Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0028941**
Facility Type	**Municipal**	APS ID	**1087669**
Major / Minor	**Minor**	Authorization ID	**1438270**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Evans City Water & Sewer Authority**	Facility Name	**Evans City Borough STP**
Applicant Address	216 Wahl Avenue	Facility Address	220 Wahl Avenue
	Evans City, PA 16033-1053		Evans City, PA 16033-1053
Applicant Contact	Martin Fabian	Facility Contact	
Applicant Phone	(724) 432-3428	Facility Phone	(724) 538-8320
Client ID	275331	Site ID	628273
Ch 94 Load Status	Not Overloaded	Municipality	Evans City Borough
Connection Status	No Limitations	County	Butler
Date Application Received	April 20, 2023	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: NPDES Renewal of a municipal sewage treatment plant (STP).

Summary of Review

This is a renewal of an existing treated sewage discharge from a municipal sewage treatment plant (STP).

Act 14 – Proof of Notification was submitted and received.

Treatment consists of (WQM Permit No. 1072405 T-1): Comminutor with a bypass bar screen, (2) Circular Contact Stabilization Tanks (aeration, reaeration and aerobic digestion compartments and an 'inner ring' clarifier), Chemical feed system (for phosphorus control), Chlorination/Dechlorination & (4) Sludge Drying Beds.

The EPA Waiver is in effect.

There are 2 open violations in WMS for the subject Client ID (275331) as of 6/25/2025, but both are under Safe Drinking Water.

A compliance schedule for meeting the proposed Total Copper effluent limits has been included in the draft permit.

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.

Approve	Deny	Signatures	Date
X		Jordan A. Frey, E.I.T. Jordan A. Frey, E.I.T. / Project Manager	July 2, 2025
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	July 3, 2025

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.85
Latitude	40º 46' 22.41"	Longitude	-80º 4' 12.20"
Quad Name	Evans City	Quad Code	40080G1
Wastewater Description:	Sewage Effluent		

Receiving Waters	Breakneck Creek (WWF)	Stream Code	35016
NHD Com ID	126218634	RMI	
Drainage Area	34.4	Yield (cfs/mi^2)	0.018
Q_{7-10} Flow (cfs)	0.62	Q_{7-10} Basis	Streamstats
Elevation (ft)	939	Slope (ft/ft)	---
Watershed No.	20-C	Chapter 93 Class.	WWF
Existing Use	---	Existing Use Qualifier	---
Exceptions to Use	---	Exceptions to Criteria	---
Assessment Status	Impaired		
Cause(s) of Impairment	CAUSE UNKNOWN, SILTATION		
Source(s) of Impairment	DAM OR IMPOUNDMENT, SOURCE UNKNOWN		
TMDL Status		Name	

Background/Ambient Data		Data Source
pH (SU)	7.3	9/89 TMDL/WLA Report for Breakneck Creek
Temperature (°F)	25	Default
Hardness (mg/L)	100	Default
Other: NH_3-N (mg/L)	0.1	Default

Nearest Downstream Public Water Supply Intake		Beaver Falls MA - Eastvale	
PWS Waters	Beaver River	Flow at Intake (cfs)	520
PWS RMI	---	Distance from Outfall (mi)	>25

Changes Since Last Permit Issuance: None

Other Comments: None

Treatment Facility Summary

Treatment Facility Name: Evans City Water & Sewer Authority

WQM Permit No.	Issuance Date
1072405 T-1	2/21/2013

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Sequencing Batch Reactor W/Sol Removal	Ultraviolet	0.85

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.85	1872	Not Overloaded	Aerobic Digestion	Landfill

Changes Since Last Permit Issuance: None.

Other Comments: Automated Bar Screen and Grit Removal, (2) Sequential Batch Reactors and UV disinfection. Sludge handling via an aerated sludge holding tank.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .85
Latitude 40º 46' 23.00" **Longitude** -80º 4' 11.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
E. Coli	Report	IMAX		92a.61

Comments: E. Coli monitoring is based on the Department's SOP for new and reissued permits

Water Quality-Based Limitations

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
$CBOD_5$	5.24	Average Monthly	WQM 7.0 - DO/NH_3-N toxicity model
NH_3-N (5/1-10/31)	1.6	Average Monthly	WQM 7.0 - DO/NH_3-N toxicity model
NH_3-N (11/1-4/30)	4.8	Average Monthly	WQM 7.0 - DO/NH_3-N toxicity model
Phosphorus	2	Average Monthly	Stream Enrichment Risk Analysis (SERA) study on Conn. Ck.
Total Copper	0.019	Average Monthly	Toxics Management Spreadsheet
Total Zinc	Report	Average Monthly	Toxics Management Spreadsheet

Comments: Ammonia-Nitrogen limits calculated by WQM were more stringent than existing limits, yielding the above limits in the table and shall be applied to this permit. Based on DMR data, the facility can currently meet these limits.

Previous permit renewals included seasonal limitations for $CBOD_5$. The Department no longer imposes seasonal limitations and water quality-based effluent limitations for $CBOD_5$ are imposed year-round. The WQM 7.0 model was evaluated due to the updated Ammonia-Nitrogen criteria resulting in an average monthly effluent limitation of 5.24 mg/l for $CBOD_5$. This effluent limitation will be imposed year-round. Based on DMR data, the facility can currently meet this limit.

The Toxics Management Spreadsheet determined a reasonable potential for Total Copper and Total Zinc based on the application sampling. The reported Total Copper concentration is greater than 50% of the calculated WQBEL so an effluent limitation with a 3-year compliance schedule will be included in the permit. The reported Total Zinc concentration in greater than 10% of the calculated WQBEL so monitoring only will be included in the permit.

Best Professional Judgment (BPJ) Limitations

Parameter	Limit (mg/l)	SBC	Basis
Dissolved Oxygen	4	Inst. Min.	Dept. SOP
Total Nitrogen	Monitor & Report	Average Monthly	Dept. SOP
BOD5 influent	Monitor & Report (conc. & mass)	Average Monthly	Dept. SOP
TSS influent	Monitor & Report (conc. & mass)	Average Monthly	Dept. SOP
UV intensity ($\mu W/cm^2$)	Monitor & Report	Average Monthly	Dept. SOP

Anti-Backsliding

N/A

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" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: July 1, 2028 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		
Total Copper	0.13	0.20 Daily Max	XXX	0.019	0.028 Daily Max	0.047	1/week	24-Hr Composite

Compliance Sampling Location: Outfall 001, after disinfection.

Other Comments: None.

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" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through June 30, 2028.

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		
Total Copper	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	1/week	24-Hr Composite

Compliance Sampling Location: Outfall 001, after disinfection.

Other Comments: None.

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" (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) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	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	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
CBOD5	38	57	XXX	5.3	8.0	10.6	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS	213	319	XXX	30	45	60	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	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
UV Intensity (µw/cm²)	XXX	XXX	XXX	Report	XXX	XXX	1/day	Measured
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Ammonia Nov 1 - Apr 30	34	XXX	XXX	4.8	XXX	9.6	1/week	24-Hr Composite

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ammonia May 1 - Oct 31	11.3	XXX	XXX	1.6	XXX	3.2	1/week	24-Hr Composite
Total Phosphorus	14.2	XXX	XXX	2	XXX	4	1/week	24-Hr Composite
Total Zinc	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite

Compliance Sampling Location: Outfall 001, after disinfection.

Other Comments: None.

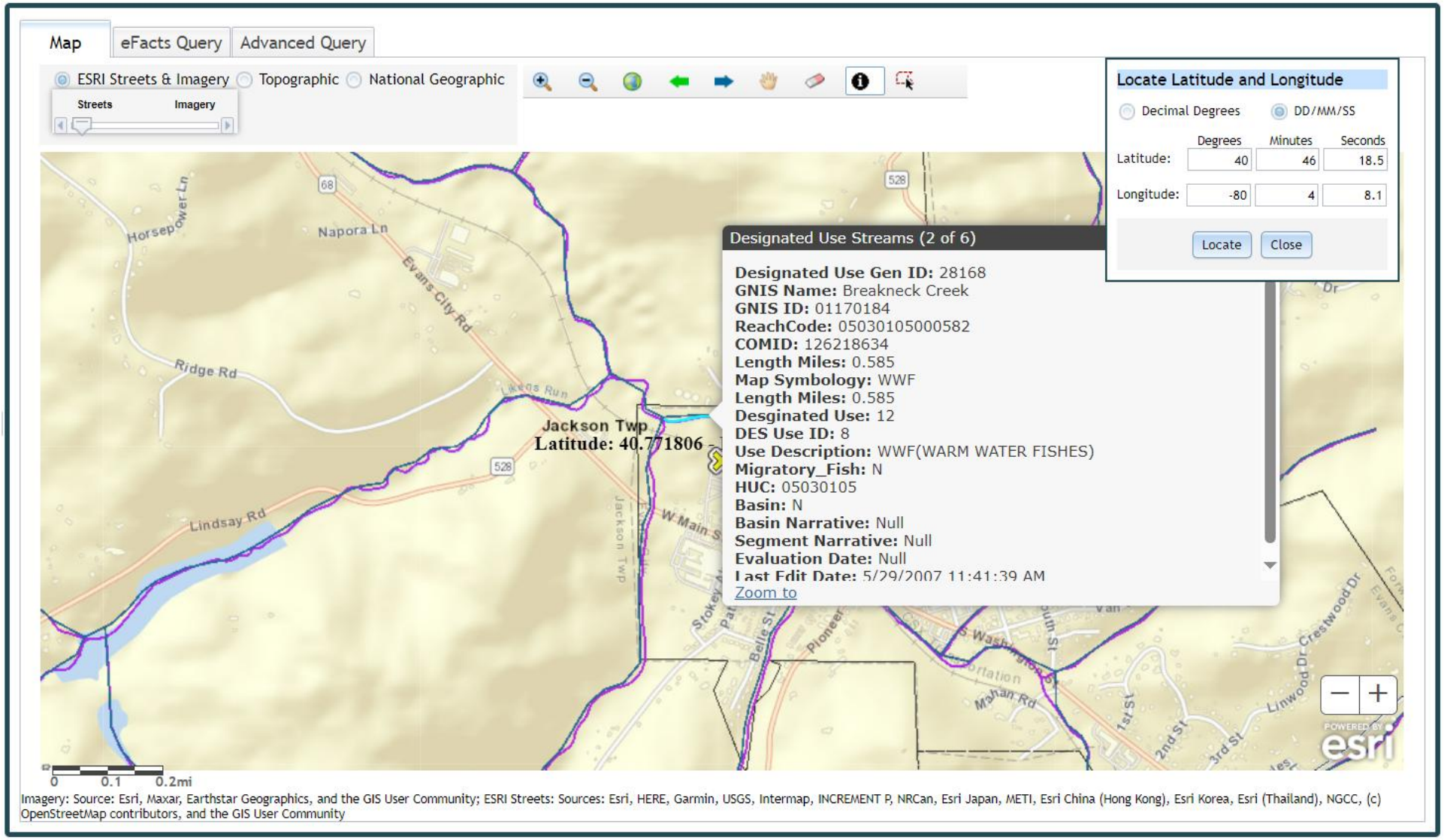
Compliance History

DMR Data for Outfall 001 (from April 1, 2023 to March 31, 2024)

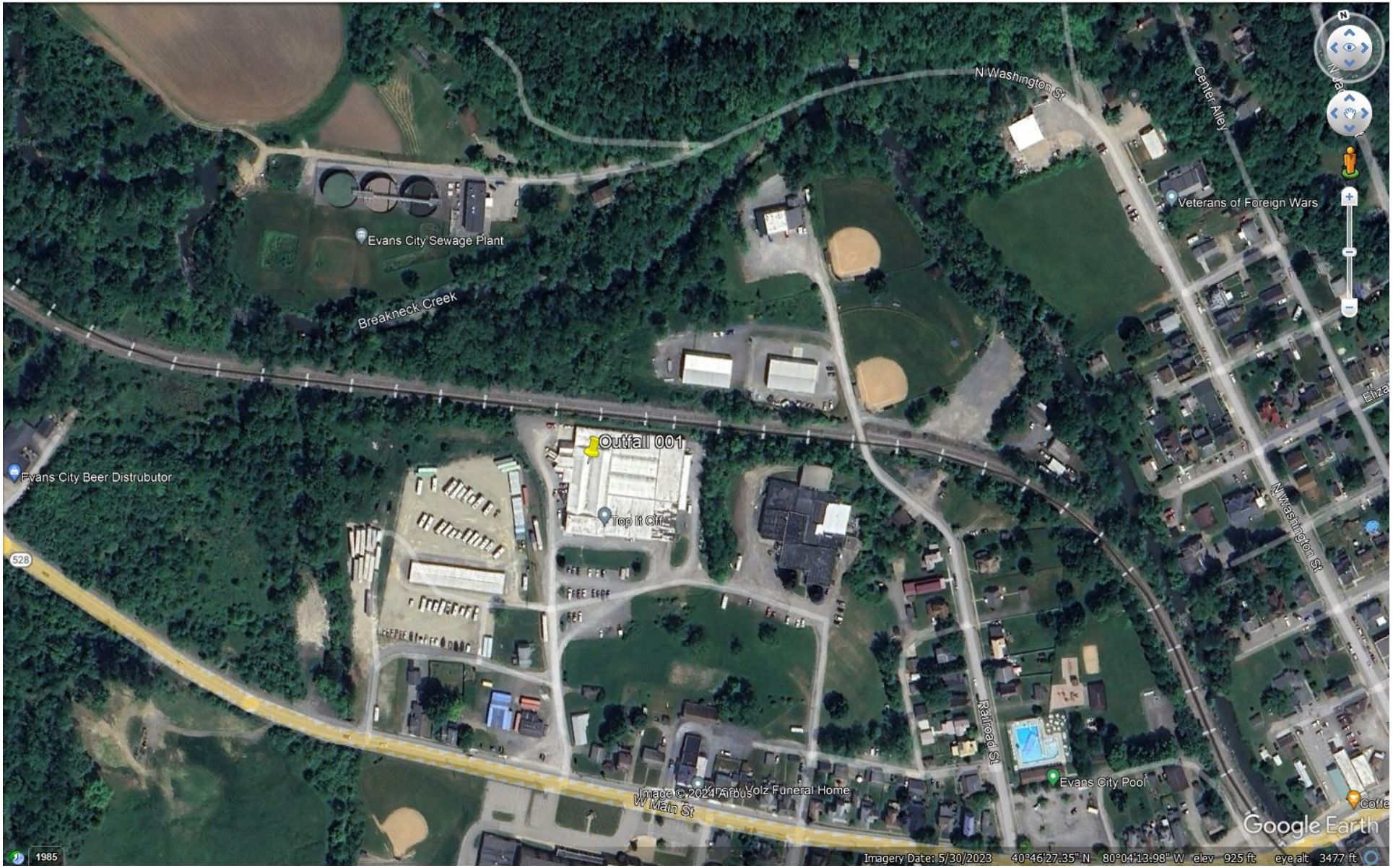
Parameter	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23
Flow (MGD) Average Monthly	0.513	0.402	0.833	0.363	0.275	0.404	0.404	0.270	0.495	0.365	0.476	0.574
Flow (MGD) Weekly Average	0.566	0.546	1.209	0.689	0.380	0.450	0.467	0.357	0.525	0.460	0.782	0.618
pH (S.U.) Instantaneous Minimum	6.70	6.65	6.72	6.9	6.87	6.92	6.85	6.86	6.8	6.98	7.0	6.9
pH (S.U.) Instantaneous Maximum	7.02	6.82	6.94	7.0	7.56	7.13	7.47	7.39	7.1	7.33	7.16	7.2
DO (mg/L) Instantaneous Minimum	7.74	7.59	6.99	6.85	5.86	5.27	7.07	6.28	6.99	7.01	7.8	8.91
CBOD5 (lbs/day) Average Monthly	12.84	10.1	21.54	11.7	7.6	12.67	10.88	6.8	12.4	9.7	11.9	14.4
CBOD5 (lbs/day) Weekly Average	14.16	13.7	30.25	29.3	10.5	11.26	15.19	8.9	13.1	14.2	19.6	15.5
CBOD5 (mg/L) Average Monthly	3	3	3.1	3.85	3.3	3.76	3.23	3	3	3.2	3	3
CBOD5 (mg/L) Weekly Average	3	3	3	5.1	3.3	3	3.9	3	3	3.7	3	3
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	771.19	704	856.59	625.2	540.3	637.69	579.53	205.4	342.03	596.6	312.35	685.0
BOD5 (mg/L) Raw Sewage Influent Average Monthly	180.25	210.0	123.3	206.5	235.6	189.26	172	91.2	82.85	196.3	78.68	143.1
TSS (lbs/day) Average Monthly	12.84	10.1	26.4	27.2	9.2	23.58	245.96	6.8	12.4	25.3	11.9	14.4
TSS (lbs/day) Raw Sewage Influent Average Monthly	564.75	476.1	534.94	480.8	429.6	526.96	538.26	292.7	398.38	332.7	425.57	461.0
TSS (lbs/day) Weekly Average	14.16	13.7	30.25	91.9	9.5	15.01	284.32	8.9	13.1	84.4	19.6	15.5

TSS (mg/L) Average Monthly	3	3	3.8	9	4	7	73	3	3	8.3	3	3
TSS (mg/L) Raw Sewage Influent Average Monthly	132	142	77	158.8	187.3	156.4	159.75	130.0	96.5	109.3	107.2	96.3
TSS (mg/L) Weekly Average	3	3	3	16	4	4	73	3	3	22.0	3	3
Fecal Coliform (No./100 ml) Geometric Mean	2.78	1	1.32	2.34	1.2	1.89	32.96	26.7	13.3	183.4	31.2	11.49
Fecal Coliform (No./100 ml) Instantaneous Maximum	12	1	4	15	2	4	276	462	205	550.0	366	91
UV Intensity (µw/cm²) Average Monthly	74	78	78	82	77	75	74	74	78	78	74	76
Total Nitrogen (mg/L) Average Monthly	1.46	1.6	1.83	3.52	1.64	1.71	3.65	2.03	1.2	2.4	1.8	1.34
Ammonia (lbs/day) Average Monthly	0.47	0.6	0.97	2.27	0.37	0.47	0.81	0.25	0.54	0.3	0.48	0.53
Ammonia (mg/L) Average Monthly	0.11	0.18	0.14	0.75	0.16	0.14	0.24	0.11	0.13	0.1	0.12	0.11
Total Phosphorus (lbs/day) Average Monthly	6.16	2.31	4.65	3.45	2.9	4.99	5.12	3.2	4.08	5.5	4.49	8.0
Total Phosphorus (mg/L) Average Monthly	1.44	0.69	0.67	1.14	1.27	1.48	1.52	1.40	0.99	1.8	1.13	1.68

Attachment 1
eMap – Location Map



Attachment 2
Google Earth Imagery



Attachment 3
Toxics Management Spreadsheet

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Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: Evans City Borough STP NPDES Permit No.: PA00288941 Outfall No.: 001

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

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.85	100	7.1						

	Discharge Pollutant	Units		Max Discharge Conc	*0 if left blank* Trib Conc	Stream Conc	*0.5 if left blank* Daily CV	Hourly CV	*0 if left blank* Stream CV	Fate Coeff	FOS	*1 if left blank* Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		662									
	Chloride (PWS)	mg/L		295									
	Bromide	mg/L		0.1									
	Sulfate (PWS)	mg/L		79.8									
	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		0.018									
	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		0.0396									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

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Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Evans City Borough STP, NPDES Permit No. PA00288941, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: **Breakneck 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	035016	2.55	926	34.02			Yes
End of Reach 1	035016	0.01	903	42.6			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	2.55	0.043										100	7		
End of Reach 1	0.01	0.043													

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	2.55														
End of Reach 1	0.01														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Evans City Borough STP, NPDES Permit No. PA00288941, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 14.102 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.04

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	29.6	Chem Translator of 0.96 applied
Total Lead	0	0		0	64.581	81.6	172	Chem Translator of 0.791 applied
Total Zinc	0	0		0	117.180	120	253	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 14.102 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.04

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	19.7	Chem Translator of 0.96 applied
Total Lead	0	0		0	2.517	3.18	6.72	Chem Translator of 0.791 applied
Total Zinc	0	0		0	118.139	120	253	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 14.102 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): 15.522 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	0.13	0.21	0.019	0.03	0.047	mg/L	0.019	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	Report	Report	Report	Report	Report	mg/L	0.16	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

Attachment 4
WQM 7.0 Model

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
20C	35016	BREAKNECK 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
2.550	Evans City STP	8.57	11.1	8.57	11.1	1	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
2.550	Evans City STP	1.58	2.51	1.58	2.51	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)		
2.55	Evans City STP	5.24	5.24	1.57	1.57	4	4	0	0

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WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20C	35016	BREAKNECK CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
2.550	0.850	21.589	7.075
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
24.811	0.608	40.810	0.128
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
4.21	0.258	1.11	1.582
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.125	2.162	Tsivoglou	5
Reach Travel Time (days)			
1.215			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.121	4.07	0.91	5.04
0.243	3.94	0.75	5.11
0.364	3.81	0.62	5.29
0.486	3.68	0.51	5.52
0.607	3.56	0.42	5.78
0.729	3.44	0.35	6.05
0.850	3.33	0.29	6.31
0.972	3.22	0.24	6.56
1.093	3.11	0.20	6.79
1.215	3.01	0.16	7.01

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)
2.550	Evans City STP	PA0028941	0.850	CBOD5	5.24		
				NH3-N	1.57	3.14	
				Dissolved Oxygen			4

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
20C	35016	BREAKNECK CREEK	**2.550**	926.00	34.02	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	0.018	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.30	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
Evans City STP	PA0028941	0.8500	0.8500	0.8500	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/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	7.54	0.00	0.00
NH3-N	25.00	0.10	0.00	1.40

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
20C	35016	BREAKNECK CREEK	0.010	903.00	42.60	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	0.018	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.30	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	0.00	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	1.40

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
20C	35016	BREAKNECK 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												
2.550	0.61	0.00	0.61	1.3149	0.00171	.608	24.81	40.81	0.13	1.215	21.59	7.07
Q1-10 Flow												
2.550	0.39	0.00	0.39	1.3149	0.00171	NA	NA	NA	0.12	1.300	21.15	7.05
Q30-10 Flow												
2.550	0.83	0.00	0.83	1.3149	0.00171	NA	NA	NA	0.14	1.143	21.94	7.09

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		