

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

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0060283
 APS ID 564115
 Authorization ID 1172208

Applicant and Facility Information

Applicant Name	<u>Penn Estates Utilities Inc.</u>	Facility Name	<u>Penn Estates</u>
Applicant Address	<u>570 Hallet Road</u> <u>East Stroudsburg, PA 18301</u>	Facility Address	<u>503 Hallet Road</u> <u>East Stroudsburg, PA 18301</u>
Applicant Contact	<u>Joesph Westfall</u>	Facility Contact	<u>Joseph Westfall</u>
Applicant Phone	<u>(570) 424-2912</u>	Facility Phone	
Client ID	<u>45060</u>	Site ID	<u>256485</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Stroud Township</u>
Connection Status		County	<u>Monroe</u>
Date Application Received	<u>March 1, 2017</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>03/06/2017</u>	If No, Reason	
Purpose of Application	<u>RENEWAL OF EXISTING NPDES PERMIT.</u>		

Summary of Review

The applicant is requesting the renewal of their NPDES permit to discharge up to 0.560 MGD of treated sewage. The receiving stream, an Unnamed Tributary of Brodhead Creek (HQ-CWF), is located in State Water Plan Watershed 1-E and is classified for High Quality Waters - Cold Water Fishes, aquatic life, water supply and recreation. The Unnamed Tributary is known locally as "Cranberry Run" and is impaired for aquatic life. Per the Department's current existing use list, the receiving stream does not have an existing use classification that is more protective than the designated use. The discharge is not expected to affect public water supplies.

The WWTP discharges to a dry swale that directs discharge to Cranberry Creek which is the point of first use. The "aquatic life" stream impairment was first determined in the late 1990s (per DEP Biologist), an updated Water Quality Assessment was completed by Sherrill Leap on 1/31/2011 reporting "ongoing impairment" to the benthic macroinvertebrate community downstream of the WWTP discharge, but not above it. The Previous Permit continued to impose Stream Surveys by the permittee as required by their 1999 WQM Part II Permit Special Conditions. This permit proposes to impose our standard Wet Test conditions with limits (1.3) in lieu of surveys.

The new Special Condition will be:

The permittee shall conduct Chronic WET tests as specified in this Permit. The permittee shall collect discharge samples and perform WET tests to generate chronic survival and reproduction data for the cladoceran, Ceriodaphnia dubia and chronic survival and growth data for the fathead minnow, Pimephales promelas.

The Previous Permits Special Re-opener Condition will still apply:

REOPENER: The regulated discharge is impacting the receiving stream's aquatic life. The Department reserves the right to impose more stringent limits or additional permit conditions in event that the stream impairment does not improve or worsens, or in event that additional monitoring/investigation identifies the exact cause of the stream impairment, or in event that the future Stream TMDL (Total Maximum Daily Load) analysis sets forth Waste Load Allocations (WLAs) for the WWTP

Approve	Deny	Signatures	Date
X		Bernard Feist, P.E. / Environmental Engineer /s/	October 21, 2019
X		Amy M. Bellanca, P.E. / Environmental Engineer Manager /s/	October 21, 2019

Summary of Review

or other requirements, or in event that WET Testing and/or other monitoring showing that additional action is required to address public nuisance or environmental harm.

The other existing limits will remain unchanged from the previous Permit. The Applicant is also subjected to DRBC Docket D-1999-020-2. The request for Total Kjeldahl Nitrogen (report mg/l) and Total Dissolved Solids (limit of 1,000 mg/l) are included.

The WMS Report query "Water Management System Inspections" was run. On 05/20/2019 an Administrative/File Review was done with Violations noted.

The WMS "Open Violations by Client Report" was run and there are Open Violations that must be resolved before a final Permit is issued.

The Administratively Extended Permit expired on August 31, 2017 and the renewal was submitted March 1, 2017.

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)	.56
Latitude	41° 1' 46.78"	Longitude	-75° 13' 8.87"
Quad Name		Quad Code	
Wastewater Description: Sewage Effluent			
Receiving Waters	Unnamed Tributary of Brodhead Creek (HQ-CWF)	Stream Code	04929
NHD Com ID	26141284	RMI	1.7
Drainage Area	1.85	Yield (cfs/mi ²)	0.114
Q ₇₋₁₀ Flow (cfs)	0.21	Q ₇₋₁₀ Basis	DFlow USGS 01440400
Elevation (ft)	735	Slope (ft/ft)	
Watershed No.	1-E (Brodhead Creek)	Chapter 93 Class.	HQ-CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired for Aquatic life per site-specific surveys for approximately 1.2 miles downstream of WWTP		
Cause(s) of Impairment	Unknown		
Source(s) of Impairment			
TMDL Status	Future	Name	
Nearest Downstream Public Water Supply Intake	Brodhead Creek Regional Authority (ID# 101890-001)		
PWS RMI	8.7	Distance from Outfall (mi)	3

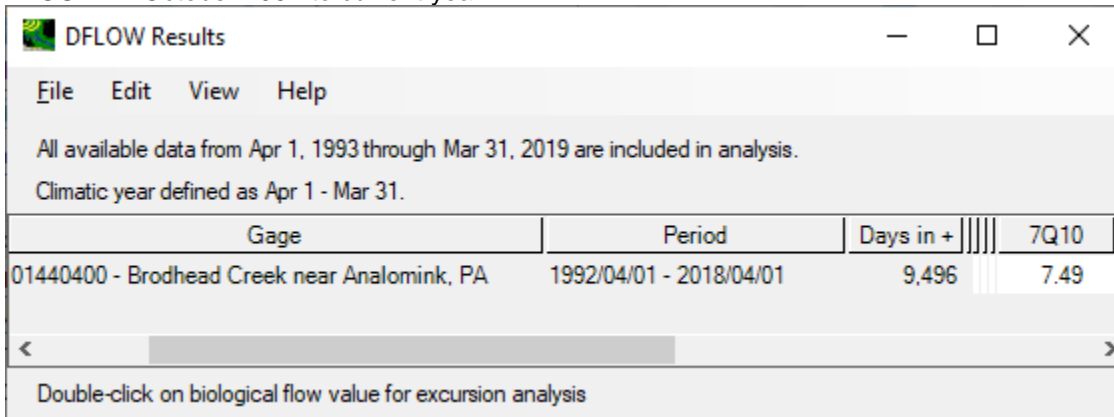
Name: Trib 04929 To Brodhead Creek WRDS: 4929 @ RMI 1.7 HUC 8 Code: 02040104

STATION.--01440400 BROADHEAD CREEK NEAR ANALOMINK, PA

LOCATION.--Lat 41° 05' 05", long 75° 12' 54", Monroe County, Hydrologic Unit 02040104, on left bank 1.5 mi upstream from Paradise Creek, 1.6 mi southeast of Henryville, and 2.3 mi north of Analomink.

DRAINAGE AREA.--65.9 square miles.

PERIOD OF RECORD.--October 1957 to current year

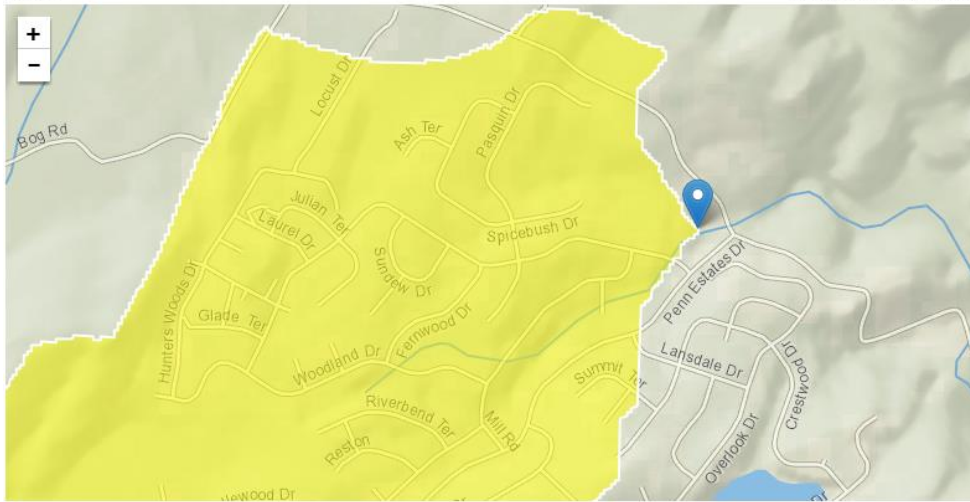


Q₇₋₁₀ LowFlowYield (cfs/mi²)= 7.49/65.9 = 0.114

Outfall 001 , RMI 1.7 at 735 ft

Clicked Point (Latitude, Longitude):
Time:

41.04324, -75.23296
2019-09-12 13:15:49



Low-Flow Statistics Parameters^[Low Flow Region 5]

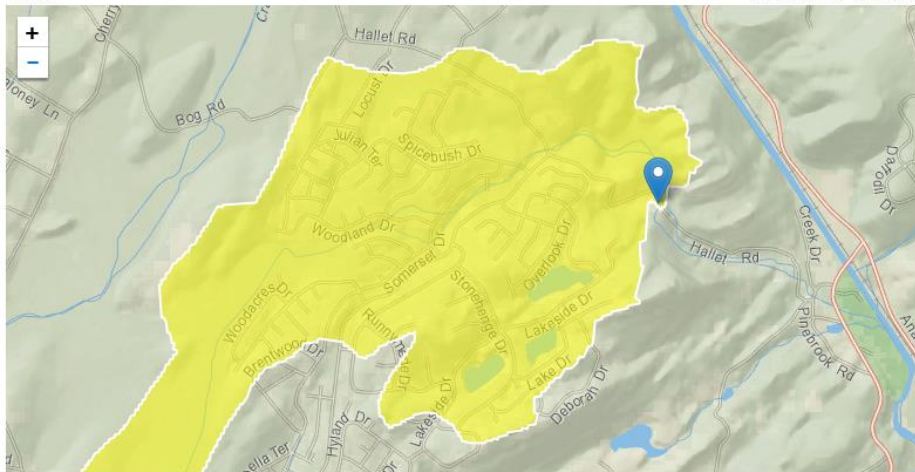
Parameter Code	Parameter Name	Value	Units
DRNAREA	Drainage Area	1.85	square miles

Q₇₋₁₀ Flow (cfs) = 0.114 * 1.85 = 0.21 cfs
Dilution = 0.21 cfs : (0.560 MGD effluent) 0.87 cfs = 1 : 0.24

RMI 0.96 at 623 ft

Clicked Point (Latitude, Longitude):
Time:

41.04031, -75.22382
2019-09-12 13:22:07



Low-Flow Statistics Parameters^[Low Flow Region 5]

Parameter Code	Parameter Name	Value	Units
DRNAREA	Drainage Area	2.69	square miles

Treatment Facility Summary				
Treatment Facility Name: Penn Estates WWTP				
WQM Permit No.	Issuance Date	Purpose		
4577407	4/14/1978	WWTP at 0.05 MGD capacity		
4598407	6/9/1999	WWTP Upgrade to 0.560 MGD		
4507405	5/19/2008	0.2 MGD Nitrification Tank		
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Extended aeration, with denitrification	Gas Chlorine & sodium bisulfite dechlorination	0.560
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.56	1,288	Not Overloaded	Activated sludge	Hauled offsite

Development of Effluent Limitations

Outfall No. 001	Design Flow (MGD) .56
Latitude 41° 2' 38.00"	Longitude -75° 14' 0.00"
Wastewater Description: Sewage Effluent	

Basis for Permit Limits:

Permit Limit	Permit Basis
CBOD ₅	Incorporation of antidegradation ABACT Technology-based effluent limits (10 mg/l monthly average), which is more conservative than water quality modeling.
TSS	Incorporation of antidegradation ABACT Technology-based effluent limits (10 mg/l monthly average).
Ammonia-N	Incorporation of antidegradation ABACT Technology-based limits (1.5 mg/l Summer; 4.5 mg/l Winter monthly average), which are more conservative than water quality modeling.
DO	No change in existing HQ water quality-based limit of 7.0 mg/l.
TRC	Incorporation of antidegradation ABACT Technology-based limit (no detectable residue, i.e. <0.02 mg/l, with adequate dechlorination facilities installed, maintained and operated per DEP TRC Policy ID# 391-2000-015), which is more conservative than updated water quality modeling.
Phosphorus	The permit incorporates effluent limitations of 2.0 mg/l for Total Phosphorus pursuant to Chapter 96.5 of the Department regulations.
Total Dissolved Solids(TDS)	DRBC docket #D-99-20-CP-4 limit of 1,000 mg/l.
Total Organic Carbon (TOC)	Continuing monitoring requirement to better characterize the effluent in terms of potential stream organic enrichment constituents.
Fecal Coliform (5/1 – 9/30)	No change in existing technology-based limits.
Fecal Coliform (10/1 – 4/30)	No change in existing technology-based limits.
pH	No change in existing technology-based limits.
Nitrate-Nitrite	No change in existing water quality (Chapter 93.7 PWS-assumption)
Total Kjeldahl Nitrogen	DRBC docket #D-99-20-CP-4 monitor and report.
Total Nitrogen	Added for Calculation with the above two
Wet Testing	Limits of 1.3 - In Lieu of Stream Surveys

Water Quality-Based Modeling

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)
1.70	Penn Estates	PA0060283	0.5600

Parameter	Effluent Limit 30 Day Average (mg/L)	Effluent Limit Maximum (mg/L)	Effluent Limit Minimum (mg/L)
CBOD5	25		
NH3-N	1.95	3.9	
Dissolved Oxygen			5

Record: 1 of 1 | No Filter | Search

TRC EVALUATION			
Input appropriate values in A3:A9 and D3:D9		Penn Estates	
0.21	= Q stream (cfs)	0.5	= CV Daily
0.56	= 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 = 0.096	1.3.2.iii	WLA cfc = 0.086
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc = 0.036	5.1d	LTA_cfc = 0.050

Source	Effluent Limit Calculations
PENTOXSD TRG	5.1f AML MULT = 1.231
PENTOXSD TRG	5.1g AVG MON LIMIT (mg/l) = 0.044 AFC
	INST MAX LIMIT (mg/l) = 0.144

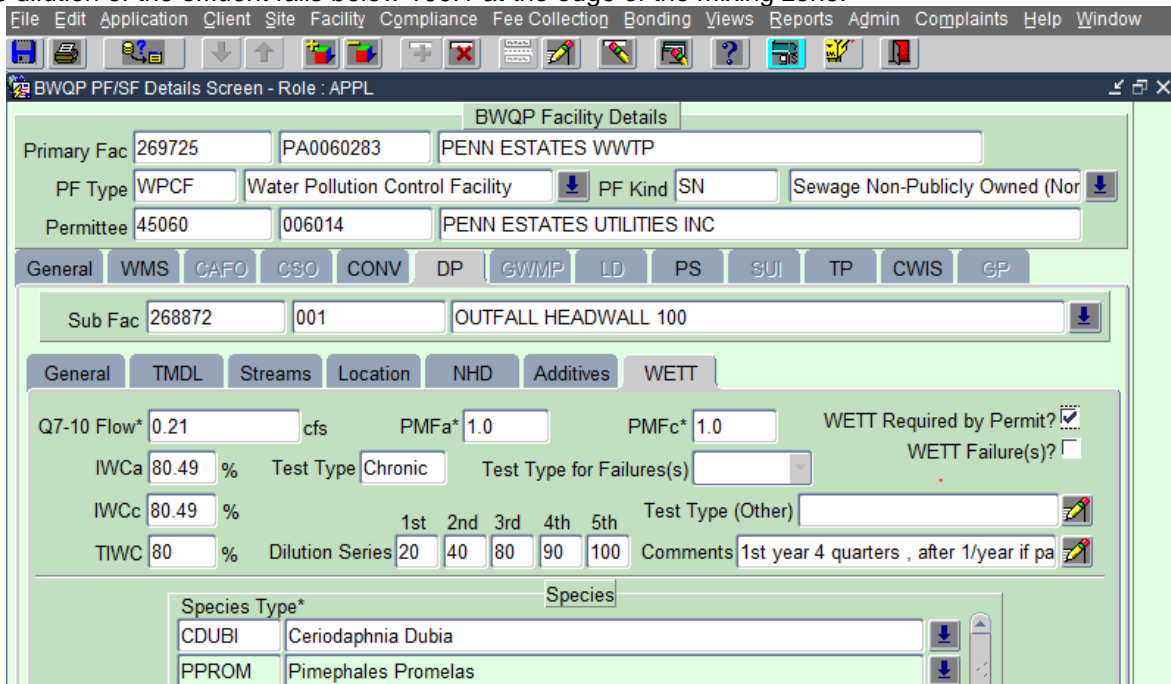


Penn Estates WQM
2019.pdf

Whole Effluent Toxicity (WET)

Evaluation of Test Type, IWC and Dilution Series for Renewed Permit					
Greater Pottsville 2018					
Acute Partial Mix Factor (PMFa):	1.0		Chronic Partial Mix Factor (PMFc):	1.0	
1	Determine IWC – Acute (IWCa):				
	$\frac{[(1.650 \text{ MGD} \times 1.547) / ((1.15 \text{ cfs} \times 1) + (1.65 \text{ MGD} \times 1.547))] \times 100 = 69\%}{(Q_d \times 1.547) / ((Q_{7-10} \times \text{PMFa}) + (Q_d \times 1.547))}$				
0.56	MGD	0.21	Q7-10 cfs	1.000	PMFa
	$[(\text{Design Flow MGD} \times 1.547) / ((Q_{7-10} \text{ cfs} \times \text{PMFa}) + (\text{Design Flow MGD} \times 1.547))] \times 100 = \text{IWCa}\%$				
				80.49	= IWCa%
Is IWCa < 1%? YES NO (YES - Acute Tests Required OR NO - Chronic Tests Required)					
If the discharge is to the tidal portion of the Delaware River, indicate how the type of test was determined:					
Type of Test for Permit Renewal:					
2a.	Determine Target IWCa (If Acute Tests Required)				
	$\text{TIWCa} = \text{IWCa} / 0.3 = \quad \% \quad \quad \quad 268.3$				
2b.	Determine Target IWCC (If Chronic Tests Required)				
	$\frac{(Q_d \times 1.547) / (Q_{7-10} \times \text{PMFc}) + (Q_d \times 1.547)}{[(\text{Design Flow MGD} \times 1.547) / ((Q_{7-10} \text{ cfs} \times \text{PMFc}) + (\text{Design Flow MGD} \times 1.547))] \times 100 = \text{TIWCC}\%$				
0.56	MGD	0.21	Q7-10 cfs	1.0	PMFc
	$[(\text{Design Flow MGD} \times 1.547) / ((Q_{7-10} \text{ cfs} \times \text{PMFc}) + (\text{Design Flow MGD} \times 1.547))] \times 100 = \text{TIWCC}\%$				
				80.49	= IWCC%

- Dilution Ratio @ edge mixing zone is less than 100:1. EPA Technical Support Document for Water Quality Based Toxics Control (March 1991; EPA/505/2-90-001) recommends that a discharger conduct chronic toxicity testing if the dilution of the effluent falls below 100:1 at the edge of the mixing zone.



Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

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	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	7.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.02	XXX	0.02	1/day	Grab
CBOD5	46.7	XXX	XXX	10.0	Report	20.0	2/week	24-Hr Composite
TSS	46.7	XXX	XXX	10.0	Report	20.0	2/week	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	1,000	Report	2,000	1/quarter	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	1/week	Grab
Nitrate-Nitrite	60.7	XXX	XXX	13.0	Report	26.0	2/week	24-Hr Composite
Ammonia Nov 1 - Apr 30	14.0	XXX	XXX	4.5	Report	9.0	2/week	24-Hr Composite
Ammonia May 1 - Oct 31	4.67	XXX	XXX	1.5	Report	3.0	2/week	24-Hr Composite
Total Phosphorus	9.3	XXX	XXX	2.0	Report	4.0	2/week	24-Hr Composite
TOC	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Kjeldahl Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Toxicity, Chronic - Ceriodaphnia Survival (TUc)	XXX	XXX	XXX	XXX	1.3	XXX	See Permit	24-Hr Composite

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Toxicity, Chronic - Ceriodaphnia Reproduction (TUC)	XXX	XXX	XXX	XXX	1.3	XXX	See Permit	24-Hr Composite
Toxicity, Chronic - Pimephales Survival (TUC)	XXX	XXX	XXX	XXX	1.3	XXX	See Permit	24-Hr Composite
Toxicity, Chronic - Pimephales Growth (TUC)	XXX	XXX	XXX	XXX	1.3	XXX	See Permit	24-Hr Composite

Compliance History

DMR Data for Outfall 001 (from August 1, 2018 to July 31, 2019)

Parameter	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18
Flow (MGD) Average Monthly	0.268	0.3300	0.4009	0.350	0.3448	0.3222	0.359	0.358	0.486	0.438	0.454	0.429
Flow (MGD) Daily Maximum	0.403	0.4328	0.5646	0.5113	0.4399	0.4387	0.523	0.596	0.611	0.622	0.648	0.525
pH (S.U.) Minimum	7.35	7.24	6.59	6.68	6.59	6.78	6.7	6.4	6.6	7.2	7.1	7.3
pH (S.U.) Maximum	8.09	7.51	7.88	7.89	7.79	7.76	7.7	7.3	7.7	7.8	8.0	7.9
DO (mg/L) Minimum	7.40	8.28	8.36	8.88	9.45	8.7	8.9	8.7	7.9	7.9	7.4	7.1
TRC (mg/L) Average Monthly	0.001	< 0.001	< 0.001	0.001	0.0001	< 0.001	< 0.001	0.001	0.002	0.002	0.003	0.00
TRC (mg/L) Instantaneous Maximum	0.008	0.037	0.006	0.001	0.0004	< 0.0008	< 0.001	0.008	0.008	0.009	0.008	0.01
CBOD5 (lbs/day) Average Monthly	4.66	5.25	8.34	6.62	5.36	7.21	5.5	17.6	13.6	9.0	9.7	7.3
CBOD5 (mg/L) Average Monthly	2.12	2.00	2.76	2.18	2.01	3.57	2.0	7.2	3.1	2.9	2.5	2.0
CBOD5 (mg/L) Daily Maximum	3.06	2.00	4.11	3.70	2.04	5.12	2.0	24.7	10.8	10.0	4.5	2.2
TSS (lbs/day) Average Monthly	6.59	7.89	9.41	8.98	8.02	7.04	8.2	7.9	14.9	9.7	11.2	10.8
TSS (mg/L) Average Monthly	< 3.00	3.00	3.36	3.03	3.0	3.0	3.0	3.0	3.7	3.0	3.0	3.0
TSS (mg/L) Daily Maximum	< 3.00	3.00	4.18	3.43	3.0	3.0	3.0	3.0	9.3	3.0	3.0	3.0
Total Dissolved Solids (mg/L) Average Monthly		261.67			288			268			335	
Total Dissolved Solids (mg/L) Daily Maximum		278			288			278			369	

Fecal Coliform (CFU/100 ml) Geometric Mean	30.8	16.71	1.95	1	1.0	1.73	1	1	1	3	1	1
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	410	130	14	< 1	1.0	3.0	1	5	2	6	2	3
Nitrate-Nitrite (lbs/day) Average Monthly	11.35	18.81	11.30	28.10	29.41	25.37	31.6	39.8	35.6	22.4	17.4	5.3
Nitrate-Nitrite (mg/L) Average Monthly	5.16	7.14	3.38	9.8	11.1	11.08	12.4	15.2	8.8	7.2	4.5	1.5
Nitrate-Nitrite (mg/L) Daily Maximum	6.23	10.9	6.9	11.9	13.1	15.1	22.2	18.3	11.3	10.6	10.2	4.0
Ammonia (lbs/day) Average Monthly	0.43	0.32	2.36	1.13	1.12	2.35	3.06	5.3	7.6	1.12	0.97	0.94
Ammonia (mg/L) Average Monthly	0.19	0.12	0.81	0.37	0.46	0.70	0.9	1.8	1.7	0.4	0.3	0.3
Ammonia (mg/L) Daily Maximum	0.58	0.14	4.0	0.66	1.8	1.7	5.1	5.6	7.9	1.4	1.1	0.4
Total Phosphorus (lbs/day) Average Monthly	3.0	3.88	0.74	0.49	1.49	0.86	0.7	0.6	0.7	1.9	6.2	4.2
Total Phosphorus (mg/L) Average Monthly	1.37	1.47	0.29	0.17	0.56	0.36	0.2	0.2	0.2	0.5	1.7	1.2
Total Phosphorus (mg/L) Daily Maximum	2.3	2.2	0.91	0.37	< 2.5	1.2	0.6	0.6	0.4	0.8	2.2	2.0
TOC (mg/L) Average Monthly	5.4	4.8	5.1	3.6	4.2	5.2	4.1	3.2	3.7	4.3	5.0	5.0