pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**New**	Application No.	**PA0288217**
Facility Type	**Industrial**	APS ID	**1012695**
Major / Minor	**Minor**	Authorization ID	**1307771**

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

Applicant and Facility Information

Applicant Name	**2988 Mercer Butler Pike LLC**	Facility Name	**Balmaghie Brewery Distillery**
Applicant Address	37 Fisher Avenue Oil City, PA 16301	Facility Address	2988 Mercer Butler Pike Grove City, PA 16127
Applicant Contact	Jeffrey Karns, Director of Facilities	Facility Contact	Judith Herschell Cole, Herschell Environmental
Applicant Phone	(724) 923-6069	Facility Phone	(404) 933-6222
Client ID	355574	Site ID	841975
SIC Code	2085	Municipality	Liberty Township
SIC Description	Manufacturing - Distilled and Blended Liquors	County	Mercer County
Date Application Received	March 2, 2020	EPA Waived?	Yes
Date Application Accepted	March 5, 2020	If No, Reason	-

Purpose of Application: A new NPDES permit for a new discharge of treated Industrial Waste.

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 will be required prior to construction of the new IW wastewater treatment facility.

The Permittee should be able 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. Little or No Assimilative Capacity

SPECIAL CONDITIONS:

II. None.

The consultant indicated that sanitary wastewater are not included as part of this application because sanitary wastewater will be generated by the restaurant and other potential venues that are not planned to be built during the initial phase with the brewery/distillery. This application is for the industrial wastewater discharge only. Although sanitary wastewater will not be discharged, the application indicated the use of UV disinfection. Therefore, UV monitoring is included in the draft permit per discussions with the consultant. It is the Department's understanding that the applicant will obtain a holding tank permit through the Municipal Sewage Enforcement Officer (SEO) (MCJSA) for sewage disposal purposes in this first phase in which less than 800 GPD of domestic sewage will be generated. The applicant has been advised of the related Planning requirements including potential easement requirements, etc. JCD

Approve	Deny	Signatures	Date
X		Stephen A. McCauley Stephen A. McCauley, E.I.T. / Environmental Engineering Specialist	9/22/2020
X		Justin C. Dickey Justin C. Dickey, P.E. / Environmental Engineer Manager	9/28/2020

There are no open violations in efacts associated with the subject Client ID (355574) as of 9/22/2020.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.0435
Latitude	41º 5' 9.0"	Longitude	-80º 5' 21.0"
Quad Name	-	Quad Code	-
Wastewater Description:	IW Process Effluent without ELG		
Receiving Waters	Unnamed Tributary to the Wolf Creek (CWF)	Stream Code	N/A
NHD Com ID	126222020	RMI	1.16
Drainage Area	0.3	Yield (cfs/mi^2)	0.076
Q_{7-10} Flow (cfs)	0.22	Q_{7-10} Basis	Calculated
Elevation (ft)	1270	Slope (ft/ft)	0.014041
Watershed No.	20-C	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	Pennsylvania American Water Company - Ellwood City		
PWS Waters	Connoquenessing Creek	Flow at Intake (cfs)	27.6
PWS RMI	0.20	Distance from Outfall (mi)	32.0

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 a new discharge of 0.0435 MGD of treated industrial waste-related wastewater from a new brewery and distillery in Liberty Township, Mercer County.

Treatment is proposed to consist of the following: A screen filter, an equalization tank, ceramic nanofiltration membranes, reverse osmosis, a permeate tank, and a concentrate tank.

Sewage from a proposed restaurant will be addressed in the future pending the economics of the brewery and distillery.

Facility Area: See the topographical map (Attachment 1)

1. Streamflow:

Unnamed Tributary to the Wolf Creek	Drainage Area:	0.3	sq. mi.	(from StreamStats)
@ Outfall 001:	Yieldrate:	0.076	cfsm	(from StreamStats)
	% of stream allocated:	100%	Basis:	no nearby discharges
	Q_{7-10}:	0.022	cfs	(calculated)

2. Wasteflow:

Outfall 001: Permitted discharge: 0.0435 MGD = 0.0673 cfs

Runoff flow period: 24 hours Basis: Flow equalization is used.

Flow will be required to be monitored for both monthly average and daily maximum as recommended in the SOP, under the authority of Chapter 92a.61.

The calculated stream flow is less than the proposed discharge flow. In accordance with the SOP, since this will be a new discharge, and there is less than 3 parts stream flow (Q7-10) to 1 part effluent (design flow), the treatment requirements in 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, will be implemented in this NPDES Permit.

3. Parameters:

The following parameters were evaluated: pH, Total Suspended Solids, Phosphorus, Nitrogen, Dissolved Oxygen, and Total Residual Chlorine.

NO_2-NO_3, Fluoride, Phenolics, Sulfates, and Chlorides can be calculated for the nearest downstream potable water supply (PWS) by using a mass-balance calculation.

a. pH

Between 6.0 and 9.0 at all times

Basis: Application of Chapter 93.7 technology-based limits.

b. Total Suspended Solids

Limits are 10 mg/l as a monthly average and 20 as a daily maximum.

Basis: Application of document number 391-2000-014 technology-based limits.

c. $CBOD_5$

Median discharge pH to be used: 7.5 Standard Units (S.U.)

Basis: Default

Discharge temperature: 25°C (Default value used for modeling purposes)

Median stream pH to be used: 7.0 Standard Units (S.U.)

Basis: Default used in the absence of background data

Stream Temperature: 20˚C (Default value used for CWF modeling purposes)

Background $CBOD_5$ concentration: 2.0 mg/l

Basis: Default value

Calculated $CBOD_5$ limits: 25 mg/l (monthly average)
50 mg/l (instantaneous maximum)

Result: WQ modeling resulted in the above $CBOD_5$ limits (see Attachment 2). However, the more restrictive technology-based limit of 10 mg/l as a monthly average from document number 391-2000-014 will be set with this NPDES Permit.

d. Ammonia-Nitrogen (NH_3-N)

Median discharge pH to be used: 7.0 Standard Units (S.U.)

Basis: Default

Discharge temperature: 25°C (Default value used for modeling purposes)

Median stream pH to be used: 7.0 Standard Units (S.U.)

Basis: Default used in the absence of background data

Stream Temperature: 20˚C (Default value used for CWF modeling purposes)

Background NH_3-N concentration: 0.0 mg/l

Basis: Default value.

Calculated summer NH_3-N limits: 2.2 mg/l (monthly average)
4.4 mg/l (instantaneous maximum)

Calculated winter NH_3-N limits: 6.6 mg/l (monthly average)
13.2 mg/l (instantaneous maximum)

Result: WQ modeling resulted in the calculated summer NH3-N limits above (see Attachment 2). Per the SOP, the winter limits are calculated as 3 times the summer limits.

e. Total Phosphorus

☒ Limit necessary due to:

☐ Discharge to lake, pond, or impoundment
☒ Discharge to stream

Basis: The monthly average limit is set to 0.5 mg/l monthly average based on document number 391-2000-014.

☐ Limit not necessary

Basis: N/A

f. Total Nitrogen

A new limit of 5 mg/l as a monthly average will be set based on document number 391-2000-014.

g. Dissolved Oxygen (DO)

☐ 4.0 mg/l - minimum desired in effluent to protect all aquatic life
☐ 5.0 mg/l - desired in effluent for CWF, WWF, or TSF
☒ 6.0 mg/l - minimum required due to discharge falling under guidance document 391-2000-014
☐ 8.0 mg/l - required due to discharge going to a naturally reproducing salmonid stream

Discussion: The Dissolved Oxygen minimum is set to 6.0 mg/l as recommended in the WQ modeling (see Attachment 2), and from document number 391-2000-014.

h. Total Residual Chlorine (TRC)

☒ No limit necessary
☐ TRC limits: _____ mg/l (monthly average)
_____ mg/l (instantaneous maximum)

Basis: TRC limits will not be required with this permit as Ultraviolet light will be used for disinfection. UV light intensity (µw/cm²) will be monitored daily.

i. NO_2-NO_3, Fluoride, Phenolics, Sulfates, and Chlorides

Nearest Downstream potable water supply (PWS): Pennsylvania American Water Company - Ellwood City

Distance downstream from the point of discharge: 32.0 miles (approximate)

☒ No limits necessary
☐ Limits needed

Basis Significant dilution available (see below).

PWS Evaluation:

Stream flow (sf) at the potable water supply intake = 27.6 cfs
Waste flow (wf) from the discharge = 0.0435 MGD = 0.0673 cfs
Total Flow (tot. flow) = sf + wf = 27.6673 cfs

Background Concentrations:

NO_2-NO_3 = no data	Sulfates = no data
Fluoride = no data	Chlorides = no data
Phenolics = no data	TDS = no data

Mass balance for Nitrate-Nitrite (NO_2-NO_3) at the potable water supply intake:

(sf @ PWS)(bkrd. conc.) + (wf)(x) = (tot. flow)(criteria)
(27.6 cfs)(0 mg/l) + (0.0673 cfs)(x) = (27.6673 cfs)(10 mg/l)

x = 4,111 mg/l (renewal application maximum was 10 mg/l - ok)

Mass balance for Fluoride at the potable water supply intake:

(sf @ PWS)(bkrd. conc.) + (wf)(x) = (tot. flow)(criteria)
(27.6 cfs)(0 mg/l) + (0.0673 cfs)(x) = (27.6673 cfs)(2 mg/l)

x = 822 mg/l (renewal application maximum was non detect - ok)

Mass balance for Phenolics at the potable water supply intake:

(sf @ PWS)(bkrd. conc.) + (wf)(x) = (tot. flow)(criteria)
(27.6 cfs)(0 mg/l) + (0.0673 cfs)(x) = (27.6673 cfs)(0.005 mg/l)

x = 2.05 mg/l (renewal application maximum was N/A mg/l - ok)

Mass balance for Sulfates at the potable water supply intake:

(sf @ PWS)(bkrd. conc.) + (wf)(x) = (tot. flow)(criteria)
(27.6 cfs)(0 mg/l) + (0.0673 cfs)(x) = (27.6673 cfs)(250 mg/l)

x = 102,776 mg/l (renewal application maximum was non detect - ok)

Mass balance for Chlorides at the potable water supply intake:

(sf @ PWS)(bkrd. conc.) + (wf)(x) = (tot. flow)(criteria)
(27.6 cfs)(0 mg/l) + (0.0673 cfs)(x) = (27.6673 cfs)(250 mg/l)

x = 102,776 mg/l (renewal application maximum was 150 mg/l - ok)

Mass balance for TDS at the potable water supply intake:

(sf @ PWS)(bkrd. conc.) + (wf)(x) = (tot. flow)(criteria)
(27.6 cfs)(0 mg/l) + (0.0673 cfs)(x) = (27.6673 cfs)(500 mg/l)

x = 205,552 mg/l (renewal application maximum was <400 mg/l - ok)

4. 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 3) to determine which parameters should be modeled using the Pentox program. Based on the Toxics Screening Analysis Spreadsheet, no parameters needed modeled for Outfall 001 using the Pentox program. However, TDS and Chlorides were evaluated on page 5 as part of the PWS review. Both parameters were found to not need limits.

5. Attachment List:

Attachment 1 - Topographical Map of the Facility Area

Attachment 2 - WQ Model Printouts

Attachment 3 - Toxics Screening Analysis Spreadsheet

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

Adobe Acrobat Document

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	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Wkly Avg	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	6.0 Inst Min	XXX	XXX	XXX	1/day	Grab
CBOD5	3.6	XXX	XXX	10.0	XXX	20	2/month	24-Hr Composite
TSS	3.6	XXX	XXX	10.0	XXX	20	2/month	24-Hr Composite
UV Intensity (µw/cm²)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/day	Grab
Total Nitrogen	1.8	XXX	XXX	5.0	XXX	10	2/month	24-Hr Composite
Ammonia Nov 1 - Apr 30	2.3	XXX	XXX	6.6	XXX	13.2	2/month	24-Hr Composite
Ammonia May 1 - Oct 31	0.79	XXX	XXX	2.2	XXX	4.4	2/month	24-Hr Composite
Total Phosphorus	0.18	XXX	XXX	0.5	XXX	1	2/month	24-Hr Composite

Compliance Sampling Location: at Outfall 001, after Ultraviolet (UV) light disinfection.

Flow and UV light intensity are monitor only based on Chapter 92a.61. The limits for pH are technology-based on Chapter 93.7. The limits for CBOD5, Total Suspended Solids, Dissolved Oxygen, Total Nitrogen, and Total Phosphorus are technology-based on document number 391-2000-014. The limits for Ammonia-Nitrogen are water quality-based on Chapter 93.7.