Pennsylvania Department of Environmental Protection

Northcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0010430**
Facility Type	**Industrial**	APS ID	**1120989**
Major / Minor	**Minor**	Authorization ID	**1498428**

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

1.0 Applicant and Facility Information

Applicant Name	**Hanover Foods Corp.**	Facility Name	**Centre Hall Facility**
Applicant Address	3008 Penns Valley Pike	Facility Address	3008 Penns Valley Pike
	Centre Hall, PA 16828-8405		Centre Hall, PA 16828
Applicant Contact	Randy Deardorff	Facility Contact	Randy Deardorff
Applicant Phone	(717) 633-3957	Facility Phone	(717) 633-3957
Client ID	62075	Site ID	457544
SIC Code	2037, 2038	Municipality	Potter Township
SIC Description	Manufacturing - Frozen Fruits and Vegetables, Manufacturing - Frozen Specialties, NEC	County	Centre
Date Application Received	August 30, 2024	EPA Waived?	Yes
Date Application Accepted	September 12, 2024	If No, Reason	
Purpose of Application	Renewal of an existing NPDES permit for the discharge of industrial waste and stormwater.		

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.

Approve	Deny	Signatures	Date
X		Derek S. Garner / Project Manager	February 13, 2026
X		Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	February 25, 2026

2.0 Facility Summary

The Hanover Foods Corp. Centre Hall Facility is a commercial food processing plant that operates five main canned and frozen food production lines consisting of: green vegetables, pasta, entrees, root crops, and dry beans. The food processing operations result in industrial wastewater being generated daily during operating hours from washing, blanching, and freezing the food products. Wastewater is stored in an equalization tank and fed through the treatment process 24 hours per day.

The existing wastewater treatment plant is rated for an annual average design flow of 0.225 MGD and a design maximum monthly flow of 0.350 MGD. The current average flow during production is 0.150 MGD. The design organic capacity is 8,787 lbs/day. Construction and operation of the facility was/is covered under WQM Permit No. 1405201. Treatment at the facility generally consists of:

- Screening / Grit removal
- Aeration tank
- Secondary clarifier tank
- Polishing tank
- Chlorine contact tank

After disinfection the wastewater is ultimately discharged via Outfall 001 to Sinking Creek.

Sludge is wasted to a sludge storage tank and land applied as fertilizer to local agricultural fields adjacent to the plant.

See Attachment A for an overview map of the site.

3.0 Proposed Stormwater Requirements

There are two stormwater outfalls located on the facility's property that drain to infiltration basins. DEP has historically determined that there is no reasonable potential for these basins to discharge to a surface water and that stormwater only leaves the site via sheet flow. The permit does not require any stormwater sampling, only BMPs and PPC requirements.

Since stormwater coverage is required based on the facility's industrial activity and the Clean Streams Law does not distinguish between point and non-point source pollution, the fact stormwater only leaves the property via sheet flow or infiltration does not preclude the facility from conducting representative stormwater sampling. Accordingly, DEP has proposed to establish stormwater sampling at Outfall 002. By establishing a stormwater outfall in the permit, the permittee will be required to collect and report stormwater samples to ensure the BMPs in place are adequate. Proposed Outfall 002 is an existing discharge to a grassy infiltration basin located at approximately 40° 50' 9.39" N, 77° 39' 51.54" W.

4.0 Discharge, Receiving Waters and Water Supply Information

4.1 Outfall 001

Outfall 001 continuously discharges wastewater treated at the onsite treatment plant. The existing discharge is located approximately 1.7 miles from the facility to Sinking Creek.

Table 4-1. Outfall 001 Information

Outfall No.	001	Design Flow (MGD)	0.150
Latitude	40º 49' 42.71"	Longitude	-77º 37' 52.54"
Quad Name	Centre Hall	Quad Code	1224
Wastewater Description:	IW Process Effluent with ELG		

Receiving Waters	Sinking Creek	Stream Code	18377
NHD Com ID	54969135	RMI	4.40
Drainage Area (mi^2)	29.1	Yield (cfs/mi^2)	0.144
Q_{7-10} Flow (cfs)	2.31	Q_{7-10} Basis	Streamgage No. 01555000
Elevation (ft)	1,117	Slope (ft/ft)	0.002
Watershed No.	6-A	Chapter 93 Class.	CWF, MF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Impaired		
Cause(s) of Impairment	Pathogens [1]		
Source(s) of Impairment	Unknown		
TMDL Status	n/a	Name	n/a

Nearest Downstream Public Water Supply Intake	SUEZ Water at Susquehanna Township, Dauphin County		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	3,510
PWS RMI	76.73	Distance from Outfall (mi)	Approx. 100

[1] This discharge is not expected to contribute to the pathogen impairment of Sinking Creek.

See Attachment B for Q7-10 calculations and associated documentation.

4.2 Outfall 002

Outfall 002 is a proposed stormwater outfall.

Table 4-2. Outfall 002 Information

Outfall No.	002	Design Flow (MGD)	n/a
Latitude	40º 50' 9.39"	Longitude	-77º 39' 51.54"
Quad Name	Centre Hall	Quad Code	1224
Wastewater Description:	Stormwater		
Receiving Waters	UNT to Sinking Creek	Stream Code	n/a
NHD Com ID	n/a	RMI	n/a
Drainage Area (mi^2)	n/a	Yield (cfs/mi^2)	n/a
Q_{7-10} Flow (cfs)	n/a	Q_{7-10} Basis	n/a
Elevation (ft)	1,247	Slope (ft/ft)	n/a
Watershed No.	6-A	Chapter 93 Class.	CWF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Attaining		
Cause(s) of Impairment	n/a		
Source(s) of Impairment	n/a		
TMDL Status	n/a	Name	n/a

5.0 Compliance History

5.1 Inspection Reports

The facility was most recently inspected by DEP on July 24, 2025. All required treatment units were operable, and no impacts were noted in the receiving stream.

5.2 Violations

The following effluent violations occurred during the existing permit's term:

Table 5-1. Effluent Violation Summary

Noncompliance Date	Noncompliance Description	Parameter	Sample Value	Violation Condition	Permit Value	Units	SBC
3/26/2020	Violation of permit condition	Total Suspended Solids	163	>	100	mg/L	Daily Max
3/26/2020	Violation of permit condition	Total Suspended Solids	201.2	>	188	lbs/day	Daily Max
7/27/2022	Violation of permit condition	Fecal Coliform	249	>	200	No./100 ml	Geo Mean
11/28/2022	Late DMR Submission						
11/28/2023	Violation of permit condition	Ammonia-Nitrogen	22.1	>	16.5	mg/L	Daily Max
3/27/2024	Violation of permit condition	Fecal Coliform	24196	>	10000	No./100 ml	IMAX
3/27/2024	Violation of permit condition	Total Residual Chlorine (TRC)	1.29	>	1.2	mg/L	IMAX
8/21/2025	Violation of permit condition	Fecal Coliform	2190	>	1000	No./100 ml	

There are numerous open violations associated with a Hanover Foods Corp. facility located in the Southcentral Region. The violations are as follows:

Table 5-2. Open Violation Summary

Permit Number	Inspection ID	Violation ID	Violation Date	Violation Code	Violation
PA0044741	3486782	981560	10/17/2022	CSL301	CSL - Unauthorized, unpermitted discharge of industrial wastes to waters of the Commonwealth
PA0044741	3517650	987740	1/9/2023	CSL301	CSL - Unauthorized, unpermitted discharge of industrial wastes to waters of the Commonwealth
PA0044741	3517650	987741	1/9/2023	CSL611	CSL - Failure to comply with terms and conditions of a WQM permit
PA0044741	3519912	988059	1/17/2023	CSL301	CSL - Unauthorized, unpermitted discharge of industrial wastes to waters of the Commonwealth
PA0044741	3519912	988060	1/17/2023	CSL611	CSL - Failure to comply with terms and conditions of a WQM permit
PA0044741	3520458	988179	1/18/2023	CSL301	CSL - Unauthorized, unpermitted discharge of industrial wastes to waters of the Commonwealth
PA0044741	3659640	8168241	11/28/2023	CSL301	CSL - Unauthorized, unpermitted discharge of industrial wastes to waters of the Commonwealth
PA0044741	3659649	8168243	12/13/2023	CSL301	CSL - Unauthorized, unpermitted discharge of industrial wastes to waters of the Commonwealth
PA0044741	4010595	8240381	6/23/2025	CSL301	CSL - Unauthorized, unpermitted discharge of industrial wastes to waters of the Commonwealth
PA0044741	4010595	8244575	6/23/2025	92A.44	NPDES - Violation of effluent limits in Part A of permit

6.0 Development of Effluent Limitations

6.1 Outfall 001

Outfall No.	001	**Design Flow (MGD)**	0.150
Latitude	40º 49' 43.35"	**Longitude**	-77º 37' 53.47"
Wastewater Description:	IW Process Effluent with ELG		

Effluent limits are the most stringent of technology-based effluent limitations ("TBELs"), water-quality based effluent limitations ("WQBELs"), or best professional judgment ("BPJ").

6.1.1 Technology-Based Limitations

The first step in developing effluent limitations is to recognize and develop applicable TBELs based on the industrial activity that takes place at the facility for each outfall. TBELs are subject to the development of more stringent WQBELs or BPJ.

ELG Parameters

Outfall 001 discharges treated industrial wastewater from the IWTP. Various waste streams at the facility are regulated by separate mass-based, production-normalized effluent limit guidelines (ELGs) found at 40 CFR § 407, Canned and Preserved Fruits and Vegetables Processing Point Source Category. To calculate the limits, each waste stream's specific subcategory was applied and then the resulting mass limits were combined. The waste streams are pasta(1), entrees(2), root crops(3), green vegetables(3), and dry beans.

(1) There are no directly applicable ELGs for the pasta production line. Historically, DEP has assigned Frozen Potato Products Subcategory using best professional judgment.
(2) There are no directly applicable ELGs for the entrees production line. Historically, DEP has assigned the squash limits from the Canned and Preserved Vegetables Subcategory using best professional judgment.
(3) Hanover Foods production data for the root crops and green vegetables lines are not broken into separate commodities. Meaning, instead of reporting the production of each commodity (e.g., beets, carrots, peas, etc.) the application only shows one lump sum. Since the ELGs require different limits for each commodity, DEP has historically chosen the most stringent limit applicable to each production line. For root crops, DEP used squash and for green vegetables DEP used snap beans.

By applying each production line's annual average production (lb/year) over the last five years to the production-normalized ELGs (lb/1,000 lb of raw material) the following mass-based effluent limits were calculated:

Table 6-1. ELG Summary

Production Line	BOD5 (lbs/day)		Total Suspended Solids (lbs/day)	
	Daily Maximum	Monthly Average	Daily Maximum	Monthly Average
Pasta	62.0	31.0	62.0	31.0
Entrees	25.1	16.5	45.8	34.4
Root Crops	36.6	24.0	66.7	50.0
Green Vegetables	61.9	35.7	109.5	73.8
Dry Beans	77.4	46.8	138.8	97.0
TOTAL	*263.1*	*153.9*	*422.8*	*286.2*

See Attachment C for ELG calculations.

Chapter 95 Industrial Waste Treatment Standards

In addition to ELG requirements above, 25 PA Code Chapter 95 establishes industrial wastes treatment standards for pH, oil and grease, and dissolved iron as follows:

Table 6-2. Chapter 95 Treatment Standards

Parameter	Limit (mg/l)	SBC	State Regulation
pH	6.0	Minimum	95.2(1)
	9.0	IMAX	95.2(1)
Oil and Grease	15	Average Monthly	95.2(2)
	30	IMAX	95.2(2)
Dissolved Iron	7.0	Average Monthly	95.2(4)

Chapter 95 treatment standards pH and oil and grease have historically been included in the permit, and DEP recommends they remain in the permit.

Dissolved iron treatment standards are currently not included in the permit. Sampling for dissolved iron was not included with the permit application since it is not part of the Pollutant Group 1 sampling regime. Since DEP cannot verify whether or not the 7.0 mg/L dissolved iron treatment standard is being approached or exceeded, it is recommended that it is established in the permit.

6.1.2 Water Quality-Based Limitations

After developing the TBELs, the next step is to determine if there are more stringent WQBELs that must be applied. An analysis using DEP's WQM 7.0 v1.1 and Toxics Management Spreadsheet v1.4 ("TMS") was performed for the discharge. WQM 7.0 is a multiple source discharge model that is used to determine effluent limits for ammonia-nitrogen, CBOD5, and dissolved oxygen, if applicable. TMS is a single discharge model that is used to determine effluent limits for toxics, if applicable. The existing total residual chlorine ("TRC") limits were also evaluated using the TRC Evaluation Spreadsheet.

See Attachment D for model input/output data.

WQM 7.0

WQM 7.0 was used to determine if ammonia-nitrogen, CBOD5, or dissolved oxygen WQBELs are appropriate for the discharge at Outfall 001. A reach was created in WQM 7.0 from Outfall 001 to RMI 2.1.

Table 6-3. WQM 7.0 Modeling Results

Parameter	Effluent Limit (mg/l)		
	Average Monthly	Daily Maximum	Minimum
CBOD5 (1)	104.6	--	--
Ammonia-nitrogen (2)	11	22	--
Dissolved Oxygen (3)	--	--	2.8

(1) The input for CBOD5 is the above calculated TBEL for BOD5 multiplied by a conversion factor of 0.85.
(2) The ammonia-n value is the existing WQBEL.
(3) The dissolved oxygen input is the 90th percentile of actual discharge concentrations reported in eDMR.

The model indicates there is minimal impact on the dissolved oxygen levels and that the input concentrations will not negatively impact Sinking Creek.

Toxics Management Spreadsheet

TMS was used to determine if WQBELs are appropriate for toxics found in the discharge. Input concentrations were taken from the sample results reported in the renewal application. Due to the nature of the discharge, the only toxics that were required to be reported were total dissolved solids, chloride, bromide, sulfate, and fluoride. Since each of these pollutants associated critical uses are applied at potable water supplies and there are no immediate downstream water supply intakes, TMS does not recommend any effluent limits or reporting requirements.

Total Residual Chlorine Evaluation

The existing TRC limits were evaluated in the TRC Evaluation Spreadsheet. The spreadsheet indicates that the existing TBELs are still protective of Sinking Creek.

6.1.3 Best Professional Judgment Limitations

After applying the TBELs and determining if there are more stringent WQBELs, the next step is to apply BPJ, if applicable.

Total Suspended Solids ("TSS")

Previous BPJ determinations have established TSS limits of 65 mg/L average monthly, 100 mg/L daily maximum, and 100 mg/L instantaneous maximum. These limits were established based on Sinking Creek's former siltation impairment seen downstream of Outfall 001. Sinking Creek is no longer impaired for siltation, but if facility is allowed to discharge above these limitations it stands to reason that the impairment would return. Accordingly, DEP recommends that these BPJ limitations remain in lieu of the less stringent TBELs calculated above.

Biochemical Oxygen Demand, 5-Day ("BOD5")

DEP generally does not allow discharges to small surface waters to exceed 200 mg/L BOD5 due to negative aesthetic impacts (e.g., color, taste, odor). The TBELs calculated above would result in a daily maximum concentration limit of 210 mg/L (263.1 lbs/day / 0.150 MGD / 8.34). Accordingly, DEP recommends the daily maximum and instantaneous maximum limits are not based off of the calculated TBEL loadings, but instead are capped at 200 mg/L.

It is noted that this permit has historically converted BOD5 limits to CBOD5 limits using a factor of 0.85. It is unclear why the limits are converted since BOD5 is the pollutant of concern identified in the ELG, and BOD5 is widely applied to industrial facilities throughout the state. The factor of 0.85 is more consistent with typical sewage discharges and may not be representative of industrial food processing discharges. DEP recommends BOD5 is used in the permit to remain consistent with the ELGs and permitting practices throughout the state.

Total Dissolved Solids ("TDS")

DEP generally assigns TDS reporting requirements for existing discharges that exceed 1,000 mg/L. Historically, this discharge has approached or exceeded 1,000 mg/L TDS. Based on the samples collected for the renewal application and annually throughout the existing permit's term, the discharge continues to approach and exceed 1,000 mg/L (max 1,040 mg/L). Accordingly, DEP recommends that TDS reporting remains in the permit.

Fecal Coliform

Fecal coliform limits taken from 25 Pa. Code § 92a.47 (relating to sewage) have historically been applied to Outfall 001. Sample results continue to indicate fecal coliform is present in the discharge and have even exceeded the limitations during the existing permit's term. DEP recommends that the following existing limits remain in the permit:

Pollutant	Limit (mg/l)	SBC
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean
Fecal Coliform (5/1 – 9/30)	1000 / 100 ml	IMAX
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX

PFAS-related Compounds

Sampling completed as part of the renewal application did not detect PFOA, PFOS, HFPO-DA, or PFBS. DEP generally assigns annual reporting requirements to PFAS-related compounds are not detected in the effluent. Accordingly, DEP has proposed annual reporting requirements for PFOA, PFOS, HFPO-DA, and PFBS. The following related condition will be established in the permit so that the permittee may cease monitoring when non-detect values are reported for four consecutive monitoring periods:

The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detects at or below Quantitation Limits of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS and 6.4 ng/L for HFPO-DA. When monitoring is discontinued, permittees should enter a No Discharge Indicator (NODI) Code of "GG" on DMRs.

Influent Monitoring

The existing permit includes influent monitoring requirements for CBOD5 and TSS. DEP recommends that these requirements remain, but CBOD5 be changed to BOD5 to be consistent with changes made to effluent sampling.

Seasonal Multipliers

Historically, this permit has applied a seasonal multiplier of 0.5x to CBOD5 (now BOD5) and 3x to ammonia-n.

The existing permit applies the CBOD5 TBEL to traditionally cold-weather months, and halves the limits during warm-weather months. The permittee has demonstrated 100% compliance with CBOD5 over the most recent permit cycle. Accordingly, DEP recommends continued use of a 0.5x seasonal multiplier with the revised BOD5 limits.

Unlike CBOD5/BOD5, ammonia-n is a water-quality based effluent limit that factors available dilution into development. DEP generally applies a seasonal multiplier of 3x during cold-weather months since there is more water available for dilution (i.e., no Q7-10 conditions) and reduced biological treatment. Accordingly, DEP recommends the continued use of seasonal multipliers for ammonia-n.

6.1.4 Chesapeake Bay Requirements

The Hanover Foods Corp. Centre Hall Facility is categorized as a non-significant industrial waste facility in Phase 3 of Pennsylvania's Watershed Implementation Plan Wastewater Supplement. Non-significant food processing facilities are recommended to sample for total nitrogen and total phosphorus at a frequency of 1/month. This is an increase from the existing 1/quarter frequency in the permit. DEP is unaware of any unique reasoning that would justify deviating from standard operating procedure in this case. Accordingly, 1/month monitoring is recommended.

6.1.5 Anti-Backsliding

Only BOD5 limits are proposed to be made less stringent based on production data over the last five years. 40 CFR § 122.44(l)(2)(i)(B)(1) allows for backsliding when information is available which was not available at the time of previous permit issuance, such as new production data.

6.2 Outfall 002

Outfall No.	002	**Design Flow (MGD)**	n/a
Latitude	40º 50' 9.39"	**Longitude**	-77º 39' 51.54"

Wastewater Description: IW Process Effluent with ELG

6.2.1 Technology-Based Limitations

There are no TBELs applicable to stormwater discharges associated with food processing discharges.

6.2.2 Water Quality-Based Limitations

DEP does not have a protocol for establishing WQBELs for stormwater discharges.

6.3.3 Best Professional Judgment (BPJ) Limitations

DEP recommends establishing the following monitoring requirements and benchmark values taken from the PAG-03, Appendix I (Food and Kindred Products). Appendix I is typically applied to SIC Code Major Group 20, which includes the industrial activities at the Centre Hall Facility (2037, 2038).

Table 6-4. Stormwater Monitoring Requirements

Pollutant	Monitoring Requirements		Benchmark Values
	Minimum Measurement Frequency	Sample Type	
Total Nitrogen (mg/L) [(1)]	1 / 6 months	Calculation	XXX
Total Phosphorus (mg/L)	1 / 6 months	Grab	XXX
pH (S.U.)	1 / 6 months	Grab	9.0
BOD5 (mg/L)	1 / 6 months	Grab	30
Total Suspended Solids (TSS) (mg/L)	1 / 6 months	Grab	100
Chemical Oxygen Demand (COD) (mg/L)	1 / 6 months	Grab	120
Nitrate + Nitrite-Nitrogen (mg/L)	1 / 6 months	Grab	XXX
Oil and Grease (mg/L)	1 / 6 months	Grab	30

(1) Total nitrogen is the sum of total Kjeldahl-N (TKN) plus nitrite-nitrate as N (NO_2+NO_3-N), where TKN and NO_2+NO_3-N are measured in the same sample.

6*.4.4 Anti-Backsliding*

This is a proposed outfall. Anti-backsliding is not applicable.

7.0 Effluent Limitations and Monitoring Requirements

7.1 Existing Effluent Limitations and Monitoring Requirements

The existing effluent limits and monitoring requirements are as follows:

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	Report Inst Min	XXX	XXX	XXX	1/week	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5	XXX	1.2	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	168.9	253.3	XXX	90.0	135.0	180	1/week	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	84.5	126.7	XXX	45.0	67.5	90	1/week	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) Industrial Influent	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Suspended Solids	120.0	188.0	XXX	65.0	100.0	100	1/week	24-Hr Composite
Total Suspended Solids Industrial Influent	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Dissolved Solids	XXX	Report	XXX	Report Daily Max	XXX	XXX	1/year	24-Hr Composite
Oil and Grease	XXX	XXX	XXX	15.0	30.0	30	1/month	Grab
Fecal Coliform (No./100 ml) Nov 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Oct 31	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Total Nitrogen	XXX	Report	XXX	Report Daily Max	XXX	XXX	1/quarter	24-Hr Composite

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Ammonia-Nitrogen Nov 1 - Apr 30	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	20.6	31.0	XXX	11.0	16.5	22	1/week	24-Hr Composite
Total Phosphorus	XXX	Report	XXX	Report Daily Max	XXX	XXX	1/quarter	24-Hr Composite

Compliance Sampling Location: Outfall 001

7.2 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. Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	Report Inst Min	XXX	XXX	XXX	1/week	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5	XXX	1.2	1/day	Grab
Biochemical Oxygen Demand (BOD5) Nov 1 - Apr 30	153.9	263.1	XXX	123.0	200	200	1/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) May 1 - Oct 31	77.0	131.6	XXX	61.6	105.2	123.2	1/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Industrial Influent	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Suspended Solids	81.3	125.1	XXX	65.0	100.0	100	1/week	24-Hr Composite
Total Suspended Solids Industrial Influent	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Dissolved Solids	XXX	Report	XXX	XXX	Report	XXX	1/year	24-Hr Composite
Oil and Grease	XXX	XXX	XXX	15.0	30.0	30	1/month	Grab
Fecal Coliform (No./100 ml) Nov 1 - Apr 30	XXX	XXX	XXX	2000	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Oct 31	XXX	XXX	XXX	200	XXX	1000	1/week	Grab
Total Nitrogen	XXX	Report	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Ammonia-Nitrogen May 1 - Oct 31	13.8	20.6	XXX	11.0	16.5	22	1/week	24-Hr Composite
Total Phosphorus	XXX	Report	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Iron, Dissolved	XXX	XXX	XXX	XXX	7.0	XXX	1/week	Grab
PFOA (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
PFOS (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
PFBS (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
HFPO-DA (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab

Compliance Sampling Location: Outfall 001

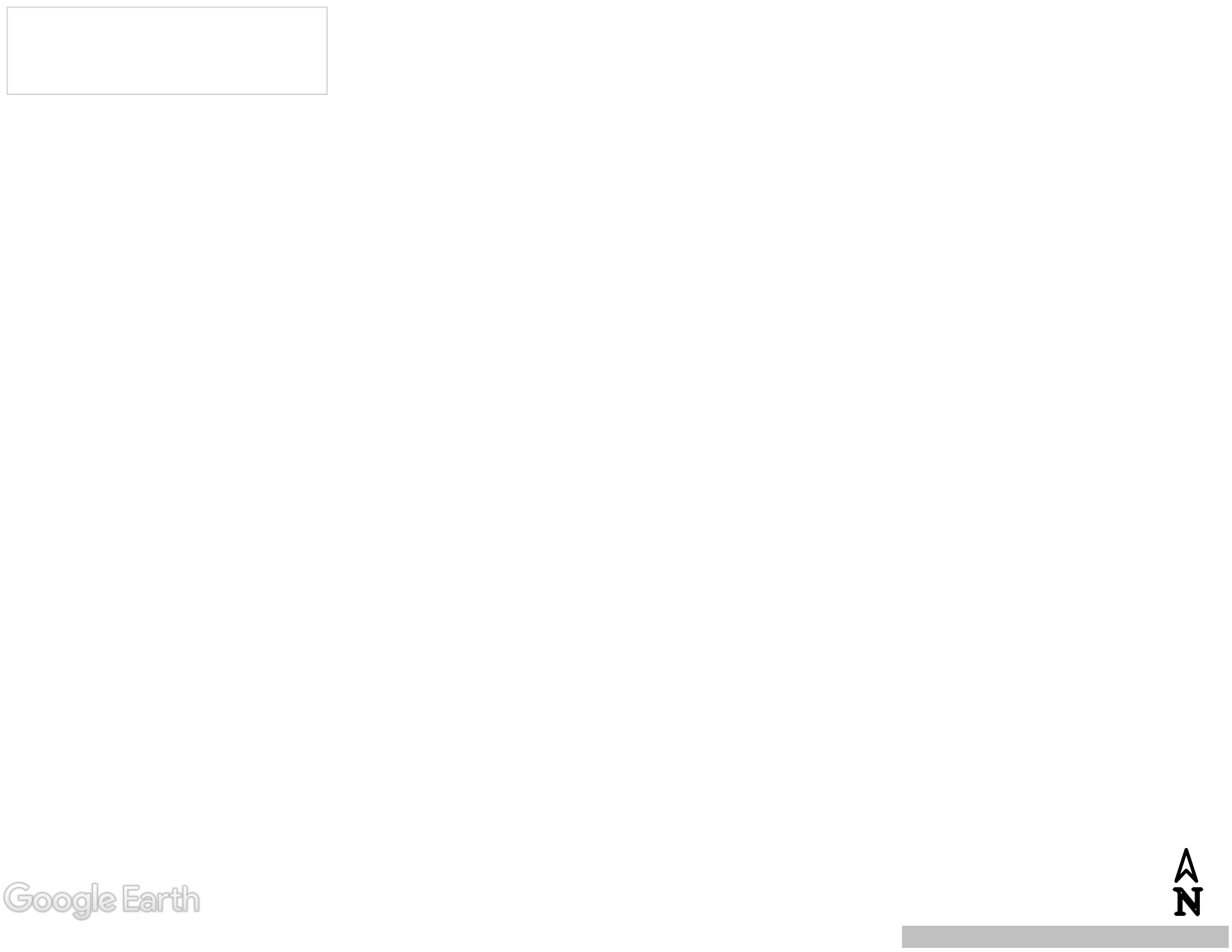
Outfall 002, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Biochemical Oxygen Demand (BOD5)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Chemical Oxygen Demand (COD)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Nitrate-Nitrite as N	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Calculation
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Compliance Sampling Location: Outfall 002

ATTACHMENT A

Facility and Discharge Location Map


Google Earth
N

ATTACHMENT B

Q7-10 Calculations and Supporting Documentation

ATTACHMENT B.1

StreamStats Output

StreamStats Output Report

Latitude 40.82865
Longitude -77.63119

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	8.8992	degrees
BSLOPDRAW	Unadjusted basin slope, in degrees	9.1267	degrees
BSLPDRPA20	Unadjusted basin slope, in degrees, from PA v1	9.1488	degrees
CARBON	Percentage of area of carbonate rock	16.65	percent
CENTROXA83	X coordinate of the centroid, in NAD_1983_Albers, meters	27829.7041	meters
CENTROYA83	Basin centroid horizontal (y) location in NAD 1983 Albers	197043.5095	meters
DRN	Drainage quality index from STATSGO	3.1	dimensionless
DRNAREA	Area that drains to a point on a stream	29.1	square miles
ELEV	Mean Basin Elevation	1549	feet
ELEVMAX	Maximum basin elevation	2418	feet
FOREST	Percentage of area covered by forest	67.8737	percent
GLACIATED	Percentage of basin area that was historically covered by glaciers		percent
IMPNLCD01	Percentage of impervious area determined from NLCD 2001 impervious dataset	0.7069	percent
LC01DEV	Percentage of land-use from NLCD 2001 classes 21-24	6.9218	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	6.8561	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	0.697	percent
LONG_OUT	Longitude of Basin Outlet		degrees
MAXTEMP	Mean annual maximum air temperature over basin area from PRISM 1971-2000 800-m grid	57.5	degrees F
OUTLETXA83	X coordinate of the outlet, in NAD_1983_Albers,meters	31105.3152	meters
OUTLETYA83	Y coordinate of the outlet, in NAD_1983_Albers, meters	203095.124	meters
PRECIP	Mean Annual Precipitation	41	inches
ROCKDEP	Depth to rock	4.5	feet
STORAGE	Percentage of area of storage (lakes ponds reservoirs wetlands)	0.55	percent
STRDEN	Stream Density -- total length of streams divided by drainage area	1.63	miles per square mile
STRMTOT	total length of all mapped streams (1:24,000-scale) in the basin	47.48	miles
URBAN	Percentage of basin with urban development	0.3105	percent

StreamStats Output Report

Latitude	40.84249
Longitude	-77.60303

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	7.848	degrees
BSLOPDRAW	Unadjusted basin slope, in degrees	8.0694	degrees
BSLPDRPA20	Unadjusted basin slope, in degrees, from PA v1	8.1485	degrees
CARBON	Percentage of area of carbonate rock	34.7	percent
CENTROXA83	X coordinate of the centroid, in NAD_1983_Albers, meters	1524948.411	meters
CENTROYA83	Basin centroid horizontal (y) location in NAD 1983 Albers	2123411.141	meters
DRN	Drainage quality index from STATSGO	3.13	dimensionless
DRNAREA	Area that drains to a point on a stream	39.8	square miles
ELEV	Mean Basin Elevation	1488.2	feet
ELEVMAX	Maximum basin elevation	2417.9	feet
FOREST	Percentage of area covered by forest	55.956	percent
GLACIATED	Percentage of basin area that was historically covered by glaciers	0	percent
IMPNLCD01	Percentage of impervious area determined from NLCD 2001 impervious dataset	1.177	percent
LC01DEV	Percentage of land-use from NLCD 2001 classes 21-24	8.4732	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	8.5811	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	1.2413	percent
LONG_OUT	Longitude of Basin Outlet	-77.6030797	decimal degrees
MAXTEMP	Mean annual maximum air temperature over basin area from PRISM 1971-2000 800-m grid	57.69	degrees F
OUTLETXA83	X coordinate of the outlet, in NAD_1983_Albers,meters	1528935	meters
OUTLETYA83	Y coordinate of the outlet, in NAD_1983_Albers, meters	2129805	meters
PRECIP	Mean Annual Precipitation	41.4	inches
ROCKDEP	Depth to rock	4.7	feet
STORAGE	Percentage of area of storage (lakes ponds reservoirs wetlands)	0.41	percent
STRDEN	Stream Density -- total length of streams divided by drainage area	1.474	miles per square mile
STRMTOT	total length of all mapped streams (1:24,000-scale) in the basin	58.668	miles
URBAN	Percentage of basin with urban development	1.2664	percent

ATTACHMENT B.2

Reference Gage Information

USGS
science for a changing world

Prepared in cooperation with the Pennsylvania Department of Environmental Protection

Selected Streamflow Statistics for Streamgage Locations in and near Pennsylvania

Open-File Report 2011-1070

U.S. Department of the Interior
U.S. Geological Survey

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

[Latitude and Longitude in decimal degrees; mi^2, square miles]

Streamgage number	Streamgage name	Latitude	Longitude	Drainage area (mi^2)	Regulated[1]
01541303	West Branch Susquehanna River at Hyde, Pa.	41.005	-78.457	474	Y
01541308	Bradley Run near Ashville, Pa.	40.509	-78.584	6.77	N
01541500	Clearfield Creek at Dimeling, Pa.	40.972	-78.406	371	Y
01542000	Moshannon Creek at Osceola Mills, Pa.	40.850	-78.268	68.8	N
01542500	WB Susquehanna River at Karthaus, Pa.	41.118	-78.109	1,462	Y
01542810	Waldy Run near Emporium, Pa.	41.579	-78.293	5.24	N
01543000	Driftwood Branch Sinnemahoning Creek at Sterling Run, Pa.	41.413	-78.197	272	N
01543500	Sinnemahoning Creek at Sinnemahoning, Pa.	41.317	-78.103	685	N
01544000	First Fork Sinnemahoning Creek near Sinnemahoning, Pa.	41.402	-78.024	245	Y
01544500	Kettle Creek at Cross Fork, Pa.	41.476	-77.826	136	N
01545000	Kettle Creek near Westport, Pa.	41.320	-77.874	233	Y
01545500	West Branch Susquehanna River at Renovo, Pa.	41.325	-77.751	2,975	Y
01545600	Young Womans Creek near Renovo, Pa.	41.390	-77.691	46.2	N
01546000	North Bald Eagle Creek at Milesburg, Pa.	40.942	-77.794	119	N
01546400	Spring Creek at Houserville, Pa.	40.834	-77.828	58.5	N
01546500	Spring Creek near Axemann, Pa.	40.890	-77.794	87.2	N
01547100	Spring Creek at Milesburg, Pa.	40.932	-77.786	142	N
01547200	Bald Eagle Creek below Spring Creek at Milesburg, Pa.	40.943	-77.786	265	N
01547500	Bald Eagle Creek at Blanchard, Pa.	41.052	-77.604	339	Y
01547700	Marsh Creek at Blanchard, Pa.	41.060	-77.606	44.1	N
01547800	South Fork Beech Creek near Snow Shoe, Pa.	41.024	-77.904	12.2	N
01547950	Beech Creek at Monument, Pa.	41.112	-77.702	152	N
01548005	Bald Eagle Creek near Beech Creek Station, Pa.	41.081	-77.549	562	Y
01548500	Pine Creek at Cedar Run, Pa.	41.522	-77.447	604	N
01549000	Pine Creek near Waterville, Pa.	41.313	-77.379	750	N
01549500	Blockhouse Creek near English Center, Pa.	41.474	-77.231	37.7	N
01549700	Pine Creek below Little Pine Creek near Waterville, Pa.	41.274	-77.324	944	Y
01550000	Lycoming Creek near Trout Run, Pa.	41.418	-77.033	173	N
01551500	WB Susquehanna River at Williamsport, Pa.	41.236	-76.997	5,682	Y
01552000	Loyalsock Creek at Loyalsockville, Pa.	41.325	-76.912	435	N
01552500	Muncy Creek near Sonestown, Pa.	41.357	-76.535	23.8	N
01553130	Sand Spring Run near White Deer, Pa.	41.059	-77.077	4.93	N
01553500	West Branch Susquehanna River at Lewisburg, Pa.	40.968	-76.876	6,847	Y
01553700	Chillisquaque Creek at Washingtonville, Pa.	41.062	-76.680	51.3	N
01554000	Susquehanna River at Sunbury, Pa.	40.835	-76.827	18,300	Y
01554500	Shamokin Creek near Shamokin, Pa.	40.810	-76.584	54.2	N
01555000	Penns Creek at Penns Creek, Pa.	40.867	-77.048	301	N
01555500	East Mahantango Creek near Dalmatia, Pa.	40.611	-76.912	162	N
01556000	Frankstown Branch Juniata River at Williamsburg, Pa.	40.463	-78.200	291	N
01557500	Bald Eagle Creek at Tyrone, Pa.	40.684	-78.234	44.1	N
01558000	Little Juniata River at Spruce Creek, Pa.	40.613	-78.141	220	N
01559000	Juniata River at Huntingdon, Pa.	40.485	-78.019	816	LF
01559500	Standing Stone Creek near Huntingdon, Pa.	40.524	-77.971	128	N
01559700	Sulphur Springs Creek near Manns Choice, Pa.	39.978	-78.619	5.28	N
01560000	Dunning Creek at Belden, Pa.	40.072	-78.493	172	N

ATTACHMENT B.3

DFLOW Output

RESULTS: USGS 01555000 Penns Creek at Penns Creek, PA

Start	1995
End	2026

Flow Statistic	Flow Value	Percentile	1-day Excur. per 3 yr.
1Q10	41.55	0.21%	1
7Q10	43.286	0.38%	1.5
30Q10	48.824	1.30%	2
Harmonic Mean	201.1	32.83%	N/A
Harmonic Mean, Adjusted	201.1	32.83%	N/A

ATTACHMENT B.4

Q7-10 Calculation

Low-Flow (Q_{7-10}) Calculation

Facility: **Hanover Foods Corp.**
NPDES Permit No. **PA0010430**

Gage Information

Drainage Area: **301** mi^2
Q_{7-10}: **43.3** cfs
LFY: **0.144** cfsm

Outfall Information

Drainage Area: **29.1** mi^2
Q_{7-10}: **4.19** cfs

Downstream Locations

RMI: **2.1**
Drainage Area: **39.8** mi^2
Q_{7-10}: **5.725** cfs

RMI:
Drainage Area: mi^2
Q_{7-10}: cfs

RMI:
Drainage Area: mi^2
Q_{7-10}: cfs

RMI:
Drainage Area: mi^2
Q_{7-10}: cfs

RMI:
Drainage Area: mi^2
Q_{7-10}: cfs

RMI:
Drainage Area: mi^2
Q_{7-10}: cfs

RMI:
Drainage Area: mi^2
Q_{7-10}: cfs

RMI:
Drainage Area: mi^2
Q_{7-10}: cfs

ATTACHMENT C

ELG Calculations

Subpart D, Frozen Potato Products Subcategory

Average Annual Production = 8,087,546 (lbs/yr)

§ 407.42 BPCT

Effluent Characteristic	Effluent Limitations			
	Maximum Daily	Calculated Limit	Monthly Average	Calculated Limit
BOD5	2.8	62.0	1.4	31.0
TSS	2.8	62.0	1.4	31.0

§ 407.47 BCT

Effluent Characteristic	Effluent Limitations			
	Maximum Daily	Calculated Limit	Monthly Average	Calculated Limit
BOD5	2.8	62.0	1.4	31.0
TSS	2.8	62.0	1.4	31.0

Subpart G, Canned and Preserved Vegetables Subcategory

Average Annual Production = 10,196,414 (lbs/yr)

§ 407.72 BPCT

Effluent Characteristic	Effluent Limitations			
	Maximum Daily	Calculated Limit	Monthly Average	Calculated Limit
BOD5	0.9	25.1	0.59	16.5
TSS	1.64	45.8	1.23	34.4

§ 407.77 BCT

Effluent Characteristic	Effluent Limitations			
	Maximum Daily	Calculated Limit	Monthly Average	Calculated Limit
BOD5	0.9	25.1	0.59	16.5
TSS	1.64	45.8	1.23	34.4

Subpart G, Canned and Preserved Vegetables Subcategory

Average Annual Production = 14,847,464 (lbs/yr)

§ 407.72 BPCT

Effluent Characteristic	Effluent Limitations			
	Maximum Daily	Calculated Limit	Monthly Average	Calculated Limit
BOD5	0.9	36.6	0.59	24.0
TSS	1.64	66.7	1.23	50.0

§ 407.77 BCT

Effluent Characteristic	Effluent Limitations			
	Maximum Daily	Calculated Limit	Monthly Average	Calculated Limit
BOD5	0.9	36.6	0.59	24.0
TSS	1.64	66.7	1.23	50.0

Subpart G, Canned and Preserved Vegetables Subcategory

Average Annual Production = 14,962,643 (lbs/yr)

§ 407.72 BPCT

Effluent Characteristic	Effluent Limitations			
	Maximum Daily	Calculated Limit	Monthly Average	Calculated Limit
BOD5	1.51	61.9	0.87	35.7
TSS	2.67	109.5	1.8	73.8

§ 407.77 BCT

Effluent Characteristic	Effluent Limitations			
	Maximum Daily	Calculated Limit	Monthly Average	Calculated Limit
BOD5	1.51	61.9	0.87	35.7
TSS	2.67	109.5	1.8	73.8

Subpart G, Canned and Preserved Vegetables Subcategory

Average Annual Production = 11,305,694 (lbs/yr)

§ 407.72 BPCT

Effluent Characteristic	Effluent Limitations			
	Maximum Daily	Calculated Limit	Monthly Average	Calculated Limit
BOD5	2.5	77.4	1.51	46.8
TSS	4.48	138.8	3.13	97.0

§ 407.77 BCT

Effluent Characteristic	Effluent Limitations			
	Maximum Daily	Calculated Limit	Monthly Average	Calculated Limit
BOD5	2.5	77.4	1.51	46.8
TSS	4.48	138.8	3.13	97.0

Production Line	BOD5 (lbs/day)		TSS (lbs/day)	
	Daily Maximum	**Monthly Average**	**Daily Maximum**	**Monthly Average**
Pasta	62.0	31.0	62.0	31.0
Entrees	25.1	16.5	45.8	34.4
Root Crops	36.6	24.0	66.7	50.0
Green Vegetables	61.9	35.7	109.5	73.8
Dry Beans	77.4	46.8	138.8	97.0
TOTAL	*263.1*	*153.9*	*422.8*	*286.2*

ATTACHMENT D

Model Input / Output Data

ATTACHMENT D.1

WQM 7.0 Input / Output Data

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
06A	18377	SINKING CREEK	**4.400**	1117.00	29.10	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	0.144	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	8.00	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
Hanover Foods	PA0010430	0.1500	0.1500	0.1500	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	104.60	2.00	0.00	1.50
Dissolved Oxygen	2.80	8.24	0.00	0.00
NH3-N	11.00	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
06A	18377	SINKING CREEK	**2.150**	1093.00	39.80	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (ºC)	Tributary pH	Stream Temp (ºC)	Stream pH
Q7-10	0.144	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	8.00	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 (ºC)	Disc pH
		0.0000	0.0000	0.0000	0.000	0.00	7.00

Parameter Data

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

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
06A	18377	SINKING CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (ºC)	Analysis pH
Q7-10 Flow												
4.400	4.19	0.00	4.19	.2321	0.00202	.663	31.27	47.18	0.21	0.644	20.26	7.83
Q1-10 Flow												
4.400	4.02	0.00	4.02	.2321	0.00202	NA	NA	NA	0.21	0.658	20.27	7.83
Q30-10 Flow												
4.400	4.74	0.00	4.74	.2321	0.00202	NA	NA	NA	0.23	0.604	20.23	7.85

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	0.96	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.13	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
06A	18377	SINKING CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
4.400	Hanover Foods	5.26	22	5.26	22	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
4.400	Hanover Foods	.94	11	.94	11	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)		
4.40	Hanover Foods	104.6	104.6	11	11	2.8	2.8	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
06A	18377	SINKING CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (ºC)	Analysis pH
4.400	0.150	20.262	7.832
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
31.266	0.663	47.179	0.213
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
7.38	0.956	0.58	0.714
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.957	4.123	Tsivoglou	6
Reach Travel Time (days)			
0.644			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.064	6.94	0.55	7.54
0.129	6.52	0.53	7.25
0.193	6.12	0.50	7.07
0.258	5.75	0.48	6.97
0.322	5.41	0.46	6.93
0.387	5.08	0.44	6.93
0.451	4.77	0.42	6.95
0.515	4.48	0.40	7.00
0.580	4.21	0.38	7.07
0.644	3.96	0.36	7.14

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
06A	18377	SINKING CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
4.400	Hanover Foods	PA0010430	0.150	CBOD5	104.6		
				NH3-N	11	22	
				Dissolved Oxygen			2.8

ATTACHMENT D.2

TMS Input / Output Data

Discharge Information

Instructions | Discharge | Stream

Facility: **Hanover Foods Corp. Centre Hall Facility** NPDES Permit No.: **PA0010430** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **IW Process Effluent with ELG**

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
0.15	274	7.79						

					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		1040									
	Chloride (PWS)	mg/L		280									
	Bromide	mg/L	<	0.011									
	Sulfate (PWS)	mg/L		41.8									
	Fluoride (PWS)	mg/L	<	0.05									
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	µg/L											
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L											
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	µg/L											
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

Group 3	Carbon Tetrachloride	µg/L	<										
	Chlorobenzene	µg/L											
	Chlorodibromomethane	µg/L	<										
	Chloroethane	µg/L	<										
	2-Chloroethyl Vinyl Ether	µg/L	<										
	Chloroform	µg/L	<										
	Dichlorobromomethane	µg/L	<										
	1,1-Dichloroethane	µg/L	<										
	1,2-Dichloroethane	µg/L	<										
	1,1-Dichloroethylene	µg/L	<										
	1,2-Dichloropropane	µg/L	<										
	1,3-Dichloropropylene	µg/L	<										
	1,4-Dioxane	µg/L	<										
	Ethylbenzene	µg/L	<										
	Methyl Bromide	µg/L	<										
	Methyl Chloride	µg/L	<										
	Methylene Chloride	µg/L	<										
	1,1,2,2-Tetrachloroethane	µg/L	<										
	Tetrachloroethylene	µg/L	<										
	Toluene	µg/L	<										
	1,2-trans-Dichloroethylene	µg/L	<										
	1,1,1-Trichloroethane	µg/L	<										
	1,1,2-Trichloroethane	µg/L	<										
	Trichloroethylene	µg/L	<										
	Vinyl Chloride	µg/L	<										
Group 4	2-Chlorophenol	µg/L	<										
	2,4-Dichlorophenol	µg/L	<										
	2,4-Dimethylphenol	µg/L	<										
	4,6-Dinitro-o-Cresol	µg/L	<										
	2,4-Dinitrophenol	µg/L	<										
	2-Nitrophenol	µg/L	<										
	4-Nitrophenol	µg/L	<										
	p-Chloro-m-Cresol	µg/L	<										
	Pentachlorophenol	µg/L	<										
	Phenol	µg/L	<										
	2,4,6-Trichlorophenol	µg/L	<										
Group 5	Acenaphthene	µg/L	<										
	Acenaphthylene	µg/L	<										
	Anthracene	µg/L	<										
	Benzidine	µg/L	<										
	Benzo(a)Anthracene	µg/L	<										
	Benzo(a)Pyrene	µg/L	<										
	3,4-Benzofluoranthene	µg/L	<										
	Benzo(ghi)Perylene	µg/L	<										
	Benzo(k)Fluoranthene	µg/L	<										
	Bis(2-Chloroethoxy)Methane	µg/L	<										
	Bis(2-Chloroethyl)Ether	µg/L	<										
	Bis(2-Chloroisopropyl)Ether	µg/L	<										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<										
	4-Bromophenyl Phenyl Ether	µg/L	<										
	Butyl Benzyl Phthalate	µg/L	<										
	2-Chloronaphthalene	µg/L	<										
	4-Chlorophenyl Phenyl Ether	µg/L	<										
	Chrysene	µg/L	<										
	Dibenzo(a,h)Anthrancene	µg/L	<										
	1,2-Dichlorobenzene	µg/L	<										
	1,3-Dichlorobenzene	µg/L	<										
	1,4-Dichlorobenzene	µg/L	<										
	3,3-Dichlorobenzidine	µg/L	<										
	Diethyl Phthalate	µg/L	<										
	Dimethyl Phthalate	µg/L	<										
	Di-n-Butyl Phthalate	µg/L	<										
	2,4-Dinitrotoluene	µg/L	<										

	2,6-Dinitrotoluene	µg/L	<											
	Di-n-Octyl Phthalate	µg/L	<											
	1,2-Diphenylhydrazine	µg/L	<											
	Fluoranthene	µg/L	<											
	Fluorene	µg/L	<											
	Hexachlorobenzene	µg/L	<											
	Hexachlorobutadiene	µg/L	<											
	Hexachlorocyclopentadiene	µg/L	<											
	Hexachloroethane	µg/L	<											
	Indeno(1,2,3-cd)Pyrene	µg/L	<											
	Isophorone	µg/L	<											
	Naphthalene	µg/L	<											
	Nitrobenzene	µg/L	<											
	n-Nitrosodimethylamine	µg/L	<											
	n-Nitrosodi-n-Propylamine	µg/L	<											
	n-Nitrosodiphenylamine	µg/L	<											
	Phenanthrene	µg/L	<											
	Pyrene	µg/L	<											
	1,2,4-Trichlorobenzene	µg/L	<											
Group 6	Aldrin	µg/L	<											
	alpha-BHC	µg/L	<											
	beta-BHC	µg/L	<											
	gamma-BHC	µg/L	<											
	delta BHC	µg/L	<											
	Chlordane	µg/L	<											
	4,4-DDT	µg/L	<											
	4,4-DDE	µg/L	<											
	4,4-DDD	µg/L	<											
	Dieldrin	µg/L	<											
	alpha-Endosulfan	µg/L	<											
	beta-Endosulfan	µg/L	<											
	Endosulfan Sulfate	µg/L	<											
	Endrin	µg/L	<											
	Endrin Aldehyde	µg/L	<											
	Heptachlor	µg/L	<											
	Heptachlor Epoxide	µg/L	<											
	PCB-1016	µg/L	<											
	PCB-1221	µg/L	<											
	PCB-1232	µg/L	<											
	PCB-1242	µg/L	<											
	PCB-1248	µg/L	<											
	PCB-1254	µg/L	<											
	PCB-1260	µg/L	<											
	PCBs, Total	µg/L	<											
	Toxaphene	µg/L	<											
	2,3,7,8-TCDD	ng/L	<											
Group 7	Gross Alpha	pCi/L												
	Total Beta	pCi/L	<											
	Radium 226/228	pCi/L	<											
	Total Strontium	µg/L	<											
	Total Uranium	µg/L	<											
	Osmotic Pressure	mOs/kg												

Stream / Surface Water Information

Hanover Foods Corp. Centre Hall Facility, NPDES Permit No. PA0010430, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Sinking Creek**

No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	018377	4.4	1117	29.1			Yes
End of Reach 1	018377	2.1	1080	39.8			Yes

Q $_{7\text{-}10}$

Location	RMI	LFY (cfs/mi²)*	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	4.4	0.144										110	7		
End of Reach 1	2.1	0.144										110	7		

Q $_{h}$

Location	RMI	LFY (cfs/mi²)	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	4.4														
End of Reach 1	2.1														

Model Results

Hanover Foods Corp. Centre Hall Facility, NPDES Permit No. PA0010430, Outfall 001

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

☑ ***Hydrodynamics***

Q_{7-10}

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
4.4	4.19		4.19	0.232	0.003	0.656	30.509	46.48	0.221	0.636	39.022
2.1	5.73		5.7312								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
4.4	25.99		25.99	0.232	0.003	1.436	30.509	21.239	0.598	0.235	13.189
2.1	34.174		34.17								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.620 Analysis Hardness (mg/l): 123.45 Analysis pH: 7.03

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	

☑ ***CFC*** CCT (min): 39.022 PMF: 1 Analysis Hardness (mg/l): 118.61 Analysis pH: 7.02

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	

☑ ***THH*** CCT (min): 39.022 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	

☑ ***CRL*** CCT (min): 13.189 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	

☑ ***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

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	Discharge Conc < TQL

ATTACHMENT D.3

TRC Evaluation

TRC EVALUATION

Input appropriate values in B4:B8 and E4:E7

2.31	= Q stream (cfs)	0.5	= CV Daily
0.225	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	0.62	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)	0	=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 1.332	1.3.2.iii	WLA cfc = 2.075
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.496	5.1d	LTA_cfc = 1.206

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	

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)