

Application Type Renewal
Wastewater Type Sewage
Facility Type SFTF

**NPDES PERMIT FACT SHEET
INDIVIDUAL SFTF/SRSTP**

Application No. PA0248231
APS ID 584124
Authorization ID 1186063

Applicant, Facility and Project Information

Applicant Name	<u>Otterbein United Meth Church Duncannon</u>	Facility Name	<u>Otterbein United Meth Church Development</u>
Applicant Address	<u>327 Newport Road Duncannon, PA 17020-9669</u>	Facility Address	<u>327 Newport Road Duncannon, PA 17020-9669</u>
Applicant Contact	<u>Karen Magee</u>	Facility Contact	<u>Georga Leppard</u>
Applicant Phone	<u>(717) 582-6844</u>	Facility Phone	<u>(717) 582-6844</u>
Client ID	<u>248511</u>	Site ID	<u>494504</u>
SIC Code	<u>8661</u>	Municipality	<u>Penn Township</u>
SIC Description	<u>Services - Religious Organizations</u>	County	<u>Perry</u>
Date Application Received	<u>June 6, 2017</u>	WQM Required	<u></u>
Date Application Accepted	<u>June 12, 2017</u>	WQM App. No.	<u></u>
Project Description	<u>This is an application for NPDES renewal.</u>		

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineering Specialist	August 8, 2019
		Daniel W. Martin, P.E. / Environmental Engineer Manager	
		Maria Bebenek, P.E. / Environmental Program Manager	

Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the Otterbein United Methodist Church located at 327 Newport Road, Duncannon, PA 17020 in Perry County, municipality of Penn Township. The NPDES expired on November 30, 2017. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on June 6, 2017.

The purpose of this Fact Sheet is to present the basis of information used for establishing the proposed NPDES permit effluent limitations. The Fact Sheet includes a description of the facility, a description of the facility's receiving waters, a description of the facility's attainment/non-attainment assessment status, and a description of any changes to the proposed monitoring/sampling frequency. Section 6 provides the justification for the proposed NPDES effluent limits derived from technology based effluent limits (TBEL), water quality based effluent limits (WQBEL), total maximum daily loading (TMDL), antidegradation, anti-backsliding, and/or whole effluent toxicity (WET). A brief summary of the outlined descriptions has been included in the Summary of Review section.

The subject facility is a 0.002 MGD (2000 GPD) treatment facility. The applicant does not anticipate any proposed upgrades to the treatment facility in the next five years. The NPDES application has been processed as a Small Treatment Facility due to the type of sewage and the design flow rate for the facility. The applicant disclosed the Act 14 requirement to Perry County and Penn Township and the notice was received by the parties on June 2, 2017. A planning approval letter was not necessary as the facility is neither new or expanding.

Utilizing the DEP's web-based Emap-PA information system, the receiving waters has been determined to be Tributary 11374 of Little Juniata Creek. The sequence of receiving streams that Tributary 11374 of Little Juniata Creek discharges into are Tributary 11371 of Little Juniata Creek, the Little Juniata River, and the Susquehanna River which eventually drains into the Chesapeake Bay. Due to the flow rate of the facility, the subject site is not subject to the Chesapeake Bay implementation requirements. The receiving water has protected water usage for cold water fishes (CWF) and migratory fishes (MF). No Class A Wild Trout fisheries are impacted by this discharge. The absence of high quality and/or exceptional value surface waters removes the need for an additional evaluation of anti-degradation requirements.

Tributary 11374 of Little Juniata Creek is a Category 2 and 5 stream listed in the 2016 Integrated List of All Waters (formerly 303d Listed Streams). This stream is an attaining stream that supports aquatic life. The receiving stream is also impaired for recreational purposes due to pathogens from an unknown source. The receiving waters is not subject to a total maximum daily load (TMDL) plan to improve water quality in the subject facility's watershed.

The existing permit and proposed permit differ as follows:

- There were no changes from the existing permit to the proposed permit.

The proposed permit will expire five (5) years from the effective date.

Based on the review in this report, 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.

Any additional information or public review of documents associated with the discharge or facility may be available at PA DEP Southcentral Regional Office (SCRO), 909 Elmerton Avenue, Harrisburg, PA 17110. To make an appointment for file review, contact the SCRO File Review Coordinator at 717.705.4700.

1.0 Applicant

1.1 General Information

This fact sheet summarizes PA Department of Environmental Protection's review for the NPDES renewal for the following subject facility.

Facility Name: Otterbein United Methodist Church

NPDES Permit # PA0248231

Physical Address: 327 Newport Road
Duncannon, PA 17020

Mailing Address: 327 Newport Road
Duncannon, PA 17020

Contact: Georga Leppard
Church Secretary

Consultant: There was not a consultant used for the NPDES renewal application.

1.2 Permit History

The facility stated that when the sewage plant was built, it was found there was not enough solids to maintain adequate levels. The plant was then switched to holding tanks which are pumped routinely.

Otterbein experienced a fire on June 14, 2018 which rendered the building unusable. Power and water were turned off while the restoration of the building was being completed. Temporary toilets (porta johns) were installed for use of the workers. Electric was restored in June 2019 at which time the tanks were pumped and emptied. As of July 2019, full occupation of the building has not yet occurred.

Due to the fire at the church, the facility does not have the exact dates for the switch to holding tanks since they are unable to find records after the fire. However, by congregational memory that switch occurred 2-3 years after initial start-up.

The point of first use survey was conducted in August 1998. At the time of POFU survey numerous pools of standing water were present throughout the reach. No flow in the unnamed tributary was observed from the facility location downstream to the Little Juniata Creek which is approximately 0.9 miles. The point of first use was determined to be the Little Juniata Creek.

2.0 Treatment Facility Summary

2.1 Site location

The physical address for the facility is 327 Newport Road, Duncannon, PA 17020. A topographical and an aerial photograph of the facility are depicted as Figure 1 and Figure 2.

Figure 1: Topographical map of the subject facility

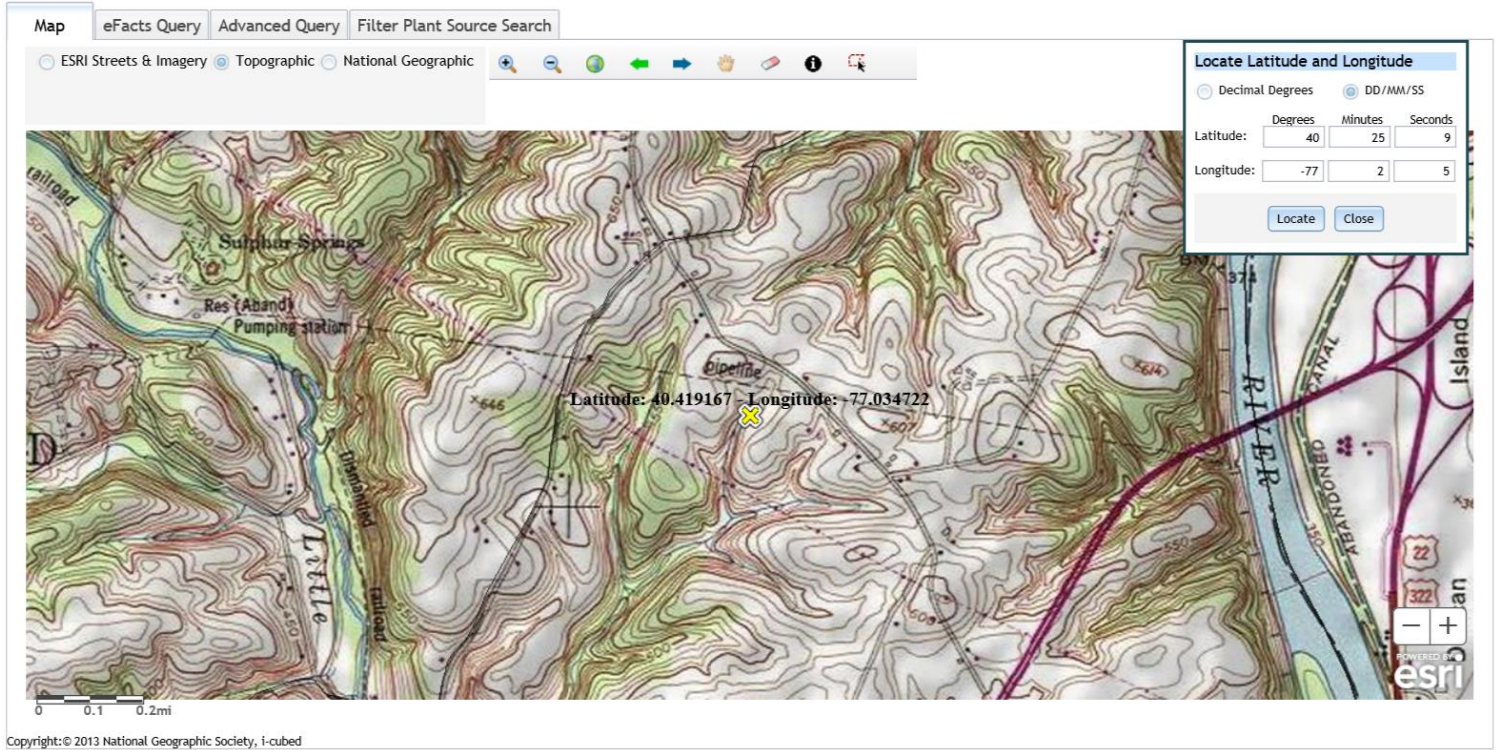
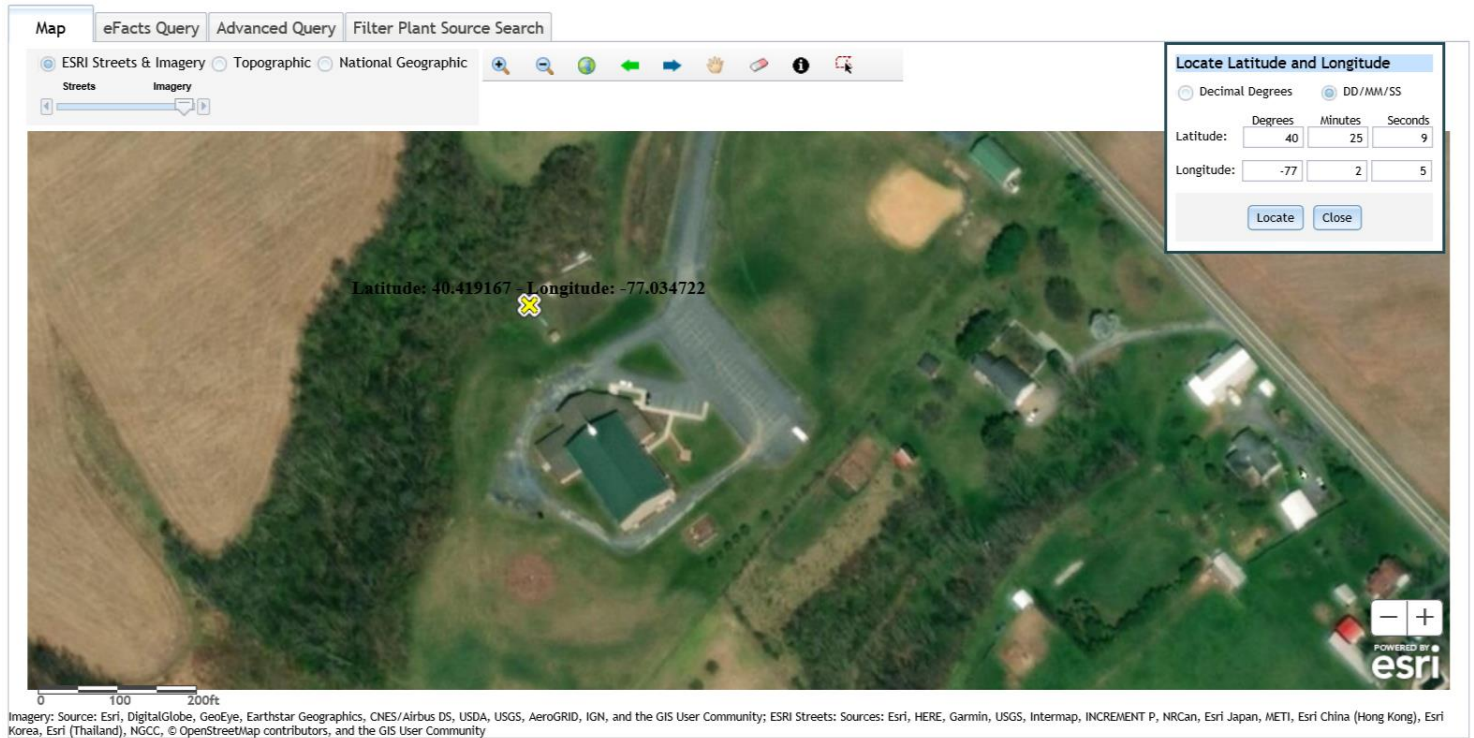


Figure 2: Aerial Photograph of the subject facility



2.2 Description of Wastewater Treatment Process

The subject facility is a 0.002 MGD (2000 GPD) design flow facility. The subject facility treats wastewater using a Chromoglass CA-30 plant, an effluent filter, and a chlorine tank for disinfection. The facility is being evaluated for flow, pH, dissolved oxygen, TRC, CBOD, TSS, fecal coliform, and ammonia-nitrogen. The existing permits limits for the facility is summarized in Section 2.4.

The treatment process is summarized in the table.

Treatment Facility Summary				
Treatment Facility Name: Otterbein United Methodist Church Development				
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Sequencing Batch Reactor	Chlorine	0.002
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.002	5.10			

2.3 Facility Outfall Information

The facility has the following outfall information.

Outfall No.	<u>001</u>	Design Flow (MGD)	<u>.002</u>
Latitude	<u>40° 25' 9.00"</u>	Longitude	<u>-77° 2' 5.00"</u>
Wastewater Description:	<u>Sewage Effluent</u>		

2.4 Existing NPDES Permits Limits

The existing NPDES permit limits are summarized in the table.

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 001, Latitude 40° 25' 9", Longitude 77° 2' 5", River Mile Index 0.23, Stream Code 11374
 Receiving Waters: Unnamed Tributary of Little Juniata Creek
 Type of Effluent: Treated Sewage

1. The permittee is authorized to discharge during the period from December 1, 2012 through November 30, 2017.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly		Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	1/week	Estimate
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/week	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/week	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.5	XXX	1.6	1/week	Grab
CBOD5 May 1 - Oct 31	XXX	XXX	XXX	10	XXX	20	1/month	Grab
CBOD5 Nov 1 - Apr 30	XXX	XXX	XXX	20	XXX	40	1/month	Grab
Total Suspended Solids	XXX	XXX	XXX	10	XXX	20	1/month	Grab
Fecal Coliform (CFU/100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	1/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	3.0	XXX	6.0	1/month	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	9.0	XXX	18	1/month	Grab

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

3.0 Facility NPDES Compliance History

3.1 Summary of Inspections

A summary of the most recent inspections during the existing permit review cycle is as follows.

The DEP inspector noted the following:

12/27/2012: The plant continues to be used as a holding tank. The chlorine contact tank was empty during inspection.

12/16/2013: The plant continues to be used as a holding tank. The chlorine contact tank was empty during inspection.

09/25/2017: The Chromaglass tanks continue to be used as holding tanks. The tanks hatches were closed and locked during the inspection and were not accessible. The sludge holding and chlorine contact tanks were also locked. However, the lids were lifted on the opposite side of the lock. Both tanks contained a foot or so of water.

3.2 Summary of DMR Data

A review of the DMRs from January 2018 to December 2018 showed that facility did not have any sewage discharge. The facility misplaced the DMR for February 2018. Since there was a fire at the church on June 14, 2018, the discharge was zero (0) from June 2018 until June 2019.

The facility had been using a holding tank. Septic pumping was completed at least 6 times in 2016, at least 4 times in 2017, and there was a record of septage pumping in April 2018. Septic pumping resumed after the fire with a pumping occurring on June 8, 2019.

3.3 Non-Compliance

3.3.1 Non-Compliance- NPDES Effluent

A summary of the non-compliance to the permit limits for the existing permit cycle is as follows.

There were no non-compliance with effluent limits for the time frame beginning December 1, 2012 to July 21, 2019.

Since the facility had been using a holding tank which included septage pumping, non-compliance with NPDES effluent would not be expected.

3.3.2 Non-Compliance- Enforcement Actions

A summary of the non-compliance enforcement actions for the current permit cycle is as follows:

There were no non-compliance actions shown in DEP WMS system for the time frame beginning December 1, 2012 to July 21, 2019.

3.4 Open Violations

No open violations existed as of August 2019.

4.0 Receiving Waters and Water Supply Information Detail Summary

4.1 Receiving Waters

The receiving waters has been determined to be Tributary 11374 of Little Juniata Creek. The sequence of receiving streams that Tributary 11374 of Little Juniata Creek discharges into are Tributary 11371 of Little Juniata Creek, the Little Juniata River. and the Susquehanna River which eventually drains into the Chesapeake Bay.

4.2 Public Water Supply (PWS) Intake

The closest PWS to the subject facility is Capital Region Water (PWS ID #7220049) located approximately 13.7 miles downstream of the subject facility on the Susquehanna River. Based upon the distance and the flow rate of the facility, the PWS should not be impacted.

4.3 Class A Wild Trout Streams

Class A Wild Trout Streams are waters that support a population of naturally produced trout of sufficient size and abundance to support long-term and rewarding sport fishery. DEP classifies these waters as high-quality coldwater fisheries.

The information obtained from EMAP suggests that no Class A Wild Trout Fishery will be impacted by this discharge.

4.4 2016 Integrated List of All Waters (303d Listed Streams):

Section 303(d) of the Clean Water Act requires States to list all impaired surface waters not supporting uses even after appropriate and required water pollution control technologies have been applied. The 303(d) list includes the reason for impairment which may

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be one or more point sources (i.e. industrial or sewage discharges) or non-point sources (i.e. abandoned mine lands or agricultural runoff and the pollutant causing the impairment such as metals, pH, mercury or siltation).

States or the U.S. Environmental Protection Agency (EPA) must determine the conditions that would return the water to a condition that meets water quality standards. As a follow-up to listing, the state or EPA must develop a Total Maximum Daily Load (TMDL) for each waterbody on the list. A TMDL identifies allowable pollutant loads to a waterbody from both point and non-point sources that will prevent a violation of water quality standards. A TMDL also includes a margin of safety to ensure protection of the water.

The water quality status of Pennsylvania's waters uses a five-part categorization (lists) of waters per their attainment use status. The categories represent varying levels of attainment, ranging from Category 1, where all designated water uses are met to Category 5 where impairment by pollutants requires a TMDL for water quality protection.

The receiving waters is listed in the 2016 Pennsylvania Integrated Water Quality Monitoring and Assessment Report as a Category 2 and 5 waterbody. The surface waters is an attaining stream that supports aquatic life. The receiving waters is also impaired for recreational purposes due to pathogens from an unknown source. The designated use has been classified as protected waters for cold water fishes and migratory fishes.

4.5 Low Flow Stream Conditions

Water quality modeling estimates are based upon conservative data inputs. The data are typically estimated using either a stream gauge or through USGS web based StreamStats program. The NPDES effluent limits are based upon the combined flows from both the stream and the facility discharge.

A conservative approach to estimate the impact of the facility discharge using values which minimize the total combined volume of the stream and the facility discharge. The volumetric flow rate for the stream is based upon the seven-day, 10-year low flow (Q710) which is the lowest estimated flow rate of the stream during a 7 consecutive day period that occurs once in 10 year time period. The facility discharge is based upon a known design capacity of the subject facility.

The closest WQN and gauge stations to the subject facility is the Susquehanna Station at Harrisburg, PA (WQN202 or USGS station number 1570500). This WQN station is located approximately 16.9 miles downstream of the subject facility while the gauge station is located 16.9 miles downstream of the subject facility. For WQM modeling, pH and stream water temperature data from the water quality network station was used. pH was estimated to be 8.25 and the stream water temperature was estimated to be 23.75 C. The low flow yield and the Q710 for the subject facility was estimated as shown below.

Gauge Station Data		
USGS Station Number	1570500	
Station Name	Susquehanna River at Harrisburg	
Q710	3,200	ft ³ /sec
Drainage Area (DA)	24,100	mi ²
Calculations		
The low flow yield of the gauge station is:		
Low Flow Yield (LFY) = Q710 / DA		
LFY =	(3,200 ft ³ /sec / 24,100 mi ²)	
LFY =	0.1328	ft ³ /sec/mi ²
The low flow at the subject site is based upon the DA of		
	29	mi ²
Q710 = (LFY@gauge station)(DA@Subject Site)		
Q710 = (0.1328 ft ³ /sec/mi ²)(29 mi ²)		
Q710 =	3.8506	ft ³ /sec

4.6 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	<u>001</u>	Design Flow (MGD)	<u>.002</u>
Latitude	<u>40° 25' 9.70"</u>	Longitude	<u>-77° 2' 5.31"</u>
Quad Name	<u></u>	Quad Code	<u></u>
Wastewater Description: <u>Sewage Effluent</u>			

Receiving Waters	<u>Unnamed Tributary of Little Juniata Creek (CWF, MF)</u>	Stream Code	<u>11374</u>
NHD Com ID	<u>56398359</u>	RMI	<u>0.2</u>
Drainage Area	<u>0.0365</u>	Yield (cfs/mi ²)	<u>0.1328</u>
Q ₇₋₁₀ Flow (cfs)	<u>0.0048</u>	Q ₇₋₁₀ Basis	<u>Stream Stats</u>
Elevation (ft)	<u>568</u>	Slope (ft/ft)	<u></u>
Watershed No.	<u>07A</u>	Chapter 93 Class.	<u>Cold Water Fishes, Migratory Fishes</u>
Existing Use	<u>Same as Chapter 93</u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u>None</u>
Assessment Status	<u>Attaining Use(s) supports aquatic life; Impaired for recreational purposes</u>		
Cause(s) of Impairment	<u>Pathogens</u>		
Source(s) of Impairment	<u>Unknown</u>		
TMDL Status	<u>Not appl.</u>	Name	<u></u>

Background/Ambient Data		Data Source	
pH (SU)	<u>8.25</u>		<u>WQN202; Median July to Sept</u>
Temperature (°C)	<u>23.75</u>		<u>WQN202; Median July to Sept</u>
Hardness (mg/L)	<u>Not appl.</u>		<u></u>
Other:	<u></u>		<u></u>

Nearest Downstream Public Water Supply Intake	<u>Capital Region Water</u>		
PWS Waters	<u>Susquehanna River</u>	Flow at Intake (cfs)	<u></u>
PWS RMI	<u>73.4</u>	Distance from Outfall (mi)	<u>13.7</u>

5.0: Overview of Presiding Water Quality Standards

5.1 General

There are at least six (6) different policies which determines the effluent performance limits for the NPDES permit. The policies are technology based effluent limits (TBEL), water quality based effluent limits (WQBEL), antidegradation, total maximum daily loading (TMDL), anti-backsliding, and whole effluent toxicity (WET) The effluent performance limitations enforced are the selected permit limits that is most protective to the designated use of the receiving waters. An overview of each of the policies that are applicable to the subject facility has been presented in Section 6.

5.2 Technology-Based Limitations

TBEL treatment requirements under section 301(b) of the Act represent the minimum level of control that must be imposed in a permit issued under section 402 of the Act (40 CFR 125.3).

Small flow treatment facilities are confined to permit limitations promulgated by the Small Flow Treatment Facilities Manual (Document # 36-0300-002) and the SOP- New and Reissuance Small Flow Treatment Facility Individual NPDES Permit Application (Revised January 13, 2015). The effluent limits for small flows are summarized below.

Parameter	Avg Mo	IMAX	Sample Type	Frequency: SFTFs
Flow (GPD)	Report	XXX	Measured	1/month
BOD5 (mg/l)	10	20	Grab	1/month
TSS (mg/l)	10	20	Grab	1/month
TRC (mg/l)	TRC Spreadsheet or 0.02 mg/l AML		Grab	1/month
Fecal Coliform (No/100 ml)	200 Geometric Mean		Grab	1/month

Other parameters that require effluent limits were developed using the effluent limits assigned by Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers (Document # 391-2000-014). Since the guidance document has been revised several times, the TBEL effluent limits that apply are those there present in the guidance manual revision at the time of permitting.

5.3 Water Quality-Based Limitations

WQBEL are based on the need to attain or maintain the water quality criteria and to assure protection of designated and existing uses (PA Code 25, Chapter 92a.2). The subject facility that is typically enforced is the more stringent limit of either the TBEL or the WQBEL.

Determination of WQBEL is calculated by spreadsheet analysis or by a computer modeling program developed by DEP. DEP permit engineers utilize the following computing programs for WQBEL permit limitations: (1) MS Excel worksheet for Total Residual Chlorine (TRC); (2) WQM 7.0 for Windows Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen Version 1.0 (WQM Model) and (3) PENTOXSD for Windows 2.0 (PENTOXSD) for Toxics pollutants.

5.3.1 Water Quality Modeling 7.0

The WQM Model is a computer model that is used to determine NPDES discharge effluent limitations for Carbonaceous BOD (CBOD5), Ammonia Nitrogen (NH3-N), and Dissolved Oxygen (DO) for single and multiple point source discharges scenarios. WQM Model is a complete-mix model which means that the discharge flow and the stream flow are assumed to instantly and completely mixed at the discharge node.

WQM recommends effluent limits for DO, CBOD5, and NH3-N in mg/l for the discharge(s) in the simulation.

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Four types of limits may be recommended. The limits are (a) a *minimum concentration for DO in the discharge as 30-day average*; (b) a *30-day average concentration for CBOD5 in the discharge*; (c) a *30-day average concentration for the NH₃-N in the discharge*; (d) *24-hour average concentration for NH₃-N in the discharge*.

The WQM Model requires several input values for calculating output values. The source of data originates from either EMAP, the National Map, or Stream Stats. Data for stream gauge information, if any, was abstracted from USGS Low-Flow, Base-Flow, and Mean-Flow Regression Equations for Pennsylvania Streams authored by Marla H. Stuckey (Scientific Investigations Report 2006-5130).

The input values utilized for the modeling are summarized in the table which can be found in Attachment B.

The applicable WQM Effluent Limit Type are discussed in Section 6 under the corresponding parameter which is either DO, CBOD, or ammonia-nitrogen.

5.3.2 PENTOXSD Modeling

Not applicable

5.3.3 Whole Effluent Toxicity (WET)

Not applicable

5.4 Total Maximum Daily Loading (TMDL)**5.4.1 TMDL**

The goal of the Clean Water Act (CWA), which governs water pollution, is to ensure that all of the Nation's waters are clean and healthy enough to support aquatic life and recreation. To achieve this goal, the CWA created programs designed to regulate and reduce the amount of pollution entering United States waters. Section 303(d) of the CWA requires states to assess their waterbodies to identify those not meeting water quality standards. If a waterbody is not meeting standards, it is listed as impaired and reported to the U.S. Environmental Protection Agency. The state then develops a plan to clean up the impaired waterbody. This plan includes the development of a Total Maximum Daily Load (TMDL) for the pollutant(s) that were found to be the cause of the water quality violations. A Total Maximum Daily Load (tmdl) calculates the maximum amount of a specific pollutant that a waterbody can receive and still meet water quality standards.

Pennsylvania has committed to restoring all impaired waters by developing TMDLs and TMDL alternatives for all impaired waterbodies. The TMDL serves as the starting point or planning tool for restoring water quality.

5.4.1.1 Local TMDL

The subject facility does not discharge into a local TMDL.

5.4.1.2 Chesapeake Bay TMDL Requirement

The Chesapeake Bay Watershed is a large ecosystem that encompasses approximately 64,000 square miles in Maryland, Delaware, Virginia, West Virginia, Pennsylvania, New York and the District of Columbia. An ecosystem is composed of interrelated parts that interact with each other to form a whole. All of the plants and animals in an ecosystem depend on each other in some way. Every living thing needs a healthy ecosystem to survive. Human activities affect the Chesapeake Bay ecosystem by adding pollution, using resources and changing the character of the land.

Most of the Chesapeake Bay and many of its tidal tributaries have been listed as impaired under Section 303(d) of the federal Water Pollution Control Act ("Clean Water Act"), 33 U.S.C. § 1313(d). While the Chesapeake Bay is outside the boundaries of Pennsylvania, more than half of the State lies within the watershed. Two major rivers in Pennsylvania are part of the Chesapeake Bay Watershed. They are (a) the Susquehanna River and (b) the Potomac River. These two rivers total 40 percent of the entire Chesapeake Bay watershed.

The overall management approach needed for reducing nitrogen, phosphorus and sediment are provided in the Bay TMDL document and the Phase I and II WIPs which is described in the Bay TMDL document and Executive Order 13508.

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The Bay TMDL is a comprehensive pollution reduction effort in the Chesapeake Bay watershed identifying the necessary pollution reductions of nitrogen, phosphorus and sediment across the seven Bay watershed jurisdictions of Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia and the District of Columbia to meet applicable water quality standards in the Bay and its tidal waters.

The Watershed Implementation Plans (WIPs) provides objectives for how the jurisdictions in partnership with federal and local governments will achieve the Bay TMDL's nutrient and sediment allocations. The jurisdictions have developed or will develop WIPs over three Phases.

Phase I and Phase II WIPs were developed and submitted to EPA in 2010 and 2012 for objectives to be implemented by 2017 and 2025 to achieve applicable water quality standards. The Phase II WIPs build on the initial Phase I WIPs platform by providing more specific local actions. In 2018, Phase III WIPs will be developed to include further actions for jurisdictions to implement between 2018 and 2025.

Section 7 of the Phase II WIP describes Pennsylvania's strategy for reducing nutrients to the Chesapeake Bay from wastewater facilities. The supplement to Section 7 of the Phase II WIP provides an update on Chesapeake Bay TMDL implementation activities for point sources and DEP's current implementation strategy for wastewater. The supplement is updated periodically to reflect changes due to PA DEP's permit actions as well as changes to strategies in managing the wastewater sector's allocated loads under the TMDL. The latest revision of the supplement was October 14, 2016.

The Chesapeake Bay TMDL (Appendix Q) categorizes point sources into four sectors

:

- Sector A- significant sewage dischargers;
- Sector B- significant industrial waste (IW) dischargers;
- Sector C- non-significant dischargers (both sewage and IW facilities); and
- Sector D- combined sewer overflows (CSOs).

All sectors contain a listing of individual facilities with NPDES permits that were believed to be discharging at the time the TMDL was published (2010). All sectors with the exception of the non-significant dischargers have individual wasteload allocations (WLAs) for TN and TP assigned to specific facilities. Non-significant dischargers have a bulk or aggregate allocation for TN and TP based on the facilities in that sector that were believed to be discharging at that time and their estimated nutrient loads.

Based upon the supplement the subject facility has been categorized as a Sector C discharger. The supplement defines Sector C as a sewage facility that is considered non-significant dischargers if it is a Phase 4 facility or Phase 5 facility having a specified flow rate (i.e. Phase 4 facility ≥ 0.2 MGD and < 0.4 MGD, Phase 5 facility > 0.002 MGD and < 0.2 MGD), a small flow/single residence sewage treatment facilities (≤ 0.002 MGD), or a non-significant IW facilities. These facilities may be covered by statewide general permits or may have individual NPDES permits.

Currently, there are approximately 1,000 Phase 4 and 5 sewage facilities and approximately 740 small flow sewage treatment facilities covered by the general permit. There are also approximately 600 non-significant IW facilities.

A list of non-significant sewage and industrial waste dischargers with Cap Loads in NPDES permits is presented in Attachment B of the Phase 2 WIP. The facility is not listed in Attachment B of the WIP.

This facility is not subject to Sector C monitoring requirements.

5.5 Anti-Degradation Requirement:

Chapter 93.4a of the PA regulations requires that surface water of the Commonwealth of Pennsylvania may not be degraded below levels that protect the existing uses. The regulations specifically state that *Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected*. Antidegradation requirements are implemented through DEP's guidance manual entitled Water Quality Antidegradation Implementation Guidance (Document #391-0300-02).

The policy requires DEP to protect the existing uses of all surface waters and the existing quality of High Quality (HQ) and Exceptional Value (EV) Waters. Existing uses are protected when DEP makes a final decision on any permit or approval for an activity that may affect a protected use. Existing uses are protected based upon DEP's evaluation of the best available information (which satisfies DEP protocols and Quality Assurance/Quality Control (QA/QC) procedures) that indicates the protected use of the waterbody.

For a new, additional, or increased point source discharge to an HQ or EV water, the person proposing the discharge is required to utilize a nondischarge alternative that is cost-effective and environmentally sound when compared with the cost of the proposed discharge. If a nondischarge alternative is not cost-effective and environmentally sound, the person must use the best available combination of treatment, pollution prevention, and wastewater reuse technologies and assure that any discharge is nondegrading. In the case of HQ waters, DEP may find that after satisfaction of intergovernmental coordination and public participation requirements lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In addition, DEP will assure that cost-effective and reasonable best management practices for nonpoint source control in HQ and EV waters are achieved.

The subject facility's discharge will be to a non-special protection waters and the permit conditions are imposed to protect existing instream water quality and uses. Neither HQ waters or EV waters is impacted by this discharge.

5.6 Anti-Backsliding

Anti-backsliding is a federal regulation which prohibits a permit from being renewed, reissued, or modified containing effluent limitations which are less stringent than the comparable effluent limitations in the previous permit (40 CFR 122.I.1 and 40 CFR 122.I.2). A review of the existing permit limitations with the proposed permit limitations confirm that the facility is consistent with anti-backsliding requirements. The facility has proposed effluent limitations that are as stringent as the existing permit.

6.0 NPDES Parameter Details

The basis for the proposed sampling and their monitoring frequency that will appear in the permit for each individual parameter are itemized in this Section. The final limits are the more stringent of technology based effluent treatment (TBEL) requirements, water quality based (WQBEL) limits, TMDL, antidegradation, anti-degradation, or WET.

The reader will find in this section:

- a) a justification of recommended permit monitoring requirements and limitations for each parameter in the proposed NPDES permit;
- b) a summary of changes from the existing NPDES permit to the proposed permit; and
- c) a summary of the proposed NPDES effluent limits.

6.1 Recommended Monitoring Requirements and Effluent Limitations

A summary of the recommended monitoring requirements and effluent limitations are itemized in the tables. The tables are categorized by (a) Conventional Pollutants and Disinfection and (b) Nitrogen.

6.1.1 Conventional Pollutants and Disinfection

Summary of Proposed NPDES Parameter Details for Conventional Pollutants and Disinfection			
Otterbein United Methodist Church, PA0248231			
Parameter	Permit Limitation Required by ¹ :	Recommendation	
pH (S.U.)	TBEL	Monitoring:	The monitoring frequency shall be 1x/wk as a grab sample.
		Effluent Limit:	Effluent limits may range from pH = 6.0 to 9.0
		Rationale:	The monitoring frequency has been assigned in accordance with best professional judgement (BPJ) and the effluent limits assigned by Chapter 95.2(1).
Dissolved Oxygen	BPJ	Monitoring:	The monitoring frequency shall be 1/wk as a grab sample.
		Effluent Limit:	Effluent limits shall not exceed 5.0 mg/l.
		Rationale:	The monitoring frequency has been assigned in accordance with best professional judgement (BPJ) and the effluent limits assigned by best professional judgement.
CBOD	TBEL (Dry Stream Guidance)	Monitoring:	The monitoring frequency shall be 1x/month as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 10 mg/l as an average month during the months of May 1 to October 31 and 20 mg/l during the months of November 1 to April 30..
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers (Document # 391-2000-014). The dry stream guidance manual used to develop the effluent limits were determined based upon TBEL from the dry stream guidance in force at the time the permit was originally issued.
TSS	TBEL (Dry Stream Guidance)	Monitoring:	The monitoring frequency shall be 1x/mo as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 10 mg/l.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers (Document # 391-2000-014). The dry stream guidance manual used to develop the effluent limits were determined based upon TBEL from the dry stream guidance in force at the time the permit was originally issued.
TRC	TBEL	Monitoring:	The monitoring frequency shall be on a 1/wk basis as a grab sample (BPJ).
		Effluent Limit:	The average monthly limit should not exceed 0.5 mg/l and/or 1.6 mg/l as an instantaneous maximum.
		Rationale:	Chlorine in both combined (chloramine) and free form is extremely toxic to freshwater fish and other forms of aquatic life (Implementation Guidance Total Residual Chlorine 1). The TRC effluent limitations to be imposed on a discharger shall be the more stringent of either the WQBEL or TBEL requirements and shall be expressed in the NPDES permit as an average monthly and instantaneous maximum effluent concentration (Implementation Guidance Total Residual Chlorine 4). Based on the stream flow rate (lowest 7-day flow rate in 10 years) and the design flow rate of the subject facility calculated by the TRC Evaluation worksheet, the TBEL is more stringent than the WQBEL. The monitoring frequency has been assigned in accordance with BPJ and the effluent limits assigned by Chapter 92a.48(b)(2)
Fecal Coliform	TBEL	Monitoring:	The monitoring frequency shall be 1x/month as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 200 mg/l as a geometric mean.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(4) and 92a.47(a)(5).

Notes:

1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Dry Stream Guidance

2 Monitoring frequency based on flow rate of 0.002 MGD.

3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits (Document # 362-0400-001) Revised 10/97

4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)

5 Phase 2 Watershed Implementation Plan Wastewater Supplement, Revised September 6, 2017

6.1.2 Nitrogen Species and Phosphorus

Summary of Proposed NPDES Parameter Details for Nitrogen Species and Phosphorus			
Otterbein United Methodist Church, PA0248231			
Parameter	Permit Limitation Required by ¹ :	Recommendation	
Ammonia-Nitrogen	TBEL (Dry Stream Guidance)	Monitoring:	The monitoring frequency shall be 1x/mo as a grab sample (Table 6-3)
		Effluent Limit:	Effluent limits shall not exceed 3.0 mg/l as an average month during the months of May 1 to October 31 and 9.0 mg/l during the months of November 1 to April 30..
		Rationale:	The effluent limits were determined based upon TBEL from the dry stream guidance in force at the time the permit was originally issued.
Notes:			
1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Dry Stream Guidance			
2 Monitoring frequency based on flow rate of 0.002 MGD.			
3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97			
4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)			
5 Phase 2 Watershed Implementation Plan Wastewater Supplement, Revised September 6, 2017			

6.2 Summary of Changes From Existing Permit to Proposed Permit

A summary of how the proposed NPDES permit differs from the existing NPDES permit is summarized as follows.

There were no changes to monitoring or effluent requirements in the proposed permit.

NPDES Permit Fact Sheet
Otterbein United Meth Church Development
6.3 Summary of Proposed NPDES Effluent Limits

NPDES Permit No. PA0248231

The proposed NPDES effluent limitations are summarized in the table below.

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 001, Latitude 40° 25' 9.00", Longitude 77° 2' 5.00", River Mile Index 1.72, Stream Code 13876

Receiving Waters: Unnamed Tributary of Little Juniata Creek (CWF, MF)

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **Permit Effective Date** through **Permit Expiration Date**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

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	1/week	Estimate
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/week	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/week	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/week	Grab
CBOD5 Nov 1 - Apr 30	XXX	XXX	XXX	20	XXX	40	1/month	Grab
CBOD5 May 1 - Oct 31	XXX	XXX	XXX	10	XXX	20	1/month	Grab
TSS	XXX	XXX	XXX	10	XXX	20	1/month	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/month	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	9.0	XXX	18	1/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	3.0	XXX	6	1/month	Grab

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

Attachment A

Stream Stats/Gauge Data

14 Selected Streamflow Statistics for Streamgauge Locations in and near Pennsylvania

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
01561000	Brush Creek at Gapsville, Pa.	39.956	-78.254	36.8	N
01562000	Raystown Branch Juniata River at Saxton, Pa.	40.216	-78.265	756	N
01562500	Great Trough Creek near Marklesburg, Pa.	40.350	-78.130	84.6	N
01563200	Raystown Branch Juniata River below Rays Dam nr Huntingdon, Pa.	40.429	-77.991	960	Y
01563500	Juniata River at Mapleton Depot, Pa.	40.392	-77.935	2,030	Y
01564500	Aughwick Creek near Three Springs, Pa.	40.213	-77.925	205	N
01565000	Kishacoquillas Creek at Reedsville, Pa.	40.655	-77.583	164	N
01565700	Little Lost Creek at Oakland Mills, Pa.	40.605	-77.311	6.52	N
01566000	Tuscarora Creek near Port Royal, Pa.	40.515	-77.419	214	N
01566500	Cocolamus Creek near Millerstown, Pa.	40.566	-77.118	57.2	N
01567000	Juniata River at Newport, Pa.	40.478	-77.129	3,354	Y
01567500	Bixler Run near Loysville, Pa.	40.371	-77.402	15.0	N
01568000	Sherman Creek at Shermans Dale, Pa.	40.323	-77.169	207	N
01568500	Clark Creek near Carsonville, Pa.	40.460	-76.751	22.5	LF
01569000	Stony Creek nr Dauphin, Pa.	40.380	-76.907	33.2	N
01569800	Letort Spring Run near Carlisle, Pa.	40.235	-77.139	21.6	N
01570000	Conodoguinet Creek near Hogestown, Pa.	40.252	-77.021	470	LF
01570500	Susquehanna River at Harrisburg, Pa.	40.255	-76.886	24,100	Y
01571000	Paxton Creek near Penbrook, Pa.	40.308	-76.850	11.2	N
01571500	Yellow Breeches Creek near Camp Hill, Pa.	40.225	-76.898	213	N
01572000	Lower Little Swatara Creek at Pine Grove, Pa.	40.538	-76.377	34.3	N
01572025	Swatara Creek near Pine Grove, Pa.	40.533	-76.402	116	N
01572190	Swatara Creek near Inwood, Pa.	40.479	-76.531	167	N
01573000	Swatara Creek at Harper Tavern, Pa.	40.403	-76.577	337	N
01573086	Beck Creek near Cleona, Pa.	40.323	-76.483	7.87	N
01573160	Quittapahilla Creek near Bellegrove, Pa.	40.343	-76.562	74.2	N
01573500	Manada Creek at Manada Gap, Pa.	40.397	-76.709	13.5	N
01573560	Swatara Creek near Hershey, Pa.	40.298	-76.668	483	N
01574000	West Conewago Creek near Manchester, Pa.	40.082	-76.720	510	N
01574500	Codorus Creek at Spring Grove, Pa.	39.879	-76.853	75.5	Y
01575000	South Branch Codorus Creek near York, Pa.	39.921	-76.749	117	Y
01575500	Codorus Creek near York, Pa.	39.946	-76.755	222	Y
01576000	Susquehanna River at Marietta, Pa.	40.055	-76.531	25,990	Y
01576085	Little Conestoga Creek near Churchtown, Pa.	40.145	-75.989	5.82	N
01576500	Conestoga River at Lancaster, Pa.	40.050	-76.277	324	N
01576754	Conestoga River at Conestoga, Pa.	39.946	-76.368	470	N
01578310	Susquehanna River at Conowingo, Md.	39.658	-76.174	27,100	Y
01578400	Bowery Run near Quarryville, Pa.	39.895	-76.114	5.98	N
01580000	Deer Creek at Rocks, Md.	39.630	-76.403	94.4	N
01581500	Bynum Run at Bel Air, Md.	39.541	-76.330	8.52	N
01581700	Winters Run near Benson, Md.	39.520	-76.373	34.8	N
01582000	Little Falls at Blue Mount, Md.	39.604	-76.620	52.9	N
01582500	Gunpowder Falls at Glencoe, Md.	39.550	-76.636	160	Y
01583000	Slade Run near Glyndon, Md.	39.495	-76.795	2.09	N
01583100	Piney Run at Dover, Md.	39.521	-76.767	12.3	N

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

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

Streamgauge 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)
01565000	1941–2008	37	17.6	18.6	28.6	20.3	32.4	24.4
01565700	1965–1981	17	.4	.4	.9	.5	1.1	.8
01566000	1913–2008	52	4.3	7.9	18.8	12.4	25.6	19.2
01566500	1932–1958	27	1.7	2.4	4.0	3.2	5.7	4.9
01567000	² 1974–2008	35	504	534	725	589	857	727
01567000	³ 1901–1972	72	311	367	571	439	704	547
01567500	1955–2008	54	2.0	2.2	3.3	2.6	3.8	3.1
01568000	1931–2008	78	12.7	15.5	25.5	19.2	32.0	26.0
01568500	² 1943–1997	55	1.8	2.3	4.3	2.7	5.0	3.1
01569000	1939–1974	14	2.6	4.0	7.4	5.1	9.4	7.8
01569800	1978–2008	31	15.9	17.0	24.4	18.4	26.1	20.3
01570000	¹ 1913–1969	35	—	63.1	110	76.1	124	95.3
01570000	² 1971–2008	38	63.1	69.3	109	78.3	125	97.8
01570500	³ 1901–1972	72	2,310	2,440	4,000	2,830	4,950	3,850
01570500	² 1974–2008	35	3,020	3,200	5,180	3,690	6,490	4,960
01571000	1941–1995	16	.1	.2	.6	.3	1.2	.8
01571500	1911–2008	62	81.6	86.8	115	94.0	124	105
01572000	1921–1984	14	2.1	2.3	4.8	3.0	6.5	4.5
01572025	1990–2008	17	15.2	16.4	26.7	18.5	34.6	27.7
01572190	1990–2008	17	19.1	20.5	36.2	23.9	45.8	35.3
01573000	1920–2008	89	18.0	22.0	52.0	30.8	69.2	50.9
01573086	1965–1981	17	.5	.6	2.6	.8	3.3	1.1
01573160	1977–1994	18	26.9	29.6	46.4	33.6	51.9	39.5
01573500	1939–1958	20	1.3	1.4	2.5	1.8	3.2	2.6
01573560	1977–2008	30	50.3	62.0	104	76.9	131	108
01574000	1930–2008	79	8.0	11.1	32.0	17.7	47.0	33.9
01574500	² 1968–2008	41	14.2	24.0	35.9	29.4	42.0	33.3
01574500	³ 1930–1966	34	2.3	7.1	11.5	9.3	14.8	12.7
01575000	² 1973–1995	23	.7	1.4	6.7	3.2	12.0	9.3
01575000	³ 1929–1971	43	.1	.6	10.3	2.3	15.0	6.1
01575500	² 1948–1996	49	12.1	18.7	41.3	23.9	50.0	33.8
01576000	¹ 1933–1972	40	2,100	2,420	4,160	2,960	5,130	4,100
01576000	² 1974–2008	35	2,990	3,270	5,680	3,980	7,180	5,540
01576085	1984–1995	12	.4	.5	.8	.7	1.2	1.2
01576500	1931–2008	78	27.2	38.6	79.4	49.1	97.3	66.1
01576754	1986–2008	23	74.2	84.9	151	106	189	147
⁴ 01578310	1969–2008	40	549	2,820	5,650	4,190	7,380	6,140
01578400	1964–1981	18	1.4	1.5	2.7	1.9	3.2	2.5
⁴ 01580000	1928–2008	81	19.7	22.8	48.1	28.1	51.8	35.4
⁴ 01581500	1946–2008	28	.2	.3	1.2	.8	1.7	1.5
⁴ 01581700	1969–2008	40	4.7	5.5	17.5	8.1	18.3	12.0
⁴ 01582000	1946–2008	63	11.3	12.5	25.0	15.5	28.0	20.3
⁴ 01582500	1979–2008	27	41.2	43.9	78.8	53.8	90.6	74.1
⁴ 01583000	1949–1981	33	.3	.3	.7	.3	1.0	.6
⁴ 01583100	1984–2008	15	2.1	2.4	5.5	3.2	6.0	4.2

Attachment B

Modeling Input Values

WQM 7.0 Modeling Output Values