

Application Type Renewal
Facility Type Industrial
Major / Minor Minor

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

Application No. PA0209244
APS ID 978298
Authorization ID 1247291

Applicant and Facility Information

Applicant Name	<u>Brady Township Troutville Borough Water Association</u>	Facility Name	<u>Brady Township Troutville Borough Water System</u>
Applicant Address	<u>PO Box 126 Luthersburg, PA 15848</u>	Facility Address	<u>694 Luthersburg - Rockton Road Luthersburg, PA 15848</u>
Applicant Contact	<u>Michael Kennis</u>	Facility Contact	<u>Bryan Hartzfeld</u>
Applicant Phone	<u>(814) 583-5048</u>	Facility Phone	<u>(814) 583-5048</u>
Client ID	<u>39552</u>	Site ID	<u>242515</u>
SIC Code	<u>4941</u>	Municipality	<u>Brady Township</u>
SIC Description	<u>Trans. & Utilities - Water Supply</u>	County	<u>Clearfield</u>
Date Application Received	<u>September 28, 2018</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u></u>	If No, Reason	<u></u>
Purpose of Application	<u>Application for the renewal of an existing NPDES permit for the discharge of treated filter backwash.</u>		

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 9, 2019
		Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	<u>001</u>	Design Flow (MGD)	<u>0.015</u>
Latitude	<u>41° 3' 14.30"</u>	Longitude	<u>-78° 42' 23.20"</u>
Quad Name	<u>Luthersburg</u>	Quad Code	<u>1016</u>
Wastewater Description: <u>Water Treatment Effluent</u>			
Receiving Waters	<u>UNT to Laborde Branch (CWF)</u>	Stream Code	<u>48803</u>
NHD Com ID	<u>123860962</u>	RMI	<u>11</u>
Drainage Area	<u>N/A</u>	Yield (cfs/mi ²)	<u>N/A</u>
Q ₇₋₁₀ Flow (cfs)	<u>0, Intermittent Stream</u>	Q ₇₋₁₀ Basis	<u>N/A</u>
Elevation (ft)	<u>1880</u>	Slope (ft/ft)	<u>N/A</u>
Watershed No.	<u>17-D</u>	Chapter 93 Class.	<u>CWF</u>
Existing Use	<u>CWF</u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u>None</u>	Exceptions to Criteria	<u>None</u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>Metals</u>		
Source(s) of Impairment	<u>ACID MINE DRAINAGE</u>		
TMDL Status	<u>Final</u>	Name	<u>Luthersburg and Laborde Branch</u>
Nearest Downstream Public Water Supply Intake	<u>Hawthorn Area Water Authority</u>		
PWS Waters	<u>Redbank Creek</u>	Flow at Intake (cfs)	<u>31.1</u>
PWS RMI	<u>28.04</u>	Distance from Outfall (mi)	<u>66</u>

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.

Treatment Facility Summary

Treatment Facility Name: Luthersburg-Salem Water Treatment Plant

Treatment System Components:

- Settling Tank.
- Actuation Valve.
- Sludge Drying Bed.
- 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

Luthersburg Branch and Laborde Branch TMDL (Segment SMH16)

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. There currently is no entry for this segment on the Pa Section 303(d) list for impairment due to pH. Sample data at point SCRO2 shows pH ranging between 6.5 and 7.6, pH will not be addressed in this TMDL because acidity data was not collected. Allocations were not calculated for aluminum and acidity because aluminum and acidity sample data were not collected at this sample point. A TMDL for manganese and iron have been calculated for this segment. In accordance with 40 CFR §122.44(d)(1)(i), effluent limitations for manganese and iron will be implemented at §93.7 Specific Water Quality Standards requirements (1.0 mg/l for manganese and 1.5 mg/l for iron) to ensure that these pollutants 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				1.5	3.0	3.7	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 0.015 MGD.

Development of Effluent Limitations

Outfall No. 001 Design Flow (MGD) 0.015
 Latitude 41° 3' 14.30" Longitude -78° 42' 23.20"
 Wastewater Description: Water Treatment Effluent

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) <i>Technology-Based Control Requirements for Water Treatment Plant.</i>
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 compute 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 D 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 following parameters were candidates for monitoring or limitations shown below:

Parameter	Effluent Limit (µg/l)	Governing Criterion	Max Daily Limit (µg/l)	WQBEL (µg/l)	WQBEL Criterion	Permit Recommendation
Total Boron	1840	INPUT	2870.696	6233.484	CFC	Monitor
Hexavalent Chromium	30	INPUT	46.805	40.498	CFC	Establish Limits
Total Selenium	14	INPUT	21.842	19.437	CFC	Establish Limits

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				1.5	3.0	3.7	1/ Month	Grab
Total Manganese				1.0	2.0	2.5	1/ Month	Grab
TRC				0.5		1.6	1/ Day	Grab
Total Boron				Report		Report	1/ Month	Grab
Hexavalent Chromium				40.49	80.98	101.24	1/ Month	Grab
Total Selenium				19.43	38.87	48.57	1/ Month	Grab

*The proposed effluent limits for Outfall 001 were based on a design flow of 0.015 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 either 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 iron have been calculated for this segment. In accordance with 40 CFR §122.44(d)(1)(i), effluent limitations for manganese and iron were previously implemented at §93.7 Specific Water Quality Standards requirements (1.0 mg/l for manganese and 1.5 mg/l for iron) to ensure that these pollutants 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. The limit for manganese also corresponds to the technology-based limits (BPT) found in the DEP Guidance Document (392-2183-003) *Technology-Based Control Requirements for Water Treatment Plants*. The abovementioned limit for total iron is more stringent than the BPT limits, but it must be implemented to ensure that water quality standards are met.

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. Therefore, a TRC model evaluation was conducted to verify the appropriate water quality-based limits which are indicated in the proposed limits above. The TRC model was run 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 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	LUTHERSBURG SALEM WATER TRMT PLT	PA0209244	2711361	812166	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 (listed below), 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



Brady Twp.
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	0.0203	0.0202	0.0200	0.0203	0.0213	0.0167	0.0188	0.0174	0.0227	0.0194	0.0211	0.0199
Flow (MGD) Daily Maximum	0.0237	0.0224	0.0229	0.0239	0.0221	0.0207	0.0193	0.0240	0.0210	0.0217	0.0211	0.0226
pH (S.U.) Minimum	6.9	6.9	6.9	6.5	6.9	6.8	6.8	6.9	6.3	6.7	6.7	6.4
pH (S.U.) Maximum	7.6	7.4	7.9	6.9	7.8	7.3	7.1	7.2	6.8	6.9	7.2	7.9
TRC (mg/L) Average Monthly	0.35	0.32	0.37	0.32	0.38	0.42	0.44	0.40	0.44	0.44	0.42	0.43
TRC (mg/L) Instantaneous Maximum	0.40	0.36	0.45	0.35	0.47	0.47	0.47	0.45	0.48	0.47	0.48	0.49
TSS (mg/L) Average Monthly	12.0	3.0	2.0	< 2.0	< 2.0	4.0	3.0	< 2.0	< 2.0	< 2.0	10.0	5.0
TSS (mg/L) Daily Maximum	12.0	3.0	2.0	< 2.0	< 2.0	4.0	3.0	< 2.0	< 2.0	< 2.0	10.0	5.0
Total Aluminum (mg/L) Average Monthly	0.06	< 0.05	0.06	< 0.05	0.05	< 0.05	0.07	0.06	< 0.05	0.08	0.09	< 0.05
Total Aluminum (mg/L) Daily Maximum	0.06	< 0.05	0.06	< 0.05	0.05	< 0.05	0.07	0.06	< 0.05	0.08	0.09	< 0.05
Total Iron (mg/L) Average Monthly	0.28	0.13	0.13	0.08	0.08	0.14	0.24	0.28	0.34	1.08	0.52	0.25
Total Iron (mg/L) Daily Maximum	0.28	0.13	0.13	0.08	0.08	0.14	0.24	0.28	0.34	1.08	0.52	0.25
Total Manganese (mg/L) Average Monthly	0.38	0.36	0.29	0.33	0.49	0.57	0.67	0.53	0.70	0.46	0.78	0.37
Total Manganese (mg/L) Daily Maximum	0.38	0.36	0.29	0.33	0.49	0.57	0.67	0.53	0.70	0.46	0.78	0.37

Tools and References Used to Develop Permit	
<input type="checkbox"/>	WQM for Windows Model (see Attachment)
<input checked="" type="checkbox"/>	PENTOXSD for Windows Model (see Attachment C)
<input checked="" type="checkbox"/>	TRC Model Spreadsheet (see Attachment E)
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment)
<input checked="" type="checkbox"/>	Toxics Screening Analysis Spreadsheet (see Attachment B)
<input checked="" type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input checked="" type="checkbox"/>	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
<input type="checkbox"/>	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
<input checked="" type="checkbox"/>	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
<input checked="" type="checkbox"/>	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
<input type="checkbox"/>	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
<input type="checkbox"/>	Pennsylvania CSO Policy, 385-2000-011, 9/08.
<input type="checkbox"/>	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
<input type="checkbox"/>	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
<input checked="" type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
<input type="checkbox"/>	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
<input type="checkbox"/>	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
<input checked="" type="checkbox"/>	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
<input type="checkbox"/>	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
<input checked="" type="checkbox"/>	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
<input checked="" type="checkbox"/>	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
<input type="checkbox"/>	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
<input type="checkbox"/>	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
<input type="checkbox"/>	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.
<input checked="" type="checkbox"/>	Design Stream Flows, 391-2000-023, 9/98.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
<input checked="" type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input type="checkbox"/>	SOP:
<input type="checkbox"/>	Other: