pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0080195**
Facility Type	**Industrial**	APS ID	**319721**
Major / Minor	**Minor**	Authorization ID	**1092777**

NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

Applicant and Facility Information

Applicant Name	**Anvil International LLC**	Facility Name	**Anvil International Iron Foundry Columbia**
Applicant Address	1411 Lancaster Avenue	Facility Address	1411 Lancaster Avenue
	Columbia, PA 17512-1939		Columbia, PA 17512-1939
Applicant Contact	Greg Wise	Facility Contact	Greg Wise
Applicant Phone	(717) 684-4400	Facility Phone	(717) 684-4400
Client ID	136885	Site ID	443864
SIC Code	3322	Municipality	West Hempfield Township
SIC Description	Manufacturing - Malleable Iron Foundries	County	Lancaster
Date Application Received	October 5, 2015	EPA Waived?	Yes
Date Application Accepted	July 27, 2017	If No, Reason	

Purpose of Application: This is an application for NPDES renewal.

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineer Nick Hong (via electronic signature)	April 7, 2021
X		Daniel W. Martin, P.E. / Environmental Engineer Manager /s/	April 7, 2021
X		Maria Bebenek, P.E. / Environmental Program Manager /s/	April 7, 2021

Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the Anvil International, LLC located at 1411 Lancaster Avenue, Columbia, PA 17512 in Lancaster County, municipality of Columbia. The NPDES became effective on April 1, 2011 and expired on March 31, 2016. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on October 5, 2015. Due to changes in the facility's treatment process, the NPDES renewal application was re-submitted on November 25, 2020.

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 has two internal monitoring point outfalls and four discharging outfalls. The facility is a 0.1978 MGD treatment facility (flow based upon water intake from city water). In January 2020, the applicant replaced the galvanizing wastewater treatment with a water quenching system that recycles the wastewater. The upgrade is completely recyclable and will eliminate the need for galvanizing wastewater discharge. However, the facility will continue to discharge process cooling water. The NPDES application has been processed as an Industrial Wastewater with ELG due to the type of wastewater and the design flow rate for the facility. The applicant disclosed the Act 14 requirement to Lancaster Planning Commission and Borough of Columbia and the notice was received by the parties on November 20, 2020 and November 18, 2020. A planning approval letter was not necessary as the facility is an industrial waste facility.

Utilizing the DEP's web-based Emap-PA information system, the receiving waters has been determined to be Tributary 07880 to Shawnee Run. The sequence of receiving streams that Tributary 07880 to Shawnee Run discharges into are the Shawnee Run and the Susquehanna River which eventually drains into the Chesapeake Bay. Since the facility discharges process cooling water only, the subject site will not be subject to the Chesapeake Bay implementation requirements. The receiving water has protected water usage for warm water fishes (WWF) 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 07880 to Shawnee Run is a Category 4c and 5 stream listed in the 2020 Integrated List of All Waters (formerly 303d Listed Streams). This stream is impaired for aquatic life due to metals from urban runoff and storm sewers. The receiving stream is also impacted by flow alterations from urban runoff and storm sewers. Other impairments include siltation from agriculture. 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:

- **Effluent limit temperature changes for Outfalls 001 and 002. The temperature limits have been organized by standard critical use time periods.**
- **Due to elimination of galvanizing wastewater, the following have been parameters have been eliminated for Outfall 001: TSS, Oil and Grease, Total Cadmium, Total Copper, Total Lead, Total Nickel, Total Silver, and Total Zinc.**
- **Outfall 100 has been eliminated.**

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.

Summary of Review
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:	Anvil International, LLC
NPDES Permit #	PA0080195
Physical Address:	1411 Lancaster Avenue Columbia, PA 17512
Mailing Address:	1411 Lancaster Avenue Columbia, PA 17512
Contact:	Greg Wise EHS Manager gwise@anvilintl.com Ryan Hill Environmental Engineer rhill@anvilintl.com
Consultant:	There was not a consultant utilized for this NPDES renewal

1.2 Permit History

Information about the Facility

Anvil International is a manufacturer of pipe fittings, pipe hangers, and piping support systems. The company has seven (7) plants in the United States. Three of the plants are located in PA. The plant located in Columbia, PA is considered an iron foundry that manufacturers cast (gray) malleable and ductile iron pipe fittings and grooved products, iron threaded fittings, pipe hangers and custom castings. The facility operates under the Malleable Iron Foundries (SIC Code #3322, NAICS Code #331511).

The facility was considered a major discharger that was subject to WET testing. Between October 1991 to February 1993, the facility prepared four quarterly test that passed. Three of the four test had to be retested due to suspected lab problems. On October 13, 1993, EPA received the WET test results and accepted the results on March 5, 1994. Subsequent renewals have not required additional WET testing.

In January 2000, a rerating of the facility removed the requirement that the facility be categorized as a major facility. EPA concurred with this rerating and removed the facility from the list of major facilities.

In 2019, DEP was contacted on the adjustment to their treatment process to eliminate the galvanizing wastewater treatment plant. By concurrence, the NPDES renewal was deferred until completion of the construction and pilot testing of the closed loop treatment cycle. Effective January 2020, the galvanizing treatment system became a closed loop treatment cycle. Outfall 100 has been eliminated.

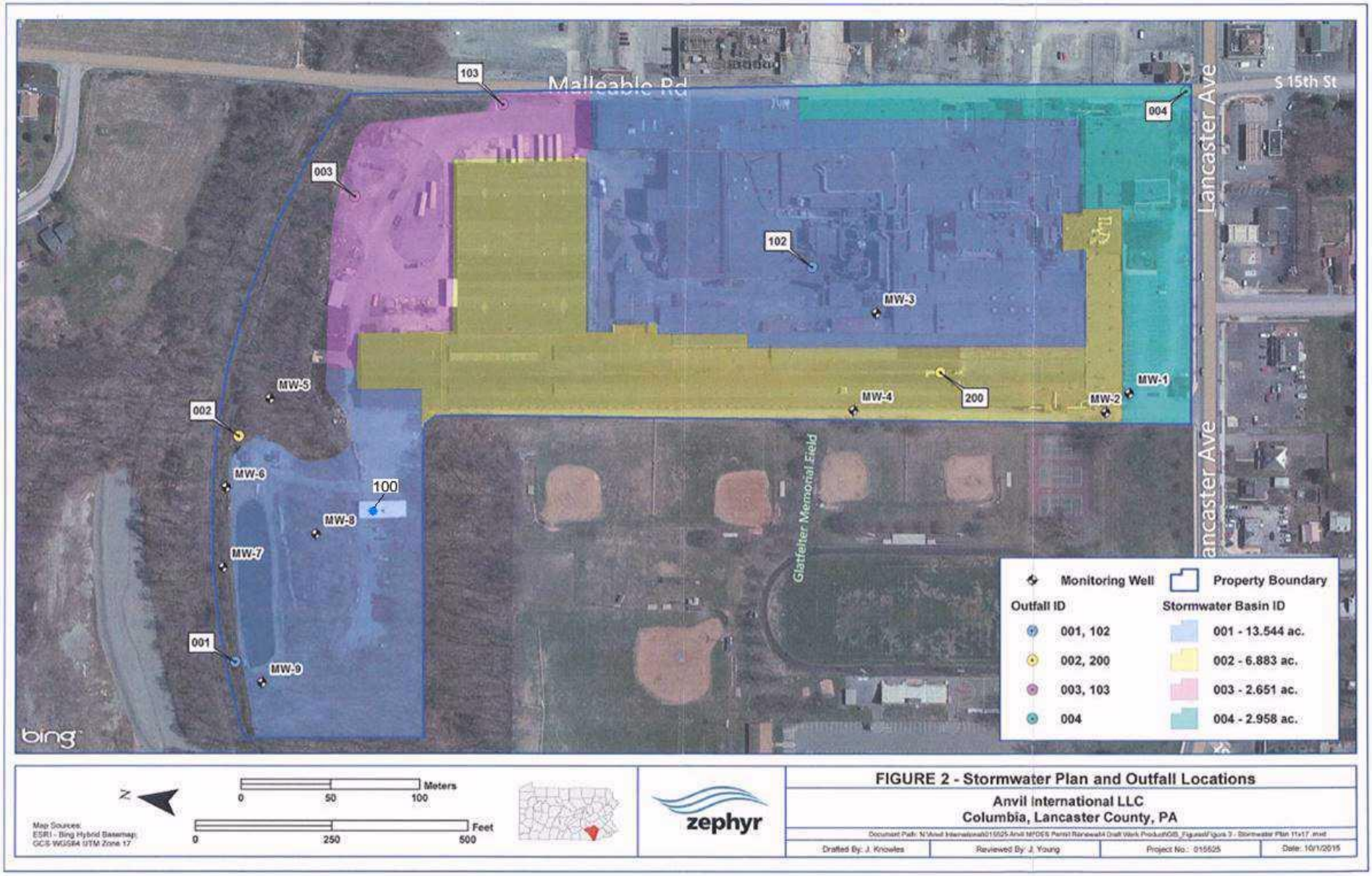
Since the galvanizing wastewater treatment plant became a closed loop, DEP elected to waive the requirements for an amended WQM permit.

The subject has six (6) different outfalls. The outfall identification number and purpose for the outfall is summarized below.

Outfall ID	Purpose of Outfall
001	This outfall receives non-contact cooling water from chillers and coolers, air compressor condensate, boiler water blowdown, and stormwater
102/103	This outall receives effluent from stormwater. Flow is weather dependent; Discharges property via Outfall 001
002	This outfall receives effluent from non-contact cooling water and stormwater.
200	This outfall receives effluent from stormwater. Flow is weather dependent. Discharges property via Outfall 002
003	This outfall receives stormwater. Flow is weather dependent.
004	This outfall receives stormwater. Flow is weather dependent.

The figure provided by the facility shows the following:

(a) Location of wastewater outfalls. Outfall 001 and 002 both discharge to UNT of Shawnee Run.
(b) Outfalls 102/103 combine and discharge through Outfall 001
(c) While Outfall 100 appears on the figure, the outfall has been eliminated.
(d) Delineation of the drainage areas to each of the stormwater outfalls


Malleable Rd
S 15th St
Lancaster Ave
Glatfelter Memorial Field
103
004
003
102
MW-3
MW-5
MW-1
MW-4
200
MW-2
002
MW-6
100
MW-8
MW-7
001
MW-9
bing
Monitoring Well
Property Boundary
Outfall ID
Stormwater Basin ID
001, 102
001 - 13.544 ac.
002, 200
002 - 6.883 ac.
003, 103
003 - 2.651 ac.
004
004 - 2.958 ac.
N
Meters
0
50
100
Feet
0
250
500
Map Sources:
ESRI - Bing Hybrid Basemap;
GCS: WGS84 UTM Zone 17
zephyr
FIGURE 2 - Stormwater Plan and Outfall Locations
Anvil International LLC
Columbia, Lancaster County, PA
Drafted By: J. Knowles
Reviewed By: J. Young
Project No.: 015525
Date: 10/1/2015

2.0 Treatment Facility Summary

2.1 Site location

The physical address for the facility is 1411 Lancaster Avenue, Columbia, PA 17512. 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

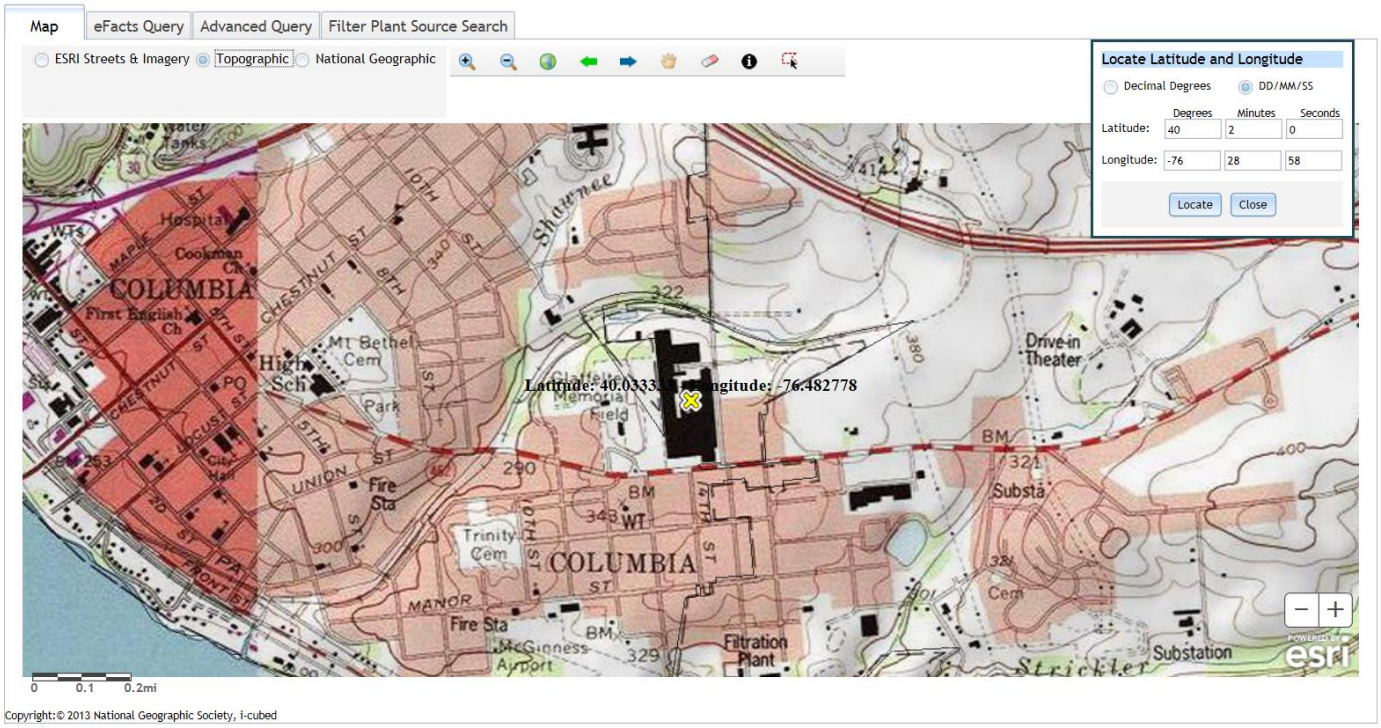
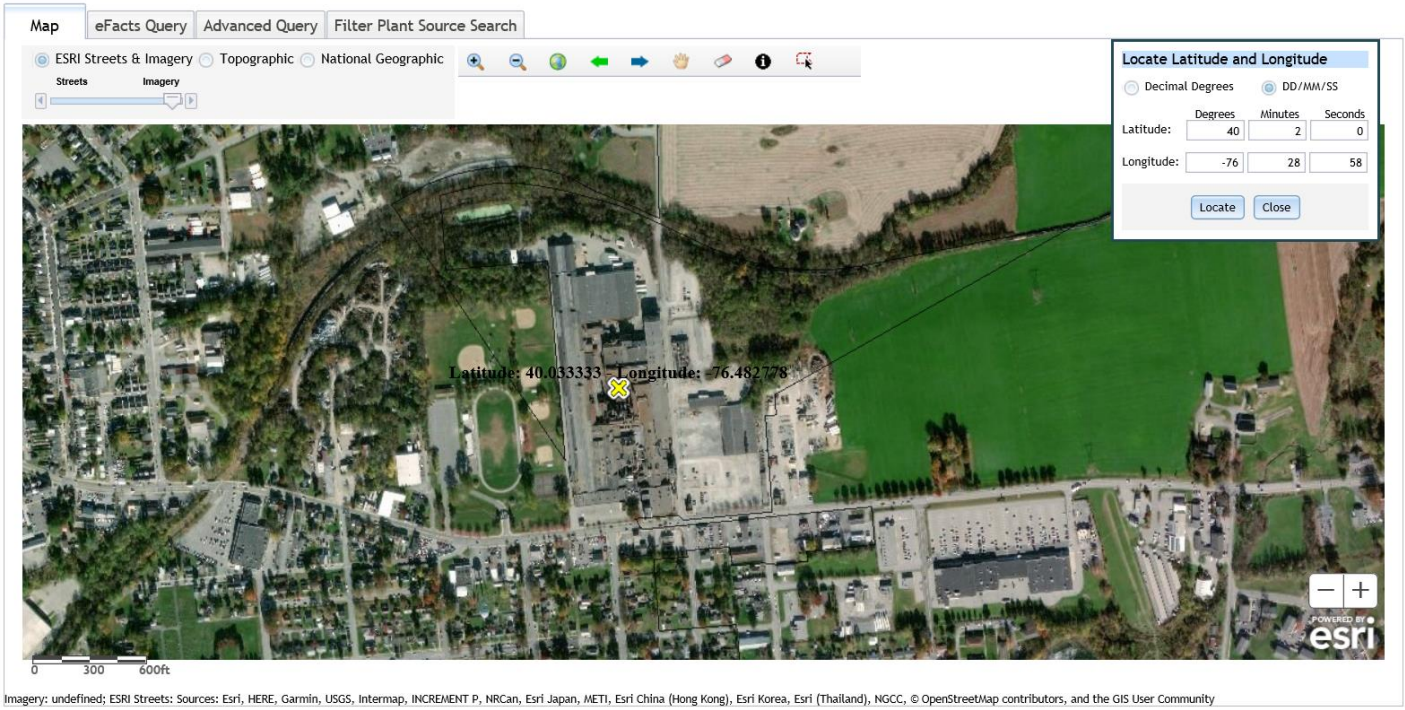


Figure 2: Aerial Photograph of the subject facility



2.2 Description of Wastewater Treatment Process

(a) Outfall 001 and Outfall 002

The subject facility is a 0.1978 MGD design flow facility. This flow rate is based upon the intake of water from the city. The facility discharges process cooling water. Discharges are through Outfall 001 and 002. A storage impoundment exists prior to the discharge for Outfall 001.

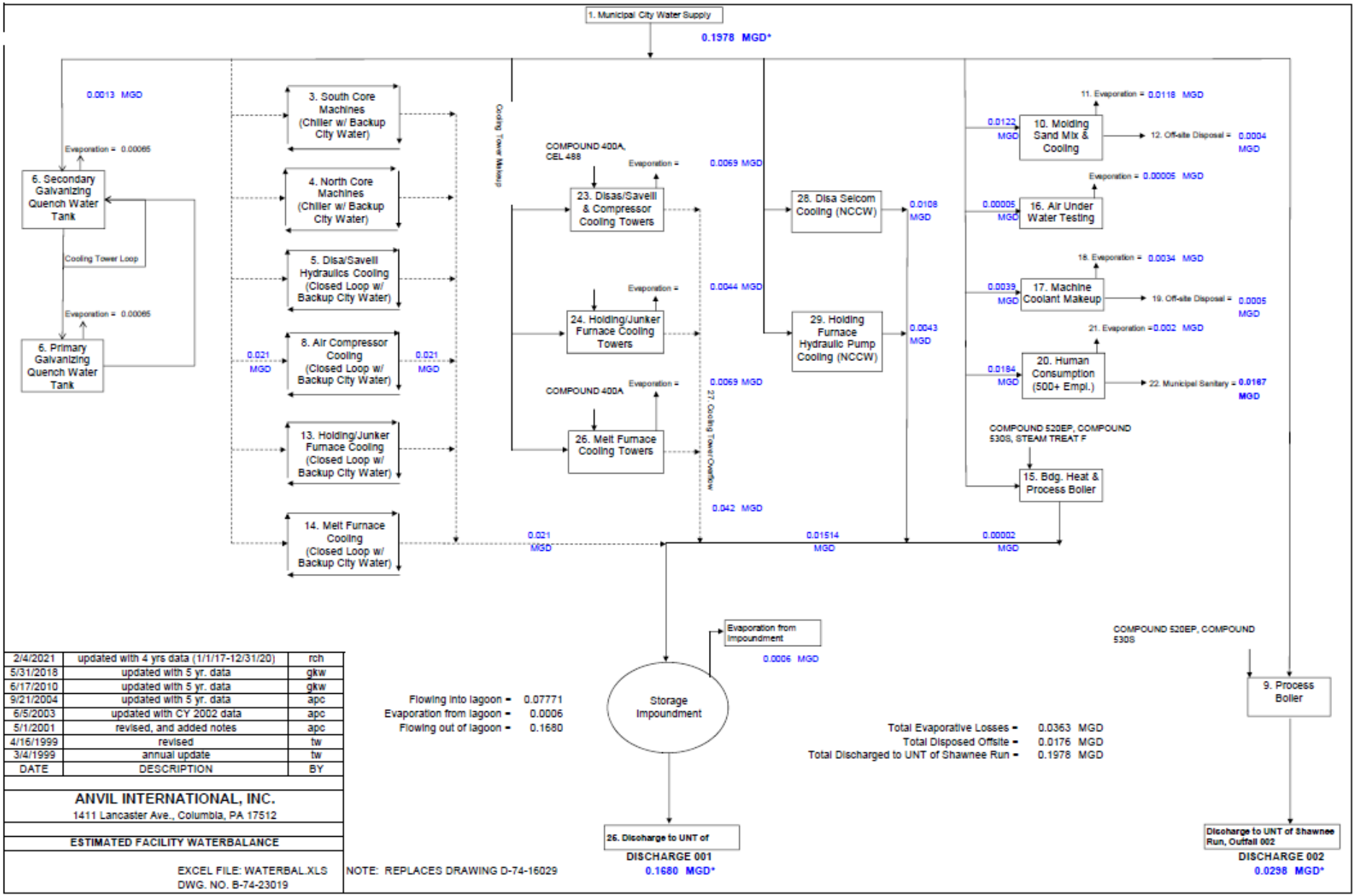
The discharge from Outfall 001 and 002 were modelled as one discharge point.

(b) Outfalls IMP 100

Due to the installation of the closed loop process, Outfall 100 has been eliminated.

The flow diagram shows the following:

(a) The flows reported by the facility are five-year average flows from January 2017 to December 2020.
(b) Source of the wastewater (i.e. Municipal City Water and/or Pumping Well MW-2)
(c) Points of introduction for chemical additives
(d) Losses of water to atmosphere, discharges to surface waters, discharges to publicly owned or other wastewater treatment facilities.


1. Municipal City Water Supply
0.1978 MGD*
0.0013 MGD
Evaporation = 0.00065
6. Secondary Galvanizing Quench Water Tank
Cooling Tower Loop
Evaporation = 0.00065
6. Primary Galvanizing Quench Water Tank
3. South Core Machines (Chiller w/ Backup City Water)
4. North Core Machines (Chiller w/ Backup City Water)
5. Disa/Savelli Hydraulics Cooling (Closed Loop w/ Backup City Water)
0.021 MGD
8. Air Compressor Cooling (Closed Loop w/ Backup City Water)
0.021 MGD
13. Holding/Junker Furnace Cooling (Closed Loop w/ Backup City Water)
14. Melt Furnace Cooling (Closed Loop w/ Backup City Water)
0.021 MGD
Cooling Tower Makeup
COMPOUND 400A, CEL 488
Evaporation =
23. Disas/Savelli & Compressor Cooling Towers
0.0069 MGD
Evaporation =
24. Holding/Junker Furnace Cooling Towers
0.0044 MGD
COMPOUND 400A
Evaporation =
26. Melt Furnace Cooling Towers
0.0069 MGD
27. Cooling Tower Overflow
0.042 MGD
28. Disa Selcom Cooling (NCCW)
0.0108 MGD
29. Holding Furnace Hydraulic Pump Cooling (NCCW)
0.0043 MGD
0.01514 MGD
11. Evaporation = 0.0118 MGD
0.0122 MGD
10. Molding Sand Mix & Cooling
12. Off-site Disposal = 0.0004 MGD
Evaporation = 0.00005 MGD
0.00005 MGD
16. Air Under Water Testing
18. Evaporation = 0.0034 MGD
0.0039 MGD
17. Machine Coolant Makeup
19. Off-site Disposal = 0.0005 MGD
21. Evaporation = 0.002 MGD
0.0184 MGD
20. Human Consumption (500+ Empl.)
22. Municipal Sanitary = 0.0167 MGD
COMPOUND 520EP, COMPOUND 530S, STEAM TREAT F
15. Bdg. Heat & Process Boiler
0.00002 MGD
Evaporation from Impoundment
0.0006 MGD
Storage Impoundment
COMPOUND 520EP, COMPOUND 530S
9. Process Boiler
Flowing into lagoon = 0.07771
Evaporation from lagoon = 0.0006
Flowing out of lagoon = 0.1680
Total Evaporative Losses = 0.0363 MGD
Total Disposed Offsite = 0.0176 MGD
Total Discharged to UNT of Shawnee Run = 0.1978 MGD
26. Discharge to UNT of
DISCHARGE 001
0.1680 MGD*
Discharge to UNT of Shawnee Run, Outfall 002
DISCHARGE 002
0.0298 MGD*
2/4/2021 updated with 4 yrs data (1/1/17-12/31/20) rch
5/31/2018 updated with 5 yr. data gkw
6/17/2010 updated with 5 yr. data gkw
9/21/2004 updated with 5 yr. data apc
6/5/2003 updated with CY 2002 data apc
5/1/2001 revised, and added notes apc
4/16/1999 revised tw
3/4/1999 annual update tw
DATE DESCRIPTION BY
ANVIL INTERNATIONAL, INC.
1411 Lancaster Ave., Columbia, PA 17512
ESTIMATED FACILITY WATERBALANCE
EXCEL FILE: WATERBAL.XLS
DWG. NO. B-74-23019
NOTE: REPLACES DRAWING D-74-16029

The following are notes on the water balance for the process flow diagram.

NOTES FOR WATER BALANCE, 2020

1. Metered water usage through 4 city meters: N/F meter, Blank Storage meter, Office meter, and Holding Furnace meter
3. System normally runs off a chiller. In the event of a chiller failure, the system converts to city water to drain.
4. System normally runs off a chiller. In the event of a chiller failure, the system converts to city water to drain.
5. Closed loop cooling system for: Disamatic hydraulics, Savelli hydraulics, AMC hydraulics and power capsules for all lines. Backup is city water to drain.
6. Based on flow through make up water meter usage, evaporation rate is half of the daily makeup per quench tank.**No Discharges, Minor Evaporation**
8. Closed loop cooling system for: (7) Centac air compressors & (3) reciprocating air compressors. Backup is city water to drain.
9. Based on instantaneous daily flow measurements at Outfall 002, excluding stormwater flow.
10. Mositure addition to 3 sand systems = moisture evaporated + moisture hauled offsite (see 11 & 12, below)
11. Based on 2 sand systems: N/F 150 tph (2.75% evaporates), Disa 160 tph (2.75% evaporates)
12. Based on 20,000 tpy waste sand and dust hauled offsite, at a maximum moisture of 3.0%
13. Two closed loop cooling systems for: Junker furnace and South 30-ton holing furnace. Backup is city water to drain.
14. Two closed loop cooling systems for: melt deck furnaces. Backup is city water to drain.
15. Estimated daily blow-down of 20 gallons per day
16. Based on 50 gallons of makeup water added per day for all testers.
17. Calculated, based on estimate of gallons evaporated (item 18), and gallons disposed of offsite as oily wastewater (item 19)
18. Estimated, based on 1700 gallons (10% of Hoffman system volume) of makeup water/day x 2 systems
19. Based on 2500 gallons/week hauled offsite for disposal and 2000 tons of chips per year with 3% water hauled offsite
20. Calculated, based on sum of gallons evaporated (estimated as 10% of volume to sewer), and gallons to municipal sewer
21. Estimated, based on 10% of municipal sewer flow is evaporated (showers, etc.)
22. Metered through one totalizing meter in sewer line
23. Evaporation from open loop side of cooling tower is estimated as 1/4 of capacity of BAC tower evaporation rate
24. Evaporation from open loop side of cooling tower is estimated as 1/4 of capacity of BAC tower evaporation rate
25. Metered through totalizing meter at outfall from storage impoundment
26. Evaporation from open loop side of cooling tower is estimated as 1/4 of capacity of BAC tower evaporation rate
27. Cooling tower overflow is estimated based on balance of volume between contributors to storage impoundment and discharge from impoundment
28. Selcom water flow rate estimated based on 2.5 gpm per Disa 24/7
29. Holding furnace hydraulic system cooling system discharge estimated based on 3 gpm, 24/7

2.2.1 Stormwater Outfalls

Stormwater is received through Outfalls 003, 004, 102/103 and 200. Stormwater is discharged through Outfalls 001 and 002.

For stormwater, the facility is being evaluated for flow, pH, CBOD5, COD, TSS, oil and grease, TKN, total phosphorus, total arsenic, total cadmium, total chromium, total copper, total cyanide, dissolved iron, total lead, total nickel, total silver, and total zinc.

Stormwater discharges associated with industrial activity from metal finishing shall require monitoring. The federal ELG parameters of interest are itemized in 40 CFR 433. The PA PAG-03 itemizes parameters of interest in Appendix B- Primary Metals under SIC Code 3322 and 3321. Other parameters of interest are itemized by the stormwater associated with industrial activity- no exposure.

2.3 Facility Outfall Information

The facility has the following outfall information.

Outfall No.	001	**Design Flow (MGD)**	.168
Latitude	40º 2' 9.30"	**Longitude**	-76º 29' 9.22"
Wastewater Description:	IW Process Effluent with ELG, Noncontact Cooling Water (NCCW), Stormwater		

Outfall No.	002	**Design Flow (MGD)**	.0298
Latitude	40º 2' 8.51"	**Longitude**	-76º 28' 58.48"
Wastewater Description:	IW Process Effluent with ELG		

Outfall No.	003	**Design Flow (MGD)**	0
Latitude	40º 2' 8.51"	**Longitude**	-76º 28' 58.48"
Wastewater Description:	Stormwater		

Outfall No.	004	**Design Flow (MGD)**	0
Latitude	40º 1' 53.80"	**Longitude**	-76º 28' 54.06"
Wastewater Description:	Stormwater		

Outfall No.	103	**Design Flow (MGD)**	___
Latitude	40º 2' 0.00"	**Longitude**	-76º 29' 0.00"
Wastewater Description:			

Outfall No.	200	**Design Flow (MGD)**	___
Latitude	40º 2' 5.00"	**Longitude**	-76º 29' 3.00"
Wastewater Description:			

The subject facility outfall is not within the vicinity of another sewage/wastewater outfall. However, other stormwater outfalls do exist downstream of the subject facility along Shawnee Run.

2.3.1 Production Data for Effluent Limitation Guidelines (ELGs)

The table below summarizes production data from 2015- 2018.

Production Data

Parameter	Production Years			
	2015	**2016**	**2017**	**2018**
Total Annual Production	2277.9	2064.6	1981.6	1960.8
Max Monthly Production	301.3	221.4	213.9	196.8
Month of Max Production	March	October	June	October
Avg/ Production Hours/Day	16	16	16	16
Avg Production Days/Month	20	20	20	20

Note:
Data in metric short tons

While the facility is classified as a federal ELG (Part 433- Metal Finishing Point 2), the facility will only discharge process cooling water. Thus, permits limits for the treatment process shall not be subject to ELG. However, limits shall exist for stormwater discharges.

2.3.2 Operational Considerations- Chemical Additives

Chemical additives are chemical products introduced into a waste stream that is used for cleaning, disinfecting, or maintenance and which may be detected in effluent discharged to waters of the Commonwealth. Chemicals excluded are those used for neutralization of waste streams, the production of goods, and treatment of wastewater.

The subject facility utilizes the following additives.

Chemicals/Additives Utilized by the Facility

Chemical Additive Name	Purpose
CEL 488	Biocide in cooling towers
Compound 400-A (Dequest 2010)	Biocide in open-loop side of cooling towers
Compound 520 EP (Sodium Edetate)	Water treatment in boiler
Compound 530-S (Sodium Sulfite)	Water treatment in cooling towers
Compoud Stream Treat F (Cyclohexylamine)	Corosion inhibitor in boiler system

Notes:

- Information abstracted from the NPDES renewal application dated for December 1, 2020.

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° 2' 9.30" , **Longitude** 76° 29' 9.21" , **River Mile Index** 0.3 , **Stream Code** 07880

Discharging to Unnamed Tributary to Shawnee Run

which receives wastewater from process water, non-contact cooling water, air compressor condensate and stormwater.

1. The permittee is authorized to discharge during the period from April 1, 2011 through March 31, 2016.

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, Footnotes and Supplemental Information).

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	Daily Average	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Repot	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	10	1/day	Grab
Temperature (°F) Jan 1 - Feb 28	XXX	XXX	XXX	62	XXX	XXX	1/day	I-S
Temperature (°F) Mar 1-31	XXX	XXX	XXX	73	XXX	XXX	1/day	I-S
Temperature (°F) Apr 1-30	XXX	XXX	XXX	85	XXX	XXX	1/day	I-S
Temperature (°F) May 1-31	XXX	XXX	XXX	90	XXX	XXX	1/day	I-S
Temperature (°F) Jun 1 - Aug 31	XXX	XXX	XXX	100	XXX	XXX	1/day	I-S
Temperature (°F) Sep 1-30	XXX	XXX	XXX	90	XXX	XXX	1/day	I-S
Temperature (°F) Oct 1-31	XXX	XXX	XXX	78	XXX	XXX	1/day	I-S

Outfall 001, Continued (from April 1, 2011 through March 31, 2016)

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	Daily Maximum	Instant. Maximum		
Temperature (°F) Nov 1-30	XXX	XXX	XXX	68 Daily Avg	XXX	XXX	1/day	I-S
Temperature (°F) Dec 1-31	XXX	XXX	XXX	62 Daily Avg	XXX	XXX	1/day	I-S
Total Suspended Solids	Report	Report	XXX	30	60	75	1/week	24-Hr Composite
Oil and Grease	XXX	XXX	XXX	15	XXX	30	1/week	Grab
Total Cadmium	0.006	0.012	XXX	0.008	0.016	0.02	1/year	24-Hr Composite
Total Copper	0.06	0.12	XXX	0.08	0.16	0.2	1/year	24-Hr Composite
Total Lead	0.02	0.04	XXX	0.02	0.04	0.05	1/week	24-Hr Composite
Total Nickel	0.13	0.26	XXX	0.17	0.34	0.42	1/year	24-Hr Composite
Total Silver	0.012	0.024	XXX	0.015	0.03	0.04	1/year	24-Hr Composite
Total Zinc	0.34	0.68	XXX	0.45	0.9	1.1	1/week	24-Hr Composite

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

at Outfall 001

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

I. B. For Outfall 100 , **Latitude** 40° 2' 6.00" , **Longitude** 76° 29' 6.00" , **River Mile Index** NA , **Stream Code** 07880

Discharging to Unnamed Tributary to Shawnee Run

which receives wastewater from galvanizing treatment system and groundwater remediation

1. The permittee is authorized to discharge during the period from April 1, 2011 through March 31, 2016.

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, Footnotes and Supplemental Information).

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	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Repot	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	10	1/day	Grab
Total Suspended Solids	Report	Report	XXX	30	60	XXX	1/month	24-Hr Composite
Oil and Grease	XXX	XXX	XXX	26	52	XXX	1/month	Grab
Total Cadmium	Report	Report	XXX	0.26	0.69	XXX	1/year	24-Hr Composite
Total Chromium	Report	Report	XXX	1.71	2.77	XXX	1/year	24-Hr Composite
Total Copper	Report	Report	XXX	2.07	3.38	XXX	1/year	24-Hr Composite
Total Cyanide	Report	Report	XXX	0.65	1.2	XXX	1/year	24-Hr Composite
Total Lead	Report	Report	XXX	0.43	0.69	XXX	1/month	24-Hr Composite

Outfall 100, Continued (from April 1, 2011 through March 31, 2016)

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	Daily Maximum	Instant. Maximum		
Total Nickel	Report	Report	XXX	2.38	3.98	XXX	1/year	24-Hr Composite
Total Silver	Report	Report	XXX	0.24	0.43	XXX	1/year	24-Hr Composite
Total Zinc	Report	Report	XXX	1.48	2.61	XXX	1/month	24-Hr Composite
Total Toxic Organics[4]	XXX	XXX	XXX	XXX	2.13	XXX	1/year	Grab

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

at Outfall 100

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

I. C. For Outfall 102/103 , **Latitude** 40° 2' 0.00" , **Longitude** 76° 29' 0.00" , **River Mile Index** NA , **Stream Code** 07880

Discharging to Unnamed Tributary to Shawnee Run

which receives stormwater[3].

1. The permittee is authorized to discharge during the period from April 1, 2011 through March 31, 2016.

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, Footnotes and Supplemental Information).

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	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
CBOD5	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Chemical Oxygen Demand	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Kjeldahl Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Arsenic	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Cadmium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Outfall 103, Continued (from April 1, 2011 through March 31, 2016)

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	Daily Maximum	Instant. Maximum		
Total Chromium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Copper	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Cyanide	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Dissolved Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Nickel	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Silver	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Zinc	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

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

at Outfall 102/103

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

I. D. For Outfall 002 , **Latitude** 40° 2' 8.50" , **Longitude** 76° 28' 58.47" , **River Mile Index** 0.32 , **Stream Code** 07880

Discharging to Unnamed Tributary to Shawnee Run

which receives wastewater from non-contact cooling water and stormwater

1. The permittee is authorized to discharge during the period from April 1, 2011 through March 31, 2016.
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, Footnotes and Supplemental Information).
3.

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	Daily Average	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Repot	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	10	1/day	Grab
Temperature (°F) Jan 1 - Feb 28	XXX	XXX	XXX	62	XXX	XXX	1/day	I-S
Temperature (°F) Mar 1-31	XXX	XXX	XXX	73	XXX	XXX	1/day	I-S
Temperature (°F) Apr 1-30	XXX	XXX	XXX	85	XXX	XXX	1/day	I-S
Temperature (°F) May 1-31	XXX	XXX	XXX	90	XXX	XXX	1/day	I-S
Temperature (°F) Jun 1 - Aug 31	XXX	XXX	XXX	100	XXX	XXX	1/day	I-S
Temperature (°F) Sep 1-30	XXX	XXX	XXX	90	XXX	XXX	1/day	I-S

Outfall 002, Continued (from April 1, 2011 through March 31, 2016)

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	Daily Average	Daily Maximum	Instant. Maximum		
Temperature (°F) Oct 1-31	XXX	XXX	XXX	78	XXX	XXX	1/day	I-S
Temperature (°F) Nov 1-30	XXX	XXX	XXX	68	XXX	XXX	1/day	I-S
Temperature (°F) Dec 1-31	XXX	XXX	XXX	62	XXX	XXX	1/day	I-S

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

at Outfall 002

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

I. E. For Outfall 200 , **Latitude** 40° 2' 5.00" , **Longitude** 76° 29' 3.00" , **River Mile Index** NA , **Stream Code** 07880

Discharging to Unnamed Tributary to Shawnee Run

which receives stormwater[3].

1. The permittee is authorized to discharge during the period from April 1, 2011 through March 31, 2016.

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, Footnotes and Supplemental Information).

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	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
CBOD5	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Chemical Oxygen Demand	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Kjeldahl Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Arsenic	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Cadmium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Outfall 200, Continued (from April 1, 2011 through March 31, 2016)

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	Daily Maximum	Instant. Maximum		
Total Chromium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Copper	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Cyanide	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Dissolved Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Nickel	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Silver	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Zinc	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

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

at Outfall 200

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

I. F. **For Outfall** 003, **Latitude** 40° 2' 8.50", **Longitude** 76° 28' 58.47", **River Mile Index** _____, **Stream Code** 07880

Discharging to Unnamed Tributary to Shawnee Run

which receives stormwater[3].

1. The permittee is authorized to discharge during the period from April 1, 2011 through March 31, 2016.

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, Footnotes and Supplemental Information).

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	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
CBOD5	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Chemical Oxygen Demand	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Kjeldahl Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Arsenic	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Cadmium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Outfall 003, Continued (from April 1, 2011 through March 31, 2016)

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	Daily Maximum	Instant. Maximum		
Total Chromium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Copper	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Cyanide	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Dissolved Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Nickel	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Silver	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Zinc	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

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

at Outfall 003

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

I. G. For Outfall 004 , **Latitude** 40° 1' 53.80" , **Longitude** 76° 28' 54.06" , **River Mile Index** NA , **Stream Code** NA

Discharging to Columbia Borough Storm Sewer

which receives stormwater[3].

1. The permittee is authorized to discharge during the period from April 1, 2011 through March 31, 2016.

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, Footnotes and Supplemental Information).

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	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
CBOD5	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Chemical Oxygen Demand	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Kjeldahl Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Arsenic	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Cadmium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Outfall 004, Continued (from April 1, 2011 through March 31, 2016)

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	Daily Maximum	Instant. Maximum		
Total Chromium	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Copper	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Cyanide	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Dissolved Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Nickel	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Silver	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Zinc	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

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

at Outfall 004

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.

04/26/2012: No adverse issues reported.

11/04/2014: The inlet to Outfall 003 had some sediment and debris build up.

The equalization tank for the wastewater treatment plant had significant solids on the bottom of the tank. The environmental health and safety officer recommended that a sludge blanket be kept to encourage settling. The tanks were pumped annually.

The polishing lagoon had some scum and sheen. DEP requested that the flow meters be calibrated annually and that a record of the calibration be kept at the site. The earthen dam around the weir box was breached on the eastern side. This results in considerable flow that is not being accounted for. DEP had requested that this be repaired. The composite sampler was not refrigerated and had no thermometer. DEP requested that a thermometer be placed in the composite sampler and that the samples be iced to a temperature not exceeding 4 C.

07/17/2015: The inspection was a follow-up meeting from 02/15/2015. Anvil was reported for continuing to attempt to address flow which is bypassing their effluent weir.

02/18/2016: No adverse issues reported.

03/12/2018: No adverse issues reported.

08/07/2018: The inspection was in response to a self-reported spill of industrial wastewater containing an unknown concentration of zinc.

08/22/2018: A Notice of Violation was transmitted to the facility informing the facility was violation with the Sections 301 and 307 of the Pennsylvania Clean Streams law for discharging industrial waste to waters of the Commonwealth.

01/16/2020: The facility has been in discussion with DEP on eliminating the galvanizing wastewater treatment plant. The facility stated that they are currently undergoing a trial period of internally recycling process water from the galvanizing process. The galvanizing wastewater treatment plant has not been in operation since mid-December 2019.

3.2 Summary of DMR Data

A review of approximately 1-year of DMR data shows that the monthly average flow data for the facility. For Outfall 001, the maximum average flow data for the DMR reviewed was 0.175 MGD in September 2020. For Outfall 002, the maximum average flow data for the DMR reviewed was 0.030703 MGD in August 2020.

The design flow rate for Outfall 001 is 0.168 MGD.

The design flow rate for Outfall 002 is 0.0298 MGD.

The off-site laboratory used for the analysis of the parameters was Pace Analytical Services, LLC, 1638 Roseytown Rd, Suites 2,3,4, Greensburg, PA 15601.

The off-site laboratory used for the WET analysis of the parameters was Eurofins Test America (Pittsburgh), 301 Alpha Drive- RIDC Park, Pittsburgh, PA 15238.

DMR Data for Outfall 001 (from March 1, 2020 to February 28, 2021)

Parameter	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20
Flow (MGD) Average Monthly	0.14	0.133	0.136	0.136	0.168	0.175	0.128	0.122	0.136	0.132	0.125	0.139
Flow (MGD) Daily Maximum	0.162	0.143	0.159	0.170	0.385	0.4	0.190	0.151	0.176	0.190	0.138	0.163
pH (S.U.) Minimum	7.40	7.42	6.94	6.8	6.93	6.76	6.65	6.74	6.75	7.21	7.27	7.52
pH (S.U.) Instantaneous Maximum	8.42	8.26	8.2	8.15	7.93	7.78	8.01	7.78	7.55	7.78	9.51	9.13
Temperature (ºF) Daily Average	46	48	49	55	64	72	79	78	73	65	58	56
TSS (lbs/day) Average Monthly	< 3.0	< 3.0	5.0	< 2.0	6.0	4.0	10.0	4.0	3.0	2.0	7.0	6.0
TSS (lbs/day) Daily Maximum	8.0	10.0	8.0	2.0	17.0	7.0	24.0	8.0	7.0	5.0	11.0	11.0
TSS (mg/L) Average Monthly	< 3.0	< 3.0	5.0	< 1.0	3.0	3.0	8.0	4.0	3.0	2.0	6.0	5.0
TSS (mg/L) Daily Maximum	6.5	8.7	7.2	2.2	6.2	5.8	15.0	6.8	5.4	4.1	10.3	9.7
Oil and Grease (mg/L) Average Monthly	< 5.0	< 6.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.5	< 5.0	< 7.0	< 5.0	< 5.0	< 5.0
Total Cadmium (lbs/day) Average Monthly	GG	GG	GG	GG	GG	GG	GG	< 0.001	GG	GG	GG	GG
Total Cadmium (lbs/day) Daily Maximum	GG	GG	GG	GG	GG	GG	GG	< 0.001	GG	GG	GG	GG
Total Cadmium (mg/L) Average Monthly	GG	GG	GG	GG	GG	GG	GG	< 0.001	GG	GG	GG	GG
Total Cadmium (mg/L) Daily Maximum	GG	GG	GG	GG	GG	GG	GG	< 0.001	GG	GG	GG	GG
Total Copper (lbs/day) Average Monthly	GG	GG	GG	GG	GG	GG	GG	0.005	GG	GG	GG	GG
Total Copper (lbs/day) Daily Maximum	GG	GG	GG	GG	GG	GG	GG	0.005	GG	GG	GG	GG
Total Copper (mg/L) Average Monthly	GG	GG	GG	GG	GG	GG	GG	0.005	GG	GG	GG	GG
Total Copper (mg/L) Daily Maximum	GG	GG	GG	GG	GG	GG	GG	0.0045	GG	GG	GG	GG
Total Lead (lbs/day) Average Monthly	< 0.001	< 0.0010	< 0.001	< 0.001	< 0.002	< 0.002	< 0.002	< 0.001	< 0.0010	< 0.001	< 0.001	< 0.001

Total Lead (lbs/day) Daily Maximum	0.002	0.0020	0.002	< 0.001	0.003	< 0.003	0.004	< 0.001	< 0.0010	0.002	0.001	< 0.001
Total Lead (mg/L) Average Monthly	< 0.001	< 0.0010	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.0010	< 0.001	< 0.001	< 0.001
Total Lead (mg/L) Daily Maximum	0.002	0.0019	0.0014	< 0.001	0.0011	< 0.001	0.0028	< 0.001	< 0.0010	0.002	0.0012	0.0011
Total Nickel (lbs/day) Average Monthly	GG	GG	GG	GG	GG	GG	GG	< 0.001	GG	GG	GG	GG
Total Nickel (lbs/day) Daily Maximum	GG	GG	GG	GG	GG	GG	GG	< 0.001	GG	GG	GG	GG
Total Nickel (mg/L) Average Monthly	GG	GG	GG	GG	GG	GG	GG	< 0.001	GG	GG	GG	GG
Total Nickel (mg/L) Daily Maximum	GG	GG	GG	GG	GG	GG	GG	< 0.001	GG	GG	GG	GG
Total Silver (lbs/day) Average Monthly	GG	GG	GG	GG	GG	GG	GG	< 0.001	GG	GG	GG	GG
Total Silver (lbs/day) Daily Maximum	GG	GG	GG	GG	GG	GG	GG	< 0.001	GG	GG	GG	GG
Total Silver (mg/L) Average Monthly	GG	GG	GG	GG	GG	GG	GG	< 0.001	GG	GG	GG	GG
Total Silver (mg/L) Daily Maximum	GG	GG	GG	GG	GG	GG	GG	< 0.001	GG	GG	GG	GG
Total Zinc (lbs/day) Average Monthly	0.06	0.05	0.06	0.03	0.05	0.03	0.05	0.03	0.03	0.06	0.06	0.06
Total Zinc (lbs/day) Daily Maximum	0.10	0.08	0.08	0.03	0.10	0.06	0.10	0.04	0.04	0.08	0.07	0.08
Total Zinc (mg/L) Average Monthly	0.05	0.05	0.05	0.03	0.03	0.03	0.04	0.03	0.03	0.06	0.05	0.05
Total Zinc (mg/L) Daily Maximum	0.078	0.066	0.068	0.03	0.047	0.045	0.066	0.04	0.035	0.07	0.067	0.061

DMR Data for Outfall 002 (from March 1, 2020 to February 28, 2021)

Parameter	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20
Flow (MGD) Average Monthly	0.01400	0.002760	0.007537	0.0130	0.01190	0.0030	0.030703	0.003235	0.0018	0.0058	0.0060	0.0127
Flow (MGD) Daily Maximum	0.03351	0.033510	0.097430	0.255710	0.11450	0.0217	0.620170	0.046610	0.01722	0.0256	0.02994	0.127
pH (S.U.) Minimum	7.04	7.18	7.13	6.63	6.90	6.45	6.55	6.77	6.40	6.92	7.07	7.13
pH (S.U.) Instantaneous Maximum	8.38	8.14	8.49	8.30	8.68	8.00	8.20	8.01	8.03	7.88	8.44	8.94
Temperature (ºF) Daily Average	48	41	42.7	47.7	57.7	64	68.0	68.5	63.4	56	53.5	51

DMR Data for Outfall 003 (from March 1, 2020 to February 28, 2021)

Parameter	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20
pH (S.U.) Daily Maximum			6.60						8.40			
CBOD5 (mg/L) Daily Maximum			< 2.0						49.0			
COD (mg/L) Daily Maximum			72.0						29.0			
TSS (mg/L) Daily Maximum			80.0						220.0			
Oil and Grease (mg/L) Daily Maximum			< 5.3						< 5.2			
TKN (mg/L) Daily Maximum			< 5.0						< 5.0			
Total Phosphorus (mg/L) Daily Maximum			0.26						0.36			
Total Arsenic (mg/L) Daily Maximum			0.0010						0.0016			
Total Cadmium (mg/L) Daily Maximum			< 0.0010						< 0.0010			
Total Chromium (mg/L) Daily Maximum			0.0066						0.014			
Total Copper (mg/L) Daily Maximum			0.027						0.052			
Total Cyanide (mg/L) Daily Maximum			< 0.010						< 0.010			
Dissolved Iron (mg/L) Daily Maximum			< 0.050						0.230			
Total Lead (mg/L) Daily Maximum			0.028						0.033			
Total Nickel (mg/L) Daily Maximum			0.012						0.017			
Total Silver (mg/L) Daily Maximum			< 0.0010						< 0.0010			
Total Zinc (mg/L) Daily Maximum			0.77						1.70			

DMR Data for Outfall 004 (from March 1, 2020 to February 28, 2021)

Parameter	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20
pH (S.U.) Daily Maximum			6.03						7.30			
CBOD5 (mg/L) Daily Maximum			< 2.0						2.60			
COD (mg/L) Daily Maximum			26.0						< 10.0			
TSS (mg/L) Daily Maximum			15.0						25.0			
Oil and Grease (mg/L) Daily Maximum			< 5.1						< 5.1			
TKN (mg/L) Daily Maximum			< 5.0						< 5.0			
Total Phosphorus (mg/L) Daily Maximum			< 0.10						< 0.10			
Total Arsenic (mg/L) Daily Maximum			< 0.0010						< 0.0010			
Total Cadmium (mg/L) Daily Maximum			< 0.0010						< 0.0010			
Total Chromium (mg/L) Daily Maximum			< 0.0020						< 0.0020			
Total Copper (mg/L) Daily Maximum			0.012						0.016			
Total Cyanide (mg/L) Daily Maximum			< 0.010						< 0.010			
Dissolved Iron (mg/L) Daily Maximum			< 0.050						0.050			
Total Lead (mg/L) Daily Maximum			0.0017						0.0016			
Total Nickel (mg/L) Daily Maximum			< 0.0010						< 0.0010			
Total Silver (mg/L) Daily Maximum			< 0.0010						< 0.0010			
Total Zinc (mg/L) Daily Maximum			0.083						0.059			

DMR Data for Outfall 103 (from March 1, 2020 to February 28, 2021)

Parameter	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20
pH (S.U.) Daily Maximum			6.37						7.30			
CBOD5 (mg/L) Daily Maximum			35.0						3.7			
COD (mg/L) Daily Maximum			140.0						13.0			
TSS (mg/L) Daily Maximum			130.0						700.0			
Oil and Grease (mg/L) Daily Maximum			< 5.2						< 5.1			
TKN (mg/L) Daily Maximum			< 5.0						< 5.0			
Total Phosphorus (mg/L) Daily Maximum			0.30						0.28			
Total Arsenic (mg/L) Daily Maximum			0.0013						0.0022			
Total Cadmium (mg/L) Daily Maximum			< 0.0010						< 0.0010			
Total Chromium (mg/L) Daily Maximum			0.0090						0.018			
Total Copper (mg/L) Daily Maximum			0.032						0.051			
Total Cyanide (mg/L) Daily Maximum			< 0.010						< 0.010			
Dissolved Iron (mg/L) Daily Maximum			0.260						0.42			
Total Lead (mg/L) Daily Maximum			0.030						0.032			
Total Nickel (mg/L) Daily Maximum			0.013						0.021			
Total Silver (mg/L) Daily Maximum			0.0013						< 0.0010			
Total Zinc (mg/L) Daily Maximum			0.70						0.84			

DMR Data for Outfall 200 (from March 1, 2020 to February 28, 2021)

Parameter	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20
pH (S.U.) Daily Maximum			6.23						7.50			
CBOD5 (mg/L) Daily Maximum			< 2.0						9.2			
COD (mg/L) Daily Maximum			24.0						24.0			
TSS (mg/L) Daily Maximum			4.7						18.0			
Oil and Grease (mg/L) Daily Maximum			< 5.2						< 5.6			
TKN (mg/L) Daily Maximum			< 5.0						< 5.0			
Total Phosphorus (mg/L) Daily Maximum			< 0.10						0.12			
Total Arsenic (mg/L) Daily Maximum			< 0.0010						< 0.0010			
Total Cadmium (mg/L) Daily Maximum			< 0.0010						< 0.0010			
Total Chromium (mg/L) Daily Maximum			< 0.0020						< 0.0020			
Total Copper (mg/L) Daily Maximum			0.026						0.022			
Total Cyanide (mg/L) Daily Maximum			< 0.010						< 0.010			
Dissolved Iron (mg/L) Daily Maximum			< 0.050						< 0.050			
Total Lead (mg/L) Daily Maximum			0.0017						0.0049			
Total Nickel (mg/L) Daily Maximum			< 0.0010						0.0015			
Total Silver (mg/L) Daily Maximum			< 0.0010						< 0.0010			
Total Zinc (mg/L) Daily Maximum			0.21						0.310			

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.

The study period began on April 1, 2011 and ended on April 5, 2021.

Non-compliance with effluent limitations prior to the facility's initiation with eDMR have not been included in the table. All the non-compliance are associated with Outfall 100. Since this outfall has been eliminated, the non-compliance with NDPES effluent limits is not of a concern.

Summary of Non-Compliance with Effluent Limitations
Beginning Date 04/01/2011 to 04/05/2021

OUTFALL	STAGE	NON COMPLIANCE DATE	NON COMPLIANCE TYPE	NON COMPLIANCE CATEGORY	PARAMETER	SAMPLE VALUE	VIOLATION CONDITION	PERMIT VALUE	UNIT OF MEASURE	STATISTICAL BASE CODE
100	Final Effluent	04/27/2017	Violation of permit condition	Concentration 3 Effluent Violation	Zinc, Total	3.80	>	2.61	mg/L	Daily Maximum
100	Final Effluent	04/27/2017	Violation of permit condition	Concentration 2 Effluent Violation	Zinc, Total	1.81	>	1.48	mg/L	Average Monthly
100	Final Effluent	07/25/2017	Violation of permit condition	Concentration 3 Effluent Violation	Zinc, Total	3.00	>	2.61	mg/L	Daily Maximum
100	Final Effluent	07/25/2017	Violation of permit condition	Concentration 2 Effluent Violation	Zinc, Total	1.97	>	1.48	mg/L	Average Monthly
100	Final Effluent	12/20/2017	Violation of permit condition	Concentration 3 Effluent Violation	Zinc, Total	5.10	>	2.61	mg/L	Daily Maximum
100	Final Effluent	12/20/2017	Violation of permit condition	Concentration 2 Effluent Violation	Zinc, Total	2.07	>	1.48	mg/L	Average Monthly
100	Final Effluent	01/17/2018	Violation of permit condition	Concentration 2 Effluent Violation	Total Suspended Solids	53	>	30	mg/L	Average Monthly
100	Final Effluent	03/21/2018	Violation of permit condition	Concentration 3 Effluent Violation	Zinc, Total	3.50	>	2.61	mg/L	Daily Maximum
100	Final Effluent	07/20/2018	Violation of permit condition	Concentration 3 Effluent Violation	Zinc, Total	3.00	>	2.61	mg/L	Daily Maximum
100	Final Effluent	08/14/2018	Violation of permit condition	Concentration 3 Effluent Violation	Zinc, Total	5.40	>	2.61	mg/L	Daily Maximum
100	Final Effluent	08/14/2018	Violation of permit condition	Concentration 2 Effluent Violation	Zinc, Total	1.84	>	1.48	mg/L	Average Monthly
100	Final Effluent	11/27/2018	Violation of permit condition	Concentration 2 Effluent Violation	Zinc, Total	1.81	>	1.48	mg/L	Average Monthly
100	Final Effluent	11/27/2018	Violation of permit condition	Concentration 3 Effluent Violation	Zinc, Total	4.80	>	2.61	mg/L	Daily Maximum

3.3.2 Non-Compliance- Enforcement Actions

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

Sumary of Enforcement Actions
Beginning Date 04/01/2011 to 04/01/2021

ENF ID	ENF TYPE	ENF TYPE DESC	ENF CREATION DATE	EXECUTED DATE	VIOLATIONS	# OF VIOLATIONS	PENALTY AMOUNT	AMOUNT RECEIVED	TOTAL AMOUNT DUE	ENF FINALSTATUS	ENF CLOSED DATE
323966	CACP	Consent Assessment of Civil Penalty	06/02/2015	05/29/2015	92A.44; CSL301	2	$9,894.00	$9,894.00	$0.00	Comply/Closed	05/29/2015
367863	NOV	Notice of Violation	09/28/2018	08/22/2018	CSL301	1				Comply/Closed	08/22/2018

3.4 Summary of Biosolids/Solids Disposal

A summary of the biosolids/solids disposed of from the facility is as follows.

The facility discharges process cooling water. Biosolids/solids disposal is not suspected.

3.5 Open Violations

No open violations existed as of April 2021.

4.0 Receiving Waters and Water Supply Information Detail Summary

4.1 Receiving Waters

The receiving waters has been determined to be Tributary 07880 to Shawnee Run. The sequence of receiving streams that Tributary 07880 to Shawnee Run discharges into are Shawnee Run 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 York Water Company (PWS ID #7670100) located approximately 6.2 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 2020 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 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 2020 Pennsylvania Integrated Water Quality Monitoring and Assessment Report as a Category 4c and 5 waterbody. This stream is impaired for aquatic life due to metals from urban runoff and storm sewers. The receiving stream is also impacted by flow alterations from urban runoff and storm sewers. Other impairments include siltation from agriculture. The designated use has been classified as protected waters for warm water fishes (WWF) and migratory fishes (MF).

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 to the subject facility is the Susquehanna River at station at Marietta, PA (WQN201 or USGS station number 1576000). The WQN station is located on the Susquehanna River approximately 2.45 miles downstream of the subject facility.

The closest gauge stations to the subject facility is the Susquehanna River at station at Marietta, PA (USGS station number 1576000). The gauge station is located just upstream on the Susquehanna River. This station is approximately 4 miles from 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 8.1 and the stream water temperature was estimated to be 25.5 C. The total hardness (mg/l as $CaCO_3$) from the WQN was estimated to be 84.5 mg/l.

The low flow yield and the Q710 for the subject facility was estimated as shown below.

Gauge Station Data			
USGS Station Number	Susquehanna River at Marietta, PA		
Station Name	01576000		
Q710	3,270	ft^3/sec	
Drainage Area (DA)	25,990	mi^2	
Calculations			
The low flow yield of the gauge station is:			
Low Flow Yield (LFY) = Q710 / DA			
LFY =	(3,270 ft^3/sec / 25,990 mi^2)		
LFY =	0.1258	$ft^3/sec/mi^2$	
The low flow at the subject site is based upon the DA of		0.56	mi^2
Q710 = (LFY@gauge station)(DA@Subject Site)			
Q710 = (0.1258 $ft^3/sec/mi^2$)(0.56 mi^2)			
Q710 =	0.070	ft^3/sec	

In comparison, the streamflow from the March 2011 resulted in a Q710 of 0.14 ft^3/sec. The previous Fact Sheet reportedly stated that an exhausting research by a hydrogeologist was completed with correlation with the groundwater yield from the Little Conestoga Creek. The derivation has been included in the attachment. The difference between the Q710 from the Susquehanna River gauge station and the correlation from the Little Conestoga Creek is nearly a 2x difference (i.e. 0.07 ft^3/sec vs 0.14 ft^3/sec).

In consultation with DEP Southcentral management, the Q710 (Q710 = 0.07 ft^3/s) calculated in Section 4.5 will not be used for this NPDES renewal. However, future renewals may be subject to a revised Q710.

For the purposes of this Fact Sheet, the streamflow developed in the March 2011 (i.e. Q710 = 0.14 ft^3/sec) shall be utilized. The streamflow Q710 is used for modeling thermal temperature for the effluent temperature limits.

Proposed Estimate for Low Flow Yield

The application engineer considered three (3) different available low flow yields which are itemized as a, b and c below.

(a) The March 2011 Fact Sheet estimated the low flow yield as 0.18 $ft^3/s/mi^2$.
(b) Low flow yield estimated in the calculations in Section 4.5 gives 0.1258 $ft^3/sec/mi^2$.
(c) StreamStats was utilized for three (3) modeling points. One modeling point was the center of the facility (Lat 40.033, Long -76.488). The second modeling point (Lat 40.035, Long -76.485) was the location of Outfall 001. For these two modeling points, the larger drainage area and the larger Q710 was utilized for modelling. Since modeling requires a point further downstream, a third modeling point was used. The low flow yield estimate from StreamStats is a web application developed by USGS. This tool provides the more reliable best estimate. Using StreamStats, the low flow yield gives 0.1418 $ft^3/sec/mi^2$. The StreamStats output is enclosed in the attachment.

The low flow yield utilized for this Fact Sheet review was the StreamStats at 0.1418 $ft^3/sec/mi^2$. This low flow yield was utilized for calculating the maximum usage of additives in the Toxics Management Spreadsheet.

4.6.1 Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.2
Latitude	40º 2' 8.33"	Longitude	-76º 29' 9.01"
Quad Name		Quad Code	
Wastewater Description:	IW Process Effluent with ELG, Noncontact Cooling Water (NCCW), Stormwater		

Receiving Waters	Unnamed Tributary to Shawnee Run	Stream Code	7880
NHD Com ID	57464961	RMI	0.3
Drainage Area	0.56	Yield (cfs/mi^2)	0.1418
Q_{7-10} Flow (cfs)	0.14	Q_{7-10} Basis	Streamgauge/StreamStats
Elevation (ft)	310	Slope (ft/ft)	
Watershed No.	7-G	Chapter 93 Class.	WWF, MF
Existing Use	Same as Chapter 93 class.	Existing Use Qualifier	
Exceptions to Use	None	Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Flow Alterations, Metals, Siltation		
Source(s) of Impairment	Agriculture, Urban Runoff/Storm Sewers, Urban Runoff/Storm Sewers		
TMDL Status	Not applicable	Name	

Background/Ambient Data		Data Source
pH (SU)	8.1	WQN201; median July to Sept
Temperature (°C)	25.5	WQN201; median July to Sept
Hardness (mg/L)	84.5	WQN201; median historical
Other:		

Nearest Downstream Public Water Supply Intake		York Water Company	
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	37.7	Distance from Outfall (mi)	6.2

4.6.2 Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	.052
Latitude	40º 2' 9.56"	Longitude	-76º 28' 58.86"
Quad Name		Quad Code	
Wastewater Description:	IW Process Effluent with ELG		
Receiving Waters	Unnamed Tributary to Shawnee Run	Stream Code	7880
NHD Com ID	57464961	RMI	0.3
Drainage Area	0.51	Yield (cfs/mi^2)	0.1418
Q_{7-10} Flow (cfs)	0.14	Q_{7-10} Basis	Streamgauge/Streamstats
Elevation (ft)	310	Slope (ft/ft)	
Watershed No.	7-G	Chapter 93 Class.	WWF
Existing Use	Same as Chapter 93 class.	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Flow Alterations, Metals, Siltation		
Source(s) of Impairment	Agriculture, Urban Runoff/Storm Sewers, Urban Runoff/Storm Sewers		
TMDL Status	Not applicable	Name	

Background/Ambient Data		Data Source
pH (SU)	8.1	WQN201; median July to Sept
Temperature (°F)	25.5	WQN201; median July to Sept
Hardness (mg/L)	84.5	WQN201; median historical
Other:		

Nearest Downstream Public Water Supply Intake	York Water Company		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	37.7	Distance from Outfall (mi)	6.19

4.6.3 Discharge, Receiving Waters and Water Supply Information

Outfall No.	004	Design Flow (MGD)	0
Latitude	40º 2' 7.96"	Longitude	-76º 28' 51.16"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary to Shawnee Run	Stream Code	7880
NHD Com ID	57464961	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	7-G	Chapter 93 Class.	WWF, MF
Existing Use	Same as Chapter 93 class.	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Flow Alterations, Metals, Siltation		
Source(s) of Impairment	Agriculture, Urban Runoff/Storm Sewers, Urban Runoff/Storm Sewers		
TMDL Status	Not applicable	Name	

Background/Ambient Data		Data Source
pH (SU)	8.1	WQN201; median July to Sept
Temperature (°F)	25.5	WQN201; median July to Sept
Hardness (mg/L)	84.5	WQN201; median historical
Other:		

Nearest Downstream Public Water Supply Intake		York Water Company	
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	37.7	Distance from Outfall (mi)	6.19

4.6.4 Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	0
Latitude	40º 2' 9.56"	Longitude	-76º 28' 58.86"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary to Shawnee Run	Stream Code	7880
NHD Com ID	57464961	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	7-G	Chapter 93 Class.	WWF, MF
Existing Use	Same as Chapter 93 class.	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Flow Alterations, Metals, Siltation		
Source(s) of Impairment	Agriculture, Urban Runoff/Storm Sewers, Urban Runoff/Storm Sewers		
TMDL Status	Not applicable	Name	

Background/Ambient Data		Data Source
pH (SU)	8.1	WQN201; median July to Sept
Temperature (°F)	25.5	WQN201; median July to Sept
Hardness (mg/L)	84.5	WQN201; median historical
Other:		

Nearest Downstream Public Water Supply Intake		York Water Company	
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	37.7	Distance from Outfall (mi)	6.19

4.6.5 Discharge, Receiving Waters and Water Supply Information

Outfall No.	103	Design Flow (MGD)	
Latitude	40º 2' 9.26"	Longitude	-76º 28' 59.67"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary to Shawnee Run	Stream Code	7880
NHD Com ID	57464961	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	7-G	Chapter 93 Class.	WWF, MF
Existing Use	Same as Chapter 93 class.	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Flow Alterations, Metals, Siltation		
Source(s) of Impairment	Agriculture, Urban Runoff/Storm Sewers, Urban Runoff/Storm Sewers		
TMDL Status	Not applicable	Name	

Background/Ambient Data		Data Source
pH (SU)	8.1	WQN201; median July to Sept
Temperature (°F)	25.5	WQN201; median July to Sept
Hardness (mg/L)	84.5	WQN201; median historical
Other:		

Nearest Downstream Public Water Supply Intake		York Water Company	
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	37.7	Distance from Outfall (mi)	6.19

4.6.7 Discharge, Receiving Waters and Water Supply Information

Outfall No.	200	Design Flow (MGD)	
Latitude	40º 2' 9.22"	Longitude	-76º 29' 4.15"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary to Shawnee Run	Stream Code	7880
NHD Com ID	57464961	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	7-G	Chapter 93 Class.	WWF, MF
Existing Use	Same as Chapter 93 class.	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Flow Alterations, Metals, Siltation		
Source(s) of Impairment	Agriculture, Urban Runoff/Storm Sewers, Urban Runoff/Storm Sewers		
TMDL Status	Not applicable	Name	

Background/Ambient Data		Data Source
pH (SU)	8.1	WQN201; median July to Sept
Temperature (°F)	25.5	WQN201; median July to Sept
Hardness (mg/L)	84.5	WQN201; median historical
Other:		

Nearest Downstream Public Water Supply Intake		York Water Company	
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	37.7	Distance from Outfall (mi)	6.19

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). Available TBEL requirements for the state of Pennsylvania are itemized in PA Code 25, Chapter 92a.47.

The presiding sources for the basis for the effluent limitations are governed by either federal or state regulation. The reference sources for each of the parameters is itemized in the tables. The following technology-based limitations apply, subject to water quality analysis and best professional judgement (BPJ) where applicable:

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)

Industrial facilities are commonly restricted to effluent limitations established by federal effluent limitation guidelines (ELG). The applicable ELG for this type of industrial facility is the Metal Finishing Point Source Category (i.e. 40 CFR 433). However, since the facility only discharges process cooling water, parameters in the ELG will not be applicable to the treatment discharge.

ELG and PAG03 stormwater monitoring parameters shall be applicable to the facility.

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 for the subject facility: MS Excel worksheet for Thermal Discharge Limit Calculations

5.3.1 Water Quality Modeling 7.0

Consistent with the DEP Implementation Guidance for Temperature Criteria, a spreadsheet temperature model were executed. Refer to the model runs in Attachment C.

5.3.2 Toxics Modeling

The facility will be discharging process cooling water. The process cooling water is mixed with chemical additives prior to the point of discharge. The Toxics Management Spreadsheet (formerly called PENTOXSD) was utilized to estimate maximum chemical usages.

PENTOXSD modeling outputs were submitted by the facility. The facility utilized a design flow rate of 5 MGD. This presumably includes both process water and stormwater. The appropriate flow rate should exclude stormwater contributions.

According the process flow diagram, the facility receives 0.1978 MGD of water from the municipality. This flow rate was used as the basis for flow.

The chemical additives utilized at the facility are summarized in Section 2.3.2.

The maximum chemical usages are summarized in Section 6.1.2.

5.3.3 Whole Effluent Toxicity (WET)

The subject facility is not subject to WET.

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, II, and III WIPs which is described in the Bay TMDL document and Executive Order 13508.

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.

Phase 3 WIP provides an update on Chesapeake Bay TMDL implementation activities for point sources and DEP's current implementation strategy for wastewater. The latest revision of the supplement was December 17, 2019.

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 non-significant discharger that includes sewage facilities (Phase 4 facilities: ≥ 0.2 MGD and < 0.4 MGD and Phase 5 facilities: > 0.002 MGD and < 0.2 MGD), small flow/single residence sewage treatment facilities (≤ 0.002 MGD), and non-significant IW facilities, all of which may be covered by statewide General Permits or may have individual NPDES permits.

At this time, there are approximately 850 Phase 4 and 5 sewage facilities, approximately 715 small flow sewage treatment facilities covered by a statewide General Permit, and approximately 300 non-significant IW facilities.

For non-significant IW facilities, monitoring and reporting of TN and TP will be required throughout the permit term in renewed or amended permits anytime the facility has the potential to introduce a net TN or TP increase to the load contained within the intake water used in processing.

In general, facilities that discharge groundwater and cooling water with no addition of chemicals containing N or P do not require monitoring. Monitoring for facilities with other discharges will generally conform to the following minimum sampling frequencies, with the permit writer having final discretion: Phase 3 WIP Wastewater Supplement Revised, December 17, 2019

Non-significant IW facilities that propose expansion or production increases and as a result will discharge at least 75 lbs/day TN or 25 lbs/day TP (on an annual average basis), will be classified as Significant IW dischargers and receive Cap Loads in their permits based on existing performance (existing TN/TP concentrations at current average annual flow).

In general, for new non-significant IW discharges (including existing facilities discharging without a permit), DEP will issue permits containing Cap Loads of “0” and these facilities will be expected to purchase credits and/or apply offsets to achieve compliance.

This facility is not subject to Sector C monitoring requirements since (a) the facility is not listed in Attachment B of the Phase III WIP; and (b) the facility will only utilize process cooling water in their manufacturing plant.

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.l.1 and 40 CFR 122.l.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.

Some differences in temperature will occur from the existing permit to the proposed. Some months may appear to have a less stringent temperature limit. However, less stringent temperature limits can be justified with the implementation of the new Thermal Discharge Limit Calculations Worksheet.

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, WET, or ELG

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, (b) Toxics/Chemical Additives requirements, and (c) stormwater monitoring requirements.

6.1.1 Conventional Pollutants and Disinfection

Summary of Proposed NPDES Parameter Details for Conventional Pollutants and Disinfection Anvil International, LLC, PA0080195; Outfalls 001 and 002			
Parameter	**Permit Limitation Required by[1]:**	**Recommendation**	
pH (S.U.)	Antibacksliding	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-4).
		Effluent Limit:	Effluent limits may range from pH = 6.0 to 10.0
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-4 and the effluent limits assigned by Chapter 95.2(1) and anti-backsliding. Previous renewals had a variance on the upper limit for pH.
Temp F; Jan 1 -31	WQBEL	Effluent Limit:	50
Temp F; Feb 1-29	WQBEL	Effluent Limit:	50
Temp F; Mar 1 -31	WQBEL	Effluent Limit:	71
Temp F; Apr 1 - 15	WQBEL	Effluent Limit:	80
Temp F; Apr 16 - 30	WQBEL	Effluent Limit:	86
Temp F; May 1 -15	WQBEL	Effluent Limit:	82
Temp F; May 16 - 31	WQBEL	Effluent Limit:	103
Temp F; Jun 1 -15	WQBEL	Effluent Limit:	103
Temp F; Jun 16 -30	WQBEL	Effluent Limit:	110
Temp F; Jul 1-31	WQBEL	Effluent Limit:	101
Temp F; Aug 1 - 15	WQBEL	Effluent Limit:	98
Temp F; Aug 16 - 31	WQBEL	Effluent Limit:	98
Temp F; Sep 1 -15	WQBEL	Effluent Limit:	94
Temp F; Sep 16 - 30	WQBEL	Effluent Limit:	87
Temp F; Oct 1 - 15	WQBEL	Effluent Limit:	81
Temp F; Oct 16 - 31	WQBEL	Effluent Limit:	75
Temp F; Nov 1 - 15	WQBEL	Effluent Limit:	68
Temp F; Nov 16 - 30	WQBEL	Effluent Limit:	58
Temp F; Dec 1 - 31	WQBEL	Effluent Limit:	50
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) ELG			
2 Monitoring frequency based on flow rate of 0.1511 MGD.			
3 Table 6-4 (Self Monitoring Requirements for Industrial 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			
- Rationale for Temperature Limits: The Temperature limits were established using the Thermal Discharge Limit Calculation Worksheet using Chapter 93 ambient temperatures and site specific temperatures. The tempeature limit which was the greater of the Chapter 93 ambient temperature or the site specific temperature was used for the permit limit.			

6.1.2 Toxics/Chemical Additives

The table summarizes chemical additives maximum daily usage limitations.

Chemical Additive Usage Limitation	
Chemical Additive Name	**Maximum Daily Usage Limits (lbs/day)**
CEL 488	0.006
Compound 400-A (Dequest 2010)	46.1
Compound 520 EP (Sodium Edetate)	38.7
Compound 530-S (Sodium Sulfite)	47.9
Compoud Stream Treat F (Cyclohexylamine)	0.32

6.1.3 Stormwater Monitoring Requirements

Summary of Proposed NPDES Parameter Details for Toxics / Chemcial Additives Anvil International, LLC, PA0080195 Outfalls 102/103, 200, 003, 004		
Parameter	**Permit Limitation Required by[1]:**	**Recommendation**
pH	ELG	Rationale: Monitoring shall continue 2x/yr. Stormwater discharges associated with industrial activity from metal finishing shall require monitoring. The federal ELG parameters of interest are itemized in 40 CFR 433. The PA PAG-03 itemizes parameters of interest in Appendix B- Primary Metals under SIC Code 3322. Other parameters of interest are itemized by the stormwater associated with industrial activity- no exposure.
CBOD5	Stormwater No Exposure	
COD	Stormwater No Exposure	
TSS	ELG	
Oil and Grease	ELG / Stormwater No Exposure	
TKN	Stormwater No Exposure	
Total Phosphorus	Stormwater No Exposure	
Total Arsenic	ELG	
Total Cadmium	ELG	
Total Chromium	ELG	
Total Copper	ELG	
Total Cyanide	ELG	
Dissolved Iron	Stormwater No Exposure	
Total Lead	ELG	
Total Nickel	ELG	
Total Silver	ELG	
Total Zinc	ELG	
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) ELG		
2 Monitoring frequency based on flow rate of 0.1978 MGD.		

6.2 Summary of Changes From Existing Permit to Proposed Permit

The facility has two discharge points- Outfall 001 and Outfall 002. Both Outfalls were combined and modelled as one discharge point. The flow diagram in Section 2.2 shows that process cooling water from Outfall 001 discharges to a storage impoundment prior to discharge through Outfall 001.

Regulation/Policy provides for provisions for maximum temperatures in the receiving waterbody resulting from heated wastewater sources to protect designated uses. Consistent with the Implementation Guidance for Temperature Criteria, the subject facility is categorized as a Case 2 situation. Case 2 situations are those where the source of cooling water is other than the receiving stream. For Anvil International, the source of water originated from the municipal water system.

The Fact Sheet from March 2011 utilized actual site-specific upstream temperature values collected from years 1986 to 1988 and inserted into the model as an allowable temperature. These values were continued to be used for this fact sheet.

A review of the current temperature limits for Outfalls 001 and 002 differ from the proposed temperature limits. The proposed temperature limits differ due to the following reasons.

- Temperature modeling was previously completed for a waste flow of 0.1384 MGD and a Q710 of 0.14 ft^3/s.
- Temperature modeling completed for the proposed permit uses a waste flow of 0.1511 MGD and Q710 of 0.14 ft^3/s. The waste flow is slightly larger (i.e. 9% higher) and the Q710 is the same. The waste flow was estimated by

calculating the average monthly flow from the DMR for both Outfalls 001 and 002 from November 2019 to October 2020. The table below summarizes the waste flow derivation of 0.1511 MGD. Usage of average monthly flow is consistent with the previous fact sheet. Updates to the wasteflow is reasonable since the previous fact sheet was completed over 10 years ago and since the facility has made process changes involving the elimination of the galvanizing wastewater treatment.

Summary of Average Monthly Flow From DMR

Outfall	Parameter	20-Oct	20-Sep	20-Aug	20-Jul	20-Jun	20-May	20-Apr	20-Mar	20-Feb	20-Jan	19-Dec	19-Nov
001	Flow (MGD) Average Monthly	0.168	0.175	0.128	0.122	0.136	0.132	0.125	0.139	0.147	0.147	0.142	0.134
002	Flow (MGD) Average Monthly	0.0119	0.003	0.030703	0.003235	0.0018	0.0058	0.006	0.0127	0.006	0.006	0.030227	0.00171

Average flow for Outfall 001 =	**0.14125**	**MGD**
Average flow for Outfall 002 =	**0.009923**	**MGD**
Total Average for for Outfall 001 and 002 =	**0.15117**	MGD

Modeling runs were completed (a) without using site specific temperature data and (b) with using site specific temperature data. The proposed temperature limits in the NPDES permits utilized the same site-specific temperature data in the analysis from the Fact Sheet prepared in March 2011. The utilized actual upstream temperature values were collected from years 1986 to 1988 and inserted into the model as an allowable site-specific temperature.

This Fact Sheet models temperature using an updated Thermal Effluent Limit spreadsheet (Version 2.0) compared with the spreadsheet utilized in the March 2011 Fact Sheet. The updated spreadsheet has an allowance of a minimum of 1 F in ambient temperature when the ambient temperature is equal to or greater than the applicable criterion. This allowance was based on the presumption that typical field thermometers could not measure temperatures more accurately than 0.5 F and was rounded to 1 F. Further, the minimum 1 F is consistent with the requirements of Water Quality Antidegradation Implementation Guidance (DEP document number 391-0300-002) (Implementation Guidance for Temperature Criteria 3).

The March 2011 Fact Sheet did not limit have a maximum allowance difference in ambient temperature.

A review of the development of permit limits in the March 2011 did not conclusively detail the reason on how the permits were established. Temperature modeling runs were completed (a) without using site specific temperature data and (b) with using site specific temperature data. DEP was unable to completely correlate the temperature in the current permit with the aforementioned temperature modeling runs. There was no consistency in using the maximum or minimum temperature from the modeling runs. The critical use period (i.e. time periods) used in the current permit were combined into different time periods rather then the conventional critical use period of either monthly or bimonthly time periods.

The following table summarizes temperatures output from the Thermal Discharge Limit Calculations Worksheet. Modeling with Chapter 93 uses default values for ambient temperatures and the site specific utilizes the site-specific temperatures from 1986 to 1988. The maximum temperature between the Chapter 93 and the site specific was utilized for the proposed permit. The critical use time period categories from the current fact sheet have been abandoned. The critical use time periods for the draft permit are the standard conventional time periods. DEP reiterates that the maximum modelled temperature between the Chapter 93 default values and the site-specific temperatures was utilized for the draft permit.

Temperature Selected for Draft Permit			
Time Period / Temperature Source	**Chapter 93**	**Site Specific**	**Temp. Limit in Draft Permit**
	Temp (F)	**Temp (F)**	**Temp (F)**
Jan 1-31	50	45	50
Feb 1-29	50	47	50
Mar 1-31	71	56	71
Apr 1-15	80	64	80
Apr 16-30	86	64	86
May 1-15	82	71	82
May 16-31	103	103	103
Jun 1-15	103	99	103
Jun 16-30	107	110	110
Jul 1-31	99	101	101
Aug 1-15	98	98	98
Aug 16-31	98	98	98
Sep 1-15	93	94	94
Sep 16-30	87	84	87
Oct 1-15	81	81	81
Oct 16-31	75	70	75
Nov 1-15	68	59	68
Nov 16-30	58	58	58
Dec 1-31	49	50	50

Notes:

-Q710 is 0.14 ft^3/s; Wasteflow of 0.1511 MGD

-Chapter 93 temperature limits arrived by using Chapter 93 ambient temperatures

-Site Specific temperature limits arrived by using site specific temperatures collected from 1986 - 1988. These site specific temperatures were used in the March 2011 Fact Sheet

temperatures in the proposed permit. It is the greater temperature between Chapter 93 or site specific temperature. The temperature has been rounded to nearest whole number.

The changes to the permit limits for Outfalls 001 and 002 are summarized in the table.

Changes in Permit Monitoring or Effluent Quality (Outfalls 001 and 002)

Parameter	Existing Permit	Draft Permit
TSS	Monitor 1x/week. Effluent limit of 30 mg/l	Galvanizing wastewater treatment is now closed loop. This parameter has been eliminated
Oil and Grease	Monitor 1x/week. Effluent limit of 15 mg/l	Galvanizing wastewater treatment is now closed loop. This parameter has been eliminated
Total Cadmium	Monitor 1x/yr. Effluent limit of 0.008 mg/l	Galvanizing wastewater treatment is now closed loop. This parameter has been eliminated
Total Copper	Monitor 1x/yr. Effluent limit of 0.08 mg/l	Galvanizing wastewater treatment is now closed loop. This parameter has been eliminated
Total Lead	Monitor 1x/yr. Effluent limit of 0.02 mg/l	Galvanizing wastewater treatment is now closed loop. This parameter has been eliminated
Total Nickel	Monitor 1x/yr. Effluent limit of 0.17 mg/l	Galvanizing wastewater treatment is now closed loop. This parameter has been eliminated
Total Silver	Monitor 1x/yr. Effluent limit of 0.015 mg/l	Galvanizing wastewater treatment is now closed loop. This parameter has been eliminated
Total Zinc	Monitor 1x/yr. Effluent limit of 0.45 mg/l	Galvanizing wastewater treatment is now closed loop. This parameter has been eliminated
Temp F; Jan 1 -31	62	50
Temp F; Feb 1-29	62	50
Temp F; Mar 1 -31	73	71
Temp F; Apr 1 - 15	85	80
Temp F; Apr 16 - 30	85	86
Temp F; May 1 -15	90	82
Temp F; May 16 - 31	90	103
Temp F; Jun 1 -15	100	103
Temp F; Jun 16 -30	100	110
Temp F; Jul 1-31	100	101
Temp F; Aug 1 - 15	100	98
Temp F; Aug 16 - 31	100	98
Temp F; Sep 1 -15	90	94
Temp F; Sep 16 - 30	90	87
Temp F; Oct 1 - 15	78	81
Temp F; Oct 16 - 31	78	75
Temp F; Nov 1 - 15	68	68
Temp F; Nov 16 - 30	68	58
Temp F; Dec 1 - 31	62	50

6.3.1 Summary of Proposed NPDES Effluent Limits

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.

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° 2' 9.30" , **Longitude** 76° 29' 9.22" , **River Mile Index** 0.3 , **Stream Code** 7880

Receiving Waters: Unnamed Tributary to Shawnee Run (WWF)

Type of Effluent: Noncontact Cooling Water (NCCW), Stormwater

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	Continuous	Measured
Temperature (deg F) (°F) Jan 1 - 31	XXX	XXX	XXX	50 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Feb 1 - 28	XXX	XXX	XXX	50 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Mar 1 - 31	XXX	XXX	XXX	71 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Apr 1 - 15	XXX	XXX	XXX	80 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Apr 16 - 30	XXX	XXX	XXX	86 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) May 1 - 15	XXX	XXX	XXX	82 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) May 16 - 31	XXX	XXX	XXX	103 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Jun 1 - 15	XXX	XXX	XXX	103 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Jun 16 - 30	XXX	XXX	XXX	110 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Jul 1 - 31	XXX	XXX	XXX	101 Daily Max	XXX	XXX	1/day	I-S

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Temperature (deg F) (°F) Aug 1 - 15	XXX	XXX	XXX	98 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Aug 16 - 31	XXX	XXX	XXX	98 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Sep 1 - 15	XXX	XXX	XXX	94 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Sep 16 - 30	XXX	XXX	XXX	87 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Oct 1 - 15	XXX	XXX	XXX	81 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Oct 16 - 31	XXX	XXX	XXX	75 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Nov 1 - 15	XXX	XXX	XXX	68 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Nov 16 - 30	XXX	XXX	XXX	58 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Dec 1 - 31	XXX	XXX	XXX	50 Daily Max	XXX	XXX	1/day	I-S

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

at Outfall 001

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

I. B. For Outfall 002 , **Latitude** 40° 2' 8.51" , **Longitude** 76° 28' 58.48" , **River Mile Index** 0.3 , **Stream Code** 7880

Receiving Waters: Unnamed Tributary to Shawnee Run (WWF)

Type of Effluent: Noncontact Cooling Water (NCCW), Stormwater

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	Continuous	Measured
Temperature (deg F) (°F) Jan 1 - 31	XXX	XXX	XXX	50 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Feb 1 - 28	XXX	XXX	XXX	50 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Mar 1 - 31	XXX	XXX	XXX	71 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Apr 1 - 15	XXX	XXX	XXX	80 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Apr 16 - 30	XXX	XXX	XXX	86 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) May 1 - 15	XXX	XXX	XXX	82 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) May 16 - 31	XXX	XXX	XXX	103 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Jun 1 - 15	XXX	XXX	XXX	103 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Jun 16 - 30	XXX	XXX	XXX	110 Daily Max	XXX	XXX	1/day	I-S

Outfall 002 , Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Temperature (deg F) (°F) Jul 1 - 31	XXX	XXX	XXX	101 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Aug 1 - 15	XXX	XXX	XXX	98 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Aug 16 - 31	XXX	XXX	XXX	98 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Sep 1 - 15	XXX	XXX	XXX	94 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Sep 16 - 30	XXX	XXX	XXX	87 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Oct 1 - 15	XXX	XXX	XXX	81 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Oct 16 - 31	XXX	XXX	XXX	75 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Nov 1 - 15	XXX	XXX	XXX	68 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Nov 16 - 30	XXX	XXX	XXX	58 Daily Max	XXX	XXX	1/day	I-S
Temperature (deg F) (°F) Dec 1 - 31	XXX	XXX	XXX	50 Daily Max	XXX	XXX	1/day	I-S

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

at Outfall 002

6.3.2 Summary of Proposed Permit Part C Conditions

The subject facility has the following Part C conditions.

- Temperature 2 Degree Hourly Change
- Chemical Additives
- Industrial Stormwater Requirements

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet
☐	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: New and Reissuance Industrial Waste and Industrial Stormwater, Revised October 11, 2013
☐	Other:

Attachment A

Stream Stats/Gauge Data

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

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

Streamgage number	Streamgage name	Latitude	Longitude	Drainage area (mi²)	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 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 (ft³/s)	7-day, 10-year (ft³/s)	7-day, 2-year (ft³/s)	30-day, 10-year (ft³/s)	30-day, 2-year (ft³/s)	90-day, 10-year (ft³/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	[3]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	[3]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

March 2011 Fact Shsst derivation for Q710.

STREAMFLOW:

During a previous NPDES renewal, it was agreed in an August 30, 1989 meeting with Anvil International, Inc., that streamflow would be reevaluated to determine if a higher Q_{7-10} could be used. The hydrogeologist conducted an exhausting research and concluded that streamflow could be correlated with the groundwater yield of the Little Conestoga Creek. This finding could only give an average yield of 0.86 cfs/mi^2 and not a low flow yield. This value was then compared to the USGS gaging station on the Conestoga River. A Q_{7-10} yield was then calculated by the same proportion between average yield (defined as the 50 percentile) and the Q_{7-10} yield on the Conestoga River. An October 1991 report developed by the Susquehanna River Basin Commission on the USGS gage station on the Conestoga River at the Lancaster City location has revised the gaging data upwards to reflect the water withdrawal above the gage by the Lancaster Municipal Water Company. A Q_{7-10} stream yield can be calculated as follows:

1. Average yield from the Little Conestoga Creek is 0.86 cfs/mi^2.
2. Average yield (50 percentile) of the Conestoga River is 0.79 cfs/mi^2.
3. Q_{7-10} yield of the Conestoga River is 0.166 cfs/mi^2.

$$\frac{0.86}{0.79} = \frac{x}{0.166}$$

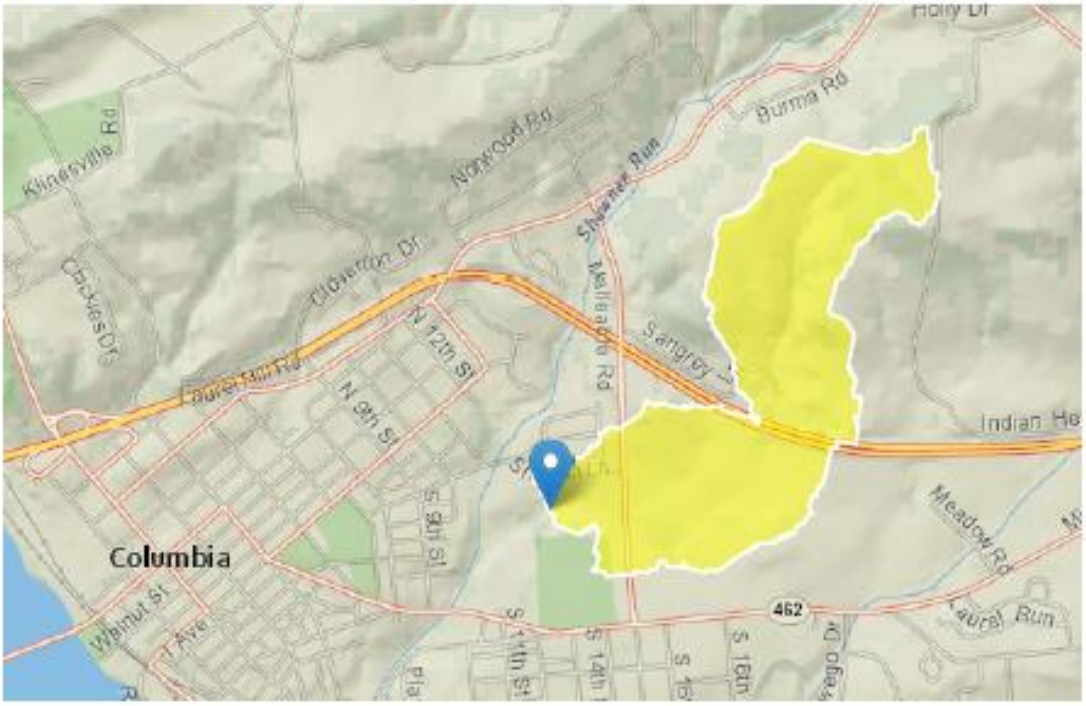
x = Calculated Q_{7-10} yield = 0.18 cfs/mi^2

Streamflow used in this report is calculated using this Q_{7-10} yield at the point of discharge on the unnamed tributary to which Anvil International, Inc. discharges as determined during the 2005 renewal. The 2000 renewal and previous permits were evaluated using the point of first use being at the confluence of the UNT and Shawnee Run based on a 1989 aquatic study. A more intensive study was conducted on the UNT on December 29, 2004. This aquatic survey documents that the UNT contains an aquatic community requiring a perennial streamflow. The attached report documents that the point of first use is at the point of discharge and must be protected by all permit renewals after 2005.

The drainage area at the end of pipe is 0.75 mi^2, which results in a Q_{7-10} of 0.14 cfs and a Q_{30-10} of 0.18 cfs using a factor of 1.27 take from the Conestoga River gaging data.

StreamStats Report

Region ID: PA
Workspace ID: PA20210205151353478000
Clicked Point (Latitude, Longitude): 40.03565, -76.48571
Time: 2021-02-05 10:14:10 -0500



Anvil International PA0080195 Modeling Point- Discharge Point Location January 2021

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.51	square miles
BSLOPD	Mean basin slope measured in degrees	4.3497	degrees
ROCKDEP	Depth to rock	5	feet

Parameter Code	Parameter Description	Value	Unit
URBAN	Percentage of basin with urban development	15.3817	percent

Low-Flow Statistics Parameters[Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.51	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	4.3497	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5	feet	4.13	5.21
URBAN	Percent Urban	15.3817	percent	0	89

Low-Flow Statistics Disclaimers[Low Flow Region 1]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report[Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.151	ft^3/s
30 Day 2 Year Low Flow	0.196	ft^3/s
7 Day 10 Year Low Flow	0.0672	ft^3/s
30 Day 10 Year Low Flow	0.0914	ft^3/s
90 Day 10 Year Low Flow	0.146	ft^3/s

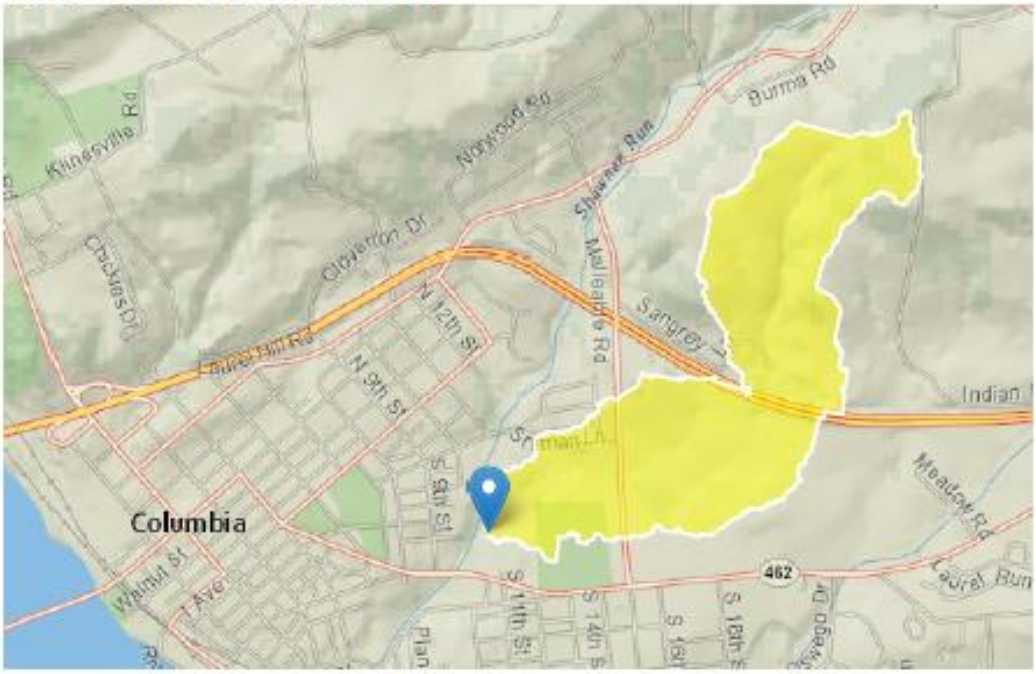
Low-Flow Statistics Citations

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/)

Application Version: 4.4.0

StreamStats Report

Region ID: PA
Workspace ID: PA20210127123037153000
Clicked Point (Latitude, Longitude): 40.03349, -76.48893
Time: 2021-01-27 07:30:54 -0500



Anvil International PA0080195 Modeling Point #1 January 2021

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.56	square miles
BSLOPD	Mean basin slope measured in degrees	4.1945	degrees
ROCKDEP	Depth to rock	5	feet

Parameter Code	Parameter Description	Value	Unit
URBAN	Percentage of basin with urban development	21.3762	percent

Low-Flow Statistics Parameters[Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.56	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	4.1945	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5	feet	4.13	5.21
URBAN	Percent Urban	21.3762	percent	0	89

Low-Flow Statistics Disclaimers[Low Flow Region 1]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report[Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.175	ft^3/s
30 Day 2 Year Low Flow	0.229	ft^3/s
7 Day 10 Year Low Flow	0.0794	ft^3/s
30 Day 10 Year Low Flow	0.108	ft^3/s
90 Day 10 Year Low Flow	0.175	ft^3/s

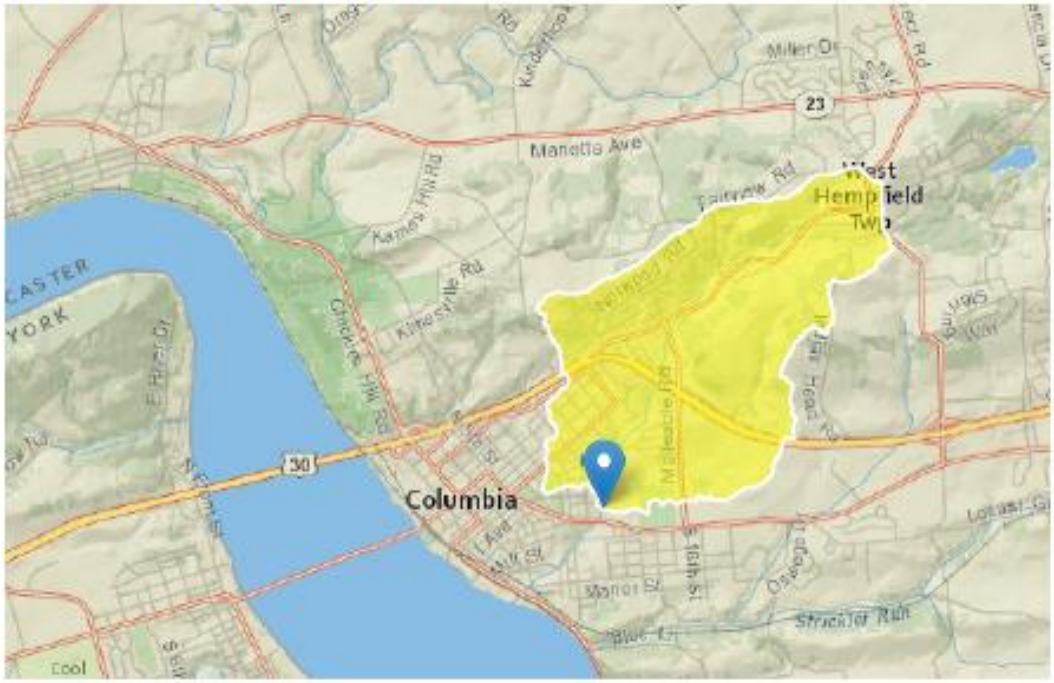
Low-Flow Statistics Citations

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/)

Application Version: 4.4.0

StreamStats Report

Region ID: PA
Workspace ID: PA20210127125736255000
Clicked Point (Latitude, Longitude): 40.03275, -76.49001
Time: 2021-01-27 07:57:53 -0500



Anvil International PA0080195 Modeling Point #2 January 2021

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	2.1	square miles
BSLOPD	Mean basin slope measured in degrees	5.649	degrees
ROCKDEP	Depth to rock	5	feet

Parameter Code	Parameter Description	Value	Unit
URBAN	Percentage of basin with urban development	29.5699	percent

Low-Flow Statistics Parameters[Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.1	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	5.649	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5	feet	4.13	5.21
URBAN	Percent Urban	29.5699	percent	0	89

Low-Flow Statistics Disclaimers[Low Flow Region 1]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report[Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	1.1	ft^3/s
30 Day 2 Year Low Flow	1.33	ft^3/s
7 Day 10 Year Low Flow	0.61	ft^3/s
30 Day 10 Year Low Flow	0.755	ft^3/s
90 Day 10 Year Low Flow	1.02	ft^3/s

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/)

Application Version: 4.4.0

Attachment B

Modeling Input Values
Toxics Modeling

Master Input Sheet				
Anvil International				
PA0080195				
January 2021				
General Data 1 (Modeling Point #1)	***Type***	***Default***	***Input Value***	***Units***
Stream Code	R		7880	
River Mile Index	R		0.3	miles
Elevation	R		310	feet
Latitude			40.035917	
Longitude			-76.485889	
Drainage Area	R		0.51	sq miles
Reach Slope	O		Default	ft/ft
Low Flow Yield	R	0.1	0.1418	cfs/sq mile
Potable Water Supply Withdrawal	O	0	Default	mgd
General Data 2 (Modeling Point #2)	***Type***	***Default***	***Input Value***	***Units***
Stream Code	R		7880	
River Mile Index	R		0.1	miles
Elevation	R		297	feet
Latitude			40.03349	
Longitude			-76.48893	
Drainage Area	R		0.56	sq miles
Reach Slope	O		Default	ft/ft
Low Flow Yield	R	0.1	0.1418	cfs/sq mile
Potable Water Supply Withdrawal	O	0	Default	mgd
General Data 3 (Modeling Point #2)	***Type***	***Default***	***Input Value***	***Units***
Stream Code	R		7880	
River Mile Index	R		0	miles
Elevation	R		296	feet
Latitude			40.03275	
Longitude			-76.49001	
Drainage Area	R		2.1	sq miles
Reach Slope	O		Default	ft/ft
Low Flow Yield	R	0.1	0.1418	cfs/sq mile
Potable Water Supply Withdrawal	O	0	Default	mgd

Hydrodynamic and Related Data	***Type***	***Default***	***Input Value***	***Units***
Tributary Flow	O		Default	cfs
Stream Flow	O		Default	cfs
Tributary Temperature	R	20	25.5	C
Tributary pH	R	7	8.1	pH units
Tributary Hardness	O		85	mg/l
Stream Temperature	O		Default	C
Stream pH	O		Default	pH Units

Discharge Data	***Type***	***Default***	***Input Value***	***Units***
Discharge Name	R		Anvil International	15 character
Permit Number	R		PA0080195	PA0000000
Existing Discharge Flow	R		0.1978	mgd
Permitted Discharge Flow	R		0.1978	mgd
Design Discharge Flow	R		0.1978	mgd
Reserve Factor	O	0	Default	decimal percent
Discharge Temperature	R	25	17.02	C
Discharge pH	R	7	7.62	pH units
Discharge Hardness	R (Pentox)	100	100	mg/l

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.1, October 2020

Discharge Information

Instructions | Discharge | Stream

Facility: **Anvil International** NPDES Permit No.: **PA0080195** Outfall No.: **001/002**

Evaluation Type: **Custom / Additives** Wastewater Description: **Process cooling water / chemical additives**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.1978	100	7.62						

				0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
CEL 488	mg/L		1.00E+09									
Compound 400A	mg/L		1.00E+09									
Compound 520 EP	mg/L		1.00E+09									
Compound 530 S	mg/L		1.00E+09									
Steam Treat F	mg/L		1.00E+09									

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.1, October 2020

Stream / Surface Water Information

Anvil International, NPDES Permit No. PA0080195, Outfall 001/002

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Tributary 07880 to Shawnee Run** No. Reaches to Model: **1**

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	007880	0.3	310	0.51			Yes
End of Reach 1	007880	0	296	2.1			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	0.3	0.1418										85	8.1		
End of Reach 1	0	0.1418										85	8.1		

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	0.3														
End of Reach 1	0														

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.1, October 2020

Model Results

Anvil International, NPDES Permit No. PA0080195, Outfall 001/002

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 0.060 PMF: 1 Analysis Hardness (mg/l): 97.133 Analysis pH: 7.68

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
CEL 488	0	0		0	18	18.0	22.3	
Compound 400A	0	0		0	130,440	130,440	161,268	
Compound 520 EP	0	0		0	109,360	109,360	135,206	
Compound 530 S	0	0		0	135,560	135,560	167,598	
Steam Treat F	0	0		0	900	900	1,113	

☑ ***CFC*** CCT (min): 0.060 PMF: 1 Analysis Hardness (mg/l): 97.133 Analysis pH: 7.68

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
CEL 488	0	0		0	2	2.0	2.47	
Compound 400A	0	0		0	14,490	14,490	17,915	
Compound 520 EP	0	0		0	12,150	12,150	15,021	
Compound 530 S	0	0		0	15,060	15,060	18,619	
Steam Treat F	0	0		0	99	99.0	122	

☑ ***THH*** CCT (min): 0.060 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
CEL 488	0	0		0	700	700	865	
Compound 400A	0	0		0	34,500	34,500	42,654	
Compound 520 EP	0	0		0	23,000	23,000	28,436	
Compound 530 S	0	0		0	N/A	N/A	N/A	
Steam Treat F	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 0.420 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
CEL 488	0	0		0	N/A	N/A	N/A	
Compound 400A	0	0		0	N/A	N/A	N/A	
Compound 520 EP	0	0		0	N/A	N/A	N/A	
Compound 530 S	0	0		0	N/A	N/A	N/A	
Steam Treat F	0	0		0	N/A	N/A	N/A	

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

Pollutants	*Mass Limits* AML (lbs/day)	*Mass Limits* MDL (lbs/day)	*Concentration Limits* AML	*Concentration Limits* MDL	*Concentration Limits* IMAX	*Concentration Limits* Units	Governing WQBEL	WQBEL Basis	Comments
CEL 488	0.004	0.006	0.002	0.004	0.006	mg/L	0.002	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Compound 400A	29.6	46.1	17.9	27.9	44.8	mg/L	17.9	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Compound 520 EP	24.8	38.7	15.0	23.4	37.6	mg/L	15.0	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Compound 530 S	30.7	47.9	18.6	29.0	46.5	mg/L	18.6	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Steam Treat F	0.2	0.32	0.12	0.19	0.31	mg/L	0.12	CFC	Discharge Conc ≥ 50% WQBEL (RP)

☐ ***Other Pollutants without Limits or Monitoring***

Attachment C
Thermal Modelling

Temperature Model Run with Chapter 93

Facility:	**Anvil International**
Permit Number:	PA0080195
Stream Name:	Shawnee Run
Analyst/Engineer:	DEP
Stream Q7-10 (cfs):	0.14

	Facility Flows				Stream Flows			
	Intake (Stream) (MGD)	Intake (External) (MGD)	Consumptive Loss (MGD)	Discharge Flow (MGD)	PMF	Upstream Stream Flow (cfs)	Adjusted Stream Flow (cfs)	Downstream Stream Flow (cfs)
Jan 1-31	0	0.151173	0	0.151173	1.00	0.45	0.45	0.68
Feb 1-29	0	0.151173	0	0.151173	1.00	0.49	0.49	0.72
Mar 1-31	0	0.151173	0	0.151173	1.00	0.98	0.98	1.21
Apr 1-15	0	0.151173	0	0.151173	1.00	1.30	1.30	1.54
Apr 16-30	0	0.151173	0	0.151173	1.00	1.30	1.30	1.54
May 1-15	0	0.151173	0	0.151173	1.00	0.71	0.71	0.95
May 16-31	0	0.151173	0	0.151173	1.00	0.71	0.71	0.95
Jun 1-15	0	0.151173	0	0.151173	1.00	0.42	0.42	0.65
Jun 16-30	0	0.151173	0	0.151173	1.00	0.42	0.42	0.65
Jul 1-31	0	0.151173	0	0.151173	1.00	0.24	0.24	0.47
Aug 1-15	0	0.151173	0	0.151173	1.00	0.20	0.20	0.43
Aug 16-31	0	0.151173	0	0.151173	1.00	0.20	0.20	0.43
Sep 1-15	0	0.151173	0	0.151173	1.00	0.15	0.15	0.39
Sep 16-30	0	0.151173	0	0.151173	1.00	0.15	0.15	0.39
Oct 1-15	0	0.151173	0	0.151173	1.00	0.17	0.17	0.40
Oct 16-31	0	0.151173	0	0.151173	1.00	0.17	0.17	0.40
Nov 1-15	0	0.151173	0	0.151173	1.00	0.22	0.22	0.46
Nov 16-30	0	0.151173	0	0.151173	1.00	0.22	0.22	0.46
Dec 1-31	0	0.151173	0	0.151173	1.00	0.34	0.34	0.57

Facility:	**Anvil International**							
Permit Number:	PA0080195							
Stream:	Shawnee Run							
	WWF			**WWF**		**WWF**		**PMF**
	Ambient Stream	Ambient Stream	Target Maximum	Daily		Daily		
	Temperature (ºF)	Temperature (ºF)	Stream Temp.[1]	WLA[2]		WLA[3]	at Discharge	
	(Default)	(Site-specific data)	(ºF)	(Million BTUs/day)		(ºF)	Flow (MGD)	
Jan 1-31	35	0	40	N/A -- Case 2		49.6	0.151173	1.00
Feb 1-29	35	0	40	N/A -- Case 2		50.5	0.151173	1.00
Mar 1-31	40	0	46	N/A -- Case 2		71.1	0.151173	1.00
Apr 1-15	47	0	52	N/A -- Case 2		79.8	0.151173	1.00
Apr 16-30	53	0	58	N/A -- Case 2		85.8	0.151173	1.00
May 1-15	58	0	64	N/A -- Case 2		82.3	0.151173	1.00
May 16-31	62	0	72	N/A -- Case 2		102.5	0.151173	1.00
Jun 1-15	67	0	80	N/A -- Case 2		103.3	0.151173	1.00
Jun 16-30	71	0	84	N/A -- Case 2		107.3	0.151173	1.00
Jul 1-31	75	0	87	N/A -- Case 2		99.2	0.151173	1.00
Aug 1-15	74	0	87	N/A -- Case 2		97.9	0.151173	1.00
Aug 16-31	74	0	87	N/A -- Case 2		97.9	0.151173	1.00
Sep 1-15	71	0	84	N/A -- Case 2		92.6	0.151173	1.00
Sep 16-30	65	0	78	N/A -- Case 2		86.6	0.151173	1.00
Oct 1-15	60	0	72	N/A -- Case 2		80.6	0.151173	1.00
Oct 16-31	54	0	66	N/A -- Case 2		74.6	0.151173	1.00
Nov 1-15	48	0	58	N/A -- Case 2		67.6	0.151173	1.00
Nov 16-30	42	0	50	N/A -- Case 2		57.7	0.151173	1.00
Dec 1-31	37	0	42	N/A -- Case 2		49.2	0.151173	1.00

[1] This is the maximum of the WWF WQ criterion or the ambient temperature. The ambient temperature may be either the design (median) temperature for WWF, or the ambient stream temperature based on site-specific data entered by the user. A minimum of 1ºF above ambient stream temperature is allocated.

[2] The WLA expressed in Million BTUs/day is valid for Case 1 scenarios, and disabled for Case 2 scenarios.

[3] The WLA expressed in ºF is valid only if the limit is tied to a daily discharge flow limit (may be used for Case 1 or Case 2). WLAs greater than 110ºF are displayed as 110ºF.

Temperature Model Run with Site Specific Temperature

Facility:	**Anvil International**
Permit Number:	PA0080195
Stream Name:	Shawnee Run
Analyst/Engineer:	DEP
Stream Q7-10 (cfs):	0.14

	Facility Flows				Stream Flows			
	Intake (Stream) (MGD)	Intake (External) (MGD)	Consumptive Loss (MGD)	Discharge Flow (MGD)	PMF	Upstream Stream Flow (cfs)	Adjusted Stream Flow (cfs)	Downstream Stream Flow (cfs)
Jan 1-31	0	0.151173	0	0.151173	1.00	0.45	0.45	0.68
Feb 1-29	0	0.151173	0	0.151173	1.00	0.49	0.49	0.72
Mar 1-31	0	0.151173	0	0.151173	1.00	0.98	0.98	1.21
Apr 1-15	0	0.151173	0	0.151173	1.00	1.30	1.30	1.54
Apr 16-30	0	0.151173	0	0.151173	1.00	1.30	1.30	1.54
May 1-15	0	0.151173	0	0.151173	1.00	0.71	0.71	0.95
May 16-31	0	0.151173	0	0.151173	1.00	0.71	0.71	0.95
Jun 1-15	0	0.151173	0	0.151173	1.00	0.42	0.42	0.65
Jun 16-30	0	0.151173	0	0.151173	1.00	0.42	0.42	0.65
Jul 1-31	0	0.151173	0	0.151173	1.00	0.24	0.24	0.47
Aug 1-15	0	0.151173	0	0.151173	1.00	0.20	0.20	0.43
Aug 16-31	0	0.151173	0	0.151173	1.00	0.20	0.20	0.43
Sep 1-15	0	0.151173	0	0.151173	1.00	0.15	0.15	0.39
Sep 16-30	0	0.151173	0	0.151173	1.00	0.15	0.15	0.39
Oct 1-15	0	0.151173	0	0.151173	1.00	0.17	0.17	0.40
Oct 16-31	0	0.151173	0	0.151173	1.00	0.17	0.17	0.40
Nov 1-15	0	0.151173	0	0.151173	1.00	0.22	0.22	0.46
Nov 16-30	0	0.151173	0	0.151173	1.00	0.22	0.22	0.46
Dec 1-31	0	0.151173	0	0.151173	1.00	0.34	0.34	0.57

Facility:	**Anvil International**							
Permit Number:	PA0080195							
Stream:	Shawnee Run							
	WWF			**WWF**		**WWF**		**PMF**
	Ambient Stream	Ambient Stream	Target Maximum	Daily		Daily		
	Temperature (ºF)	Temperature (ºF)	Stream Temp.[1]	WLA[2]		WLA[3]	at Discharge	
	(Default)	(Site-specific data)	(ºF)	(Million BTUs/day)		(ºF)	Flow (MGD)	
Jan 1-31	35	42.3	43.3	N/A -- Case 2		45.2	0.151173	1.00
Feb 1-29	35	44.3	45.3	N/A -- Case 2		47.4	0.151173	1.00
Mar 1-31	40	50.7	51.7	N/A -- Case 2		55.9	0.151173	1.00
Apr 1-15	47	57.3	58.3	N/A -- Case 2		63.9	0.151173	1.00
Apr 16-30	53	57.3	58.3	N/A -- Case 2		63.9	0.151173	1.00
May 1-15	58	61.7	64	N/A -- Case 2		71.0	0.151173	1.00
May 16-31	62	61.7	72	N/A -- Case 2		103.4	0.151173	1.00
Jun 1-15	67	69.3	80	N/A -- Case 2		99.2	0.151173	1.00
Jun 16-30	71	69.3	84	N/A -- Case 2		110.0	0.151173	1.00
Jul 1-31	75	73.3	87	N/A -- Case 2		100.9	0.151173	1.00
Aug 1-15	74	73.8	87	N/A -- Case 2		98.1	0.151173	1.00
Aug 16-31	74	73.8	87	N/A -- Case 2		98.1	0.151173	1.00
Sep 1-15	71	68.3	84	N/A -- Case 2		94.3	0.151173	1.00
Sep 16-30	65	68.3	78	N/A -- Case 2		84.4	0.151173	1.00
Oct 1-15	60	60	72	N/A -- Case 2		80.6	0.151173	1.00
Oct 16-31	54	60	66	N/A -- Case 2		70.3	0.151173	1.00
Nov 1-15	48	56.5	58	N/A -- Case 2		59.4	0.151173	1.00
Nov 16-30	42	56.5	57.5	N/A -- Case 2		58.5	0.151173	1.00
Dec 1-31	37	47.5	48.5	N/A -- Case 2		49.9	0.151173	1.00

[1] This is the maximum of the WWF WQ criterion or the ambient temperature. The ambient temperature may be either the design (median) temperature for WWF, or the ambient stream temperature based on site-specific data entered by the user. A minimum of 1ºF above ambient stream temperature is allocated.

[2] The WLA expressed in Million BTUs/day is valid for Case 1 scenarios, and disabled for Case 2 scenarios.

[3] The WLA expressed in ºF is valid only if the limit is tied to a daily discharge flow limit (may be used for Case 1 or Case 2).

WLAs greater than 110ºF are displayed as 110ºF.