pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0228648**
Facility Type	**Municipal**	APS ID	**992601**
Major / Minor	**Minor**	Authorization ID	**1272240**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Jackson Township Municipal Authority Tioga County**	Facility Name	**Jackson Township Municipal Authority Millerton Sewer System STP**
Applicant Address	585 Skyline Drive	Facility Address	30 Wisteria Way
	Lawrenceville, PA 16929-8737		Millerton, PA 16936
Applicant Contact	Robert Rundell, Operator	Facility Contact	Robert Rundell, Operator
Applicant Phone	(570) 537-3300	Facility Phone	(570) 537-3300
Client ID	202790	Site ID	605302
Ch 94 Load Status	Not Overloaded	Municipality	Jackson Township
Connection Status	No Limitations	County	Tioga
Date Application Received	May 2, 2019	EPA Waived?	Yes
Date Application Accepted	May 4, 2019	If No, Reason	
Purpose of Application	Renewal of a NPDES permit		

Summary of Review

The Jackson Township Municipal Authority STP serves the area around the Village of Millerton in Jackson Township, Tioga County. A map of the discharge location is attached.

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
✓		Keith C. Allison / Project Manager	October 8, 2019
		Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.11
Latitude	41º 59' 12.43"	Longitude	-76º 55' 57.80"
Quad Name	Millerton, PA	Quad Code	0330
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Seeley Creek (Hammond Creek)	Stream Code	30951
NHD Com ID	48523484	RMI	2.05
Drainage Area	26.3 mi^2	Yield (cfs/mi^2)	0.0614
Q_{7-10} Flow (cfs)	1.6	Q_{7-10} Basis	USGS Gage 01516350, Tioga River near Mansfield (1978-2008)
Elevation (ft)	1155	Slope (ft/ft)	0.00887
Watershed No.	4-B	Chapter 93 Class.	CWF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	None	Exceptions to Criteria	None
Nearest Downstream Public Water Supply Intake	PA-NY State Line		
PWS Waters	Seeley Creek	Distance from Outfall (mi)	2.13

Changes Since Last Permit Issuance: None. The stream and drainage characteristics determined for the previous renewal remain valid and are unchanged here.

Other Comments: The receiving stream, Hammond Creek, is not specifically listed in Chapter 93.

No downstream water supply is expected to be affected by the discharge with the limitations and monitoring proposed. The Department considers the Pennsylvania-New York state line to be the nearest downstream water supply because there is no other nearer water supply intake.

Treatment Facility Summary				
Treatment Facility Name: Jackson Township Sewer System				
WQM Permit No.	**Issuance Date**			
5904402	9/21/04			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary	Extended Aeration	Chlorine With Dechlorination	0.11
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.22	186	Not Overloaded	Aerobic Digestion	Landfill

Changes Since Last Permit Issuance: None

Other Comments: The treatment, as approved by WQM permit No. 5904402 consists of a pump station, comminutor, bar screen, flow equalization, two extended aeration basins, two clarifiers, chlorination with contact tank, dechlorination with contact tank, sludge holding and reed sludge drying beds.

Compliance History	
Summary of DMRs:	A review of the DMRs for the past year found the effluent violations listed in the table below.
Summary of Inspections:	The facility has been inspected by the Department approximately annually over the past permit term. The most recent inspection on June 30, 2019 by Brandon Shihinski, WQS identified no violations.

Effluent Violations for Outfall 001, from: September 1, 2018 To: August 31, 2019

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Ammonia	05/31/19	Avg Mo	6.8	lbs/day	5.5	lbs/day
Ammonia	05/31/19	Wkly Avg	8.4	lbs/day	8.3	lbs/day
Ammonia	05/31/19	Avg Mo	16.3	mg/L	6	mg/L
Ammonia	05/31/19	Wkly Avg	16.9	mg/L	9	mg/L

Other Comments: A WMS query found no open violations in eFACTS for the Jackson Township Municipal Authority.

Existing Effluent Limitations and Monitoring Requirements – Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	4.0	XXX	XXX	XXX	1/week	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.5	XXX	1.17	1/day	Grab
CBOD5 May 1 - Oct 31	18	28	XXX	20	30	40	2/month	8-Hr Composite
CBOD5 Nov 1 - Apr 30	23	37	XXX	25	40	50	2/month	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Suspended Solids	28	41	XXX	30	45	60	2/month	8-Hr Composite
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	XXX	2/month	Grab
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	XXX	2/month	Grab
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/year	8-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	5.5	8.3	XXX	6	9	12	2/month	8-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	16.5	24.8	XXX	18	27	36	2/month	8-Hr Composite
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	1/year	8-Hr Composite

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.11
Latitude 41º 59' 13.00" **Longitude** -76º 55' 58.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

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

Comments: The above limit are applicable and already included in the existing NPDES permit.

Water Quality-Based Limitations

CBOD5, NH3-N & DO
The WQM7.0 model allows the Department to evaluate point source discharges of dissolved oxygen (DO), carbonaceous BOD ($CBOD_5$), and ammonia nitrogen (NH_3-N) into free-flowing streams and rivers. The discharge has existing WQ-Based limits for CBOD5 and NH3-N. As conditions have not changed, modeling conducted for the previous review remains valid which shows that the existing limits are adequate to protect the receiving stream. See Attachment B.

Total Residual Chlorine
TRC modeling performed for the previous review remains valid and shows that the existing BAT limit of 0.5 mg/L is adequate to protect the receiving stream. See Attachment B. The facility has an existing TRC IMAX of 1.17 mg/L that will remain in the permit pursuant to anti-backsliding.

Toxics Management
No further "Reasonable Potential Analysis" was performed at this time to determine additional parameters as candidates for limitations or monitoring for this minor sewage treatment facility with no industrial dischargers.

Chesapeake Bay/Nutrient Requirements
According to the Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, this facility is considered a Phase 5 Chesapeake Bay sewage discharger, and as such requires no nutrient loading limits. Per a review of the facility DMRs over the past permit term the Total Nitrogen has averaged 20.1 mg/L and the Total Phosphorus has averaged 4.7 mg/L. Because the nutrients levels in the discharge have adequately been characterized at this time, existing annual Total Nitrogen and Total Phosphorus monitoring will be removed from this proposed draft permit.

Best Professional Judgment (BPJ) Limitations

Comments: No additional BPJ limits are necessary for this discharge at this time beyond the technology and water quality-based limitations noted above.

Anti-Backsliding

No limitations were made less stringent consistent with the anti-degradation requirements of the Clean Water Act and 40 CFR 122.44(l).

Hauled in Waste
Per the application, the permittee has not accepted any hauled-in waste in the past three years and does not anticipate receiving any over the next permit term.

Biosolids/Sludge Disposal
Wasted sludge is disposed at the Northern Tier Solid Waste Authority Bradford County Landfill.

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Metered
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/week	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.17	1/day	Grab
CBOD5 Nov 1 - Apr 30	23	37	XXX	25	40	50	2/month	8-Hr Composite
CBOD5 May 1 - Oct 31	18	28	XXX	20	30	40	2/month	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS	28	41	XXX	30	45	60	2/month	8-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Ammonia Nov 1 - Apr 30	16.5	24.8	XXX	18	27	36	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	5.5	8.3	XXX	6	9	12	2/month	8-Hr Composite

Compliance Sampling Location: Outfall 001

Other Comments: The above monitoring and limitations are unchanged from the existing permit with the exception of the removal of annual Total Nitrogen and Total Phosphorus monitoring as mentioned above.

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

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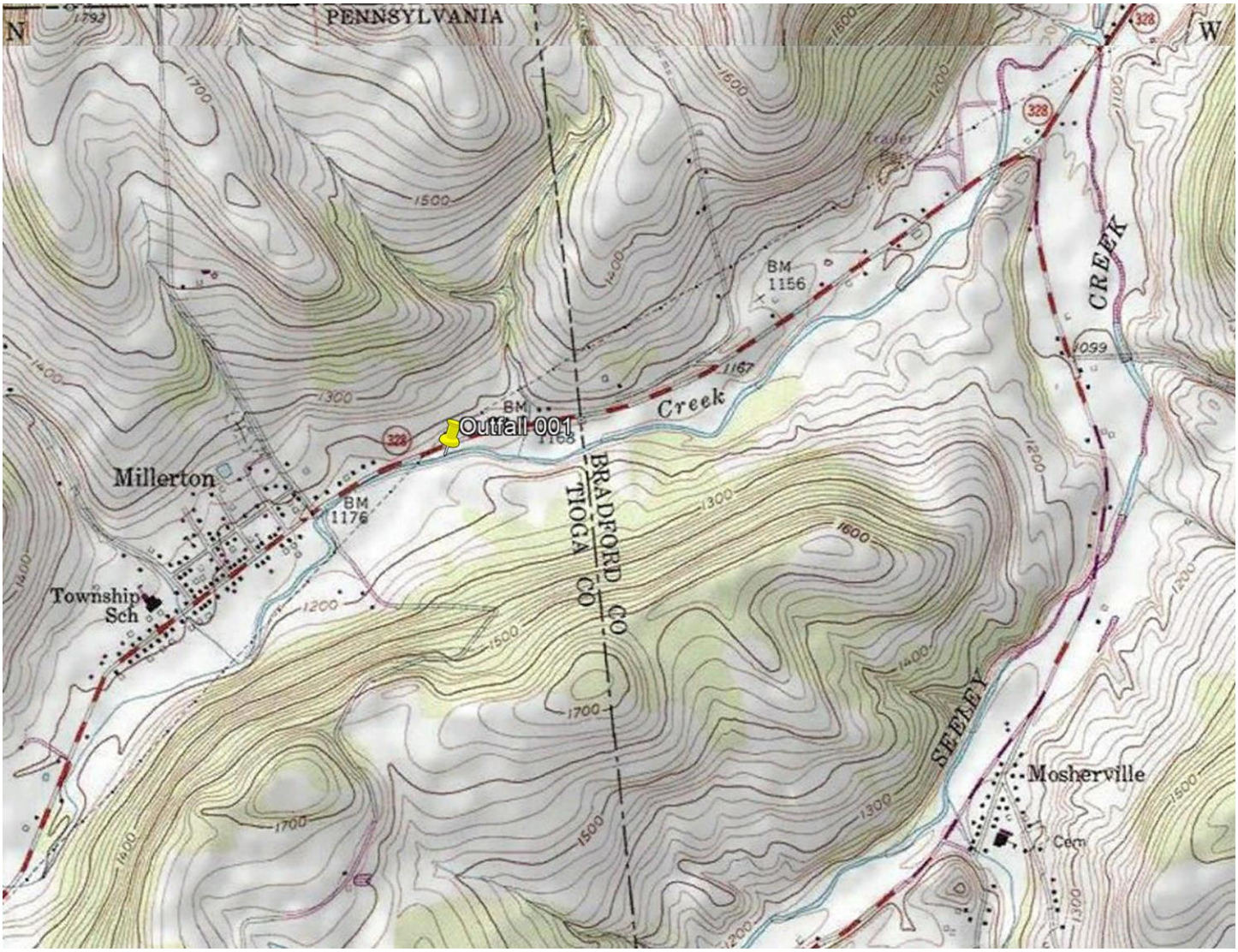

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Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
04B	30951	HAMMOND CREEK	2.050	1155.00	26.30	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	0.061	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
Jackson Twp	PA0228648	0.1100	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	20.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	6.00	0.00	0.00	0.70

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WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
04B	30951	HAMMOND 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												
2.050	1.61	0.00	1.61	.1702	0.00887	.581	20.69	35.6	0.15	0.844	20.48	7.00
Q1-10 Flow												
2.050	1.03	0.00	1.03	.1702	0.00887	NA	NA	NA	0.12	1.052	20.71	7.00
Q30-10 Flow												
2.050	2.20	0.00	2.20	.1702	0.00887	NA	NA	NA	0.17	0.721	20.36	7.00

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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	6		

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WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
04B	30951	HAMMOND 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
2.050	Jackson Twp	9.19	12	9.19	12	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
2.050	Jackson Twp	1.87	6	1.87	6	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)		
2.05	Jackson Twp	20	20	6	6	3	3	0	0

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WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
04B	30951	HAMMOND CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
2.050	0.110	20.477	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
20.688	0.581	35.595	0.148
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
3.72	0.540	0.57	0.726
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.743	12.654	Tsivoglou	6
Reach Travel Time (days)			
0.844			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.084	3.55	0.54	8.17
0.169	3.39	0.51	8.17
0.253	3.23	0.48	8.17
0.338	3.08	0.45	8.17
0.422	2.94	0.42	8.17
0.506	2.81	0.40	8.17
0.591	2.68	0.37	8.17
0.675	2.56	0.35	8.17
0.759	2.44	0.33	8.17
0.844	2.33	0.31	8.17

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WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
04B	30951	HAMMOND 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)
2.050	Jackson Twp	PA0228648	0.110	CBOD5	20		
				NH3-N	6	12	
				Dissolved Oxygen			3

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TRC EVALUATION

Client | Date ...

1.6	= Q stream (cfs)	0.5	= CV Daily
0.11	= 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)
	= % Factor of Safety (FOS)	0	=Decay Coefficient (K)

Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	1.3.2.iii	WLA afc =	3.018	1.3.2.iii	WLA cfc =	2.935
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	1.125	5.1d	LTA_cfc =	1.706
		WQBEL_afc=	1.384		WQBEL_cfc=	2.100

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)**