pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0038130**
Facility Type	**Municipal**	APS ID	**1012194**
Major / Minor	**Minor**	Authorization ID	**1306888**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Mont Alto Municipal Authority**	Facility Name	**Mont Alto STP**
Applicant Address	3 N Main Street	Facility Address	6341 Anthony Highway
	Mont Alto, PA 17237		Mont Alto, PA 17237
Applicant Contact	David Monn	Facility Contact	Larson Wenger
Applicant Phone	(717) 749-5597	Facility Phone	(717) 749-5808
Client ID	35101	Site ID	446000
Ch 94 Load Status	Not Overloaded	Municipality	Quincy Township
Connection Status	No Limitations	County	Franklin
Date Application Received	January 24, 2020	EPA Waived?	Yes
Date Application Accepted	March 4, 2020	If No, Reason	
Purpose of Application	NPDES Renewal.		

Summary of Review

Mont Alto Municipal Authority (MAMA) has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit. The permit was last reissued on July 21, 2015 and became effective on August 1, 2015. The permit was amended on July 31, 2015 and August 17, 2015 to change the minimum measurement frequency for CBOD5 and TSS and to change the UV output monitoring requirement, respectively. The permit will expire on July 31, 2020.

Based on the review, it is recommended that the permit be drafted.

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		*Jinsu Kim* Jinsu Kim / Environmental Engineering Specialist	February 5, 2021
		Daniel W. Martin, P.E. / Environmental Engineer Manager	
		Maria D. Bebenek, P.E. / Program Manager	

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.30
Latitude	39° 50’ 4.55”	Longitude	77° 34’ 10.27”
Quad Name	Waynesboro	Quad Code	2025
Wastewater Description:	Sewage Effluent		
Receiving Waters	West Branch Antietam Creek	Stream Code	59258
NHD Com ID	49486714	RMI	10.17
Drainage Area	7.87 sq. mi.	Yield (cfs/mi^2)	0.196
Q_{7-10} Flow (cfs)	1.54	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	788	Slope (ft/ft)	
Watershed No.	13-C	Chapter 93 Class.	CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	See comments below		
Cause(s) of Impairment	See comments below		
Source(s) of Impairment	See comments below		
TMDL Status	Final	Name	West Branch Antietam Creek TMDL
Nearest Downstream Public Water Supply Intake	City of Brunswick		
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	>50

Drainage Area
The discharge is to West Branch Antietam Creek at RM 10.17. A drainage area upstream of the point of discharge is estimated to be 7.87 sq.mi using USGS StreamStats available at https://streamstats.usgs.gov/ss/.

Streamflow
USGS StreamStats produced a Q7-10 flow of 1.54 cfs at the point of discharge.

West Branch Antietam Creek
Under 25 PA Code §93.9z, West Branch Antietam Creek from SR 997 Bridge to Confluence with East Branch Antietam Creek is designated as cold water fishes. No special protection water is therefore impacted by this discharge. DEP’s latest integrated water quality report shows that just downstream of the point of discharge, the stream is impaired for siltation and nutrients as a result of agricultural activities and water/flow variability as a result of small residential runoff. The permit will be developed to ensure that the discharge does not cause or contribute to these impairments. West Branch Antietam Creek is mainly impaired for sediment and nutrients particularly Total Phosphorus. As a result, DEP developed a Total Maximum Daily Load (TMDL) in December 2010 to address this impairment listings. This TMDL has a wasteload allocation (WLA) for this facility. More details on this TMDL WLA will be discussed later in this fact sheet.

Public Water Supply Intake
The fact sheet developed for the last permit renewal indicates that the nearest downstream water supply intake is for the City of Brunswick on the Potomac River. The distance downstream from the outfall to the intake is over 50 miles. Due to the distance and dilution, the discharge is not expected to impact the water supply.

Treatment Facility Summary				
Treatment Facility Name: Mont Alto STP				
WQM Permit No.	**Issuance Date**			
2810402	09/13/2010			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary	SBR	Ultraviolet (UV)	0.30
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.450	688	Not Overloaded	Aerobic Digestion	Land Application

MAMA owns and operates a municipal wastewater treatment plant serving the Mont Alto Borough (95%) and Quincy Township (5%). All sewer systems are 100% separated. The treatment plant utilizes a sequencing batch reactor activated sludge treatment process consisting of fine screen, SBRs (2), UV disinfection and an outfall structure. The facility is rated for 0.30 MGD as annual average design flow and 0.45 MGD as hydraulic design capacity.

Alum is used for phosphorous removal. Sludge is processed via an on-site aerobic digestor and then is land applied as Class B material to agricultural land under NPDES PAG083590. According to the application, the facility receives about 5 GPD of wastewater from industrial users. The facility does not have an EPA-approve pretreatment program at this time.

Compliance History	
Summary of DMRs:	A summary of past 12-month DMR data is presented on the next page.
Summary of Inspections:	11/13/2017: Patrick Bowen, former DEP Water Quality Specialist, conducted a routine inspection and noted that sample in the effluent sampler jug appeared clear. No violations were identified at the time of inspection.
Other Comments:	DEP's database revealed that there is no open violation associated with this facility or permittee. Since the last permit reissuance, the facility had one (1) permit violation associated with biosolids in March 2018. This violation has been resolved and closed. Since the last permit reissuance, the facility had three (3) effluent violations; 10/2019 (TP 4.0 v. 2.0 mg/L), 1/2020 (TP 2.7 v. 2.0 mg/L), 4/2020 (TP 2.2 v. 2.0 mg/L).

Effluent Data

DMR Data for Outfall 001 (from March 1, 2019 to February 29, 2020)

Parameter	FEB-20	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19
Flow (MGD) Average Monthly	0.1288	0.1169	0.1144	0.0971	0.0995	0.1046	0.1246	0.2169	0.2525	0.4829	0.3217	0.4249
Flow (MGD) Daily Maximum	0.3896	0.2452	0.2820	0.2434	0.2738	0.1753	0.1964	0.4379	0.3647	0.8324	0.6270	0.8973
pH (S.U.) Minimum	6.6	6.7	6.7	6.8	6.8	6.8	6.9	6.7	6.9	6.8	6.8	6.7
pH (S.U.) Maximum	7.1	7.1	7.2	7.1	7.1	7.1	7.2	7.1	7.2	7.3	7.2	7.1
DO (mg/L) Minimum	6.3	5.8	5.3	6.2	5.7	5.6	5.4	5.3	5.2	5.2	5.3	5.7
CBOD5 (lbs/day) Average Monthly	4	2	6	2	2	3	3	8	7	15	8	11
CBOD5 (lbs/day) Weekly Average	5	6	7	2	3	3	4	8	8	15	9	12
CBOD5 (mg/L) Average Monthly	4	6	8	3	3	3	3	4	5.5	3	3	4
CBOD5 (mg/L) Weekly Average	4	6	5	3	3	3	3	5	5.6	3	3	4
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	117	269	245	157	214	180	245	160	257	186	223	143
BOD5 (mg/L) Raw Sewage Influent Average Monthly	120	289	305	216	260	217	217	83	107	37	81	44
TSS (lbs/day) Average Monthly	5	2	3	0.7	5	2	3	7	12	8	4	10
TSS (lbs/day) Raw Sewage Influent Average Monthly	124	270	224	135	119	288	393	140	211	121	161	145
TSS (lbs/day) Weekly Average	7	3	4	0.8	5	4	5	10	14	10	6	14
TSS (mg/L) Average Monthly	4	3	4	1	6	3	3	3	5	2	2	3
TSS (mg/L) Raw Sewage Influent Average Monthly	116	292	278	185	146	342	342	76	86	24	60	45
TSS (mg/L) Weekly Average	5	3	5	1	6	5	5	4	6	2	2	4

Fecal Coliform (CFU/100 ml) Geometric Mean	2	4	16	3	39	2	2	9	1	1	6	1
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	3	4	136	12	192	3	3	13	2	2	31	1
Nitrate-Nitrite (mg/L) Average Monthly	6.8	4.66	11.5	1.16	1.1	0.8	1.4	1.7	5.3	2.5	3.3	4.1
Total Nitrogen (mg/L) Average Monthly	8	5.41	16.4	1.66	1.84	1.47	2	2.27	5.8	3.51	3.8	4.6
Total Nitrogen (lbs) Total Monthly	251	162	408	27	45	37	47	149	422	546	314	473
Total Nitrogen (lbs) Total Annual						3417						
Ammonia (lbs/day) Average Monthly	0.1	0.09	2.0	0.07	0.08	0.08	0.1	0.2	0.2	2.0	0.3	1.0
Ammonia (mg/L) Average Monthly	3.0	0.1	2.4	0.1	0.1	0.1	0.1	0.1	0.1	0.43	0.1	0.32
Ammonia (lbs) Total Monthly	3	3.0	65	2	2	3	4	6	7	66	8	32
Ammonia (lbs) Total Annual						228						
TKN (mg/L) Average Monthly	1.2	0.8	3.5	0.5	0.74	0.67	0.6	0.57	0.5	1.01	0.5	0.5
Total Phosphorus (lbs/day) Average Monthly	2.0	2.0	2.0	0.5	3.0	1.0	0.7	0.4	0.4	1.0	0.6	0.5
Total Phosphorus (mg/L) Average Monthly	1.9	1.88	2.7	0.72	4.0	1.5	0.62	0.3	0.15	0.2	0.21	0.16
Total Phosphorus (lbs) Total Monthly	53	55.0	74	16	97	36	21	14	11	30	17	16
Total Phosphorus (lbs) Total Annual						223						
UV Dosage ($mWsec/cm^2$) Minimum	25.2	24.6	25.2	25.1	25.2	25.2	25.2	25.2	25.2	25.3	25.2	25.2

Existing Effluent Limits and Monitoring Requirements

The table below summarizes effluent limitations and monitoring requirements implemented in the existing NPDES permit.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Total Annual	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
CBOD5	63	100 Wkly Avg	XXX	25	40	50	2/month	8-Hr Composite
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Suspended Solids	75	113 Wkly Avg	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	1,000	2/month	Grab
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	16.3	XXX	XXX	6.5	XXX	13	2/month	8-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	48.9	XXX	XXX	19.5	XXX	39	2/month	8-Hr Composite
UV Dosage (mW-s/cm^2)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Record
Total Phosphorus	5.0	XXX	XXX	2.0	XXX	4.0	2/month	8-Hr Composite

Existing Effluent Limits and Monitoring Requirements

continued

Parameter [1]	Effluent Limitations					Monitoring Requirements	
	Mass Units (lbs)		Concentrations (mg/L)			Minimum [2] Measurement Frequency	Required Sample Type
	Monthly	Annual	Minimum	Monthly Average	Maximum		
Ammonia-N	Report	Report	XXX	Report	XXX	2/month	8-Hr Composite
Kjeldahl---N	XXX	XXX	XXX	Report	XXX	2/month	8-Hr Composite
Nitrate-Nitrite as N	XXX	XXX	XXX	Report	XXX	2/month	8-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	1/month	Calculation
Total Phosphorous	Report	Report	XXX	Report	XXX	2/month	8-Hr Composite

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .3
Latitude 39º 50' 4.56" **Longitude** -77º 34' 10.28"
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)
	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
Total Suspended Solids	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: Since the facility utilizes UV disinfection, the total residual chlorine standard is not applicable.

Water Quality-Based Limitations

WQM 7.0 version 1.0b is a water quality model designed to assist DEP to determine appropriate permit requirements for CBOD5, NH3-N and DO. DEP's technical guidance no. 391-2000-007 describes the technical methods contained in the model for conducting wasteload allocation analyses and for determining recommended limits for point source discharges. The model was utilized and the output indicates that existing effluent limits for these parameters are still adequate. No change is therefore recommended.

Toxics
DEP's minor sewage facility permit application requires facilities greater than 0.1 MGD to collect effluent and analyze for Total Copper, Total Lead, and Total Zinc. Additional ten (10) samples provided as part of the application show that effluent contains does not contain these metals at a level of concern.

Best Professional Judgment (BPJ) Limitations

Dissolved Oxygen
A minimum of 5.0 mg/L for DO is an existing effluent limit and is a current state water quality criterion found in 25 Pa. Code § 93.7(a). This effluent limit will remain unchanged for the upcoming permit renewal to ensure the protection of water quality standards. This approach is also consistent with DEP's SOP no. BPNPSM-PMT-033. This requirement has also been assigned to other facilities throughout the state.

Total Phosphorus
The permit currently contains Total Phosphorus effluent limits of average monthly and instantaneous maximum (IMAX) limits of 2.0 mg/L and 4.0 mg/L, respectively. These effluent limits will remain unchanged as the West Branch Antietam Creek Watershed is impaired for not only suspended solids but also nutrients including phosphorus.

Additional Considerations

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

Influent BOD & TSS Monitoring
As a result of negotiation with EPA, the existing influent monitoring reporting requirement for TSS and BOD5 will be maintained in the draft permit. This requirement has been consistently assigned to all municipal wastewater treatment facilities.

Ultraviolet (UV) Monitoring
DEP's Standard Operating Procedure (SOP no. BPNPSM-PMT-033) recommends a routine monitoring of Ultraviolet (UV) transmittance or intensity when the facility is utilizing an UV disinfection system in lieu of chlorination. This is a reasonable approach and has been assigned to other facilities equipped with similar technology. Accordingly, existing UV monitoring requirement will remain in the permit.

Local TMDL Requirements
As mentioned previously, the discharge is to West Branch Antietam Creek. DEP developed a TMDL in December 2010 to address nutrient and suspended solids impairments identified within the West Branch Antietam Creek Watershed. For this facility, this TMDL specifies the Total Suspended Solids waste load allocation (WLA) of 27,397 lbs/year or 75 lbs/day based on 30 mg/L average monthly concentration with the design flow of 0.30 MGD. As the existing permit already contains the average monthly mass load limit of 75 lbs/day, no change is recommended. The TMDL does not specify a Total Phosphorus WLA at this time.

Chesapeake Bay TMDL & TN/TP SOP Monitoring Requirement
The discharge is located within the Chesapeake Bay watershed and is considered under the Supplement to Phase III Watershed Implementation Plan (WIP) a Phase 4 facility designed to treat between 0.2 MGD and 0.4 MGD. The existing monitoring requirement will continue to be included in the upcoming permit renewal. This approach is consistent with The WIP and SOP as it is important to collect ample and up-to-date datasets for DEP to understand impacts of all point source discharges to the Chesapeake Bay watershed.

Monitoring Frequency and Sample Type
Unless stated otherwise in this fact sheet, all existing monitoring frequencies and sample types will remain unchanged in the permit and are consistent with recommended requirements specified in DEP's technical guidance no. 362-0400-001.

Mass Loading Limitations
All effluent mass loading limits will be based on the formula: design flow x concentration limit x conversion factor of 8.34.

Class A Wild Trout Fishery
A Class A Wild Trout Fishery is not impacted by this discharge.

Anti-Degradation Requirements
Unless stated otherwise in this fact sheet, all permit requirements proposed in this fact sheet are at least as stringent as permit requirements specified in the existing permit renewal in accordance with 40 CFR §122.44(l)(1).

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	Instant. Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
CBOD5	63	100	XXX	25	40	50	2/month	8-Hr Composite
TSS	75	113	XXX	30	45	60	2/month	8-Hr Composite
Fecal Coliform Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Ammonia Nov 1 - Apr 30	48.9	XXX	XXX	19.5	XXX	39	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	16.3	XXX	XXX	6.5	XXX	13	2/month	8-Hr Composite
Total Phosphorus	5.0	XXX	XXX	2.0	XXX	4	2/month	8-Hr Composite
TKN	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Nitrate-Nitrite	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/month	Calculation

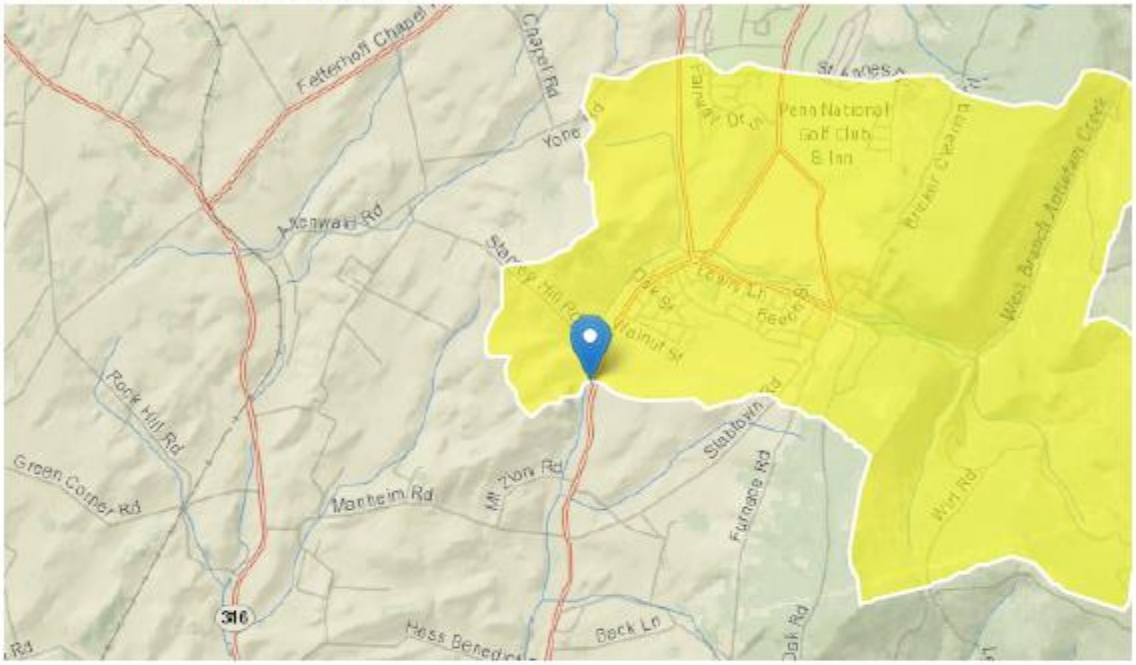
Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☐	PENTOXSD for Windows Model (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Toxics Screening Analysis Spreadsheet (see Attachment)
☐	Water Quality Toxics 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:
☐	Other:

Attachments:

1. StreamStats

StreamStats Report

Region ID: PA
Workspace ID: PA20200422003325407000
Clicked Point (Latitude, Longitude): 39.83438, -77.56953
Time: 2020-04-21 20:33:42 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	7.87	square miles
PRECIP	Mean Annual Precipitation	43	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	1.36	miles per square mile
ROCKDEP	Depth to rock	5.2	feet
CARBON	Percentage of area of carbonate rock	38	percent

Low-Flow Statistics Parameters[Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	7.87	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	43	inches	35	50.4
STRDEN	Stream Density	1.36	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	5.2	feet	3.32	5.65
CARBON	Percent Carbonate	38	percent	0	99

Low-Flow Statistics Flow Report[Low Flow Region 2]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	SEp
7 Day 2 Year Low Flow	2.49	ft^3/s	38	38
30 Day 2 Year Low Flow	2.91	ft^3/s	33	33
7 Day 10 Year Low Flow	1.54	ft^3/s	51	51
30 Day 10 Year Low Flow	1.76	ft^3/s	46	46
90 Day 10 Year Low Flow	2.16	ft^3/s	36	36

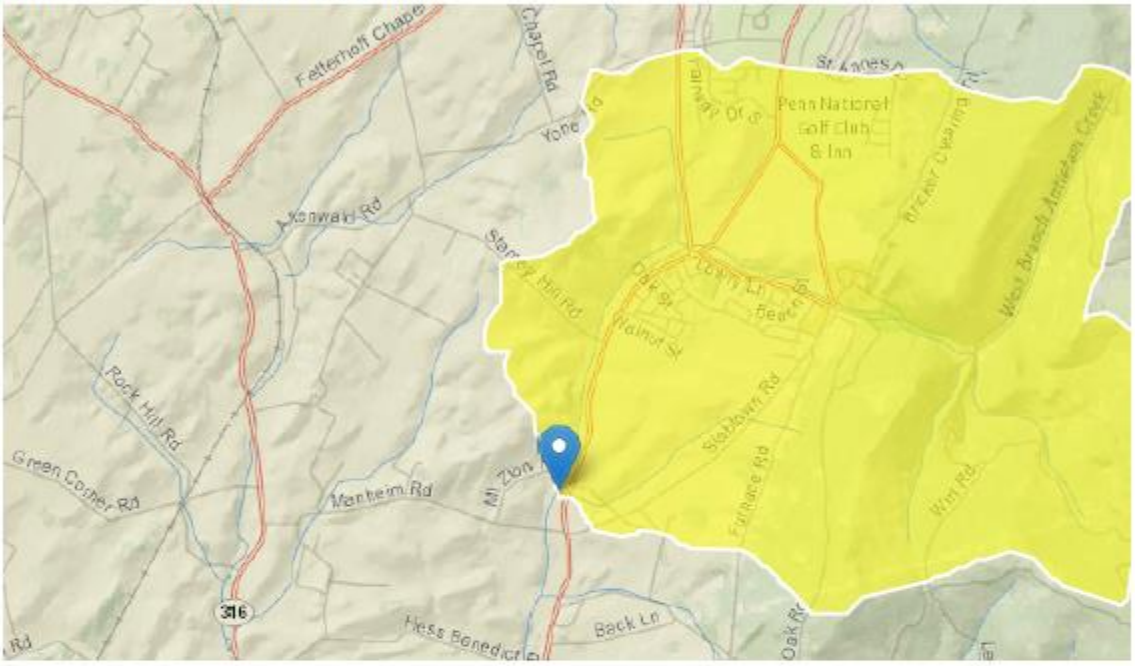
Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Node 2

StreamStats Report

Region ID: PA
Workspace ID: PA20200424133204345000
Clicked Point (Latitude, Longitude): 39.82512, -77.57294
Time: 2020-04-24 09:32:21 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	9.37	square miles
PRECIP	Mean Annual Precipitation	43	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	1.44	miles per square mile
ROCKDEP	Depth to rock	5.2	feet
CARBON	Percentage of area of carbonate rock	42	percent

Low-Flow Statistics Parameters[Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	9.37	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	43	inches	35	50.4
STRDEN	Stream Density	1.44	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	5.2	feet	3.32	5.65
CARBON	Percent Carbonate	42	percent	0	99

Low-Flow Statistics Flow Report[Low Flow Region 2]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	SEp
7 Day 2 Year Low Flow	2.98	ft^3/s	38	38
30 Day 2 Year Low Flow	3.46	ft^3/s	33	33
7 Day 10 Year Low Flow	1.87	ft^3/s	51	51
30 Day 10 Year Low Flow	2.13	ft^3/s	46	46
90 Day 10 Year Low Flow	2.56	ft^3/s	36	36

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

2. WQM Model

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
13C	59258	WEST BRANCH ANTIETAM CREEK	**10.170**	788.00	7.87	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	0.100	0.00	1.54	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
Mont Alto WWTP	PA0038130	0.3000	0.3000	0.3000	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	5.00	8.24	0.00	0.00
NH3-N	6.50	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
13C	59258	WEST BRANCH ANTIETAM CREEK	**9.500**	758.00	9.37	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	0.100	0.00	1.87	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

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 Effluent Limits

SWP Basin	Stream Code	Stream Name
13C	59258	WEST BRANCH ANTIETAM 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)
10.170	Mont Alto WWTP	PA0038130	0.300	CBOD5	25		
				NH3-N	6.5	13	
				Dissolved Oxygen			5

3. West Branch Antietam TMDL

West Branch Antietam Creek Watershed TMDL

Franklin County, Pennsylvania

Prepared by:

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

December, 2010

Table 10. TMDL Values for the Impaired West Branch Antietam Creek Subsheds					
Subshed	Pollutant	Loading Rate in Reference (lb/ac-yr)	Total Area in West Branch Antietam Creek Subshed (ac)	Target TMDL Value (lb/yr)	Target TMDL Value (lb/day)
UNT 59260	Sediment	171	1,090	186,740*	512
UNT 59260	Nutrients	0.3	1,090	360*	1
UNT 59264	Sediment	171	1,724	295,464*	809
UNT 59264	Nutrients	0.3	1,724	569*	2
UNT 59267	Sediment	338	9,692	3,278,107*	8,981
UNT 59267	Nutrients	0.2	9,692	1,855*	5
UNT 59281	Sediment	176	6,207	1,254,754*	3,438

* takes into account rounding in previous calculations

The target TMDL values were then used as the basis for load allocations and reductions in the West Branch Antietam Creek Subsheds, using the following two equations:

1. TMDL = WLA + LA + MOS
2. LA = ALA + LNR

where:

TMDL = Total Maximum Daily Load
WLA = Waste Load Allocation (Point Sources)
LA = Load Allocation (Nonpoint Sources)
MOS = Margin of Safety
ALA = Adjusted Load Allocation
LNR = Loads Not Reduced

Waste Load Allocation

The waste load allocation (WLA) portion of the TMDL equation is the total loading of a pollutant that is assigned to point sources. There is one permitted discharge in the West Branch Antietam Creek Watershed, found in the UNT 59281 Subshed, that has effluent limits. The permit limit for the Mont Alto Sewage Treatment Plant, NPDES permit number PA0038130, for total suspended solids (TSS) is derived from a concentration of 30 mg/L (monthly average) with a design flow of 0.30 million gallons per day (mgd) and equals 27,397 pounds per year, 75 lbs/day.

WLA = 0.30 mgd Flow * 30 mg/L monthly average concentration* 8.34* 365= 27,397 TSS lbs./yr
75 TSS lbs/day.

Margin of Safety

The margin of safety (MOS) is that portion of the pollutant loading that is reserved to account for any uncertainty in the data and computational methodology used for the analysis. For this analysis, the MOS is explicit. Ten percent of the targeted TMDL for sediment was reserved as the MOS. Using 10% of the TMDL load is based on professional judgment and will provide an additional level of protection to the designated uses of West Branch Antietam Creek. An example of the MOS

4. Additional testing

Mont Alto Municipal Authority
WWTF NPDES Permit Renewal
Additional Effluent Testing Results (24 hr. Composite)

Date	Total Lead (mg/l)	Total Copper (mg/l)	Total Calcium (mg/l)	Total Magnesium (mg/l)	Total Hardness (mg/l)
1/5/2021	<0.001	0.009	44	5.2	131
1/6/2021	<0.001	0.008	41	4.6	121
1/7/2021	<0.001	0.010	39	4.4	116
1/8/2021	<0.001	0.007	38	4.4	113
1/9/2021	<0.001	<0.005	35	4.4	106
1/10/2021	<0.001	0.007	38	4.4	113
1/11/2021	<0.001	0.013	33	4.0	99
1/12/2021	<0.001	0.011	32	4.0	96
1/13/2021	<0.001	0.010	28	3.6	85
1/14/2021	0.003	0.007	28	3.8	86
Average	<0.001	0.009	36	4.3	107

5.