pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

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

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

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	Terry Zellers	Facility Contact	Terry Zellers
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 for discharge of treated industrial waste		

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

Approve	Deny	Signatures	Date
X		J. Pascal Kwedza, P.E. / Environmental Engineer	November 13, 2019
		Daniel W. Martin, P.E. / Environmental Engineer Manager	
		Maria D. Bebenek, P.E., Program Manager	

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. The "Phase 2 Watershed Implementation Plan Wastewater Supplement" states that "the minimum monitoring frequency for TN species and TP in new or renewed NPDES permits for significant dischargers will be 2/week.
- Weekly monitoring of Total Copper 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:

Other Comments:

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:

Other Comments:

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:

Other Comments:

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:

Other Comments:

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 September 1, 2018 to August 31, 2019)

Parameter	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18
Flow (MGD) Average Monthly	0.624	0.628	0.668	0.584	0.559	0.58	0.675	0.702	0.576	0.621	0.631	0.68
Flow (MGD) Daily Maximum	0.800	0.827	0.835	0.714	0.711	0.741	0.906	0.858	0.76	0.781	0.776	0.85
pH (S.U.) Minimum	6.7	6.5	6.6	6.9	6.6	6.6	6.5	6.5	6.7	6.7	6.7	6.7
pH (S.U.) Maximum	7.5	7.5	7.4	7.4	7.2	7.6	7.4	7.1	7.5	7.4	7.4	7.5
DO (mg/L) Minimum	7.1	7.0	7.3	7.5	8.1	8.1	8.1	8.2	8.3	8.0	7.2	6.6
TRC (mg/L) Average Monthly	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.02
TRC (mg/L) Instant Maximum	0.06	0.06	0.02	0.06	0.06	0.05	0.04	0.04	0.03	0.03	0.03	0.03
CBOD5 (lbs/day) Average Monthly	< 11	< 10	< 12	< 8	< 9	< 39	< 31	< 15	< 17	< 10	< 11	< 13
CBOD5 (lbs/day) Daily Maximum	< 13	< 13	19	< 11	< 11	87	71	26	36	< 12	< 12	< 14
CBOD5 (mg/L) Average Monthly	< 2	< 2.1	< 2.5	< 2	< 2.0	7.3	5.3	< 2.8	< 3.3	< 2	< 2	< 2
CBOD5 (mg/L) Daily Maximum	< 2	2.3	3.8	< 2	< 2.0	14.4	11.9	6	7.1	< 2	< 2	< 2
TSS (lbs/day) Average Monthly	< 21	< 21	< 22	< 17	< 18	< 44	< 29	< 23	< 21	< 21	< 22	< 25
TSS (lbs/day) Daily Maximum	< 26	< 26	27	< 22	< 23	65	40	< 26	< 24	< 24	< 23	< 27
TSS (mg/L) Average Monthly	< 4	< 4.1	< 4.4	< 4	< 4.0	< 8.5	< 4.7	< 4	< 4	< 4	< 4	< 4
TSS (mg/L) Daily Maximum	< 4	4.4	5.6	< 4	< 4.0	11.6	6.8	< 4	< 4	< 4	< 4	< 4
Oil and Grease (lbs/day) Ave. Monthly	< 26	< 25	< 27	< 24	< 27	< 27	< 31	< 29	< 28	< 27	< 27	< 30
Oil and Grease (lbs/day) Daily Max	< 32	< 33	< 32	< 29	42	< 31	< 36	< 32	< 30	< 30	< 29	34
Oil and Grease (mg/L) Average Monthly	< 5.0	< 5.0	< 5.0	< 5.0	< 5.8	< 5.2	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.2
Oil and Grease (mg/L) Daily Maximum	< 5.0	< 5.2	< 5.0	< 5.0	8.2	< 5.9	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	5.6

Fecal Coliform (CFU/100 ml) Geometric Mean	194	< 30	9	20	< 4	50	571	15	22	22	< 3	17
Fecal Coliform (CFU/100 ml) Daily Maximum	3600	1400	254	104	71	168	577	140	40	136	< 94	36
Nitrate-Nitrite (mg/L) Average Monthly	4.38	2.4	5.69	2.99	3.65	3.54	3.2	4.79	2.33	2	< 1.95	1.29
Nitrate-Nitrite (lbs) Total Monthly	713	378	834	410	451	554	526	843	381	301	< 321	242
Total Nitrogen (lbs/day) Ave. Monthly	29.425	19.8	37.55	18.45	< 20.06	31.65	31.9	62.2	19.0	17.08	< 19	15.15
Total Nitrogen (lbs/day) Daily Max.	35.3	29.5	47.7	36.2	26.6	42.4	41.1	186	32.0	25.8	22.3	18.6
Total Nitrogen (mg/L) Average Monthly	5.58	3.91	7.62	4.31	< 4.75	6.22	5.4	10.45	3.6	3.33	< 3.55	2.4
Total Nitrogen (mg/L) Daily Maximum	5.97	5.38	9.53	6.68	8.29	7.87	8.08	28.92	6.24	4.54	4.21	2.76
Total Nitrogen (lbs) Effluent Net Total Monthly	911.5	615.9	1126.2	571.9	< 601.6	981.3	894.8	1941.4	589.4	512.6	< 590.2	453.7
Total Nitrogen (lbs) Total Monthly	911.5	615.9	1126.2	571.9	< 601.6	981.3	894.8	1941.1	589.4	512.6	< 590.2	453.7
Ammonia (lbs/day) Average Monthly	< 0.5	< 0.5	< 0.5	< 0.4	< 0.5	< 0.5	< 0.6	< 0.06	< 1.5	< 0.5	< 0.8	< 0.6
Ammonia (lbs/day) Daily Maximum	< 0.7	< 0.6	< 0.6	< 0.5	< 0.6	< 0.6	< 0.8	< 0.06	4.2	< 0.6	< 1.9	< 0.7
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.10	< 0.3	< 0.1	< 0.15	< 0.10
Ammonia (mg/L) Daily Maximum	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.10	0.88	< 0.1	0.34	< 0.10
Ammonia (lbs) Total Monthly	< 16.4	< 15.6	< 14.7	< 12.8	< 13.7	< 15.5	< 17.1	< 17.5	< 45.5	< 15.5	< 25.2	< 18.9
TKN (mg/L) Average Monthly	1.19	1.51	1.94	1.32	< 1.11	2.68	2.2	5.66	1.27	1.33	1.6	1.11
TKN (lbs) Total Monthly	198	238	292	162	< 151	427	369	1098	208	211	269	212
Total Phosphorus (lbs/day) Ave. Monthly	1.0	3.64	3.01	< 1.15	0.9	2.17	1.97	0.8	< 0.8	2.12	1.69	1.38
Total Phosphorus (lbs/day) Daily Max	1.6	7.1	4.6	2.8	1.5	3.2	3.4	0.9	1.1	5.4	2.5	1.7
Total Phosphorus (mg/L) Ave. Monthly	0.18	0.74	0.63	< 0.42	0.21	0.43	0.34	0.13	< 0.15	0.41	0.32	0.22
Total Phosphorus (mg/L) Daily Max	0.24	1.36	0.98	1.31	0.34	0.53	0.57	0.15	0.22	0.9	0.48	0.3

Total Phosphorus (lbs) Effluent Net Total Monthly	30.9	112.9	9.040	< 35.7	27.52	67.2	55.2	23.3	< 24.5	66.2	52.4	41.5
Total Phosphorus (lbs) Total Monthly	30.90	112.85	90.40	< 35.73	27.52	67.21	55.19	23.32	< 24.46	66.25	52.36	41.53

4.1.1 DMR Data for Outfall 003 (from September 1, 2018 to August 31, 2019)

Parameter	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18
pH (S.U.) Minimum			6.97						7.08			
pH (S.U.) Instantaneous Maximum			6.97						7.08			
CBOD5 (mg/L) Instantaneous Maximum			63.6						51.3			
COD (mg/L) Instantaneous Maximum			121						91.2			
TSS (mg/L) Instantaneous Maximum			58.7						66.0			
Oil and Grease (mg/L) Instantaneous Maximum			< 5.0						< 5.0			
Fecal Coliform (CFU/100 ml) Instantaneous Maximum			665						> 20000			
TKN (mg/L) Instantaneous Maximum			13.5						12.5			
Total Phosphorus (mg/L) Instantaneous Maximum			1.73						1.49			
Dissolved Iron (mg/L) Instantaneous Maximum			0.076						0.118			

4.2 Effluent Violations for Outfall 001, from: October 1, 2018 To: August 31, 2019

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	02/28/19	Geo Mean	571	CFU/100 ml	400	CFU/100 ml
Fecal Coliform	03/31/19	Geo Mean	571	CFU/100 ml	400	CFU/100 ml
Fecal Coliform	07/31/19	Daily Max	1400	CFU/100 ml	400	CFU/100 ml
Fecal Coliform	08/31/19	Daily Max	3600	CFU/100 ml	400	CFU/100 ml
Fecal Coliform	02/28/19	Daily Max	577	CFU/100 ml	400	CFU/100 ml
Fecal Coliform	03/31/19	Daily Max	577	CFU/100 ml	400	CFU/100 ml
Total Phosphorus	07/31/19	Avg Mo	0.74	mg/L	0.50	mg/L
Total Phosphorus	06/30/19	Avg Mo	0.63	mg/L	0.50	mg/L
Total Phosphorus	07/31/19	Daily Max	1.36	mg/L	1.0	mg/L
Total Phosphorus	05/31/19	Daily Max	1.31	mg/L	1.0	mg/L

4.2.1 Effluent Violations

The facility had numerous effluent violations for Fecal Coliform and Total Phosphorus as shown on the table 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 11l times during the past permit cycle. Inspection reports indicates the upgraded facility is operated and maintained well. TRC, Fecal Coliform and Total Nitrogen violations were noted during plant inspections. In addition, two 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 = 7.0 (Default)
* Discharge Temperature = 25° C (Default)
* Stream pH = 7.0(Default)
* Stream Temperature = 20° C (Default)
* Background NH_3-N = 0.0 (default

5.3.5 $CBOD_5$

WQM7.0 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 WQM 7.0 stream model (attachment C) 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 of the WQM 7.0 stream model (attachment C) 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 months 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 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 trasnfer 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 weekly 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 results indicates that an average monthly water quality limit of 0.02 mg/l and 0.05mg/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 16 mg/l maximum daily based on ELG 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 pollutant Groups submitted with the application. All pollutants detected in the application sampling were entered into the Toxics Screening Analysis spreadsheet (attachment E) to determine if any pollutants were candidates for PENTOXSD modeling. Total Cadmium and Total Copper were determined to be pollutant of concern however, Total Cadmium was reported as non-detect using a less sensitive method. The permittee was offered an opportunity to re-sample Total Cadmium using DEP's target QL. The permittee resubmitted 3 samples of Total Cadmium and 7 samples of Total Copper analyzed using DEP's target QL. When the resubmitted data for Total Cadmium and average of the 7 data submitted for Total Copper were added to the screening spreadsheet, Total Cadmium was no longer a pollutant of concern. Total Copper was entered into PENTOXSD model for analysis. Default hardness of 100 mg/l was used as input for background hardness and discharge hardness of 183 mg/l was taken from permit application. The most stringent WQBELs recommended by the PENTOXSD model presented in attachment D was then entered into the same Toxics Screening Analysis spreadsheet in order to determine if limitation or monitoring was necessary. A monthly average limit of 0.016 mg/l was recommended for Total Copper. See the Toxic screenings spreadsheet presented in attachment E for details. A pre-draft permit survey response from the permittee indicates, the permittee would not be able to meet recommended limit. Since the model was run with default values, the draft permit is written to require weekly monitoring in the interim, and offered the permittee an opportunity to collect data to refine the PENTOXSD model and /or conduct Toxic Reduction Evaluation study/conduct a site-specific study for copper in to comply comply with the limit by the end of the permit term. See part C of the permit for details.

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 is currently updating the chemical additives lists. The permittee was informed that any new chemical additive or proposed increase in any approved chemical additive will need to be approved by DEP prior to usage. The permittee will continue using the chemical additives in the existing permit and get news one approved in accordance with DEP chemical additive approval process. The new chemical additive condition that lays out the chemical approval process is added to Part C of the permit.

5.0 Other Requirements

5.1 Anti-backsliding

Not applicable to this permit

5.2 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 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

5.4 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.

5.5 Class A wild Trout Fisheries

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

5.6 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)

5.7 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).

5.8 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.

6.0 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	24-Hr Composite
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
Total Nitrogen	Report	Report	XXX	103	147	257	1/month	Calculation
Ammonia Nov 1 - Apr 30	22.5	45	XXX	3.0	6.0	7.5	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	7.5	15	XXX	1.0	2.0	2.5	1/week	24-Hr Composite
Total Phosphorus	3.8	7.5	XXX	0.50	1.0	1.25	1/week	24-Hr Composite
Total Copper	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite

Compliance Sampling Location: Outfall 001

6.1 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		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Net Total Nitrogen	Report	16,438	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	1370	XXX	XXX	XXX	XXX	1/month	Calculation

Compliance Sampling Location: at Outfall 001

6.2 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.

Outfalls 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

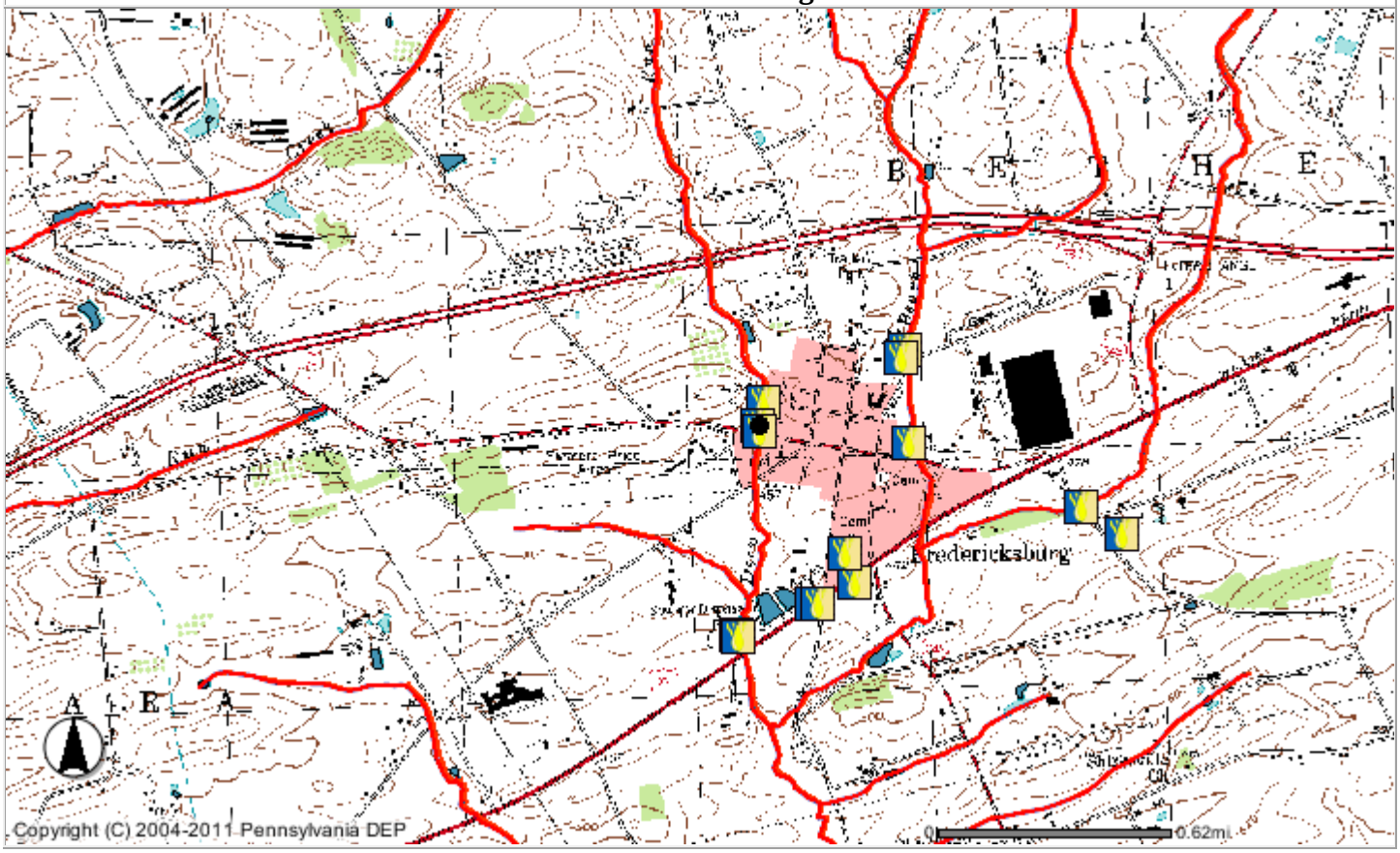
Compliance Sampling Location: At Outfalls 002 & 003

7.0 Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment **B**)
☐	PENTOXSD for Windows Model (see Attachment)
☒	TRC Model Spreadsheet (see Attachment **D**)
☐	Temperature Model Spreadsheet (see Attachment)
☒	Toxics Screening Analysis Spreadsheet (see Attachment **C**)
☒	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 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.
☐	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.
☐	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.
☐	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.
☐	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:
☐	

8. Attachment

A. Topographical Map

Farmers Pride Discharge Point



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	18.26		
				NH3-N	1.57	3.14	
				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	13.96		
				NH3-N	1.59	3.18	
				Dissolved Oxygen			5

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	20.00	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	20.00	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	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

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

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		

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	7.29	7.63	7.29	7.63	0	0
0.190	Hain Pure Prot.	6.94	7.49	7.1	7.49	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	1.57	1.45	1.57	0	0
0.190	Hain Pure Prot.	1.4	1.59	1.41	1.59	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	18.26	18.26	1.57	1.57	5	5	0	0
0.19	Hain Pure Prot.	13.96	13.96	1.59	1.59	5	5	0	0

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	1.49	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	17.04	1.46	5.17
0.029	16.71	1.44	5.18
0.043	16.39	1.42	5.19
0.058	16.07	1.40	5.22
0.072	15.76	1.38	5.25
0.087	15.46	1.36	5.28
0.101	15.16	1.34	5.32
0.116	14.86	1.32	5.36
0.130	14.58	1.30	5.40
0.144	14.29	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)**
13.99	0.976	1.40	1.012
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.286	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	13.93	1.40	5.28
0.007	13.86	1.39	5.28
0.011	13.80	1.39	5.28
0.015	13.74	1.38	5.28
0.018	13.68	1.38	5.28
0.022	13.62	1.37	5.28
0.026	13.56	1.37	5.28
0.029	13.50	1.36	5.28
0.033	13.44	1.36	5.29
0.037	13.38	1.35	5.29

C. TRC Calculations

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)

D. PENNTOXSD Model Results

PENTOXSD Analysis Results

Recommended Effluent Limitations

SWP Basin	Stream Code:	Stream Name:
07D	9896	DEEP RUN

RMI	Name	Permit Number	Disc Flow (mgd)
0.76	Farmers Pride	PA0035157	0.9000

Parameter	Effluent Limit (µg/L)	Governing Criterion	Max. Daily Limit (µg/L)	Most Stringent WQBEL (µg/L)	Most Stringent WQBEL Criterion
COPPER	16.185	CFC	25.251	16.185	CFC

RMI	Name	Permit Number	Disc Flow (mgd)
0.19	Hain Pure Prot.	PA0080705	0.7500

Parameter	Effluent Limit (µg/L)	Governing Criterion	Max. Daily Limit (µg/L)	Most Stringent WQBEL (µg/L)	Most Stringent WQBEL Criterion
COPPER	NA	NA	NA	NA	NA

PENTOXSD

Modeling Input Data

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
9896	0.76	460.00	1.43	0.00000	0.00	☑

Stream Data

	LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary Hard	Tributary pH	Stream Hard	Stream pH	Analysis Hard	Analysis pH
	(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)		(mg/L)	
Q7-10	0.056	0	0	0	0	0	0	0	100	7	0	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow	Permitted Disc Flow	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard	Disc pH
		(mgd)	(mgd)	(mgd)						(mg/L)	
Farmers Pride	PA0035157	0.9	0.9	0.9	0	0	0	0	0	183	6.9

Parameter Data

Parameter Name	Disc Conc (µg/L)	Trib Conc (µg/L)	Disc Daily CV	Disc Hourly CV	Steam Conc (µg/L)	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc (µg/L)
COPPER	25	0	0.5	0.5	0	0	0	0	1	0

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
9896	0.19	445.00	2.05	0.00000	0.00	☑

Stream Data

	LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary Hard	Tributary pH	Stream Hard	Stream pH	Analysis Hard	Analysis pH
	(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)		(mg/L)	
Q7-10	0.056	0	0	0	0	0	0	0	100	7	0	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow	Permitted Disc Flow	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard	Disc pH
		(mgd)	(mgd)	(mgd)						(mg/L)	
Hain Pure Prot.	PA0080705	0.75	0.75	0.75	0	0	0	0	0	100	7

Parameter Data

Parameter Name	Disc Conc (µg/L)	Trib Conc (µg/L)	Disc Daily CV	Disc Hourly CV	Steam Conc (µg/L)	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc (µg/L)
COPPER	0	0	0.5	0.5	0	0	0	0	1	0

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
9896	0.01	442.00	3.00	0.00000	0.00	☑

Stream Data

	LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary Hard	Tributary pH	Stream Hard	Stream pH	Analysis Hard	Analysis pH
	(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)		(mg/L)	
Q7-10	0.056	0	0	0	0	0	0	0	100	7	0	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard (mg/L)	Disc pH
		0	0	0	0	0	0	0	0	100	7

Parameter Data

Parameter Name	Disc Conc (µg/L)	Trib Conc (µg/L)	Disc Daily CV	Disc Hourly CV	Steam Conc (µg/L)	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc (µg/L)
COPPER	0	0	0.5	0.5	0	0	0	0	1	0

PENTOXSD Analysis Results

Hydrodynamics

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	Depth (ft)	Width (ft)	WD Ratio	Velocity (fps)	Reach Trav Time (days)	CMT (min)
Q7-10 Hydrodynamics											
0.760	0.0801	0	0.0801	1.3923	0.005	0.5380	11.350	21.096	0.2411	0.1445	.018
0.190	0.1148	0	0.1148	1.16024	0.0032	0.5279	12.207	23.122	0.1979	0.0556	.076
0.010	0.168	0	0.168	NA	0	0	0	0	0	0	NA
Qh Hydrodynamics											
0.760	0.8178	0	0.8178	1.3923	0.005	0.6433	11.350	17.644	0.3027	0.1151	.663
0.190	1.1204	0	1.1204	1.16024	0.0032	0.6819	12.207	17.902	0.2740	0.0401	1.558
0.010	1.5628	0	1.5628	NA	0	0	0	0	0	0	NA

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number
0.76	**Farmers Pride**	**PA0035157**

AFC

Q7-10: **CCT (min)** 0.018 **PMF** 1 **Analysis pH** 6.904 **Analysis Hardness** 178.485

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
COPPER	0	0	0	0	23.197	24.164	25.553

Dissolved WQC. Chemical translator of 0.96 applied.

CFC

Q7-10: **CCT (min)** 0.018 **PMF** 1 **Analysis pH** 6.904 **Analysis Hardness** 178.485

Parameter	Stream Conc. (µg/L)	Stream CV	Trib Conc. (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
COPPER	0	0	0	0	14.693	15.305	16.185

Dissolved WQC. Chemical translator of 0.96 applied.

THH

Q7-10: **CCT (min)** 0.018 **PMF** NA **Analysis pH** NA **Analysis Hardness** NA

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
COPPER	0	0	0	0	NA	NA	NA

CRL

Qh: **CCT (min)** 0.663 **PMF** 1

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
COPPER	0	0	0	0	NA	NA	NA

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number
0.19	Hain Pure Prot.	PA0080705

AFC

Q7-10: CCT (min) 0.076 PMF 1 Analysis pH 6.993 Analysis Hardness 104.929

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
COPPER	0	0	0	0	14.062	14.648	NA

Dissolved WQC. Chemical translator of 0.96 applied.

CFC

Q7-10: CCT (min) 0.076 PMF 1 Analysis pH 6.99 Analysis Hardness 106.778

Parameter	Stream Conc. (µg/L)	Stream CV	Trib Conc. (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
COPPER	0	0	0	0	9.472	9.867	NA

Dissolved WQC. Chemical translator of 0.96 applied.

THH

Q7-10: CCT (min) 0.076 PMF NA Analysis pH NA Analysis Hardness NA

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
COPPER	0	0	0	0	NA	NA	NA

CRL

Qh: CCT (min) 1.558 PMF 1

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
COPPER	0	0	0	0	NA	NA	NA

E. Toxic Screening Analysis Spreadsheet

TOXICS SCREENING ANALYSIS
WATER QUALITY POLLUTANTS OF CONCERN
VERSION 2.6

CLEAR FORM

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

Analysis Hardness (mg/L): **183** Discharge Flow (MGD): **0.9** Analysis pH (SU): **7**

Stream Flow, Q_{7-10} (cfs): **0.09**

Parameter	Maximum Concentration in Application or DMRs (µg/L)		Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Total Dissolved Solids		737000	500000	Yes		
Chloride		341000	250000	Yes		
Bromide		73	N/A	No		
Sulfate		80000	250000	No		
Fluoride		450	2000	No		
Total Aluminum		0.000026	750	No		
Total Antimony		1	5.6	No		
Total Arsenic		1.4	10	No		
Total Barium		18	2400	No		
Total Beryllium		0.5	N/A	No		
Total Boron		45	1600	No		
Total Cadmium	<	0.2	0.423	No (Value < QL)		
Total Chromium		1	N/A	No		
Hexavalent Chromium		0.25	10.4	No		
Total Cobalt		6.7	19	No		
Total Copper		21	15.6	Yes	16	Establish Limits
Total Cyanide		5	N/A	No		
Total Iron		170	1500	No		
Dissolved Iron		44	300	No		
Total Lead	<	1	6.9	No (Value < QL)		
Total Manganese		20	1000	No		
Total Mercury		0.008	0.05	No		
Total Molybdenum		13	N/A	No		
Total Nickel		4	87	No		
Total Phenols (Phenolics)		0.00001	5	No		
Total Selenium	<	2	5.0	No (Value < QL)		
Total Silver		1	10.7	No		
Total Thallium	<	0.5	0.24	No (Value < QL)		
Total Zinc		27	199.9	No		