pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0000213**
Facility Type	**Industrial**	APS ID	**1090742**
Major / Minor	**Minor**	Authorization ID	**1443780**

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

Applicant and Facility Information

Applicant Name	**PA American Water Company**	Facility Name	**PA American Water Kane**
Applicant Address	852 Wesley Drive	Facility Address	66 Dwight Road
	Mechanicsburg, PA 17055-4436		Kane, PA 16735
Applicant Contact	Brandy Braun, Director (brandy.braun@amwater.com)	Facility Contact	Daniel Edinger, Senior Supervisor (Daniel.edinger@amwater.com)
Applicant Phone	(724) 986-3617	Facility Phone	(814) 598-0326
Client ID	87712	Site ID	263616
SIC Code	4941	Municipality	Kane Borough
SIC Description	Trans. & Utilities - Water Supply	County	McKean
Date Application Received	June 1, 2023	EPA Waived?	Yes
Date Application Accepted	June 14, 2023	If No, Reason	-

Purpose of Application: Renewal of an NPDES Permit for an existing discharge of wastewater from a water treatment plant.

Summary of Review

Act 14 - Proof of Notification was submitted and received.

This facility is not subject to any ELGs.

A Water Quality Management (WQM) Permit is not required at this time.

The applicant 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. Effluent Chlorine Optimization and Minimization

There are 2 open violations in efacts associated with the subject Client ID (87712) as of 3/20/2024 (see Attachment 1).

Approve	Deny	Signatures	Date
X		Stephen A. McCauley Stephen A. McCauley, E.I.T. / Environmental Engineering Specialist	3/20/2024
X		 (Vacant) / Environmental Engineer Manager	Okay to Draft JCD 3/25/2024

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.009
Latitude	41º 40' 38.00"	Longitude	-78º 48' 13.00"
Quad Name	-	Quad Code	-

Wastewater Description: IW Process Effluent without ELG (Water Treatment Plant Filter Backwash)

Receiving Waters	Hubert Run (CWF)	Stream Code	56598
NHD Com ID	112378723	RMI	2.6
Drainage Area	2.43	Yield (cfs/mi^2)	0.135
Q_{7-10} Flow (cfs)	0.328	Q_{7-10} Basis	calculated
Elevation (ft)	1740	Slope (ft/ft)	0.01247
Watershed No.	16-B	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)	1,250
PWS RMI	90.0	Distance from Outfall (mi)	105.0

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 0.009 MGD of potable water treatment backwash wastewater from the PA American Water Kane water treatment plant in Kane Borough, McKean County.

Permitted treatment consists of: Iron and Manganese removal through aeration, chlorination, pH adjustment, three pressure filters, and settling. WQM permit 266I5-T1 authorizes treatment of the backwash water in a 34,000 gallon earthen settling lagoon. WQM permit 4292201 authorizes treatment of the backwash water in a newer 92,000 gallon circular concrete settling tank.

1. Streamflow:

Kinzua Creek at Guffey, PA - USGS Gage no. 03011800:

Q_{7-10}:	5.26	cfs	(from StreamStats)
Drainage Area:	38.8	sq. mi.	(from StreamStats)
Yieldrate:	0.135	cfsm	(calculated)

Hubert Run @ Outfall 001:

Yieldrate:	0.135	cfsm	(calculated above)
Drainage Area:	2.43	sq. mi.	(from StreamStats)
% of stream allocated:	100%	Basis:	no nearby discharges
Q_{7-10}:	0.32	cfs	(calculated)

2. Wasteflow: Outfall 001:

Maximum discharge: 0.009 MGD = 0.013 cfs

Runoff flow period: 24 hours Basis: Flow for a Municipal WTP

Flow will be required to be monitored as recommended by the NPDES Permit Writers' Manual (document number 362-0400-001) for Water Treatment Plant Wastes.

3. Parameters:

The limits for Total Suspended Solids, Total Iron, Total Aluminum, Total Manganese, pH, and Total Residual Chlorine are technology-based on the Departments document entitled, "NPDES Permit Writers' Manual" (document number 362-0400-001) under Chapter 14.5.4 - Methods Employed to Treat and Dispose of Water Treatment Plant Wastes.

a. Total Suspended Solids

Technology-based limits are 30.0 mg/l as a monthly average and 60.0 mg/l as a daily maximum, with a calculated instantaneous maximum of 75.0 mg/l.

b. Total Iron

Technology-based limits are 2.0 mg/l as a monthly average and 4.0 mg/l as a daily maximum, with a calculated instantaneous maximum of 5.0 mg/l.

c. Total Aluminum

Technology-based limits are 4.0 mg/l as a monthly average and 8.0 mg/l as a daily maximum, with a calculated instantaneous maximum of 10.0 mg/l.

d. Total Manganese

Technology-based limits are 1.0 mg/l as a monthly average and 2.0 mg/l as a daily maximum, with a calculated instantaneous maximum of 2.5 mg/l.

e. pH

Between 6.0 and 9.0 at all times.

f. Total Residual Chlorine (TRC)

TRC limits were calculated using the Department's TRC Calculation Spreadsheet (see Attachment 2). The calculated limits are slightly less restrictive than the limits in the previous NPDES Permit, which were technology-based limits of 0.5 mg/l as a monthly average and 1.0 mg/l as a daily maximum, with a calculated instantaneous maximum of 1.25 mg/l.

g. Reasonable Potential for Downstream Public Water Supply (PWS):

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

Distance downstream from the point of discharge: 105 miles (approximate)

Parameter	PWS Criteria (mg/l)	Discharge Maximum (mg/l)
TDS	500	58
Chloride	250	10.4
Bromide	1.0	<0.072
Sulfate	250	7.5

Result: Since none of the parameters are discharged at a concentration greater than the criteria at the PWS, mass-balance calculations were not performed. No limits or monitoring is necessary as significant dilution is available.

4. Reasonable Potential Analysis:

A Reasonable Potential Analysis was performed in accordance with State practices for Outfall 001 using the Department's Toxics Management Spreadsheet (see Attachment 3).

Result: The discharge concentrations for the following parameters were found to be greater than 10% of the calculated WQBELs:

Parameter	Discharge Conc. (µg/l)	WQBEL (µg/l)	%WQBEL
Total Copper	8.19	47.0	>10%

Per the SOP, since the maximum discharge concentration for Total Copper was greater than 10% of the calculated WQBELs, 1/quarter monitoring will be set with the NPDES Permit renewal.

5. Attachment List:

Attachment 1 - Open Violations by Client

Attachment 2 - TRC_Calc Spreadsheet

Attachment 3 - Toxics Management Spreadsheet

(The Attachments above can be found at the end of this document)

Compliance History

DMR Data for Outfall 001 (from February 1, 2023 to January 31, 2024)

Parameter	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23
Flow (MGD) Average Monthly	0.0034	0.0055	0.0083	0.0085	0.0085	0.0085	0.0086	0.0139	0.0053	0.0058	0.0041	0.0058
Flow (MGD) Daily Maximum	0.0088	0.0171	0.0139	0.0088	0.0088	0.0088	0.0088	0.0583	0.0283	0.0263	0.0113	0.0549
pH (S.U.) Instantaneous Minimum	6.9	7.1	7.6	7.7	7.8	7.9	7.8	7.3	7.1	6.9	6.9	7.0
pH (S.U.) Instantaneous Maximum	7.4	7.8	8.0	7.9	8.0	8.1	8.1	8.0	7.8	7.7	7.2	7.7
TRC (mg/L) Average Monthly	0.31	0.34	0.30	0.21	0.14	0.13	0.09	0.15	0.09	0.09	0.10	0.14
TRC (mg/L) Daily Maximum	0.44	0.47	0.48	0.38	0.21	0.20	0.14	0.28	0.15	0.19	0.12	0.25
TSS (mg/L) Average Monthly	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 3	3	5.5	7.4	3.5
TSS (mg/L) Daily Maximum	< 2	< 2	< 2	< 2	2	< 2	< 2	4	3	6	11	4
Total Aluminum (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.15	< 0.1	0.15	< 0.12	< 0.1
Total Aluminum (mg/L) Daily Maximum	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	0.2	0.2	< 0.1
Total Iron (mg/L) Average Monthly	0.25	0.15	0.19	0.17	0.23	0.22	0.25	0.26	0.30	0.24	0.49	0.31
Total Iron (mg/L) Daily Maximum	0.33	0.15	0.26	0.18	0.30	0.24	0.36	0.32	0.38	0.24	0.62	0.43
Total Manganese (mg/L) Average Monthly	0.06	0.04	0.06	0.05	0.08	0.07	0.07	0.07	0.16	0.21	< 0.17	0.20
Total Manganese (mg/L) Daily Maximum	0.08	0.04	0.07	0.05	0.11	0.07	0.09	0.07	0.17	0.21	0.29	0.22

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" (386-0400-001), 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	1/day	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/week	Grab
TRC	XXX	XXX	XXX	0.5	1.0	1.25	1/week	Grab
TSS	XXX	XXX	XXX	30.0	60.0	75	2/month	8-Hr Composite
Total Aluminum	XXX	XXX	XXX	1.0	2.0	2.5	2/month	8-Hr Composite
Total Copper	XXX	XXX	XXX	Report Avg Qrtly	Report	XXX	1/quarter	8-Hr Composite
Total Iron	XXX	XXX	XXX	2.0	4.0	5	2/month	8-Hr Composite
Total Manganese	XXX	XXX	XXX	1.0	2.0	2.5	2/month	8-Hr Composite

Compliance Sampling Location: Outfall 001.

Flow and Total Copper are monitor only based on Chapter 92a.61. The limits for pH, Total Residual Chlorine (TRC), Total Suspended Solids (TSS), Aluminum, Iron, and Manganese are technology-based on the NPDES Permit Writers' Manual for potable water treatment backwash wastewater.

Attachment 1

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WATER MANAGEMENT SYSTEM
OPEN VIOLATIONS BY CLIENT

Client ID: 87712
Client: All

Open Violations: 2

CLIENT ID	CLIENT	PF ID	FACILITY	PF KIND	PF STATUS	INSP PROGRAM	PROGRAM SPECIFIC ID
87712	PA AMER WATER CO	50919	PAW-SAW CREEK ESTATES WWTF	Sewage Non-Publicly Owned (Non-Muni)	Active	WPC NPDES	PA0060640
87712	PA AMER WATER CO	675228	UPPER POTTSGROVE SEWERS TO POTTSTOWN BORO STP	Sewage Publicly Owned (Muni)	Active	WPC State Water Pollution Control	WQG02460510

INSP ID	VIOLATION ID	INSPECTION CATEGORY	VIOLATION DATE	VIOLATION CODE	VIOLATION	PF INSPECTOR	INSP REGION
3700379	8172903	PF	01/17/2024	92A.44	NPDES - Violation of effluent limits in Part A of permit	GLAVICH,KELSEY	NERO
3605646	8156718	PF	08/21/2023	92A.47(C)	NPDES - Illegal discharge to waters of the Commonwealth from a sanitary sewer overflow (SSO)	THAKER,KETAN	SERO

Attachment 2

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.328	= Q stream (cfs)	0.5	= CV Daily
0.009	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)	0	=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 7.534	1.3.2.iii	WLA cfc = 7.338
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 2.807	5.1d	LTA_cfc = 4.266

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	

WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...** **...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...** **...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**

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Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **PA American Water Kane** NPDES Permit No.: **PA0000213** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **potable water treatment backwash**

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
0.009	21.2	7.6						

					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		58									
	Chloride (PWS)	mg/L		10.4									
	Bromide	mg/L	<	0.072									
	Sulfate (PWS)	mg/L		7.5									
	Fluoride (PWS)	mg/L		0.656									
Group 2	Total Aluminum	µg/L		200									
	Total Antimony	µg/L	<	0.07									
	Total Arsenic	µg/L	<	2.5									
	Total Barium	µg/L		52.4									
	Total Beryllium	µg/L		0.21									
	Total Boron	µg/L	<	56.5									
	Total Cadmium	µg/L		0.104									
	Total Chromium (III)	µg/L	<	1.99									
	Hexavalent Chromium	µg/L		0.3									
	Total Cobalt	µg/L		0.256									
	Total Copper	µg/L		8.19									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	6									
	Dissolved Iron	µg/L	<	35									
	Total Iron	µg/L		616									
	Total Lead	µg/L		0.758									
	Total Manganese	µg/L		320									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		5.73									
	Total Phenols (Phenolics) (PWS)	µg/L	<	4									
	Total Selenium	µg/L	<	2.5									
	Total Silver	µg/L	<	0.274									
	Total Thallium	µg/L		0.054									
	Total Zinc	µg/L		30.2									
	Total Molybdenum	µg/L		0.077									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

Group 3	Carbon Tetrachloride	µg/L	<										
	Chlorobenzene	µg/L											
	Chlorodibromomethane	µg/L	<										
	Chloroethane	µg/L	<										
	2-Chloroethyl Vinyl Ether	µg/L	<										
	Chloroform	µg/L	<										
	Dichlorobromomethane	µg/L	<										
	1,1-Dichloroethane	µg/L	<										
	1,2-Dichloroethane	µg/L	<										
	1,1-Dichloroethylene	µg/L	<										
	1,2-Dichloropropane	µg/L	<										
	1,3-Dichloropropylene	µg/L	<										
	1,4-Dioxane	µg/L	<										
	Ethylbenzene	µg/L	<										
	Methyl Bromide	µg/L	<										
	Methyl Chloride	µg/L	<										
	Methylene Chloride	µg/L	<										
	1,1,2,2-Tetrachloroethane	µg/L	<										
	Tetrachloroethylene	µg/L	<										
	Toluene	µg/L	<										
	1,2-trans-Dichloroethylene	µg/L	<										
	1,1,1-Trichloroethane	µg/L	<										
	1,1,2-Trichloroethane	µg/L	<										
	Trichloroethylene	µg/L	<										
	Vinyl Chloride	µg/L	<										
Group 4	2-Chlorophenol	µg/L	<										
	2,4-Dichlorophenol	µg/L	<										
	2,4-Dimethylphenol	µg/L	<										
	4,6-Dinitro-o-Cresol	µg/L	<										
	2,4-Dinitrophenol	µg/L	<										
	2-Nitrophenol	µg/L	<										
	4-Nitrophenol	µg/L	<										
	p-Chloro-m-Cresol	µg/L	<										
	Pentachlorophenol	µg/L	<										
	Phenol	µg/L	<										
	2,4,6-Trichlorophenol	µg/L	<										
Group 5	Acenaphthene	µg/L	<										
	Acenaphthylene	µg/L	<										
	Anthracene	µg/L	<										
	Benzidine	µg/L	<										
	Benzo(a)Anthracene	µg/L	<										
	Benzo(a)Pyrene	µg/L	<										
	3,4-Benzofluoranthene	µg/L	<										
	Benzo(ghi)Perylene	µg/L	<										
	Benzo(k)Fluoranthene	µg/L	<										
	Bis(2-Chloroethoxy)Methane	µg/L	<										
	Bis(2-Chloroethyl)Ether	µg/L	<										
	Bis(2-Chloroisopropyl)Ether	µg/L	<										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<										
	4-Bromophenyl Phenyl Ether	µg/L	<										
	Butyl Benzyl Phthalate	µg/L	<										
	2-Chloronaphthalene	µg/L	<										
	4-Chlorophenyl Phenyl Ether	µg/L	<										
	Chrysene	µg/L	<										
	Dibenzo(a,h)Anthrancene	µg/L	<										
	1,2-Dichlorobenzene	µg/L	<										
	1,3-Dichlorobenzene	µg/L	<										
	1,4-Dichlorobenzene	µg/L	<										
	3,3-Dichlorobenzidine	µg/L	<										
	Diethyl Phthalate	µg/L	<										
	Dimethyl Phthalate	µg/L	<										
	Di-n-Butyl Phthalate	µg/L	<										
	2,4-Dinitrotoluene	µg/L	<										

	2,6-Dinitrotoluene	µg/L	<										
	Di-n-Octyl Phthalate	µg/L	<										
	1,2-Diphenylhydrazine	µg/L	<										
	Fluoranthene	µg/L	<										
	Fluorene	µg/L	<										
	Hexachlorobenzene	µg/L	<										
	Hexachlorobutadiene	µg/L	<										
	Hexachlorocyclopentadiene	µg/L	<										
	Hexachloroethane	µg/L	<										
	Indeno(1,2,3-cd)Pyrene	µg/L	<										
	Isophorone	µg/L	<										
	Naphthalene	µg/L	<										
	Nitrobenzene	µg/L	<										
	n-Nitrosodimethylamine	µg/L	<										
	n-Nitrosodi-n-Propylamine	µg/L	<										
	n-Nitrosodiphenylamine	µg/L	<										
	Phenanthrene	µg/L	<										
	Pyrene	µg/L	<										
	1,2,4-Trichlorobenzene	µg/L	<										
Group 6	Aldrin	µg/L	<										
	alpha-BHC	µg/L	<										
	beta-BHC	µg/L	<										
	gamma-BHC	µg/L	<										
	delta BHC	µg/L	<										
	Chlordane	µg/L	<										
	4,4-DDT	µg/L	<										
	4,4-DDE	µg/L	<										
	4,4-DDD	µg/L	<										
	Dieldrin	µg/L	<										
	alpha-Endosulfan	µg/L	<										
	beta-Endosulfan	µg/L	<										
	Endosulfan Sulfate	µg/L	<										
	Endrin	µg/L	<										
	Endrin Aldehyde	µg/L	<										
	Heptachlor	µg/L	<										
	Heptachlor Epoxide	µg/L	<										
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<										
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

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Attachment 3

Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

PA American Water Kane, NPDES Permit No. PA0000213, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Hubert Run**

No. Reaches to Model: **1**

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	056598	2.6	1740	2.43			Yes
End of Reach 1	056598	0	1580	7.49			Yes

$Q_{7\text{-}10}$

Location	RMI	LFY (cfs/mi²)*	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	2.6	0.135										19.3	7		
End of Reach 1	0	0.135													

Q_h

Location	RMI	LFY (cfs/mi²)	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	2.6														
End of Reach 1	0														

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

PA American Water Kane, NPDES Permit No. PA0000213, Outfall 001

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

☑ ***Hydrodynamics***

$Q_{7\text{-}10}$

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
2.6	0.33		0.33	0.014	0.012	0.424	7.926	18.674	0.102	1.563	2.654
0	1.01		1.01115								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
2.6	2.80		2.80	0.014	0.012	1.074	7.926	7.382	0.331	0.48	0.71
0	7.502		7.50								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 2.654 PMF: 1 Analysis Hardness (mg/l): 19.377 Analysis pH: 7.01

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	18,421	
Total Antimony	0	0		0	1,100	1,100	27,018	
Total Arsenic	0	0		0	340	340	8,351	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	515,796	
Total Boron	0	0		0	8,100	8,100	198,950	
Total Cadmium	0	0		0	0.407	0.4	9.88	Chem Translator of 1.013 applied
Total Chromium (III)	0	0		0	148.590	470	11,549	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	400	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	2,333	

Total Copper	0	0		0	2.863	2.98	73.3	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	10.412	10.1	248	Chem Translator of 1.03 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	40.5	Chem Translator of 0.85 applied
Total Nickel	0	0		0	116.820	117	2,875	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	0.191	0.22	5.53	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	1,597	
Total Zinc	0	0		0	29.173	29.8	733	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 2.654 PMF: 1 Analysis Hardness (mg/l): 19.377 Analysis pH: 7.01

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	5,404	
Total Arsenic	0	0		0	150	150	3,684	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	100,703	
Total Boron	0	0		0	1,600	1,600	39,299	
Total Cadmium	0	0		0	0.078	0.08	1.97	Chem Translator of 0.978 applied
Total Chromium (III)	0	0		0	19.328	22.5	552	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	255	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	467	
Total Copper	0	0		0	2.203	2.3	56.4	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	36,843	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	0.406	0.39	9.67	Chem Translator of 1.03 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	22.3	Chem Translator of 0.85 applied
Total Nickel	0	0		0	12.975	13.0	320	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	123	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	319	
Total Zinc	0	0		0	29.412	29.8	733	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 2.654 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc	Stream	Trib Conc	Fate	WQC	WQ Obj	WLA (µg/L)	Comments

Pollutants	Conc (µg/L)	CV	(µg/L)	Coef	(µg/L)	(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	138	
Total Arsenic	0	0		0	10	10.0	246	
Total Barium	0	0		0	2,400	2,400	58,948	
Total Boron	0	0		0	3,100	3,100	76,141	
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	7,369	
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	24,562	
Total Mercury	0	0		0	0.050	0.05	1.23	
Total Nickel	0	0		0	610	610	14,983	
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	5.89	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 0.710 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	47.0	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	PWS Not Applicable
Total Aluminum	11,807	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	58,948	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	39,299	µg/L	Discharge Conc < TQL
Total Cadmium	1.97	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	552	µg/L	Discharge Conc < TQL
Hexavalent Chromium	255	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	467	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	7,369	µg/L	Discharge Conc ≤ 10% WQBEL

Total Iron	36,843	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	9.67	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	24,562	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	1.23	µg/L	Discharge Conc < TQL
Total Nickel	320	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	123	µg/L	Discharge Conc < TQL
Total Silver	3.54	µg/L	Discharge Conc < TQL
Total Thallium	5.89	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	470	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS