pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0228095**
Facility Type	**Industrial**	APS ID	**1020695**
Major / Minor	**Minor**	Authorization ID	**1321999**

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

Applicant and Facility Information

Applicant Name	**Tulpehocken Spring Water Co.**	Facility Name	**Tulpehocken Spring Water Co.**
Applicant Address	750 Point Township Drive	Facility Address	750 Point Township Drive
	Northumberland, PA 17857-8789		Northumberland, PA 17857-8789
Applicant Contact	Greg Miles	Facility Contact	Greg Miles
Applicant Phone	(800) 346-9284	Facility Phone	(800) 346-9284
Client ID	59009	Site ID	518639
SIC Code	2000	Municipality	Point Township
SIC Description	Food and Kindred Products	County	Northumberland
Date Application Received	July 28, 2020	EPA Waived?	Yes
Date Application Accepted	August 5, 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.

The discharge is distilled water that is used in the final stage of a bottle washing operation and all other process wash water goes to the sanitary sewer.

Approve	Deny	Signatures	Date
X		*Jonathan P. Peterman* Jonathan P. Peterman / Project Manager	March 30, 2021
X		*Nicholas W. Hartranft* Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	March 31, 2021

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.0027
Latitude	40º 54' 32.61"	Longitude	-76º 45' 51.12"
Quad Name		Quad Code	
Wastewater Description:	IW Process Effluent without ELG		
Receiving Waters	Unnamed Stream	Stream Code	N/A
NHD Com ID	65643213	RMI	0.3
Drainage Area	8.44 mi^2 at Lithia Spring Creek	Yield (cfs/mi^2)	0.06
Q_{7-10} Flow (cfs)	0.5	Q_{7-10} Basis	Stream Gage (01554000)
Elevation (ft)	450	Slope (ft/ft)	n/a
Watershed No.	5-E	Chapter 93 Class.	TSF-MF
Existing Use	TSF-MF	Existing Use Qualifier	n/a
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Not Assessed (man-made canal)		
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 Water in Milton, PA		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	728
PWS RMI	10.5	Distance from Outfall (mi)	4

Changes Since Last Permit Issuance: The Q_{7-10} was determined at the confluence of the canal with Lithia Spring Creek. 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*. A comparative analysis was not conducted given that a stream gage (01554000) is located immediately downstream of the discharge location. The associated stream data is attached in Appendix A.

Other Comments: None.

Anti-Backsliding

In accordance with 40 CFR 122.44(l)(1) and (2), this permit does not contain effluent limitations, standards, or conditions that are less stringent than the previous permit.

Chesapeake Bay Requirements

This facility 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 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 facility processes, 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 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	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/month	Estimate
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	2/month	Grab
Total Suspended Solids	XXX	XXX	XXX	30	60	75	2/month	Grab
Total Dissolved Solids	XXX	XXX	XXX	500	750 Daily Max	XXX	2/month	Grab
MBAS	XXX	XXX	XXX	Report Daily Max	XXX	0.5	2/month	Grab

The existing effluent limits for Outfall 001 were based on a design flow of 0.0027 MGD

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.0027
Latitude 40º 54' 33.10" **Longitude** -76º 45' 51.40"
Wastewater Description: IW Process Effluent without ELG

Technology-Based Limitations

The following technology-based limitations 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
pH	6-9 at all times	-		§133.102(c)	§95.2

Effluent Limits Guidelines (ELGs)

There are no ELGs associated with this facilities processes.

Water Quality-Based Limitations

To establish whether or not water-quality based effluent limitations (WQBELs) are required, the Department models in-stream conditions. In order to determine limitations for toxics, the Department utilizes the Toxics Management Spreadsheet.

Toxics Management Spreadsheet

Toxics Management Spreadsheet 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.

A “Reasonable Potential Analysis” (See Appendix B) determined that the following parameters were candidates for monitoring or limitations shown below:

Parameter	Effluent Limit (µg/l)	WQBEL (µg/l)	WQBEL Criterion	Permit Recommendation
Total Copper	870	1,815	AFC	Monitor

Comments: Monitoring for Total Copper will be required on an annual basis.

Best Professional Judgement (BPJ) Limitations
Comments: The existing limitations for total dissolved solids (TDS), total suspended solids (TSS), and methylene blue active substance (MBAS) were previously established as BPJ limitations.

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	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/month	Estimate
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	2/month	Grab
Total Suspended Solids	XXX	XXX	XXX	30	60	75	2/month	Grab
Total Dissolved Solids	XXX	XXX	XXX	500	750 Daily Max	XXX	2/month	Grab
MBAS	XXX	XXX	XXX	Report Daily Max	XXX	0.5	2/month	Grab
Total Copper (µg/l)	XXX	XXX	XXX	Report Annual Average	XXX	XXX	1/year	Grab

The proposed effluent limits for Outfall 001 were based on a design flow of 0.0027 MGD.

General Information
The associated mass-based limits (lbs/day) for all parameters were based on the formula: design flow (average annual) (MGD) x concentration limit (mg/L) at design flow x conversion factor (8.34). All effluent limits were then rounded down in accordance with the rounding rules established in the *Technical Guidance for the Development and Specification of Effluent Limitations (362-0400-001)*, Chapter 5 - Specifying Effluent Limitations in NPDES Permits. The existing monitoring frequencies and sample types for these parameters generally correspond with the *Technical Guidance for the Development and Specification of Effluent Limitations* (362-0400-001) Table 6-4 and will remain.

Flow
Reporting of maximum daily flow and monthly average is appropriate for this type of facility and consistent with similar facility types.

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.

Total Dissolved Solids, Total Suspended Solids, and MBAS
The existing limitations for total dissolved solids (TDS), total suspended solids (TSS), and methylene blue active substance (MBAS) were previously established as BPJ limitations.

Total Copper
Given that Total Copper was determined to be a pollutant of concern, monitoring will be required on an annual basis.

Other Comments: None.

Stormwater Requirements

The facility has a Standard Industrial Classification (SIC) code of 2089. The stormwater from the site is covered under a no exposure certificate.

Compliance History

Summary of Inspections -The last facility inspection was conducted on 2/4/2020 by the Department which revealed that there were no issues and 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 no open violations.

Summary of e-DMR- A review of the e-DMR data over the previous year reveals no effluent violations listed in the compliance section below.

Compliance History

DMR Data for Outfall 001 (from February 1, 2020 to January 31, 2021)

Parameter	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20	FEB-20
Flow (MGD) Average Monthly	0.0012	0.0012	0.0012	0.0012	0.0014	0.0014	0.0014	0.0014	0.0015	0.0014	0.0014	0.0015
Flow (MGD) Daily Maximum	0.0013	0.0013	0.0013	0.0013	0.0016	0.0015	0.0016	0.0015	0.0016	0.0016	0.0016	0.0016
pH (S.U.) Minimum	6.8	6.8	6.8	6.8	6.8	6.8	6.7	6.8	6.7	6.9	6.7	6.8
pH (S.U.) Maximum	6.8	6.8	6.8	6.8	6.8	6.9	6.8	6.9	6.8	6.7	6.9	6.7
TSS (mg/L) Average Monthly	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5	< 5.0	2.5	< 5.0
TSS (mg/L) Weekly Average	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	5.0	< 5.0
Total Dissolved Solids (mg/L) Average Monthly	121	57	67	124	107	109	126	111	84	120	215	121
Total Dissolved Solids (mg/L) Daily Maximum	146	62	76	144	128	112	186	116	142	124	296	166
MBAS (mg/L) Daily Maximum	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

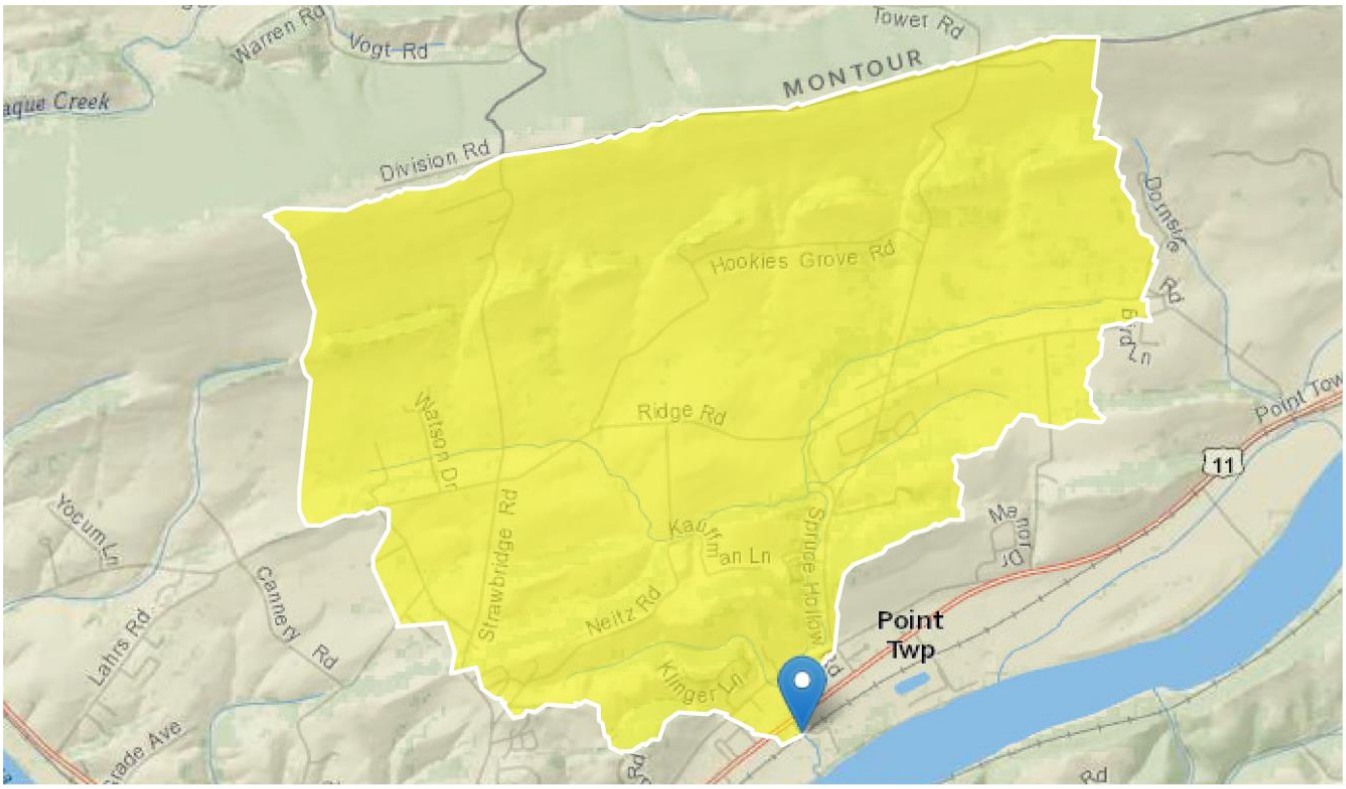
Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment **B**)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical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

APPENDIX A

Q_{7-10} ANALYSIS AND STREAM DATA

StreamStats Report

Region ID: PA
Workspace ID: PA20210329181348284000
Clicked Point (Latitude, Longitude): 40.90811, -76.76632
Time: 2021-03-29 14:14:05 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	8.44	square miles
PRECIP	Mean Annual Precipitation	41	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	1.7	miles per square mile
ROCKDEP	Depth to rock	4.4	feet
CARBON	Percentage of area of carbonate rock	13.74	percent

General Disclaimers

The delineation point is in an exclusion area. undefined

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	8.44	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
STRDEN	Stream Density	1.7	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.4	feet	3.32	5.65
CARBON	Percent Carbonate	13.74	percent	0	99

Low-Flow Statistics Flow Report [Low Flow Region 2]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

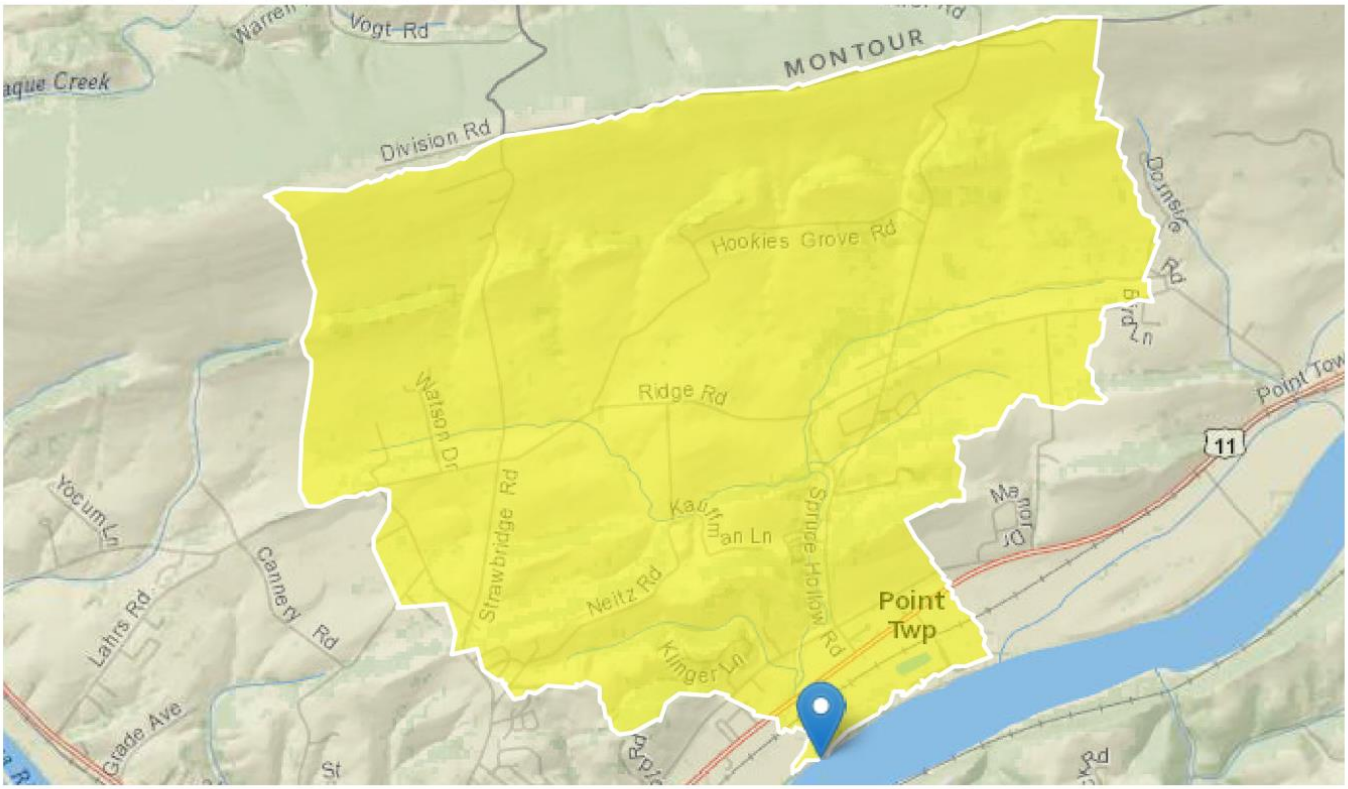
Statistic	Value	Unit	SE	SEp
7 Day 2 Year Low Flow	1.02	ft^3/s	38	38
30 Day 2 Year Low Flow	1.36	ft^3/s	33	33
7 Day 10 Year Low Flow	0.468	ft^3/s	51	51
30 Day 10 Year Low Flow	0.631	ft^3/s	46	46
90 Day 10 Year Low Flow	0.973	ft^3/s	36	36

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

StreamStats Report

Region ID: PA
Workspace ID: PA20210330151846628000
Clicked Point (Latitude, Longitude): 40.90510, -76.76484
Time: 2021-03-30 11:19:02 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	8.92	square miles
PRECIP	Mean Annual Precipitation	41	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	1.64	miles per square mile
ROCKDEP	Depth to rock	4.4	feet
CARBON	Percentage of area of carbonate rock	13	percent

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	8.92	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
STRDEN	Stream Density	1.64	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.4	feet	3.32	5.65
CARBON	Percent Carbonate	13	percent	0	99

Low-Flow Statistics Flow Report [Low Flow Region 2]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	SEp
7 Day 2 Year Low Flow	1.11	ft^3/s	38	38
30 Day 2 Year Low Flow	1.48	ft^3/s	33	33
7 Day 10 Year Low Flow	0.512	ft^3/s	51	51
30 Day 10 Year Low Flow	0.689	ft^3/s	46	46
90 Day 10 Year Low Flow	1.06	ft^3/s	36	36

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

APPENDIX B

TOXICS MANAGEMENT SPREADSHEET

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Tulpehocken Spring Water Co.** NPDES Permit No.: **PA0228095** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Bottle water rinse 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
0.0027	16	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		86									
	Chloride (PWS)	mg/L		2.4									
	Bromide	mg/L	<	0.6									
	Sulfate (PWS)	mg/L		4.1									
	Fluoride (PWS)	mg/L	<	0.2									
Group 2	Total Aluminum	µg/L		71									
	Total Antimony	µg/L		1									
	Total Arsenic	µg/L	<	1.5									
	Total Barium	µg/L		8.6									
	Total Beryllium	µg/L	<	0.5									
	Total Boron	µg/L	<	50									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L		1									
	Hexavalent Chromium	µg/L		0.29									
	Total Cobalt	µg/L	<	2.5									
	Total Copper	µg/L		870									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	13									
	Dissolved Iron	µg/L	<	60									
	Total Iron	µg/L		19									
	Total Lead	µg/L		0.55									
	Total Manganese	µg/L		1.1									
	Total Mercury	µg/L		0.0014									
	Total Nickel	µg/L		1.6									
	Total Phenols (Phenolics) (PWS)	µg/L		3									
	Total Selenium	µg/L	<	2									
	Total Silver	µg/L	<	0.5									
	Total Thallium	µg/L	<	0.5									
	Total Zinc	µg/L		52									
	Total Molybdenum	µg/L	<	1									
	Acrolein	µg/L											
	Acrylamide	µg/L											
	Acrylonitrile	µg/L											
	Benzene	µg/L											
	Bromoform	µg/L											

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Tulpehocken Spring Water Co., NPDES Permit No. PA0228095, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Lithia Spring 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	027289	0.3	438	8.44			Yes
End of Reach 1	027289	0	428	8.92			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	0.3	0.1										100	7		
End of Reach 1	0	0.1													

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	0.3														
End of Reach 1	0														

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Tulpehocken Spring Water Co., NPDES Permit No. PA0228095, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 9.391 PMF: 1 Analysis Hardness (mg/l): 99.586 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	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	152,298	
Total Antimony	0	0		0	1,100	1,100	223,370	
Total Arsenic	0	0		0	340	340	69,042	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	4,264,338	
Total Boron	0	0		0	8,100	8,100	1,644,816	
Total Cadmium	0	0		0	2.006	2.12	431	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	567.832	1,797	364,893	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	3,309	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	19,291	
Total Copper	0	0		0	13.387	13.9	2,832	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	64.291	81.2	16,492	Chem Translator of 0.792 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	334	Chem Translator of 0.85 applied
Total Nickel	0	0		0	466.597	468	94,939	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	3.194	3.76	763	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	13,199	
Total Zinc	0	0		0	116.770	119	24,245	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 9.391 PMF: 1 Analysis Hardness (mg/l): 99.586 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	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	44,674	
Total Arsenic	0	0		0	150	150	30,460	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	832,561	
Total Boron	0	0		0	1,600	1,600	324,902	
Total Cadmium	0	0		0	0.245	0.27	54.8	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	73.863	85.9	17,441	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	2,111	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	3,858	
Total Copper	0	0		0	8.924	9.3	1,888	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	304,596	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.505	3.16	643	Chem Translator of 0.792 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	184	Chem Translator of 0.85 applied
Total Nickel	0	0		0	51.824	52.0	10,555	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	1,013	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	2,640	
Total Zinc	0	0		0	117.725	119	24,245	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 9.391 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	1,137	
Total Arsenic	0	0		0	10	10.0	2,031	
Total Barium	0	0		0	2,400	2,400	487,353	
Total Boron	0	0		0	3,100	3,100	629,498	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	

Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	60,919	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	203,064	
Total Mercury	0	0		0	0.050	0.05	10.2	
Total Nickel	0	0		0	610	610	123,869	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	48.7	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 2.493 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

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

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	Report	Report	Report	Report	Report	µg/L	1,815	AFC	Discharge Conc > 10% WQBEL (no RP)

☑ ***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
Total Aluminum	97,617	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	1,137	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	487,353	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	324,902	µg/L	Discharge Conc < TQL
Total Cadmium	54.8	µg/L	Discharge Conc < TQL
Total Chromium (III)	17,441	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	2,111	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	3,858	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	60,919	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	304,596	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	643	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	203,064	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	10.2	µg/L	Discharge Conc ≤ 10% WQBEL
Total Nickel	10,555	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	1,013	µg/L	Discharge Conc < TQL
Total Silver	489	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	48.7	µg/L	Discharge Conc < TQL
Total Zinc	15,540	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS