pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0035092**
Facility Type	**Industrial**	APS ID	**4675**
Major / Minor	**Minor**	Authorization ID	**1110775**

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

Applicant and Facility Information

Applicant Name	**Tyson Poultry, Inc.**	Facility Name	**Tyson Poultry Inc. New Holland**
Applicant Address	403 S Custer Avenue	Facility Address	403 S Custer Avenue
	New Holland, PA 17557-9221		New Holland, PA 17557-9221
Applicant Contact	Julie Bard-Ziegler	Facility Contact	Julie Bard-Ziegler
Applicant Phone	(717) 355-5437	Facility Phone	(717) 355-5437
Client ID	1975	Site ID	252308
SIC Code	2015	Municipality	New Holland Borough
SIC Description	Manufacturing - Poultry Slaughtering And Processing	County	Lancaster
Date Application Received	March 7, 2016	EPA Waived?	No
Date Application Accepted	December 16, 2016	If No, Reason	Significant CB Discharge

Purpose of Application: NPDES Renewal.

Summary of Review

Tyson Poultry, Inc. has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit. The permit was issued on August 15, 2011, and became effective on September 1, 2011. The permit authorized discharge of industrial wastewater from the existing wastewater treatment plant (WWTP) located in New Holland Borough, Lancaster County into UNT to Mill Creek. An NPDES permit amendment was issued on July 23, 2014, which changed the permittee name to Tyson Poultry, Inc. The existing permit expiration date was August 31, 2016, and the permit has been administratively extended since that time.

Per the previous fact sheet, Tyson Poultry, Inc. is a poultry processing and slaughtering facility where live chickens are trucked to the facility daily. They are killed, cleaned, processed via cooking, packed for sale, and also processed into a variety of special frozen poultry products for retail sale. There are approximately 850 employees, who work on two shifts followed by a sanitation shift were all processing areas are cleaned. Processing occurs Monday through Friday. Rendering is not done at the WWTP; the chicken offal is trucked to a private rendering facility. Sanitary wastewater is treated at the New Holland Borough WWTP. Outfall 001 is located at the mouth of an unnamed tributary (UNT) to Mill Creek, approximately 20' from the confluence with Mill Creek. Outfalls 002, 003, and 004 are stormwater outfalls located near the main plant site.

Changes in this renewal: Bromide, Chloride, and Sulfate monitoring requirements were added. The minimum measurement frequency for TN and TP has been increased to 2/week. A more stringent NH_3-N limit was added to the permit. Temperature limits were added to the permit.

Supplemental information is located at the end of this fact sheet.

Approve	Deny	Signatures	Date
X		*Benjamin Lockwood* Benjamin R. Lockwood / Environmental Engineering Specialist	March 6, 2021
X		/s/ Daniel W. Martin, P.E. / Environmental Engineer Manager	March 16, 2021
X		/s/ Maria D. Bebenek, P.E. / Program Manager	March 16, 2021

Summary of Review
Public Participation DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	1.5
Latitude	40º 5' 29"	Longitude	76º 5' 7"
Quad Name	New Holland	Quad Code	1837
Wastewater Description:	Treated chicken processing water		
Receiving Waters	Unnamed Tributary to Mill Creek (WWF,MF)	Stream Code	07622
NHD Com ID	57462847	RMI	0.05
Drainage Area	2.02 mi^2	Yield (cfs/mi^2)	.024
Q_{7-10} Flow (cfs)	0.0492	Q_{7-10} Basis	USGS PA StreamStats
Elevation (ft)	412	Slope (ft/ft)	
Watershed No.	7-J	Chapter 93 Class.	WWF, MF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	Pathogens, Nutrients, Siltation		
Source(s) of Impairment	Source Unknown, Grazing in Riparian or Shoreline Zones, Grazing in Riparian or Shoreline Zones		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	Holtwood Power Plant		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	45.5

Changes Since Last Permit Issuance: USGS PA StreamStats provided a drainage area of 2.02 mi^2 and a Q_{7-10} flow of 0.0492 cfs at the point of discharge.

Other Comments: None

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	Variable (Stormwater)
Latitude	40º 5' 27"	Longitude	76º 5' 12"
Quad Name	New Holland	Quad Code	1837
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary of Mill Creek (WWF, MF)	Stream Code	07622
NHD Com ID	57462747	RMI	0.9
Drainage Area	0.51 mi^2	Yield (cfs/mi^2)	0.052
Q_{7-10} Flow (cfs)	0.0263	Q_{7-10} Basis	USGS PA StreamStats
Elevation (ft)	438	Slope (ft/ft)	
Watershed No.	7-J	Chapter 93 Class.	WWF, MF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	Pathogens, Nutrients, Siltation		
Source(s) of Impairment	Source Unknown, Grazing in Riparian or Shoreline Zones, Grazing in Riparian or Shoreline Zones		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	Holtwood Power Plant		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	46.4

Changes Since Last Permit Issuance: None

Other Comments: None

Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	Variable (Stormwater)
Latitude	40º 5' 55"	Longitude	76º 5' 55"
Quad Name	New Holland	Quad Code	1837
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary to Mill Creek (WWF, MF)	Stream Code	07623
NHD Com ID	57462745	RMI	0.25
Drainage Area	0.61 mi^2	Yield (cfs/mi^2)	0.039
Q_{7-10} Flow (cfs)	0.0237	Q_{7-10} Basis	USGS PA StreamStats
Elevation (ft)	433	Slope (ft/ft)	
Watershed No.	7-J	Chapter 93 Class.	WWF, MF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	Pathogens, Nutrients, Siltation		
Source(s) of Impairment	Source Unknown, Grazing in Riparian or Shoreline Zones, Grazing in Riparian or Shoreline Zones		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	Holtwood Power Plant		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	46.5

Changes Since Last Permit Issuance: None

Other Comments: None

Discharge, Receiving Waters and Water Supply Information

Outfall No.	004	Design Flow (MGD)	Variable (Stormwater)
Latitude	40º 5' 15"	Longitude	76º 5' 15"
Quad Name	New Holland	Quad Code	1837
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary of Mill Creek (WWF, MF)	Stream Code	07622
NHD Com ID	57462747	RMI	1.15
Drainage Area	0.47 mi^2	Yield (cfs/mi^2)	0.053
Q_{7-10} Flow (cfs)	0.0249	Q_{7-10} Basis	USGS PA StreamStats
Elevation (ft)	450	Slope (ft/ft)	
Watershed No.	7-J	Chapter 93 Class.	WWF, MF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	Pathogens, Nutrients, Siltation		
Source(s) of Impairment	Source Unknown, Grazing in Riparian or Shoreline Zones, Grazing in Riparian or Shoreline Zones		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	Holtwood Power Plant		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	46.7

Changes Since Last Permit Issuance: None

Other Comments: None

Treatment Facility Summary				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Industrial	Secondary With Total Nitrogen Reduction	Activated Sludge	Ultraviolet	1.5
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
1.5	0.037	Not Overloaded	Sludge Holding	Other WWTP

Changes Since Last Permit Issuance: An upgrade to Tyson's existing WWTP to meet their NPDES permit limits was approved in a Water Quality Management (WQM) permit dated February 7, 2013. Nutrient Cap Loads were established in the previous NPDES permit renewal to satisfy the Chesapeake Bay Watershed Total Maximum Daily Load (TMDL) Requirements. Prior to the upgrade the WWTP consisted of: Rotary screen, grease pit, equalization (EQ) tank, dissolved air flotation (DAF) and polymer, second EQ tank, aeration tanks for complete mix activated sludge, clarifier with addition of aluminum chloride for phosphorus removal, chlorine contact tank, and two aerated sludge holding tanks.

The WQM approved an upgrade consisting of a WWTP conversion to a multi-stage Biological Nitrogen Removal (BNR) facility. As part of the project, 12 new pumps were installed with 2 existing pumps upgraded, three floating mixers and an installed standby blower were added to a tank to be operated as an anoxic reactor, a nitrate recycle line and a flowmeter were added between the main nitrification reactor and the anoxic reactor, an additional flowmeter was added in the pump station following the anoxic reactor, fine bubble diffuser grids and two new blowers were added to the main nitrification reactor, two existing rectangular tanks were equipped to operate as either additional aerobic or anoxic reactors as needed, and a new flow meter and totalizer were added on the return activated sludge (RAS) line from the final clarifier. The current treatment process is as follows: Double drum screen – Three influent pumps directing flow to the EQ tank – DAF – Anoxic Tank – North Complete Mix Activated Sludge (NCMAS) tank – South Complete Mix Activated Sludge (SCMAS) tank – Clarifier – UV disinfection System – Passes through old chlorine contact tank for DO adjustments – Outfall 001 to UNT to Mill Creek. Aluminum chloride is used as a solids and grease coagulant. Sulfuric acid and caustic acid are added for pH control. A lime/mag slurry is used to maintain alkalinity. A polymer is added to the floc tube to assist in flocculation. The clarifier is equipped with an ultrasonic unit to control algae growth. RAS is directed from the clarifier to the anoxic tank. WAS from the clarifier is directed back to the DAF. DAF sludge is directed to the sludge holding tank. A second sludge holding tank is available if needed.

Other Comments: None

Compliance History	
Summary of DMRs:	A summary of the past 12-month DMR effluent data is presented on the next page of this fact sheet.
Summary of Inspections:	2/2/2016: A routine inspection was conducted. No issues or violations were observed during a walkthrough of the WWTP. It was noted that Tyson was interested in installing boilers to add steam to the EQ basin to raise the water temperature by a few degrees to help out the nitrification process. The equipment is onsite, but not installed. 1/17/2019: A routine inspection was conducted. The flow EQ basin level was below half, and the surface aerator was functional upon inspection. The DAF effluent was mostly clear, and the skimmers were functional. The clarifier had a significant amount of pin floc upon inspection, and had a green tint. The effluent trough appeared clear. The CCT is cleaned every weekend, and had a small amount of algae present on the sides of the tank. Field results were within permitted limits. The sludge holding tank was at a low level upon inspection. On 1/4/19, an overflow from the sludge holding tank of approximately 90 gallons was reported. This was due to operator error. An inspection of the overflow area was completed. A very small amount of residual solids were noted on a grassy area prior to the stream. The stream appeared to be free of solids and had only a small amount of standing water. Based on temperature sampling results, the possibility of including a temperature parameter in the next permit issuance was discussed. A significant amount of algae was present on the stream bed directly downstream of Outfall 001. The stormwater outfalls were observed, and no water quality concerns were noted. The Environmental Manager, Ms. Bard-Ziegler suggested that if future permits required stormwater sampling, then Outfall 004 should be relocated. The catch basin is currently collecting runoff from road and nearby facilities and is not representative of Tyson's runoff. 2/8/2018: A Notice of Violation (NOV) was issued regarding the overflow that occurred on 1/4/2019. 1/17/2020: A routine inspection was conducted. The effluent from the DAF unit was mostly clear, and the skimmers were functional. The clarifier had a light accumulation of pin floc, and the effluent trough appeared clear. Field results were within permitted limits. 6/24/2020: An administrative inspection was conducted. The facility was operating normally, with all units online and operable. No emergency conditions such as SSOs or equipment failures were noted. There were no outstanding issues at the time of inspection. 11/12/2020: An administrative inspection was conducted. Ms. Bard-Ziegler provided notification on 11/12/2020 that blower #4 air line began losing air. The email noted that underground piping would be replaced with aboveground steel piping to deliver blower air.

Other Comments: There are currently no open violations associated with the permittee or the facility.

Compliance History

DMR Data for Outfall 001 (from January 1, 2020 to December 31, 2020)

Parameter	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20	FEB-20	JAN-20
Flow (MGD) Average Monthly	0.618242	0.658544	0.825913	0.81231	0.796035	0.750553	0.730766	0.596289	0.688153	0.649426	0.595577	0.67939
Flow (MGD) Daily Maximum	0.901661	1.026287	1.070418	1.113407	1.097644	1.016302	0.984181	0.933896	1.024378	1.081269	0.892795	1.09409
pH (S.U.) Minimum	7.0	6.9	6.9	7.1	6.9	7.0	7.0	6.9	6.9	7.0	6.8	6.5
pH (S.U.) Maximum	8.4	7.7	7.5	7.7	7.7	7.7	7.5	7.6	7.6	7.7	7.8	7.5
DO (mg/L) Minimum	6.6	6.3	6.6	6.3	6.1	6.7	6.6	6.3	6.8	7.0	7.1	5.7
TRC (mg/L) Average Monthly	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	0.06	0.04
TRC (mg/L) Instantaneous Maximum	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	0.15	0.17
CBOD5 (lbs/day) Average Monthly	56	55	< 17	< 17	< 16	18	< 26	< 18	< 14	< 14	42	< 29
CBOD5 (lbs/day) Daily Maximum	59	133	< 17	< 18	< 17	20	47	25	< 15	< 15	75	91
CBOD5 (mg/L) Average Monthly	8.4	7.4	< 2.0	< 2.0	< 2.0	2.5	< 3.6	< 2.8	< 2.0	< 2.1	7	< 4.1
CBOD5 (mg/L) Daily Maximum	9.1	17.3	2.0	< 2.0	< 2.0	2.9	6.4	3.7	< 2.0	2.2	11.3	12.2
TSS (lbs/day) Average Monthly	< 36	< 31	< 46	< 34	< 38	< 29	< 29	< 27	< 29	< 27	65	< 58
TSS (lbs/day) Daily Maximum	49	34	82	< 36	54	< 31	30	< 29	< 31	< 30	148	191
TSS (mg/L) Average Monthly	< 5.5	< 4.2	< 5.6	< 4.0	< 4.6	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	10	< 8.0
TSS (mg/L) Daily Maximum	7.6	4.8	< 10.4	< 4.0	6.4	4.0	4.0	4.0	< 4.0	< 4.0	22.4	25.6
Total Dissolved Solids (lbs/day) Average Monthly	12373	14836	15808	15773	15227	14577	12290	13281	14000	12938	11248	12876
Total Dissolved Solids (mg/L) Average Monthly	1874	1995	1915	1850	1863	2014	1680	2005	1938	1925	1883	1978

Total Dissolved Solids (mg/L) Daily Maximum	2010	2150	2010	1930	1940	2090	1910	2130	2010	2110	2060	2160
Oil and Grease (lbs/day) Average Monthly	< 32	< 37	< 40	< 53	< 46	< 40	< 37	< 39	< 35	< 36	< 31	< 32
Oil and Grease (lbs/day) Daily Maximum	< 33	< 41	< 42	89	60	64	41	55	< 39	49	< 34	< 37
Oil and Grease (mg/L) Average Monthly	< 4.9	< 4.9	< 4.9	< 6.0	< 5.6	< 5.5	< 5.1	< 5.8	< 4.9	< 5.4	< 5.0	< 5.0
Oil and Grease (mg/L) Daily Maximum	< 5.0	< 4.9	< 4.9	10.3	7.4	8.2	5.6	7.5	< 5.1	6.7	6.3	< 5.0
Fecal Coliform (CFU/100 ml) Geometric Mean	< 1	< 3	< 2	< 3	< 2	< 3	< 5	< 1	< 1	< 1	< 1	< 1
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	2	84	11	16	4	28	13	2	2	< 1	3	5
Nitrate-Nitrite (mg/L) Average Monthly	13.08	9.72	10.5	9.28	14.23	17.68	10.96	16.78	16.34	9.77	22.76	27.42
Nitrate-Nitrite (lbs) Total Monthly	2712	2237	2677	2355	3626	4080	2399	3398	3588	2061	4194	5906
Total Nitrogen (mg/L) Average Monthly	14.1	10.9	11.6	10.3	15.1	18.4	11.8	17.6	17.1	10.9	24.7	30.6
Total Nitrogen (mg/L) Daily Maximum	21.2	17.1	14.1	14.1	19.4	28.8	14.1	24.1	29.3	14.2	61.7	86.1
Total Nitrogen (lbs) Effluent Net Total Monthly	2921	2491	2969	2611	3858	4235	2591	3563	3753	2292	4550	6564
Total Nitrogen (lbs) Total Monthly	2921	2491	2969	2611	3858	4235	2591	3563	3753	2292	4550	6564
Total Nitrogen (lbs) Effluent Net Total Annual				< 41477								
Total Nitrogen (lbs) Total Annual				< 41477								
Ammonia (lbs/day) Average Monthly	< 0.7	< 0.8	< 0.8	< 0.9	< 0.8	< 0.7	< 0.7	< 0.7	< 0.7	< 7	< 0.6	< 5
Ammonia (lbs/day) Daily Maximum	< 0.7	< 0.8	< 0.9	< 0.9	< 0.9	< 0.8	< 0.8	< 0.7	< 0.8	< 0.8	< 0.7	11
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.9

Ammonia (mg/L) Daily Maximum	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.8
Ammonia (lbs) Total Monthly	< 21	< 22	< 26	< 26	< 25	< 22	< 22	< 21	< 22	< 21	< 17	< 170
Ammonia (lbs) Total Annual				< 473								
TKN (mg/L) Average Monthly	1.03	1.17	1.14	1.0	< 0.91	< 0.7	0.88	< 0.82	< 0.76	1.09	1.98	3.14
TKN (lbs) Total Monthly	209	254	292	256	< 232	154	193	165	166	231	356	658
Total Phosphorus (lbs/day) Average Monthly	< 0.8	< 1	< 0.8	< 0.9	< 0.9	< 0.8	< 0.9	< 0.7	< 0.7	< 0.7	< 0.7	< 0.8
Total Phosphorus (lbs/day) Daily Maximum	1	4	0.9	1	0.9	1	1.1	< 0.7	< 0.8	< 0.8	0.9	1.6
Total Phosphorus (mg/L) Average Monthly	< 0.1	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Phosphorus (mg/L) Daily Maximum	0.2	0.6	0.1	0.1	0.1	0.1	< 0.2	< 0.1	0.1	< 0.1	0.1	0.2
Total Phosphorus (lbs) Effluent Net Total Monthly	< 25	< 43	< 26	< 27	< 27	< 24	< 26	< 21	< 22	< 21	< 19	< 26
Total Phosphorus (lbs) Total Monthly	< 25	< 43	< 26	< 27	< 27	< 24	< 26	< 21	< 22	< 21	< 19	< 26
Total Phosphorus (lbs) Effluent Net Total Annual				< 280								
Total Phosphorus (lbs) Total Annual				< 280								

Existing Effluent Limitations and Monitoring Requirements

The tables below summarize the effluent limits and monitoring requirements implemented in the existing NPDES permit.

Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.16	XXX	0.52	1/day	Grab
CBOD5	200	325	XXX	16	26	40	1/week	24-Hr Composite
TSS	250	375	XXX	20	30	50	1/week	24-Hr Composite
Total Dissolved Solids	Report	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Oil and Grease	100	175	XXX	8	14	20	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	1/week	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	400 Geo Mean	XXX	2,000	1/week	Grab
Ammonia May 1 - Oct 31	25	50	XXX	2	4	5	1/week	24-Hr Composite
Ammonia Nov 1 - Apr 30	50	100	XXX	4	8	10	1/week	24-Hr Composite
Total Phosphorus	25	50	XXX	2	4	5	1/week	24-Hr Composite

Outfall 001

Parameter	Effluent Limitations					Monitoring Requirements	
	Mass Units (lbs)		Concentrations (mg/L)			Minimum Measurement Frequency	Required Sample Type
	Monthly	Annual	Minimum	Monthly Average	Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	1/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	1/week	24-Hr Composite
Nitrite-Nitrate as N	Report	XXX	XXX	Report	XXX	1/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	103	147	1/week	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	1/week	24-Hr Composite
Net Total Nitrogen	Report	54,794	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	559	XXX	XXX	XXX	1/month	Calculation

Compliance Sampling Location: Outfall 001

Other Comments: None

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 1.5
Latitude 40º 5' 29" **Longitude** 76º 5' 7"
Wastewater Description: Treated chicken processing water

Technology-Based Limitations

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

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)
NH_3-N	8.0	Maximum Daily	432.112, 432.113	-
NH_3-N	4.0	Average Monthly	432.112, 432.113	-
BOD_5	26	Maximum Daily	432.112	-
BOD_5	16	Average Monthly	432.112	-
Fecal Coliform	400 CFU per 100 ml	Maximum Daily	432.112	-
Oil & Grease	14	Maximum Daily	432.112	-
Oil & Grease	8.0	Average Monthly	432.112	-
TSS	30	Maximum Daily	432.112	-
TSS	20	Average Monthly	432.112	-
TN	147	Maximum Daily	432.113	-
TN	103	Average Monthly	432.113	-

This facility is regulated by an Effluent Limitation Guideline (ELG) from the Code of Federal Regulations 40 CFR §432 Meat and Poultry Products Point Source Category. Tyson Poultry, Inc. is regulated under Subpart K – Poultry First Processing. Subpart K applies to existing point sources that slaughter more than 100 million lbs/yr. Tyson's NPDES permit application states that the 5 year annual average production is 351,663,951 lbs/yr, so Tyson will continue to be regulated by this Subpart. The previous permit renewal developed limits based on Section §432.112 -BPT and §432.113 -BAT. These limits were applied to this permit, and are listed in the table above. Tyson's production also involves the further processing of chickens, which is covered under Subpart L – Poultry Further Processing. Therefore, they would also be regulated under Subpart L, which has identical limits to Subpart K.

pH

PA Code §§ 95.2(1) requires effluent pH limits of 6.0 to 9.0 standard units (S.U.) at all times in effluent. The permit will continue to require pH limit of 6.0 to 9.0 S.U.

UV Monitoring

DEP's SOP No. BPNPSM-PMT-032 recommends, at a minimum, routine monitoring of UV transmittance, dosage, or intensity when the facility is utilizing a UV disinfection system. The monitoring should occur at the same frequency as would be used for Total Residual Chlorine (TRC). This recommendation was implemented as a part of the proper operation and maintenance requirement specified in Part B of the NPDES permit, requesting permittees to demonstrate the effectiveness of UV disinfection systems. This approach has been assigned to other facilities equipped with similar technology. Accordingly, a parameter for UV Intensity will be included in the permit.

Oil and Grease

DEP's SOP No. BPNPSM-PMT-032 states that if the maximum concentration of oil and grease in the discharge is 8 mg/l or greater, establish an effluent limitation of 15 mg/l average monthly and 30 mg/l Instantaneous Maximum (IMAX). The maximum concentration reported in the permit application is <5.0 mg/l. However, there are already existing limits of 8.0 mg/l average monthly and 14 mg/l IMAX in the permit for Oil and Grease due to the ELG, so they will remain in the renewal permit.

Total Dissolved Solids (TDS)

Total Dissolved Solids and its major constituents including Bromide, Chloride, and Sulfate have become statewide pollutants of concern and threats to DEP's mission to prevent violations of water quality standards. The requirement to monitor these pollutants must be considered under the criteria specified in 25 Pa. Code § 95.10 and the following January 23, 2014 DEP Central Office Directive:

For point source discharges and upon issuance or reissuance of an individual NPDES permit:

- Where the concentration of TDS in the discharge exceeds 1,000 mg/L, or the net TDS load from a discharge exceeds 20,000 lbs/day, and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for TDS, sulfate, chloride, and bromide. Discharges of 0.1 MGD or less should monitor and report for TDS, sulfate, chloride, and bromide if the concentration of TDS in the discharge exceeds 5,000 mg/L.

- Where the concentration of bromide in a discharge exceeds 1 mg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for bromide. Discharges of 0.1 MGD or less should monitor and report for bromide if the concentration of bromide in the discharge exceeds 10 mg/L.

- Where the concentration of 1,4-dioxane (CAS 123-91-1) in a discharge exceeds 10 µg/l and the discharge flow exceeds 0.1 mgd, Part A of the permit should include monitor and report for 1,4-dioxane. Discharges of 0.1 mgd or less should monitor and report for 1,4-dioxane if the concentration of 1,4-dioxane in the discharge exceeds 100 µg/l.

Tyson Poultry, Inc. reported a maximum effluent TDS concentration of 2,660 mg/l and <0.21 mg/l for Bromide. Based upon the data provided in the application, monitoring of TDS, Bromide, Chloride, and Sulfate will be required. An existing monitoring requirement for TDS is included in the existing permit, and a monitoring requirement will be added for Bromide, Chloride, and Sulfate. A monitoring frequency of 1/week and 24-hour composite sample type will be used for these parameters.

Chesapeake Bay Total Maximum Daily Load (TMDL)

DEP developed a strategy to comply with the EPA and Chesapeake Bay Foundation requirements by reducing point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP). This strategy can be located in the Pennsylvania Chesapeake Watershed Implementation Plan (WIP), dated January 11, 2011. Subsequently, an update to the WIP was published as the Phase 2 WIP. As part of the Phase 2 WIP, a Phase 2 Watershed Implementation Plan Wastewater Supplement (Phase 2 Supplement) was developed, providing an update on TMDL implementation for point sources and DEP's current implementation strategy for wastewater. Subsequently, a Phase 3 Watershed Implementation Plan Wastewater Supplement (Phase 3 Supplement) was developed, dated December 17, 2019. Industrial discharges have been prioritized by Central Office based on their delivered TN and TP loadings to the Bay. Significant industrial wastewater dischargers are facilities that discharge more than 75 lbs/day of TN or 25 lbs/day of TP on an average annual basis and the rest are classified as non-significant dischargers. Based on the Phase 3 Supplement, this facility is classified as a significant discharger. Table 7 of the Phase 3 Supplement lists the Cap Loads for Tyson: A TN Cap Load of 54,794 lbs/yr, and a TP Cap Load of 559 lbs/yr. These Cap Loads will be unchanged from the previous renewal. The Phase 3 Supplement states that "the minimum monitoring frequency for TN species and TP in new or renewed NPDES permits for significant industrial dischargers will be 2/week." Therefore, the monitoring frequency for TN and TP is being increased to 2/week. DEP no longer offers any tools to calculate monthly loads for Net TN and Net TP; therefore, this reporting requirement is no longer needed and will be removed from the permit.

$CBOD_5$, NH_3-N

Pursuant to 40 CFR § 122.44(d)(1)(i), more stringent requirements should be considered when pollutants are discharged at the levels which have the reasonable potential to cause or contribute to excursions above water quality standards. WQM 7.0 ver. 1.0b is a water quality model designed to assist DEP in determining appropriate WQBELs for carbonaceous biochemical oxygen demand ($CBOD_5$), ammonia (NH_3-N), and dissolved oxygen (D.O.). DEP's Technical Guidance No. 391-2000-007 provides the technical methods contained in WQM 7.0 for determining wasteload allocations and for determining recommended NPDES effluent limits for point source discharges. The model was utilized for this permit application.

The flow data used to run the model was acquired from USGS PA StreamStats and is included in the attachment. Stream pH and temperature inputs for this model run were based on data acquired from the National Water Quality Monitoring Council website. Data was analyzed from the Water Quality Network (WQN) Station ID 284 from November 2012 to March 2019. DEP's Standard Operating Procedure (SOP) No. BPNPSM-PMT-032 (Establishing Effluent Limitations for Individual Industrial Permits) recommends using the 90th percentile of long-term data for background and discharge characteristics when using WQM 7.0. A 90th percentile analysis was performed on the data and resulted in a Stream pH of 8.3 and a Stream Temperature of 22.1°C. There are two other point source dischargers located in the vicinity of Tyson Poultry, Inc. All of the discharges are listed in the table below. A multiple discharge analysis was conducted to evaluate the cumulative impact of these discharges.

Facility Name	NPDES Permit no.	RMI	Discharge Flow, MGD
Tyson Poultry	PA0035092	23.1	1.5
New Holland Borough WWTP	PA0021890	23.5	1.34
Earl Township WWTP	PA0086304	22.27	0.65

The model output indicated a $CBOD_5$ average monthly limit of 19.36 mg/l, an NH_3-N average monthly limit of 1.77 mg/l, and a D.O. minimum limit of 5.0 mg/l were protective of water quality. The existing average monthly $CBOD_5$ limit of 16 mg/l is more stringent and will remain in the permit. The NH_3-N limit of 1.77 mg/l is more stringent than the existing limit. Based on the round-off guidelines from Chapter 5 of the Technical Guidance for the Development and Specification of Effluent Limitations (Guidance No. 362-0400-001), a NH_3-N limit of 1.7 mg/l will be included in the permit. A wintertime NH_3-N limit of 4.0 mg/l will remain in the permit due to the ELG. The limits were revised to conform with the statement in DEP's SOP No. BCW-PMT-032 that all concentration limits less than 10 should contain at least one decimal place. A review of the past year of DMR data for Tyson Poultry, Inc. shows that the facility is capable of meeting this slightly more stringent limit.

Total Suspended Solids

25 Pa. Code § 92a.47(a)(1) requires an average monthly TSS limit of 30 mg/l for discharges of sewage. The ELG includes a more stringent average monthly TSS limit of 20 mg/l, which will remain in the permit.

Toxics

A review of the application did not show any toxics of concern in the effluent. This is consistent with the development of previous renewals; therefore, the use of DEP's Toxics Management Spreadsheet Version 1.0 is not necessary for this permit renewal.

Total Phosphorus

For TP, the existing NPDES permit requires the permittee to comply with average monthly and IMAX limits of 2 mg/L and 4 mg/L, respectively. DEP's Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams (Guidance No. 391-2000-018) was used during a previous permit renewal to determine that phosphorus limitations were necessary. An existing average monthly limit of 2.0 mg/l and instantaneous maximum limit of 4.0 mg/l will remain in the permit to protect the local watershed. The limits were revised to conform with the statement in the SOP No. BCW-PMT-032 that all concentration limits less than 10 should contain at least one decimal place.

Dissolved Oxygen

A minimum D.O. limit of 5.0 mg/L is a D.O. water quality criterion found in 25 Pa. Code § 93.7(a). This limit is included in the existing NPDES permit based BPJ. It is still recommended to include this limit in the draft permit to ensure that the facility continues to achieve compliance with DEP water quality standards.

Fecal Coliform

PA Code § 92a.47.(a)(4) requires a monthly average limit of 200/100 mL as a geometric mean and an instantaneous maximum limit not greater than 1,000/100 mL from May through September for fecal coliform. PA Code § 92a.47.(a)(5) requires a monthly average limit of 2,000/100 mL as a geometric mean and an instantaneous maximum limit not greater than 10,000/100 mL from October through April for fecal coliform. The existing limits of summer 200 CFU/100 ml and winter 400 CFU/100 ml are more stringent, and will remain in the permit.

Temperature

From past DEP inspections, it has been determined that Tyson has thermally elevated process water. From 5/29/13, the effluent wet well temperature was 27.3°C. On 2/2/16, the effluent wet well temperature was 22.3°C. On 12/6/16, the temperature at Outfall 001 was 17.8°C, the upstream temperature was 8.8°C, and the downstream temperature was 16.7°C. On 1/7/19, the temperature at Outfall 001 was 18.6°C, the upstream temperature was 9.7°C, approximately 10' downstream the temperature was 18.1°C, and approximately 30' downstream the temperature was 15.6°C. A reasonable potential (RP) analysis was performed for temperature. Effluent limitations for temperature were calculated using the Case 2 Thermal Worksheet with a wastewater flow of 1.5 mgd. A stream $Q_{7\text{-}10}$ flow of 1.22 cfs was used in the temperature worksheet. The worksheet provided permit limits for a discharge to a WWF stream; these limits will be included in the permit. A printout of the worksheet is attached. From DEP's Guidance No. 362-0400-001 Table 6-4, for process water, a sample type of immersion stabilization (I-S) and a monitoring frequency of 1/day should be used.

Chemical Additives

Based on correspondence with Tyson Poultry, Inc. dated March 12, 2021, the following chemical additives are currently used at the plant and are expected to be present in the effluent:

Chemical Additive	On DEP's Approved List
Nalco 1820	No
Nalco 22310	No
Nalco 3DT265	No
Nalco 7330	Yes
Nalco 73801WR	Yes
Nalco 7396	Yes
Nalco 8735	Yes
Nalco 1722	No
3DT-465	Yes
3DT-S68	Yes
Nalco 2195 Resin Cleaner	No

Only 6 of the chemicals are included on DEP's Approved List of Chemical Additives. DEP's SOP No. BPNPSM-PMT-030 states if the additives are not included on the Approved List, "the draft permit cover letter should notify the applicant that unless the additive is placed on the Approved List and the Chemical Additives Notification Form for the additive is submitted to supplement the application prior to DEP's issuance of a final permit, use of the chemical additive following permit issuance would constitute non-compliance." The permit will include Part C conditions for chemical additive usage and reporting requirements.

Sampling Frequency & Sample Type

The monitoring requirements were established based on the Best Professional Judgment (BPJ), Table 6-3, and/or Table 6-4 of DEP's Technical Guidance No. 362-0400-001.

Anti-Degradation

The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

303(d) Listed Streams

The discharge is located on a stream segment that is designated on the 303(d) list as impaired. There is a recreational impairment for pathogens due to an unknown source. There is also an aquatic life impairment for nutrients and siltation due to grazing in riparian or shoreline zones. The final permit will include fecal coliform, TN and TP limits.

Class A Wild Trout Fisheries

No Class A Wild Trout Fisheries are impacted by this discharge.

Anti-Backsliding

Pursuant to 40 CFR § 122.44(l)(1), all proposed permit requirements addressed in this fact sheet are at least as stringent as the requirements implemented in the existing NPDES permit unless any exceptions are addressed by DEP in this fact sheet.

Development of Effluent Limitations

Outfall No.	002, 003, 004	**Design Flow (MGD)**	Variable (Stormwater)
	40º 5' 27" (002)		76º 5' 12" (002)
	40º 5' 55" (003)		76º 5' 55" (003)
Latitude	40º 5' 15" (004)	**Longitude**	76º 5' 15" (004)

Wastewater Description: Stormwater

Stormwater Limitations

The application lists three (3) stormwater outfalls for this facility; Outfall 002, 003, and 004. Tyson Poultry, Inc. is classified under SIC Code 2015. All materials are stored under roof, so the stormwater discharge does not fall within the EPA definition of stormwater associated with industrial activity per 40 CFR 122.26(b)(14); therefore, monitoring will not be required. Part C requirements for stormwater outfalls will be included in the permit.

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
UV Intensity (mW/cm^2)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
CBOD5	200	325	XXX	16	26	40	1/week	24-Hr Composite
TSS	250	375	XXX	20	30	50	1/week	24-Hr Composite
Total Dissolved Solids	Report	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Bromide	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Chloride	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Sulfate	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Oil and Grease	100	175	XXX	8.0	14	20	1/week	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	400 Geo Mean	XXX	2,000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	1/week	Grab
Ammonia Nov 1 - Apr 30	50	100	XXX	4.0	8.0	10	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	21	42	XXX	1.7	3.4	4.2	1/week	24-Hr Composite

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	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Phosphorus	25	50	XXX	2.0	4.0	5.0	1/week	24-Hr Composite
Temperature (ºF) Jan 1-31	XXX	XXX	XXX	XXX	48	XXX	1/day	I-S
Temperature (ºF) Feb 1-29	XXX	XXX	XXX	XXX	49	XXX	1/day	I-S
Temperature (ºF) Mar 1-31	XXX	XXX	XXX	XXX	68	XXX	1/day	I-S
Temperature (ºF) Apr 1-15	XXX	XXX	XXX	XXX	76	XXX	1/day	I-S
Temperature (ºF) Apr 16-30	XXX	XXX	XXX	XXX	82	XXX	1/day	I-S
Temperature (ºF) May 1-15	XXX	XXX	XXX	XXX	80	XXX	1/day	I-S
Temperature (ºF) May 16-31	XXX	XXX	XXX	XXX	98	XXX	1/day	I-S
Temperature (ºF) Jun 1-15	XXX	XXX	XXX	XXX	100	XXX	1/day	I-S
Temperature (ºF) Jun 16-30	XXX	XXX	XXX	XXX	104	XXX	1/day	I-S
Temperature (ºF) Jul 1-31	XXX	XXX	XXX	XXX	97	XXX	1/day	I-S
Temperature (ºF) Aug 1-15	XXX	XXX	XXX	XXX	96	XXX	1/day	I-S
Temperature (ºF) Aug 16-31	XXX	XXX	XXX	XXX	96	XXX	1/day	I-S
Temperature (ºF) Sep 1-15	XXX	XXX	XXX	XXX	91	XXX	1/day	I-S
Temperature (ºF) Sep 16-30	XXX	XXX	XXX	XXX	85	XXX	1/day	I-S
Temperature (ºF) Oct 1-15	XXX	XXX	XXX	XXX	79	XXX	1/day	I-S
Temperature (ºF) Oct 16-31	XXX	XXX	XXX	XXX	73	XXX	1/day	I-S
Temperature (ºF) Nov 1-15	XXX	XXX	XXX	XXX	66	XXX	1/day	I-S
Temperature (ºF) Nov 16-30	XXX	XXX	XXX	XXX	56	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	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Temperature (ºF) Dec 1-31	XXX	XXX	XXX	XXX	48	XXX	1/day	I-S

Compliance Sampling Location: Outfall 001

Other Comments: None

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, to comply with Pennsylvania's Chesapeake Bay Tributary Strategy.

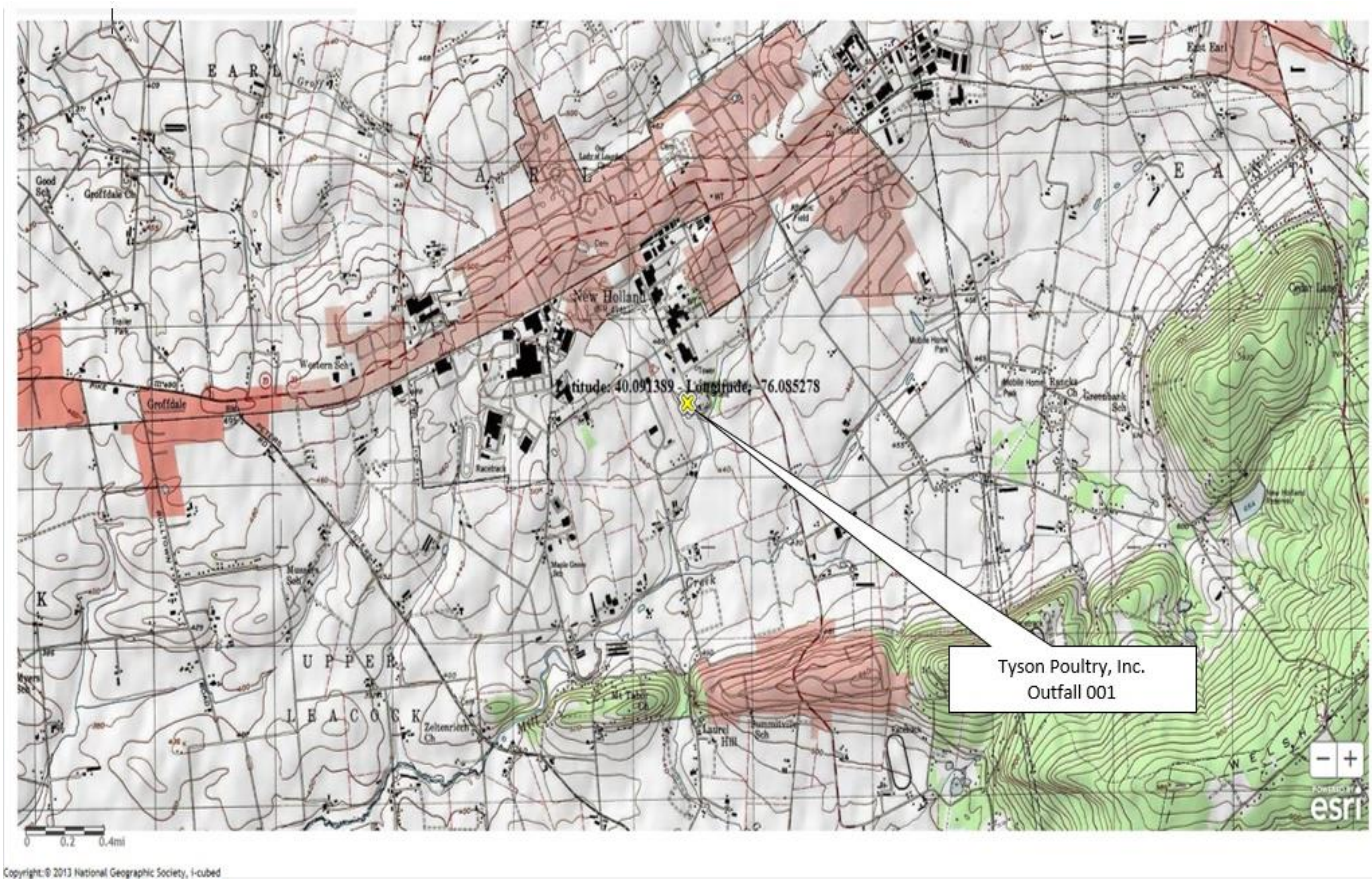
Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations					Monitoring Requirements	
	Mass Units (lbs)		Concentrations (mg/L)			Minimum Measurement Frequency	Required Sample Type
	Monthly	Annual	Minimum	Monthly Average	Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	1/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	1/week	24-Hr Composite
Nitrite-Nitrate as N	Report	XXX	XXX	Report	XXX	1/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	103	147	1/week	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	1/week	24-Hr Composite
Net Total Nitrogen	XXX	54,794	XXX	XXX	XXX	1/year	Calculation
Net Total Phosphorus	XXX	559	XXX	XXX	XXX	1/year	Calculation

Compliance Sampling Location: Outfall 001

Other Comments: None

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☒	Temperature Model 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: No. BCW-PMT-032, No. BCW-PMT-033
☐	Other: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Tyson Poultry, Inc.
Outfall 001
New Holland
0 0.2 0.4mi
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Enter a report title and/or comments here that will display on the printed report. Use the print button below.

Enter report title:

Tyson Poultry PA0035092 Discharge Point

Enter comments:

Some comments here

Tyson Poultry PA0035092 Discharge Point

Region ID:	PA
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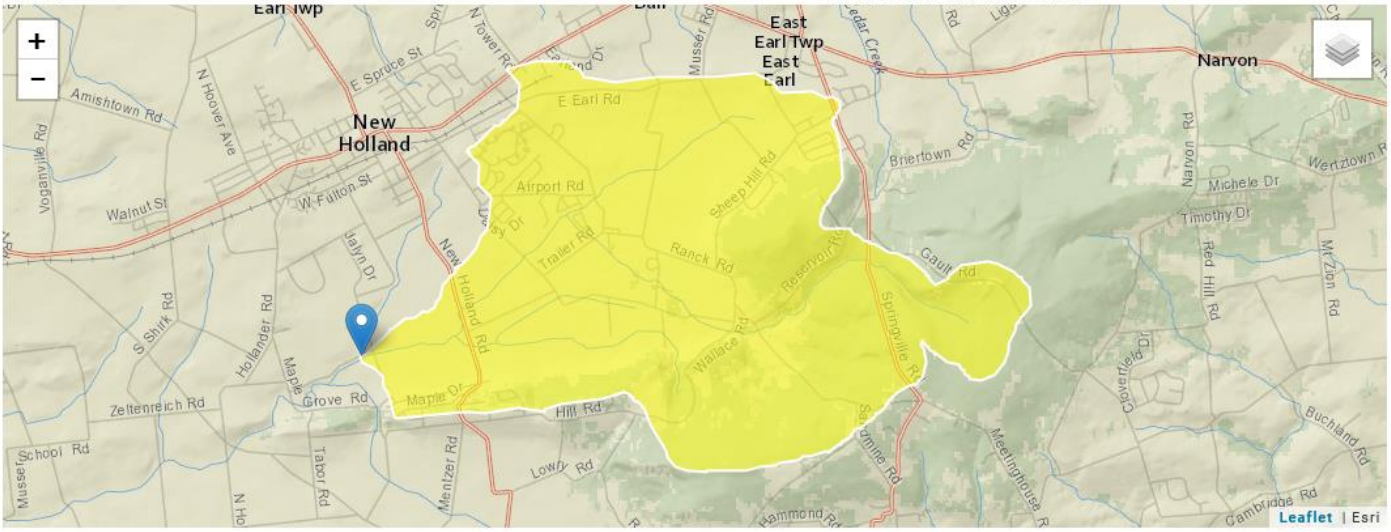

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	7.74	square miles
BSLOPD	Mean basin slope measured in degrees	3.6	degrees
ROCKDEP	Depth to rock	5.4	feet
URBAN	Percentage of basin with urban development	4	percent

Low-Flow Statistics Parameters[Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	7.74	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	3.6	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5.4	feet	4.13	5.21
URBAN	Percent Urban	4	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	2.07	ft^3/s
30 Day 2 Year Low Flow	2.63	ft^3/s
7 Day 10 Year Low Flow	0.996	ft^3/s
30 Day 10 Year Low Flow	1.29	ft^3/s
90 Day 10 Year Low Flow	2.06	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.

Application Version: 4.4.0

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Enter a report title and/or comments here that will display on the printed report. Use the print button below.

Enter report title:

Earl Township PA0086304 Discharge

Enter comments:

Some comments here

Earl Township PA0086304 Discharge

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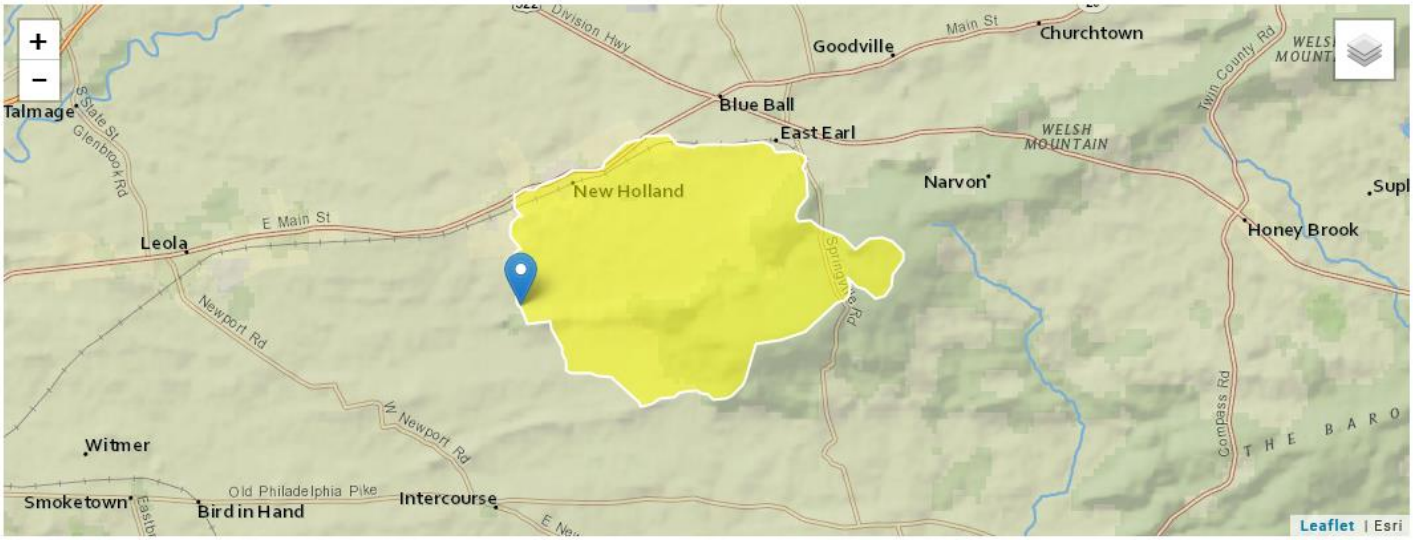


Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	12.7	square miles
BSLOPD	Mean basin slope measured in degrees	3.2	degrees
ROCKDEP	Depth to rock	5.5	feet
URBAN	Percentage of basin with urban development	7	percent

Low-Flow Statistics Parameters[Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	12.7	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	3.2	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5.5	feet	4.13	5.21
URBAN	Percent Urban	7	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	3.36	ft^3/s
30 Day 2 Year Low Flow	4.33	ft^3/s
7 Day 10 Year Low Flow	1.64	ft^3/s
30 Day 10 Year Low Flow	2.13	ft^3/s
90 Day 10 Year Low Flow	3.52	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.

Application Version: 4.4.0

Download

Enter a report title and/or comments here that will display on the printed report. Use the print button below.

Enter report title:

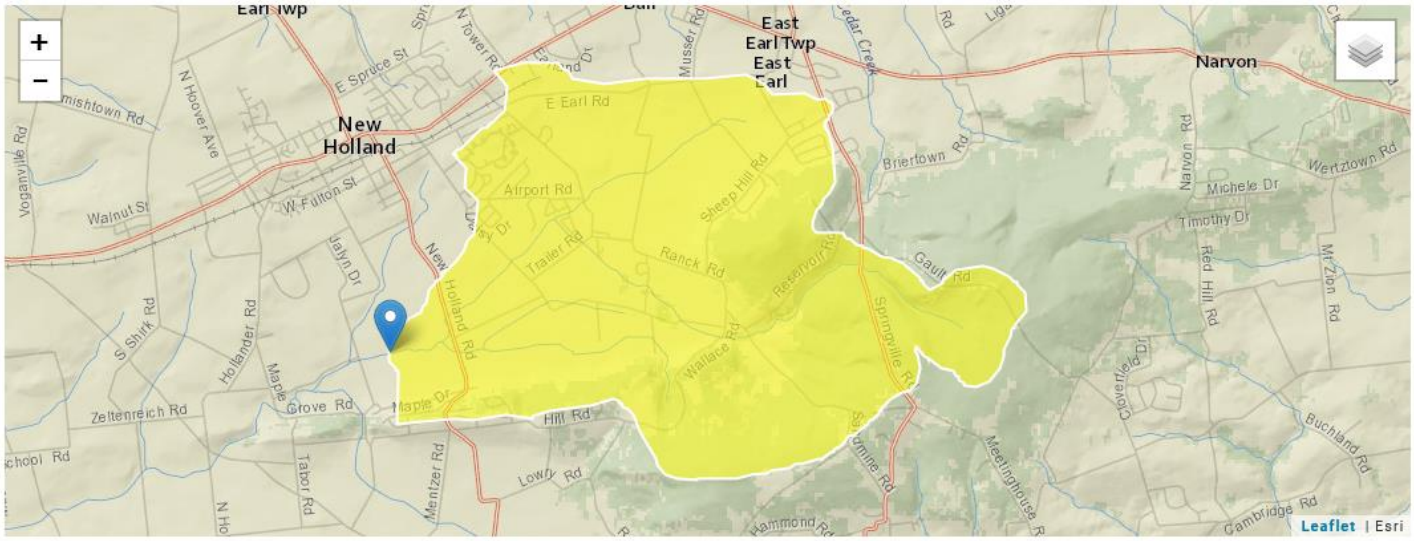
New Holland Borough PA0021890 Discharge Point

Enter comments:

Some comments here

New Holland Borough PA0021890 Discharge Point

Region ID:	PA
Workspace ID:	PA20200819134526122000
Clicked Point (Latitude, Longitude):	40.08229, -76.08197
Time:	2020-08-19 09:45:45 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	7.61	square miles
BSLOPD	Mean basin slope measured in degrees	3.6	degrees
ROCKDEP	Depth to rock	5.4	feet
URBAN	Percentage of basin with urban development	4	percent

Low-Flow Statistics Parameters[Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	7.61	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	3.6	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5.4	feet	4.13	5.21
URBAN	Percent Urban	4	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	2.04	ft^3/s
30 Day 2 Year Low Flow	2.59	ft^3/s
7 Day 10 Year Low Flow	0.978	ft^3/s
30 Day 10 Year Low Flow	1.26	ft^3/s
90 Day 10 Year Low Flow	2.03	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.

Application Version: 4.4.0

Download

Tyson Poultry, Inc. PA0035092 Mill Creek RMI 21.1 ×

Enter comments:

Some comments here

Tyson Poultry, Inc. PA0035092 Mill Creek RMI 21.1

Region ID:	PA
Workspace ID:	PA20210224123153044000
Clicked Point (Latitude, Longitude):	40.07101, -76.11345
Time:	2021-02-24 07:32:00 -0500

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	13.8	square miles
BSLOPD	Mean basin slope measured in degrees	3.1045	degrees
ROCKDEP	Depth to rock	5.5	feet
URBAN	Percentage of basin with urban development	6.6711	percent

Low-Flow Statistics Parameters[Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	13.8	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	3.1045	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5.5	feet	4.13	5.21
URBAN	Percent Urban	6.6711	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	3.5	ft^3/s
30 Day 2 Year Low Flow	4.53	ft^3/s
7 Day 10 Year Low Flow	1.69	ft^3/s
30 Day 10 Year Low Flow	2.2	ft^3/s
90 Day 10 Year Low Flow	3.7	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.

Application Version: 4.4.0

Enter a report title and/or comments here that will display on the printed report. Use the print button below.

Enter report title:

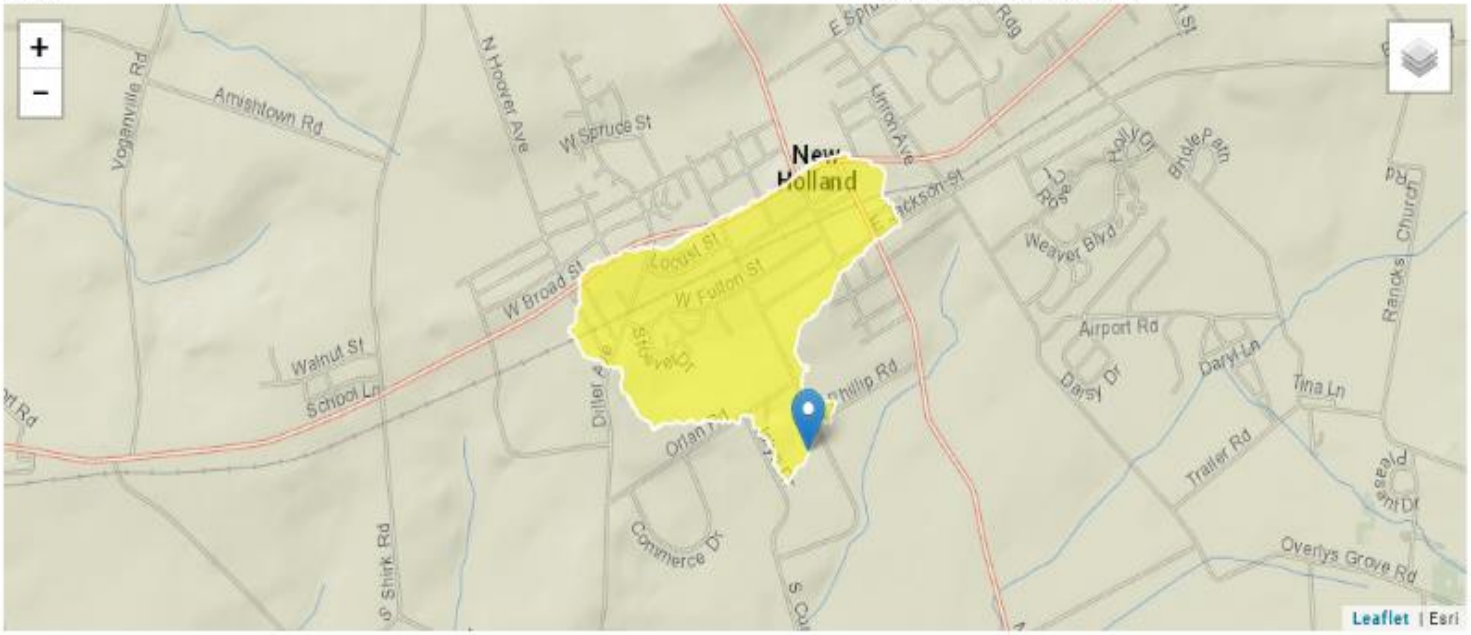
Tyson Poultry, Inc. PA0035092 UNT to Mill Creek RMI 0.9

Enter comments:

Some comments here

Tyson Poultry, Inc. PA0035092 UNT to Mill Creek RMI 0.9

Region ID:	PA
Workspace ID:	PA20210225230719287000
Clicked Point (Latitude, Longitude):	40.09185, -76.08637
Time:	2021-02-25 18:07:35 -0500



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	1.571	degrees
ROCKDEP	Depth to rock	5	feet
URBAN	Percentage of basin with urban development	53.1611	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	1.571	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5	feet	4.13	5.21
URBAN	Percent Urban	53.1611	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	0.0731	ft^3/s
30 Day 2 Year Low Flow	0.119	ft^3/s
7 Day 10 Year Low Flow	0.0263	ft^3/s
30 Day 10 Year Low Flow	0.0446	ft^3/s
90 Day 10 Year Low Flow	0.112	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.

Application Version: 4.4.0

Enter a report title and/or comments here that will display on the printed report. Use the print button below.

Enter report title:

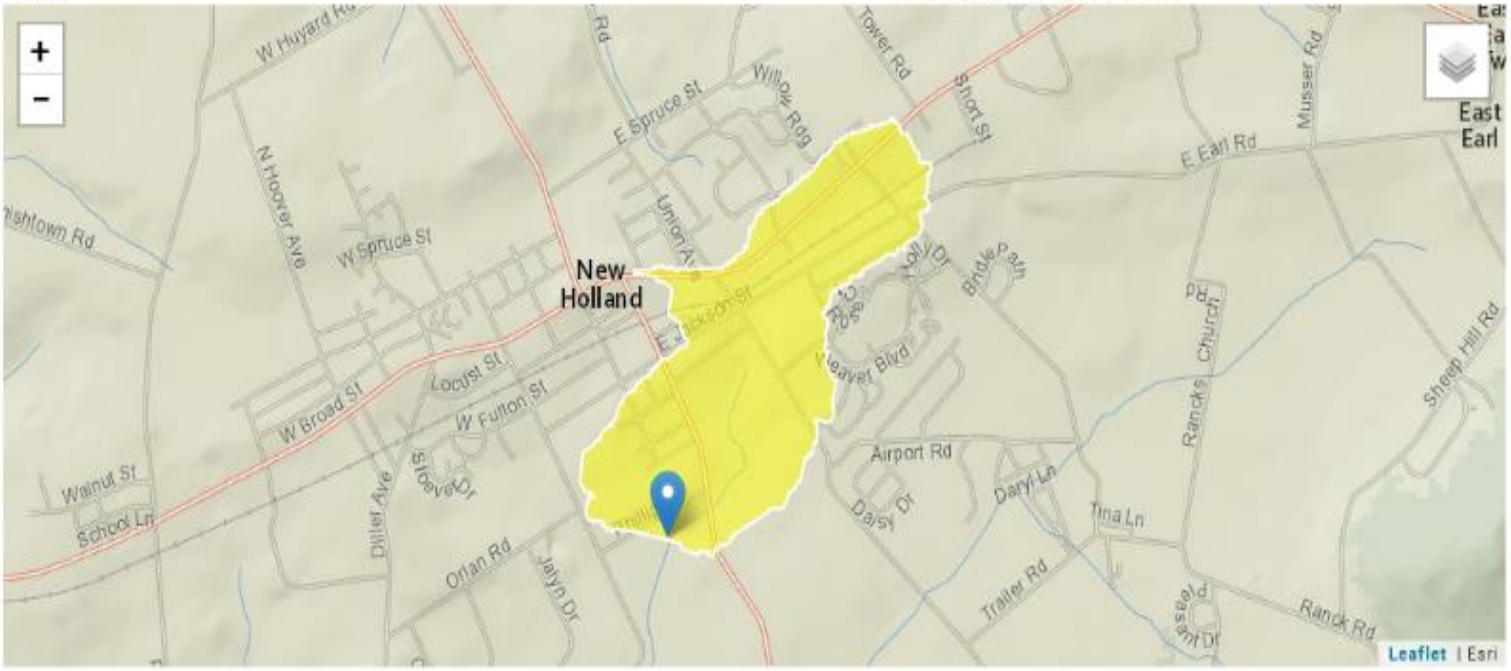
Tyson Poultry, Inc. UNT to Mill Creek 07623 RMI 0.25

Enter comments:

Some comments here

Tyson Poultry, Inc. UNT to Mill Creek 07623 RMI 0.25

Region ID:	PA
Workspace ID:	PA20210226150533163000
Clicked Point (Latitude, Longitude):	40.09368, -76.08191
Time:	2021-02-26 10:05:49 -0500



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.61	square miles
BSLOPD	Mean basin slope measured in degrees	1.4401	degrees
ROCKDEP	Depth to rock	5	feet
URBAN	Percentage of basin with urban development	44.1934	percent

Low-Flow Statistics Parameters[Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.61	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	1.4401	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5	feet	4.13	5.21
URBAN	Percent Urban	44.1934	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	0.0695	ft^3/s
30 Day 2 Year Low Flow	0.115	ft^3/s
7 Day 10 Year Low Flow	0.0237	ft^3/s
30 Day 10 Year Low Flow	0.0411	ft^3/s
90 Day 10 Year Low Flow	0.108	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.

Application Version: 4.4.0

Enter a report title and/or comments here that will display on the printed report. Use the print button below.

Enter report title:

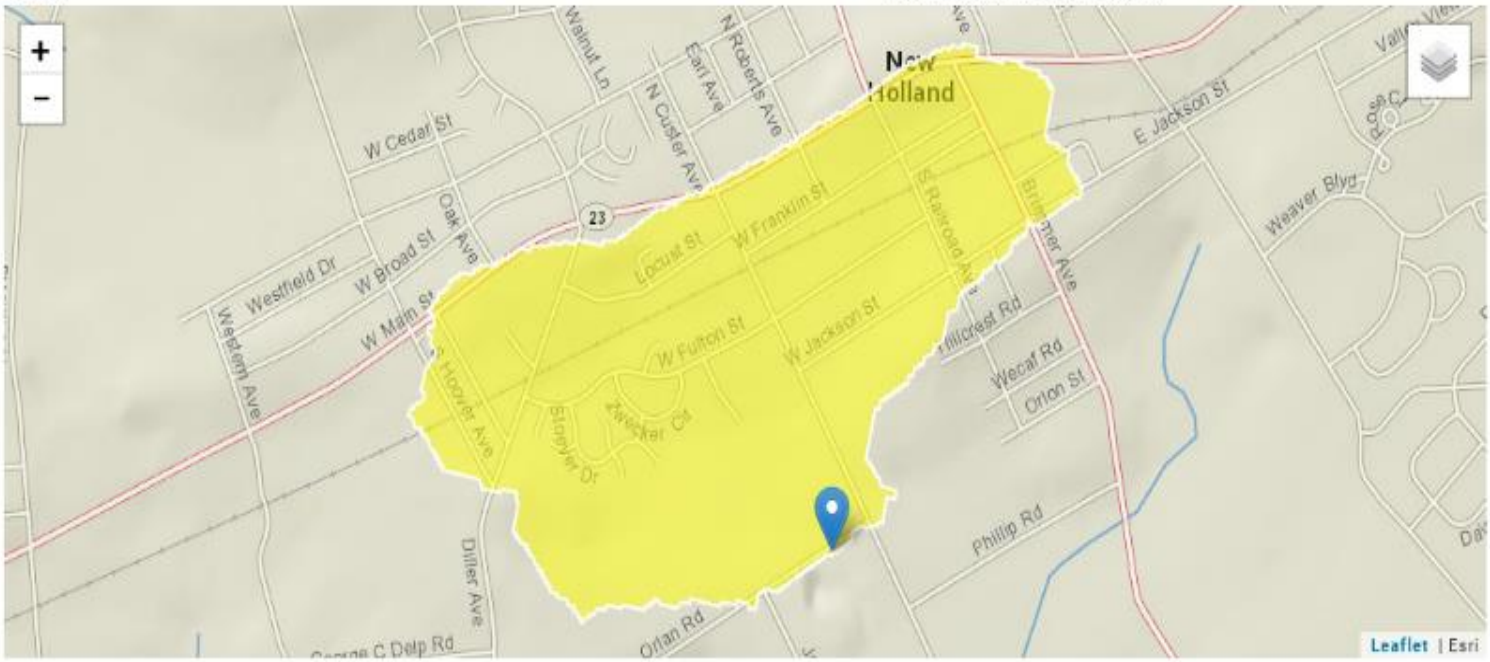
Tyson Poultry, Inc. PA0035092 UNT to Mill Creek 07622 RMI 1.15

Enter comments:

Some comments here

Tyson Poultry, Inc. PA0035092 UNT to Mill Creek 07622 RMI 1.15

Region ID: PA
Workspace ID: PA20210226154257844000
Clicked Point (Latitude, Longitude): 40.09418, -76.08833
Time: 2021-02-26 10:43:13 -0500



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.47	square miles
BSLOPD	Mean basin slope measured in degrees	1.5308	degrees
ROCKDEP	Depth to rock	5	feet
URBAN	Percentage of basin with urban development	57.6374	percent

Low-Flow Statistics Parameters[Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.47	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	1.5308	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5	feet	4.13	5.21
URBAN	Percent Urban	57.6374	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	0.069	ft^3/s
30 Day 2 Year Low Flow	0.113	ft^3/s
7 Day 10 Year Low Flow	0.0249	ft^3/s
30 Day 10 Year Low Flow	0.0425	ft^3/s
90 Day 10 Year Low Flow	0.108	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.

Application Version: 4.4.0

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07J	7597	MILL CREEK	23.500	419.00	7.61	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.98	0.000	0.000	0.0	0.00	0.00	20.00	7.00	22.10	8.30
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
New Holland	PA0021890	1.3400	1.3400	1.3400	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07J	7597	MILL CREEK	23.100	412.00	7.74	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	1.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	22.10	8.30
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Tyson Poultry	PA0035092	1.5000	1.5000	1.5000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07J	7597	MILL CREEK	22.270	398.00	12.70	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	1.64	0.000	0.000	0.0	0.00	0.00	20.00	7.00	22.10	8.30
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Earl TWP	PA0086304	0.6500	0.6500	0.6500	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07J	7597	MILL CREEK	21.100	374.00	13.80	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	1.70	0.000	0.000	0.0	0.00	0.00	20.00	7.00	22.10	8.30
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	0.00	7.00

Parameter Data

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

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07J	7597	MILL CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
23.500	0.98	0.00	0.98	2.073	0.00331	.598	21.01	35.12	0.24	0.101	24.07	7.16
23.100	1.00	0.00	1.00	4.3935	0.00319	.646	25.17	38.96	0.33	0.153	24.46	7.08
22.270	1.64	0.00	1.64	5.399	0.00389	.672	29.87	44.47	0.35	0.204	24.32	7.11
Q1-10 Flow												
23.500	0.63	0.00	0.63	2.073	0.00331	NA	NA	NA	0.23	0.108	24.33	7.11
23.100	0.64	0.00	0.64	4.3935	0.00319	NA	NA	NA	0.32	0.159	24.63	7.06
22.270	1.05	0.00	1.05	5.399	0.00389	NA	NA	NA	0.33	0.214	24.53	7.07
Q30-10 Flow												
23.500	1.33	0.00	1.33	2.073	0.00331	NA	NA	NA	0.26	0.095	23.87	7.20
23.100	1.35	0.00	1.35	4.3935	0.00319	NA	NA	NA	0.34	0.148	24.32	7.11
22.270	2.23	0.00	2.23	5.399	0.00389	NA	NA	NA	0.37	0.195	24.15	7.14

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07J	7597	MILL CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
23.500	New Holland	6.55	8.52	6.55	8.1	2	5
23.100	Tyson Poultry	6.57	8.37	6.67	7.96	2	5
22.270	Earl TWP	5.86	11.98	6.64	11.98	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
23.500	New Holland	1.29	2.12	1.29	1.83	2	14
23.100	Tyson Poultry	1.3	2.05	1.32	1.77	2	14
22.270	Earl TWP	1.18	3.8	1.31	3.41	3	10

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
23.50	New Holland	20.64	20.64	1.83	1.83	5	5	0	0
23.10	Tyson Poultry	19.36	19.36	1.77	1.77	5	5	0	0
22.27	Earl TWP	25	25	3.41	3.41	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07J	7597	MILL CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
23.500	1.340	24.070	7.158
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
21.013	0.598	35.117	0.243
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
14.66	1.180	1.24	0.958
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.040	8.416	Tsivoglou	5
Reach Travel Time (days)			
0.101			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.010	14.46	1.23	5.89
0.020	14.25	1.22	5.75
0.030	14.05	1.21	5.63
0.040	13.85	1.20	5.53
0.050	13.65	1.19	5.44
0.060	13.46	1.17	5.36
0.071	13.26	1.16	5.29
0.081	13.08	1.15	5.23
0.091	12.89	1.14	5.18
0.101	12.71	1.13	5.14

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
23.100	2.840	24.464	7.084
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
25.171	0.646	38.963	0.331
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
15.54	1.164	1.40	0.987
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.091	11.184	Tsivoglou	5
Reach Travel Time (days)			
0.153			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.015	15.20	1.38	5.07
0.031	14.87	1.36	5.06
0.046	14.55	1.34	5.07
0.061	14.23	1.32	5.08
0.077	13.93	1.30	5.10
0.092	13.63	1.28	5.13
0.107	13.33	1.26	5.17
0.122	13.04	1.24	5.21
0.138	12.76	1.22	5.25
0.153	12.48	1.21	5.30

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07J	7597	MILL CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
23.500	New Holland	PA0021890	1.340	CBOD5	20.64		
				NH3-N	1.83	3.66	
				Dissolved Oxygen			5

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
23.100	Tyson Poultry	PA0035092	1.500	CBOD5	19.36		
				NH3-N	1.77	3.54	
				Dissolved Oxygen			5

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
22.270	Earl TWP	PA0086304	0.650	CBOD5	25		
				NH3-N	3.41	6.82	
				Dissolved Oxygen			5

Facility:	**Tyson Poultry, Inc.**									
Permit Number:	PA0035092									
Stream Name:	Mill Creek									
Analyst/Engineer:	Benjamin Lockwood									
Stream Q7-10 (cfs):	1.22									
		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	1.5	0	1.5		1.00	3.90	3.90	6.22
	Feb 1-29	0	1.5	0	1.5		1.00	4.27	4.27	6.59
	Mar 1-31	0	1.5	0	1.5		1.00	8.54	8.54	10.86
	Apr 1-15	0	1.5	0	1.5		1.00	11.35	11.35	13.67
	Apr 16-30	0	1.5	0	1.5		1.00	11.35	11.35	13.67
	May 1-15	0	1.5	0	1.5		1.00	6.22	6.22	8.54
	May 16-31	0	1.5	0	1.5		1.00	6.22	6.22	8.54
	Jun 1-15	0	1.5	0	1.5		1.00	3.66	3.66	5.98
	Jun 16-30	0	1.5	0	1.5		1.00	3.66	3.66	5.98
	Jul 1-31	0	1.5	0	1.5		1.00	2.07	2.07	4.39
	Aug 1-15	0	1.5	0	1.5		1.00	1.71	1.71	4.03
	Aug 16-31	0	1.5	0	1.5		1.00	1.71	1.71	4.03
	Sep 1-15	0	1.5	0	1.5		1.00	1.34	1.34	3.66
	Sep 16-30	0	1.5	0	1.5		1.00	1.34	1.34	3.66
	Oct 1-15	0	1.5	0	1.5		1.00	1.46	1.46	3.78
	Oct 16-31	0	1.5	0	1.5		1.00	1.46	1.46	3.78
	Nov 1-15	0	1.5	0	1.5		1.00	1.95	1.95	4.27
	Nov 16-30	0	1.5	0	1.5		1.00	1.95	1.95	4.27
	Dec 1-31	0	1.5	0	1.5		1.00	2.93	2.93	5.25

Please forward all comments to Tom Starosta at 717-787-4317, tstarosta@state.pa.us.

Version 2.0 -- 07/01/2005 Reference: Implementation Guidance for Temperature Criteria, DEP-ID: 391-2000-017

NOTE: The user can only edit fields that are blue.

NOTE: MGD x 1.547 = cfs.

Facility:	**Tyson Poultry, Inc.**						
Permit Number:	PA0035092						
Stream:	Mill Creek						
	WWF Criteria	**CWF Criteria**	**TSF Criteria**	**316 Criteria**		**Q7-10 Multipliers**	**Q7-10 Multipliers**
	(ºF)	(ºF)	(ºF)	(ºF)		(Used in Analysis)	(Default - Info Only)
Jan 1-31	40	38	40	0		3.2	3.2
Feb 1-29	40	38	40	0		3.5	3.5
Mar 1-31	46	42	46	0		7	7
Apr 1-15	52	48	52	0		9.3	9.3
Apr 16-30	58	52	58	0		9.3	9.3
May 1-15	64	54	64	0		5.1	5.1
May 16-31	72	58	68	0		5.1	5.1
Jun 1-15	80	60	70	0		3	3
Jun 16-30	84	64	72	0		3	3
Jul 1-31	87	66	74	0		1.7	1.7
Aug 1-15	87	66	80	0		1.4	1.4
Aug 16-31	87	66	87	0		1.4	1.4
Sep 1-15	84	64	84	0		1.1	1.1
Sep 16-30	78	60	78	0		1.1	1.1
Oct 1-15	72	54	72	0		1.2	1.2
Oct 16-31	66	50	66	0		1.2	1.2
Nov 1-15	58	46	58	0		1.6	1.6
Nov 16-30	50	42	50	0		1.6	1.6
Dec 1-31	42	40	42	0		2.4	2.4

NOTES:
WWF= Warm water fishes
CWF= Cold water fishes
TSF= Trout stocking

	A	B	C	D	E	F	G	H	I	J
1	Facility:	**Tyson Poultry, Inc.**								
2	Permit Number:	PA0035092								
3	Stream:	Mill Creek								
4										
5										
6										
7		**WWF**			**WWF**		**WWF**		**PMF**	
8		Ambient Stream	Ambient Stream	Target Maximum	Daily		Daily			
9		Temperature (°F)	Temperature (°F)	Stream Temp.[1]	WLA[2]		WLA[3]	at Discharge		
10		(Default)	(Site-specific data)	(°F)	(Million BTUs/day)		(°F)	Flow (MGD)		
11	Jan 1-31	35	0	40	N/A -- Case 2		48.4	1.5	1.00	
12	Feb 1-29	35	0	40	N/A -- Case 2		49.2	1.5	1.00	
13	Mar 1-31	40	0	46	N/A -- Case 2		68.1	1.5	1.00	
14	Apr 1-15	47	0	52	N/A -- Case 2		76.4	1.5	1.00	
15	Apr 16-30	53	0	58	N/A -- Case 2		82.4	1.5	1.00	
16	May 1-15	58	0	64	N/A -- Case 2		80.1	1.5	1.00	
17	May 16-31	62	0	72	N/A -- Case 2		98.8	1.5	1.00	
18	Jun 1-15	67	0	80	N/A -- Case 2		100.5	1.5	1.00	
19	Jun 16-30	71	0	84	N/A -- Case 2		104.5	1.5	1.00	
20	Jul 1-31	75	0	87	N/A -- Case 2		97.7	1.5	1.00	
21	Aug 1-15	74	0	87	N/A -- Case 2		96.6	1.5	1.00	
22	Aug 16-31	74	0	87	N/A -- Case 2		96.6	1.5	1.00	
23	Sep 1-15	71	0	84	N/A -- Case 2		91.5	1.5	1.00	
24	Sep 16-30	65	0	78	N/A -- Case 2		85.5	1.5	1.00	
25	Oct 1-15	60	0	72	N/A -- Case 2		79.6	1.5	1.00	
26	Oct 16-31	54	0	66	N/A -- Case 2		73.6	1.5	1.00	
27	Nov 1-15	48	0	58	N/A -- Case 2		66.4	1.5	1.00	
28	Nov 16-30	42	0	50	N/A -- Case 2		56.7	1.5	1.00	
29	Dec 1-31	37	0	42	N/A -- Case 2		48.3	1.5	1.00	
30										
31										
32	[1] This is the maximum of the WWF WQ criterion or the ambient temperature. The ambient temperature may be									
33	either the design (median) temperature for WWF, or the ambient stream temperature based on site-specific data entered by the user.									
34	A minimum of 1°F above ambient stream temperature is allocated.									
35	[2] The WLA expressed in Million BTUs/day is valid for Case 1 scenarios, and disabled for Case 2 scenarios.									
36	[3] The WLA expressed in °F is valid only if the limit is tied to a daily discharge flow limit (may be used for Case 1 or Case 2).									
37	WLAs greater than 110°F are displayed as 110°F.									
38										
39										
40										
41										