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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0034924**
Facility Type	**Non-Municipal**	APS ID	**1033822**
Major / Minor	**Minor**	Authorization ID	**1345798**

Applicant and Facility Information

Applicant Name	**PA American Water Company**	Facility Name	**Paint Elk STP**
Applicant Address	852 Wesley Drive	Facility Address	9242 US Route 322
	Mechanicsburg, PA 17055-4436		Shippenville, PA 16254
Applicant Contact	Dale Warner	Facility Contact	Michelle Cavallo (Prod. Supervisor)
Applicant Phone	(814) 280-0013	Facility Phone	(814) 226-6242
Client ID	87712	Site ID	251999
Ch 94 Load Status	Not Overloaded	Municipality	Paint Township
Connection Status	No Limitations	County	Clarion
Date Application Received	February 23, 2021	EPA Waived?	Yes
Date Application Accepted	March 25, 2021	If No, Reason	

Purpose of Application: Renewal of a NPDES Permit for an existing discharge of treated municipal sewage.

Summary of Review

This facility treats municipal sewage from Paint Township and Elk Township, Clarion County. There are no industrial users and the facility is currently not accepting hauled-in waste.

No changes to discharge quality or quantity are proposed as part of this permit renewal.

There are currently 5 open violations listed in EFACTS for this permittee (8/10/2023). *8/15/2023 CWY* All violations at are at other facilities.

The permittee has gotten Department approval to use the Chemical Additive Aquashade as a chemical additive in their lagoons to control algae growth. A condition will be placed in Part C of the Permit related to the use of this chemical additive.

Sludge use and disposal description and location(s): Sludge has not been removed in the last 5 years.

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.

Approve	Deny	Signatures	Date
X		Adam J. Pesek Adam J. Pesek, E.I.T. / Project Manager	August 15, 2023
X		Chad W. Yurisic Chad W. Yurisic, P.E. / Environmental Engineer Manager	8/15/2023

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.6
Latitude	41º 14' 38"	Longitude	-79º 26' 41"
Quad Name	Clarion	Quad Code	04064
Wastewater Description:	Sewage Effluent		

Receiving Waters	Paint Creek	Stream Code	49424
NHD Com ID	102669975	RMI	0.82
Drainage Area	43.8 mi^2	Yield (cfs/mi^2)	0.0444
Q_{7-10} Flow (cfs)	1.945	Q_{7-10} Basis	Toms Run Gage
Elevation (ft)	1163	Slope (ft/ft)	0.0029
Watershed No.	17-B	Chapter 93 Class.	CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	METALS, PH, SILTATION		
Source(s) of Impairment	ACID MINE DRAINAGE		
TMDL Status	Final	Name	Deer Creek (Clarion)

Background/Ambient Data		Data Source
pH (SU)	4.5	3/21/90 stream sample @ Rt. 322 bridge above the STP
Temperature (°C)	20	CWF stream default value
Hardness (mg/L)	118	3/21/90 stream sample @ Rt. 322 bridge above the STP
Other:		

Nearest Downstream Public Water Supply Intake		Parker Water Authority	
PWS Waters	Allegheny River	Flow at Intake (cfs)	2050
PWS RMI	83.94	Distance from Outfall (mi)	30

Changes Since Last Permit Issuance:

Other Comments: Stream assessments have determined that the receiving stream does not support aquatic life, as well as most of Deer Creek, which Paint Creek flows into. It is not expected that the stream will recover within this next permit cycle.

Treatment Facility Summary

Treatment Facility Name: Paint Elk STP

WQM Permit No.	Issuance Date
1690402 A-4	2/16/2022
1690402-A1	2/23/11

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Stabilization Lagoon	Gas Chlorine	0.6

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.6	800.6	Not Overloaded	Sludge Lagoon	Landfill

Changes Since Last Permit Issuance: Aerators were added to the second lagoon, gas chlorination was replaced with liquid sodium hypochlorite disinfection, new headworks building with new influent box, spiral fine screen, manually cleaned bypass bar screen, cascade aerator to discharge pipe.

Other Comments: The Shippenville WWTP was converted to a pump station to transmit its wastewater to the Paint-Elk STP. Refer to WQM permit #1616402 and 1687402 T-1

Compliance History	
Summary of DMRs:	No effluent violations reported in the last three years.
Summary of Inspections:	Last site inspection was conducted on 5/18/2021. The inspection report noted all the major upgrades that had occurred in the last 4 years to the treatment facility and the collection system. It did not note any violations.

Other Comments:

Compliance History

DMR Data for Outfall 001 (from May 1, 2022 to April 30, 2023)

Parameter	APR-23	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22
Flow (MGD) Average Monthly	0.170	0.346	0.176	0.362	0.208	0.177	0.089	0.105	0.092	0.068	0.248	0.452
Flow (MGD) Weekly Average	0.351	0.533	0.245	0.438	0.251	0.323	0.103	0.142	0.298	0.089	0.336	0.647
pH (S.U.) Minimum	7.0	7.6	7.5	7.3	7.3	6.7	7.3	7.3	7.4	7.0	6.6	6.7
pH (S.U.) Maximum	8.1	8.0	8.1	7.8	7.8	7.6	7.7	7.6	7.6	7.6	7.3	7.4
DO (mg/L) Minimum	8.80	10.60	11.70	10.00	12.00	9.80	9.3	7.90	6.9	7.30	7.70	7.7
TRC (mg/L) Average Monthly	0.32	0.33	0.35	0.30	0.32	0.33	0.31	0.33	0.32	0.34	0.30	0.31
TRC (mg/L) Instantaneous Maximum	0.50	0.67	0.49	0.50	0.49	0.50	0.47	0.50	0.50	0.50	0.48	0.65
CBOD5 (lbs/day) Average Monthly	14.0	33.4	7.1	10.6	7.00	1.8	2.5	2.3	2.0	1.7	6.5	21.6
CBOD5 (mg/L) Average Monthly	5.5	6.5	4.5	5.0	5.0	2.5	3.5	1.9	4.0	3.5	3.5	5.0
BOD5 (lbs/day) Influent Average Monthly	271.7	198.2	360.9	715.3	333.9	379.6	606.4	278.5	532.7	427.7	309.6	222
BOD5 (mg/L) Influent Average Monthly	112.0	66.0	159.5	133.0	169.0	252.5	396.0	158.5	398.0	315.5	206.5	83.0
TSS (lbs/day) Average Monthly	29.2	56.3	16.2	34.8	23.1	26.7	4.2	6.4	6.3	10.2	37.9	124.4
TSS (lbs/day) Influent Average Monthly	219.7	192.5	260.0	620.0	171.2	138.1	494.9	285.5	261.7	333.9	391.3	306.6
TSS (mg/L) Average Monthly	22.0	15.2	12.5	13.3	14.0	14.4	7.0	5.0	10.0	14.3	17.2	23.5
TSS (mg/L) Influent Average Monthly	96.0	62.5	114.5	112.5	87.0	91.5	321.5	162.0	194.0	232.5	257.5	114.5

Fecal Coliform (No./100 ml) Geometric Mean	1	1	1	1	4	1	1	1	1	1	1	1
Fecal Coliform (No./100 ml) Instantaneous Maximum	1	1	1	1	9	2	1	2	1	1	1	1
Total Nitrogen (mg/L) Average Monthly		21.87			15.69			11.10			15.81	
Total Phosphorus (mg/L) Average Monthly		3.12			4.86			4.55			2.66	

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.6
Latitude 41º 14' 38" **Longitude** -79º 26' 41"
Wastewater Description: Treated domestic sewage

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)
E. Coli	Report (No./100 ml)	IMAX	-	92a.61

Comments: Monitoring for E. Coli is placed in the permit in accordance with the Department's SOP entitled "Establishing Effluent Limitations for Individual Sewage Permits."

Water Quality-Based Limitations

Comments: Since there is no aquatic life in the receiving stream in the vicinity of the discharge, secondary treatment limits are applied in accordance with PA Code 25 Ch. 95.5. Although a TMDL was developed for the Deer Creek Watershed (Paint Creek is part of this watershed), there is no reasonable expectation that the stream will improve "significantly" within the next permit cycle.

Toxics modeling was conducted for the toxic pollutants reported in the application. The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (ug/l)	SBC	Model
N/A			

Best Professional Judgment (BPJ) Limitations

Comments: Influent BOD_5 and TSS monitoring will be placed in the permit in accordance with the Department's SOP entitled "New and Reissuance Sewage Individual NPDES Permit Applications."

A dissolved oxygen limit of a minimum of 4.0 mg/l, a TRC IMAX limit of 1.6 mg/l, and monitoring for ammonia nitrogen, total nitrogen, and total phosphorus will be placed in the permit in accordance with the Department's SOP entitled "Establishing Effluent Limitations for Individual Sewage Permits."

Other Considerations

There are no waste load allocations in the Deer Creek Watershed TMDL for this facility. Therefore, monitoring for total aluminum, total iron, and total manganese will be placed in the permit a monitoring frequency of 1/year to evaluate the need to place effluent limits for these parameters in the NPDES Permit in the future and also to collect data if the TMDL is revised in the future.

Anti-Backsliding

N/A

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	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/day	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	1/day	Grab
DO	XXX	XXX	4.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	125	XXX	XXX	25.0	XXX	50	2/month	8-Hr Composite
BOD5 Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS	150	XXX	XXX	30.0	XXX	60	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
Total Nitrogen	Report Avg Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite
Ammonia	Report	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite

Outfall 001, Continued (from 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	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Phosphorus	Report Avg Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite
Total Aluminum	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/year	8-Hr Composite
Total Iron	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/year	8-Hr Composite
Total Manganese	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/year	8-Hr Composite

Compliance Sampling Location: Outfall 001 (after disinfection)

Other Comments: Monitoring frequency for pH, D.O, and TRC were changed to “1/day” to be consistent with the Department’s SOP entitled “New and Reissuance Sewage Individual NPDES Permit Applications.”

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Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Paint Elke STP** NPDES Permit No.: **PA0034924** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Treated domestic sewage**

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
0.6	100	7.1						

					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		442									
	Chloride (PWS)	mg/L		100									
	Bromide	mg/L		0.2									
	Sulfate (PWS)	mg/L		50									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	µg/L		15.3									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L		0.5									
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	µg/L		30									
	Total Molybdenum	µg/L											
	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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Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Paint Elke STP, NPDES Permit No. PA0034924, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: _____ No. Reaches to Model: 1

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	049424	30	1163	43.8	0.0029		No
End of Reach 1	042122	0	847	7671		1	No

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

Location	RMI	LFY (cfs/mi^2)*	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	30	0.0444										118	4.5		
End of Reach 1	0	0.1	2050									100	7		

Q_h

Location	RMI	LFY (cfs/mi^2)	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	30														
End of Reach 1	0														

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Toxics Management Spreadsheet
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Model Results

Paint Elke STP, NPDES Permit No. PA0034924, 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)
30	1.94		1.94	0.928	0.003	0.638	28.512	44.673	0.158	11.612	18.594
0	2050.00	1.547	2048.453								

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)
30	13.29		13.29	0.928	0.003	1.29	28.512	22.105	0.387	4.743	12.34
0	5827.224	1.547	5825.68								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 1 Analysis Hardness (mg/l): 112.18 Analysis pH: 4.67

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	
Total Copper	0	0		0	14.977	15.6	N/A	Chem Translator of 0.96 applied
Total Lead	0	0		0	73.177	94.5	N/A	Chem Translator of 0.774 applied
Total Zinc	0	0		0	129.170	132	N/A	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 18.594 PMF: 1 Analysis Hardness (mg/l): 112.18 Analysis pH: 4.67

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	
Total Copper	0	0		0	9.880	10.3	N/A	Chem Translator of 0.96 applied
Total Lead	0	0		0	2.852	3.68	N/A	Chem Translator of 0.774 applied
Total Zinc	0	0		0	130.227	132	N/A	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 18.594 THH PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A PWS PMF: 1

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	500,000	500,000	#########	WQC applied at RMI 0 with a design stream flow of 2050 cfs
Chloride (PWS)	0	0		0	250,000	250,000	#########	WQC applied at RMI 0 with a design stream flow of 2050 cfs
Sulfate (PWS)	0	0		0	250,000	250,000	#########	WQC applied at RMI 0 with a design stream flow of 2050 cfs
Total Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 12.340 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	
Total Copper	0	0		0	N/A	N/A	N/A	
Total Lead	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

☑ ***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)	1,104,788	mg/L	Discharge Conc ≤ 10% WQBEL
Chloride (PWS)	552,394	mg/L	Discharge Conc ≤ 10% WQBEL
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	552,394	mg/L	Discharge Conc ≤ 10% WQBEL
Total Copper		µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead		µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc		µg/L	Discharge Conc ≤ 10% WQBEL

Paint Elk STP
Paint Township, Clarion County
PA0034924 Discharge pH

Outfall 001

Date	pH min	pH max	10^ -pH min	10^ -pH max	& pH max)	-Log (Ave pH)
Jul-20	6.7	7.5	2E-07	3.16E-08	1.16E-07	**6.9**
Aug-20	7.1	7.5	7.94E-08	3.16E-08	5.55E-08	**7.3**
Sep-20	7.1	7.6	7.94E-08	2.51E-08	5.23E-08	**7.3**
Jul-21	6.7	7.1	2E-07	7.94E-08	1.39E-07	**6.9**
Aug-21	6.8	7.6	1.58E-07	2.51E-08	9.18E-08	**7.0**
Sep-21	7.0	7.5	1E-07	3.16E-08	6.58E-08	**7.2**
Jul-22	7.0	7.6	1E-07	2.51E-08	6.26E-08	**7.2**
Aug-22	7.4	7.6	3.98E-08	2.51E-08	3.25E-08	**7.5**
Sep-22	7.3	7.6	5.01E-08	2.51E-08	3.76E-08	**7.4**
					Median:	**7.1**