % Effluent
Permit Limit	**2.6** TUc
Permit Limit Species	**Ceridaphnia dubia, Pimephales promelas**

Permit No. PA0096211

WET Summary and Evaluation

Facility Name	Darragh STP
Permit No.	PA0096211
Design Flow (MGD)	1.12
Q_{7-10} Flow (cfs)	2.88
PMF_a	0.975
PMF_c	1

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	3/9/20	5/25/20	5/24/21	5/23/22
Ceriodaphnia	Reproduction	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	3/9/20	5/25/20	5/24/21	5/24/22
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	3/10/20	5/26/20	5/25/21	5/24/22
Pimephales	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	3/10/20	5/26/20	5/25/21	5/24/22
Pimephales	Growth	PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type	**Chronic**
TIWC	**38** % Effluent
Dilution Series	**10, 19, 38, 69, 100** % Effluent
Permit Limit	**None**
Permit Limit Species	