Pennsylvania Department of Environmental Protection

Southeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0013285**
Facility Type	**Industrial**	APS ID	**1121358**
Major / Minor	**Minor**	Authorization ID	**1499049**

NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

Applicant and Facility Information

Applicant Name	**Aqua PA Inc.**	Facility Name	**Pickering Creek Water Treatment Plant**
Applicant Address	762 W Lancaster Avenue	Facility Address	1050 Valley Forge Road
	Bryn Mawr, PA 19010-3402		Phoenixville, PA 19460
Applicant Contact	David J. Rustay	Facility Contact	David J. Rustay
Applicant Phone	(215) 593-5789	Facility Phone	(215) 593-5789
Client ID	309251	Site ID	250033
SIC Code	4941	Municipality	Schuylkill Township
SIC Description	Trans. & Utilities - Water Supply	County	Chester
Date Application Received	July 31, 2024	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: Permit Renewal

Summary of Review

Applicant requests renewal of an NPDES permit to discharge treated industrial wastewater from Pickering Creek Water Treatment Plant to Pickering Creek, a WWF, MF in state watershed 3-D. This is a Minor IW facility without ELG (MIIW1) located in Schuylkill Township, Chester County.

The facility consists of two separate surface water filtration plants separated by the Pickering Creek. Treatment process consists of residual lagoons which receive filter backwash, sedimentation basin cleaning wash water, belt filter press filtrate, and discharge from thickeners decant/overflow. The facility is permitted to discharge 2.1 mgd via Outfall 002 to the Pickering Creek.

No upgrades to the treatment facility are proposed at this renewal

The chemicals Sulfur Dioxide (dichlorination) and Zetag 8849FS (flocculant) are listed in the application as waste water treatment chemicals.

eDMR review shows the discharge is in compliance with the effluent limitations in the existing permit. No comments were received from Operations Section.

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

Approve	Deny	Signatures	Date
X		*Sara Abraham* Sara Reji Abraham, E.I.T. / Project Manager	November 21, 2024
X		*Pravin Patel* Pravin C. Patel, P.E. / Environmental Engineer Manager	11/25/2024

Summary of Review

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.

Act 14 Notifications:

Schuylkill Township - June 12, 2024
Chester County - June 12, 2024

Permit Conditions:

A. Acquire Necessary Property Rights
B. Proper Sludge Disposal
C. WQM Permit Conditions
D. BAT/ELG Reopener
E. Discharge Conditions to Pickering Creek

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	2.1
Latitude	40º 7' 25.01"	Longitude	-75º 29' 33.09"
Quad Name	Valley Forge	Quad Code	1842
Wastewater Description:	Filter backwash, sedimentation basin cleaning wash water, filter press filtrate, and thickener decant/overflow		

Receiving Waters	Pickering Creek (WWF, MF)	Stream Code	01508
NHD Com ID	26003282	RMI	0.19
Drainage Area	38.9 mi^2	Yield (cfs/mi^2)	0.125
Q_{7-10} Flow (cfs)	4.86	Q_{7-10} Basis	Previous fact sheet*
Elevation (ft)	104.51	Slope (ft/ft)	
Watershed No.	3-D	Chapter 93 Class.	WWF, MF
Exceptions to Use	None	Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	FLOW REGIME MODIFICATION		
Source(s) of Impairment	DAM OR IMPOUNDMENT		

Nearest Downstream Public Water Supply Intake	PA American Water Co Norristown District		
PWS Waters	Schuylkill River	Flow at Intake (cfs)	
PWS RMI	24.77	Distance from Outfall (mi)	10.56

* The nearest USGS Streamgage is 01473500 on Schuylkill River at Norristown, PA which is approximately 10.79 miles downstream of the discharge point at RMI 25.05. Recent stream flow retrievals resulted in a Q_{7-10}, Q_{1-10}, and Q_{30-10} of 220 cfs, 182 cfs, and 247 cfs, respectively, at this gage for record period of 1929-2008. These values were obtained from the latest USGS streamflow report (1). The drainage area is reported to be 1,760 mi^2 at the gage station. The drainage area at DP is found to be 38.9 mi^2 from USGS StreamStats Version 3.0, accessed on June 17, 2019. (this information is from previous fact sheet).

Q_{7-10} runoff rate (yield) = 220/1760 = 0.125 cfs/mi^2.

(1) Stuckey, M.H., Roland, M.A., 2011, Selected streamflow statistics for streamgage locations in and near Pennsylvania: U.S. Geological Survey Scientific Investigations Report 2011-1070, 10p, 23p.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	0
Latitude	40º 7' 11.97"	Longitude	-75º 29' 35.51"
Quad Name	Valley Forge	Quad Code	1842
Wastewater Description:	Surge Relief Chamber No. 1 (Emergency discharge)		

Receiving Waters	Pickering Creek (WWF, MF)	Stream Code	01508
NHD Com ID	26003288	RMI	0.4
Watershed No.	3-D	Chapter 93 Class.	WWF, MF

Discharge, Receiving Waters and Water Supply Information

Outfall No.	004	Design Flow (MGD)	0
Latitude	40º 7' 14.08"	Longitude	-75º 29' 35.26"
Quad Name	Valley Forge	Quad Code	1842
Wastewater Description:	Surge Relief Chamber No. 2 (Emergency discharge)		
Receiving Waters	Pickering Creek (WWF)	Stream Code	01508
NHD Com ID	26003282	RMI	0.4
Watershed No.	3-D	Chapter 93 Class.	WWF

Discharge, Receiving Waters and Water Supply Information

Outfall No.	005	Design Flow (MGD)	0
Latitude	40º 7' 8.81"	Longitude	-75º 29' 35.37"
Quad Name	Valley Forge	Quad Code	1842
Wastewater Description:	Washwater Tank discharge		
Receiving Waters	Pickering Creek (WWF, MF)	Stream Code	1842
NHD Com ID	26003288	RMI	0.4
Watershed No.	3-D	Chapter 93 Class.	WWF, MF

Discharge, Receiving Waters and Water Supply Information

Outfall No.	006	Design Flow (MGD)	0
Latitude	40º 7' 20.00"	Longitude	-75º 29' 32.11"
Quad Name	Valley Forge	Quad Code	1842
Wastewater Description:	High Lift Station Drain		
Receiving Waters	Pickering Creek (WWF)	Stream Code	01508
NHD Com ID	26003282	RMI	0.4
Watershed No.	3-D	Chapter 93 Class.	WWF

Other comments: These outfalls receive finished chlorinated water from various structures within the plant. Outfall 003 is the emergency 16” surge relief line from Chamber #1, Outfall 004 is the emergency 16” surge relief line from Chamber #2, Outfall 005 is the emergency 16” washwater tank discharge, and Outfall 006 is the emergency 6” drain line from the high

lift station. These are emergency discharges only and there has been no discharge from any of these outfalls during the previous five years.

Outfall 007 discharges groundwater from 30” Groundwater Ejector Line from Chamber No. 1

Outfall 008 discharges groundwater from 16” Groundwater Ejector Line from Chamber No. 2

009 discharges groundwater from 12” Groundwater Ejector Line from Chamber No. 3
are discharging groundwater

Due to high water table, groundwater may be pumped and discharged through Outfalls 007, 008 and 009. However, there has been no discharge from any of these outfalls during the previous five years.

Outfall 010 discharges Travel Screen Wastewater. Design flow is reported as 0.001 mgd in the application. No discharge occurred via this outfall during the past five years.

Wastewater Treatment Facility Summary

Treatment Facility Name: Pickering Creek Water Filtration Plant

WQM Permit No.	Issuance Date
1508201	03/12/2009

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Industrial	Primary	Gravity Thickener and belt filter press	No Disinfection	2.1

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

Compliance History

DMR Data for Outfall 002 (from August 1, 2023 to July 31, 2024)

Parameter	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23
Flow (MGD) Average Monthly	1.011086	0.812225	0.59735	0.469401	0.519503	0.600591	0.620199	0.452156	0.515742	0.576238	0.718109	0.582281
Flow (MGD) Daily Maximum	1.465441	1.579161	0.93527	0.622239	0.666069	0.898177	0.917086	0.740061	0.845966	0.902349	1.165617	0.849846
pH (S.U.) Instantaneous Minimum	7.06	6.95	7.17	7.0	7.08	7.15	7.0	6.76	7.08	7.0	6.93	7.03
pH (S.U.) Instantaneous Maximum	7.74	7.72	7.69	7.8	7.65	7.72	7.6	7.58	8.07	7.81	7.69	7.73
TRC (mg/L) Average Monthly	< 0.02	< 0.05	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
TRC (mg/L) Instantaneous Maximum	0.08	0.25	0.15	< 0.01	0.02	< 0.01	< 0.01	< 0.01	0.05	0.05	< 0.01	0.08
CBOD5 (lbs/day) Average Monthly	< 19.0	< 12.0	< 10	< 8.0	< 8.0	< 10.0	< 11.0	< 7.0	< 10.0	< 11.0	< 15	< 10.0
CBOD5 (lbs/day) Daily Maximum	< 24.0	< 15.0	< 14	< 9.0	< 9.0	< 12.0	< 14.0	< 8.0	13.0	< 12.0	< 17	< 14.0
CBOD5 (mg/L) Average Monthly	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
CBOD5 (mg/L) Daily Maximum	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	3.2	< 2.0	< 2.0	< 2.0
TSS (lbs/day) Average Monthly	< 21.0	13.0	29	10.0	< 3.0	15.0	18.0	< 9.0	16.0	12.0	110.0	26.0
TSS (lbs/day) Daily Maximum	41.0	15.0	74	15.0	5.0	29.0	28.0	17.0	26.0	23.0	219.0	44.0
TSS (mg/L) Average Monthly	< 2.0	2.0	6.0	3.0	< 1.0	3.0	3.0	2.4	3.0	2.0	14.0	6.0
TSS (mg/L) Daily Maximum	5.6	3.6	12.0	3.6	1.2	5.0	6.0	4.4	6.0	4.4	30.0	13.0
Total Dissolved Solids (mg/L) Daily Maximum		210			229			268			264	
Turbidity (NTU) Average Monthly	1.36	1.55	1.13	1.48	2.22	2.49	2.95	3.72	2.69	1.41	1.97	2.3

Turbidity (NTU) Instantaneous Maximum	3.95	4.68	2.2	5.0	7.4	5.02	7.1	13.0	12.1	2.7	4.1	5.2
Ammonia (mg/L) Daily Maximum		< 0.5			< 0.5			0.49			< 0.5	
Total Aluminum (lbs/day) Average Monthly	3.0	3.0	2	1.0	1.0	2.0	2.0	1.0	2.0	1.0	14.0	3.0
Total Aluminum (lbs/day) Daily Maximum	4.0	3.0	5	1.0	1.0	3.0	3.0	2.0	3.0	2.0	32.0	5.0
Total Aluminum (mg/L) Average Monthly	0.3	0.5	0.5	0.3	0.3	0.3	0.4	0.3	0.4	0.3	1.9	0.7
Total Aluminum (mg/L) Daily Maximum	0.38	0.77	1.5	0.36	0.36	0.52	0.73	0.41	0.59	0.3	4.31	1.6
Total Iron (lbs/day) Average Monthly	< 0.9	< 0.6	< 0.5	< 0.4	< 0.4	< 0.5	< 0.6	< 0.4	< 0.5	< 0.5	< 1.0	< 0.5
Total Iron (lbs/day) Daily Maximum	< 1.0	< 0.7	< 0.7	< 0.5	< 0.5	< 0.6	0.7	0.7	< 0.6	0.6	1.0	< 0.7
Total Iron (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Iron (mg/L) Daily Maximum	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.16	0.18	< 0.1	0.1	0.19	< 0.1
Total Manganese (lbs/day) Average Monthly	1.0	3.0	0.7	0.2	0.8	0.4	0.5	0.4	2.0	2.0	1.0	0.8
Total Manganese (lbs/day) Daily Maximum	2.0	4.0	2	0.3	2.0	0.8	0.7	0.8	3.0	3.0	3.0	1.0
Total Manganese (mg/L) Average Monthly	0.1	0.5	0.1	0.1	0.2	0.1	0.1	0.1	0.4	0.4	0.2	0.2
Total Manganese (mg/L) Daily Maximum	0.19	0.63	0.22	0.1	0.36	0.17	0.12	0.22	0.58	0.56	0.419	0.32

Compliance History

None

Development of Effluent Limitations

Outfall No. 002 **Design Flow (MGD)** 2.1
Latitude 40º 7' 26.42" **Longitude** -75º 29' 30.92"
Wastewater Description: Discharge from residual lagoons (Filter backwash, sedimentation basin cleaning wash water, filter press filtrate, and thickener decant/overflow)

Technology-Based Limitations

A majority of industrial wastewaters generated from this water treatment plant is from Filter backwash, sedimentation basin cleaning wash water, filter press filtrate, and thickener decant/overflow. DEP's technical guidance no. 362-2183-003 addresses technology-based control requirements along with the following recommended Best Practicable Control Technology Currently Available (BPT) effluent requirements for WTP sludge and filter backwash:

Parameter	Limit (mg/l)	SBC
Suspended Solids	30	Average Monthly
	60	Daily Maximum
Iron, Total	2.0	Average Monthly
	4.0	Daily Maximum
Aluminum, Total	4.0	Average Monthly
	8.0	Daily Maximum
Manganese, Total	1.0	Average Monthly
	2.0	Daily Maximum
Flow	Monitor	Average Monthly
pH	6.0	Minimum
	9.0	Maximum
Total Residual Chlorine	0.5	Average Monthly
	1.0	Daily Maximum

*All these above existing limits are recommended for the draft permit except TRC limits.

Water Quality-Based Limitations

Since the facility injects ammonia prior to filtration, the WQM 7.0 model run was conducted (report is attached). The following nodes were used in the model:

Node 1: Outfall 002 at Pickering Creek (01508)
- Elevation: 104.51 ft (USGS TNM viewer, 06/19/2019)
- Drainage Area: 38.9 mi^2 (StreamStat Version 3.0, 06/19/2019)
- River Mile Index: 0.19 mile (PA DEP eMapPA)
- Low Flow Yield: 0.125 cfs/mi^2

Node 2: At the confluence with Schuylkill River (00833)
- Elevation: 74.39 ft (USGS TNM 2.0 viewer, 06/19/2019)
- Drainage Area: 38.91 mi^2 (StreamStat Version 3.0, 06/19/2019)
- River Mile Index: 0.0 (PA DEP eMapPA)
- Low Flow Yield: 0.125 cfs/mi^2

(from previous fact sheet)

NH3-N

WQM 7.0 model recommended NH3-N limit of 5.15 mg/l as average monthly and 10.3 mg/l as instantaneous maximum limit during summer to protect water quality standards. The edmr review indicated that the discharge concentration of ammonia (<0.5 mg/l) is much lower than the recommended limits. Therefore, it is recommended that the existing monitoring requirement be carried over to the draft permit.

CBOD5

WQM 7.0 model recommended a monthly average CBOD5 limit of 25 mg/l which is the same as in the existing permit. Existing limit is carried over to the draft permit.

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
03D	1508	PICKERING CREEK	**0.000**	74.39	38.91	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.125	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

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

Parameter Data

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

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
03D	1508	PICKERING CREEK	**0.190**	104.51	38.90	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.125	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Pickering Creek	PA0013285	0.0000	0.0000	2.1000	0.000	25.00	7.00

Parameter Data

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

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
03D	1508	PICKERING CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
0.190	4.86	0.00	4.86	3.2487	0.03002	.804	28.68	35.69	0.35	0.033	22.00	7.00
Q1-10 Flow												
0.190	3.11	0.00	3.11	3.2487	0.03002	NA	NA	NA	0.31	0.038	22.55	7.00
Q30-10 Flow												
0.190	6.61	0.00	6.61	3.2487	0.03002	NA	NA	NA	0.39	0.030	21.65	7.00

WQM 7.0 Modeling Specifications

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

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
03D	1508	PICKERING CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.190	Pickering Creek	13.56	26.55	13.56	26.55	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.190	Pickering Creek	1.7	5.15	1.7	5.15	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
0.19	Pickering Creek	25	25	5.15	5.15	3	3	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
03D	1508	PICKERING CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.190	2.100	22.003	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
28.683	0.804	35.685	0.352
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
11.21	1.336	2.06	0.817
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.143	105.253	Tsivoglou	5
Reach Travel Time (days)			
0.033			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.003	11.16	2.06	6.84
0.007	11.10	2.05	7.33
0.010	11.05	2.05	7.68
0.013	11.00	2.04	7.93
0.017	10.94	2.04	7.95
0.020	10.89	2.03	7.95
0.023	10.84	2.02	7.95
0.026	10.79	2.02	7.95
0.030	10.73	2.01	7.95
0.033	10.68	2.01	7.95

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
03D	1508	PICKERING CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
0.190	Pickering Creek	PA0013285	0.000	CBOD5	25		
				NH3-N	5.15	10.3	
				Dissolved Oxygen			3

Total Residual Chlorine

Chlorine is used for source water disinfection, injected at the headworks, after flocculation/sedimentation and after filtration in both east and west side. Since chlorine is introduced prior to flocculation/sedimentation and filtration, residual chlorine is expected to be present in the effluent discharged via Outfall 002. Accordingly, TRC effluent concentrations must be monitored and regulated per 25 PA Code §92a.48(b). DEP's TRC_CALC worksheet recommended an average monthly limit of 0.23 mg/l and instantaneous maximum limit of 0.74 mg/l. Worksheet is attached for reference. These limits are more stringent than the current limits in the existing permit. Review of eDMRs shows that the facility can easily achieve these new limits and included in the draft permit.

pickering creek TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9 — Pickering Creek WTP

4.86	= Q stream (cfs)	0.5	= CV Daily
2.1	= 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
	= 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)	0	=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 0.496	1.3.2.iii	WLA cfc = 0.476
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.185	5.1d	LTA_cfc = 0.277

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.228	AFC
		INST MAX LIMIT (mg/l) = 0.744	

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)**

Toxics

Based on the monitoring data (maximum concentrations) reported on the application, DEP utilizes Toxics management Spreadsheet (TMS) to evaluate reasonable potential for toxic pollutants to cause or contribute to an excursion above the water quality standards and develop WQBELs for those such toxic pollutants (i.e., 40 CFR § 122.44(d)(1)(i)). There are no parameters of concern based on TMS run. Report is attached for reference.

Total Dissolved Solids (TDS)

Discharge concentrations of TDS are reported as very low (<500 mg/l) based on eDMRs and application. Existing monitoring requirement is continued in the draft permit.

Total Phosphorus and Total Nitrogen

Discharge concentrations for Total Phosphorus and Total Nitrogen are very low according to the application and no monitoring is needed similar to the existing permit.

PFAS

Sample results for PFOA, PFOS, PFBS and HFPO-DA are provided in the application. Detectable results are reported for PFOA (4.8 ng/l) and PFBS (6.3 ng/l) slightly above the DEP recommended Target Quantitation Limits. It seems like the presence of PFAs parameters in the effluent is due to the presence of PFAs in the source water. It is confirmed that the facility doesn't have any PFAs removal treatment process currently. Annual monitoring for PFAs parameters is included in the draft permit to collect data. This will be reevaluated at the next permit renewal.

The permittee may discontinue monitoring for these parameters if the results in 4 consecutive monitoring periods indicate non-detect results at or below Quantitation Limits of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS and 6.4 ng/L for HFPO-DA. When monitoring is discontinued, permittee must enter a No Discharge Indicator (NODI) Code of "GG" on DMRs.

Mass loading Effluent Limitations

The current reporting requirements for CBOD5, TSS, Aluminum, Iron and Manganese are recommended to continue in the draft permit.

Anti-Degradation requirements

The effluent limits for this discharge have been developed to ensure the existing in-stream uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High-Quality stream is impacted by this discharge. No Exceptional-Value stream is impacted by this discharge.

Anti-Backsliding

N/A

Sedimentation Cleaning

Historically, Aqua pumped out the settling basin into a lagoon where the wastewater was dosed with a polymer and solids allowed to settle. The decant was then discharged through the Outfall 002 over the course of approximately a week. During the last permit renewal (2020), DEP was informed that Aqua had installed residual filter presses at the plant. Now the wastewater from the basin cleaning operation is sent to the residuals handling facility and are handled through the filter press like all other wastewater from the drinking water treatment process (filter backwash water). It is evident that there is no separate waste stream being discharged from the facility which necessitates the removal of limits/monitoring requirement in association with the basin cleaning. Special Part C condition in the permit regarding the basin cleaning has been eliminated since last permit renewal. Monitoring of a new parameter, Turbidity was added to the permit for filter backwash water to check the effectiveness of the filter press at the last permit renewal. This requirement is continued to the draft permit. eDMR review shows no concern.

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: Pickering Creek WTP NPDES Permit No.: PA001328 Outfall No.: 002

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: IW effluent

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
2.1	124	7.3						

					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		264									
	Chloride (PWS)	mg/L		64.2									
	Bromide	mg/L		0.32									
	Sulfate (PWS)	mg/L		62									
	Fluoride (PWS)	mg/L	<	0.14									
Group 2	Total Aluminum	µg/L		4.31									
	Total Antimony	µg/L		0.4									
	Total Arsenic	µg/L	<	1									
	Total Barium	µg/L		54									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L	<	200									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	1									
	Hexavalent Chromium	µg/L	<	0.25									
	Total Cobalt	µg/L		0.4									
	Total Copper	µg/L		2									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L		23									
	Dissolved Iron	µg/L	<	20									
	Total Iron	µg/L		0.42									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		0.72									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		2.2									
	Total Phenols (Phenolics) (PWS)	µg/L	<	2									
	Total Selenium	µg/L	<	2									
	Total Silver	µg/L	<	0.4									
	Total Thallium	µg/L	<	0.3									
	Total Zinc	µg/L		7									
	Total Molybdenum	µg/L	<	3									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										
	Carbon Tetrachloride	µg/L	<										
	Chlorobenzene	µg/L											
	Chlorodibromomethane	µg/L	<										
	Chloroethane	µg/L	<										
	2-Chloroethyl Vinyl Ether	µg/L	<										

Group 3	Chloroform	µg/L	<										
	Dichlorobromomethane	µg/L	<										
	1,1-Dichloroethane	µg/L	<										
	1,2-Dichloroethane	µg/L	<										
	1,1-Dichloroethylene	µg/L	<										
	1,2-Dichloropropane	µg/L	<										
	1,3-Dichloropropylene	µg/L	<										
	1,4-Dioxane	µg/L	<										
	Ethylbenzene	µg/L	<										
	Methyl Bromide	µg/L	<										
	Methyl Chloride	µg/L	<										
	Methylene Chloride	µg/L	<										
	1,1,2,2-Tetrachloroethane	µg/L	<										
	Tetrachloroethylene	µg/L	<										
	Toluene	µg/L	<										
	1,2-trans-Dichloroethylene	µg/L	<										
	1,1,1-Trichloroethane	µg/L	<										
	1,1,2-Trichloroethane	µg/L	<										
	Trichloroethylene	µg/L	<										
	Vinyl Chloride	µg/L	<										
Group 4	2-Chlorophenol	µg/L	<										
	2,4-Dichlorophenol	µg/L	<										
	2,4-Dimethylphenol	µg/L	<										
	4,6-Dinitro-o-Cresol	µg/L	<										
	2,4-Dinitrophenol	µg/L	<										
	2-Nitrophenol	µg/L	<										
	4-Nitrophenol	µg/L	<										
	p-Chloro-m-Cresol	µg/L	<										
	Pentachlorophenol	µg/L	<										
	Phenol	µg/L	<										
	2,4,6-Trichlorophenol	µg/L	<										
Group 5	Acenaphthene	µg/L	<										
	Acenaphthylene	µg/L	<										
	Anthracene	µg/L	<										
	Benzidine	µg/L	<										
	Benzo(a)Anthracene	µg/L	<										
	Benzo(a)Pyrene	µg/L	<										
	3,4-Benzofluoranthene	µg/L	<										
	Benzo(ghi)Perylene	µg/L	<										
	Benzo(k)Fluoranthene	µg/L	<										
	Bis(2-Chloroethoxy)Methane	µg/L	<										
	Bis(2-Chloroethyl)Ether	µg/L	<										
	Bis(2-Chloroisopropyl)Ether	µg/L	<										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<										
	4-Bromophenyl Phenyl Ether	µg/L	<										
	Butyl Benzyl Phthalate	µg/L	<										
	2-Chloronaphthalene	µg/L	<										
	4-Chlorophenyl Phenyl Ether	µg/L	<										
	Chrysene	µg/L	<										
	Dibenzo(a,h)Anthrancene	µg/L	<										
	1,2-Dichlorobenzene	µg/L	<										
	1,3-Dichlorobenzene	µg/L	<										
	1,4-Dichlorobenzene	µg/L	<										
	3,3-Dichlorobenzidine	µg/L	<										
	Diethyl Phthalate	µg/L	<										
	Dimethyl Phthalate	µg/L	<										
	Di-n-Butyl Phthalate	µg/L	<										
	2,4-Dinitrotoluene	µg/L	<										
	2,6-Dinitrotoluene	µg/L	<										
	Di-n-Octyl Phthalate	µg/L	<										
	1,2-Diphenylhydrazine	µg/L	<										
	Fluoranthene	µg/L	<										
	Fluorene	µg/L	<										
	Hexachlorobenzene	µg/L	<										
	Hexachlorobutadiene	µg/L	<										
	Hexachlorocyclopentadiene	µg/L	<										
	Hexachloroethane	µg/L	<										
	Indeno(1,2,3-cd)Pyrene	µg/L	<										

	Isophorone	µg/L	<										
	Naphthalene	µg/L	<										
	Nitrobenzene	µg/L	<										
	n-Nitrosodimethylamine	µg/L	<										
	n-Nitrosodi-n-Propylamine	µg/L	<										
	n-Nitrosodiphenylamine	µg/L	<										
	Phenanthrene	µg/L	<										
	Pyrene	µg/L	<										
	1,2,4-Trichlorobenzene	µg/L	<										
Group 6	Aldrin	µg/L	<										
	alpha-BHC	µg/L	<										
	beta-BHC	µg/L	<										
	gamma-BHC	µg/L	<										
	delta BHC	µg/L	<										
	Chlordane	µg/L	<										
	4,4-DDT	µg/L	<										
	4,4-DDE	µg/L	<										
	4,4-DDD	µg/L	<										
	Dieldrin	µg/L	<										
	alpha-Endosulfan	µg/L	<										
	beta-Endosulfan	µg/L	<										
	Endosulfan Sulfate	µg/L	<										
	Endrin	µg/L	<										
	Endrin Aldehyde	µg/L	<										
	Heptachlor	µg/L	<										
	Heptachlor Epoxide	µg/L	<										
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<										
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

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Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Pickering Creek WTP, NPDES Permit No. PA001328, Outfall 002

Instructions | Discharge | *Stream*

Receiving Surface Water Name: _____ 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	001508	0.19	104.51	38.9			Yes
End of Reach 1	001508	0	74.39	38.91			Yes

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

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	0.19	0.125										100	7		
End of Reach 1	0	0.125													

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	0.19														
End of Reach 1	0														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Pickering Creek WTP, NPDES Permit No. PA001328, Outfall 002

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 3.246 PMF: 1 Analysis Hardness (mg/l): 109.61 Analysis pH: 7.10

Pollutants	Stream Conc	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	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	1,873	
Total Antimony	0	0		0	1,100	1,100	2,746	
Total Arsenic	0	0		0	340	340	849	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	52,432	
Total Boron	0	0		0	8,100	8,100	20,224	
Total Cadmium	0	0		0	2.202	2.34	5.85	Chem Translator of 0.94 applied
Total Chromium (III)	0	0		0	614.243	1,944	4,853	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	40.7	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	237	
Total Copper	0	0		0	14.653	15.3	38.1	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	71.358	91.8	229	Chem Translator of 0.778 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	4.11	Chem Translator of 0.85 applied
Total Nickel	0	0		0	506.042	507	1,266	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	3.767	4.43	11.1	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	162	
Total Zinc	0	0		0	126.657	130	323	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 3.246 PMF: 1 Analysis Hardness (mg/l): 109.61 Analysis pH: 7.10

Pollutants	Stream Conc	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	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	549	
Total Arsenic	0	0		0	150	150	375	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	10,237	
Total Boron	0	0		0	1,600	1,600	3,995	
Total Cadmium	0	0		0	0.262	0.29	0.72	Chem Translator of 0.905 applied
Total Chromium (III)	0	0		0	79.900	92.9	232	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	26.0	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	47.4	
Total Copper	0	0		0	9.686	10.1	25.2	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	3,745	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.781	3.58	8.93	Chem Translator of 0.778 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	2.26	Chem Translator of 0.85 applied
Total Nickel	0	0		0	56.206	56.4	141	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	12.5	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	32.5	
Total Zinc	0	0		0	127.693	130	323	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 3.246 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc	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	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	14.0	
Total Arsenic	0	0		0	10	10.0	25.0	
Total Barium	0	0		0	2,400	2,400	5,992	
Total Boron	0	0		0	3,100	3,100	7,740	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	749	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	

Total Manganese	0	0		0	1,000	1,000	2,497	
Total Mercury	0	0		0	0.050	0.05	0.12	
Total Nickel	0	0		0	610	610	1,523	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	0.6	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 2.913 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc	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	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***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

☑ ***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
Fluoride (PWS)	N/A	N/A	Discharge Conc < TQL
Total Aluminum	1,200	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	14.0	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	5,992	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	3,995	µg/L	Discharge Conc < TQL
Total Cadmium	0.72	µg/L	Discharge Conc < TQL
Total Chromium (III)	232	µg/L	Discharge Conc < TQL
Hexavalent Chromium	26.0	µg/L	Discharge Conc < TQL
Total Cobalt	47.4	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	24.4	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	749	µg/L	Discharge Conc < TQL
Total Iron	3,745	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	8.93	µg/L	Discharge Conc < TQL
Total Manganese	2,497	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.12	µg/L	Discharge Conc < TQL
Total Nickel	141	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	12.5	µg/L	Discharge Conc < TQL
Total Silver	7.09	µg/L	Discharge Conc < TQL
Total Thallium	0.6	µg/L	Discharge Conc < TQL
Total Zinc	207	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS

Development of Effluent Limitations

Outfall No.	003	**Design Flow (MGD)**	.001
Latitude	40º 7' 17.53"	**Longitude**	-75º 29' 33.49"
Wastewater Description:	Surge Relief Line – Chamber No. 1		

Development of Effluent Limitations

Outfall No.	004	**Design Flow (MGD)**	.001
Latitude	40º 7' 18.01"	**Longitude**	-75º 29' 32.97"
Wastewater Description:	Surge Relief Line Chamber No. 2		

Development of Effluent Limitations

Outfall No.	005	**Design Flow (MGD)**	.001
Latitude	40º 7' 18.41"	**Longitude**	-75º 29' 32.73"
Wastewater Description:	Washwater Tank Discharge		

Development of Effluent Limitations

Outfall No.	006	**Design Flow (MGD)**	.001
Latitude	40º 7' 19.15"	**Longitude**	-75º 29' 31.86"
Wastewater Description:	High Lift Station Drain		

Existing permit has average monthly and daily maximum flow monitoring requirements for Outfalls 003, 004, 005 and 006. It also has TRC average monthly and IMAX limit of 1.0 mg/l which are carried over to this draft permit.

Outfalls 007, 008 and 009 discharges groundwater and no numeric limits apply to these outfalls. Included narrative criteria similar to the existing permit.

Outfall 010 discharges travel screen wastewater discharge. No numeric limits apply to this outfall. Included narrative criteria similar to the existing permit.

Proposed Effluent Limitations and Monitoring Requirements

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	1/day	Calculation
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/week	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.23	XXX	0.74	1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Report	Report	XXX	25.0	40.0	50	1/week	24-Hr Composite
Total Suspended Solids	Report	Report	XXX	30.0	60.0	75	1/week	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Turbidity (NTU)	XXX	XXX	XXX	Report	XXX	Report	1/week	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Aluminum, Total	Report	Report	XXX	4.0	8.0	10	1/week	24-Hr Composite
Iron, Total	Report	Report	XXX	2.0	4.0	5	1/week	24-Hr Composite
Manganese, Total	Report	Report	XXX	1.0	2.0	2.5	1/week	24-Hr Composite
PFOA (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
PFOS (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
PFBS (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
HFPO-DA (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab

Proposed Effluent Limitations and Monitoring Requirements

Outfall 003, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Daily when Discharging	Estimate
Total Residual Chlorine (TRC)	XXX	XXX	XXX	1.0	XXX	1.0	Daily when Discharging	Grab

Proposed Effluent Limitations and Monitoring Requirements

Outfall 004, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Daily when Discharging	Estimate
Total Residual Chlorine (TRC)	XXX	XXX	XXX	1.0	XXX	1.0	Daily when Discharging	Grab

Proposed Effluent Limitations and Monitoring Requirements

Outfall 005, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Daily when Discharging	Estimate
Total Residual Chlorine (TRC)	XXX	XXX	XXX	1.0	XXX	1.0	Daily when Discharging	Grab

Proposed Effluent Limitations and Monitoring Requirements

Outfall 006, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Daily when Discharging	Estimate
Total Residual Chlorine (TRC)	XXX	XXX	XXX	1.0	XXX	1.0	Daily when Discharging	Grab