

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

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

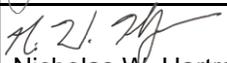
Application No. PA0110272
 APS ID 1103842
 Authorization ID 1467475

Applicant and Facility Information

Applicant Name	<u>WW Freedom Group LLC</u>	Facility Name	<u>Cogan Valley Farms</u>
Applicant Address	<u>229 Brook Lane</u> <u>Tunkhannock, PA 18657-6379</u>	Facility Address	<u>480 State Route 973 W</u> <u>Cogan Station, PA 17728-9504</u>
Applicant Contact	<u>Andrew Meloy</u>	Facility Contact	<u>Andrew Meloy</u>
Applicant Phone	<u>(814) 329-8811</u>	Facility Phone	<u>(814) 329-8811</u>
Client ID	<u>368481</u>	Site ID	<u>240693</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Hepburn Township</u>
Connection Status	<u>No limitations</u>	County	<u>Lycoming</u>
Date Application Received	<u>January 5, 2024</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u></u>	If No, Reason	<u></u>
Purpose of Application	<u>Application for the renewal of the existing individual NPDES permit.</u>		

Summary of Review

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		 Jonathan P. Peterman / Project Manager	February 27, 2026
X		 Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	March 2, 2026

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	<u>001</u>	Design Flow (MGD)	<u>.01365</u>
Latitude	<u>41° 19' 6.71"</u>	Longitude	<u>-77° 5' 1.67"</u>
Quad Name	<u>Cogan Station</u>	Quad Code	<u>0829</u>
Wastewater Description: <u>Sewage Effluent</u>			
Receiving Waters	<u>Lycoming Creek (EV (existing use))</u>	Stream Code	<u>20501</u>
NHD Com ID	<u>66913405</u>	RMI	<u>8.48</u>
Drainage Area	<u>233</u>	Yield (cfs/mi ²)	<u>0.0439</u>
Q ₇₋₁₀ Flow (cfs)	<u>10.2</u>	Q ₇₋₁₀ Basis	<u>Gage 01550000, Lycoming Creek near Trout Run (1915-2008)</u>
Elevation (ft)	<u>580.9</u>	Slope (ft/ft)	<u>0.00215</u>
Watershed No.	<u>10-A</u>	Chapter 93 Class.	<u>CWF</u>
Existing Use	<u>EV(EXCEPTIONAL VALUE)</u>	Existing Use Qualifier	<u>RBP - Antidegradation</u>
Exceptions to Use	<u>None</u>	Exceptions to Criteria	<u>None</u>
Assessment Status	<u>Attaining Use(s)</u>		
Cause(s) of Impairment	<u>N/A</u>		
Source(s) of Impairment	<u>N/A</u>		
TMDL Status	<u>Final</u>	Name	<u>Lycoming Creek</u>
Nearest Downstream Public Water Supply Intake	<u>PA American Water Company at Milton, PA</u>		
PWS Waters	<u>West Branch Susquehanna River</u>	Flow at Intake (cfs)	<u></u>
PWS RMI	<u>10.8</u>	Distance from Outfall (mi)	<u>Approx. 39</u>

Changes Since Last Permit Issuance: None.

Other Comments: A Q_{7,10} flow for that gage was obtained from *Selected Streamflow Statistics for Streamgage Locations in and near Pennsylvania* (USGS Open Files Report 2011-1070) and a comparative analysis was conducted using this gage. There have been no changes to the discharge points and watershed, so the previous analysis will be utilized and attached in appendix A.

Treatment Facility Summary				
Treatment Facility Name: Cogan Valley Farms				
WQM Permit No.	Issuance Date	Comments		
4179403 A-2	05/07/2024	New treatment plant.		
4179403 T-2	07/14/2022	Transfer from Cogan Valley Farms to WW Freedom Group LLC		
4179403 A-1	2/3/15	Installation of a dechlorination tablet feeder to an existing treatment plant		
4179403	8/15/1979	Original construction		
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Ultraviolet	0.01365
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.01365	26	Not Overloaded	Holding Tank	Other WWTP

Changes Since Last Permit Issuance: The **new** treatment system consists of a 7,428-gallon equalization tank with aeration, an 18,571-gallon extended aeration with baffle, each of these sections will have mixing and aeration using a T-bar air supply system with a throttling valve and eight coarse air diffuser heads, a 4,333-gallon clarification tank, a 2,514-gallon aerated sludge digestion/ holding tank, a 542-gallon effluent pumping tank, two (2) Sanitron S2400C UV disinfection units or equivalent.

Other Comments: The WQM Permit was originally issued August 15, 1979. The previous treatment facility consisted of grinding, screening, an aeration tank, a clarifier, chlorine disinfection with chlorine contact tank, and an aerobic digester.

Anti-Backsliding

In accordance with 40 CFR 122.44(l)(1) and (2), this permit does not contain effluent limitations, standards, or conditions that are less stringent than the previous permit.

Biosolids Use/Disposal

The facility's sludge is disposed of at Tiadaghton Valley Municipal Authority (TVMA).

Hauled in Waste

According to the application materials, the WWTF has not received hauled-in wastes during the past three years and does not anticipate receiving hauled-in wastes in the next five years.

Chesapeake Bay Requirements

Previously, the permittee was required to monitor and report TN and TP throughout the permit term at a frequency no less than annually in accordance with the Phase III WIP Chesapeake Bay Strategy for Phase V facilities (0.002 MGD to 0.2 MGD). Monitoring for these parameters was conducted over the previous permit term and the yearly monitoring requirements for nutrients will be removed accordingly. No further monitoring is required at this time. The monitoring results are attached in the Appendix D.

Existing Effluent Limitations and Monitoring Requirements

Existing Limits – Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	3/week	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	3/week	Grab
Dissolved Oxygen	XXX	XXX	Report Daily Min	XXX	XXX	XXX	3/week	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	Report	XXX	0.05	3/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	25	XXX	50	2/month	8-Hr Composite
Total Suspended Solids	XXX	XXX	XXX	30	XXX	60	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
Total Nitrogen	Report Annl Avg	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Grab
Total Phosphorus	Report Annl Avg	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Grab

*The existing effluent limits for Outfall 001 were based on a design flow of 0.01365 MGD.

Development of Effluent Limitations

Outfall No.	<u>001</u>	Design Flow (MGD)	<u>.01365</u>
Latitude	<u>41° 19' 7.41"</u>	Longitude	<u>-77° 5' 1.55"</u>
Wastewater Description:	<u>Sewage Effluent</u>		

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)

Water Quality-Based Limitations

To establish whether or not water-quality based effluent limitations (WQBELs) are required, the Department models in-stream conditions. In order to determine limitations for CBOD5, ammonia-N and dissolved oxygen, the Department utilizes the WQM 7.0 v1.0b model and in order to determine limitations for toxics, the Department utilizes Toxics Management Spreadsheet (TMS). The TMS was not utilized or this review.

WQM 7.0 for Windows, Version 1.0b, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen

There have been no changes to the discharge or watershed, so the previous modeling is still valid and will be utilized for this review. The model was previously run using the Q7-10 stream flow, background water quality, average annual design flow, and other discharge characteristics. The technology-based effluent limits for CBOD₅ (25 mg/l) and Ammonia-Nitrogen (25 mg/l) were used as inputs for the modeling. The DO minimum daily average criterion from §93.7 (6.0 mg/L for CWF) was used for the in-stream objective for the model. The summary of the output is as follows:

Parameter	Effluent Limit		
	30 Day Average	Maximum	Minimum
CBOD5	25	N/A	N/A
Ammonia-N	25	50	N/A
Dissolved Oxygen	N/A	N/A	3

The model did not recommend more restrictive water-quality based effluent limitations with regards to CBOD₅, ammonia, and dissolved oxygen. Refer to the Appendix B for the previous WQM 7.0 inputs and results. The existing effluent limits will remain.

Best Professional Judgment (BPJ) Limitations

See the D.O. section below.

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 the abovementioned 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) and/or BPJ.

Proposed Limits - 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	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	3/week	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	3/week	Grab
Dissolved Oxygen	XXX	XXX	Report Daily Min	XXX	XXX	XXX	3/week	Grab
Ultraviolet light dosage (mjoules/cm ²)	XXX	XXX	Report	XXX	XXX	XXX	3/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD ₅)	XXX	XXX	XXX	25	XXX	50	2/month	8-Hr Composite
Total Suspended Solids	XXX	XXX	XXX	30	XXX	60	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
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab

*The proposed effluent limits for Outfall 001 were based on a design flow of 0.01365 MGD.

Effluent Limit Determination for Outfall 001

General Information

All of the limits proposed above are consistent with other permits issued for wastewater treatment plants in the region. The associated mass-based limits (lbs/day) for all parameters were based on the formula: design flow (average annual) (MGD) x concentration limit (mg/L) at design flow x conversion factor (8.34). All effluent limits were then rounded down in accordance with the rounding rules established in the *Technical Guidance for the Development and Specification of Effluent Limitations (362-0400-001)*, Chapter 5 - Specifying Effluent Limitations in NPDES Permits.

Flow

Reporting of the average monthly and daily maximum flow is consistent with monitoring requirements for other treatment plants of this size.

Carbonaceous Biochemical Oxygen Demand (CBOD₅)

The results of the WQM 7.0 model show that the previously applied secondary treatment standards (25 PA Code §92a.47 (a) (1&2)) for CBOD₅ are protective of water quality.

Total Suspended Solids (TSS)

The previously applied technology based secondary treatment standards (25 PA Code §92a.47 (a) (1&2)) for TSS will remain as well.

pH

CFR Title 40 §133.102(c) and 25 PA Code §95.2(1) provide the basis of effluent limitations for pH. The existing limits will remain.

Previous TRC Determination (To be removed)

In accordance with 25 Pa. Code §92a.48(b)(3): “Facilities using chlorination that discharge to an Exceptional Value Water, or to a High Quality Water where economic or social justification under § 93.4c(b) (1)(iii) (relating to implementation of antidegradation requirements) has not been demonstrated under applicable State or Federal law or regulations, shall discontinue chlorination or dechlorinate their effluents prior to discharge into the waters.” It was previously determined that an appropriate method detection level for TRC is 0.05 mg/l and therefore the final instantaneous maximum limit for TRC was be 0.05 mg/l to ensure that residual chlorine is not discharged. The new plant utilizes UV, therefore TRC will be removed from the permit.

Ultraviolet light dosage (mjoules/cm²)

The proposed permit has the permittee reporting UV Dosage in mjoules/cm² in lieu of TRC. This was verified during the WQM permit process.

Fecal Coliforms

The existing fecal coliform limits with I-max limits were previously updated from the previous Chapter 92 code to correspond with what is specified in the updated 25 PA Code § 92a.47 (a)(4)&(5).

Dissolved Oxygen (DO)

Given results of the WQM 7.0 model, a discharge of effluent from this facility with a DO concentration of 3 mg/l would not result in an exceedance of water quality requirements for this stream. It is anticipated, based on similar technology, that the DO concentration in the effluent would be greater than 3.0 mg/l. Therefore, based on BPJ, only monitoring will be required for this facility.

E. Coli

25 PA Code § 92a.61 provide the basis of monitoring requirements for E. Coli. Yearly monitoring will be required going forward.

Compliance History

Summary of Inspections -The last inspection of the facilities was conducted by the Department on 9/26/25 which reveals the facility was operating normally, but the following violations were noted:

1. 25 Pa. Code 271.918: Failure to maintain sludge records for at least 5 years. There were no sludge hauling records available for review.
2. 25 Pa. Code 92a.41(a)(12): Failure to submit monitoring reports or properly complete monitoring reports. Late DMR submissions for the following monitoring periods: 12/01/2024- 12/31/2024, 01/01/2024- 12/31/2024, 01/01/2025- 01/31/2025, 03/01/2025- 03/31/2025, 06/01/2025- 06/30/2025, and 07/01/2025- 07/31/2025.
3. 3. 25 Pa. Code 92a.41(a)(5): Failure to maintain permitted treatment units in operable condition There are holes in the wall between the sludge holding tank and aeration tank that inhibit the use of the sludge holding tank. The facility is utilizing a separate underground tank for sludge holding.
4. 4. 25 Pa. Code 92a.61(c): Failure to monitor pollutants as required by the NPDES permit. The facility did not collect samples for the analysis of Total Phosphorus and Total Nitrogen for the reporting period of 01/01/2024 through 12/31/2024.

The operations section has already worked with the permittee to resolve these violations.

WMS Query Summary - A WMS Query was run at *Reports - Violations & Enforcements – Open Violations for Client Report* to determine whether there are any unresolved violations associated with the client that will affect issuance of the

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Cogan Valley Farms**

NPDES Permit No. PA0110272

permit (per CSL Section 609). This query revealed the following unresolved violations. These violations are related to the SDW program, and they will be contacted regarding these violations.

CLIENT ID	CLIENT	PF ID	FACILITY	INSP PROGRAM	PROGRAM SPECIFIC ID	INSP ID	VIOLATION ID	VIOLATION DATE	VIOLATION CODE	VIOLATION
368481	WW FREEDOM GROUP LLC	244232	COGAN VALLEY MOBILE HOME PARK	Safe Drinking Water	4410152	3841980	8202814	09/17/2024	C1A	FAILURE TO MEET DESIGN AND CONSTRUCTION STANDARDS
368481	WW FREEDOM GROUP LLC	244232	COGAN VALLEY MOBILE HOME PARK	Safe Drinking Water	4410152	3841980	8202815	09/17/2024	D6D	FAILURE TO PREPARE AND/OR MAINTAIN A SYSTEM MAP

DMRs Summary - Upon review of the last year of DMR's, the facility appears to be generally operating within the given concentration limits.

Compliance History

DMR Data for Outfall 001 (from January 1, 2025 to December 31, 2025)

Parameter	DEC-25	NOV-25	OCT-25	SEP-25	AUG-25	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25
Flow (MGD) Average Monthly	0.016	0.012	0.01	0.014	0.011	0.00828 1	0.012	0.009	0.017	0.0086	0.224	0.009
Flow (MGD) Daily Maximum	0.023	0.016	0.013	0.11	0.016	0.00848 1	0.024	0.011	0.09	0.01	0.009	0.014
pH (S.U.) Daily Minimum	6.7	6.85	6.92	7.1	6.42	6.36	6.52	6.65	6.6	6.65	6.85	6.65
pH (S.U.) Daily Maximum	6.92	7.07	7.16	7.2	7.1	6.51	6.71	6.76	6.89	6.92	6.85	6.78
DO (mg/L) Daily Minimum	1.5	1.5	1.5	1.0	1.5	1.5	1.8	0.9	0.9	0.8	0.8	0.8
TRC (mg/L) Average Monthly	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.01	< 0.01	< 0.01	0.01	0.01	< 0.01
TRC (mg/L) Instantaneous Maximum	0.01	< 0.01	< 0.01	< 0.01	0.02	0.02	0.02	0.03	0.01	0.02	0.02	0.02
CBOD5 (mg/L) Average Monthly	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 2.0	< 3.0
TSS (mg/L) Average Monthly	3.0	6.0	< 2.0	< 3.0	< 2.0	6.0	< 2.0	< 2.0	< 2.0	< 2.0	< 6.0	< 4.0
Fecal Coliform (No./100 ml) Geometric Mean	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Compliance History

Tools and References Used to Develop Permit	
<input checked="" type="checkbox"/>	WQM for Windows Model (see Attachment B)
<input checked="" type="checkbox"/>	Toxics Management Spreadsheet (see Attachment D)
<input type="checkbox"/>	TRC Model Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment [redacted])
<input checked="" type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input checked="" type="checkbox"/>	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
<input type="checkbox"/>	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
<input checked="" type="checkbox"/>	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
<input type="checkbox"/>	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
<input type="checkbox"/>	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
<input type="checkbox"/>	Pennsylvania CSO Policy, 386-2000-002, 9/08.
<input checked="" type="checkbox"/>	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
<input type="checkbox"/>	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
<input checked="" type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
<input type="checkbox"/>	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
<input checked="" type="checkbox"/>	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
<input type="checkbox"/>	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
<input type="checkbox"/>	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
<input checked="" type="checkbox"/>	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
<input type="checkbox"/>	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
<input type="checkbox"/>	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
<input type="checkbox"/>	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
<input type="checkbox"/>	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
<input type="checkbox"/>	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
<input type="checkbox"/>	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, 386-2000-020, 10/97.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
<input checked="" type="checkbox"/>	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, 386-2000-010, 3/1999.
<input checked="" type="checkbox"/>	Design Stream Flows, 386-2000-003, 9/98.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
<input type="checkbox"/>	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
<input checked="" type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input type="checkbox"/>	SOP: [redacted]
<input type="checkbox"/>	Other: [redacted]

APPENDIX A

PREVIOUS Q7-10 ANALYSIS AND STREAM DATA

Table 1. List of U.S. Geological Survey streamgauge locations in and near Pennsylvania with updated streamflow statistics.—Continued

[Latitude and Longitude in decimal degrees; mi², square miles]

Streamgauge number	Streamgauge name	Latitude	Longitude	Drainage area (mi ²)	Regulated ¹
01541303	West Branch Susquehanna River at Hyde, Pa.	41.005	-78.457	474	Y
01541308	Bradley Run near Ashville, Pa.	40.509	-78.584	6.77	N
01541500	Clearfield Creek at Dimeling, Pa.	40.972	-78.406	371	Y
01542000	Moshannon Creek at Osceola Mills, Pa.	40.850	-78.268	68.8	N
01542500	WB Susquehanna River at Karthaus, Pa.	41.118	-78.109	1,462	Y
01542810	Waldy Run near Emporium, Pa.	41.579	-78.293	5.24	N
01543000	Driftwood Branch Sinnemahoning Creek at Sterling Run, Pa.	41.413	-78.197	272	N
01543500	Sinnemahoning Creek at Sinnemahoning, Pa.	41.317	-78.103	685	N
01544000	First Fork Sinnemahoning Creek near Sinnemahoning, Pa.	41.402	-78.024	245	Y
01544500	Kettle Creek at Cross Fork, Pa.	41.476	-77.826	136	N
01545000	Kettle Creek near Westport, Pa.	41.320	-77.874	233	Y
01545500	West Branch Susquehanna River at Renovo, Pa.	41.325	-77.751	2,975	Y
01545600	Young Womans Creek near Renovo, Pa.	41.390	-77.691	46.2	N
01546000	North Bald Eagle Creek at Milesburg, Pa.	40.942	-77.794	119	N
01546400	Spring Creek at Houserville, Pa.	40.834	-77.828	58.5	N
01546500	Spring Creek near Axemann, Pa.	40.890	-77.794	87.2	N
01547100	Spring Creek at Milesburg, Pa.	40.932	-77.786	142	N
01547200	Bald Eagle Creek below Spring Creek at Milesburg, Pa.	40.943	-77.786	265	N
01547500	Bald Eagle Creek at Blanchard, Pa.	41.052	-77.604	339	Y
01547700	Marsh Creek at Blanchard, Pa.	41.060	-77.606	44.1	N
01547800	South Fork Beech Creek near Snow Shoe, Pa.	41.024	-77.904	12.2	N
01547950	Beech Creek at Monument, Pa.	41.112	-77.702	152	N
01548005	Bald Eagle Creek near Beech Creek Station, Pa.	41.081	-77.549	562	Y
01548500	Pine Creek at Cedar Run, Pa.	41.522	-77.447	604	N
01549000	Pine Creek near Waterville, Pa.	41.313	-77.379	750	N
01549500	Blockhouse Creek near English Center, Pa.	41.474	-77.231	37.7	N
01549700	Pine Creek below Little Pine Creek near Waterville, Pa.	41.274	-77.324	944	Y
01550000	Lycoming Creek near Trout Run, Pa.	41.418	-77.033	173	N
01551500	WB Susquehanna River at Williamsport, Pa.	41.236	-76.997	5,682	Y
01552000	Loyalsock Creek at Loyalsockville, Pa.	41.325	-76.912	435	N
01552500	Muncy Creek near Sonestown, Pa.	41.357	-76.535	23.8	N
01553130	Sand Spring Run near White Deer, Pa.	41.059	-77.077	4.93	N
01553500	West Branch Susquehanna River at Lewisburg, Pa.	40.968	-76.876	6,847	Y
01553700	Chillisquaque Creek at Washingtonville, Pa.	41.062	-76.680	51.3	N
01554000	Susquehanna River at Sunbury, Pa.	40.835	-76.827	18,300	Y
01554500	Shamokin Creek near Shamokin, Pa.	40.810	-76.584	54.2	N
01555000	Penns Creek at Penns Creek, Pa.	40.867	-77.048	301	N
01555500	East Mahantango Creek near Dalmatia, Pa.	40.611	-76.912	162	N
01556000	Frankstown Branch Juniata River at Williamsburg, Pa.	40.463	-78.200	291	N
01557500	Bald Eagle Creek at Tyrone, Pa.	40.684	-78.234	44.1	N
01558000	Little Juniata River at Spruce Creek, Pa.	40.613	-78.141	220	N
01559000	Juniata River at Huntingdon, Pa.	40.485	-78.019	816	LF
01559500	Standing Stone Creek near Huntingdon, Pa.	40.524	-77.971	128	N
01559700	Sulphur Springs Creek near Manns Choice, Pa.	39.978	-78.619	5.28	N
01560000	Dunning Creek at Belden, Pa.	40.072	-78.493	172	N

$$\frac{7.6 \text{ cfs}}{173 \text{ mi}^2} = 0.0439 \frac{\text{cfs}}{\text{mi}^2}$$

26 Selected Streamflow Statistics for Streamgage Locations in and near Pennsylvania

Table 2. Selected low-flow statistics for streamgage locations in and near Pennsylvania.—Continued

[ft³/s; cubic feet per second; —, statistic not computed; <, less than]

Streamgage number	Period of record used in analysis ¹	Number of years used in analysis	1-day, 10-year (ft ³ /s)	7-day, 10-year (ft ³ /s)	7-day, 2-year (ft ³ /s)	30-day, 10-year (ft ³ /s)	30-day, 2-year (ft ³ /s)	90-day, 10-year (ft ³ /s)
01546000	1912–1934	17	1.8	2.2	6.8	3.7	12.1	11.2
01546400	1986–2008	23	13.5	14.0	19.6	15.4	22.3	18.7
01546500	1942–2008	67	26.8	29.0	41.3	31.2	44.2	33.7
01547100	1969–2008	40	102	105	128	111	133	117
01547200	1957–2008	52	99.4	101	132	106	142	115
01547500	² 1971–2008	38	28.2	109	151	131	172	153
01547500	³ 1956–1969	14	90.0	94.9	123	98.1	131	105
01547700	1957–2008	52	.5	.6	2.7	1.1	3.9	2.2
01547800	1971–1981	11	1.6	1.8	2.4	2.1	2.9	3.5
01547950	1970–2008	39	12.1	13.6	28.2	17.3	36.4	23.8
01548005	² 1971–2000	25	142	151	206	178	241	223
01548005	³ 1912–1969	58	105	114	147	125	165	140
01548500	1920–2008	89	21.2	24.2	50.1	33.6	68.6	49.3
01549000	1910–1920	11	26.0	32.9	78.0	46.4	106	89.8
01549500	1942–2008	67	.6	.8	2.5	1.4	3.9	2.6
01549700	1959–2008	50	33.3	37.2	83.8	51.2	117	78.4
01550000	1915–2008	94	6.6	7.6	16.8	11.2	24.6	18.6
01551500	² 1963–2008	46	520	578	1,020	678	1,330	919
01551500	³ 1901–1961	61	400	439	742	523	943	752
01552000	1927–2008	80	20.5	22.2	49.5	29.2	69.8	49.6
01552500	1942–2008	67	.9	1.2	3.1	1.7	4.4	3.3
01553130	1969–1981	13	1.0	1.1	1.5	1.3	1.8	1.7
01553500	² 1968–2008	41	760	838	1,440	1,000	1,850	1,470
01553500	³ 1941–1966	26	562	619	880	690	1,090	881
01553700	1981–2008	28	9.1	10.9	15.0	12.6	17.1	15.2
01554000	² 1981–2008	28	1,830	1,990	3,270	2,320	4,210	3,160
01554000	³ 1939–1979	41	1,560	1,630	2,870	1,880	3,620	2,570
01554500	1941–1993	53	16.2	22.0	31.2	25.9	35.7	31.4
01555000	1931–2008	78	33.5	37.6	58.8	43.4	69.6	54.6
01555500	1931–2008	78	4.9	6.5	18.0	9.4	24.3	16.6
01556000	1918–2008	91	43.3	47.8	66.0	55.1	75.0	63.7
01557500	1946–2008	63	2.8	3.2	6.3	4.2	8.1	5.8
01558000	1940–2008	69	56.3	59.0	79.8	65.7	86.2	73.7
01559000	1943–2008	66	104	177	249	198	279	227
01559500	1931–1958	28	9.3	10.5	15.0	12.4	17.8	15.8
01559700	1963–1978	16	.1	.1	.2	.1	.3	.2
01560000	1941–2008	68	8.5	9.4	15.6	12.0	20.2	16.2
01561000	1932–1958	27	.4	.5	1.6	.8	2.5	1.7
01562000	1913–2008	96	64.1	67.1	106	77.4	122	94.5
01562500	1931–1957	27	1.1	1.6	3.8	2.3	5.4	3.7
01563200	² 1974–2008	35	—	—	—	112	266	129
01563200	³ 1948–1972	25	10.3	28.2	86.1	64.5	113	95.5
01563500	² 1974–2008	35	384	415	519	441	580	493
01563500	³ 1939–1972	34	153	242	343	278	399	333
01564500	1940–2008	69	3.6	4.2	10.0	6.2	14.4	10.6

1915-1995 Q₇₋₁₀ = 7.63

APPENDIX B

WQM 7.0 MODEL INPUT/OUTPUT

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
10A	20501	LYCOMING CREEK	8.480	580.90	233.00	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	Tributary pH	Stream Temp	Stream pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C)	
Q7-10	0.044	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
Cogan Valley	PA00110272	0.0150	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

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

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
10A	20501	LYCOMING CREEK	6.440	560.00	238.00	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	Tributary pH	Stream Temp	Stream pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C)	
Q7-10	0.044	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
WASD Hepburn	PA0032352	0.0026	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

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

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
10A	20501	LYCOMING CREEK	6.440	560.00	238.00	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	Tributary pH	Stream Temp	Stream pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C)	
Q7-10	0.044	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
WASD Hepburn	PA0032352	0.0026	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

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

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
10A	20501	LYCOMING CREEK	6.440	560.00	238.00	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	Tributary pH	Stream Temp	Stream pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C)	
Q7-10	0.044	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
WASD Hepburn	PA0032352	0.0026	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

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

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
10A	20501	LYCOMING CREEK	6.440	560.00	238.00	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	Tributary pH	Stream Temp	Stream pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C)	
Q7-10	0.044	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
WASD Hepburn	PA0032352	0.0026	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

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

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
10A	20501	LYCOMING CREEK	6.440	560.00	238.00	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	Tributary pH	Stream Temp	Stream pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C)	
Q7-10	0.044	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
WASD Hepburn	PA0032352	0.0026	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 D.O.Simulation

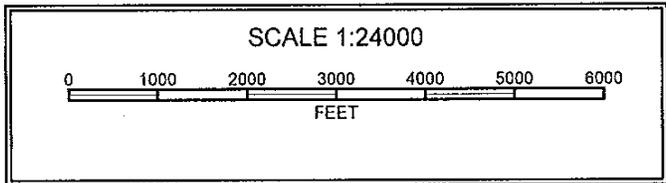
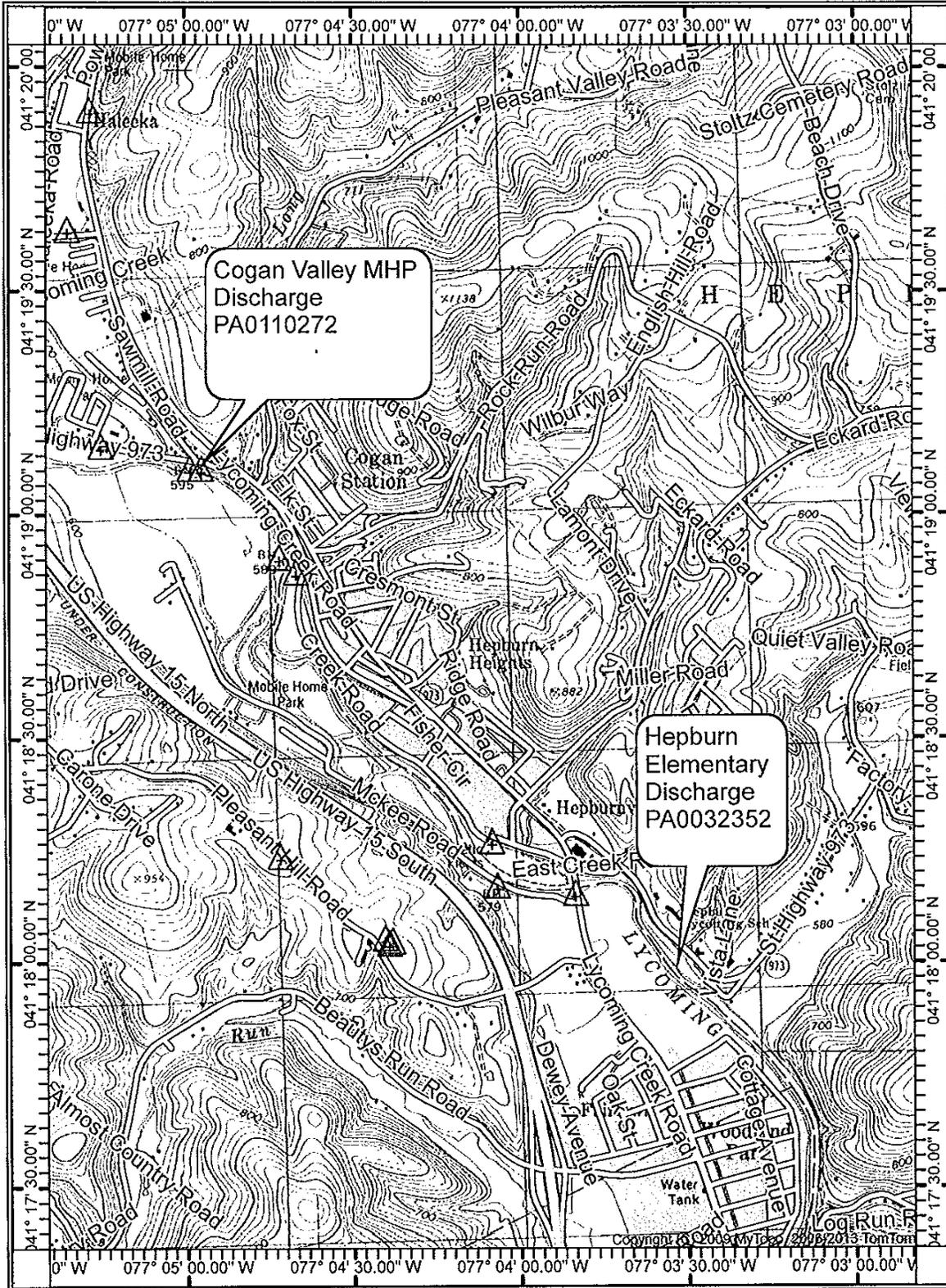
<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>		
10A	20501	LYCOMING CREEK		
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>	
8.480	0.015	20.011	7.000	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>	
57.506	0.827	69.526	0.216	
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>	<u>Reach Kn (1/days)</u>	
2.05	0.028	0.06	0.701	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>	
8.231	2.855	Tsivoglou	6	
<u>Reach Travel Time (days)</u>	<u>Subreach Results</u>			
0.578	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>
	0.058	2.05	0.05	8.24
	0.116	2.05	0.05	8.24
	0.174	2.04	0.05	8.24
	0.231	2.04	0.05	8.24
	0.289	2.04	0.05	8.24
	0.347	2.03	0.04	8.24
	0.405	2.03	0.04	8.24
	0.463	2.03	0.04	8.24
	0.521	2.02	0.04	8.24
	0.578	2.02	0.04	8.24
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>	
6.440	0.018	20.013	7.000	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>	
58.492	0.832	70.272	0.215	
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>	<u>Reach Kn (1/days)</u>	
2.03	0.016	0.05	0.701	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>	
8.239	2.552	Tsivoglou	6	
<u>Reach Travel Time (days)</u>	<u>Subreach Results</u>			
0.619	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>
	0.062	2.03	0.04	8.24
	0.124	2.02	0.04	8.24
	0.186	2.02	0.04	8.24
	0.248	2.02	0.04	8.24
	0.310	2.02	0.04	8.24
	0.372	2.02	0.04	8.24
	0.433	2.01	0.03	8.24
	0.495	2.01	0.03	8.24
	0.557	2.01	0.03	8.24
	0.619	2.01	0.03	8.24

WQM 7.0 D.O.Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>		
10A	20501	LYCOMING CREEK		
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>	
8.480	0.015	20.011	7.000	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>	
57.506	0.827	69.526	0.216	
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>	<u>Reach Kn (1/days)</u>	
2.05	0.028	0.06	0.701	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>	
8.231	2.855	Tsivoglou	6	
<u>Reach Travel Time (days)</u>	<u>Subreach Results</u>			
0.578	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>
	0.058	2.05	0.05	8.24
	0.116	2.05	0.05	8.24
	0.174	2.04	0.05	8.24
	0.231	2.04	0.05	8.24
	0.289	2.04	0.05	8.24
	0.347	2.03	0.04	8.24
	0.405	2.03	0.04	8.24
	0.463	2.03	0.04	8.24
	0.521	2.02	0.04	8.24
	0.578	2.02	0.04	8.24
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>	
6.440	0.018	20.013	7.000	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>	
58.492	0.832	70.272	0.215	
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>	<u>Reach Kn (1/days)</u>	
2.03	0.016	0.05	0.701	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>	
8.239	2.552	Tsivoglou	6	
<u>Reach Travel Time (days)</u>	<u>Subreach Results</u>			
0.619	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>
	0.062	2.03	0.04	8.24
	0.124	2.02	0.04	8.24
	0.186	2.02	0.04	8.24
	0.248	2.02	0.04	8.24
	0.310	2.02	0.04	8.24
	0.372	2.02	0.04	8.24
	0.433	2.01	0.03	8.24
	0.495	2.01	0.03	8.24
	0.557	2.01	0.03	8.24
	0.619	2.01	0.03	8.24

APPENDIX C

FACILITY MAP



APPENDIX D

TN & TP DATA

NPDES Permit Fact Sheet
Cogan Valley Farms

NPDES Permit No. PA0110272

PERMIT	PF NAME	MONITORING START DATE	MONITORING END DATE	REPORT FREQUENCY	OUTFALL	DISCHARGE	MONITORING LOCATION	PARAMETER	LOAD UNITS	LOAD 1 VALUE	CONC UNITS	CONC 2 VALUE	CONC 2 SBC	SAMPLE FREQUENCY	SAMPLE TYPE
PA0110272	COGAN VALLEY FARMS	01/01/2021	12/31/2021	Annually	001	Yes	Final Effluent	Total Nitrogen	lbs/day	E	mg/L	E	Annual Average		
PA0110272	COGAN VALLEY FARMS	01/01/2022	12/31/2022	Annually	001	Yes	Final Effluent	Total Nitrogen	lbs/day	< 1	mg/L	< 33.37	Annual Average	1/year	Grab
PA0110272	COGAN VALLEY FARMS	01/01/2022	12/31/2022	Annually	001	Yes	Final Effluent	Total Nitrogen	lbs/day	< 1	mg/L	< 33.37	Annual Average	1/year	Grab
PA0110272	COGAN VALLEY FARMS	01/01/2023	12/31/2023	Annually	001	Yes	Final Effluent	Total Nitrogen	lbs/day	< 1	mg/L	< 33.3	Annual Average	1/year	Grab
PA0110272	COGAN VALLEY FARMS	01/01/2024	12/31/2024	Annually	001	Yes	Final Effluent	Total Nitrogen	lbs/day	E	mg/L	E	Annual Average		
PA0110272	COGAN VALLEY FARMS	01/01/2025	12/31/2025	Annually	001	Yes	Final Effluent	Total Nitrogen	lbs/day	< 1.0	mg/L	< 7.958	Annual Average	1/year	Grab
PA0110272	COGAN VALLEY FARMS	01/01/2021	12/31/2021	Annually	001	Yes	Final Effluent	Total Phosphorus	lbs/day	E	mg/L	E	Annual Average		
PA0110272	COGAN VALLEY FARMS	01/01/2022	12/31/2022	Annually	001	Yes	Final Effluent	Total Phosphorus	lbs/day	0.07	mg/L	2.3	Annual Average	1/year	Grab
PA0110272	COGAN VALLEY FARMS	01/01/2022	12/31/2022	Annually	001	Yes	Final Effluent	Total Phosphorus	lbs/day	0.07	mg/L	2.3	Annual Average	1/year	Grab
PA0110272	COGAN VALLEY FARMS	01/01/2023	12/31/2023	Annually	001	Yes	Final Effluent	Total Phosphorus	lbs/day	0.07	mg/L	2.3	Annual Average	1/year	Grab
PA0110272	COGAN VALLEY FARMS	01/01/2024	12/31/2024	Annually	001	Yes	Final Effluent	Total Phosphorus	lbs/day	E	mg/L	E	Annual Average		
PA0110272	COGAN VALLEY FARMS	01/01/2025	12/31/2025	Annually	001	Yes	Final Effluent	Total Phosphorus	lbs/day	0.1	mg/L	1.11	Annual Average	1/year	Grab