pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0232491**
Facility Type	**Industrial**	APS ID	**978292**
Major / Minor	**Minor**	Authorization ID	**1247278**

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

Applicant and Facility Information

Applicant Name	**Brady Township - Troutville Borough Water Association**	Facility Name	**Brady Township Troutville Borough Water System**
Applicant Address	PO Box 126 Luthersburg, PA 15848	Facility Address	452 Main Street Troutville, PA 15866
Applicant Contact	Michael Kennis	Facility Contact	Bryan Hartzfeld
Applicant Phone	(814) 583-5048	Facility Phone	(814) 583-5048
Client ID	39552	Site ID	242515
SIC Code	4941	Municipality	Brady Township
SIC Description	Trans. & Utilities - Water Supply	County	Clearfield
Date Application Received	September 28, 2018	EPA Waived?	Yes
Date Application Accepted	October 10, 2018	If No, Reason	
Purpose of Application	Application for the renewal of an existing NPDES permit for the discharge of treated filter backwash.		

Summary of Review

Brady Township - Troutville Borough Water Association has submitted an application for the renewal of the existing NPDES Permit PA0232491 for the Department's 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 for this water treatment plant is generated from process wastewater produced during drinking water treatment.

Approve	Deny	Signatures	Date
X		Jonathan P. Peterman / Project Manager	September 11, 2019
		Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.006
Latitude	41º 1' 50.44"	Longitude	-78º 46' 24.13"
Quad Name	Du Bois	Quad Code	1015
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to East Branch Mahoning Creek (HQ-CWF)	Stream Code	48017
NHD Com ID	123857092	RMI	0.28
Drainage Area	N/A	Yield (cfs/mi^2)	N/A
Q_{7-10} Flow (cfs)	0, Intermittent Stream	Q_{7-10} Basis	N/A
Elevation (ft)	1580	Slope (ft/ft)	N/A
Watershed No.	17-D	Chapter 93 Class.	HQ-CWF
Existing Use	HQ-CWF	Existing Use Qualifier	N/A
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Impaired		
Cause(s) of Impairment	Metals, pH		
Source(s) of Impairment	Abandoned Mine Drainage		
TMDL Status	Final, 03/27/2007	Name	East Branch Mahoning Creek
Nearest Downstream Public Water Supply Intake	PA American Water Punxsutawney		
PWS Waters	East Branch Mahoning Creek	Flow at Intake (cfs)	17.4
PWS RMI	1.13	Distance from Outfall (mi)	8.0

Changes Since Last Permit Issuance: None.

Other Comments: Given the nature of the effluent, the design effluent limitations being implemented, the volume of discharge, and the distance from the outfall to the water intake, this facility is expected to have no impact on the public water supply. The Reasonable Potential Analysis and PENTOXSD data were derived using the Point of First Use (POFU) which was determined to be at the East Branch Mahoning Creek.

Treatment Facility Summary

Treatment Facility Name: Troutville Borough Water Treatment Plant
Treatment System Components:
- Iron/Manganese Filters
- Filter Backwash
- Settling Lagoon
- Outfall 001.

Changes Since Last Permit Issuance: None.
Other Comments: None

Chesapeake Bay Requirements

This facility is located in the Ohio River watershed and will not be subject to Chesapeake Bay requirements.

TMDL Impairment Discussion

East Branch Mahoning Creek TMDL (Segment EB02)
The Department's Geographic Information System (GIS) shows that the UNT to East Branch Mahoning Creek is impaired and a TMDL exists for the stream segment for metals due to acid drainage from abandoned coalmines. The TMDL addresses the three primary metals associated with acid mine drainage (iron, manganese, aluminum) and pH. There is no Waste Load Allocation (WLA) for this facility established in the TMDL. Sample data at point EB02 shows that UNT 48015 East Branch Mahoning Creek has a pH ranging between 6.8 and 7.1. There currently is not an entry for this segment on the Pa Section 303(d) list for impairment due to pH. All aluminum and iron data was found to be at less than detection limits. Because water quality standards were met, a TMDL for aluminum and iron wasn't necessary and the effluent limits for these values will be established in accordance with Guidance Document (392-2183-003. A TMDL for manganese and acidity has been calculated for this segment. In accordance with 40 CFR §122.44(d)(1)(i), effluent limitations for manganese will be implemented at §93.7 Specific Water Quality Standards requirements (1.0 mg/l) to ensure that this pollutant will not be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard.

Existing Effluent Limitations and Monitoring Requirements

Existing Limits – Outfall 001

Discharge Parameter	Limitations							
	Mass (lb/day)		Concentration (mg/L)				Monitoring Requirements	
	Monthly Average	Daily Maximum	Minimum	Average Monthly	Daily Max.	Instantaneous Maximum	Minimum Frequency	Sample Type
Flow (MGD)	Report	Report					1/ Week	Estimate
pH (Std. Units)			6.0			9.0	1/ Week	Grab
TSS				30	60	75	1/ Month	Grab
Aluminum				4.0	8.0	10.0	1/ Month	Grab
Total Iron				2.0	4.0	5.0	1/ Month	Grab
Total Manganese				1.0	2.0	2.5	1/ Month	Grab
TRC				0.5		1.6	1/ Day	Grab

*The existing effluent limits for Outfall 001 were based on a design flow of 0.006 MGD.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.006
Latitude 41º 1' 49.20" **Longitude** -78º 46' 25.40"
Wastewater Description: Filter backwash from the Water Treatment Plant

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)	Federal Regulation	State Regulation
Iron (Total)	1.5	3.0	-	§93.7
Manganese (Total)	1.0	2.0	-	§93.7
pH	6-9 at all times	-	§133.102(c)	§95.2
TRC	0.5	-	-	§92a.48

Parameter	Limit (mg/l) (Average Monthly)	Limit (mg/l) (Daily Maximum)	Basis
TSS	30	60	These limits are derived from Guidance Document (392-2183-003) *Technology-Based Control Requirements for Water Treatment Plant.*
Iron (Total)	2.0	4.0	
Aluminum (Total)	4.0	8.0	
Manganese (Total)	1.0	2.0	
TRC	0.5	1.0	

Comments: None.

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 PENTOXSD v2.0d model. The use of a WQM7.0 analysis is not required for this discharge type.

PENTOXSD for Windows Version 2.0d

PENTOXSD V2.0d 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.

In order to determine which parameters are required to be analyzed in the PENTOXSD model, a Toxics Screening Analysis is used to identify toxic pollutants of concern. In this particular case, sampling for pollutant Groups 1 and 2 was submitted with the application. These values were input into the Toxics Screening Analysis v2.7 spreadsheet to determine if each pollutant was a candidate for PENTOXSD modeling (pollutant of concern). Refer to Appendix B for the Toxics Screening Analysis v2.7.

The Toxics Screening Analysis v2.7 determines pollutants of concern using the following logic:

- All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, that are greater than the most stringent applicable water quality criterion were considered to be pollutants of concern.
- Also, where the maximum reported value in an application for a pollutant is less than the detection limit using the most sensitive analytical method listed in Chapter 16, the parameter is not a parameter of concern, even if the maximum reported value exceeds the applicable Chapter 93 criterion.
- Where the maximum reported values in an application for a parameter is less than the detection limit for some analytical method other than the most sensitive analytical method listed in Chapter 16, the parameter is a pollutant of concern if the maximum reported value exceeds the Chapter 93 criterion, even if the value is reported as “non-detect.”

The PENTOXSD model was then run for all parameters of concern to evaluate reasonable potential (RP) for other toxic pollutants to cause an excursion above water quality standards. See Appendix C for the PENTOXSD model input/output. The most stringent WQBEL recommended by the model was then entered back into the same Toxics Screening Analysis v2.7 spreadsheet in order to determine which action to take regarding the pollutant. The permit recommendations of Monitor, Establish Limits, or to take no action (-) are established in the Toxics Screening Analysis v2.7 spreadsheet for each pollutant based off of the following logic:

- Establish average monthly and IMAX limits in the draft permit where the maximum reported concentration exceeds 50% of the WQBEL.
- For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.
- For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10% - 50% of the WQBEL.

A “Reasonable Potential Analysis” (See Appendix B) determined that the no parameters were candidates for monitoring or limitations.

Comments: None.

Best Professional Judgement (BPJ) Limitations
Comments: None Required.

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.

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.

Proposed Limits - Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date

Discharge Parameter	Limitations							
	Mass (lb/day)		Concentration (mg/L)				Monitoring Requirements	
	Monthly Average	Daily Maximum	Minimum	Average Monthly	Daily Max.	Instantaneous Maximum	Minimum Frequency	Sample Type
Flow (MGD)	Report	Report					1/ Week	Estimate
pH (Std. Units)			6.0			9.0	1/ Week	Grab
TSS				30	60	75	1/ Month	Grab
Aluminum				4.0	8.0	10.0	1/ Month	Grab
Total Iron				2.0	4.0	5.0	1/ Month	Grab
Total Manganese				1.0	2.0	2.5	1/ Month	Grab
TRC				0.5		1.6	1/ Day	Grab

*The proposed effluent limits for Outfall 001 were based on a design flow of 0.006 MGD.

Flow
The existing monitoring frequency (1/ Week) and sample type (Estimate) for Flow will remain.

pH
CFR Title 40 §133.102(c) and 25 PA Code §95.2(1) provide the basis of effluent limitations for pH.

Total Suspended Solids (TSS)
The existing TSS technology-based effluent limits have been implemented in accordance with DEP Guidance Document (392-2183-003) *Technology-Based Control Requirements for Water Treatment Plants* and shall remain.

Total Aluminum
No TMDL for aluminum on this discharge segment. There are currently no limits given that the facility does not use alum in its treatment processes. Given that both facilities discharge to impaired streams (metals) and this facility should have no issues meeting this limit, these technology-based effluent limits will be implemented in accordance with DEP Guidance Document (392-2183-003) *Technology-Based Control Requirements for Water Treatment Plants*.

Total Manganese, Total Iron
A TMDL for manganese and acidity has been calculated for this associated discharge segment. In accordance with 40 CFR §122.44(d)(1)(i), effluent limitations for manganese will be implemented at §93.7 Specific Water Quality Standards requirements (1.0 mg/l) to ensure that this pollutant will not be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard. These limits also correspond to the technology-based limits (BPT) will be implemented in accordance with DEP Guidance Document (392-2183-003) *Technology-Based Control Requirements for Water Treatment Plants*. Since a TMDL for Iron has not been calculated for this segment, the technology-based limits (BPT) will be implemented in accordance with DEP Guidance Document (392-2183-003).

Total Residual Chlorine (TRC)
The Guidance Document (392-2183-003) stipulates that the monthly average limit for TRC should be 0.5 mg/L, but it also stipulates that the technology limit for TRC is required by former Section 93.5 of Title 25 of the Departments Regulations. It also refers to Section 93.5 and the Implementation Guidance for Total Residual Chlorine (TRC) Regulation for details on how to impose TRC limitations. The TRC model evaluation was conducted using the existing technology-based limit of 0.5 mg/l and the results indicate that the existing limit is protective of water quality. The existing TRC effluent limits will remain.

The existing monitoring frequencies and sample types for the abovementioned parameters are consistent with other water treatment plant wastewater discharges and the *Technical Guidance for the Development and Specification of Effluent Limitations* (362-0400-001) Table 6-3. The existing requirements will remain.

Compliance History

Summary of Inspections -The last inspection of the facility was conducted on 2/22/19 by Clarissa Alcorn which reveals 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 the following violation:

CLIENT	FACILITY	PROGRAM SPECIFIC ID	INSP ID	VIOLATION ID	VIOLATION DATE	VIOLATION CODE	VIOLATION	PF INSPECTOR
BRADY TWP TROUTVILLE BORO WATER ASSN	TROUTVILLE WATER TRMT PLANT	PA0232491	2711345	812158	02/23/2018	92A.41(A)5	NPDES - Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance	ALCORN, CLARISSA

DMRs Summary -Upon review of the DMR's for the past year, the facility has been operating within the given concentration limits.

Other Comments: The operations section will be notified that this violation will need to be resolved before the permit is issued.

Attachments

Appendices

Compliance History

DMR Data for Outfall 001 (from July 1, 2018 to June 30, 2019)

Parameter	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18	JUL-18
Flow (MGD) Average Monthly	0.0010	0.0007	0.0009	0.0008	0.0013	0.0010	0.0008	0.0009	0.0013	0.0009	0.0010	0.0008
Flow (MGD) Daily Maximum	0.0019	0.0007	0.0016	0.0010	0.0016	0.0014	0.0012	0.0015	0.0016	0.0009	0.0010	0.0009
pH (S.U.) Minimum	7.0	7.0	7.0	6.9	7.3	6.9	6.6	7.2	6.5	6.5	7.4	7.3
pH (S.U.) Maximum	7.6	7.5	7.9	7.6	7.6	7.4	7.3	7.5	7.7	7.9	8.0	7.7
TRC (mg/L) Average Monthly	0.03	0.03	0.03	0.04	0.05	0.06	0.05	0.07	0.07	0.06	0.06	0.06
TRC (mg/L) Instantaneous Maximum	0.04	0.04	0.04	0.04	0.06	0.07	0.07	0.08	0.08	0.08	0.07	0.08
TSS (mg/L) Average Monthly	7.0	2.0	3.0	< 2.0	< 2.0	< 2.0	< 2.0	3.0	< 2.0	< 2.0	8.0	4.0
TSS (mg/L) Daily Maximum	7.0	2.0	3.0	< 2.0	< 2.0	< 2.0	< 2.0	3.0	< 2.0	< 2.0	8.0	4.0
Total Aluminum (mg/L) Average Monthly	0.08	0.11	0.08	0.13	0.14	0.11	0.10	0.28	0.12	< 0.05	< 0.05	0.16
Total Aluminum (mg/L) Daily Maximum	0.08	0.11	0.08	0.13	0.14	0.11	0.10	0.28	0.12	< 0.05	< 0.05	0.16
Total Iron (mg/L) Average Monthly	0.22	0.21	0.14	0.09	0.10	0.16	0.16	0.33	0.24	0.14	0.40	0.34
Total Iron (mg/L) Daily Maximum	0.22	0.21	0.14	0.09	0.10	0.16	0.16	0.33	0.24	0.14	0.40	0.34
Total Manganese (mg/L) Average Monthly	< 0.02	< 0.02	< 0.02	< 0.02	0.02	0.03	0.03	0.05	0.03	0.02	0.87	< 0.02
Total Manganese (mg/L) Daily Maximum	< 0.02	< 0.02	< 0.02	< 0.02	0.02	0.03	0.03	0.05	0.03	0.02	0.87	< 0.02

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