pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northcentral Regional Office
CLEAN WATER PROGRAM

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

Application Type	**Renewal**	Application No.	**PA0114596**
Facility Type	**Industrial**	APS ID	**1000702**
Major / Minor	**Minor**	Authorization ID	**1323531**

Applicant and Facility Information

Applicant Name	**Avery Dennison**	Facility Name	**Avery Dennison Lock Haven Adhesives Plant**
Applicant Address	171 Draketown Road Mill Hall, PA 17751-8608	Facility Address	171 Draketown Road Mill Hall, PA 17751-8608
Applicant Contact	John Somers	Facility Contact	John Somers
Applicant Phone	(570) 893-6856	Facility Phone	(570) 893-6856
Client ID	44212	Site ID	251657
SIC Code	2891	Municipality	Bald Eagle Township
SIC Description	Manufacturing - Adhesives And Sealants	County	Clinton
Date Application Received	August 11, 2020	EPA Waived?	Yes
Date Application Accepted	August 25, 2020	If No, Reason	

Purpose of Application: Application for the renewal of the existing individual NPDES permit.

Summary of Review

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.

In a separate application, Avery Dennison Performance Polymers proposed an expansion to their current facility that will include new buildings, storage areas, and both paved and unpaved parking areas. This project is not expected to create an increase to the overall runoff volume given that there is a proposed infiltration basin. A new outfall (007) is proposed that will ultimately discharge to Bald Eagle Creek. This outfall will be assigned the same stormwater monitoring requirements as the other existing outfalls.

Approve	Deny	Signatures	Date
X		*Jonathan P. Peterman* Jonathan P. Peterman / Project Manager	August 9, 2021
X		*Nicholas W. Hartranft* Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	August 16, 2021

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.1
Latitude	41° 7’ 0”	Longitude	77° 28’ 2”
Quad Name	Mill Hall	Quad Code	1026
Wastewater Description:	Non-Contact Cooling Water		
Receiving Waters	Bald Eagle Creek (WWF)	Stream Code	22412
NHD Com ID	67175178	RMI	4.1
Drainage Area	765	Yield (cfs/mi^2)	0.2687
Q_{7-10} Flow (cfs)	0 (dry drainage ditch)	Q_{7-10} Basis	N/A
Q_{7-10} (cfs) (@ Bald Eagle)	205	Q_{7-10} Basis (@ Bald Eagle)	Gage No. 01548005
Elevation (ft)	541	Slope (ft/ft)	0.003
Watershed No.	9-C	Chapter 93 Class.	WWF
Existing Use	WWF	Existing Use Qualifier	N/A
Exceptions to Use	None.	Exceptions to Criteria	None.
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	N/A		
Source(s) of Impairment	N/A		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	PA American White Deer		
PWS Waters	West Branch Susquehanna River	Flow at Intake (cfs)	682
PWS RMI	10.5	Distance from Outfall (mi)	60

Notes: The discharge is conveyed from the facility to Bald Eagle Creek via a drainage ditch. Therefore, the discharge point, for water quality purposes, will be considered to be Bald Eagle Creek. A comparative stream analysis was conducted using an upstream gage (01548005) to determine the Q_{7-10} at the receiving stream. The updated Q_{7-10} data was obtained from the updated stream gage information obtained from *Stuckey, M.H., and Roland, M.A., 2011, Selected Streamflow Statistics for Streamgage Locations In and Near Pennsylvania*. The Q_{7-10} calculations, which are attached in Appendix A, indicate that the Q_{7-10} at Bald Eagle Creek is 205 cfs.

Changes Since Last Permit Issuance: None.

TMDL Impairment

The Departments Geographical Information System indicates that UNT to Bald Eagle Creek and Bald Eagle Creek are attaining their use and there are no associated TMDLs for this segment. However, the 2014 Pennsylvania Integrated Water Quality Monitoring and Assessment: Report - Streams, Category 5 Waterbodies, Pollutants Requiring a TMDL, indicates that there are impairments listed for Bald Eagle Creek caused by upstream impoundments and acid mine drainage. The associated TMDL date is listed as 2017. Therefore, yearly monitoring for metals (aluminum, iron, and manganese) was proposed and conducted. This sampling provided a characterization of the waste stream which will allow the Department to ensure that the discharge does not contribute to an instream excursion and provide data for the development of the TMDL. Based on the sampling, it was determined that this discharge does not cause or contribute to an instream excursion and monitoring is no longer necessary.

Chesapeake Bay Requirements

This facility's discharge is classified as a "non-significant" IW given that the gross effluent discharges do not exceed 75 lbs/day of TN or 25 lbs/day of TP. The permittee will be not be required to monitor and report TN and TP at outfall 001 throughout the permit term in accordance with the Phase II WIP Chesapeake Bay Strategy for non-significant industrial waste facilities. Non-significant IW dischargers should receive monitoring requirements in permits if there is any possibility of a net increase in nutrients as a result of outfall 001 and monitoring frequencies should be established using the general guidance in the Phase II WIP Supplement. It was determined that there is no potential that the associated facility processes could create a net increase in TN or TP.

Existing Effluent Limitations and Monitoring Requirements

Outfall 001 - Existing Limits

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	1/week	Estimate
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/week	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.5	XXX	1.17	1/week	Grab
Temperature (ºF)	XXX	XXX	XXX	XXX	110	XXX	1/week	I-S
Oil and Grease	XXX	XXX	XXX	15	XXX	30	1/quarter	Grab
Total Aluminum	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Iron	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Manganese	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab

The existing effluent limits for Outfall 001 were based on a design flow of 0.1 MGD.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.1
Latitude 41° 07' 00" **Longitude** 77° 28' 02"
Wastewater Description: NCCW

Technology-Based Limitations

The following effluent standards for industrial waste will apply, subject to water quality analysis and BPJ where applicable:

Parameter	Limit (mg/l) (Average Monthly)	Limit (mg/l) (Daily Maximum)	Limit (mg/l) (Inst. Maximum)	Federal Regulation	State Regulation
Oil & Grease	15	-	30	-	§95.2(2)(ii)
pH	6-9 at all times	-		§133.102(c)	§95.2

There are no applicable technology-based effluent limitations for non-contact cooling water. However, 25 Pa. Code § 95.2 does set forth effluent standards for pH, dissolved iron, and oil and grease for discharges of industrial wastewater. The characteristics of the blowdown do not show a potential to negatively impact the receiving surface water.

Water Quality-Based Limitations

WQM 7.0 for Windows, Version 1.0b, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen
This model is not required given that there are no existing limits and the discharge BOD concentration provided in the application is less than 25 mg/L.

Toxics Management Spreadsheet
This model is a single discharge wasteload allocation program for toxics that uses a mass-balance water quality analysis to determine recommended water quality-based effluent limits. The model incorporates consideration for mixing, first-order decay and other factors to computes a Wasteload Allocation (WLA) for each applicable criterion. Finally, the model determines a maximum water quality-based effluent limitation (WQBEL) for each parameter and outputs the more stringent of the WQBEL or the input concentration. The output of which is the recommends average monthly and maximum daily effluent limitations.

Sampling for pollutant Groups was submitted with the application. This sampling information and the receiving stream information was entered into the Toxics Management Spreadsheet. The modeling results indicated that no limits or monitoring requirements are needed for these parameters. Refer to Appendix B for the Toxics Management Spreadsheet.

Comments: None.

Best Professional Judgement (BPJ) Limitations

Comments: None.

Additional Considerations

None.

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 the abovementioned 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) and/or BPJ.

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

Outfall 001 - Proposed Limits

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	1/week	Estimate
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/week	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.5	XXX	1.17	1/week	Grab
Temperature (ºF)	XXX	XXX	XXX	XXX	110	XXX	1/week	I-S
Oil and Grease	XXX	XXX	XXX	15	XXX	30	1/quarter	Grab

The proposed effluent limits for Outfall 001 were based on a design flow of 0.1 MGD.

Flow

The existing monitoring frequency (1/Week) and sample type (Estimate) for Flow correspond with the *Technical Guidance for the Development and Specification of Effluent Limitations* (362-0400-001) Table 6-4. Reporting of maximum daily flow and monthly average is appropriate for discharges of this type and volume.

pH

The existing permit limits for pH were implemented in accordance with 25 PA Code §95.2(1), which provide the basis of effluent limitations for pH, and shall remain. The existing monitoring frequency (1/Week) and sample type (grab) for pH correspond with the *Technical Guidance for the Development and Specification of Effluent Limitations* (362-0400-001) Table 6-4 which is appropriate for discharges of this type and volume.

Oil and Grease

The existing permit limits for oil and grease were implemented in accordance with 25 PA Code §95.2(2)(ii), which provide the basis of effluent limitations for oil and grease and shall remain. The existing monitoring frequency (1/quarter) and sample type (grab) for oil and grease is appropriate for discharges of this type and volume.

Total Residual Chlorine (TRC)

A TRC model evaluation was conducted by using the existing effluent limitations as input. (See the Appendix for the spreadsheet results.) The TRC evaluation reveals that existing effluent limits of 0.5 mg/L (Average Monthly) and 1.17 mg/L (Instantaneous Maximum) are protective of water quality and will remain. The existing monitoring sample type (Grab) and monitoring frequency of (1/ Week) for TRC is appropriate for discharges of this type and volume and will remain.

Temperature

As stipulated the Department's *Implementation Guidance for Temperature Criteria* (391-2000-017), thermal discharges may not exceed 110°F (43.3°C) at any point accessible to the general public. A monitoring frequency (1/Week) and sample type (I-S) for temperature correspond with the *Technical Guidance for the Development and Specification of Effluent Limitations* (362-0400-001) Table 6-4, are appropriate for discharges of this type and volume, and will remain. Additionally, the Part C conditions will include special condition C15 – Temperature 2 Degree Hourly Change.

Stormwater Requirements

The industrial activities associated with Avery Dennison Performance Polymers' facility are identified in 40 CFR 122.26(b)(14)(ix) and thus the facility required to obtain an NPDES permit to discharge stormwater into waters of the Commonwealth of Pennsylvania. The facility is classified under SIC Codes 2891- Establishments primarily engaged in manufacturing industrial and household adhesives, glues, caulking compounds, sealants, and linoleum, tile, and rubber cements from vegetable, animal, or synthetic plastics materials, purchased or produced in the same establishment. The following stormwater requirements will be incorporated into this permit consistent with Appendix F of the PAG-03 General NPDES Permit and anti-backsliding regulations:

DISCHARGE PARAMETER	SAMPLE TYPE	MEASUREMENT FREQUENCY	BENCHMARK VALUES
pH (S.U.)	1 Grab	1/6 months	XXX
Chemical Oxygen Demand (COD) (mg/L)	1 Grab	1/6 months	120
Total Suspended Solids (TSS) (mg/L)	1 Grab	1/6 months	100
Nitrate + Nitrite-Nitrogen (mg/L)	1 Grab	1/6 months	XXX
Total Phosphorus (mg/L)	1 Grab	1/6 months	XXX
Total Lead (mg/L)	1 Grab	1/6 months	XXX
Total Zinc (mg/L)	1 Grab	1/6 months	XXX
Total Iron (mg/L)	1 Grab	1/6 months	XXX
Total Aluminum (mg/L)	1 Grab	1/6 months	XXX

Note: There are no associated ELGs for this facility. The other discharge parameters will be applied in part A of the permit for each outfall (002 through 007). Additionally, the permit will contain Part C condition 123A related to Industrial Stormwater Requirements.

Chemical Additives

Avery Dennison has proposed a total of five (5) new products in their chemical additive usage sheet. The following chemical additives are listed on the usage sheet and on the approved chemical additive list: Spectrus OX909, Spectrus NX1100, Spectrus BD1550, and Continuum AT209. However, Foamtrol AF2082 was listed on the usage sheet and it is not on the approved chemical additive list. The applicant will be notified of this potential non-compliance in the draft permit cover letter. Additionally, the permittee will be required to address the following deficiency. The permittee must submit the calculations for the proposed chemical additives during the draft period. The compliance section will be notified of this issue. Additionally, Part "C" condition C 118 will be placed in the draft permit to address chemical additives.

Compliance History

Summary of Inspections -The most recent Clean Water Program onsite inspections for this facility were a Compliance Evaluation Inspection on 4/8/21. The inspection reports indicated that the facility was operating normally.

WMS Query Summary -A WMS Query was run at *Reports - Violations & Enforcements – Open Violations for Client Report* to determine whether there are any unresolved violations associated with the client that will affect issuance of the permit (per CSL Section 609). This query revealed that there were no unresolved violations.

eDMRs Summary - Upon review of the eDMR's, the facility has generally been in compliance with the existing effluent limits. A slight exceedance was recorded on 05/31/19 for $CBOD_5$. This was resolved by the next month's report.

Compliance History

DMR Data for Outfall 001 (from May 1, 2020 to April 30, 2021)

Parameter	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20
Flow (MGD) Average Monthly		0.0036	0.0036	0.0036	0.0038	0.00501	0.0129	0.0037	0.0234	0.0037	0.0047	0.0036
Flow (MGD) Daily Maximum		0.0036	0.0036	0.0036	0.0048	0.00924	0.041	0.0041	0.0468	0.0039	0.008	0.0036
pH (S.U.) Minimum		7.25	6.46	6.68	6.18	6.9	6.86	6.97	6.91	6.97	6.81	7.23
pH (S.U.) Maximum		7.74	7.28	7.44	7.24	7.35	7.56	7.8	7.21	7.3	7.31	7.33
TRC (mg/L) Average Monthly		0.28	0.23	0.13	0.03	0.02	0.14	0.0004	0.06	0.04	0.05	0.07
TRC (mg/L) Instantaneous Maximum		0.52	0.30	0.26	0.06	0.03	0.602	0.02	0.13	0.07	0.07	0.12
Temperature (ºF) Daily Maximum		68.54	63.5	69.8	61.9	72.5	77.2	85.64	90.3	89.06	83.1	75.02
Oil and Grease (mg/L) Average Monthly		< 4.8			< 4.8			< 4.8			< 4.8	
Oil and Grease (mg/L) Instantaneous Maximum		< 4.8			< 4.8			< 4.8			< 4.8	
Total Aluminum (mg/L) Average Monthly					< 0.05							
Total Iron (mg/L) Average Monthly					0.346							
Total Manganese (mg/L) Average Monthly					< 0.005							

DMR Data for Outfall 002 (from May 1, 2020 to April 30, 2021)

Parameter	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20
pH (S.U.) Daily Maximum					7.7						7.3	
CBOD5 (mg/L) Daily Maximum					10.6						< 3.7	
COD (mg/L) Daily Maximum					107						33.6	

TSS (mg/L) Daily Maximum					23						< 4	
Oil and Grease (mg/L) Daily Maximum					< 4.8						< 4.8	
TKN (mg/L) Daily Maximum					2.1						2.1	
Total Phosphorus (mg/L) Daily Maximum					0.37						0.036	
Total Iron (mg/L) Daily Maximum					1.34						0.15	

DMR Data for Outfall 003 (from May 1, 2020 to April 30, 2021)

Parameter	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20
pH (S.U.) Daily Maximum					7.7						7.6	
CBOD5 (mg/L) Daily Maximum					7.6						< 37.2	
COD (mg/L) Daily Maximum					77.1						100	
TSS (mg/L) Daily Maximum					33						< 4	
Oil and Grease (mg/L) Daily Maximum					< 4.8						< 4.8	
TKN (mg/L) Daily Maximum					2.6						1.8	
Total Phosphorus (mg/L) Daily Maximum					0.41						0.052	
Total Iron (mg/L) Daily Maximum					0.814						0.696	

DMR Data for Outfall 004 (from May 1, 2020 to April 30, 2021)

Parameter	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20
pH (S.U.) Daily Maximum					7.2						7.3	
CBOD5 (mg/L) Daily Maximum					< 2.2						3.8	
COD (mg/L) Daily Maximum					< 25						< 25	
TSS (mg/L) Daily Maximum					5						21	

Oil and Grease (mg/L) Daily Maximum					< 4.8						< 4.8	
TKN (mg/L) Daily Maximum					< 1						< 1	
Total Phosphorus (mg/L) Daily Maximum					0.23						0.054	
Total Iron (mg/L) Daily Maximum					0.0841						2.03	

DMR Data for Outfall 005 (from May 1, 2020 to April 30, 2021)

Parameter	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20
pH (S.U.) Daily Maximum					7.8						7.8	
CBOD5 (mg/L) Daily Maximum					3.3						< 3.7	
COD (mg/L) Daily Maximum					54.5						42.5	
TSS (mg/L) Daily Maximum					88						14	
Oil and Grease (mg/L) Daily Maximum					< 4.8						< 4.8	
TKN (mg/L) Daily Maximum					1.3						< 1	
Total Phosphorus (mg/L) Daily Maximum					0.25						0.03	
Total Iron (mg/L) Daily Maximum					2.36						0.274	

DMR Data for Outfall 006 (from May 1, 2020 to April 30, 2021)

Parameter	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20
pH (S.U.) Daily Maximum					6.8						7.6	
CBOD5 (mg/L) Daily Maximum					< 2.2						< 3.7	
COD (mg/L) Daily Maximum					< 25						26.9	
TSS (mg/L) Daily Maximum					5						< 4	
Oil and Grease (mg/L) Daily Maximum					< 4.8						< 4.8	

TKN (mg/L) Daily Maximum					< 1						1.3	
Total Phosphorus (mg/L) Daily Maximum					0.22						< 0.03	
Total Iron (mg/L) Daily Maximum					0.144						0.137	

	Tools and References Used to Develop Permit
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment **B**)
☒	TRC Model Spreadsheet (see Attachment **C**)
☐	Temperature Model Spreadsheet (see Attachment)
☒	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☒	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☒	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☒	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☒	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☒	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:

APPENDIX A

STREAM DATA AND Q^{7-10} ANALYSIS

Q_{7-10} Analysis

Facility: Avery Dennison
Outfall: 001

NPDES Permit No.: PA0114596
RMI at Outfall: 4.1

Reference Stream Gage Information	
Stream Name	Bald Eagle Creek
Reference Gage	1548005
Station Name	Bald Eagle Creek near Beech Creek Station, Pa
Gage Drainage Area (sq. mi.)	562
Q_{7-10} at gage (cfs)	151
Yield Ratio (cfs/mi^2)	0.2687

Was BaSE Used?	No
Correlation From Ecoflows	

Check Dilution Ratio		
Discharge at Outfall (wf) (mgd)	0.1	
	sf (cfs)	wf (cfs)
Dilution Ratio = sf/wf	205.5427	0.154722875
Dilution Ratio =	1328.457117 to 1	

Q_{7-10} at Outfall	
Drainage Area at site (sq. mi.)	765
Q_{7-10} at discharge site (cfs)	205.5427
Q_{7-10} at discharge site (mgd)	132.8457
Low Flow Yield Ratio of 0.1 cfs/mi^2 (For Approx. Comparison Only)	
Q_{7-10} at discharge site (cfs)	76.5000
Q_{7-10} at discharge site (mgd)	49.4432

Q_{7-10} at Downstream Reach #1	
Drainage Area at Reach (sq. mi.)	772
RMI	1.92
Q_{7-10} at reach (cfs)	207.4235
Q_{7-10} at reach (mgd)	134.0613
	Elev. 538'

Q_{7-10} at Downstream Reach #2	
Drainage Area at Reach (sq. mi.)	[Drainage Area @ Reach #2]
RMI	[RMI @ Reach #2]
Q_{7-10} at reach (cfs)	#VALUE!
Q_{7-10} at reach (mgd)	#VALUE!

Q_{7-10} at Downstream Reach #3	
Drainage Area at Reach (sq. mi.)	[Drainage Area @ Reach #3]
RMI	[RMI @ Reach #3]
Q_{7-10} at reach (cfs)	#VALUE!
Q_{7-10} at reach (mgd)	#VALUE!

Basin Characteristics Report at Site

Date: Wed Aug 19, 2015 8:48:19 AM GMT-4
NAD 1983 Latitude: 41.117 (41 07 01)
NAD 1983 Longitude: -77.4653 (-77 27 55)

Label	Value
DRNAREA	765
STRMTOT	1235.74
STRDEN	1.62
BSLOPD	9.1
CENTROIDX	22872.5
CENTROIDY	219953.7
OUTLETX	44895
OUTLETY	235195
LONG_OUT	-77.46536
BSLOPDRAW	9.35
FOREST	70
PRECIP	40
URBAN	3
GLACIATED	0
ROCKDEP	4.7
CARBON	31
STORAGE	1
ELEV	1348.2
MAXTEMP	57
DRN	3.1
IMPNLCD01	2
LC01DEV	9
LC11IMP	1.86
LC11DEV	9.75

Basin Map at Outfall

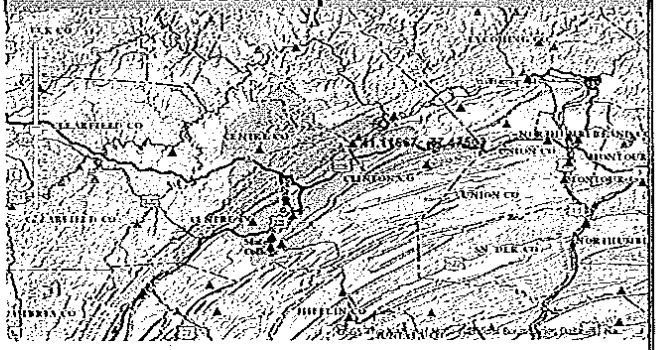

Table 1. List of U.S. Geological Survey streamgage locations in and near Pennsylvania with updated streamflow statistics.—Continued

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

Streamgage number	Streamgage name	Latitude	Longitude	Drainage area (mi²)	Regulated[1]
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

Table 2. Selected low-flow statistics for streamgage locations in and near Pennsylvania.—Continued

[ft³/s; cubic feet per second; —, statistic not computed; <, less than]

Streamgage number	Period of record used in analysis[1]	Number of years used in analysis	1-day, 10-year (ft³/s)	7-day, 10-year (ft³/s)	7-day, 2-year (ft³/s)	30-day, 10-year (ft³/s)	30-day, 2-year (ft³/s)	90-day, 10-year (ft³/s)
01546000	1912–1934	17	1.8	2.2	6.8	3.7	12.1	11.2
01546400	1986–2008	23	13.5	14.0	19.6	15.4	22.3	18.7
01546500	1942–2008	67	26.8	29.0	41.3	31.2	44.2	33.7
01547100	1969–2008	40	102	105	128	111	133	117
01547200	1957–2008	52	99.4	101	132	106	142	115
01547500	[2]1971–2008	38	28.2	109	151	131	172	153
01547500	[3]1956–1969	14	90.0	94.9	123	98.1	131	105
01547700	1957–2008	52	.5	.6	2.7	1.1	3.9	2.2
01547800	1971–1981	11	1.6	1.8	2.4	2.1	2.9	3.5
01547950	1970–2008	39	12.1	13.6	28.2	17.3	36.4	23.8
01548005	[2]1971–2000	25	142	151	206	178	241	223
01548005	[3]1912–1969	58	105	114	147	125	165	140
01548500	1920–2008	89	21.2	24.2	50.1	33.6	68.6	49.3
01549000	1910–1920	11	26.0	32.9	78.0	46.4	106	89.8
01549500	1942–2008	67	.6	.8	2.5	1.4	3.9	2.6
01549700	1959–2008	50	33.3	37.2	83.8	51.2	117	78.4
01550000	1915–2008	94	6.6	7.6	16.8	11.2	24.6	18.6
01551500	[2]1963–2008	46	520	578	1,020	678	1,330	919
01551500	[3]1901–1961	61	400	439	742	523	943	752
01552000	1927–2008	80	20.5	22.2	49.5	29.2	69.8	49.6
01552500	1942–2008	67	.9	1.2	3.1	1.7	4.4	3.3
01553130	1969–1981	13	1.0	1.1	1.5	1.3	1.8	1.7
01553500	[2]1968–2008	41	760	838	1,440	1,000	1,850	1,470
01553500	[3]1941–1966	26	562	619	880	690	1,090	881
01553700	1981–2008	28	9.1	10.9	15.0	12.6	17.1	15.2
01554000	[2]1981–2008	28	1,830	1,990	3,270	2,320	4,210	3,160
01554000	[3]1939–1979	41	1,560	1,630	2,870	1,880	3,620	2,570
01554500	1941–1993	53	16.2	22.0	31.2	25.9	35.7	31.4
01555000	1931–2008	78	33.5	37.6	58.8	43.4	69.6	54.6
01555500	1931–2008	78	4.9	6.5	18.0	9.4	24.3	16.6
01556000	1918–2008	91	43.3	47.8	66.0	55.1	75.0	63.7
01557500	1946–2008	63	2.8	3.2	6.3	4.2	8.1	5.8
01558000	1940–2008	69	56.3	59.0	79.8	65.7	86.2	73.7
01559000	1943–2008	66	104	177	249	198	279	227
01559500	1931–1958	28	9.3	10.5	15.0	12.4	17.8	15.8
01559700	1963–1978	16	.1	.1	.2	.1	.3	.2
01560000	1941–2008	68	8.5	9.4	15.6	12.0	20.2	16.2
01561000	1932–1958	27	.4	.5	1.6	.8	2.5	1.7
01562000	1913–2008	96	64.1	67.1	106	77.4	122	94.5
01562500	1931–1957	27	1.1	1.6	3.8	2.3	5.4	3.7
01563200	[2]1974–2008	35	—	—	—	112	266	129
01563200	[3]1948–1972	25	10.3	28.2	86.1	64.5	113	95.5
01563500	[2]1974–2008	35	384	415	519	441	580	493
01563500	[3]1939–1972	34	153	242	343	278	399	333
01564500	1940–2008	69	3.6	4.2	10.0	6.2	14.4	10.6

APPENDIX B

TOXICS MANAGEMENT SPREADSHEET

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Avery Dennison** NPDES Permit No.: **PA0114596** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Non-Contact Cooling Water**

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
0.1	72.8	7						

					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		308									
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L	<	50									
	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		346									
	Total Lead	µg/L											
	Total Manganese	µg/L	<	5									
	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											

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Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Avery Dennison, NPDES Permit No. PA0114596, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Bald Eagle Creek**

No. Reaches to Model: 1

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	022412	4.1	541	765			Yes
End of Reach 1	022412	1.92	538	772			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	4.1	0.1	205									100	7		
End of Reach 1	1.92	0.1	207												

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	4.1														
End of Reach 1	1.92														

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Avery Dennison, NPDES Permit No. PA0114596, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.062 Analysis Hardness (mg/l): 99.671 Analysis pH: 7.00

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	
Total Aluminum	0	0		0	750	750	62,025	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	

☑ ***CFC*** CCT (min): 720 PMF: 0.427 Analysis Hardness (mg/l): 99.952 Analysis pH: 7.00

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	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	1,989,218	WQC = 30 day average; PMF = 1
Total Manganese	0	0		0	N/A	N/A	N/A	

☑ ***THH*** CCT (min): 720 PMF: 0.427 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	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	567,034	

☑ ***CRL*** CCT (min): 720 PMF: 0.663 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	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	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
Total Aluminum	39,755	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	1,989,218	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	567,034	µg/L	Discharge Conc ≤ 10% WQBEL

APPENDIX C

TRC MODEL

1A	B	C	D	E	F	G
2	**TRC EVALUATION**	Avery Dennison PA0114596				
3	Input appropriate values in B4:B8 and E4:E7					
4	205	= Q stream (cfs)		0.5	= CV Daily	
5	0.1	= Q discharge (MGD)		0.5	= CV Hourly	
6	4	= no. samples		1	= AFC_Partial Mix Factor	
7	0.3	= Chlorine Demand of Stream		1	= CFC_Partial Mix Factor	
8	0	= Chlorine Demand of Discharge		15	= AFC_Criteria Compliance Time (min)	
9	0.5	= BAT/BPJ Value		720	= CFC_Criteria Compliance Time (min)	
	0	= % Factor of Safety (FOS)		0	=Decay Coefficient (K)	
10	Source	Reference	AFC Calculations		Reference	CFC Calculations
11	TRC	1.3.2.iii	WLA afc = 422.740		1.3.2.iii	WLA cfc = 412.131
12	PENTOXSD TRG	5.1a	LTAMULT afc = 0.373		5.1c	LTAMULT cfc = 0.581
13	PENTOXSD TRG	5.1b	LTA_afc= 157.523		5.1d	LTA_cfc = 239.594
14						
15	Source		Effluent Limit Calculations			
16	PENTOXSD TRG	5.1f	AML MULT = 1.720			
17	PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500		BAT/BPJ	
18			INST MAX LIMIT (mg/l) = 1.170			

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)**