pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0035157**
Facility Type	**Industrial**	APS ID	**28828**
Major / Minor	**Minor**	Authorization ID	**1159781**

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

Applicant and Facility Information

Applicant Name	**Farmers Pride Inc.**	Facility Name	**Farmers Pride Poultry**
Applicant Address	PO Box 39 154 W Main Street	Facility Address	154 W Main Street
	Fredericksburg, PA 17026-0039		Fredericksburg, PA 17026-9510
Applicant Contact	Eric Sprunger	Facility Contact	Eric Sprunger
Applicant Phone	(717) 865-1154	Facility Phone	(717) 865-1154
Client ID	63325	Site ID	444114
SIC Code	2015	Municipality	Bethel Township
SIC Description	Manufacturing - Poultry Slaughtering And Processing	County	Lebanon
Date Application Received	August 4, 2016	EPA Waived?	No
Date Application Accepted	August 18, 2016	If No, Reason	Significant CB Discharge

Purpose of Application: Permit renewal to discharge treated industrial wastewater.

Summary of Review

1.0 General Discussion

This factsheet supports the renewal of an existing NPDES permit for a discharge of treated industrial waste from an existing poultry slaughtering and processing plant. Process wastewater generated at the plant consists of raw product (live chicken) killing, scalding, defeathering, eviscerating, ammonia compressor cooling water, final bird wash, bulk ice packaging of chicken and plant sanitation clean-up. The wastewater treatment plant also receives the 30 minutes first flush of storm water from a storm water pumping station. Recovered feather, blood and offal are taken to an offsite rendering facility. Process water is obtained from the municipal water supply along with wells. Wastewater is discharge to Deep Run which is classified for warm water fishes(WWF). The treatment plant was upgraded during the past permit cycle to meet Chesapeake Bay nutrient load requirement and to improve on treatment quality. Wastewater from the various sources will flow to an aerated flow equalization basin and pre-treated in a dissolved air flotation(DAF) treatment cell with chemical coagulation and flocculation prior to a 4-stage activated sludge process followed by final clarification and the final effluent chlorinated/de-chlorinated prior to discharge. The facility falls under SIC 2015 and 2077 and is covered under ELG. The existing NPDES permit was issued on January 23, 2012 with an effective date of February 1, 2012 and expiration date of January 31, 2017. The applicant submitted a timely NPDES renewal application to the Department and is currently operating under the terms and conditions in the existing permit under administrative extension provisions pending Department action on the renewal application. A draft permit was issued to the permittee on 12/19/2019 but was not finalized due to compliance issues at the site. The permit is being redrafted due to new permit template and new water quality standards.

A topographical map showing discharge location is presented in attachment A.

Approve	Deny	Signatures	Date
X		*J. Pascal Kwedza* J. Pascal Kwedza, P.E. / Environmental Engineer	April 25, 2021
X		*Maria D. Bebenek for Daniel W. Martin* Daniel W. Martin, P.E. / Environmental Engineer Manager	April 29, 2021
X		*Maria D. Bebenek* Maria D. Bebenek, P.E./ Program Manager	April 29, 2021

Summary of Review

1.1 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.

1.2 Changes to Existing Permit

- The monitoring frequency for Total Nitrogen species have increased to 2/week per the requirements of the Chesapeake Bay Program to address concerns with compliance with Chesapeake Bay cap loads.
- Twice per month monitoring of Total Copper, Total Zinc, Total Iron, Dissolved Iron and Total Cobalt has been added to the permit.

1.3 Existing Permit Limitations

	DISCHARGE LIMITATIONS						**MONITORING** REQUIREMENTS	
	Mass Units (lbs/day)		**Concentrations (mg/l)**				**Minimum**	**Required**
Discharge Parameter	**Avg Monthly**	**Max Daily**	**Minimum**	**Average Monthly**	**Maximum Daily**	**Inst. Maximum**	**Measurement Frequency**	**Sample Type**
Flow (mgd)	Monitor & Report	Monitor & Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	From 6.0 to 9.0 inclusive				1/day	Grab
D.O.	XXX	XXX	Minimum of 5.0 mg/l at all times				1/day	Grab
TRC	XXX	XXX	XXX	0.02	XXX	0.05	1/day	Grab
TSS	75	150	XXX	10	20	25	1/week	24-hr comp
$CBOD_5$	75	150	XXX	10	20	25	1/week	24-hr comp
NH_3-N (5/1 to 10/31)	7.5	15	XXX	1.0	2.0	2.5	1/week	24-hr comp
NH_3-N (11/1 to 4/30)	22.5	45	XXX	3.0	6.0	7.5	1/week	24-hr comp
Total Phosphorus	3.8	7.5	XXX	0.5	1.0	1.25	1/week	24-hr comp
Fecal Coliform (5/1 to 9/30)	XXX	XXX	XXX	200	400	XXX	1/week	Grab
Fecal Coliform (10/1 to 4/30)	XXX	XXX	XXX	400	400	XXX	1/week	Grab
Oil &Grease	M&R	M&R	XXX	8.0	14	30	1/week	24-hr comp
Total Nitrogen	M&R	M&R	XXX	103	147	257	1/week	Calculate

Summary of Review

1.3.1 Chesapeake Bay Limits

Discharge Parameter	Effluent Limitations					Monitoring Requirements	
	Mass Load(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 Comp
Kjeldahl---N	Report	XXX	XXX	Report	XXX	1/Week	24-hr Comp
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	1/Week	24-hr Comp
Total Nitrogen	Report	Report	XXX	Report	XXX	1/Month	Calculate
Total Phosphorus	Report	Report	XXX	Report	XXX	1/week	24-hr Comp
Net Total Nitrogen	Report	16,438	XXX	XXX	XXX	1/Month	Calculate
Net Total Phos.	Report	1,370	XXX	XXX	XXX	1/Month	Calculate

2.0 Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.9
Latitude	40º 26' 22.19"	Longitude	-76º 26' 12.72"
Quad Name	Fredericksburg	Quad Code	1534
Wastewater Description:	IW Process Effluent with ELG		
Receiving Waters	Deep Run	Stream Code	09896
NHD Com ID	56395999	RMI	0.76
Drainage Area	1.43	Yield (cfs/mi^2)	USGS Gage Station
Q_{7-10} Flow (cfs)	0.09	Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	7-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Cause Unknown, Nutrients, Pathogens, Siltation		
Source(s) of Impairment	Agriculture, Source Unknown, Urban Runoff/Storm Sewers		
TMDL Status	Final	Name	Deep Run, Beach Run, and Elizabeth Run Nutrient TMDL

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company		
PWS Waters	Swatara Creek	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	28

Changes Since Last Permit Issuance: None

2.1 Water Supply Intake:

The closest water supply intake located downstream from the discharge is Pennsylvania American Water Company in South Hanover Twp., Dauphin County. The distance downstream from the discharge to the intake is approximately 28 miles. No impact is expected on the intake as a result of this discharge

2.2 Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	0
Latitude	40º 26' 42.12"	Longitude	-76º 26' 6.01"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Deep Run	Stream Code	
NHD Com ID	56395999	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	7-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Cause Unknown, Nutrients, Pathogens, Siltation		
Source(s) of Impairment	Agriculture, Source Unknown, Urban Runoff/Storm Sewers		
TMDL Status	Final	Name	Deep Run, Beach Run, and Elizabeth Run Nutrient TMDL

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: None

2.2.1 Stormwater

See stormwater section of the report for details on Outfall 002

2.3 Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	0
Latitude	40º 26' 45"	Longitude	-76º 26' 05"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Deep Run	Stream Code	
NHD Com ID	56395999	RMI	
Drainage Area	3.19 ac	Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	7-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Cause Unknown, Nutrients, Pathogens, Siltation		
Source(s) of Impairment	Agriculture, Source Unknown, Urban Runoff/Storm Sewers,		
TMDL Status	Final	Name	Deep Run, Beach Run, and Elizabeth Run Nutrient TMDL

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: None

2.3.1 Stormwater

See stormwater section of the report for details on Outfall 003

2.4 Discharge, Receiving Waters and Water Supply Information

Outfall No.	004	Design Flow (MGD)	0
Latitude	40º 26' 41"	Longitude	-76º 26' 06"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Deep Run	Stream Code	
NHD Com ID	56395999	RMI	
Drainage Area	2.0 ac	Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	7-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Cause Unknown, Nutrients, Pathogens, Siltation		
Source(s) of Impairment	Agriculture, Source Unknown, Urban Runoff/Storm Sewers,		
TMDL Status	Final	Name	Deep Run, Beach Run, and Elizabeth Run Nutrient TMDL

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: None

2.4.1 Stormwater

See stormwater section of the report for details on Outfall 004

3.0 Treatment Facility Summary

Treatment Facility Name: Farmers Pride

WQM Permit No.	Issuance Date
38899401 A-1	11/25/2013

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Industrial	Secondary with Ammonia And Phosphorus	4-Stage Badenpho. Activated Sludge	Gas Chlorine	0.90

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
1.20	23,518	Not Overloaded	Aerobic Digestion	Combination of methods

Changes Since Last Permit Issuance: Plant upgrade completed during the past permit cycle for BNR removal

3.1 Treatment Facility

Wastewater treatment process consist of a first stage pretreatment with an aerated flow equalization basin and dissolved air floatation (DAF) cell operated with polymer coagulation/flocculation. DAF sludge is stored in holding tanks prior to hauling offsite. The biological treatment process is the modified 4-stage Bardenpho BNR which consists of 4 tanks arranged to provide anoxic/oxic/anoxic/oxic treatment with nitrate recycle between tank 1 and tank 2. Tanks 1 and 2 are concrete tanks and tanks 3,4 are partitioned in a CMAS tank. Tanks 1 and 3 are anoxic tanks and tanks 2 and 4 are aerobic tanks. Glycerin is used as carbon source to enhance de-nitrification. The biological process is followed by clarification and chlorination using sodium hypochlorite and de-chlorination using sodium bisulfite prior to discharge. Waste activated sludge is sent to an aerobic digester and hauled out periodically for land application by a certified hauler.

4.0 Compliance History

4.1 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	0.64096	0.63744	0.52884	0.56791	0.66447	0.64717	0.70802	0.66925	0.66896	0.6405	0.62754	0.63967
Flow (MGD) Daily Maximum	0.81592	0.87995	0.72524	0.88233	0.93265	0.90329	0.83746	0.82195	0.85884	0.86466	0.79796	0.75747
pH (S.U.) Minimum	6.7	6.8	6.7	6.6	6.5	6.6	6.9	6.5	6.6	6.8	6.7	6.6
pH (S.U.) Maximum	7.4	7.4	7.2	7.3	7.3	7.0	7.1	7.1	7.1	7.2	7.3	7.3
DO (mg/L) Minimum	7.9	7.0	7.5	7.5	7.2	7.1	7.3	7.2	7.3	7.7	7.5	7.7
TRC (mg/L) Average Monthly	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
TRC (mg/L) Instant. Maximum	0.05	0.05	0.06	0.05	0.08	0.03	0.06	0.06	0.04	0.04	0.03	0.04
CBOD5 (lbs/day) Average Monthly	< 10	30	< 10	< 10	< 11	< 12	< 11	< 10	< 10	< 11	< 11	< 11
CBOD5 (lbs/day) Daily Maximum	< 11	43	< 12	15	< 13	13	< 12	< 12	< 12	< 11	< 12	< 12
CBOD5 (mg/L) Average Monthly	< 2.1	5.6	< 2.2	< 2.3	< 2.2	< 2.2	< 2.0	< 2	< 2	< 2.0	< 2	< 2.0
CBOD5 (mg/L) Daily Maximum	2.2	8.3	2.7	3.1	2.9	2.4	< 2.0	< 2	< 2	< 2.0	< 2	< 2.0
TSS (lbs/day) Average Monthly	< 20	< 30	< 18	< 16	< 25	< 23	< 22	< 22	< 21	< 21	< 23	< 24
TSS (lbs/day) Daily Maximum	< 22	40	< 23	< 19	34	< 25	< 25	25	< 24	< 23	24	30
TSS (mg/L) Average Monthly	< 4	< 5.5	< 4.1	< 4.0	< 5	< 4.1	< 4.0	< 4.2	< 4	< 4	< 2	< 4.5
TSS (mg/L) Daily Maximum	< 4	7.6	4.4	< 4.0	5.6	4.4	< 4.0	4.7	< 4	< 4	< 2	5.5
Oil and Grease (lbs/day) Ave. Monthly	< 25	< 24	< 25	< 23	< 30	< 32	< 30	< 29	< 31	< 28	< 28	27
Oil and Grease (lbs/day) Daily Max.	< 29	< 26	< 28	< 28	< 33	39	< 32	< 33	42	36	< 31	< 30
Oil and Grease (mg/L) Average Monthly	< 5.1	< 5.1	< 4.9	< 4.9	< 5.4	< 5.6	< 5.2	< 5.2	< 5.5	< 5.3	< 5.2	< 5.2
Oil and Grease (mg/L) Daily Maximum	< 5.3	< 5.1	< 5.1	< 5	6	6.8	< 5.8	5.6	6.5	5.9	< 5.3	< 5.3

Fecal Coliform (CFU/100 ml) Geometric Mean	< 8	16	7	28	21	< 5	< 3	3	9	< 7	35	142
Fecal Coliform (CFU/100 ml) Daily Maximum	28	145	89	600	200	29	13	17	40	22	800	458
Nitrate-Nitrite (mg/L) Average Monthly	17.9	4.3	9.44	13.85	11.12	1.72	2.18	1.79	3.21	5.13	4.52	2.08
Nitrate-Nitrite (lbs) Total Monthly	2473	728	1278	1747	1727	282	382	296	520	834	754	347
Total Nitrogen (lbs/day) Ave. Monthly	92.925	38.54	49.2	66.55	73.975	18.6	7.6	20.55	27.12	34.2	60.77	32.56
Total Nitrogen (lbs/day) Daily Max	104.3	74.5	67.2	100.3	85.4	28.7	34.9	25.8	51.1	37.5	122.6	65.9
Total Nitrogen (mg/L) Average Monthly	< 18.82	8.94	11.3	15.93	15.05	3.36	3.31	3.99	5.07	6.51	10.53	6.05
Total Nitrogen (mg/L) Daily Maximum	20.81	13.54	17.40	21.03	17.66	5.43	5.83	4.86	9.16	6.91	20.44	12.02
Total Nitrogen (lbs) Effluent Net Total Monthly	< 2602	1493.4	1524.9	1997.3	2293.5	557.6	579.5	637.7	814	1060.3	1823.2	1009.1
Total Nitrogen (lbs) Total Monthly	< 2602	1493.4	1524.9	1997.3	2293.5	557.6	579.5	637.7	814	1060.3	1823.2	1009.1
Total Nitrogen (lbs) Effluent Net Total Annual						11922						
Total Nitrogen (lbs) Total Annual						11922						
Ammonia (lbs/day) Average Monthly	< 0.5	< 11.3	< 0.5	< 1.1	7.8	< 0.5	< 0.5	< 1.5	< 0.5	< 0.5	< 18.9	< 8.0
Ammonia (lbs/day) Daily Maximum	< 0.6	33.8	0.6	2.8	21.4	< 0.6	< 0.6	4.5	< 0.6	< 0.6	73.7	36.1
Ammonia (mg/L) Average Monthly	< 0.1	< 2.14	< 0.1	< 0.3	< 1.71	< 0.1	< 0.1	< 0.3	< 0.1	< 0.1	< 3.2	< 1.48
Ammonia (mg/L) Daily Maximum	< 0.1	6.45	0.11	0.8	5.06	< 0.1	< 0.1	1.0	< 0.1	< 0.1	12.3	6.58
Ammonia (lbs) Total Monthly	< 13.8	< 351	< 14.1	< 33.2	< 241.4	< 16.8	< 17	< 47.5	< 15.6	< 16.3	< 565.7	< 248.8
Ammonia (lbs) Total Annual						< 1592						
TKN (mg/L) Average Monthly	< 0.97	4.64	1.86	2.08	3.93	1.64	1.14	2.19	1.86	1.38	6.01	< 3.97
TKN (lbs) Total Monthly	< 130	765	247	250	567	275	197	342	294	226	1069	< 662

Total Phosphorus (lbs/day) Ave. Monthly	0.7	1.87	0.9	1.29	< 1.13	1.03	0.7	< 1.8	2.59	0.8	< 0.8	< 1.33
Total Phosphorus (lbs/day) Daily Max	1.1	3.7	1.6	2.6	1.9	1.8	0.9	2.3	7.0	0.9	1.1	2.2
Total Phosphorus (mg/L) Ave. Monthly	0.13	0.35	0.20	0.34	< 0.25	0.19	0.13	< 0.22	0.49	0.15	< 0.13	< 0.25
Total Phosphorus (mg/L) Daily Max	0.19	0.71	0.29	0.75	0.45	0.34	0.14	0.43	1.25	0.18	0.19	0.41
Total Phosphorus (lbs) Effluent Net Total Monthly	18.7	57.8	26.9	38.7	< 35.1	30.9	22	< 35.2	77.6	24.2	< 22.7	< 41.3
Total Phosphorus (lbs) Total Monthly	18.71	57.85	26.91	38.66	< 35.11	30.93	22.03	< 35.24	77.64	24.23	< 22.67	< 41.25
Total Phosphorus (lbs) Effluent Net Total Annual						< 438						
Total Phosphorus (lbs) Total Annual						< 438						

4.1.1 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.) Minimum			6.83						7.11			
pH (S.U.) Instant. Maximum			6.83						7.11			
CBOD5 (mg/L) Instant. Maximum			> 226.2						21			
COD (mg/L) Instant. Maximum			462						15.8			
TSS (mg/L) Instant. Maximum			244						28.4			
Oil and Grease (mg/L) Instant. Maximum			9.3						6.5			
Fecal Coliform (CFU/100 ml) Instant. Maximum			> 20000						> 20000			
TKN (mg/L) Instantaneous Maximum			51.9						14.5			
Total Phosphorus(mg/L) Instant Maximum			7.55						1.06			
Dissolved Iron (mg/L) Instant Maximum			0.168						< 0.100			

4.2 Effluent Violations for Outfall 001, from: April 1, 2020 To: February 28, 2021

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TRC	10/31/20	IMAX	0.08	mg/L	0.06	mg/L
Fecal Coliform	04/30/20	Daily Max	800	CFU/100 ml	400	CFU/100 ml
Fecal Coliform	11/30/20	Daily Max	600	CFU/100 ml	400	CFU/100 ml
Ammonia	10/31/20	Avg Mo	7.8	lbs/day	7.5	lbs/day
Ammonia	10/31/20	Daily Max	21.4	lbs/day	15	lbs/day
Ammonia	04/30/20	Daily Max	73.7	lbs/day	45	lbs/day
Ammonia	04/30/20	Avg Mo	< 3.2	mg/L	3.0	mg/L
Ammonia	10/31/20	Avg Mo	< 1.71	mg/L	1.0	mg/L
Ammonia	10/31/20	Daily Max	5.06	mg/L	2.0	mg/L
Ammonia	01/31/21	Daily Max	6.45	mg/L	6.0	mg/L
Ammonia	04/30/20	Daily Max	12.3	mg/L	6.0	mg/L
Total Phosphorus	06/30/20	Daily Max	1.25	mg/L	1.0	mg/L

4.2.1 Effluent Violations

The facility had numerous effluent violations for Fecal Coliform, Ammonia, TRC and Total Phosphorus as shown on table 4.2 above. The violation appears to be operation related. The violations need to be addressed satisfactorily prior to final permit issuance. The following paragraph will be added to the cover letter of the draft permit asking the permittee to address violations.

"According to DEP's records, there are unresolved violation(s) at one or more facilities you own or operate. In accordance with DEP's Clean Water Program standard operating procedures, an applicant's compliance history is considered prior to making a final decision on any permit application. Please take the opportunity to address these violations during this draft comment period. DEP may not be able to issue a final permit until the violation(s) are resolved"

The violations appear to be operation related, if structural adjustment to the treatment unit is required to address the violations, the facility will be required to submit a corrective action plan to the Department for approval.

4.3 Inspection Report Summary

The facility was inspected several times during the past permit cycle. Inspection reports indicate the upgraded facility is operated and maintained well. TRC, Fecal Coliform and Total Nitrogen violations were noted during plant inspections. In addition, three instances of unpermitted discharges were documented. Good housekeeping was recommended.

5.0 Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .9
Latitude 40º 26' 41.82" **Longitude** -76º 26' 6.14"
Wastewater Description: IW Process Effluent with ELG

5.1 Basis for Effluent Limitations

In general, the CWA requires that the effluent limits for a particular pollutant be the more stringent of either technology-based limits or water quality-based limits. Technology-based limits are set according to the level of treatment that is achievable using available technology. A water quality-based effluent limit is designed to ensure that the water quality standards applicable to a waterbody are being met and may be more stringent than technology-based effluent limits.

5.2 Technology-Based Limitations

Discharges from poultry processors are regulated under 40 CFR 432 (effective date October 8, 2004) that presents production-based effluent limits in mg/l for existing and new sources. Based on production rate information in the renewal application, 23,204,472 lb LWK/month or 242,369,900 lb LWK/yr) the discharge is considered to be an existing point source that slaughters more than 100,000,000 lb LWK/yr, and thus Section 432.112 (BPT) and 432.113 (BAT) are applicable. The following table presents the BPT/BAT limits that are applicable to outfall 001. The limits from 40 CFR 432 must be included in the permit unless water quality based effluent limits (WQBELs) are more stringent.

SUMMARY OF BAT LIMITS		
Pollutant	**Effluent Concentrations (mg/l)**	
	Average Monthly	**Maximum Daily**
BOD_5	16	26
TSS	20	30
Oil & Grease	8	14
NH_3-N	4	8
Total N	103	147
Fecal Coliform	Maximum of 400/100ml	

5.3 Water Quality-Based Limitations

5.3.1 Receiving Stream

The receiving stream is the Deep Run. According to 25 PA § 93.9o, this stream is protected for Warm Water Fishes (WWF) and Migratory Fishes (MF). It is located in Drainage List o and State Watershed 7-D. It has been assigned stream code 09896. Deep Run is impaired for DO and nutrients with a TMDL finalized. The TMDL is discussed in the TMDL section of the report below.

5.3.2 TMDLs for Deep Run, Beach Run, and Elizabeth Run

Two TMDLs were finalized on 8/9/2004 for Nutrient and Sediment. The nutrient TMDL allocated a DO of 5.0 mg/l, BOD of 10.0 mg/l and 2,735lbs/year Total Phosphorus and the sediment TMDL allocated 68,600 lbs/year (34.3 tons/yr) of sediments to Farmer's Pride. The most stringent limit between the TMDL, TBELs and WQBELs will apply to the permit.

5.3.3 Streamflows

Streamflows for the water quality analysis were determined by correlating with the yield of USGS gauging station No 01573000 on Swatara Creek at Harper Tavern. The Q_{7-10} and drainage area at the gage is 22.1ft3/s and 337 mi^2 respectively. The resulting yields are as follows:

- Q_{7-10} = (22.1ft^3/s)/337 mi^2 = 0.0656ft^3/s/ mi^2
- Q_{30-10} / Q_{7-10} = 1.40
- Q_{1-10} / Q_{7-10} = 0.80

The drainage area at discharge is calculated by USGS streamStats = 1.43 mi^2

The Q_{7-10} at discharge = 1.43 mi^2 x 0.0656$ft^3/s/mi^2$ = 0.09 ft^3/s.

5.3.4 NH_3N calculations

NH_3N calculations will be based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013). The following data is necessary to determine the instream NH_3N criteria used in the attached computer model of the stream:

*	Discharge pH	= 6.9 (DMR median)
*	Discharge Temperature	= 25° C (Default)
*	Stream pH	= 7.0(Default)
*	Stream Hardness	=100mg/L(Default)
*	Stream Temperature	= 20° C (Default)
*	Background NH_3-N	= 0.0 (default
*	Discharge Hardness	= 183mg/L(sample data)

5.3.5 $CBOD_5$

WQM7.0 version 1.1 was used to calculate WQBELs for CBOD5 and NH3-N for Farmer's Pride on Deep Run. The discharge from Hain Pure Protein (formerly BC Natural) was modelled together with Farmers Pride's discharge due to their proximity to each other. The attached model results of the model presented in attachment B indicates a water quality limit of 18.26 mg/l monthly average for $CBOD_5$ is adequate to protect the water quality of the stream, but TMDL limit of 10 mg/l BOD is more stringent than the water quality limit and the ELG and will be used in the renewed permit. This limit is consistent with the existing permit. Permit Writers Manual specifies that mass loadings are appropriate for industrial discharges with water quality-based limits (Table 5-2, 10/1/97 Edition).

The mass-based limits are expressed in pounds per day and are calculated as follows:

Mass based limit (lb/day) = concentration limit (mg/L) × design flow (mgd) × 8.34

Mass based average monthly limit for $CBOD_5$ (lb/day) = 10mg/L × 0.9 mgd × 8.34 = 75.1

Mass based daily maximum for $CBOD_5$ (lb/day) = 20mg/L × 0.9 mgd × 8.34 = 150

5.3.6 **NH_3-N**

The attached model results presented attachment B also indicates that a summer limit of 1.5 mg/l NH_3 as a monthly average is necessary to protect the aquatic life from toxicity effects. This limit is more stringent that the ELG but less stringent that the existing permit limit of 1mg/l. Therefore, the existing limit will remain in the permit due to anti-backsliding restrictions. Maximum daily limits are two times the average monthly limits and winter months limits are three times the summer month limits. Mass based limits are expressed in pounds per day and are calculated as follows:

Mass based average monthly (lb/day) for the summer months for NH_3-N = 1 (mg/L) × 0.9(mgd) × 8.34 = 7.5

Mass based daily maximum (lb/day) for the summer months for NH_3-N = 2 (mg/L) × 0.9 (mgd) × 8.34 = 15

Mass based average monthly (lb/day) for winter months for NH_3-N = 3 (mg/L) × 0.9(mgd) × 8.34 = 22.5

Mass based daily maximum (lb/day) for winter months for NH_3-N = 6 (mg/L) × 0.9 (mgd) × 8.34 = 45

5.3.7 Dissolved Oxygen

The existing permit has a limit of 5 mg/l for Dissolved Oxygen (DO) based on TMDL and minimum DO criteria for the stream. There is no change in TMDL, and minimum DO criteria for the receiving stream, so the existing limit will be continued in the current permit renewal with a daily monitoring requirement per DEP guidance.

5.3.8 Total Suspended Solids:

Because this is an industrial wastewater and not sewage conventional secondary treatment standards of 30 mg/l are not applicable. The ELG provides maximum day concentration limit of 20 mg/l, however, DEP and Farmer's Pride have agreed that a TSS average monthly water quality limit of 10 mg/l will be used as a final average monthly permit limit to better assure restoration of the Deep Run basin. Permit Writers Manual specifies that mass loadings are appropriate for industrial discharges with water quality-based limits (Table 5-2, 10/1/97 Edition). The TMDL approve for Deep Run does provide a total annual load limit of 68,600 lbs/year (which is equivalent to 25 mg/l per month) is far more than the 27396.9 lbs/yr that will result from the proposed average monthly limit of 10 mg/l, no need to write the annual TMDL load for TSS in the permit.

5.3.9 Fecal Coliform:

25 PA code § 92a.47(a)(4) requires a summer technology limit of 200/100 ml as a geometric mean and § 92a.47(a)(5) requires a winter limit of 2,000/100ml as a geometric mean for Fecal Coliform. However, 40 CFR 432 requires a maximum daily limit of 400/100 ml, which will be required in the permit as a winter geometric mean since it's more stringent than 2,000/100ml. Therefore, a summer limit of 200/100 ml and a winter limit of 400/100 ml as a geometric mean, and a maximum daily limit of 400/100 ml for both seasons will be required in the permit.

5.3.10 Chesapeake Bay Strategy:

In 2003, EPA established state-wide cap loads for Total Nitrogen and Total Phosphorus for Pennsylvania that are needed to ensure compliance with new water quality standards enacted to restore the water quality of the Chesapeake Bay. DEP released Pennsylvania's Chesapeake Bay Tributary Strategy (CBTS) in January of 2005 to guide Pennsylvania's efforts to meet those cap loads and made revisions to the Strategy in 2006-2007 following a stakeholder process. Industrial discharges have been prioritized by Central Office based on their delivered TN 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. The determination of cap loads for significant industrial dischargers is divided into five categories. First would be those facilities that had reductions before the 2002 loads were calculated; second would be those facilities that submitted a Nutrient Reduction Evaluation (NRE) and reduced their nutrient loads between 2002 and 2009; third would be those facilities that submitted an NRE and are planning to reduce nutrient loads through upgrades to operation or construction of their treatment plants; fourth would be those facilities that are already at low levels of nutrient loads; and fifth would be those facilities that did not submit an NRE or submitted an NRE but did not plan to reduce nutrient loads. New and expanding industrial dischargers will submit report on how they will address any associated nutrient loadings. Non-significant IW dischargers will be required to monitor and report the nitrogen series (TKN and NO_2+NO_3-N) and Total Phosphorus using a monitoring frequency that is dependent on quantity and type of discharge. This facility is classified as significant, submitted NRE and proposed and completed upgrade to the treatment facility and has been discharging well below the allotted cap load loads of 16,438lbs/yr TN and 1,370lb/yr TP respectively.

The permittee is allowed to transfer excess credit from this facility as offset to comply with the cap load of a second facility with permit number PA0266345 owned by the permittee and related parties. This was discussed with central office staff and they concurred and advised that a language should be in the permit that acknowledges the transfer. There is a language in Part C.I.D.5 of the permit that acknowledges transfer of offsets between the two facilities.

5.3.11 Total Phosphorus:

The TMDL specifies an annual load of 2,735.7 lbs of phosphorus. The Bay limit of 1,370lbs/yr for TP is more stringent, will be included in the renewed permit. Neither the proposed Bay strategy nor the TMDL specifies a concentration limit however DEP and Farmers Pride have agreed that a TP average monthly concentration of 0.5 mg/l with corresponding mass limit will be used as final permit limits to better assure restoration of the Deep Run basin.

5.3.12 Total Nitrogen (TN):

There is no water quality criterion for TN, the technology limits of 103mg/l monthly average and 147mg/l daily maximum TN applicable to poultry processing facilities required in 40 CFR 432 will apply with a twice per week monitoring frequency.

5.3.13 Total Residual Chlorine:

The TRC model utilizes the equations and calculations as presented in the Department's 2003 Implementation Guidance for Residual Chlorine (TRC) (ID # 391-2000-015) for developing chlorine limitations. The attached TRC result presented in

attachment D indicates that an average monthly water quality limit of 0.02 mg/l (rounded) and 0.06mg/l IMAX would be needed to prevent toxicity concerns. This is consistent with the existing permit and the permit is complying with the limit. The current detection limit for TRC is 0.02mg/l. Therefore, the condition regarding reporting of MDL no longer applies to the permit.

5.3.14 Oil and Grease

The existing limit of 8 mg/l monthly average and 14 mg/l maximum daily based on ELG and IMAX of 30mg/l with monitor and report for mass limits will remain in the permit. The Permit Writers Manual specifies that mass loadings are to be monitored and reported for industrial discharges with tech-based concentration limits (Table 5-2, 10/1/97 Edition). In addition to this technology-based numerical effluent limits, narrative water quality-based limits for oil and grease, such as prohibiting visible sheening, are included in the permit.

5.3.15 pH

Following PA code 25 § 95.2, a pH of not less than 6 and not greater than 9, will be required in the permit for this industrial waste discharge with daily monitoring requirement.

5.3.16 Toxics Limits

A reasonable potential (RP) analysis was done for pollutants submitted with the application. All pollutants that were presented in the application sampling data were entered into DEP's Toxics Management Spreadsheet(TMS) which combines the logic in the previous Toxics Screening Analysis Spreadsheet and PENTOXSD Model to calculate WQBELs. The most stringent WQBELs recommended by the TMS are presented in attachment C. The discharge levels for all parameters analyzed except Total Cobalt, Total Copper, Total Iron, Dissolved Iron and Total Zinc were well below DEP's target quantitation limits(TQL) and calculated WQBELs therefore no limitation or monitoring is required in the permit for those pollutants. Monitoring was recommended for Total Cobalt, Total Iron, Dissolved Iron, Total Zinc and a monthly average limit of 0.016 mg/l was recommended for Total Copper. A pre-draft permit survey response from the permittee indicates, the permittee would not be able to meet recommended Total Copper limit. Since the model was run with default values, the draft permit is written to require monitoring of Total Copper twice per month in the interim, and offered the permittee an opportunity to collect data to refine the TMS and /or conduct Toxic Reduction Evaluation study or site-specific study for Total Copper to comply with the limit by the end of the permit term. See Part C.III of the permit for details. Twice per month monitoring is required for Total Cobalt, Total Iron, Dissolved Iron and Total Zinc collect data for further analysis. These pollutants were not pollutants of concern when Toxic Screening Analysis was used for the first draft, but they are with TMS.

The recommended limit follows the logic presented in DEPs SOP, to establish limits in the permit where the maximum reported concentration exceeds 50% of the WQBEL, or for non-conservative pollutants to establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL, or to establish monitoring requirements for conservative pollutants where the maximum reported concentration is between 10% - 50% of the WQBEL

5.3.17 Chemical Additives

Boiler blowdown and cleaning chemicals are discharged with process wastewater into the treatment plant, and the current permit lists chemicals and usage rates approved for the facility. The pending application listed chemicals that appear different from the list in the permit. The permittee submitted 19 chemical additive notification forms to update the chemical additives utilized at the site. The chemical notification forms are under review for approval or to be revised if the proposed maximum usage rates don't comply with allowable usage rates. The permittee will continue using the chemical additives in the existing permit and get new ones approved in accordance with DEP chemical additive approval process. The new chemical additive permit condition that lays out the chemical additive reporting and chemical additive approval process is presented in Part C.IV of the permit.

5.3.18 Stormwater:

Two stormwater outfalls 003 and 004 are identified in the current permit but only one outfall 003 is listed in the renewal application. Outfall 002 which used to receive overflow from storm water pumping station No. 2 has been abandoned when a new building was constructed in the area that drains to pumping station No. 2 and removed from the permit during the last permit renewal. Another outfall pipe was discovered by the facility inspector, and upon investigation by the permittee, the outfall receives stormwater from the parking lot area and from a drainage ditch from the local neighborhood around the live sheds. The new outfall will be named Outfall 002 with coordinates 40º 26' 42.12"/76º 26' 6.01". Outfall 003 (40º 26'

45"/76º 26' 05") receives overflow from storm water pumping station No.1. This station receives drainage from the live receiving area (manure and feathers) and ice melt (blood) from the dress truck shipping area. The first flush of contaminated runoff is conveyed to the wastewater treatment plant, while the remaining flow is discharged through the overflow through outfall 003. Outfall 004 (40º 26' 41"/76º 26' 06") receives flow from the paved and unpaved areas of the treatment plant.

Poultry processing facilities fall under SIC code 2015. The requirements in Appendix I of the current PAG 03 applies. The permittee shall monitor and report analytical results for the parameters listed below on Discharge Monitoring Reports (DMRs) for outfalls 002 and 003. The benchmark values listed on the table are not effluent limitations, and exceedances do not constitute permit violations. However, if the permittee's sampling demonstrates exceedances of benchmark values for two consecutive monitoring periods, the permittee shall submit a corrective action plan within 90 days of the end of the monitoring period triggering the plan. Outfall 004 will be managed per stormwater monitoring requirements in Part C of the permit.

Parameter	Minimum Measuring Frequency	Sample Type (mg/l)	Benchmark Values
pH (S.U.)	1 / 6months	Grab	XXX
BOD_5	1 / 6months	Grab	XXX
TSS	1 / 6months	Grab	100
COD	1 / 6months	Grab	120
NO_3+NO_2-N	1 / 6months	Grab	XXX
Oil & Grease	1 / 6months	Grab	30
TKN*	1 / 6months	Grab	XXX
Total Phosphorus*	1 / 6months	Grab	XXX

*In addition, the Chesapeake Bay Strategy requires storm water to be monitored for the nitrogen series and TP. Semi-annual monitoring of TKN and Total Phosphorus have been added to Appendix I parameters.

5.3.19 Best Management Practices (BMPs)

In addition to general BMPs, the permittee shall implement the following BMPs that may be applicable to SIC codes 2077 and 2015.

- Store all dry raw materials, additives and products in enclosed/covered areas; install dust collection and control system for silos, holding bins, etc.
- Store liquids in tanks with secondary containment and lead detection, where appropriate.
- Minimize raw water usage for washing products and raw materials; recycle wash water to the maximum extent practicable.
- Practice good housekeeping to limit spillage/leakage of residue and provide for prompt clean-up; dispose of rotting products promptly.
- Manage inventories to ensure only short-term supplies of raw materials and products are stored on-site.
- Limit use of pesticides, insecticides and rodenticides to the maximum extent possible; apply during dry conditions; investigate non (or least) hazardous alternatives.
- Wherever possible, enclose/cover animal holding areas; install run-on controls and collect and treat run-off, as appropriate.
- Practice good housekeeping by containing and promptly removing and managing animal manure

6.0 Other Requirements

6.1 Anti-backsliding

Not applicable to this permit

6.2 Anti-Degradation (93.4)

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.

6.3 Class A wild Trout Fisheries

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

6.4 303d Listed Streams:

The discharge is located on a stream segment that is impaired. The impairment is due to several factors: industrial point source (suspended solids); municipal point source (nutrients) and agriculture (nutrients and suspended solids). The Elizabeth-Deep-Beach Run watershed receives significant loads of pollutants from a municipal sewage plant, three poultry processing plants, a rendering plant, and various non-point sources. A TMDL was approved for this watershed. The TMDL sets the following effluent parameters for Farmers Pride: Phosphorus 2,735.7lbs/yr, D.O 5mg/l, BOD 10mg/l and TSS 34.3 tons/yr (68,600 lbs/yr)

6.5 Basis for Effluent and Surface Water Monitoring

Section 308 of the CWA and federal regulation 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather effluent and surface water data to determine if additional effluent limitations are required and/or to monitor effluent impacts on receiving water quality. The permittee is responsible for conducting the monitoring and for reporting results on Discharge Monitoring Reports (DMRs).

6.6 Effluent Monitoring

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Permittees have the option of taking more frequent samples than are required under the permit. These samples can be used for averaging if they are conducted using EPA-approved test methods (generally found in 40 CFR 136) and if the Method Detection Limits are less than the effluent limits. The sampling location must be after the last treatment unit and prior to discharge to the receiving water. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR.

7.0 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	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0	XXX	1/day	Grab
DO	XXX	XXX	6.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.02	XXX	0.06	1/day	Grab
CBOD5	75	150	XXX	10	20	25	1/week	24-Hr Composite
TSS	75	150	XXX	10	20	25	1/week	24-Hr Composite
Oil and Grease	Report	Report	XXX	8.0	14	30	1/week	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	400 Geo Mean	400	XXX	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	400	XXX	1/week	Grab
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Nitrate-Nitrite (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	Report	Report	XXX	103	147	257	2/week	24-Hr Composite
Total Nitrogen (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen (lbs) Effluent Net	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia Nov 1 - Apr 30	22.5	45	XXX	3.0	6.0	7.5	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		
Ammonia May 1 - Oct 31	7.5	15	XXX	1.0	2.0	2.5	1/week	24-Hr Composite
Ammonia (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
TKN	XXX	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TKN (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	3.8	7.5	XXX	0.50	1.0	1.25	2/week	24-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus (lbs) Effluent Net	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Copper, Total	Report	Report	XXX	Report	Report	XXX	2/month	24-Hr Composite
Cobalt, Total	Report	Report	XXX	Report	Report	XXX	2/month	24-Hr Composite
Iron, Dissolved	Report	Report	XXX	Report	Report	XXX	2/month	24-Hr Composite
Iron, Total	Report	Report	XXX	Report	Report	XXX	2/month	24-Hr Composite
Zinc, Total	Report	Report	XXX	Report	Report	XXX	2/month	24-Hr Composite

Compliance Sampling Location: At Outfall 001

7.1 Proposed Effluent Limitations and Monitoring Requirements

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

Outfall 002 & 003 , Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	Report Inst Min	XXX	XXX	Report	1/6 months	Grab
CBOD5	XXX	XXX	XXX	XXX	XXX	Report	1/6 months	Grab
COD	XXX	XXX	XXX	XXX	XXX	Report	1/6 months	Grab
TSS	XXX	XXX	XXX	XXX	XXX	Report	1/6 months	Grab
Oil and Grease	XXX	XXX	XXX	XXX	XXX	Report	1/6 months	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/6 months	Grab
TKN	XXX	XXX	XXX	XXX	XXX	Report	1/6 months	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	XXX	Report	1/6 months	Grab
Dissolved Iron	XXX	XXX	XXX	XXX	XXX	Report	1/6 months	Grab

Compliance Sampling Location: At Outfalls 002 & 003

7.2 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.

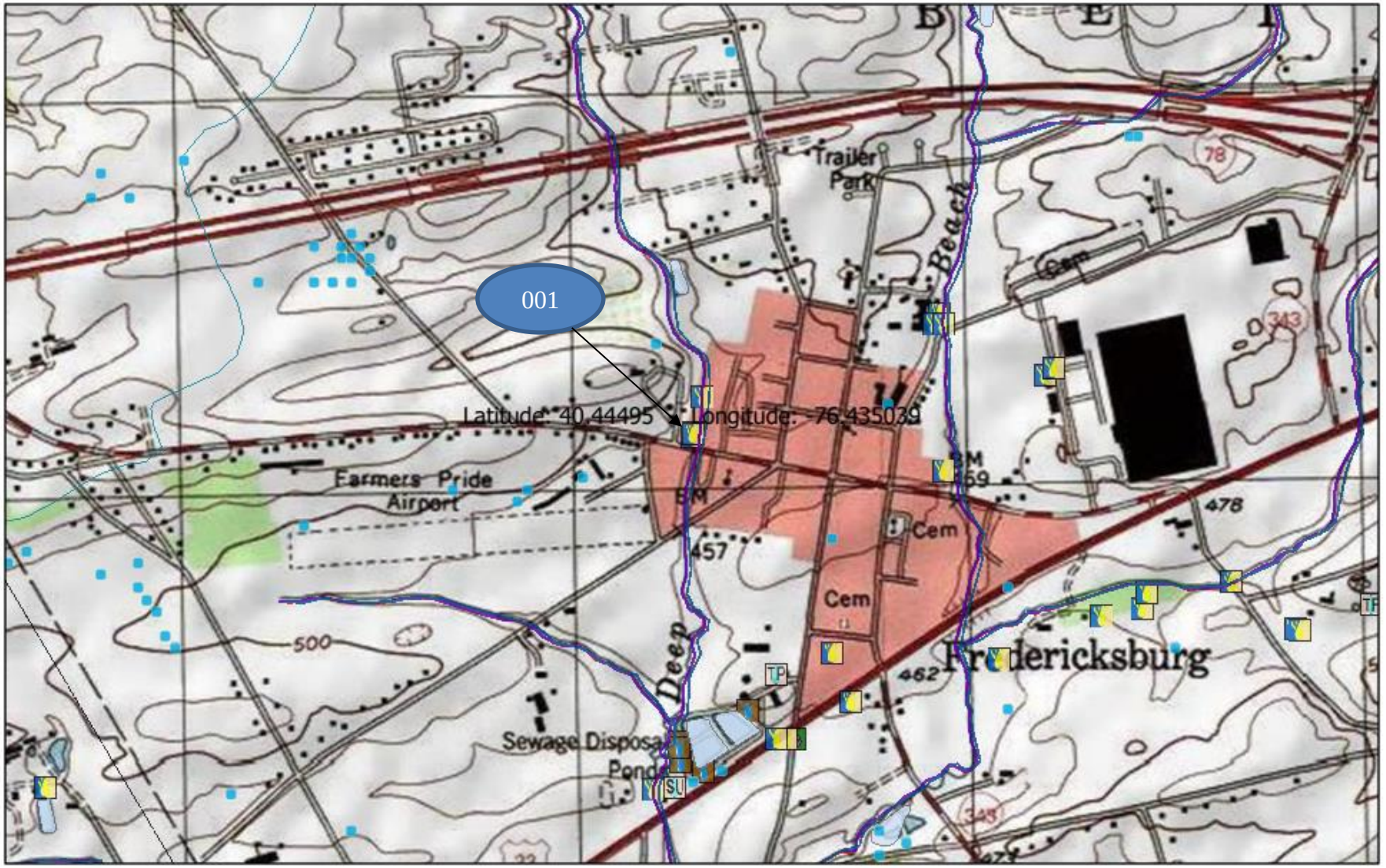
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Total Nitrogen (lbs) Effluent Net	XXX	16,438 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Nitrogen (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Ammonia (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus (lbs) Effluent Net	XXX	1,370 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation

Compliance Sampling Location: At Outfall 001

	8.0 Tools and References Used to Develop Permit
☒	WQM for Windows Model (see Attachment **B**)
☒	Toxics Management Spreadsheet (see Attachment **C**)
☒	TRC Model Spreadsheet (see Attachment **D**)
☐	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: Establishing Effluent limitations for industrial wastewater
☐	Other:

ATTACHMENTS

A. Topographical Map



April 25, 2021

1:18,056
0 0.1 0.2 0.4 mi
0 0.17 0.35 0.7 km

B. WQM Model Results

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07D	9896	DEEP RUN

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)
0.760	Farmers Pride	PA0035157	0.900	CBOD5	18.27		
				NH3-N	1.56	3.12	
				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)
0.190	Hain Pure Prot.	PA0080705	0.750	CBOD5	13.93		
				NH3-N	1.62	3.24	
				Dissolved Oxygen			5

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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
07D	9896	DEEP RUN	0.760	460.00	1.43	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	0.056	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Farmers Pride	PA0035157	0.9000	0.9000	0.9000	0.000	25.00	6.90

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
07D	9896	DEEP RUN	0.190	445.00	2.05	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	0.056	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Hain Pure Prot.	PA0080705	0.7500	0.7500	0.7500	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
07D	9896	DEEP RUN	0.010	442.00	3.00	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	0.056	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		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	5.00	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
07D	9896	DEEP RUN

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												
0.760	0.08	0.00	0.08	1.3923	0.00498	.538	11.35	21.1	0.24	0.144	24.73	6.90
0.190	0.11	0.00	0.11	2.5525	0.00316	.59	15.11	25.6	0.30	0.037	24.78	6.94
Q1-10 Flow												
0.760	0.06	0.00	0.06	1.3923	0.00498	NA	NA	NA	0.24	0.145	24.78	6.90
0.190	0.09	0.00	0.09	2.5525	0.00316	NA	NA	NA	0.30	0.037	24.83	6.94
Q30-10 Flow												
0.760	0.11	0.00	0.11	1.3923	0.00498	NA	NA	NA	0.24	0.143	24.63	6.91
0.190	0.16	0.00	0.16	2.5525	0.00316	NA	NA	NA	0.30	0.036	24.70	6.95

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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	0.8	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.4	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

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WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07D	9896	DEEP RUN

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
0.760	Farmers Pride	12.2	12.76	12.2	12.76	0	0
0.190	Hain Pure Prot.	11.42	12.32	11.77	12.32	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
0.760	Farmers Pride	1.45	1.56	1.45	1.56	0	0
0.190	Hain Pure Prot.	1.42	1.62	1.42	1.62	0	0

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)		
0.76	Farmers Pride	18.27	18.27	1.56	1.56	5	5	0	0
0.19	Hain Pure Prot.	13.93	13.93	1.62	1.62	5	5	0	0

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WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07D	9896	DEEP RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.760	0.900	24.728	6.905
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
11.350	0.538	21.096	0.241
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
17.38	1.088	1.48	1.007
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.176	12.773	Tsivoglou	5
Reach Travel Time (days)			
0.144			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.014	17.05	1.46	5.17
0.029	16.72	1.44	5.18
0.043	16.39	1.41	5.20
0.058	16.08	1.39	5.22
0.072	15.76	1.37	5.25
0.087	15.46	1.35	5.28
0.101	15.16	1.33	5.32
0.116	14.87	1.32	5.36
0.130	14.58	1.30	5.40
0.144	14.30	1.28	5.44

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.190	1.650	24.785	6.945
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
15.110	0.590	25.603	0.299
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
13.98	0.976	1.41	1.012
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.287	10.050	Tsivoglou	5
Reach Travel Time (days)			
0.037			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.004	13.92	1.40	5.28
0.007	13.85	1.40	5.28
0.011	13.79	1.39	5.28
0.015	13.73	1.39	5.28
0.018	13.67	1.38	5.28
0.022	13.61	1.38	5.28
0.026	13.55	1.37	5.28
0.029	13.49	1.37	5.28
0.033	13.43	1.36	5.29
0.037	13.37	1.36	5.29

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C. Toxics Management Spreadsheet(TMS)

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Farmers Pride** NPDES Permit No.: **PA0035157** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Poultry processing Industrial wastewater**

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
0.9	183	6.9						

					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
Group 1	Total Dissolved Solids (PWS)	mg/L		737									
	Chloride (PWS)	mg/L		341									
	Bromide	mg/L		0.073									
	Sulfate (PWS)	mg/L		80									
	Fluoride (PWS)	mg/L		0.45									
Group 2	Total Aluminum	µg/L		26									
	Total Antimony	µg/L	<	1									
	Total Arsenic	µg/L	<	1.4									
	Total Barium	µg/L		18									
	Total Beryllium	µg/L		0.5									
	Total Boron	µg/L		45									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L		1									
	Hexavalent Chromium	µg/L		0.25									
	Total Cobalt	µg/L		6.7									
	Total Copper	µg/L		21									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L		5									
	Dissolved Iron	µg/L		44									
	Total Iron	µg/L		170									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		20									
	Total Mercury	µg/L	<	0.008									
	Total Nickel	µg/L		4									
	Total Phenols (Phenolics) (PWS)	µg/L		0.01									
	Total Selenium	µg/L	<	2									
	Total Silver	µg/L		1									
	Total Thallium	µg/L	<	0.5									
	Total Zinc	µg/L		27									
	Total Molybdenum	µg/L		13									
	Acrolein	µg/L	<										

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Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Farmers Pride, NPDES Permit No. PA0035157, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: **Deep 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	009896	0.76	460	1.43			Yes
End of Reach 1	009896	0.19	445	2.06			Yes

$Q_{7\text{-}10}$

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	0.76	0.056										100	7		
End of Reach 1	0.19	0.056													

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	0.76														
End of Reach 1	0.19														

Model Results

Farmers Pride, NPDES Permit No. PA0035157, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | (•) All ( ) Inputs ( ) Results ( ) Limits

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 0.019 PMF: 1 Analysis Hardness (mg/l): 178.49 Analysis pH: 6.90

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	793	
Total Antimony	0	0		0	1,100	1,100	1,163	
Total Arsenic	0	0		0	340	340	360	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	22,208	
Total Boron	0	0		0	8,100	8,100	8,566	
Total Cadmium	0	0		0	3.536	3.84	4.07	Chem Translator of 0.92 applied
Total Chromium (III)	0	0		0	915.710	2,898	3,064	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	17.2	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	100	
Total Copper	0	0		0	23.197	24.2	25.6	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	120.611	171	181	Chem Translator of 0.707 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1.74	Chem Translator of 0.85 applied
Total Nickel	0	0		0	764.401	766	810	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	8.713	10.3	10.8	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	68.7	
Total Zinc	0	0		0	191.443	196	207	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 0.019 PMF: 1 Analysis Hardness (mg/l): 178.49 Analysis pH: 6.90

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	233	
Total Arsenic	0	0		0	150	150	159	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	4,336	
Total Boron	0	0		0	1,600	1,600	1,692	
Total Cadmium	0	0		0	0.368	0.42	0.44	Chem Translator of 0.885 applied
Total Chromium (III)	0	0		0	119.115	139	146	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	11.0	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	20.1	
Total Copper	0	0		0	14.693	15.3	16.2	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	1,586	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	4.700	6.65	7.03	Chem Translator of 0.707 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	0.96	Chem Translator of 0.85 applied
Total Nickel	0	0		0	84.901	85.2	90.1	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	5.28	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	13.7	
Total Zinc	0	0		0	193.009	196	207	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 0.019 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	5.92	
Total Arsenic	0	0		0	10	10.0	10.6	
Total Barium	0	0		0	2,400	2,400	2,538	
Total Boron	0	0		0	3,100	3,100	3,278	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	

Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	317	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	1,058	
Total Mercury	0	0		0	0.050	0.05	0.053	
Total Nickel	0	0		0	610	610	645	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	0.25	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 0.664 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Cobalt	Report	Report	Report	Report	Report	µg/L	20.1	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	0.12	0.19	16.2	25.3	40.5	µg/L	16.2	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Dissolved Iron	Report	Report	Report	Report	Report	µg/L	317	THH	Discharge Conc > 10% WQBEL (no RP)
Total Iron	Report	Report	Report	Report	Report	µg/L	1,586	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	196	AFC	Discharge Conc > 10% WQBEL (no RP)

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

D. TRC Calculation Results

B	C	D	E	F	G
TRC EVALUATION			**Enter Facility Name in E3**		
Input appropriate values in B4:B8 and E4:E7					
0.09	= Q stream (cfs)		0.5	= CV Daily	
0.9	= Q discharge (MGD)		0.5	= CV Hourly	
30	= no. samples		1	= AFC_Partial Mix Factor	
0.3	= Chlorine Demand of Strear		1	= CFC_Partial Mix Factor	
0	= Chlorine Demand of Discha		15	= AFC_Criteria Compliance Time (min)	
0.5	= BAT/BPJ Value		720	= CFC_Criteria Compliance Time (min)	
	= % Factor of Safety (FOS)			=Decay Coefficient (K)	

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 0.040	1.3.2.iii	WLA cfc = 0.031
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.015	5.1d	LTA_cfc = 0.018

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.018	AFC
		INST MAX LIMIT (mg/l) = 0.059	

WLA afc	(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...
	...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...
	...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)