Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0022543**
Facility Type	**Municipal**	APS ID	**17017**
Major / Minor	**Minor**	Authorization ID	**1480027**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Borough of Bally Berks County**	Facility Name	**Bally STP**
Applicant Address	425 Chestnut Street	Facility Address	463 Gehman Road
	Bally, PA 19503-9614		Barto, PA 19504
Applicant Contact	Wendy Mutter, Borough Manager*	Facility Contact	Nathan Heffner, WWTP Superintendent
Applicant Phone	(610) 845-2351 / bally@comcast.net	Facility Phone	(610) 845-2351, wwtpbally@comcast.net
Client ID	64287	Site ID	451737
Ch 94 Load Status		Municipality	Washington Township
Connection Status		County	Berks
Date Application Received	March 6, 2024 & April 16, 2024	EPA Waived?	EPA discretionary: former EPA pretreatment program terminated by EPA but CIU still contributing wastewater
Date Application Accepted	June 4, 2024	If No, Reason	Pretreatment
Purpose of Application	NPDES Renewal.		

*cc to Nicholas Volk, Systems Design Engineering Inc, nvolk@sdei.net, 610-916-8500

The existing permit was issued September 25, 2019, with an expiration date of September 30, 2024 . The renewal application was submitted using DEP's electronic upload system (Reference ID # 216839) with additional information submitted using DEP's electronic upload system (Reference ID # 227503). The existing permit was administratively extended past its stated expiration date.

According to the renewal application, the Sewage Treatment Plant (STP) primarily serves Bally Borough with a small portion of influent from Washington Township: 98% of flow is contributed from Bally Borough and 2% of the flow is contributed from Washington Township.

According to DEP's eMapPA, Outfall 001 is in Washington Twp, Berks County, and Outfall 002 is in Douglass Twp, Montgomery County. The STP primarily discharges to the West Branch Perkiomen Creek via Outfall 001. Outfall 002 is used as an emergency overflow of treated, disinfected wastewater. The Fact Sheet associated with the existing NPDES permit (issued in 2019) provides background on this facility:

> During high flow conditions, a discharge is allowed via outfall 002 to an Unnamed Tributary (UNT) of West Branch Perkiomen Creek but it is treated wastewater, the same as the effluent that discharges regularly via outfall 001 to the West Branch Perkiomen Creek. According to their 2018 Chapter 94 Municipal Wasteload Management Report (hereinafter referred to as the Ch. 94 Report), Outfall 001 was designed to convey up to 1.3 MGD; Outfall 002 was constructed to accommodate occasions where the discharge exceeded 1.3 MGD. The existing NPDES permit [issued February 26, 2010 as well as the NPDES permit issued June 13, 2005] allowed discharges to occur from

Approve	Deny	Signatures	Date
x		*Bonnie Boylan* Bonnie Boylan / Environmental Engineering Specialist	July 8, 2025
x		*Maria D. Bebenek* for Daniel W. Martin, P.E. / Environmental Engineer Manager	July 8, 2025
x		*Maria D. Bebenek* Maria D. Bebenek, P.E. / Environmental Program Manager	July 8, 2025

outfall 002 ONLY when the stream flow was ≥ 4.3 cfs, thereby providing sufficient assimilative capacity for the permit limits to be protective of the stream uses. This is not normal DEP permitting procedure but handling effluent overflow in such a manner is preferable to bypassing treatment or causing sanitary sewer overflows during periods of heavy precipitation that causes the POTW's [Publicly Owned Treatment Works'] discharge to exceed 1.3 MGD for several days. There is no upstream USGS gage on this stream so it is incumbent on the permittee to measure the stream flow. If the permittee desired to not measure the stream flow anymore, their limits at outfall 002 would be developed based on the design low-flow condition (Q7-10) for the UNT which would result in more stringent permit limits….Discharges at outfall 002 only occurred on 35 days between September 1, 2017 and March 31, 2019 according to their Supplemental DMRs.

When the permittee was deciding whether to replace equipment, DEP discussed with them the option of not measuring stream flow in the UNT of West Branch Perkiomen Creek and the resulting more stringent permit limits for outfall 002. They decided to keep measuring the stream flow and only release wastewater from outfall 002 when the stream flow is ≥ 4.3 cfs. The permittee installed a new stream flow meter recently.

Previous to 2019, DEP had determined that at a stream flow of 4.3 cfs, there would be no toxicity concerns for aquatic life in the UNT. This determination was made using DEP's models. Metals concentrations were the controlling factor.

Design Flow

The renewal application represented the Annual Average Design Flow as 0.50 MGD and the Hydraulic Design Capacity as 0.612 MGD, consistent with the WQM permit issued by DEP for the treatment plant re-rate.

DMRs from April 1, 2022 through May 31, 2025 indicate the average monthly flow at 001 was 0.25 and the Maximum Monthly Average (MMA) flow was 0.55 MGD.

DMRs from April 1, 2022 through May 31, 2025 indicate the average flow at 002 was 0.037 MGD and the MMA flow was 0.084 MGD. There were flows at outfall 002 nine months out of the 38 months of DMRs summarized. The duration of the discharges at outfall 002 ranged from 13.5 hours to 235 hours per month.

A summary of the DMRs' flow data is attached.

The 2024 Chapter 94 Municipal Wasteload Report submitted to DEP indicated no existing or projected hydraulic overload. See attached spreadsheet.

Industrial Users (IU)

There is one industrial user, Bally Ribbon Mills. The renewal application identifies it as a "Textile Dye House", a "Non-Significant Categorical Industrial User", conveying an average flow of 0.025 MGD. According to the permittee's consultant, most of the wastewater conveyed to the STP from this industrial user is industrial process wastewater.

The facility's 2024 Chapter 94 Municipal Wasteload Report, submitted to DEP in March 2025, included the Industrial User (IU) permit issued to Bally Ribbon Mills. The IU permit limits Bally Ribbon Mills thus: "the monthly average discharge of pretreated effluent shall not exceed 25,000 gpd. Maximum daily flows shall not exceed 35,000 gallons [sic]". The 2024 Chapter 94 Report also states:
-The industrial wastewater from this IU is pretreated and that the pretreatment consists of a polymer addition to reduce color.
-There were no upsets at the STP in 2024.
-The Borough of Bally's Pretreatment Ordinance, executed 5/1/2012, includes Local Limits.

EPA Pretreatment Program

The permit renewal application states that the STP does not have an EPA-approved pretreatment program.

In 2021, EPA gave approval to terminate this facility form the EPA-approved Pretreatment Program. See the attached letter from EPA. (Although the letter is undated, it was forwarded to DEP from EPA as an email attachment on August 10, 2021.)

When questioned by DEP, the permittee's consultant responded:

There are no updates or changes to report since EPA's 2021 approval to remove BRM [Bally Ribbon Mills] from the EPA-approved Pretreatment Program. There have been no changes in the BRM production process. The Borough executes the necessary inspections and analysis of the wastewater sampling reports.

Combined Sewer Overflows

None.

Variances

There were no variances [40 CFR 122.21(n)] requested in the application.

Hauled-in Wastes

The facility has been accepting hauled-in septage (24,656 gallons per year) and anticipates accepting it in the next five years, the term of the NPDES permit. The renewal application estimated the amount of hauled-in septage it would accept during the next five years as 35,000 gallons per year.

Sludge use and disposal description and location(s)

Hauled and disposed off-site to treatment facilities.

Outstanding Violations

There are no outstanding violations for this client according to DEP's Client History Summary Report.

Delaware River Basin Commission (DRBC)

The discharge is within the Delaware River watershed. A copy of the draft permit and Fact Sheet will therefore be sent to the DRBC for their review in accordance with State regulations and an interagency agreement. Any comments from the DRBC will be considered.

Docket D-1994-044 CP-4 was approved by DRBC March 11, 2020 and expired September 30, 2024. The docket recognizes the facility's flow as 0.5 MGD. It does not include any limits or monitoring requirements that are not already in the existing NPDES permit. A renewal/modification application was received and is under review, Docket #D-1994-044 CP-5. This application includes the re-rate of the treatment plant from 0.5 MGD to 0.612 MGD.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.5 (equivalent of 0.77 cfs)
Latitude	40Âº 23' 24.54" (40.39015)	Longitude	-75Âº 33' 56.73" (75.565758)
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	W.Branch Perkiomen Crk (CWF,MF)	Stream Code	1439
NHD Com ID	25971334	RMI	4.6 last permit/FS (approx. 4.65 per eMapPA)
Drainage Area	16.4 sq.mi. per StreamStats	Yield (cfs/mi^2)	0.2 per StreamStats
Q_{7-10} Flow (cfs)	3.1 (estimated)	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	approx. 385' (eMapPA)	Slope (ft/ft)	
Watershed No.	3-E	Chapter 93 Class.	CWF, MF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired for Aquatic Life (assess.ID 22462)		
Cause(s) of Impairment	Flow regime modification and siltation		
Source(s) of Impairment			
TMDL Status	EPA Approved 10/9/2003	Name	Green Lane Reservoir TMDL (Available at https://www.ahs.dep.pa.gov/TMDL/)

Secondary Receiving Waters: West Branch Perkiomen Creek flows into Green Lane Reservoir (Impaired for Aquatic Life) and Perkiomen Creek (RMI 23.5, TSF, MF, impaired for Aquatic Life) which flows into Schuylkill River (RMI 33.1, WWF, MF, impaired for Aquatic Life and for Fish Consumption)

Background/Ambient Data		Data Source – no WQN's on receiving water, nearby
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake		Aqua PA (Norristown)	
PWS Waters	Perkiomen Creek	Flow at Intake (cfs)	
PWS RMI	approx.. 1	Distance from Outfall (mi)	approx. 27

Other Comments:

Qs : Qd ratio = 4:1

West Branch Perkiomen Creek is considered 'Trout Natural Reproduction' (and not Class A Trout)

There is a USGS stream gage on downstream West Branch Perkiomen Creek, at RMI 1.2, gage 1472199, with a Q_{7-10} of **4.3 cfs** per USGS's 2011 'Selected Streamflow Statistics for Streamgage Locations in and near PA' by Stuckey and Roland, but the period of record ended 2008 for low-flow data analysis.

Nearby sewage discharges (non-SRSTP, non-SFTF, non-PAG-04) : only Washington Twp STP, PA0086142, on West Branch Perkiomen Creek, upstream of outfall 001, at RMI 6.9 approximately, design flow of 0.25 MGD.

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	002	Design Flow (MGD)	0.5 AAF, 0.8 for modeling *
Latitude	40Âº 23' 44.59" =40.395719	Longitude	-75Âº 34' 20.57" =75.572381
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to West Branch Perkiomen Creek (CWF, MF)	Stream Code	UNT 01446
NHD Com ID	25971358	RMI	0.52 last permit/FS (approx. 0.60 eMapPA)
Drainage Area	1.3 sq.mi. per StreamStats	Yield (cfs/mi^2)	0.1
Q_{7-10} Flow (cfs)	0.123	Q_{7-10} Basis	USGS Stream Stats
Elevation (ft)	Approx.. 410 (eMapPA)	Slope (ft/ft)	
Watershed No.	3-E	Chapter 93 Class.	CWF, MF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired for Aquatic Life (Assess.ID 22462)		
Cause(s) of Impairment	Flow regime modification, siltation		
Source(s) of Impairment			
TMDL Status	EPA approved 10/9/2003	Name	Green Lane Reservoir TMDL, downstream

Secondary Receiving Waters:
UNT empties into West Branch Perkiomen Creek at RMI 4.61 which empties into Green Lane Reservoir and Perkiomen Creek at RMI 23.5

Background/Ambient Data		Data Source - no WQN's on waterway, nearby
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake		Aqua PA (Norristown)	
PWS Waters	Perkiomen Creek	Flow at Intake (cfs)	
PWS RMI	approx 1	Distance from Outfall (mi)	approx. 27.6

*The 2019 Fact Sheet and 2019 permit assumed a discharge flow of 0.8 MGD as did the 2010 Fact Sheet and 2010 permit based on a previous prediction by the applicant for daily maximum flow from many years ago. The 2024 and 2014 permit applications (the most recent applications) did not provide a discharge flow specifically for outfall 002. The DMRs reviewed from 4/1/2022 through 5/31/2025 (attached) show a maximum discharge at outfall 002 of 0.69 MGD. The 90th percentile of the reported Maximum Daily flows for these DMRs was 0.67 MGD. To be sure these DMRs were representative of the flows at 002, DMR flow data from 2/1/2018 through 5/31/2025 were then summarized. Again, the maximum discharge at outfall 002 for this longer period was 0.69 MGD.

Other Comments:
- Qs : Qd = 3.5 : 1 (using Qs = 4.3 cfs = 2.8 MGD, the minimum stream flow in order to discharge at outfall 002)
- NOT Considered Class A Trout or "Trout Natural Reproduction'
- No nearby sewage dischargers (to consider during modeling)

Treatment Facility Summary

Treatment Facility Name: Bally Borough STP

WQM Permit No.	Issuance Date
0695404 A-4	9/11/2023
0695404 A-3	12/1/2020
0695404 A-2	Appl. withdrawn 2017
0695404 A-1	3/29/1999

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Oxidation Ditch	Sodium Hypochlorite	0.5

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.612	1050		Aerobic Digestion	Other WWTP

Changes Since Last Permit Issuance:

The amendment issued 9/11/2023 approved a re-rate for the STP: the Design Hydraulic Capacity changed from 0.50 MGD to 0.612 MGD and the Design Organic Capacity changed from 834 lbs BOD/day to 1050 lbs BOD/day.

The amendment issued 12/1/2020 documented two peristaltic metering pumps that were installed on an emergency basis on top of storage tanks and the associated piping for the conversion from gas chlorine disinfection to a liquid chlorine disinfection system. (No change to the design flows or organic capacity.)

The treatment system consists of:

-a comminutor and bar screen
-an oxidation ditch with 3 aeration channels and rotary aerator assemblies
-2 clarifiers
-3 sludge pumps for returning sludge and for waste sludge
-parallel concrete chlorine contact tanks with common influent and effluent chambers and chlorine feed system
-2 aerobic digesters
-a sludge holding tank with mechanical aerators

The DEP Fact Sheet supporting the NPDES permit issued 2/26/2010 provided the following description:

Each chlorine contact tank is equipped with an ultrasonic flow meter. Flow from both meters is fed to a unit that totalizes the combined flow. After flow leaves the chlorine contact tank, it flows to a pit that contains inlets for 001 and 002. The 002 inlet is located above 001's inlet. When 001 surcharges, at approximately 1.3 MGD, a portion of the total flow enters the 002 outfall pipe. Outfall 002 contains a flow meter that measures 002 flows alone.

EXISTING PERMIT'S LIMITS, OUTFALL 001:

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day unless otherwise noted)		Concentrations (mg/L unless otherwise noted)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instant. Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.41	XXX	1.3	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	104	166	XXX	25.0	40.0	50	1/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids	125	188	XXX	30.0	45.0	60	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10,000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	50	XXX	XXX	12.0	XXX	24	1/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	25	XXX	XXX	6.0	XXX	12	1/week	24-Hr Composite
Total Phosphorus	2.08	XXX	XXX	0.5	XXX	1	1/week	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	1000.0 Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Total Kjeldahl Nitrogen	Report Avg Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Nitrate-Nitrite as N	Report Avg Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Total Nitrogen	Report Avg Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Calculation
Bromide	Report Avg Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite

EXISTING PERMIT'S LIMITS, OUTFALL 002:

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Instant. Min.	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	Daily when Discharging	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	Daily when Discharging	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5	XXX	1.6	Daily when Discharging	Grab
CBOD5	Report	XXX	XXX	25.0	40.0	50	Daily when Discharging	24-Hr Composite
Total Suspended Solids	Report	XXX	XXX	30.0	45.0	60	Daily when Discharging	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	1000.0	XXX	XXX	Daily when Discharging	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10,000	Daily when Discharging	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	Daily when Discharging	Grab
Ammonia-N, Nov 1 - Apr 30	Report	XXX	XXX	12.0	XXX	24	Daily when Discharging	24-Hr Composite
Ammonia-N, May 1 - Oct 31	Report	XXX	XXX	6.0	XXX	12	Daily when Discharging	24-Hr Composite
Total Phosphorus	Report	XXX	XXX	0.5	XXX	1	Daily when Discharging	24-Hr Composite
Total Kjeldahl Nitrogen	Report	XXX	XXX	Report	XXX	XXX	Daily when Discharging	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	Daily when Discharging	24-Hr Composite
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	Daily when Discharging	Calculation
Bromide	Report	XXX	XXX	Report	XXX	XXX	Daily when Discharging	24-Hr Composite
Stream Flow, Start of Dischg (cfs)	4.3 Inst.Min.	XXX	XXX	XXX	XXX	XXX	Daily when Discharging	Measured
Stream Flow, End of Dischg (cfs)	4.3 Inst. Min	XXX	XXX	XXX	XXX	XXX	Daily when Discharging	Measured
Duration of Discharge (hours)	XXX	Report	XXX	XXX	XXX	XXX	Daily when Discharging	Measured

Compliance History

DMR Data for Outfall 001 (from June 1, 2024 to May 31, 2025)

Parameter	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24
Flow (MGD) Average Monthly	0.381	0.311	0.207	0.215	0.140	0.178	0.143	0.125	0.126	0.221	0.225	0.186
Flow (MGD) Daily Maximum	0.952	0.63	0.404	0.643	0.427	0.423	0.258	0.145	0.169	0.610	0.440	0.365
pH (S.U.) Instantaneous Minimum	7.11	7.23	7.32	7.13	7.39	7.31	7.46	7.45	7.44	7.49	7.40	7.2
pH (S.U.) Instantaneous Maximum	7.57	7.55	7.70	8.11	7.75	7.61	7.65	7.74	7.73	7.79	7.80	7.74
DO (mg/L) Instantaneous Minimum	5.36	5.01	6.02	6.48	6.64	6.46	6.32	5.76	5.45	5.02	5.39	6.02
TRC (mg/L) Average Monthly	0.28	0.32	0.32	0.41	0.30	0.37	0.37	0.36	0.33	0.29	0.16	0.27
TRC (mg/L) Instantaneous Maximum	0.5	0.58	0.71	0.67	0.78	0.67	0.55	0.58	0.6	0.57	0.26	0.42
CBOD5 (lbs/day) Average Monthly	< 6	< 5	< 4	< 3	< 3	< 5	< 2	< 2	< 2	< 3	< 4	< 3
CBOD5 (lbs/day) Weekly Average	< 11	8	< 4	< 4	6	< 7	< 2	< 2	< 2	< 6	< 7	< 3
CBOD5 (mg/L) Average Monthly	< 2.0	< 2.2	< 2.0	< 2.0	< 2.8	< 2.2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
CBOD5 (mg/L) Weekly Average	< 2.0	2.9	< 2.0	< 2.0	5.2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	375	315	297	231	212	427	196	266	199	280	244	187
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	721	543	441	307	298	903	205	314	259	641	360	282
BOD5 (mg/L) Raw Sewage Influent Average Monthly	123	164	167	166	204	191	184	245	193	179	142	132

TSS (lbs/day) Average Monthly	< 6	< 4	< 3	3	7	< 4	< 2	2	2	< 3	< 5	< 5
TSS (lbs/day) Raw Sewage Influent Average Monthly	325	334	307	217	235	343	210	389	226	291	295	303
TSS (lbs/day) Raw Sewage Influent Daily Maximum	488	622	508	270	376	589	272	611	284	401	416	344
TSS (lbs/day) Weekly Average	12	8	5	4	12	< 4	5	1	3	7	11	8
TSS (mg/L) Average Monthly	< 2.0	< 2.0	< 2.0	2.0	6.0	< 2.0	< 2.0	1.0	2.0	< 3.0	< 2.0	< 4.0
TSS (mg/L) Raw Sewage Influent Average Monthly	113	177	172	159	227	173	194	356	219	184	186	206
TSS (mg/L) Weekly Average	4.0	3.0	3.0	4.0	11.0	2.0	4.0	2.0	3.0	7.0	6.0	6.0
Total Dissolved Solids (mg/L) Average Quarterly			406.0			480.0			439.0			293.0
Fecal Coliform (No./100 ml) Geometric Mean	67	< 4	< 8	< 2	< 21	6	< 3	41	< 3	< 6	47	< 2
Fecal Coliform (No./100 ml) Instantaneous Maximum	110	10	25	< 2	362	30	5	2600	16	210	560	2100
Nitrate-Nitrite (lbs/day) Average Quarterly			10			15			16			33
Nitrate-Nitrite (mg/L) Average Quarterly			8.78			13.9			11.5			4.09
Total Nitrogen (lbs/day) Average Quarterly			< 10			< 15			< 17			54
Total Nitrogen (mg/L) Average Quarterly			< 9.28			< 14.4			< 12			6.59
Ammonia (lbs/day) Average Monthly	< 0.1	0.08	< 0.06	< 0.03	< 0.08	< 0.05	< 0.02	< 0.03	< 0.05	< 0.3	< 0.06	< 0.05
Ammonia (mg/L) Average Monthly	< 0.07	0.04	< 0.03	< 0.02	< 0.08	< 0.02	< 0.02	< 0.02	< 0.05	< 0.21	< 0.03	< 0.04
TKN (lbs/day) Average Quarterly			< 0.6			< 0.5			< 0.7			20

TKN (mg/L) Average Quarterly			< 0.5			< 0.5			< 0.5			2.5
Total Phosphorus (lbs/day) Average Monthly	0.90	0.80	0.50	< 0.30	0.40	0.80	0.50	0.70	0.50	0.50	0.70	0.80
Total Phosphorus (mg/L) Average Monthly	0.32	0.39	0.27	0.21	0.42	0.39	0.43	0.41	0.48	0.3	0.36	0.55
Bromide (lbs/day) Average Quarterly			< 1			< 1			< 1.0			< 8
Bromide (mg/L) Average Quarterly			< 1			< 1			< 1.0			< 1.0

Compliance History

Effluent Violations for Outfall 001, from January 1, 2022 to May 31, 2025:

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	06/30/24	IMAX	2100	No./100 ml	1000	No./100 ml
Total Phosphorus	06/30/24	Avg Mo	0.55	mg/L	.5	mg/L

Summary of Most Recent Inspections:

September 3, 2020 – 2019 permit limit exceedances for Fecal Coliform were discussed. Permittee believes the problem occurs during high flows. “Operator is looking into a solution to increase contact time with higher flows.”

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.5
Latitude 40º 23' 24" **Longitude** -75º 33' 56"
Wastewater Description: Sewage Effluent

DEP separately determines Technology-Based Effluent Limitations (TBELs), Best Professional Judgement limitations (BPJ), and Water Quality-Based Effluent Limitations (WQBELs), compares them to existing permit limits, then decides which to impose as permit limits for the renewal permit.

Technology-Based Effluent Limitations (TBELs)

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

Pollutant	Limit (units)	Statistical Base Code (SBC)	Federal Regulation	State Regulation	DRBC
$CBOD_5$	25 (mg/l)	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)	
	40 (mg/l)	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)	
BOD_5	85% Removal	Minimum			18 CFR Part 410* 4.30.3.B, 3.10.4.A, & 3.10.6.D
Total Suspended Solids (TSS)	30 (mg/l)	Average Monthly	133.102(b)(1)	92a.47(a)(1)	18 CFR Part 410* 4.30.3.A and 3.10.4.D
	45 (mg/l)	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)	18 CFR Part 410* 4.30.5.C.
Fecal Coliform (5/1 – 9/30)	200 (#/100 ml)	Geo Mean	-	92a.47(a)(4)	18 CFR Part 410* 4.30.4.A.
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 (TRC)	0.5 (mg/l)	Average Monthly	-	92a.48(b)(2)	
Total Dissolved Solids (TDS)	1000 (mg/l) **	Average			docket D-1994-044 CP-4 based on 18 CFR Part 410* 3.10.4.D.
Ammonia	20 (mg/l)	Average Monthly			18 CFR Part 410* 4.30.5.D.
Color	100*** (Pt-Co units)	Maximum			18 CFR Part 410* 4.30.5.A.

*Administrative Manual-Part III Water Quality Regulations 18 CFR Part 410

**Or a concentration established by the Commission which is compatible with designated water uses and stream quality objectives and recognizes the need for reserve capacity to serve future dischargers, i.e. a limit based on a TDS Determination submitted to DRBC proving that the discharge will not cause the TDS in the receiving water to exceed the lesser of 500 mg/l or 133% of background. The DRBC docket for this facility does not include such a TDS value; it includes the effluent limit of 1000 mg/l.

***or the natural color of the receiving water, whichever is greater; some exceptions apply.

The above TBELs for **$CBOD_5$, TSS, pH, Fecal Coliform, and TDS** are included as limits in the draft renewal permit and are the same limits as in the existing permit.

DRBC's requirement for a minimum of 85% removal for BOD_5 is satisfied by DEP's narrative condition in Part A.I. of NPDES permits for municipal sewage treatment plants, #2 of the Additional Requirements following the limits tables.

The existing permit and the draft renewal permit include more stringent limits for **TRC** and **Ammonia** than the TBELs shown in the above table. These parameters are discussed further in the WQBEL section of the Fact Sheet.

DRBC's effluent limit for **Color** was not imposed in the DRBC docket and a limit has similarly not been proposed for the draft renewal permit. There is the potential for the industrial wastewater from the CIU to discolor the receiving water. The STP's effluent, however, would have to be monitored for Color on a daily basis to catch a potential infrequent occurrence. Also, the industrial wastewater is pretreated to reduce Color and contributes less than 10% of the total STP's flow. The narrative condition included in all NPDES permits prohibiting discoloring the receiving water will be used instead of a numeric limit or monitoring requirement, as has been done in previous NPDES permits for this facility. This narrative condition is located in Part A.I. of the draft renewal permit in Additional Requirements, #1.d., following the limits tables.

Federal Effluent Limitation Guidelines (ELGs):

Process wastewater from textile manufacturers (i.e. Bally Ribbon Mills) are subject to the ELGs for Textile Mills, 40 CFR Part 410**.** These ELGs include limits for direct dischargers in terms of pounds per pounds product, not as concentrations. The ELGs do not include limits for indirect users, called 'Pretreatment Standards', but rather require that the indirect users comply with the reporting requirements of 40 CFR Part 403.

As with the existing permit, no TBELs in this draft renewal permit are extracted from the ELGs.

Best Professional Judgment (BPJ) Limitations:

None

Water Quality-Based Effluent Limitations (WQBELs)

Total Maximum Daily Load (TMDL):

Section 303(d) of the Clean Water Act requires states to establish a TMDL for all pollutants identified as preventing attainment of water quality standards. TMDLs set the maximum amount of a pollutant, the pollutant load, that can be delivered to a waterbody while still allowing the waterbody to meet water quality standards. The TMDL also allocates the allowable pollutant load among the various sources in the watershed (e.g., point and nonpoint sources such as agriculture, wastewater treatment plants, mine drainage). Waters that are not supporting water quality standards are often referred to as "impaired" waters.

Green Lane Reservoir was "listed" (list of impaired waterbodies submitted to EPA in accordance with Section 303(d) of the federal Clean Water Act) in 1996 due to organic enrichment and low dissolved oxygen and a TMDL was subsequently developed and approved by EPA.

The goal of the Green Lane Reservoir TMDL for nutrients is to reduce phosphorus loadings to the lake so that chlorophyll-a levels in Green Lane Reservoir stay at or below 20 ug/l as a seasonal average. Phosphorus is considered the limiting nutrient in the Reservoir based on past sampling. The TMDL assigned Wasteload Allocations (WLAs) to all identified existing point sources in the Green Lane Reservoir watershed based on their design flows at the time of the TMDL development and a monthly average Total Phosphorus (TP) concentration of 0.5 mg/l.

For this facility, the WLA of 2.08 lbs/day was allowed: 0.5 mg/l x 0.5 MGD x 8.34 conversion factor. (The WLAs were not specified as pounds per year or as metric tons per year as in some other TMDLs.) The draft renewal permit carries forward the TP limits in the existing permit, thereby satisfying the TMDL. Note that the mass load limit applies to total TP

from the facility, from discharges at outfall 001 *and* 002. As with the existing permit and the previous permit(s), a footnote to the permit limits table explains this requirement:

> When there is a discharge via outfall 002, the combined Monthly Average mass loadings for Total Phosphorus from the discharges at outfall 001 and outfall 002 must be ≤ 2.08 lbs/day in accordance with the facility's Wasteload Allocation in the Green Lane Reservoir TMDL. A Non-Compliance Reporting form (3800-FM-BCW0440) must be submitted to DEP if the combined Monthly Average mass loadings for Total Phosphorus from the discharges at outfall 001 and outfall 002 exceed 2.08 lbs/day.

WQBELs other than TMDL:

DEP's uses a TRC model (Excel spreadsheet) for TRC evaluation, consistent with Implementation Guidance for TRC, document #386-2000-011.

DEP uses a model known as WQM 7.0 to determine appropriate limits for CBOD5, Ammonia (NH3-N), and Dissolved Oxygen (DO). DEP's Guidance document #386-2000-022 provides the methods and calculations contained in the WQM 7.0 model for conducting wasteload allocation and for determining recommended NPDES effluent limits for point source discharges. For more explanation of the WQM 7.0 model, see Technical Reference Guide WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, document #386-2000-016.

The source of the River Mile Indices (RMI's) and elevations that were used in the WM 7.0 model (and TMS model discussed below) are DEP's eMapPA while the source of the Drainage Areas and stream design low-flows (Q_{7-10}) are the USGS PA Stream Stats online tool (see attached). Low Flow Yield (LFY) is calculated as stream low-flow Q_{7-10} divided by Drainage Area of the stream at the outfall location.

Although the receiving water is considered 'Trout Natural Reproduction', the model was not re-run using a DO goal of 8 mg/l during the early life stages of trout and other salmonids because this is an existing discharger who is not increasing their annual average design flow. This approach is consistent with DEP's Standard Operating Procedure (SOP) Establishing Effluent Limitations for Individual Sewage Permits. (25 Pa Code Chapter 93 was amended in 2013 to include special protection for early life stages of trout and other salmonids for streams where salmonids spawn.)

DEP uses a model called the Toxics Management Spreadsheet (TMS) for toxic pollutants. It is a macro-enabled Excel version of DEP's former PENTOX model. It evaluates the reasonable potential for discharges to cause in-stream exceedances of water quality criteria for toxic parameters and recommends Water Quality-Based Effluent Limitations (WQBELs) as permit limits as needed or recommends monitoring requirements to better evaluate 'reasonable potential' for some parameters. For more explanation of the TMS / PENTOX model, see Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, document #386-2000-015.

When there are less than 10 effluent sample results, the *maximum* effluent concentration of the available data (such as from the permit application and from DMRs) is used by DEP as the discharge concentration input value in the TMS. In this case there were more than 10 effluent sampling results for only one parameter: TDS. Even so, it was not necessary to use DEP's TOXCONC spreadsheet to calculate a statistical average with 99% probability for TDS from more than 10 discrete sample results because even using the maximum concentration from the application and the reviewed DMRs (between April 1, 2022 and May 31, 2025) did not result in a WQBEL being recommended by the model for TDS.

Default values used in the models in the absence of site-specific data include:

- Stream pH = 7 s.u.
- Discharge pH = 7 s.u.
- Stream Temperature = 20°C
- Discharge Temperature = 25°C
- Stream Hardness = 100 mg/l
- Discharge Hardness = 100 mg/l
- Coefficient of Variability in data = 0.5
- Chemical translators for metals
- Background concentration of toxics = 0 mg/l

In addition, the models estimate the stream width, depth, slope, velocity, and partial mix factors.

The following results were determined through water quality modeling (see attached):

Parameter	Model Results (mg/l)	Statistical Base Code	Model
Ammonia	6.0 *	Average Monthly	WQM 7.0
Ammonia	12.0 *	Maximum	WQM 7.0
CBOD5	25 **	Average monthly	WQM 7.0
Dissolved Oxygen	5.0	Instant. Minimum	WQM 7.0
Total Copper	Report	Average Monthly	Toxics Management Spreadsheet
Total Copper	Report	Daily Maximum	Toxics Management Spreadsheet

*The model did not calculate a more stringent WQBEL but carried forward the existing permit limit in adherence with backsliding prohibitions.

The model did not calculate a more stringent WQBEL but defaulted to the **TBELs.

For **Ammonia**, DEP often allows a less stringent Ammonia limit during cold months in recognition of the fact that Ammonia is less toxic to aquatic life in cold temperatures. The existing permit's Ammonia limits for warm months (shown in above table) and for cool months (12 mg/l as a Monthly Average and 24 mg/l as a Maximum) have been carried forward into the draft renewal permit.

The existing permit's **TRC** limits are carried forward into the draft renewal permit to avoid back-sliding: 0.41 mg/l as a Monthly Average and 1.3 mg/l as an Instantaneous Maximum. The facility's DMRs from April 1, 2022 through May 31, 2025 show that the average TRC concentration in the discharge at outfall 001 has been 0.30 mg/l and the Instantaneous Maximum was 0.9 mg/l. Of these 38 months, no exceedances of the existing TRC permit limits have been reported.

DEP's TMS model recommended **monitoring** be required in the draft renewal permit for **Total Copper** because the maximum concentration reported in the permit application was more than 10% of the calculated WQBEL. No limit for Total Copper was recommended because a) there is not enough sampling data to support the imposition of a limit, and b) the maximum effluent concentration reported in the permit renewal application did not exceed 50% of the calculated WQBEL which would be considered "Reasonable Potential" for the discharge to cause an exceedance of an in-stream water quality criteria.

Note: for the next renewal application, it would be desirable for the permittee to sample the effluent for Hardness as well as the receiving water upstream of the outfall for Hardness. The Minor Sewage application does not require sample results for Hardness but DEP can request information that they deem is warranted. The water quality criteria for Total Copper is Hardness-dependent. This information would result in a more accurate WQBEL and more accurate Reasonable Potential analysis.

Anti-Backsliding

No limits in the draft renewal permit are less stringent than in the existing permit.

Development of Effluent Limitations

Outfall No.	002	**Design Flow (MGD)**	0.5 design AAF, 0.8 MGD for modeling since discharge at 002 only occurs during high flow situations
Latitude	40º 23' 44" (40.395556)	**Longitude**	-75º 34' 21" (-75.5725)

Wastewater Description: Sewage Effluent during high flows, intermittent discharge

The following footnote to the permit limits table has been included in the draft renewal permit:

> Outfall 002 can be used for discharging of treated effluent from the chlorine contact tank only when the stream flow in UNT 01446 to West Branch Perkiomen Creek is ≥ 4.3 cfs. Monitor and report stream flow in UNT 01446 (in cfs) when Outfall 002 begins to discharge and when Outfall 002 stops discharging.

Technology-Based Effluent Limitations (TBELs)

The concentration TBELs for outfall 002 are the same as those for outfall 001.

Water Quality-Based Effluent Limitations (WQBELs)

Total Maximum Daily Load (TMDL):

Same as for outfall 001. The limits for Total Phosphorus are the same as in the existing permit. The following footnote to the permit limits table has been included in the draft renewal permit:

> When there is a discharge via outfall 002, the combined Monthly Average mass loadings for Total Phosphorus from the discharges at outfall 001 and outfall 002 must be ≤ 2.08 lbs/day in accordance with the facility's Wasteload Allocation in the Green Lane Reservoir TMDL. A Non-Compliance Reporting form (3800-FM-BCW0440) must be submitted to DEP if the combined Monthly Average mass loadings for Total Phosphorus from the discharges at outfall 001 and outfall 002 exceed 2.08 lbs/day.

WQBELs other than TMDL:

The same models and default input values as already discussed for outfall 001. The permit application's effluent sample results apply to both outfalls since the discharges are from the same treatment units.

(The reviewed DMRs from April 1, 2022 through May 31, 2025 reported a maximum TDS concentration of 409 mg/l at outfall 002, from nine TDS data points, whereas the maximum TDS concentration at outfall 001 per the reviewed DMRs for the same period was 480 mg/l, from 12 data points. The permit application reported a maximum TDS effluent concentration of 460 mg/l. The difference between TDS concentrations is not material since the TMS did not recommend a TDS WQBEL even using the higher discharge concentration of 480 mg/l as the input value.)

The following results were determined through water quality modeling (see attached) using a discharge flow of 0.8 MGD (discussed on bottom of page 5) and using a stream flow of 4.3 cfs:

Parameter	Model Results (mg/l)	Statistical Base Code	Model
Ammonia	6.0 *	Average Monthly	WQM 7.0
Ammonia	12.0 *	Maximum	WQM 7.0
CBOD5	25 **	Average monthly	WQM 7.0
Dissolved Oxygen	5.0	Instant. Minimum	WQM 7.0
TRC	0.5 **	Average Monthly	TRC Excel spreadsheet
TRC	1.6	Instant. Maximum	TRC Excel spreadsheet
Total Copper	Report	Average Monthly	Toxics Management Spreadsheet
Total Copper	Report	Daily Maximum	Toxics Management Spreadsheet

*The model did not calculate a more stringent WQBEL but carried forward the existing permit limit in adherence with backsliding prohibitions.

**The model did not calculate a more stringent WQBEL but defaulted to the TBELs.

For **Ammonia**, DEP often allows a less stringent Ammonia limit during cold months in recognition of the fact that Ammonia is less toxic to aquatic life in cold temperatures. The existing permit's Ammonia limits for warm months (shown in above table) and for cool months (12 mg/l as a Monthly Average and 24 mg/l as a Maximum) have been carried forward into the draft renewal permit.

DEP's TMS model recommended **monitoring** be required in the draft renewal permit for **Total Copper** because the maximum concentration reported in the permit application was more than 10% of the calculated WQBEL. No limit for Total Copper was recommended because a) there is not enough sampling data to support the imposition of a limit, and b) the maximum effluent concentration reported in the permit renewal application did not exceed 50% of the calculated WQBEL which would be considered "Reasonable Potential" for the discharge to cause an exceedance of an in-stream water quality criteria.

Note: for the next renewal application, it would be desirable for the permittee to sample the effluent for Hardness as well as the receiving water upstream of the outfall for Hardness. The Minor Sewage application does not require sample results for Hardness but DEP can request information that they deem is warranted. The water quality criteria for Total Copper is Hardness-dependent. This information would result in a more accurate WQBEL and more accurate Reasonable Potential analysis.

Anti-Backsliding

No limits in the draft renewal permit are less stringent than in the existing permit.

Whole Effluent Toxicity (WET)

For **Outfall 001**, ☐ **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: Annual

The dilution series used for the tests was: 100%, 60%, 20%, 10%, and 5%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 20%.

Summary of Four Most Recent Test Results

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
9/28/2021	Pass	Pass	Pass	Pass
10/25/2022	Pass	Pass	Pass	Pass
10/30/2023 & 10/31/2023	Pass	Pass	Pass	Pass
11/25/2024 & 11/26/2024	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:

Because the facility used to be subject to an EPA Pretreatment Program, WET testing was required by the existing NPDES permit. The results are shown above. The facility did not show reasonable potential for causing toxicity in the receiving water. As a result and because the facility is no longer subject to an EPA Pretreatment Program, the draft renewal permit does not include the requirement to conduct WET testing.

WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

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

OTHER

Mass Loading Limits

Consistent with the Technical Guidance for the Development and Specification of Effluent Limitations, document #386-0400-001, and the SOP for Establishing Effluent Limitations for Individual Sewage Permits, average monthly mass loading limits have been established for CBOD5, TSS, and NH3 at outfall 001, and average weekly mass loading limits have additionally been established for CBOD5 and TSS at outfall 001. Because the discharge at outfall 002 is intermittent and the flow variable, no mass loading limits have been imposed in the draft renewal permit for outfall 002, with the exception of Total Phosphorus (nor were mass load limits included in the existing permit for outfall 002 with the exception of Total Phosphorus).

As already discussed, for Total Phosphorus, a footnote requiring the mass loads for the discharges at outfalls 001 and 002 be added together to meet the Total Phosphorus permit limit shown in the outfall 001 limits table has been included in the draft permit to satisfy the Green Lane Reservoir TMDL.

Note: the DMRs from April 1, 2022 through May 31, 2025 were reviewed to ascertain whether the combined mass loads for $CBOD_5$, TSS, Ammonia, and Total Phosphorus for the discharges at outfalls 001 and 002 remained below the mass load limits calculated from a design flow of 0.5 MGD and the concentration limits in the permit limits tables. It was confirmed.

Sample Types and Monitoring Frequencies

Sample types and monitoring frequencies are consistent with the Technical Guidance for the Development and Specification of Effluent Limitations, document #386-0400-001, and/or carried forward from the previous permit when deemed appropriate.

Flow Monitoring

The requirement to monitor the volume of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii).

Influent BOD & TSS Monitoring

The existing influent monitoring reporting requirement for BOD5 and TSS will be maintained in the renewal permit, consistent with the permits of other municipal wastewater treatment facilities.

E. Coli Monitoring

Consistent with the SOP Establishing Effluent Limitations for Individual Sewage Permits and due to the regulatory change in the State Water Quality Standards, PA Code Chapter 93, E. Coli monitoring at outfall 001 has been included. The statutory basis for this requirement is provided at PA Code § 92a.61.

Total Nitrogen and Total Phosphorus Monitoring

In an effort to understand nutrient loading on PA streams, sewage dischargers with design flows greater than 2000 gpd are required to monitor for Total Nitrogen and Total Phosphorus in new and reissued permits at a minimum. The statutory basis for this requirement is provided at PA Code § 92a.61. Monitoring for Total Nitrogen and Total Phosphorus were also included in the existing permit.

Bromide Monitoring

Bromide monitoring had been included in the existing permit to gather data due to a concern about Bromide impacting Pennsylvania waters. DEP's Bureau of Clean Water - Central Office subsequently informed DEP regional offices that

sufficient data has been collected and the monitoring requirement for Bromide in permits could be eliminated—unless there was a site-specific reason to include it. The draft renewal permit eliminates Bromide monitoring at both outfalls.

General Pretreatment Requirements Relating to PFAS

Standard language is now included in NPDES municipal sewage permits in Part B.I.D. as follows:

4. Each POTW without an approved Pretreatment Program shall, within six (6) months of the permit effective date, develop a list of Industrial Users (IUs) in industry categories expected or suspected of per- and polyfluoroalkyl substance (PFAS) discharges to the POTW and submit the list to EPA at EPA_R3_Pretreatment@epa.gov and to DEP at RA-EPNPDES_PERMITS@pa.gov. These industry categories shall include airports; centralized waste treatment; electroplating; electric and electronic components; fire training; landfills; leather tanning & finishing; metal finishing; organic chemicals, plastics & synthetic fibers (OCPSF); paint formulating; plastics molding & forming; pulp, paper & paperboard; **textile mills**; sites known or suspected of PFAS contamination; and any other sources expected or suspected of PFAS discharges. The list must contain the names, addresses, NAICS codes, and industry categories (as listed above) of any IUs identified.

Class A Trout Fisheries

No Class A Trout Fisheries are impacted by this discharge.

TDS Baseline

In order to implement the regulations at Chapter 95.10 relevant to imposing TDS limits if increased loads in the future trigger this requirement, a TDS 'Baseline' needs to be documented. The increase of TDS loads is measured against existing mass loads, described in Chapter 95.10(a)(1) as "maximum daily discharge loads of TDS…that were authorized by the Department prior to August 21, 2010". The 2010 application provided 1 sample result for TDS: 344 mg/l. The 2014 application provided 3 effluent sample results with a maximum concentration of 451 mg/l. The TDS baseline load for the facility, both outfalls 001 and 002 combined, has been estimated as follows:

451 mg/l x 0.50 MGD x 8.34 conversion factor = 1881 lbs/day.

Antidegradation

The permit limits and conditions are intended to protect the designated and existing uses of the receiving stream. No High Quality or Exceptional Value waters are impacted by this discharge.

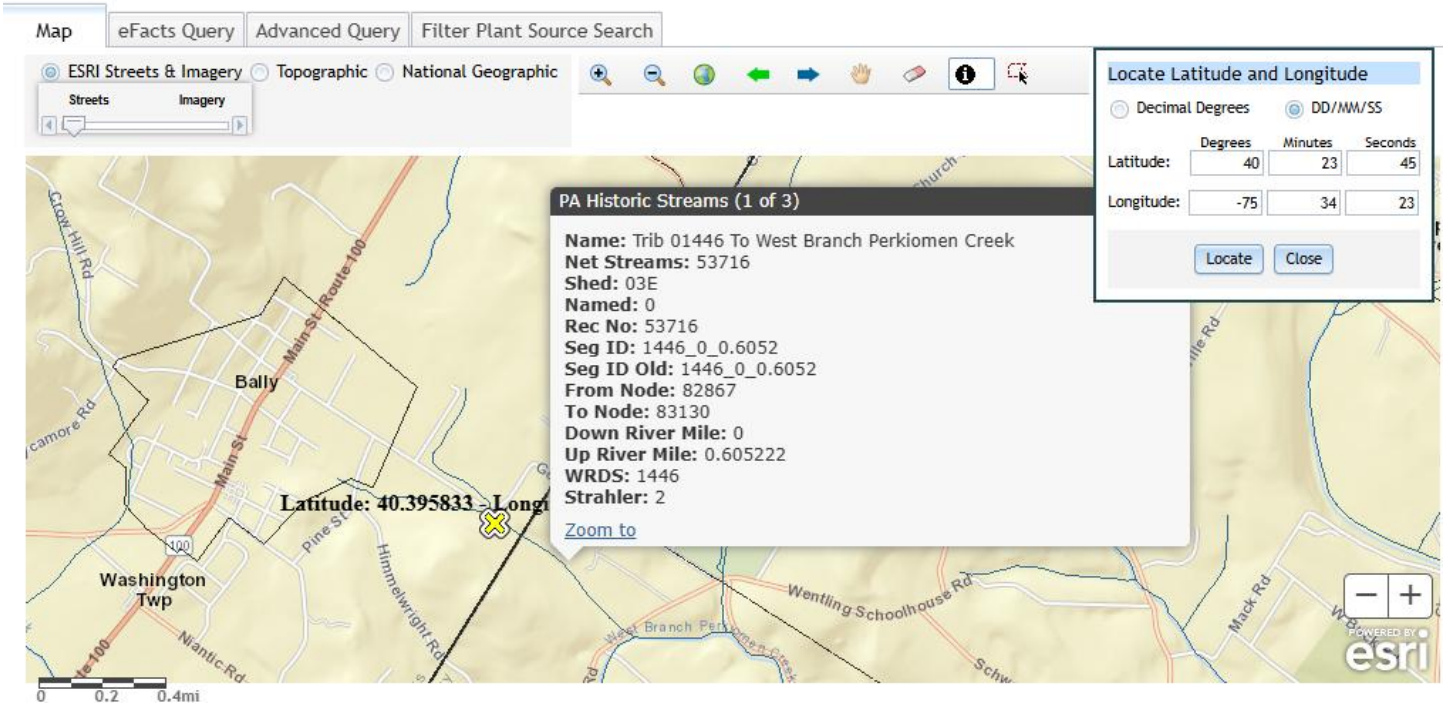
303(d) Listed Streams – Impaired Waters

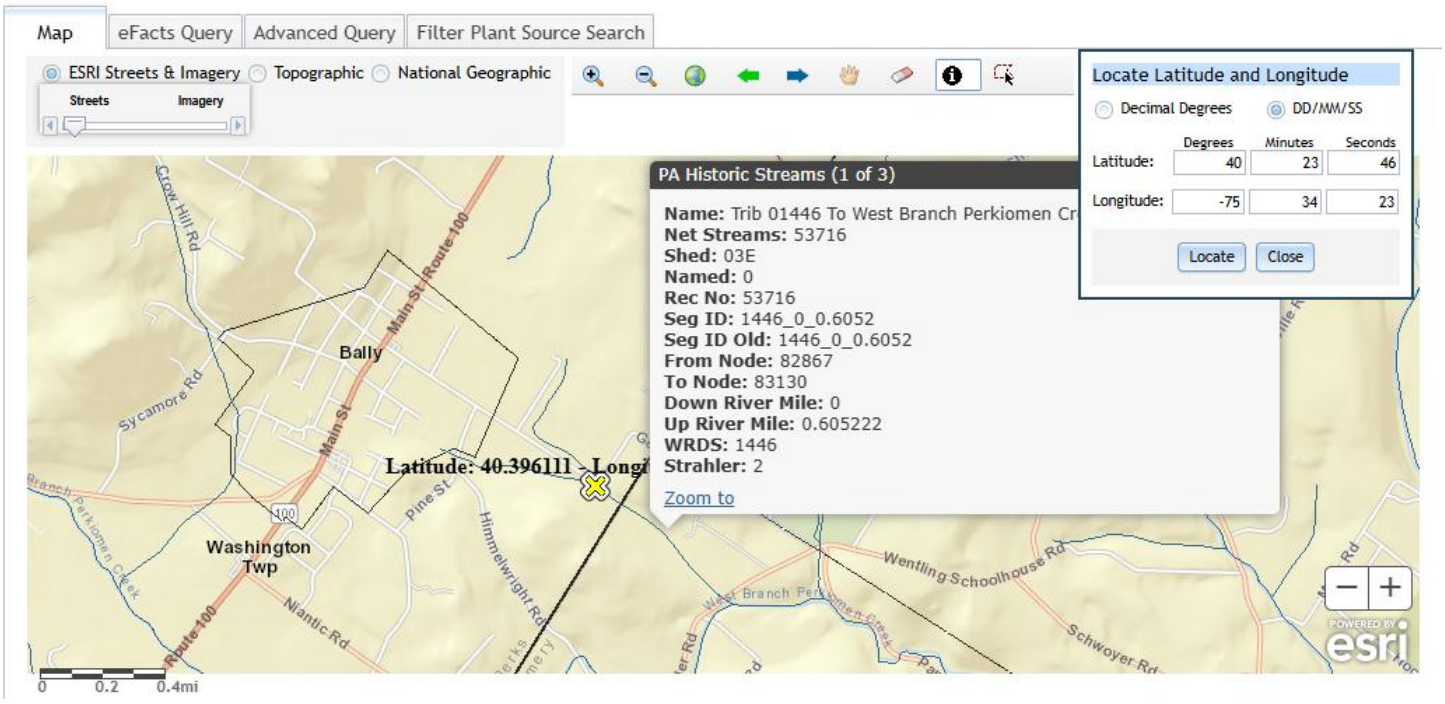
DEP's Integrated Water Quality Report is forwarded to the U.S. EPA in compliance with Section 303(d) of the federal Clean Water Act which requires states to provide a list of impaired waters and to establish a Total Maximum Daily Load (TMDL) for all pollutants identified as preventing attainment of water quality standards. West Branch Perkiomen Creek has been assessed as an impaired water for recreational use due to pathogens but no TMDL has been developed for the creek. Fecal Coliform limits are included in this draft renewal permit and are intended to protect the receiving water for recreational use. The downstream Green Lane Reservoir has also been assessed as impaired and a TMDL was developed for it as already discussed in this Fact Sheet. The draft renewal permit limits for Total Phosphorus adhere to the Wasteload Allocation assigned to this facility in the TMDL.

STORMWATER

Two stormwater outfalls were identified in the existing permit and have been included in the draft renewal permit, outfalls 003 and 004. Both of these outfalls discharge to UNT 01446. As with the existing permit, the Part C conditions of the draft renewal permit include Best Management Practices and a Preparedness, Prevention and Contingency (PPC) Plan for stormwater pollution prevention.

(In DEP's eFacts database, these outfalls were set up in 2003.)





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 as needed and BPJ. Instantaneous Maximum (IMAX) limits are generally determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instant. Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.41	XXX	1.3	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	104	166	XXX	25.0	40.0	50	1/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids	125	188	XXX	30.0	45.0	60	1/week	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	1000.0 Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10,000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 mL)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
Nitrate-Nitrite	Report Avg Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite

Outfall 001 , Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instant. Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Nitrogen	Report Avg Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Calculation
Ammonia Nov 1 - Apr 30	50	XXX	XXX	12.0	XXX	24	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	25	XXX	XXX	6.0	XXX	12	1/week	24-Hr Composite
Total Kjeldahl Nitrogen (TKN)	Report Avg Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Total Phosphorus	2.08 *	XXX	XXX	0.5	XXX	1	1/week	24-Hr Composite
Total Copper	Report	XXX	XXX	Report	Report Daily Max.	XXX	1/month	24-Hr Composite

*The combined Monthly Average mass loadings for Total Phosphorus from the discharges at outfall 001 and outfall 002 must be $\leq$ 2.08 lbs/day in accordance with the facility's Wasteload Allocation in the Green Lane Reservoir TMDL. A Non-Compliance Reporting form (3800-FM-BCW0440) must be submitted to DEP if the combined Monthly Average mass loadings for Total Phosphorus from the discharges at outfall 001 and outfall 002 exceed 2.08 lbs/day.

Compliance Sampling Location: at discharge from the facility

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 as needed and BPJ. Instantaneous Maximum (IMAX) limits are generally determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

Outfall 002, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
Duration of Discharge (hours)	XXX	Report	XXX	XXX	XXX	XXX	Daily when Discharging	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	Daily when Discharging	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	Daily when Discharging	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.5	XXX	1.6	Daily when Discharging	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Report	XXX	XXX	25.0	40.0	50	Daily when Discharging	24-Hr Composite
Total Suspended Solids	Report	XXX	XXX	30.0	45.0	60	Daily when Discharging	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	1000.0	XXX	XXX	Daily when Discharging	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10,000	Daily when Discharging	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	Daily when Discharging	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	Monthly when discharging	Grab
Nitrate-Nitrite	Report	XXX	XXX	Report	XXX	XXX	Daily when Discharging	24-Hr Composite
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	Daily when Discharging	Calculation
Ammonia Nov 1 - Apr 30	Report	XXX	XXX	12.0	XXX	24	Daily when Discharging	24-Hr Composite

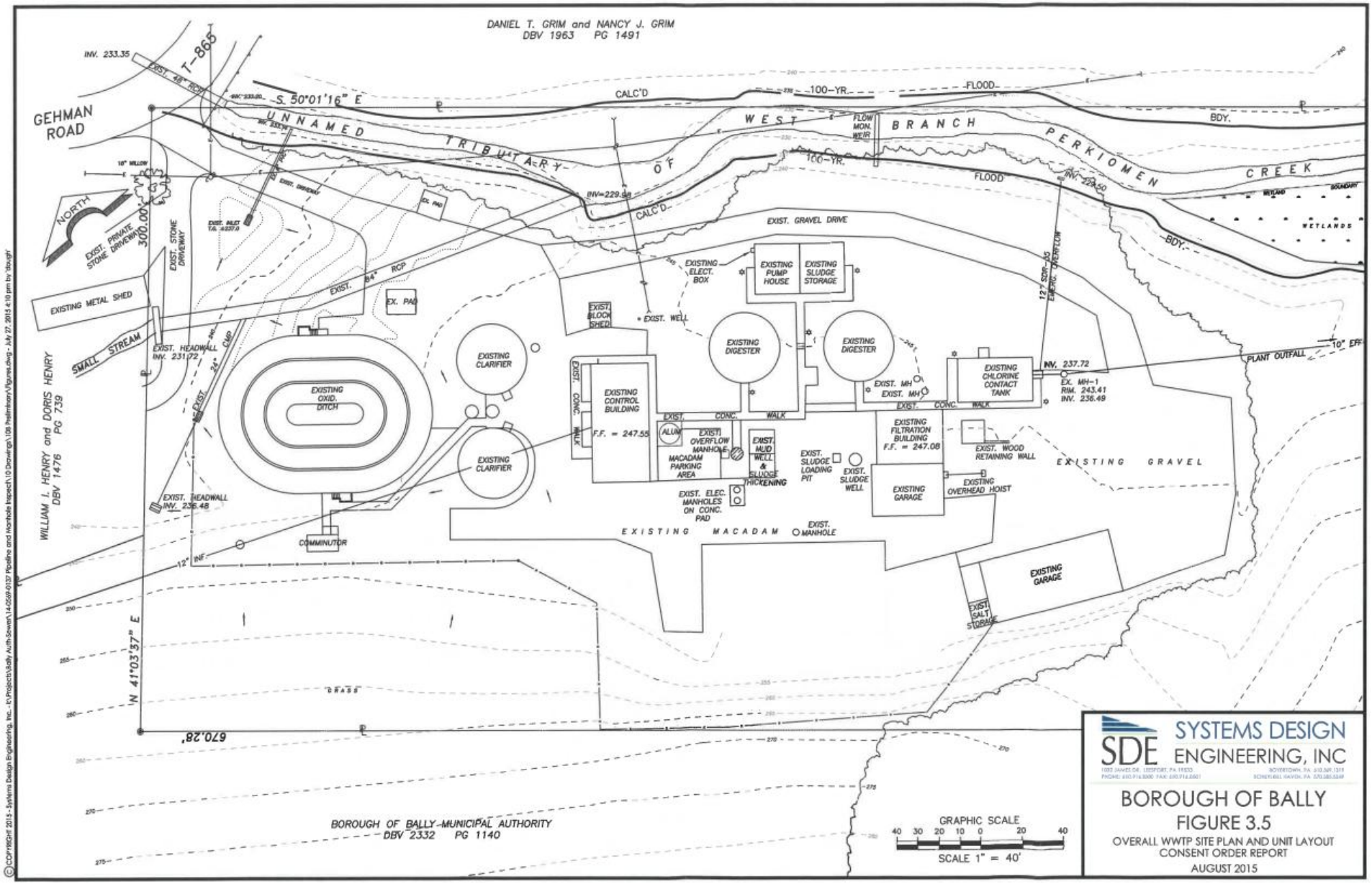
Outfall 002, Continued (from Permit Effective Date through Permit Expiration Date)

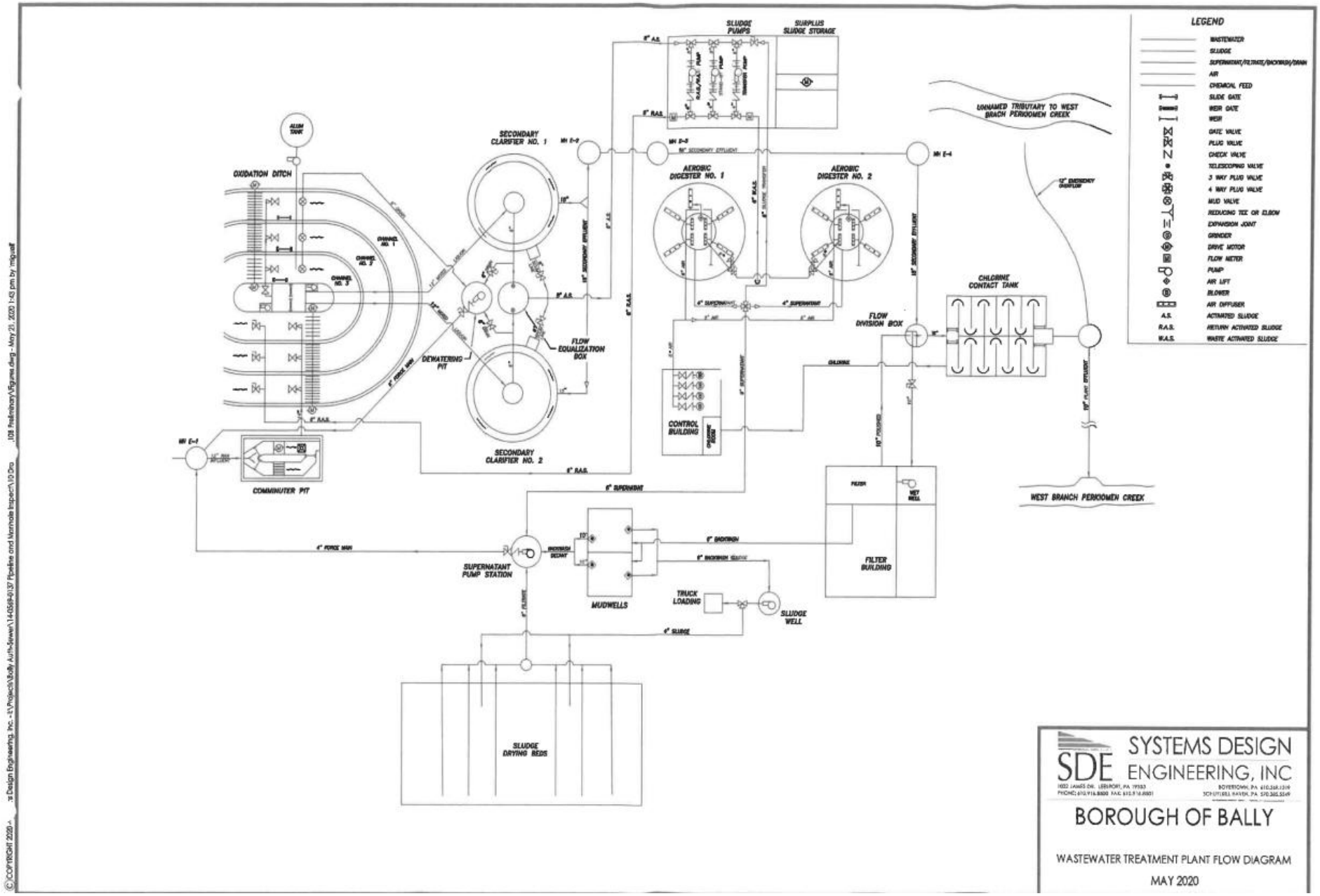
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ammonia May 1 - Oct 31	Report	XXX	XXX	6.0	XXX	12	Daily when Discharging	24-Hr Composite
Total Kjeldahl Nitrogen	Report	XXX	XXX	Report	XXX	XXX	Daily when Discharging	24-Hr Composite
Total Phosphorus	Report *	XXX	XXX	0.5	XXX	1	Daily when Discharging	24-Hr Composite
Total Copper	Report	XXX	XXX	Report	Report Daily Max.	XXX	Daily when Discharging	24-Hr Composite
Stream Flow, Start (cfs)	4.3 Inst Min	XXX	XXX	XXX	XXX	XXX	Daily when Discharging	Measured
Stream Flow, End (cfs)	4.3 Inst Min	XXX	XXX	XXX	XXX	XXX	Daily when Discharging	Measured

*The combined Monthly Average mass loadings for Total Phosphorus from the discharges at outfall 001 and outfall 002 must be $\leq$ 2.08 lbs/day in accordance with the facility's Wasteload Allocation in the Green Lane Reservoir TMDL. A Non-Compliance Reporting form (3800-FM-BCW0440) must be submitted to DEP if the combined Monthly Average mass loadings for Total Phosphorus from the discharges at outfall 001 and outfall 002 exceed 2.08 lbs/day.

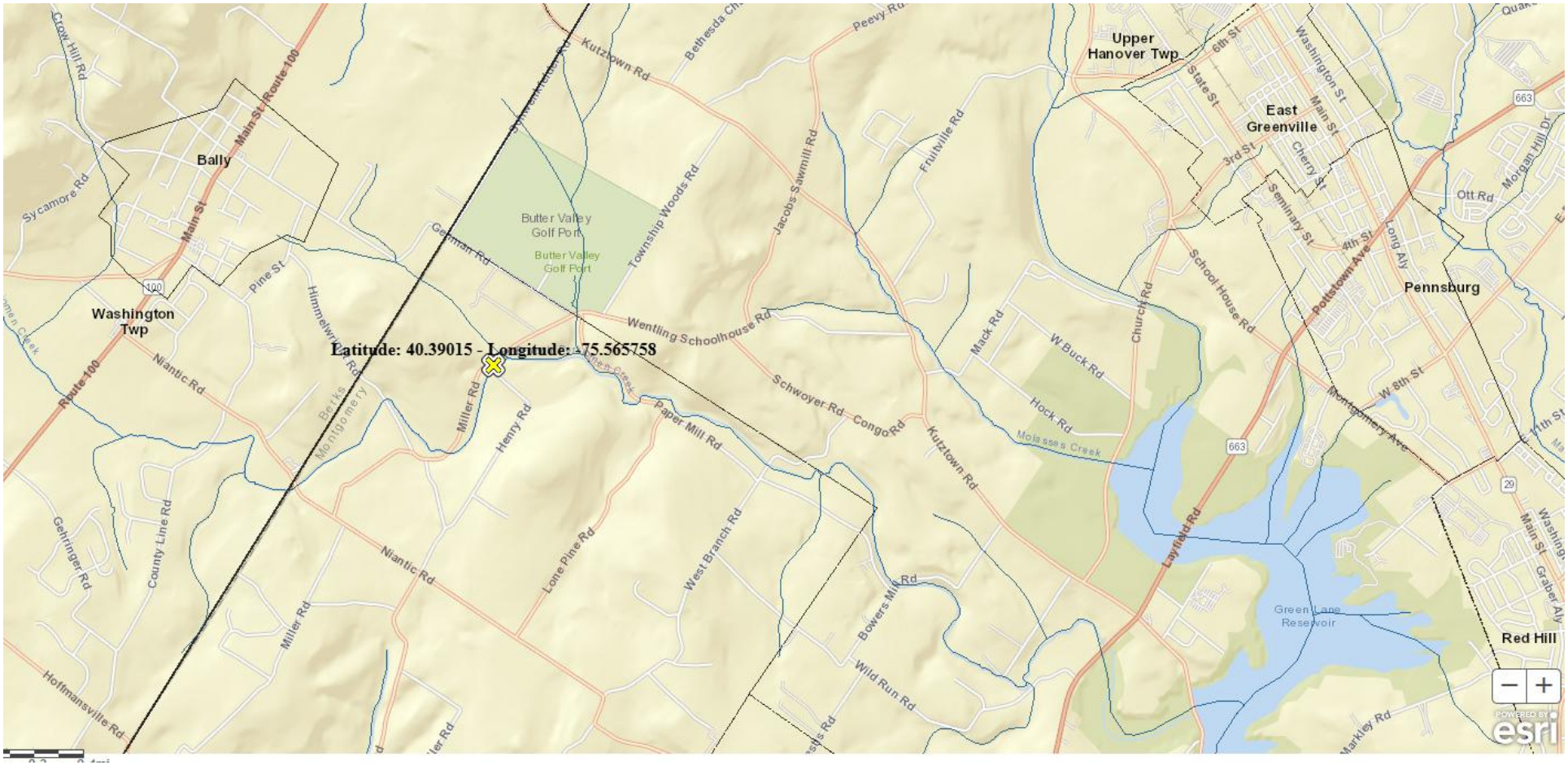
Compliance Sampling Location: at discharge from the facility

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, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☒	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☒	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☒	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☒	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 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, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 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, 386-2000-010, 3/1999.
☒	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: New and Reissuance Sewage Individual NPDES Permit Applications, Version 2.0, February 3, 2022
☒	SOP: Establishing Effluent Limitations in Individual Sewage NPDES Permits, version 2.0, February 5, 2024
☒	SOP: Establishing Water-Quality Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers. Version 1.6, May 5, 2025.
☒	Other: Total Maximum Daily Load of Nutrients for Green Lane Reservoir, March 2003

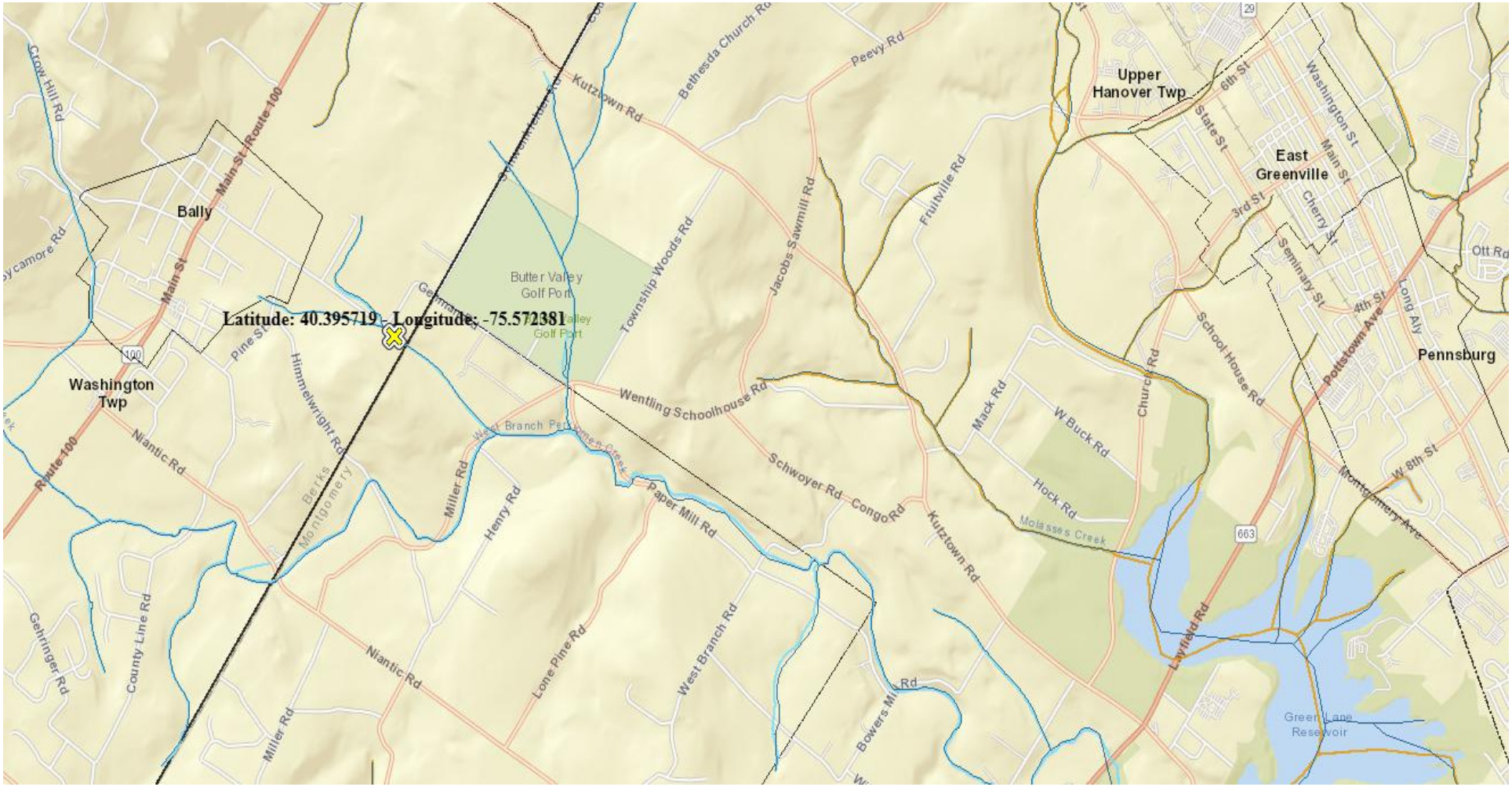

DANIEL T. GRIM and NANCY J. GRIM
DBV 1963 PG 1491
GEHMAN ROAD
T-865
INV. 233.35
EXIST. 48" RCP
S 50°01'16" E
CALC'D
100-YR. FLOOD
BDY.
UNNAMED TRIBUTARY OF WEST BRANCH PERKIOMEN CREEK
FLOW MON. WEIR
INV=229.98
INV. 229.50
WETLAND BOUNDARY
WETLANDS
NORTH
EXIST. PRIVATE STONE DRIVEWAY
300.00'
EXIST. STONE DRIVEWAY
EXIST. INLET T.C. 237.0
EXIST. GRADE
EX. PAD
EXIST. GRAVEL DRIVE
EXISTING METAL SHED
EXIST. 84" RCP
EXISTING ELECT. BOX
EXISTING PUMP HOUSE
EXISTING SLUDGE STORAGE
12" SDR-35 ENERG. DISSIPATION
EXIST. BLOCK SHED
EXIST. WELL
EXISTING DIGESTER
EXISTING DIGESTER
EXIST. HEADWALL INV. 231.72
SMALL STREAM
EXIST. 24" CMP
EXISTING CLARIFIER
EXISTING OXID. DITCH
EXISTING CLARIFIER
EXISTING CONTROL BUILDING
EXIST. CONC. WALK
F.F. = 247.55
EXIST. CONC.
ALUM
EXIST. OVERFLOW MANHOLE
MACADAM PARKING AREA
EXIST. MUD WELL & SLUDGE THICKENING
EXIST. SLUDGE LOADING PIT
EXIST. SLUDGE WELL
EXISTING FILTRATION BUILDING F.F. = 247.08
EXISTING CHLORINE CONTACT TANK
INV. 237.72
EXIST. MH
EXIST. MH
EX. MH-1 RIM. 243.41 INV. 236.49
PLANT OUTFALL
10" EFF
EXIST. WOOD RETAINING WALL
EXISTING GRAVEL
EXISTING GARAGE
EXISTING OVERHEAD HOIST
EXIST. ELEC. MANHOLES ON CONC. PAD
EXISTING MACADAM
EXIST. MANHOLE
EXIST. HEADWALL INV. 236.48
COMMINUTOR
12" INF.
WILLIAM I. HENRY and DORIS HENRY
DBV 1476 PG 739
N 41°03'37" E
670.28'
GRASS
EXISTING GARAGE
EXIST. SALT STORAGE
BOROUGH OF BALLY-MUNICIPAL AUTHORITY
DBV 2332 PG 1140
GRAPHIC SCALE
40 30 20 10 0 20 40
SCALE 1" = 40'
SYSTEMS DESIGN ENGINEERING, INC
BOROUGH OF BALLY
FIGURE 3.5
OVERALL WWTP SITE PLAN AND UNIT LAYOUT
CONSENT ORDER REPORT
AUGUST 2015


LEGEND
WASTEWATER
SLUDGE
SUPERNATANT/FILTRATE/BACKWASH/DRAIN
AIR
CHEMICAL FEED
SLIDE GATE
WEIR GATE
WEIR
GATE VALVE
PLUG VALVE
CHECK VALVE
TELESCOPING VALVE
3 WAY PLUG VALVE
4 WAY PLUG VALVE
MUD VALVE
REDUCING TEE OR ELBOW
EXPANSION JOINT
GRINDER
DRIVE MOTOR
FLOW METER
PUMP
AIR LIFT
BLOWER
AIR DIFFUSER
A.S. ACTIVATED SLUDGE
R.A.S. RETURN ACTIVATED SLUDGE
W.A.S. WASTE ACTIVATED SLUDGE
SLUDGE PUMPS
SURPLUS SLUDGE STORAGE
UNNAMED TRIBUTARY TO WEST BRACH PERKIOMEN CREEK
ALUM TANK
OXIDATION DITCH
SECONDARY CLARIFIER NO. 1
AEROBIC DIGESTER NO. 1
AEROBIC DIGESTER NO. 2
CHLORINE CONTACT TANK
FLOW DIVISION BOX
FLOW EQUALIZATION BOX
DEWATERING PIT
CONTROL BUILDING
SECONDARY CLARIFIER NO. 2
COMMINUTER PIT
WEST BRANCH PERKIOMEN CREEK
SUPERNATANT PUMP STATION
MUDWELLS
TRUCK LOADING
SLUDGE WELL
FILTER BUILDING
SLUDGE DRYING BEDS
SYSTEMS DESIGN ENGINEERING, INC
BOROUGH OF BALLY
WASTEWATER TREATMENT PLANT FLOW DIAGRAM
MAY 2020

Outfall 001, DEP's eMapPA:



Outfall 002, DEP's eMapPA:



3850-PM-BCW0015d 3/2016
Permit

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

WATER QUALITY MANAGEMENT PERMIT

PERMIT NO. 0695404
AMENDMENT NO. A-4
APS ID. 17017
AUTH. ID. 1428766

A. PERMITTEE (Name and Address): CLIENT ID#: 64287	B. PROJECT/FACILITY (Name):
Bally Borough - Berks County **425 Chestnut Street** **Bally, PA 19503-9614**	**Bally Borough STP**

C. LOCATION (Municipality, County): SITE ID#: 451737
Bally Borough, Berks County

D. This amendment approves the modification of sewage facilities as follows:

-the sewage treatment plant is re-rated for design hydraulic capacity and for design organic capacity

Pump Stations:	Manure Storage:	Sewage Treatment Facility:		
Design Capacity: ____ GPM	Volume: ____ MG	Annual Average Flow:	0.50	MGD
	Freeboard: ____ inches	Design Hydraulic Capacity:	0.612	MGD
		Design Organic Capacity:	1050	lb/day

E. APPROVAL GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING:

1. **Amendments:** All construction, operations and procedures shall be in accordance with the Water Quality Management Permit Amendment application dated **February 23, 2023** and its supporting documentation and addendums dated **July 25, 2023**, which are hereby made a part of this amendment.

   Except for any herein approved modifications, all terms, conditions, supporting documentation and addendums approved under Water Quality Management Permit No. **0695404**, **0695404 A-1** dated **3/29/1999**, and **0695404 A-3** dated **12/1/2020** shall remain in effect.

   (An application for Amendment A-2 was submitted but withdrawn in 2017.)

2. Permit Conditions Relating to Sewerage are attached and made part of this permit.

F. THE AUTHORITY GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING FURTHER QUALIFICATIONS:

1. If there is a conflict between the application or its supporting documents and amendments and the attached conditions, the attached conditions shall apply.

2. Failure to comply with the rules and regulations of DEP or with the terms or conditions of this permit shall void the authority given to the permittee by the issuance of this permit.

3. This permit is issued pursuant to the Clean Streams Law Act of June 22, 1937, P.L. 1987, as amended 35 P.S. §691.1 *et seq.* Issuance of this permit shall not relieve the permittee of any responsibility under any other law.

PERMIT ISSUED: September 11, 2023

BY: Maria D. Bebenek
Maria D. Bebenek, P.E.

TITLE: **Clean Water Program Manager**
Southcentral Regional Office

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PADEP Chapter 94 Spreadsheet
Sewage Treatment Plants

Reporting Year: 2024

Facility Name: Bally Borough Wastewater Treatment Plant
Permit No.: PA0022543
Persons/EDU: 2.64

Existing Hydraulic Design Capacity:	0.612	MGD		**Existing Organic Design Capacity:**	1,050	lbs BOD5/day
Upgrade Planned in Next 5 Years?	NO	**Year:**		**Upgrade Planned in Next 5 Years?**	NO	**Year:**
Future Hydraulic Design Capacity:		MGD		**Future Organic Design Capacity:**		lbs BOD5/day

Monthly Average Flows for Past Five Years (MGD)

Month	2020	2021	2022	2023	2024
January	0.397	0.372	0.237	0.41	0.527
February	0.447	0.42	0.211	0.272	0.35
March	0.37	0.564	0.125	0.325	0.529
April	0.447	0.317	0.299	0.233	0.618
May	0.296	0.218	0.203	0.2	0.292
June	0.195	0.321	0.076	0.178	0.186
July	0.227	0.244	0.166	0.2	0.225
August	0.327	0.279	0.177	0.187	0.221
September	0.185	0.464	0.198	0.193	0.125
October	0.192	0.332	0.278	0.158	0.125
November	0.277	0.28	0.24	0.246	0.143
December	0.485	0.139	0.388	0.344	0.178
Annual Avg	0.32	0.329	0.217	0.246	0.293
Max 3-Mo Avg	0.421	0.452	0.302	0.357	0.499
Max : Avg Ratio	1.32	1.37	1.39	1.45	1.70
Existing EDUs	591.0	592.0	592.0	592.0	592.0
Flow/EDU (GPD)	541.5	555.7	366.6	415.5	494.9
Flow/Capita (GPD)	205.1	210.5	138.8	157.4	187.5
Exist. Overload?	**NO**	**NO**	**NO**	**NO**	**NO**

Monthly Average BOD5 Loads for Past Five Years (lbs/day)

Month	2020	2021	2022	2023	2024
January	527	624	231	320	543
February	350	642	187	445	550
March	346	357	88	211	590
April	309	244	209	228	493
May	220	322	48	185	289
June	265	257	136	261	187
July	357	250	178	348	244
August	448	467	282	323	280
September	292	594	376	357	199
October	226	555	581	319	266
November	271	328	635	352	196
December	370	312	706	192	427
Annual Avg	332	413	305	295	355
Max Mo Avg	527	642	706	445	590
Max : Avg Ratio	1.59	1.56	2.32	1.51	1.66
Existing EDUs	591	592	592	592	592
Load/EDU	0.561	0.697	0.515	0.498	0.600
Load/Capita	0.213	0.264	0.195	0.189	0.227
Exist. Overload?	**NO**	**NO**	**NO**	**NO**	**NO**

Projected Flows for Next Five Years (MGD)

	2025	2026	2027	2028	2029
New EDUs	27.0	17.0	29.0	29.0	0.0
New EDU Flow	0.0128	0.0081	0.0138	0.0138	0
Proj. Annual Avg	0.294	0.3021	0.3159	0.3297	0.3297
Proj. Max 3-Mo Avg	0.425	0.437	0.457	0.477	0.477
Proj. Overload?	**NO**	**NO**	**NO**	**NO**	**NO**

Projected BOD5 Loads for Next Five Years (lbs/day)

	2025	2026	2027	2028	2029
New EDUs	27	17	29	29	0
New EDU Load	15.508	9.764	16.657	16.657	0.000
Proj. Annual Avg	355	365	382	399	399
Proj. Max Avg	613	630	659	688	688
Proj. Overload?	**NO**	**NO**	**NO**	**NO**	**NO**

Show Precipitation Data on Hydraulic Graph?

Total Monthly Precipitation for Past Five Years (Inches)

Month	2020	2021	2022	2023	2024
January	3.41	1.69	2.56	3.89	7.15
February	3.36	3.99	3.19	1.7	1.02
March	3.58	3.58	2.67	3.45	5.74
April	5.49	1.31	5.86	3.65	4.79
May	2.08	4.11	6.37	0.15	4.37
June	1.74	5.18	3.29	3.57	0.99
July	6.03	1.89	3.71	5.3	4.24
August	9.34	5.46	2.2	4.19	4.47
September	3.4	10.26	4.02	5.8	1.22
October	3.25	3.71	6.5	2.0	0.01
November	5.33	1.25	2.88	3.0	2.35
December	4.14	0.99	5.08	9.7	2.1

PERMIT	MONITORIN	MONITORING	OUTFALL	MONITORING	PARAMETER	LOAD_UN	LOAD_1_V	LOAD_1_L	LOAD_1_S	LOAD_2_V	LOAD_2_L	LOAD_2_S	CONC_UN	CONC_1_	CONC_1_	CONC_1_	CONC_2_	CONC_2_	CONC_2_	CONC_3_	CONC_3_	CONC_3_	SAMPLE_I	SAMPLE_TYPE
PA0022543	4/1/2022	4/30/2022	001	Final Effluent	Flow	MGD	0.299	Monitor ar	Average M	0.841	Monitor ar	Daily Maximum		**plus 002 mo.avg. discharge**			0.031	**total of 001+002**		0.33			Continuo	Measured
PA0022543	5/1/2022	5/31/2022	001	Final Effluent	Flow	MGD	0.203	Monitor ar	Average M	0.612	Monitor ar	Daily Maximum					0.005			0.208			Continuo	Measured
PA0022543	6/1/2022	6/30/2022	001	Final Effluent	Flow	MGD	0.076	Monitor ar	Average M	0.223	Monitor ar	Daily Maximum								0.076			Continuo	Measured
PA0022543	7/1/2022	7/31/2022	001	Final Effluent	Flow	MGD	0.166	Monitor ar	Average M	0.525	Monitor ar	Daily Maximum								0.166			Continuo	Measured
PA0022543	8/1/2022	8/31/2022	001	Final Effluent	Flow	MGD	0.177	Monitor ar	Average M	0.435	Monitor ar	Daily Maximum								0.177			Continuo	Measured
PA0022543	9/1/2022	9/30/2022	001	Final Effluent	Flow	MGD	0.198	Monitor ar	Average M	0.489	Monitor ar	Daily Maximum								0.198			Continuo	Measured
PA0022543	10/1/2022	10/31/2022	001	Final Effluent	Flow	MGD	0.278	Monitor ar	Average M	0.617	Monitor ar	Daily Maximum								0.278			Continuo	Measured
PA0022543	11/1/2022	11/30/2022	001	Final Effluent	Flow	MGD	0.24	Monitor ar	Average M	0.584	Monitor ar	Daily Maximum								0.24			Continuo	Measured
PA0022543	12/1/2022	12/31/2022	001	Final Effluent	Flow	MGD	0.388	Monitor ar	Average M	0.828	Monitor ar	Daily Maximum					0.006			0.394			Continuo	Measured
PA0022543	1/1/2023	1/31/2023	001	Final Effluent	Flow	MGD	0.41	Monitor ar	Average M	0.857	Monitor ar	Daily Maximum					0.009			0.419			Continuo	Measured
PA0022543	2/1/2023	2/28/2023	001	Final Effluent	Flow	MGD	0.272	Monitor ar	Average M	0.399	Monitor ar	Daily Maximum								0.272			Continuo	Measured
PA0022543	3/1/2023	3/31/2023	001	Final Effluent	Flow	MGD	0.325	Monitor ar	Average M	0.761	Monitor ar	Daily Maximum					0.004			0.329			Continuo	Measured
PA0022543	4/1/2023	4/30/2023	001	Final Effluent	Flow	MGD	0.233	Monitor ar	Average M	0.475	Monitor ar	Daily Maximum								0.233			Continuo	Measured
PA0022543	5/1/2023	5/31/2023	001	Final Effluent	Flow	MGD	0.2	Monitor ar	Average M	0.534	Monitor ar	Daily Maximum								0.2			Continuo	Measured
PA0022543	6/1/2023	6/30/2023	001	Final Effluent	Flow	MGD	0.178	Monitor ar	Average M	0.32	Monitor ar	Daily Maximum								0.178			Continuo	Measured
PA0022543	7/1/2023	7/31/2023	001	Final Effluent	Flow	MGD	0.2	Monitor ar	Average M	0.428	Monitor ar	Daily Maximum								0.2			Continuo	Measured
PA0022543	8/1/2023	8/31/2023	001	Final Effluent	Flow	MGD	0.187	Monitor ar	Average M	0.345	Monitor ar	Daily Maximum								0.187			Continuo	Measured
PA0022543	9/1/2023	9/30/2023	001	Final Effluent	Flow	MGD	0.193	Monitor ar	Average M	0.4	Monitor ar	Daily Maximum								0.193			Continuo	Measured
PA0022543	10/1/2023	10/31/2023	001	Final Effluent	Flow	MGD	0.158	Monitor ar	Average M	0.252	Monitor ar	Daily Maximum								0.158			Continuo	Measured
PA0022543	11/1/2023	11/30/2023	001	Final Effluent	Flow	MGD	0.246	Monitor ar	Average M	0.552	Monitor ar	Daily Maximum								0.246			Continuo	Measured
PA0022543	12/1/2023	12/31/2023	001	Final Effluent	Flow	MGD	0.344	Monitor ar	Average M	1.056	Monitor ar	Daily Maximum					0.055			0.399			Continuo	Measured
PA0022543	1/1/2024	1/31/2024	001	Final Effluent	Flow	MGD	0.443	Monitor ar	Average M	0.59	Monitor ar	Daily Maximum					0.084			0.527			Continuo	Measured
PA0022543	2/1/2024	2/29/2024	001	Final Effluent	Flow	MGD	0.35	Monitor ar	Average M	0.53	Monitor ar	Daily Maximum								0.35			Continuo	Measured
PA0022543	3/1/2024	3/31/2024	001	Final Effluent	Flow	MGD	0.458	Monitor ar	Average M	0.567	Monitor ar	Daily Maximum					0.071			0.529			Continuo	Measured
PA0022543	4/1/2024	4/30/2024	001	Final Effluent	Flow	MGD	0.546	Monitor ar	Average M	0.617	Monitor ar	Daily Maximum					0.072			0.618			Continuo	Measured
PA0022543	5/1/2024	5/31/2024	001	Final Effluent	Flow	MGD	0.292	Monitor ar	Average M	0.526	Monitor ar	Daily Maximum								0.292			Continuo	Measured
PA0022543	6/1/2024	6/30/2024	001	Final Effluent	Flow	MGD	0.186	Monitor ar	Average M	0.365	Monitor ar	Daily Maximum								0.186			Continuo	Measured
PA0022543	7/1/2024	7/31/2024	001	Final Effluent	Flow	MGD	0.225	Monitor ar	Average M	0.44	Monitor ar	Daily Maximum								0.225			Continuo	Measured
PA0022543	8/1/2024	8/31/2024	001	Final Effluent	Flow	MGD	0.221	Monitor ar	Average M	0.61	Monitor ar	Daily Maximum								0.221			Continuo	Measured
PA0022543	9/1/2024	9/30/2024	001	Final Effluent	Flow	MGD	0.126	Monitor ar	Average M	0.169	Monitor ar	Daily Maximum								0.126			Continuo	Measured
PA0022543	10/1/2024	10/31/2024	001	Final Effluent	Flow	MGD	0.125	Monitor ar	Average M	0.145	Monitor ar	Daily Maximum								0.125			Continuo	Measured
PA0022543	11/1/2024	11/30/2024	001	Final Effluent	Flow	MGD	0.143	Monitor ar	Average M	0.258	Monitor ar	Daily Maximum								0.143			Continuo	Measured
PA0022543	12/1/2024	12/31/2024	001	Final Effluent	Flow	MGD	0.178	Monitor ar	Average M	0.423	Monitor ar	Daily Maximum								0.178			Continuo	Measured
PA0022543	1/1/2025	1/31/2025	001	Final Effluent	Flow	MGD	0.14	Monitor ar	Average M	0.427	Monitor ar	Daily Maximum								0.14			Continuo	Measured
PA0022543	2/1/2025	2/28/2025	001	Final Effluent	Flow	MGD	0.215	Monitor ar	Average M	0.643	Monitor ar	Daily Maximum								0.215			Continuo	Measured
PA0022543	3/1/2025	3/31/2025	001	Final Effluent	Flow	MGD	0.207	Monitor ar	Average M	0.404	Monitor ar	Daily Maximum								0.207			Continuo	Measured
PA0022543	4/1/2025	4/30/2025	001	Final Effluent	Flow	MGD	0.311	Monitor ar	Average M	0.63	Monitor ar	Daily Maximum								0.311			Continuo	Measured
PA0022543	5/1/2025	5/31/2025	001	Final Effluent	Flow	MGD	0.381	Monitor ar	Average M	0.952	Monitor ar	Daily Maximum								0.381			Continuo	Measured
							0.250	Avg		1.056	Max									0.259	Avg, combined 001 and 002 Monthly Avg flows			
							0.546	Max												0.618	Max, combined 001 and 002 Monthly Avg flows			
							0.395	90th percenitle												0.405	90th percentile, combined Monthly Avg flow for 001 and 002			

MONITORIN MONITORING OUTFALL MONITORING PARAMETER LOAD_UN LOAD_1_V LOAD_1_L LOAD_1_S LOAD_2_V LOAD_2_L LOAD_2_S CONC_UN CONC_1_ CONC_1_ CONC_1_ CONC_2_ CONC_2_ CONC_2_ CONC_3_ CONC_3_ CONC_3_ SAMPLE_I SAMPLE_TYPE

4/1/2022	4/30/2022	002	Final Effluent	Flow	MGD	0.031	Monitor ar	Average M	0.416	Monitor ar	Daily Maximum		Continuo	Measured
5/1/2022	5/31/2022	002	Final Effluent	Flow	MGD	0.005	Monitor ar	Average M	0.131	Monitor ar	Daily Maximum		Continuo	Measured
12/1/2022	12/31/2022	002	Final Effluent	Flow	MGD	0.006	Monitor ar	Average M	0.084	Monitor ar	Daily Maximum		Continuo	Measured
1/1/2023	1/31/2023	002	Final Effluent	Flow	MGD	0.009	Monitor ar	Average M	0.233	Monitor ar	Daily Maximum		Continuo	Measured
3/1/2023	3/31/2023	002	Final Effluent	Flow	MGD	0.004	Monitor ar	Average M	0.127	Monitor ar	Daily Maximum		Continuo	Measured
12/1/2023	12/31/2023	002	Final Effluent	Flow	MGD	0.055	Monitor ar	Average M	0.663	Monitor ar	Daily Maximum		Continuo	Measured
1/1/2024	1/31/2024	002	Final Effluent	Flow	MGD	0.084	Monitor ar	Average M	0.601	Monitor ar	Daily Maximum		Continuo	Measured
3/1/2024	3/31/2024	002	Final Effluent	Flow	MGD	0.071	Monitor ar	Average M	0.503	Monitor ar	Daily Maximum		Continuo	Measured
4/1/2024	4/30/2024	002	Final Effluent	Flow	MGD	0.072	Monitor ar	Average M	0.689	Monitor ar	Daily Maximum		Continuo	Measured
	9 months out of 38 with flows at 002					0.0374	Avg		0.689	Max				
						0.084	Max							
4/1/2022	4/30/2022	002	Final Effluent	Stream Flow, End of Discharge	cfs	4.67	4.3	Instantaneous Minimum					Daily whe	Measured
5/1/2022	5/31/2022	002	Final Effluent	Stream Flow, End of Discharge	cfs	4.7	4.3	Instantaneous Minimum					Daily whe	Measured
12/1/2022	12/31/2022	002	Final Effluent	Stream Flow, End of Discharge	cfs	5.13	4.3	Instantaneous Minimum					Daily whe	Measured
1/1/2023	1/31/2023	002	Final Effluent	Stream Flow, End of Discharge	cfs	4.67	4.3	Instantaneous Minimum					Daily whe	Measured
3/1/2023	3/31/2023	002	Final Effluent	Stream Flow, End of Discharge	cfs	4.64	4.3	Instantaneous Minimum					Daily whe	Measured
12/1/2023	12/31/2023	002	Final Effluent	Stream Flow, End of Discharge	cfs	4.48	4.3	Instantaneous Minimum					Daily whe	Measured
1/1/2024	1/31/2024	002	Final Effluent	Stream Flow, End of Discharge	cfs	4.3	4.3	Instantaneous Minimum					Daily whe	Measured
3/1/2024	3/31/2024	002	Final Effluent	Stream Flow, End of Discharge	cfs	4.41	4.3	Instantaneous Minimum					Daily whe	Measured
4/1/2024	4/30/2024	002	Final Effluent	Stream Flow, End of Discharge	cfs	7.17	4.3	Instantaneous Minimum					Daily whe	Measured
						4.91	Avg							
						7.17	Max							
						4.3	Min							
4/1/2022	4/30/2022	002	Final Effluent	Stream Flow, Start of Discharge	cfs	7.22	4.3	Instantaneous Minimum					Daily whe	Measured
5/1/2022	5/31/2022	002	Final Effluent	Stream Flow, Start of Discharge	cfs	10	4.3	Instantaneous Minimum					Daily whe	Measured
12/1/2022	12/31/2022	002	Final Effluent	Stream Flow, Start of Discharge	cfs	6.28	4.3	Instantaneous Minimum					Daily whe	Measured
1/1/2023	1/31/2023	002	Final Effluent	Stream Flow, Start of Discharge	cfs	10	4.3	Instantaneous Minimum					Daily whe	Measured
3/1/2023	3/31/2023	002	Final Effluent	Stream Flow, Start of Discharge	cfs	10	4.3	Instantaneous Minimum					Daily whe	Measured
12/1/2023	12/31/2023	002	Final Effluent	Stream Flow, Start of Discharge	cfs	10	4.3	Instantaneous Minimum					Daily whe	Measured
1/1/2024	1/31/2024	002	Final Effluent	Stream Flow, Start of Discharge	cfs	7.01	4.3	Instantaneous Minimum					Daily whe	Measured
3/1/2024	3/31/2024	002	Final Effluent	Stream Flow, Start of Discharge	cfs	6.78	4.3	Instantaneous Minimum					Daily whe	Measured
4/1/2024	4/30/2024	002	Final Effluent	Stream Flow, Start of Discharge	cfs	10	4.3	Instantaneous Minimum					Daily whe	Measured
						8.59	Avg							
						10	Max							
						6.28	Min							

I	J	Q	S	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
MONITORIN	MONITORING	OUTFALL	MONITORING	PARAMETER	LOAD_UN	LOAD_1_\	LOAD_1_[	LOAD_1_S	LOAD_2_\	LOAD_2_[	LOAD_2_S	CONC_UN	CONC_1_	CONC_1_	CONC_1_	CONC_2_	CONC_2_	CONC_2_	CONC_3_	CONC_3_	CONC_3_	SAMPLE_I	SAMPLE_TYPE	
4/1/2022	4/30/2022	002	Final Effluent	Duration of Discharge	hours				61	Monitor ar	Daily Maximum											Daily whei	Measured	
5/1/2022	5/31/2022	002	Final Effluent	Duration of Discharge	hours				15.75	Monitor ar	Daily Maximum											Daily whei	Measured	
12/1/2022	12/31/2022	002	Final Effluent	Duration of Discharge	hours				28.5	Monitor ar	Daily Maximum											Daily whei	Measured	
1/1/2023	1/31/2023	002	Final Effluent	Duration of Discharge	hours				25	Monitor ar	Daily Maximum											Daily whei	Measured	
3/1/2023	3/31/2023	002	Final Effluent	Duration of Discharge	hours				13.5	Monitor ar	Daily Maximum											Daily whei	Measured	
12/1/2023	12/31/2023	002	Final Effluent	Duration of Discharge	hours				128	Monitor ar	Daily Maximum											Daily whei	Measured	
1/1/2024	1/31/2024	002	Final Effluent	Duration of Discharge	hours				215.25	Monitor ar	Daily Maximum											Daily whei	Measured	
3/1/2024	3/31/2024	002	Final Effluent	Duration of Discharge	hours				235	Monitor ar	Daily Maximum											Daily whei	Measured	
4/1/2024	4/30/2024	002	Final Effluent	Duration of Discharge	hours				114	Monitor ar	Daily Maximum											Daily whei	Measured	
	9 months out of 38 with flows at 002								92.9	Avg														
									235	Max														

StreamStats Output Report-W.Br.Perk.Crk at Washington STP						
State/Region ID	PA					
Workspace ID	PA20250701185812371000					
Latitude	40.38559					
Longitude	-75.59104					
Time	7/1/2025	2:58:36 PM				
Basin Characteristics						
Parameter Code	Parameter Description	Value	Unit			
BSLOPD	Mean basin slope measure	6.343	degrees			
DRNAREA	Area that drains to a point	14.4	square miles			
ROCKDEP	Depth to rock	5.1	feet			
URBAN	Percentage of basin with ur	0.5571	percent			
Low-Flow Statistics Parar	100.0 Percent Low Flow Region 1					
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit	
BSLOPD	Mean Basin Slope degrees	6.343	degrees	1.7	6.4	
DRNAREA	Drainage Area	14.4	square mi	4.78	1150	
ROCKDEP	Depth to Rock	5.1	feet	4.13	5.21	
URBAN	Percent Urban	0.5571	percent	0	89	
Low-Flow Statistics Flow	100.0 Percent Low Flow Region 1					
Statistic	Value	Unit	SE	ASEp		
7 Day 2 Year Low Flow	5.8	ft^3/s	46	46		
30 Day 2 Year Low Flow	6.7	ft^3/s	38	38		
7 Day 10 Year Low Flow	3.27	ft^3/s	51	51		
30 Day 10 Year Low Flow	3.82	ft^3/s	46	46		
90 Day 10 Year Low Flow	4.82	ft^3/s	41	41		
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USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (USGS). Although the software has b						
USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsem						

Application Version: 4.29.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Source:
StreamStats https://streamstats.usgs.gov/ss/

StreamStats Output Report-001, Bally Boro STP						
State/Region ID	PA					
Workspace ID	PA20250701190612325000					
Latitude	40.39003					
Longitude	-75.56585					
Time	7/1/2025	3:06:33 PM				
Basin Characteristics						
Parameter Code	Parameter Description	Value	Unit			
BSLOPD	Mean basin slope measured i	5.9392	degrees			
DRNAREA	Area that drains to a point on	16.4	square miles			
ROCKDEP	Depth to rock	5	feet			
URBAN	Percentage of basin with urba	0.7008	percent			
Low-Flow Statistics Para	100.0 Percent Low Flow Region 1					
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit	
BSLOPD	Mean Basin Slope degrees	5.9392	degrees	1.7	6.4	
DRNAREA	Drainage Area	16.4	square mil	4.78	1150	
ROCKDEP	Depth to Rock	5	feet	4.13	5.21	
URBAN	Percent Urban	0.7008	percent	0	89	
Low-Flow Statistics Flow	100.0 Percent Low Flow Region 1					
Statistic	Value	Unit	SE	ASEp		
7 Day 2 Year Low Flow	5.61	ft^3/s	46	46		
30 Day 2 Year Low Flow	6.64	ft^3/s	38	38		
7 Day 10 Year Low Flow	3.05	ft^3/s	51	51		
30 Day 10 Year Low Flow	3.66	ft^3/s	46	46		
90 Day 10 Year Low Flow	4.82	ft^3/s	41	41		
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Application Version: 4.29.2						
StreamStats Services Version: 1.2.22						
NSS Services Version: 2.2.1						

Source:
StreamStats https://streamstats.usgs.gov/ss/

StreamStats Output Report-immediately downstrm of Bally Boro 001

State/Region ID	PA
Workspace ID	PA20250701192045184000
Latitude	40.39075
Longitude	-75.55903
Time	7/1/2025 3:21:10 PM

Basin Characteristics

Parameter Code	Parameter Descrip	Value	Unit
BSLOPD	Mean basin slope r	5.4862	degrees
DRNAREA	Area that drains to	19.5	square miles
ROCKDEP	Depth to rock	4.9	feet
URBAN	Percentage of basi	2.848	percent

Low-Flow Statistics Para 100.0 Percent Low Flow Region 1

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
BSLOPD	Mean Basin Slope (	5.4862	degrees	1.7	6.4
DRNAREA	Drainage Area	19.5	square mil	4.78	1150
ROCKDEP	Depth to Rock	4.9	feet	4.13	5.21
URBAN	Percent Urban	2.848	percent	0	89

Low-Flow Statistics Flow 100.0 Percent Low Flow Region 1

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	5.78	ft^3/s	46	46
30 Day 2 Year Low Flow	7.04	ft^3/s	38	38
7 Day 10 Year Low Flow	3.06	ft^3/s	51	51
30 Day 10 Year Low Flow	3.78	ft^3/s	46	46
90 Day 10 Year Low Flow	5.21	ft^3/s	41	41

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USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.29.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Source:
StreamStats https://streamstats.usgs.gov/ss/

StreamStats Output Report - Bally STP outfall 002					
State/Region ID	PA				
Workspace ID	PA20250701193027682000				
Latitude	40.39555				
Longitude	-75.5722				
Time	7/1/2025	3:31:49 PM			
Basin Characteristics					
Parameter Code	Parameter Description	Value	Unit		
BSLOPD	Mean basin slope measured	3.0767	degrees		
DRNAREA	Area that drains to a point or	1.26	square miles		
ROCKDEP	Depth to rock	4.9	feet		
URBAN	Percentage of basin with urb	30.8332	percent		
Low-Flow Statistics Param	100.0 Percent Low Flow Region 1				
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
BSLOPD	Mean Basin Slope degrees	3.0767	degrees	1.7	6.4
DRNAREA	Drainage Area	1.26	square mil	4.78	1150
ROCKDEP	Depth to Rock	4.9	feet	4.13	5.21
URBAN	Percent Urban	30.8332	percent	0	89
Low-Flow Statistics Flow R	100.0 Percent Low Flow Region 1				
Statistic	Value	Unit			
7 Day 2 Year Low Flow	0.285	ft^3/s			
30 Day 2 Year Low Flow	0.402	ft^3/s			
7 Day 10 Year Low Flow	0.123	ft^3/s			
30 Day 10 Year Low Flow	0.179	ft^3/s			
90 Day 10 Year Low Flow	0.332	ft^3/s			
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USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S					
Application Version: 4.29.2					
StreamStats Services Version: 1.2.22					
NSS Services Version: 2.2.1					

Source:
StreamStats https://streamstats.usgs.gov/ss/

StreamStats Output Report-downstrm of Bally STP 002					
State/Region ID	PA				
Workspace ID	PA20250701193744324000				
Latitude	40.39082				
Longitude	-75.56517				
Time	7/1/2025	3:38:10 PM			
Basin Characteristics					
Parameter Code	Parameter Description	Value	Unit		
BSLOPD	Mean basin slope measured	3.1812	degrees		
DRNAREA	Area that drains to a point or	1.44	square miles		
ROCKDEP	Depth to rock	4.8	feet		
URBAN	Percentage of basin with urb	26.9891	percent		
Low-Flow Statistics Parar	100.0 Percent Low Flow Region 1				
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
BSLOPD	Mean Basin Slope degrees	3.1812	degrees	1.7	6.4
DRNAREA	Drainage Area	1.44	square mil	4.78	1150
ROCKDEP	Depth to Rock	4.8	feet	4.13	5.21
URBAN	Percent Urban	26.9891	percent	0	89
Low-Flow Statistics Flow	100.0 Percent Low Flow Region 1				
Statistic	Value	Unit			
7 Day 2 Year Low Flow	0.293	ft^3/s			
30 Day 2 Year Low Flow	0.415	ft^3/s			
7 Day 10 Year Low Flow	0.124	ft^3/s			
30 Day 10 Year Low Flow	0.183	ft^3/s			
90 Day 10 Year Low Flow	0.339	ft^3/s			
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USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (USGS). Although the software has been subjected to rig					
USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Governı					
Application Version: 4.29.2					
StreamStats Services Version: 1.2.22					
NSS Services Version: 2.2.1					

Source:
StreamStats https://streamstats.usgs.gov/ss/

Outfall 001 modeling:

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

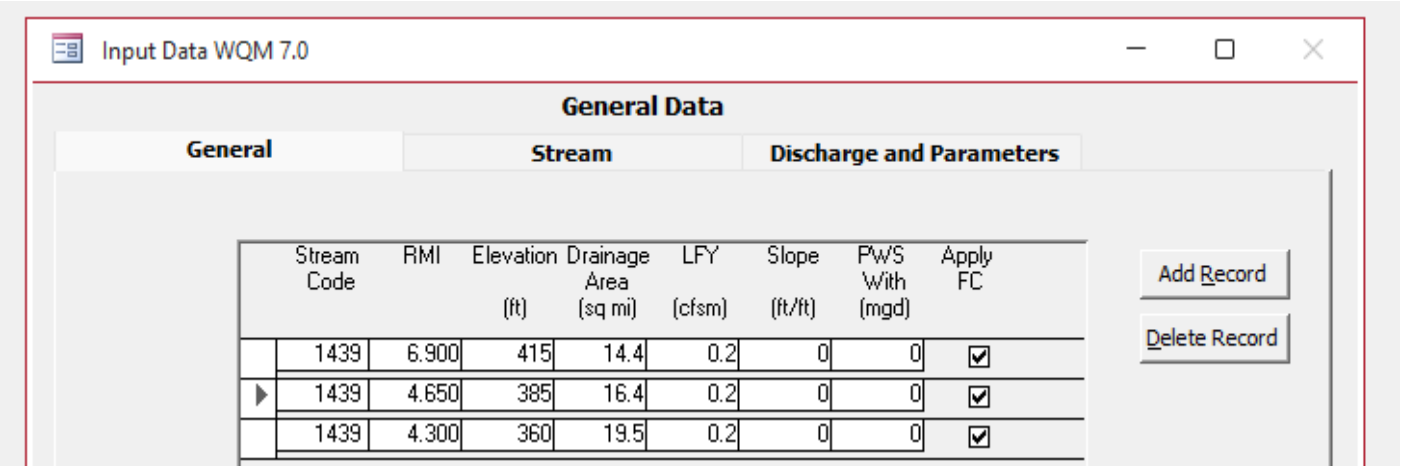
3.1	= Q stream (cfs)	0.5	= CV Daily
0.5	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance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

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 1.297	1.3.2.iii	WLA cfc = 1.257
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.483	5.1d	LTA_cfc = 0.731

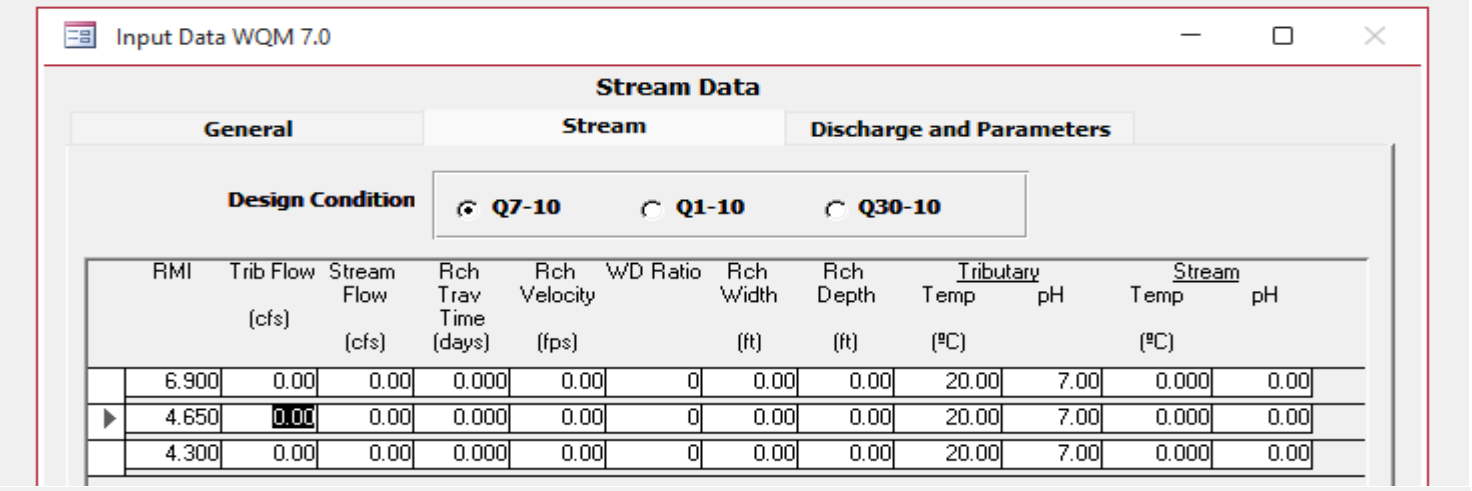
Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	

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)**

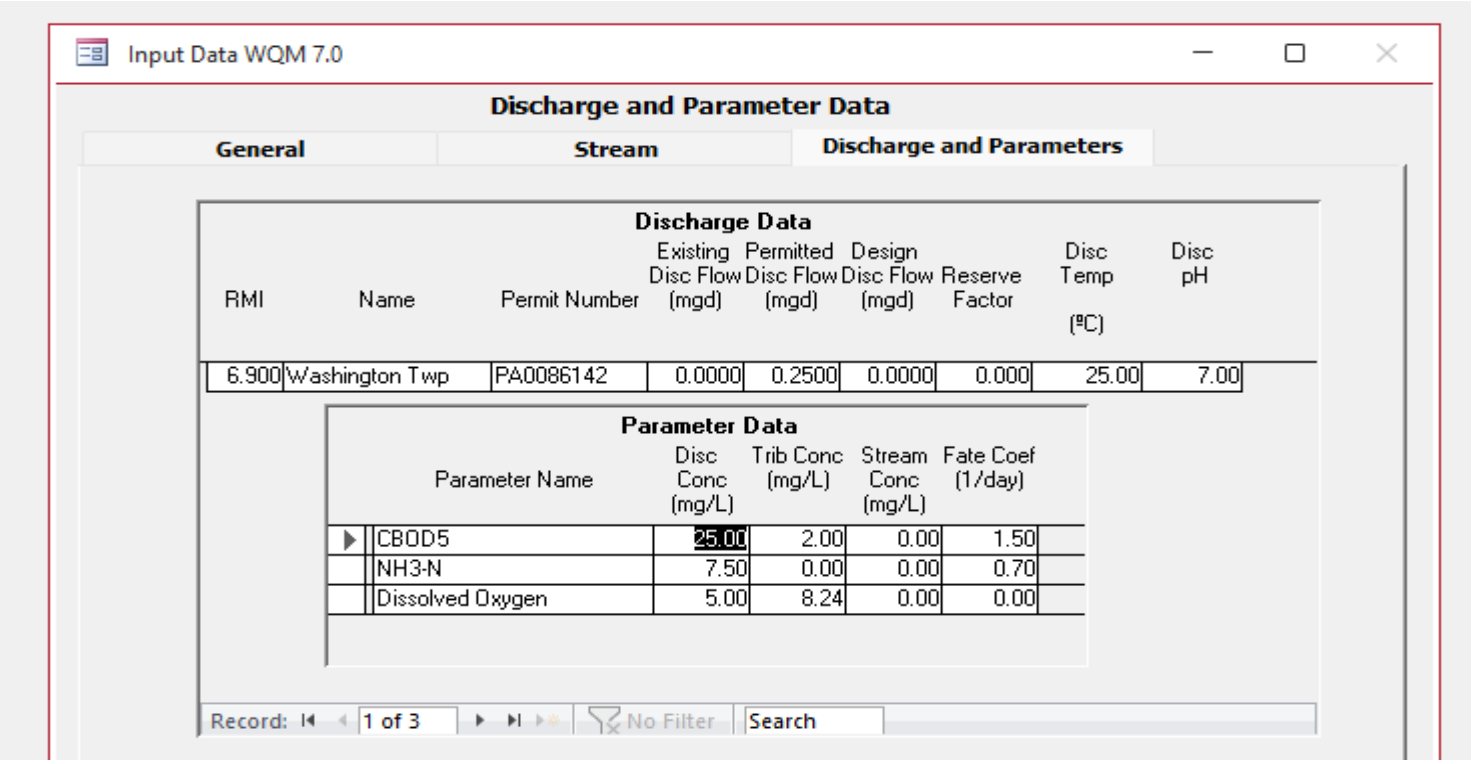
(0.011/EXP(-K*CFC_tc/1440))+(((CFC_Yc*Qs*0.011)/(1.547*Qd)....
....*EXP(-K*CFC_tc/1440)))+Xd+(CFC_Yc*Qs*Xs/1.547*Qd))*(1-FOS/100)



Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	LFY (cfsm)	Slope (ft/ft)	PWS With (mgd)	Apply FC
1439	6.900	415	14.4	0.2	0	0	☑
1439	4.650	385	16.4	0.2	0	0	☑
1439	4.300	360	19.5	0.2	0	0	☑



RMI	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (ºC)	Tributary pH	Stream Temp (ºC)	Stream pH
6.900	0.00	0.00	0.000	0.00	0	0.00	0.00	20.00	7.00	0.000	0.00
4.650	0.00	0.00	0.000	0.00	0	0.00	0.00	20.00	7.00	0.000	0.00
4.300	0.00	0.00	0.000	0.00	0	0.00	0.00	20.00	7.00	0.000	0.00



RMI	Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (ºC)	Disc pH
6.900	Washington Twp	PA0086142	0.0000	0.2500	0.0000	0.000	25.00	7.00

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/day)
CBOD5	25.00	2.00	0.00	1.50
NH3-N	7.50	0.00	0.00	0.70
Dissolved Oxygen	5.00	8.24	0.00	0.00

Input Data WQM 7.0

Discharge and Parameter Data

General | Stream | Discharge and Parameters

Discharge Data

RMI	Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (ºC)	Disc pH
4.650	Bally STP	PA0022543	0.0000	0.5000	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/day)
CBOD5	25.00	2.00	0.00	1.50
NH3-N	6.00	0.00	0.00	0.70
Dissolved Oxygen	5.00	8.24	0.00	0.00

Record: 2 of 3 | No Filter | Search

Downstream, at next node……

Input Data WQM 7.0

Discharge and Parameter Data

General | Stream | Discharge and Parameters

Discharge Data

RMI	Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (ºC)	Disc pH
4.300			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/day)
CBOD5	25.00	2.00	0.00	1.50
NH3-N	25.00	0.00	0.00	0.70
Dissolved Oxygen	3.00	8.24	0.00	0.00

Record: 3 of 3 | No Filter | Search

Modeling Specifications WQM 7.0

Select Parameters

- ○ NH3-N
- ○ Dissolved Oxygen
- ◉ Both

Select WLA Method

- ○ Uniform Treatment
- ◉ EMPR
- ○ D.O. Simulation

Q1-10 and Q30-10 Data

☑ Use input Q1-10 and Q30-10 data

Q1-10/Q7-10 ratio: 0.64

Q30-10/Q7-10 ratio: 1.36

WQAM 6.3 Comparison

☐ Input reach W/D ratios * ☐ Input reach travel times *

☑ Temperature Adjust Kr**

Dissolved Oxygen

DO Goal: 6.00

DO Saturation Percent: 90.0%

☑ Use Balanced Technology

* Check to duplicate WQAM 6.3 results
** Uncheck to duplicate WQAM 6.3 results

Analysis Results WQM 7.0

Hydrodynamics | NH3-N Allocations | D.O. Allocations | D.O. Simulation | Effluent Limitations

Design Condition: (•) Q7-10 ( ) Q1-10 ( ) Q30-10

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 (ºC)	Analysis pH
6.900	2.88	0.00	2.88	.3868	0.00253	.617	24.7	40.02	0.214	0.642	20.59	7.00
4.650	3.28	0.00	3.28	1.1603	0.01353	.649	24.06	37.05	0.284	0.075	21.31	7.00

Analysis Results WQM 7.0

Hydrodynamics | NH3-N Allocations | D.O. Allocations | D.O. Simulation | Effluent Limitations

RMI	Total Discharge Flow (mgd)	Analysis Temperature (ºC)	Analysis pH
6.900	0.250	20.592	7.000
Reach Width (ft)	Reach Depth (ft)	Reach WD Ratio	Reach Velocity (fps)
24.703	0.617	40.015	0.214
Reach C-BOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
4.72	0.759	0.89	0.733
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
7.859	5.213	Tsivoglou	6

Reach Travel Time (days): 0.642

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.064	4.49	0.85	7.75
0.128	4.27	0.81	7.69
0.193	4.06	0.77	7.67
0.257	3.87	0.74	7.68
0.321	3.68	0.70	7.70
0.385	3.50	0.67	7.73
0.449	3.33	0.64	7.77
0.513	3.17	0.61	7.82
0.578	3.01	0.58	7.86
0.642	2.86	0.55	7.91

Record: 1 of 2 | No Filter | Search

DO recovered

Analysis Results WQM 7.0

Hydrodynamics | NH3-N Allocations | D.O. Allocations | D.O. Simulation | Effluent Limitations

RMI	Total Discharge Flow (mgd)	Analysis Temperature (ºC)	Analysis pH
4.650	0.750	21.307	7.000
Reach Width (ft)	Reach Depth (ft)	Reach WD Ratio	Reach Velocity (fps)
24.062	0.649	37.053	0.284
Reach C-BOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
6.64	1.150	1.45	0.774
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
7.436	37.677	Tsivoglou	6

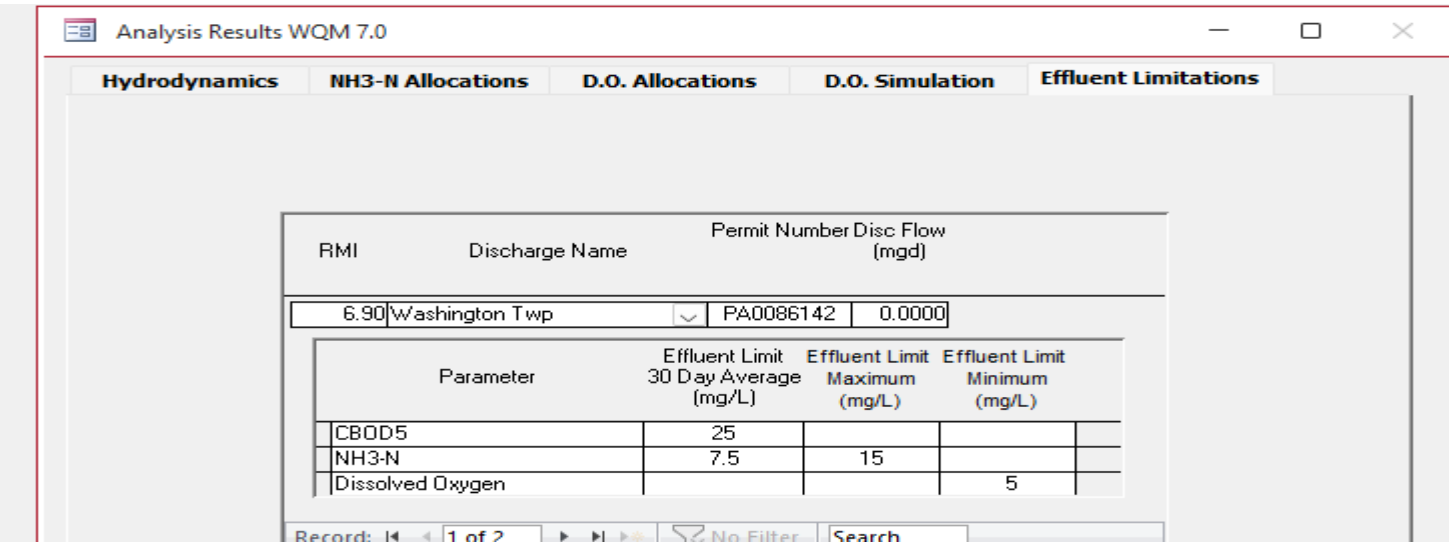
Reach Travel Time (days): 0.075

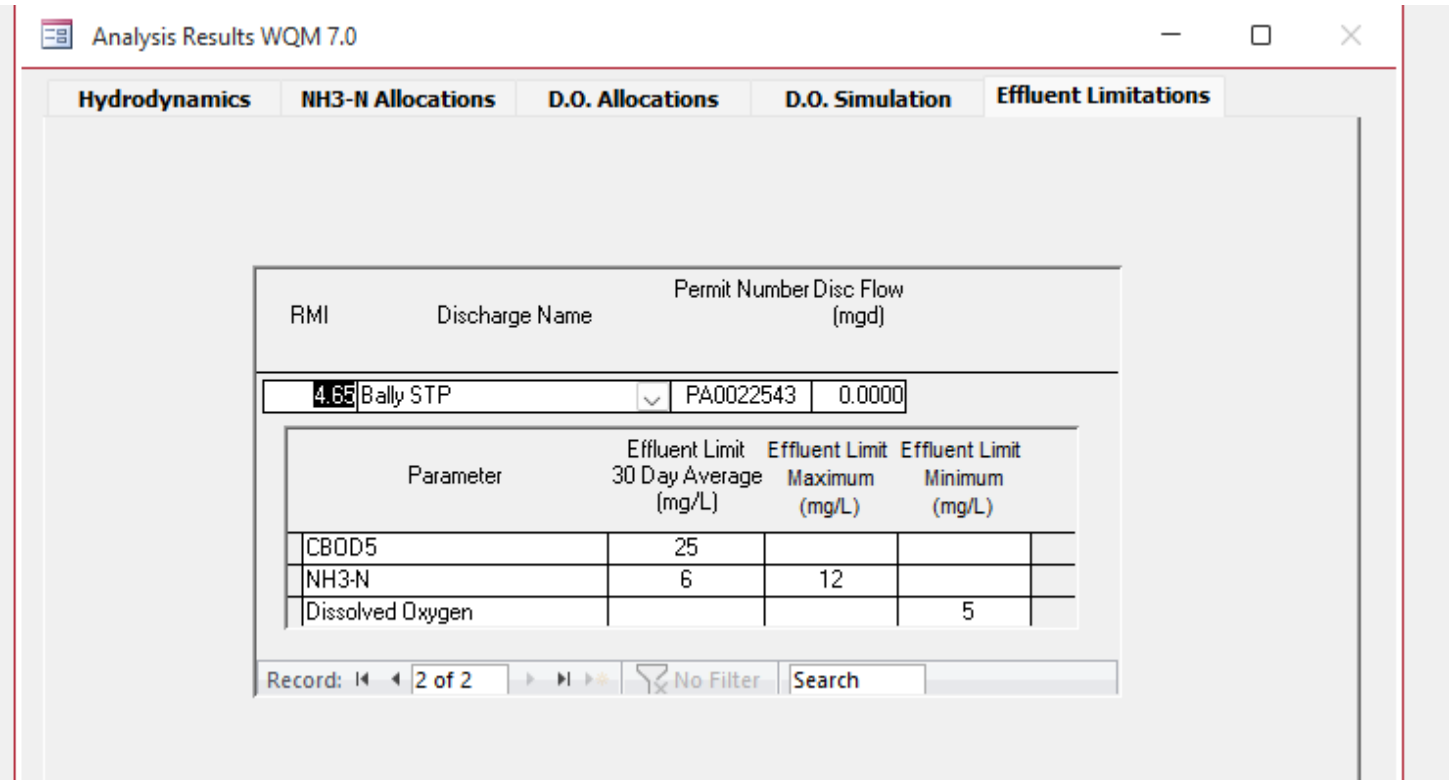
Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.008	6.58	1.44	7.69
0.015	6.52	1.44	7.89
0.023	6.46	1.43	8.04
0.030	6.40	1.42	8.05
0.038	6.34	1.41	8.05
0.045	6.29	1.40	8.05
0.053	6.23	1.40	8.05
0.060	6.17	1.39	8.05
0.068	6.11	1.38	8.05
0.075	6.06	1.37	8.05

Record: 2 of 2 | No Filter | Search

DO Recovered


Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI
Discharge Name
Permit Number
Disc Flow (mgd)
6.90
Washington Twp
PA0086142
0.0000
Parameter
Effluent Limit 30 Day Average (mg/L)
Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5
25
NH3-N
7.5
15
Dissolved Oxygen
5
Record:
1 of 2
No Filter
Search


Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI
Discharge Name
Permit Number
Disc Flow (mgd)
4.65
Bally STP
PA0022543
0.0000
Parameter
Effluent Limit 30 Day Average (mg/L)
Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5
25
NH3-N
6
12
Dissolved Oxygen
5
Record:
2 of 2
No Filter
Search

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2025

Discharge Information

Instructions | Discharge | Stream

Facility: **Bally Boro STP** NPDES Permit No.: **PA0022543** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **domestic wastewater**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.5	100	7						

	Discharge Pollutant	Units	Max Discharge Conc		0 if left blank: Trib Conc	0 if left blank: Stream Conc	0.5 if left blank: Daily CV	0.5 if left blank: Hourly CV	0 if left blank: Stream CV	0 if left blank: Fate Coeff	0 if left blank: FOS	1 if left blank: Criteria Mod	1 if left blank: Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		480									
	Chloride (PWS)	mg/L		127									
	Bromide	mg/L		1									
	Sulfate (PWS)	mg/L		27.6									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	mg/L		0.01									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	mg/L		0.012									

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2025

Stream / Surface Water Information

Bally Boro STP, NPDES Permit No. PA0022543, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **West Branch Perkiomen 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	001439	4.65	385	16.4			Yes
End of Reach 1	001439	4.31	360	19.5			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	4.65	0.2										100	7		
End of Reach 1	4.31	0.2													

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	4.65														
End of Reach 1	4.31														

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Toxics Management Spreadsheet
Version 1.4, May 2025

Model Results

Bally Boro STP, NPDES Permit No. PA0022543, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 8.021 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total 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 Copper	0	0		0	13.439	14.0	73.4	Chem Translator of 0.96 applied
Total Lead	0	0		0	64.581	81.6	428	Chem Translator of 0.791 applied
Total Zinc	0	0		0	117.180	120	628	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 8.021 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total 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 Copper	0	0		0	8.956	9.33	48.9	Chem Translator of 0.96 applied
Total Lead	0	0		0	2.517	3.18	16.7	Chem Translator of 0.791 applied
Total Zinc	0	0		0	118.139	120	628	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 8.021 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	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 Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 3.759 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 Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	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	mg/L	0.047	AFC	Discharge Conc > 10% WQBEL (no RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total 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 Lead	N/A	N/A	Discharge Conc < TQL
Total Zinc	0.4	mg/L	Discharge Conc ≤ 10% WQBEL

Outfall 002 modeling…….

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

4.3	= Q stream (cfs)	0.5	= CV Daily
0.8	= 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 = 1.127	1.3.2.iii	WLA cfc = 1.092
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.420	5.1d	LTA_cfc = 0.635

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)**

(0.011/EXP(-K*CFC_tc/1440))+(((CFC_Yc*Qs*0.011)/(1.547*Qd)....
....*EXP(-K*CFC_tc/1440)))+Xd+(CFC_Yc*Qs*Xs/1.547*Qd))*(1-FOS/100)

Input Data WQM 7.0

General Data

General | Stream | Discharge and Parameters

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	LFY (cfsm)	Slope (ft/ft)	PWS With (mgd)	Apply FC
1446	0.600	410	1.26	3.3	0	0	☑
1446	0.000	385	1.44	3	0	0	☑

Add Record

Delete Record

LFY of 3.3 = 4.3 cfs stream flow / 1.26 square miles Drainage Area. LFY of 3 = 4.3 cfs / 1.44 sq.miles

Input Data WQM 7.0

Stream Data

General | Stream | Discharge and Parameters

Design Condition ◉ Q7-10 ○ Q1-10 ○ Q30-10

RMI	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (ºC)	Tributary pH	Stream Temp (ºC)	Stream pH
0.600	0.00	0.00	0.000	0.00	0	0.00	0.00	20.00	7.00	0.000	0.00
0.000	0.00	0.00	0.000	0.00	0	0.00	0.00	20.00	7.00	0.000	0.00

Input Data WQM 7.0

Discharge and Parameter Data

General | Stream | Discharge and Parameters

Discharge Data

RMI	Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (ºC)	Disc pH
0.600	Bally STP	PA0022543	0.0000	0.0000	0.8000	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/day)
CBOD5	25.00	2.00	0.00	1.50
NH3-N	6.00	0.00	0.00	0.70
Dissolved Oxygen	5.00	8.24	0.00	0.00

Record: 1 of 2 | No Filter | Search

Input Data WQM 7.0

Discharge and Parameter Data

General | Stream | Discharge and Parameters

Discharge Data

RMI	Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (ºC)	Disc pH
0.000	downstrm		0.0000	0.0000	0.0000	0.000	20.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/day)
CBOD5	25.00	2.00	0.00	1.50
NH3-N	20.00	0.00	0.00	0.70
Dissolved Oxygen	5.00	8.24	0.00	0.00

Record: 2 of 2 | No Filter | Search

Modeling Specifications WQM 7.0

Select Parameters
- ○ NH3-N
- ○ Dissolved Oxygen
- ◉ Both

Select WLA Method
- ○ Uniform Treatment
- ◉ EMPR
- ○ D.O. Simulation

Q1-10 and Q30-10 Data
- ☑ Use input Q1-10 and Q30-10 data
- Q1-10/Q7-10 ratio: 0.64
- Q30-10/Q7-10 ratio: 1.36

WQAM 6.3 Comparison
- ☐ Input reach W/D ratios *
- ☐ Input reach travel times *
- ☑ Temperature Adjust Kr**

* Check to duplicate WQAM 6.3 results
** Uncheck to duplicate WQAM 6.3 results

Dissolved Oxygen
- DO Goal: 6.00
- DO Saturation Percent: 90.0%
- ☑ Use Balanced Technology

Analysis Results WQM 7.0

Hydrodynamics | NH3-N Allocations | D.O. Allocations | D.O. Simulation | Effluent Limitations

Design Condition: ◉ Q7-10 ○ Q1-10 ○ Q30-10

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 (ºC)	Analysis pH
0.600	4.16	0.00	4.16	1.2376	0.00789	.659	15.35	23.29	0.533	0.069	21.15	7.00

Record: 1 of 1 | No Filter | Search

Analysis Results WQM 7.0

Hydrodynamics | NH3-N Allocations | D.O. Allocations | D.O. Simulation | Effluent Limitations

RMI	Total Discharge Flow (mgd)	Analysis Temperature (ºC)	Analysis pH
0.600	0.800	21.147	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WD Ratio**	**Reach Velocity (fps)**
15.354	0.659	23.287	0.533
Reach C-BOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
7.28	1.168	1.38	0.765
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.499	41.068	Tsivoglou	6

Reach Travel Time (days): 0.069

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.007	7.21	1.37	7.75
0.014	7.15	1.36	7.94
0.021	7.09	1.35	8.07
0.028	7.03	1.35	8.07
0.034	6.97	1.34	8.07
0.041	6.91	1.33	8.07
0.048	6.86	1.33	8.07
0.055	6.80	1.32	8.07
0.062	6.74	1.31	8.07
0.069	6.68	1.31	8.07

Analysis Results WQM 7.0

Hydrodynamics | NH3-N Allocations | D.O. Allocations | D.O. Simulation | Effluent Limitations

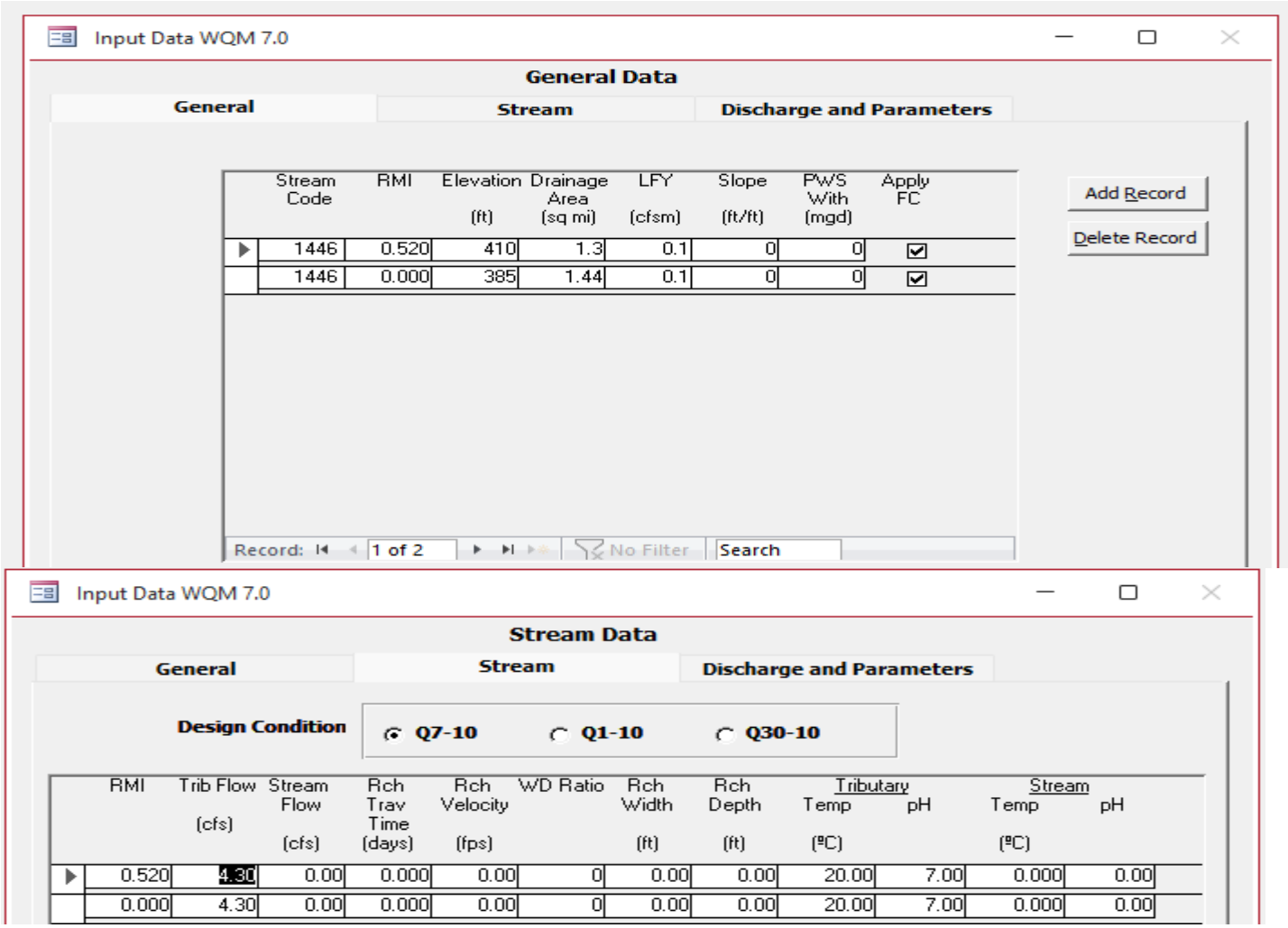
RMI	Discharge Name	Permit Number	Disc Flow (mgd)
0.60	Bally STP	PA0022543	0.0000

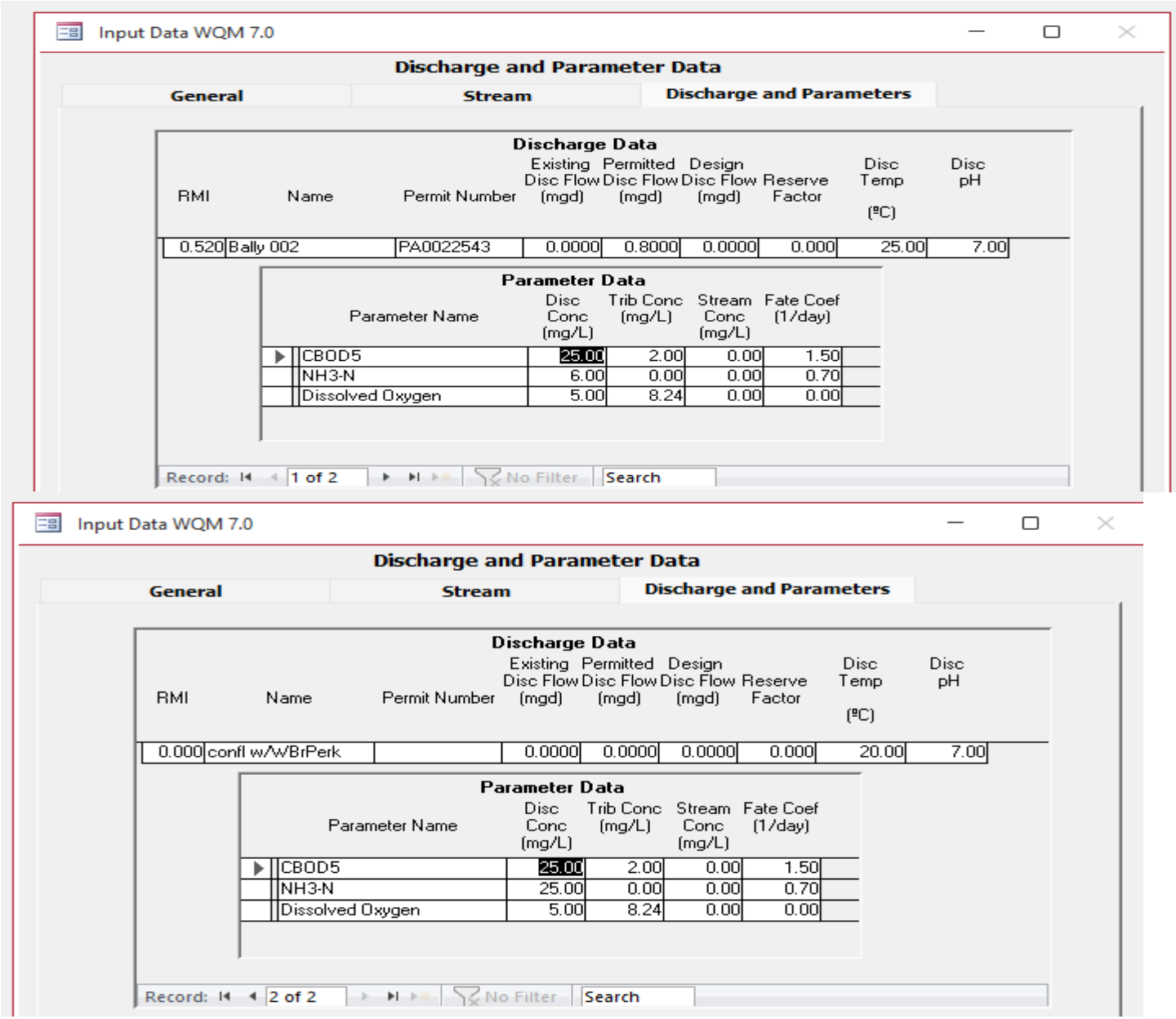
Parameter	Effluent Limit 30 Day Average (mg/L)	Effluent Limit Maximum (mg/L)	Effluent Limit Minimum (mg/L)
CBOD5	25		
NH3-N	6	12	
Dissolved Oxygen			5

Record: 1 of 1 | No Filter | Search

Same results when use RMI of 0.52 at outfall 002…and input 4.3 cfs as 'Trib Flow'…

4.3 cfs used by model, model does not back-calculated stream flow from D.A. of 1.3 sq.mi. and LFY of 0.1 cfs/sq.mi.





Input Data WQM 7.0

Discharge and Parameter Data

General | Stream | Discharge and Parameters

Discharge Data

RMI	Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (ºC)	Disc pH
0.520	Bally 002	PA0022543	0.0000	0.8000	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/day)
CBOD5	25.00	2.00	0.00	1.50
NH3-N	6.00	0.00	0.00	0.70
Dissolved Oxygen	5.00	8.24	0.00	0.00

Record: 1 of 2 | No Filter | Search

Input Data WQM 7.0

Discharge and Parameter Data

General | Stream | Discharge and Parameters

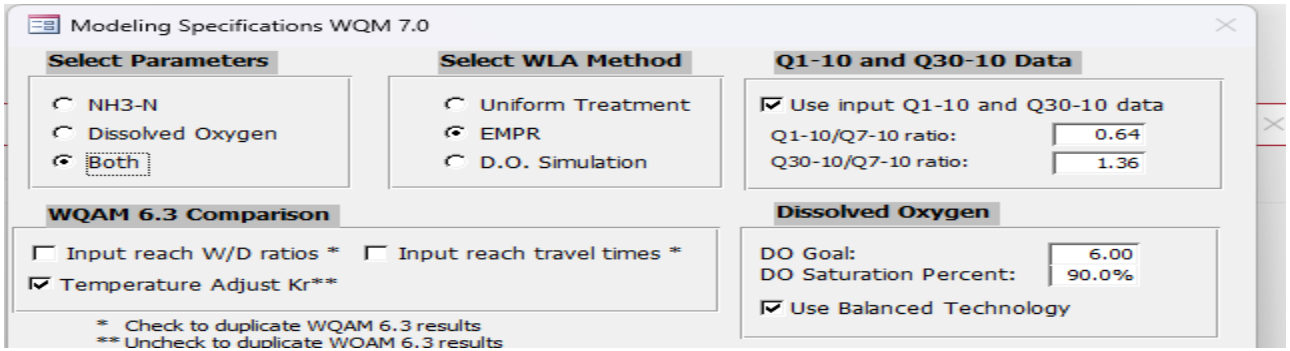
Discharge Data

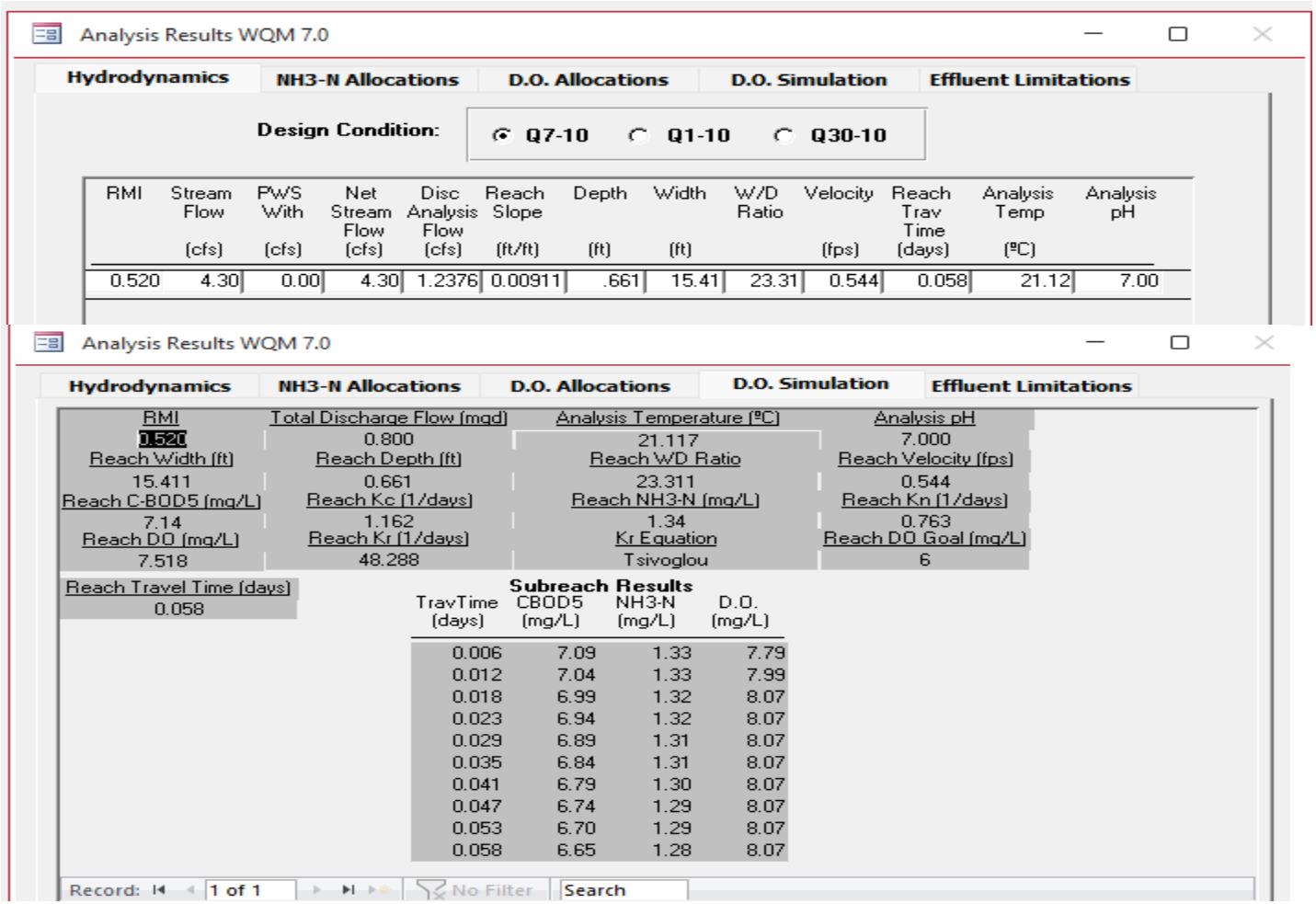
RMI	Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (ºC)	Disc pH
0.000	confl w/WBrPerk		0.0000	0.0000	0.0000	0.000	20.00	7.00

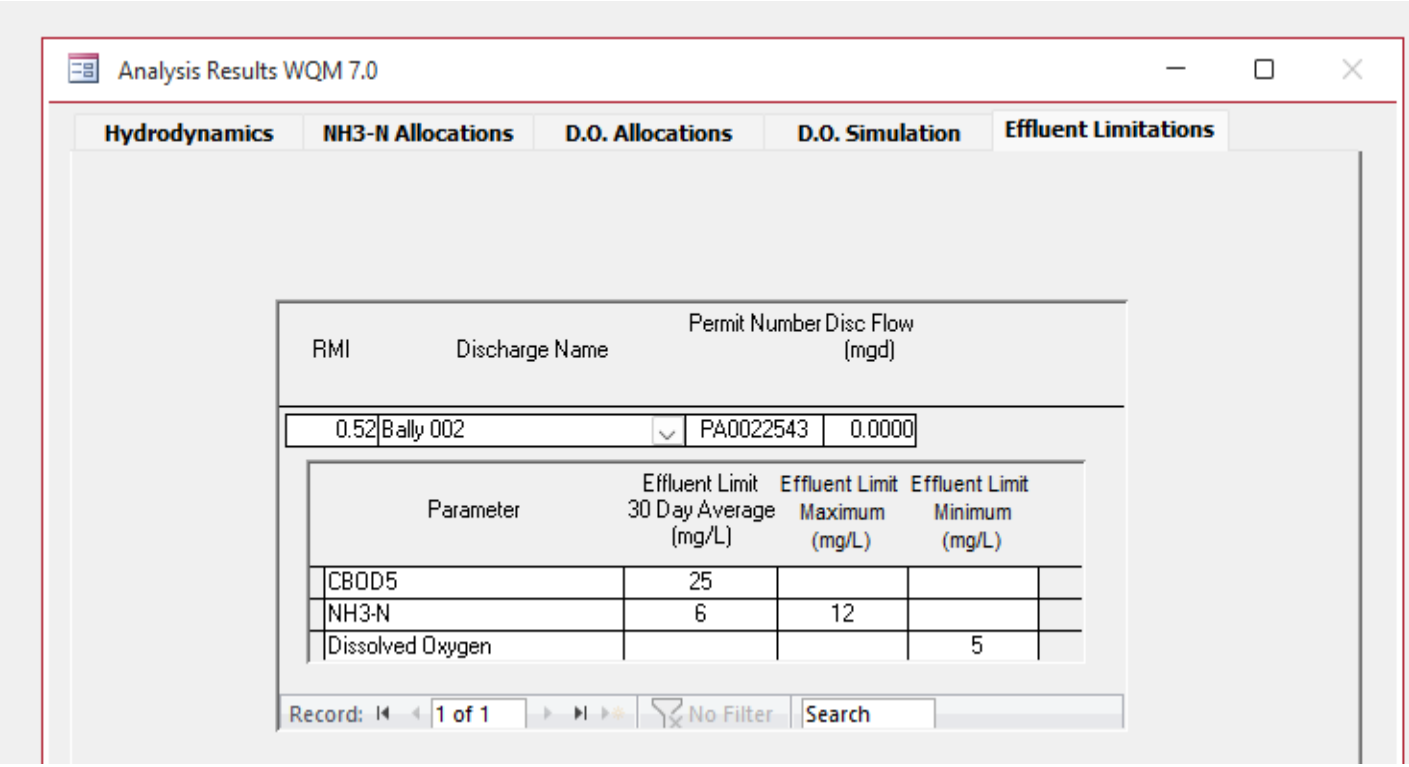
Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/day)
CBOD5	25.00	2.00	0.00	1.50
NH3-N	25.00	0.00	0.00	0.70
Dissolved Oxygen	5.00	8.24	0.00	0.00

Record: 2 of 2 | No Filter | Search


Modeling Specifications WQM 7.0
Select Parameters
NH3-N
Dissolved Oxygen
Both
Select WLA Method
Uniform Treatment
EMPR
D.O. Simulation
Q1-10 and Q30-10 Data
Use input Q1-10 and Q30-10 data
Q1-10/Q7-10 ratio: 0.64
Q30-10/Q7-10 ratio: 1.36
WQAM 6.3 Comparison
Input reach W/D ratios *
Input reach travel times *
Temperature Adjust Kr**
Dissolved Oxygen
DO Goal: 6.00
DO Saturation Percent: 90.0%
Use Balanced Technology
* Check to duplicate WQAM 6.3 results
** Uncheck to duplicate WQAM 6.3 results


Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
Design Condition:
Q7-10
Q1-10
Q30-10
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 (ºC) | Analysis pH
0.520 | 4.30 | 0.00 | 4.30 | 1.2376 | 0.00911 | .661 | 15.41 | 23.31 | 0.544 | 0.058 | 21.12 | 7.00
Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI: 0.520
Total Discharge Flow (mgd): 0.800
Analysis Temperature (ºC): 21.117
Analysis pH: 7.000
Reach Width (ft): 15.411
Reach Depth (ft): 0.661
Reach W/D Ratio: 23.311
Reach Velocity (fps): 0.544
Reach C-BOD5 (mg/L): 7.14
Reach Kc (1/days): 1.162
Reach NH3-N (mg/L): 1.34
Reach Kn (1/days): 0.763
Reach DO (mg/L): 7.518
Reach Kr (1/days): 48.288
Kr Equation: Tsivoglou
Reach DO Goal (mg/L): 6
Reach Travel Time (days): 0.058
Subreach Results
TravTime (days) | CBOD5 (mg/L) | NH3-N (mg/L) | D.O. (mg/L)
0.006 | 7.09 | 1.33 | 7.79
0.012 | 7.04 | 1.33 | 7.99
0.018 | 6.99 | 1.32 | 8.07
0.023 | 6.94 | 1.32 | 8.07
0.029 | 6.89 | 1.31 | 8.07
0.035 | 6.84 | 1.31 | 8.07
0.041 | 6.79 | 1.30 | 8.07
0.047 | 6.74 | 1.29 | 8.07
0.053 | 6.70 | 1.29 | 8.07
0.058 | 6.65 | 1.28 | 8.07
Record: 1 of 1
No Filter
Search


Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI
Discharge Name
Permit Number
Disc Flow (mgd)
0.52
Bally 002
PA0022543
0.0000
Parameter
Effluent Limit 30 Day Average (mg/L)
Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5
25
NH3-N
6
12
Dissolved Oxygen
5
Record:
1 of 1
No Filter
Search

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2025

Discharge Information

Instructions | Discharge | Stream

Facility: **Bally Boro STP** NPDES Permit No.: **PA0022543** Outfall No.: **002**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **domestic wastewater**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.8	100	7						

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		480									
	Chloride (PWS)	mg/L		127									
	Bromide	mg/L		1									
	Sulfate (PWS)	mg/L		27.6									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	mg/L		0.01									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	mg/L		0.012									

The results don't change when 460 mg/l is used as maximum discharge concentration for TDS (per application and DMR data for outfall 002)

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2025

Stream / Surface Water Information

Bally Boro STP, NPDES Permit No. PA0022543, Outfall 002

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **UNT 1446 West Branch Perkiomen Cre** No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	001446	0.6	410	1.3			Yes
End of Reach 1	001446	0	385	1.4			Yes

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

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	0.6	3.3	4.3									100	7		
End of Reach 1	0	3.3	4.3												

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	0.6														
End of Reach 1	0														

Model gives same results if run it with 0.1 as LFY or 3.3 as LFY and enter Flow as 4.3 cfs.

Model gives same results using RMI of 0.6 (per eMapPA and lat/long in appl) or RMI of 0.52.

Model Results

Bally Boro STP, NPDES Permit No. PA0022543, Outfall 002

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 4.210 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total 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 Copper	0	0		0	13.439	14.0	62.6	Chem Translator of 0.96 applied
Total Lead	0	0		0	64.581	81.6	365	Chem Translator of 0.791 applied
Total Zinc	0	0		0	117.180	120	536	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 4.210 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total 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 Copper	0	0		0	8.956	9.33	41.7	Chem Translator of 0.96 applied
Total Lead	0	0		0	2.517	3.18	14.2	Chem Translator of 0.791 applied
Total Zinc	0	0		0	118.139	120	536	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 4.210 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	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 Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 2.196 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 Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	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	mg/L	0.04	AFC	Discharge Conc > 10% WQBEL (no RP)

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

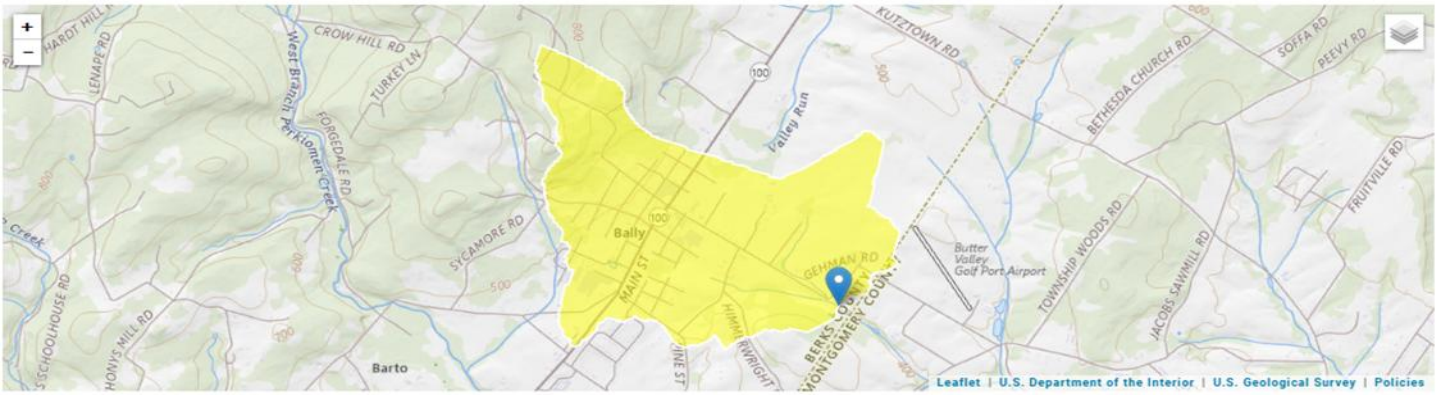
The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive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

Pollutants	Governing WQBEL	Units	Comments
Total 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 Lead	N/A	N/A	Discharge Conc < TQL
Total Zinc	0.34	mg/L	Discharge Conc ≤ 10% WQBEL

Verifying that Qs flow of 4.3 cfs for UNT 01446 is feasible……..

StreamStats Report

Region ID:	PA
Workspace ID:	PA20250708122932905000
Clicked Point (Latitude, Longitude):	40.39575, -75.57246
Time:	2025-07-08 08:29:56 -0400



General Flow Statistics Disclaimers [Statewide Mean and Base Flow]

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

Annual Flow Statistics Flow Report [Statewide Mean and Base Flow]

Statistic	Value	Unit
Mean Annual Flow	1.84	ft^3/s

Peak-Flow Statistics Parameters [Peak Flow Region 4 SIR 2019 5094]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	0	percent	0	68.5
DRNAREA	Drainage Area	1.26	square miles	1.2	512

Peak-Flow Statistics Flow Report [Peak Flow Region 4 SIR 2019 5094]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	ASEp
50-percent AEP flood	269	ft^3/s	40.4
20-percent AEP flood	475	ft^3/s	33.1
10-percent AEP flood	648	ft^3/s	30.9
4-percent AEP flood	904	ft^3/s	29.8
2-percent AEP flood	1120	ft^3/s	30.4
1-percent AEP flood	1360	ft^3/s	31.5
0.5-percent AEP flood	1610	ft^3/s	32.7
0.2-percent AEP flood	2000	ft^3/s	35.4

Peak-Flow Statistics Citations

Roland, M.A., and Stuckey, M.H.,2019, Development of regression equations for the estimation of flood flows at ungaged streams in Pennsylvania: U.S. Geological Survey Scientific Investigations Report 2019–5094, 36 p.

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.2
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Bally Borough

Permit No.: PA0022543

Test Completion Date: 9/28/2021

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	0
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	0.900
Std Dev.	0.000	0.316
# Replicates	10	10

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail: PASS

Test Completion Date: 10/25/2022

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail: PASS

Test Completion Date: 10/30/2023

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail: PASS

Test Completion Date: 11/25/2024

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail: PASS

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.2
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Bally Borough

Permit No.: PA0022543

Replicate No.	Test Completion Date: 9/28/2021 Control	TIWC
1	32	39
2	36	38
3	33	34
4	32	31
5	35	33
6	33	36
7	42	39
8	36	42
9	36	0
10	32	37
11		
12		
13		
14		
15		
Mean	34.700	32.900
Std Dev.	3.093	12.004
# Replicates	10	10

T-Test Result	1.7782
Deg. of Freedom	11
Critical T Value	0.8755
Pass or Fail	PASS

Replicate No.	Test Completion Date: 10/25/2022 Control	TIWC
1	19	25
2	23	21
3	19	20
4	19	20
5	23	21
6	22	27
7	23	24
8	27	20
9	23	24
10	33	22
11		
12		
13		
14		
15		
Mean	23.100	22.400
Std Dev.	4.280	2.459
# Replicates	10	10

T-Test Result	3.9689
Deg. of Freedom	17
Critical T Value	0.8633
Pass or Fail	PASS

Replicate No.	Test Completion Date: 10/30/2023 Control	TIWC
1	27	12
2	31	30
3	30	28
4	19	14
5	18	32
6	30	30
7	32	31
8	27	30
9	13	13
10	19	15
11		
12		
13		
14		
15		
Mean	24.600	23.500
Std Dev.	6.720	8.695
# Replicates	10	10

T-Test Result	1.5889
Deg. of Freedom	15
Critical T Value	0.8662
Pass or Fail	PASS

Replicate No.	Test Completion Date: 11/25/2024 Control	TIWC
1	28	31
2	29	31
3	28	27
4	27	34
5	30	29
6	23	29
7	25	15
8	24	29
9	26	29
10	17	15
11		
12		
13		
14		
15		
Mean	25.700	26.900
Std Dev.	3.773	6.540
# Replicates	10	10

T-Test Result	3.3839
Deg. of Freedom	14
Critical T Value	0.8681
Pass or Fail	PASS

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.2
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Bally Borough

Permit No.: PA0022543

Test Completion Date: 9/28/2021

Replicate No.	Control	TIWC
1	10	10
2	9	10
3	10	10
4	9	10
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.500	10.000
Std Dev.	0.577	0.000
# Replicates	4	4
T-Test Result	11.7367	
Deg. of Freedom	3	
Critical T Value	0.7649	
Pass or Fail	PASS	

Test Completion Date: 10/25/2022

Replicate No.	Control	TIWC
1	10	10
2	10	9
3	10	10
4	10	10
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	10.000	9.750
Std Dev.	0.000	0.500
# Replicates	4	4
T-Test Result	7.6643	
Deg. of Freedom	3	
Critical T Value	0.7649	
Pass or Fail	PASS	

Test Completion Date: 10/31/2023

Replicate No.	Control	TIWC
1	8	10
2	10	10
3	10	10
4	10	9
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	9.500	9.750
Std Dev.	1.000	0.500
# Replicates	4	4
T-Test Result	5.2627	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

Test Completion Date: 11/26/2024

Replicate No.	Control	TIWC
1	10	9
2	10	10
3	10	8
4	10	10
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	10.000	9.250
Std Dev.	0.000	0.957
# Replicates	4	4
T-Test Result	3.2125	
Deg. of Freedom	3	
Critical T Value	0.7649	
Pass or Fail	PASS	

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.2
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Bally Borough

Permit No.: PA0022543

Replicate No.	Test Completion Date: 9/28/2021 Control	TIWC
1	0.664	0.698
2	0.549	0.614
3	0.595	0.624
4	0.567	0.71
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.594	0.662
Std Dev.	0.051	0.049
# Replicates	4	4

T-Test Result	6.9375
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

Replicate No.	Test Completion Date: 10/25/2022 Control	TIWC
1	0.911	1.033
2	0.853	0.845
3	1.007	1.042
4	1.005	1.089
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.944	1.002
Std Dev.	0.075	0.108
# Replicates	4	4

T-Test Result	4.8388
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

Replicate No.	Test Completion Date: 10/31/2023 Control	TIWC
1	0.588	0.524
2	0.65	0.613
3	0.54	0.558
4	0.616	0.556
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.599	0.563
Std Dev.	0.047	0.037
# Replicates	4	4

T-Test Result	4.4821
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

Replicate No.	Test Completion Date: 11/26/2024 Control	TIWC
1	0.515	0.537
2	0.572	0.533
3	0.578	0.446
4	0.55	0.521
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.554	0.509
Std Dev.	0.029	0.043
# Replicates	4	4

T-Test Result	3.9336
Deg. of Freedom	4
Critical T Value	0.7407
Pass or Fail	PASS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Mr. Leo Mutter, Manager
Borough of Bally
425 Chestnut St.
P.O. Box 217
Bally, Pennsylvania 19503-0217

Re: Pretreatment Program
NPDES Permit Number: PA0022543
Public Notice Number PA-449-MEG

Dear Mr. Mutter:

This is to notify you of the Environmental Protection Agency's approval of your request to terminate pretreatment program implementation requirements for the Borough of Bally. The intention to approve this modification was announced to the public on September 2, 2020 and no comments were received.

Although the requirement for the Borough of Bally to implement a formal pretreatment program has been eliminated, the Borough of Bally is still responsible for compliance with its NPDES permit including prevention of any problems that may be caused by new industrial users that connect to your system. Note that pretreatment program implementation requirements in your NPDES permit remain in effect until the permit is amended or reissued by the Pennsylvania Department of Environmental Protection.

If you have any questions or need any assistance in maintaining an informal pretreatment program, please contact Natalie Sanchez Gonzalez at 215-814-2078 or by email at sanchez-gonzalez.natalie@epa.gov.

Sincerely,

Jennifer Fulton Digitally signed by JENNIFER FULTON Date: 2021.08.09 07:44:08 -04'00'

Jennifer Fulton, Acting Chief
Clean Water Branch
Water Division

cc: Nate Heffner, Pretreatment Coordinator, Borough of Bally
Gregory Unger, Systems Design Engineering, Inc.
Maria Bebenek, PADEP Southcentral Region
Sean Furjanic, PADEP Central Office