pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0272744**
Facility Type	**Industrial**	APS ID	**982070**
Major / Minor	**Minor**	Authorization ID	**1253831**

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

Applicant and Facility Information

Applicant Name	**Guys Mills Mutual Water Association**	Facility Name	**Guys Mills Water Association WTP**
Applicant Address	PO Box 112	Facility Address	28250 Plank Road
	Guys Mills, PA 16327		Guys Mills, PA 16327
Applicant Contact	Gerald Miller, President	Facility Contact	Greg Rademacher
Applicant Phone	(814) 789-3857	Facility Phone	(814) 720-1212
Client ID	26132	Site ID	244940
SIC Code	4941	Municipality	Randolph Township
SIC Description	Trans. & Utilities - Water Supply	County	Crawford County
Date Application Received	November 30, 2018	EPA Waived?	Yes
Date Application Accepted	December 3, 2018	If No, Reason	-

Purpose of Application: Renewal of an existing NPDES Permit for a discharge of IW process effluent without an ELG.

Summary of Review

Act 14 - Proof of Notification was submitted and received.

This facility is not subject to any ELGs.

A Part II Water Quality Management permit is not required at this time.

The applicant should be able to continue to meet the limits of this permit, which will protect the uses of the receiving stream.

I. OTHER REQUIREMENTS:

A. Right of Way
B. Solids Handling
C. NPDES Permit Supersedes WQM Permits
D. Modification or Revocation for Changes to BAT or BCT
E. Effluent Chlorine Optimization and Minimization

SPECIAL CONDITIONS:

II. Chapter 95 Treatment Requirements
III. Chemical Additives

There are no open violations in efacts associated with the subject Client ID (26132) as of 9/19/2019.

Approve	Deny	Signatures	Date
X		Stephen A. McCauley, E.I.T. / Environmental Engineering Specialist	
X		Justin C. Dickey, P.E. / Environmental Engineer Manager	

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.00144
Latitude	41º 37' 51.77"	Longitude	-79º 58' 41.89"
Quad Name	-	Quad Code	-
Wastewater Description:	IW Process Effluent without ELG		
Receiving Waters	Lake Creek (CWF)	Stream Code	51665
NHD Com ID	127353465	RMI	14.8
Drainage Area	1.75	Yield (cfs/mi^2)	0.07
Q_{7-10} Flow (cfs)	1.82	Q_{7-10} Basis	calculated
Elevation (ft)	1386	Slope (ft/ft)	0.00547
Watershed No.	16-D	Chapter 93 Class.	CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	-		
Source(s) of Impairment	-		
TMDL Status	-	Name	-

Background/Ambient Data		Data Source
pH (SU)	-	-
Temperature (°F)	-	-
Hardness (mg/L)	-	-
Other:	-	-

Nearest Downstream Public Water Supply Intake	Aqua Pennsylvania, Inc. - Emlenton		
PWS Waters	Allegheny River	Flow at Intake (cfs)	681.7
PWS RMI	90.0	Distance from Outfall (mi)	58.0

Public Participation

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.

Narrative: This Fact Sheet details the determination of draft NPDES permit limits for an existing discharge of 0.00144 MGD of treated Industrial Waste from an existing public water supply (PWS) backwash discharge in Randolph Township, Crawford County.

Facility Area: See the topographical map (Attachment 1)

1. Streamflow: Woodcock Creek at Blooming Valley, PA (USGS Gage no. 03022540):

Q_{7-10}:	2.33	cfs	(USGS StreamStats)
Drainage Area:	31.1	sq. mi.	(USGS StreamStats)
Yieldrate:	0.07	cfsm	(calculated)

Lake Creek @ Outfall 001:

Yieldrate:	0.07	cfsm	(calculated above)
Drainage Area:	1.75	sq. mi.	(USGS StreamStats)

% of stream allocated: 100% Basis: No nearby discharges

Q_{7-10}: 0.122 cfs

2. Wasteflow: Outfall 001

Maximum discharge: 0.00144 MGD = 0.00222 cfs

Runoff flow period: 24 hours Basis: backwash will generally occur only a few times per month

The calculated stream flow is greater than 3 parts to the discharge flow. In accordance with the SOP, since this is an existing discharge, and there is more than 3 parts stream flow (Q7-10) to 1 part effluent (design flow), no treatment requirements will be required from document number 391-2000-014, titled, "Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers", dated April 12, 2008. Flow will be required to be monitored as authorized under Chapter 92a.61, and as recommended in the SOP.

3. Reasonable Potential Analysis:

A Reasonable Potential Analysis was performed in accordance with State practices for Outfall 001 by first using the Toxics Screening Analysis Spreadsheet (see Attachment 2) to determine which parameters should be modeled using the PentoxSD program (see Attachment 3). The following parameters were modeled for Outfall 001:

Total Dissolved Solids, Total Copper, Total Phenols (Phenolics), and Total Selenium.

Median stream pH to be used:	7.0	Standard Units (S.U.)
Stream hardness to be used:	100	mg/l
Basis:	Default values	
Median discharge pH to be used:	6.5	Standard Units (S.U.)
Discharge hardness to be used:	117	mg/l
Basis:	eDMR and Renewal application sampling	

Result: The WQBELs calculated (see Attachment 3) for Total Copper and Total Selenium show there is no reasonable potential for pollution, so no monitoring or limits will be added with this renewal. Total Dissolved Solids and Total Phenols (Phenolics) were evaluated at the nearest public water supply (PWS).

4. NO_2-NO_3, Fluoride, Phenolics, Sulfates, and Chlorides:

Nearest Downstream potable water supply (PWS): Aqua Pennsylvania, Inc. - Emlenton

Distance downstream from the point of discharge: 58.0 miles (approximate)

☒ No limits necessary
☐ Limits needed

Basis: Significant dilution available (see below).

PWS Evaluation:

Stream flow (sf) at the potable water supply intake = 681.7 cfs
Waste flow (wf) from the landfill = 0.00144 MGD = 0.00222 cfs
Total Flow = 681.70222 cfs

Background Concentrations: no data (background concentrations set to zero)

Mass balance for Nitrate-Nitrite at the potable water supply intake:
(sf @ PWS)(bkrd. conc.) + (wf)(x) = (tot. flow)(criteria)
(681.7 cfs)(0) + (0.00222 cfs)(x) = (681.70222 cfs)(10 mg/l)

x = 3,070,730 mg/l (renewal application maximum (for only Nitrate) was 245 mg/l - ok)

Monitoring will be retained for Nitrates as they are a pollutant of concern in the spring that supplies half of the drinking water to the Guys Mills area.

Mass balance for Fluoride at the potable water supply intake:
(sf @ PWS)(bkrd. conc.) + (wf)(x) = (tot. flow)(criteria)
(681.7 cfs)(0) + (0.00222 cfs)(x) = (681.70222 cfs)(2 mg/l)

x = 614,146 mg/l (renewal application maximum was < 0.1 mg/l - ok)

Mass balance for Phenolics at the potable water supply intake:
(sf @ PWS)(bkrd. conc.) + (wf)(x) = (tot. flow)(criteria)
(681.7 cfs)(0) + (0.00222 cfs)(x) = (681.70222 cfs)(0.005 mg/l)

x = 1,535 mg/l (renewal application maximum was 0.008 mg/l - ok)

Mass balance for Sulfate at the potable water supply intake:
(sf @ PWS)(bkrd. conc.) + (wf)(x) = (tot. flow)(criteria)
(681.7 cfs)(0) + (0.00222 cfs)(x) = (681.70222 cfs)(250 mg/l)

x = 76,768,268 mg/l (renewal application maximum was 22.2 mg/l - ok)

Mass balance for Chlorides at the potable water supply intake:
(sf @ PWS)(bkrd. conc.) + (wf)(x) = (tot. flow)(criteria)
(681.7 cfs)(0) + (0.00222 cfs)(x) = (681.70222 cfs)(250 mg/l)

x = 76,768,268 mg/l (renewal application maximum was 1.93 mg/l - ok)

Mass balance for TDS at the potable water supply intake:
(sf @ PWS)(bkrd. conc.) + (wf)(x) = (tot. flow)(criteria)
(681.7 cfs)(0) + (0.00222 cfs)(x) = (681.70222 cfs)(500 mg/l)

x = 153,536,536 mg/l (renewal application maximum was 32,800 mg/l - ok)

TDS loadings were also evaluated to protect the water quality standards at the nearest downstream PWS intake.

To calculate the TDS capacity for the Allegheny River at the Aqua Pennsylvania, Inc. - Emlenton intake, the Q_{7-10} low flow at the PWS intake is needed. From prior work, the Q_{7-10} low flow for the Allegheny River at the Aqua Pennsylvania, Inc. - Emlenton PWS was calculated as 681.7 cfs. Since no background TDS data is readily available, an assumed value of 150 mg/l will be used for this evaluation. Subtracting the 150 mg/l from the allowable 500 mg/l yields a remaining assimilative capacity of 350 mg/l. Multiplying the 350 mg/l by the Allegheny River

Q_{7-10} low flow rate of 681.7 cfs and then by 5.4 for conversions yields a total assimilative capacity of 1,288,413 lbs/day of TDS at the Aqua Pennsylvania, Inc. - Emlenton intake.

In order to remain exempt from the treatment requirements in Chapter 95.10, the annual average daily load must remain under 5,000 lbs/day of TDS, which would be more protective than the 1,288,413 lbs/day limit for the Aqua Pennsylvania, Inc. - Emlenton intake. If that 5,000 lbs/day is divided by the proposed flowrate of 0.00144 MGD and the 8.34 conversion factor, the resulting TDS concentration limit would be 416,333 mg/l, which is well above the 32,800 mg/l maximum that was reported in the renewal NPDES Permit application. The Chapter 95 Treatment Requirements special condition will be retained with this renewal.

5. Antibacksliding:

Since all the permit limits in this renewal are the same or more restrictive than the previous NPDES Permit, anti-backsliding is not applicable.

6. Attachment List:

Attachment 1 - Topographical Map of the Facility Area
Attachment 2 - Toxics Screening Analysis Spreadsheet
Attachment 3 - Pentox Modeling Printouts

If viewing this electronically, please refer to the following PDF to view the above Attachments:

Adobe Acrobat Document

Compliance History

DMR Data for Outfall 001 (from August 1, 2018 to July 31, 2019)

Parameter	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18
Flow (MGD) Average Monthly	0.000106	0.000106	0.000106	0.000106	0.000106	0.000106	0.000106	0.000106	0.000106	0.000106	0.000106	0.000106
Flow (MGD) Daily Maximum	0.000106	0.000106	0.000106	0.000106	0.000106	0.000106	0.000106	0.000106	0.000106	0.000106	0.000106	0.000106
pH (S.U.) Minimum	6.4	6.4	6.3	6.4	6.4	6.2	6.4	6.3	6.6	6.7	6.5	6.6
pH (S.U.) Maximum	6.6	6.4	6.7	6.5	6.5	6.4	6.8	6.7	6.6	6.7	6.7	6.8
TSS (mg/L) Average Monthly	< 5.50	7.5	10.0	14.0	13.5	7.00	15.0	26.0	30.0	16.0	14.0	17.0
TSS (mg/L) Daily Maximum	6.00	9.0	14.0	19.0	18.0	7.00	17.0	44.0	44.0	19.0	21.0	19.0
Total Dissolved Solids (lbs/day) Average Monthly	5.162	5.92	4.51	5.89	3.82	4.08	5.73	9.53	10.6	8.25	8.19	8.49
Total Dissolved Solids (lbs/day) Annual Average								8.76				
Total Dissolved Solids (mg/L) Average Monthly	5795	6645	5060	6615	4285	4575	6430	10700	11950	9260	9200	9530
Total Dissolved Solids (mg/L) Daily Maximum	6310	6790	6680	7860	5720	5370	9680	17300	12000	9980	10600	10300
Nitrate (mg/L) Average Monthly	76.6	96.0	73.6	87.8	56.6	78.7	81.0	75.6	149	112	135	173
Nitrate (mg/L) Daily Maximum	85.8	105	107	132	60.4	110	128	78.2	205	122	159	245
Total Aluminum (mg/L) Average Monthly	< 0.011	0.011	< 0.011	< 0.010	0.038	< 0.011	< 0.010	< 0.013	0.014	< 0.015	0.118	< 0.014
Total Aluminum (mg/L) Daily Maximum	0.012	0.012	0.012	< 0.010	0.064	0.012	< 0.010	0.015	0.016	0.020	0.225	0.018
Total Iron (mg/L) Average Monthly	< 0.0200	< 0.0201	< 0.0328	< 0.028	0.089	< 0.020	< 0.021	< 0.033	< 0.021	0.022	0.096	< 0.027
Total Iron (mg/L) Daily Maximum	< 0.0200	0.0201	0.0456	0.036	0.153	< 0.020	0.021	0.046	0.021	0.024	0.171	0.033
Total Manganese (mg/L) Average Monthly	0.009	0.014	0.016	0.021	0.015	0.012	0.015	0.011	0.013	0.017	0.116	< 0.014
Total Manganese (mg/L) Daily Maximum	0.009	0.016	0.020	0.023	0.015	0.015	0.02	0.015	0.013	0.017	0.215	0.023

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. 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), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	2/month	Grab
TSS	XXX	XXX	XXX	30.0	60.0	75	2/month	Grab
Total Dissolved Solids	XXX	5000 Annl Avg	XXX	XXX	XXX	XXX	1/year	Grab
Total Dissolved Solids	Report	XXX	XXX	Report	Report	XXX	2/month	Grab
Nitrate	XXX	XXX	XXX	Report	Report	XXX	2/month	Grab
Total Aluminum	XXX	XXX	XXX	4.0	8.0	10	2/month	Grab
Total Iron	XXX	XXX	XXX	2.0	4.0	5	2/month	Grab
Total Manganese	XXX	XXX	XXX	1.0	2.0	2.5	2/month	Grab

Samples taken at the following location: Outfall 001, prior to mixing with any other wastewaters.

Flow and Nitrate are monitor only based on Chapter 92a.61. The limits for pH are technology-based on Chapter 95.2. The Total Suspended Solids limits are technology-based for potable water treatment backwash wastewater from the NPDES Permit Writers' Manual. The Total Dissolved Solids limit is technology-based on Chapter 95.10. The limits for Aluminum, Iron, and Manganese are technology-based on Chapter 93.7.