

Application Type Renewal  
 Facility Type Industrial  
 Major / Minor Minor

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

Application No. PA0222933  
 APS ID 1058403  
 Authorization ID 1387810

**Applicant and Facility Information**

Applicant Name	<u>Zekelman Ind Inc.</u>	Facility Name	<u>Sharon Tube</u>
Applicant Address	<u>20 Church Street</u> <u>Wheatland, PA 16161-1117</u>	Facility Address	<u>20 Church Street</u> <u>Wheatland, PA 16161</u>
Applicant Contact	<u>Robert Werth</u>	Facility Contact	<u></u>
Applicant Phone	<u></u>	Facility Phone	<u></u>
Client ID	<u>202943</u>	Site ID	<u>525183</u>
SIC Code	<u>3317</u>	Municipality	<u>Wheatland Borough</u>
SIC Description	<u>Manufacturing - Steel Pipe And Tubes</u>	County	<u>Mercer</u>
Date Application Received	<u>March 1, 2022</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u></u>	If No, Reason	<u></u>

Purpose of Application This application is for the renewal of an Individual Industrial Waste permit which covers a facility that does operations related to 40 CFR Part 420 Iron and Steel ELG.

**Summary of Review**

Applicable ELG's for this facility are based on conversations with the Environmental Manager at the facility and previous permits for the facility, these ELG's include:

40 CFR Part 420 Iron and Steel Subpart I – Acid Pickling (a)(4) Sulfuric Acid Pickling for Pipe, Tube, and Other Products Subpart J – Cold Forming (b)(2) Cold Worked Pipe and Tube Using Oil Solutions	40 CFR Part 433 Metal Finishing Subpart A – Metal Finishing
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Although the facility is eligible to receive limits from 40 CFR Part 433 Metal Finishing based on their operations, the facility will not receive limitations based on this ELG due to the exception in 40 CFR § 433.10(b) which says that if regulations and limits from 40 CFR Part 420 are implemented they will take precedent and the limits in 40 CFR Part 433 will not apply.

Based on the Pre-Draft Survey letter sent to the permittee on June 26, 2025, the facility believes it should be able to comply with all proposed limits in the draft permit upon permit issuance.

In the previous permit the limitations and modeling were performed using the assumed design flow at the facility, which was believed to be 300 gpm or 0.432 MGD. Based on the facilities Part 2 WQM Permit the facility is designed for 150 gpm or 0.216 MGD. Based on a recent amendment to this WQM Permit the facility kept its design rate of 0.216 MGD however clarifications were made in the Design Engineer's Report and application that the annual average flow at the facility should be closer to 0.05 MGD with an expected maximum daily flow of 0.07 MGD. When looking at the average flow data submitted on DMR's over the last 5 years (2021 – 2026) the average flow through Outfall 001 is 0.051 MGD and the average flow through Outfall 101 is 0.025 MGD. Since ELG calculations for IW permits should be based on the average flow during production, these values were used to calculate the ELG limitations in 40 CFR Part 420 and modeling in the Toxics Management Spreadsheet.

Approve	Deny	Signatures	Date
X		Dustin Hargenrater Dustin Hargenrater / Project Manager	March 19, 2026
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	April 1, 2026

**Summary of Review**

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.

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	<u>001</u>	Design Flow (MGD)	<u>.04</u>
Latitude	<u>41° 12' 1.23"</u>	Longitude	<u>-80° 30' 20.90"</u>
Quad Name	<u>Sharon West</u>	Quad Code	<u>41080B5</u>
Wastewater Description: <u>Suboutfall 101, Non-Contact Cooling Water, Stormwater</u>			
Receiving Waters	<u>Shenango River (WWF)</u>	Stream Code	<u>35482</u>
NHD Com ID	<u>130034022</u>	RMI	<u>25.49</u>
Drainage Area	<u>701</u>	Yield (cfs/mi <sup>2</sup> )	<u>0.036</u>
Q <sub>7-10</sub> Flow (cfs)	<u>25.3</u>	Q <sub>7-10</sub> Basis	<u>USGS - StreamStats</u>
Elevation (ft)	<u>815</u>	Slope (ft/ft)	<u>---</u>
Watershed No.	<u>20-A</u>	Chapter 93 Class.	<u>WWF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>METALS, POLYCHLORINATED BIPHENYLS (PCBS)</u>		
Source(s) of Impairment	<u>SOURCE UNKNOWN, SOURCE UNKNOWN</u>		
TMDL Status	<u>Final</u>	Name	<u>Shenango River</u>
Background/Ambient Data		Data Source	
pH (SU)	<u>7.0</u>	Default	<u></u>
Temperature (°F)	<u>25</u>	Default	<u></u>
Hardness (mg/L)	<u>85</u>	Analysis for application.	<u></u>
Other:	<u></u>		<u></u>
Nearest Downstream Public Water Supply Intake	<u>PA American Water Company – New Castle</u>		
PWS Waters	<u>Shenango River</u>	Flow at Intake (cfs)	<u>16.2</u>
PWS RMI	<u>5.1</u>	Distance from Outfall (mi)	<u>20.8</u>

Changes Since Last Permit Issuance: No changes since last permit issuance.

Other Comments: This outfall and Outfall 002 receive storm water based on statements in the previous fact sheet. Historically the stormwater meets no exposure exemption guidelines. Since the site conditions have not changed, the no exposure exemption will be extended for this permit term.

The flow to use for modeling for Industrial Waste cases is the average flow during production. The average flow during production for this outfall was calculated based on historical DMR data from 2021 – 2026. Based on the average flow reported on the DMRs over the last 5 years, the average flow through Outfall 001 is 0.051 MGD. Although ELG limitations are not calculated for Outfall 001, the average flow during production should still be used as a modeling input in the Toxics Management Spreadsheet.

Since this outfall also receives Non-Contact Cooling Water and the amount of cooling water the facility intakes is not specified in the application or process flow diagram the amount of cooling water expected to be discharging from Outfall 001 was based on the difference in flows between Outfall 101 and Outfall 001 and the addition of the evaporative losses and expected discharge rate specified in the process flow diagram. The flow used in the Thermal Limits Spreadsheet was 0.0257 MGD. This is expected to be an accurate representation of the NCCW flowing through this Outfall since the difference in flows reported on DMRs in Outfall 101 and Outfall 001 is 0.0261 MGD. There is a slight difference between the expected NCCW discharge and the difference in the outfalls because Outfall 001 is also expected to receive stormwater.

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	<u>101</u>	Design Flow (MGD)	<u>0.216</u>
Latitude	<u>41° 12' 2.73"</u>	Longitude	<u>-80° 30' 23.53"</u>
Quad Name	<u>Sharon West</u>	Quad Code	<u>41080B5</u>
Wastewater Description: <u>Acid Pickling, Metal Finishing, and Cold Forming Process Wastewaters</u>			
Receiving Waters	<u>Shenango River (WWF)</u>	Stream Code	<u>35482</u>
NHD Com ID	<u>130034022</u>	RMI	<u>25.49</u>
Drainage Area	<u>701</u>	Yield (cfs/mi <sup>2</sup> )	<u>0.036</u>
Q <sub>7-10</sub> Flow (cfs)	<u>25.3</u>	Q <sub>7-10</sub> Basis	<u>USGS - StreamStats</u>
Elevation (ft)	<u>815</u>	Slope (ft/ft)	<u>---</u>
Watershed No.	<u>20-A</u>	Chapter 93 Class.	<u>WWF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>METALS, POLYCHLORINATED BIPHENYLS (PCBS)</u>		
Source(s) of Impairment	<u>SOURCE UNKNOWN, SOURCE UNKNOWN</u>		
TMDL Status	<u>Final</u>	Name	<u>Shenango River</u>
Background/Ambient Data		Data Source	
pH (SU)	<u>7.0</u>	Default	<u></u>
Temperature (°F)	<u>25</u>	Default	<u></u>
Hardness (mg/L)	<u>85</u>	Analysis for application.	<u></u>
Other:	<u></u>		<u></u>
Nearest Downstream Public Water Supply Intake	<u>PA American Water Company – New Castle</u>		
PWS Waters	<u>Shenango River</u>	Flow at Intake (cfs)	<u>16.2</u>
PWS RMI	<u>5.1</u>	Distance from Outfall (mi)	<u>20.8</u>

Changes Since Last Permit Issuance: Cold Forming ELG limitations are being implemented for this renewal based on the cold forming process at the facility. It is unknown as to why the limits were not included in the last permit renewal. Questions regarding this subcategory and additional questions regarding parameters within the category are in the permit file, however no justification or determination were included in the permit documents to justify excluding these limits.

Other Comments: A similar approach was taken regarding the flow used to calculate the limits at this outfall for the Toxics Management Spreadsheet. The average flow through this outfall was taken over the last 5 years of DMR submissions, the average flow through this outfall over that time was 0.025 MGD. This value was used to calculate the limits in the Toxics Managements Spreadsheet model.

ELG Limit calculations were based on production of 1,000 lbs of product. Based on the maximum monthly production and the average production days per month the daily max production was 614.09 thousand pounds of product. This is slightly down from the 673.4 thousand pounds of product in the previous renewal, however, based on production values in the application and emails from the permittee there has been a slight decline in production since the last permit renewal.

Based on conversations with the DEP Biologists, there is not believed to be any concern for T&E Mussels in this stretch of the Shenango River. The critical habitat for T&E Mussels is typically between Pymatuning Lake and Shenango River Lake, as well as a small stretch below Shenango River Lake.

Treatment Facility Summary																		
<b>Treatment Facility Name:</b> Wheatland Tube Church St Plant																		
<table border="1"> <thead> <tr> <th>WQM Permit No.</th> <th>Issuance Date</th> </tr> </thead> <tbody> <tr> <td>4399201</td> <td>3/8/2000</td> </tr> <tr> <td>4399201 T-1</td> <td>5/11/2007</td> </tr> <tr> <td>4399201 T-2</td> <td>1/24/2011</td> </tr> <tr> <td>4399201 T-2 A-1</td> <td>1/31/2013</td> </tr> <tr> <td>4399201 T-3 A-1</td> <td>8/2/2017</td> </tr> <tr> <td>4399201 T-3 A-2</td> <td>10/31/2022</td> </tr> </tbody> </table>					WQM Permit No.	Issuance Date	4399201	3/8/2000	4399201 T-1	5/11/2007	4399201 T-2	1/24/2011	4399201 T-2 A-1	1/31/2013	4399201 T-3 A-1	8/2/2017	4399201 T-3 A-2	10/31/2022
WQM Permit No.	Issuance Date																	
4399201	3/8/2000																	
4399201 T-1	5/11/2007																	
4399201 T-2	1/24/2011																	
4399201 T-2 A-1	1/31/2013																	
4399201 T-3 A-1	8/2/2017																	
4399201 T-3 A-2	10/31/2022																	
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)														
Industrial	Chemical (Industrial Waste)	Neutralization	No Disinfection															
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal														
0.216			Pressure Filtration	Landfill														

Changes Since Last Permit Issuance: In 2022 the amendment of the facility included replacement of the existing coagulation/flocculation/clarifier system with a new inclined plate clarifier system, and the replacement of the existing sludge filter press system with a new, higher capacity sludge filter press system.

Other Comments: Since the amendment in 2022 the facility has only had 2 effluent violations of the existing limits. These violations were for exceedances of the daily maximum and average monthly load of Total Zinc. The reason for the violation was due to an employee error which prompted a review of work procedures and training.

**Compliance History**

**DMR Data for Outfall 001 (from February 1, 2025 to January 31, 2026)**

Parameter	JAN-26	DEC-25	NOV-25	OCT-25	SEP-25	AUG-25	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25
Flow (MGD) Average Monthly	0.0207	0.0235	0.0208	0.02276 5	0.02238	0.0203	0.0230	0.01997	0.02065 2	0.02258	0.02381	0.02147 2
pH (S.U.) Minimum	7.63	7.79	6.79	7.42	7.29	7.42	7.11	7.24	6.75	7.15	7.94	8.11
pH (S.U.) Maximum	8.42	8.48	7.36	7.44	7.42	7.50	7.33	7.24	7.60	7.68	8.38	8.46
TSS (mg/L) Average Monthly	5.0	< 45.0	< 9.0	< 3.0	< 7.0	< 6.0	6.0	7.0	< 4.0	3.0	8.0	< 3.0
Oil and Grease (mg/L) Average Monthly	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.08
Oil and Grease (mg/L) Daily Maximum	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	5.15
Total Lead (mg/L) Average Monthly	< 0.007	< 0.007	< 0.005	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003

**DMR Data for Outfall 101 (from February 1, 2025 to January 31, 2026)**

Parameter	JAN-26	DEC-25	NOV-25	OCT-25	SEP-25	AUG-25	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25
Flow (MGD) Average Monthly	0.0062	0.0094	0.0067	0.00866 5	0.00828	0.0062	0.00891	0.00587	0.00655 2	0.00848	0.00971	0.00737 2
TSS (lbs/day) Average Monthly	0.5	< 0.5	< 0.2	< 0.2	< 0.5	0.4	0.9	0.4	< 0.2	0.8	< 0.3	0.5
TSS (lbs/day) Daily Maximum	0.5	0.9	0.3	< 0.2	0.80	0.4	1.3	0.4	0.2	0.9	< 0.3	0.8
TSS (mg/L) Average Monthly	10.0	< 9.0	< 4.0	< 3.0	< 8.0	8.0	14.0	10.0	< 3.0	11.0	< 4.0	< 7.0
TSS (mg/L) Daily Maximum	11.0	15.0	4.0	< 3.0	13.0	8.0	21.0	10.0	3.0	12.0	5.0	11.0
Oil and Grease (lbs/day) Average Monthly	< 0.2	< 0.3	< 0.3	< 0.3	< 0.4	< 0.3	< 0.3	< 0.2	< 0.3	< 0.4	< 0.4	< 0.5
Oil and Grease (lbs/day) Daily Maximum	< 0.2	< 0.3	< 0.3	< 0.3	< 0.4	< 0.3	< 0.4	< 0.2	< 0.3	< 0.4	< 0.5	0.6
Oil and Grease (mg/L) Average Monthly	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 6.98

**NPDES Permit Fact Sheet  
Sharon Tube**

**NPDES Permit No. PA0222933**

Oil and Grease (mg/L) Daily Maximum	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	8.96
Total Iron (lbs/day) Average Monthly	0.01	0.008	0.15	0.007	0.01	0.01	0.01	0.01	0.006	0.4	0.02	0.02
Total Iron (mg/L) Average Monthly	0.27	0.12	0.009	0.11	0.17	0.24	0.15	0.23	0.11	0.19	0.3	0.33
Total Lead (lbs/day) Average Monthly	< 0.0003	< 0.0004	< 0.0003	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Total Lead (lbs/day) Daily Maximum	< 0.0003	< 0.0005	< 0.00004	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0003	< 0.0002
Total Lead (mg/L) Average Monthly	< 0.007	< 0.007	< 0.005	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Total Lead (mg/L) Daily Maximum	< 0.007	< 0.007	< 0.007	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Total Zinc (lbs/day) Average Monthly	0.007	0.003	0.002	0.002	0.01	0.0009	0.004	0.001	0.0008	0.002	0.002	0.002
Total Zinc (lbs/day) Daily Maximum	0.009	0.003	0.005	0.003	0.02	0.001	0.006	0.001	0.001	0.003	0.003	0.002
Total Zinc (mg/L) Average Monthly	0.15	0.05	0.043	0.003	0.13	0.017	0.05	0.03	0.014	0.028	0.03	0.03
Total Zinc (mg/L) Daily Maximum	0.18	0.05	0.08	0.04	0.24	0.024	0.1	0.03	0.02	0.035	0.03	0.03

**Development of Effluent Limitations**

<b>Outfall No.</b>	001	<b>Design Flow (MGD)</b>	.216, Average Flow During Production (0.05 MGD)
<b>Latitude</b>	41° 12' 1.91"	<b>Longitude</b>	-80° 30' 19.98"
<b>Wastewater Description:</b> Non-Contact Cooling Water, IMP 101, Stormwater			

**Technology-Based Limitations**

**Wastewater TBELs:**

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	25 PA Code 95.2(1)
	15.0	Average Monthly		25 PA Code 95.2(2)
Oil & Grease	30.0	IMAX		25 PA Code 95.2(2)(ii)
Dissolved Iron	7.0	IMAX		25 PA Code 95.2(4)

**Stormwater TBELs:**

Pollutant	Monitoring Requirements <sup>(1)(2)</sup>		Benchmark Values
	Minimum Measurement Frequency	Sample Type	
Total Nitrogen (mg/L) <sup>(3)</sup>	1/6 months	Calculation	XXX
Total Phosphorous (mg/L)	1/6 months	Grab	XXX
Total Suspended Solids (TSS) (mg/L)	1/6 months	Grab	XXX <sup>(4)</sup>
Oil & Grease (mg/L)	1/6 months	Grab	30
Total Aluminum (mg/L)	1/6 months	Grab	XXX
Total Zinc (mg/L)	1/6 months	Grab	XXX
Total Copper (mg/L)	1/6 months	Grab	XXX
Total Iron (mg/L)	1/6 months	Grab	XXX
Total Lead (mg/L)	1/6 months	Grab	XXX

**Footnotes**

- (1) In accordance with Part C V.C, the permittee shall conduct additional monitoring if specified by DEP in the letter authorizing permit coverage or other correspondence.
- (2) This is the minimum number of sampling events required. Permittees may optionally perform additional sampling.
- (3) Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO<sub>2</sub>+NO<sub>3</sub>-N), where TKN and NO<sub>2</sub>+NO<sub>3</sub>-N are measured in the same sample.
- (4) Typically, the benchmark value for TSS is 100 mg/L. Based on the permittee's allowable load through the ELG calculations this benchmark value may be exceeded, so DEP is not including the benchmark requirement for TSS.

Comments: The wastewater TBEL's for pH and Oil and Grease will be carried over from the previous permit. Additionally, based on WQBEL's calculated by the TMS which would exceed the 7.0 mg/L IMAX value for Dissolved Iron, the implementation of this limit will be included based on Chapter 95.2(4).

A majority of the stormwater TBEL parameters will have limits or monitoring already between Outfall 001 and IMP 101 so Oil & Grease, Total Aluminum, Total Zinc, Total Copper, Total Suspended Solids, Total Iron, and Total Lead will be excluded from stormwater monitoring at Outfall 001. Since Total Nitrogen and Total Phosphorous will not be monitored elsewhere in the permit, these TBELs will be included. With the renewal of this permit monitoring for TSS and Total Lead out of this outfall will be removed. The need to have monitoring for these parameters seems to be a redundancy aimed at quantifying the storm water at the facility. Since both of these parameters will be monitored via Outfall 101 and have limits at this outfall the need to impose monitoring for these parameters further down the line should not be needed.

**Water Quality-Based Limitations**

This discharge was modeled using the Toxics Management Spreadsheet and the Thermal Limit spreadsheet due to the facility being an Industrial Waste permit that uses non-contact cooling water. The Toxics Management Spreadsheet uses a mass-balance approach to calculate limits based on in-stream data for Q<sub>7-10</sub>, Yield, Drainage Area, pH, and Hardness. The model also uses existing concentrations of pollutants reported at the facility for pollutant groups 1-5, the maximum concentrations reported are used if there are less than 10 samples of any given parameter and the average concentrations are used for parameters with a sample size greater than 10. The Thermal Limits Spreadsheet takes into consideration the existing intake rates for cooling water at the facility, the thermal criteria for CWF, TSF, and WWF designations, and Q<sub>7-10</sub> multipliers that are based on typical flows during each month and uses a mass-balance approach to calculate thermal limits at the facility.

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
Total Aluminum (ug/L)	Report	Average Monthly	Toxics Management Spreadsheet
Temperature (Degrees F)	110.0	Daily Maximum	Thermal Limits Spreadsheet
Dibenzo(a,h)Anthracene (ug/L)	0.16	Average Monthly	Toxics Management Spreadsheet
	0.25	Daily Maximum	
	0.4	IMAX	

**Toxics Management Spreadsheet**

The TMS also suggested monitoring for Total Copper, Dissolved Iron, Total Iron, and Total Zinc. Total Copper is being controlled through numerical limits at Outfall 101 so the need to include monitoring at this Outfall would be redundant. The Dissolved Iron limitations provided by the TMS are considerably higher than those found in Chapter 95.2(4) of state regulations which states waste may not contain more than 7 milligrams per liter of Dissolved Iron. Since the 7 mg/L maximum is more stringent than the limits suggested in the TMS, the effluent standard of 7 mg/L IMAX of Dissolved Iron will be implemented in the permit. Total Iron will receive monitoring and reporting requirements at Outfall 101 so additional monitoring of this parameter at Outfall 001 would be redundant. Total Zinc will be limited through ELG's based on the operations at the facility so monitoring at Outfall 001 will not be imposed based on redundancy.

**Total Aluminum**

The TMS suggested monitor and reporting for Total Aluminum based on the inputs for the model. Since Total Aluminum is in the metals category and technically a toxic pollutant the monitoring frequency will be set for 2/month.

**Dibenzo(a,h)Anthracene**

The TMS suggested limits for Dibenzo(a,h)Anthracene of 0.16 ug/l Average Monthly, 0.25 ug/l Maximum Daily, and 0.4 ug/l IMAX. Since these limits are below the Departments QL the Part C Condition for WQBELs below quantitation limits will be used in the permit. Based on the inputs used in the TMS and taking a look at the testing data submitted by the facility, the laboratory used a lower detection limit than the Departments QL but had a detection which caused limits to be developed because the water quality criterion for chronic human health is 0.0001 ug/L.

**Thermal Limits Spreadsheet**

Based on the Thermal Limits Spreadsheet seasonal variations of limits for temperature should not be needed. The 110 °F limit that is being implemented is the maximum temperature allowed for safety of people coming into contact with these waters (someone taking a sample or swimming in the stream below the discharge, i.e.). Additionally, the Part C condition which restricts the maximum temperature change in the receiving water to no more than 2 °F during any given hour, will be implemented in the permit.

**Best Professional Judgment (BPJ) Limitations**

**Per- and Polyfluoroalkyl Substances (PFAS)**

In February 2024, DEP implemented a new monitoring initiative for PFAS consistent with an EPA memorandum that provides guidance to states for addressing PFAS discharges. PFAS are a family of thousands of synthetic organic chemicals that contain a chain of strong carbon-fluorine bonds. Many PFAS are highly stable, water- and oil-resistant, and exhibit other properties that make them useful in a variety of consumer products and industrial processes. PFAS are resistant to biodegradation, photooxidation, direct photolysis, and hydrolysis and do not readily degrade naturally; thus, many PFAS accumulate over time. According to the United States Department of Health and Human Services, Agency for Toxic Substances and Disease Registry (ATSDR), the environmental persistence and mobility of some PFAS, combined with decades of widespread use, have resulted in their presence in surface water, groundwater, drinking water, rainwater, soil, sediment, ice caps, outdoor and indoor air, plants, animal tissue, and human blood serum across the globe. ATSDR also reported that exposure to certain PFAS can lead to adverse human health impacts. Due to their durability, toxicity, persistence, and pervasiveness, PFAS have emerged as potentially significant pollutants of concern.

In accordance with Section II.I of DEP's "Standard Operating Procedure (SOP) for Clean Water Program – Establishing Effluent Limitations for Individual Industrial Permits" [SOP No. BCW-PMT-032] and under the authority of 25 Pa. Code § 92a.61(b), DEP has determined that monitoring for a subset of common/well-studied PFAS including Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), Perfluorobutanesulfonic acid (PFBS), and Hexafluoropropylene oxide dimer acid (HFPO-DA) is necessary to help understand the extent of environmental contamination by PFAS in the Commonwealth and the extent to which point source dischargers are contributors. SOP BCW-PMT-032 directs permit writers to consider special monitoring requirements for PFOA, PFOS, PFBS, and HFPO-DA in the following instances:

- a. If sampling that is completed as part of the permit renewal application reveals a detection of PFOA, PFOS, HFPO-DA or PFBS (any of these compounds), the application manager will establish a quarterly monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds) in the permit.
- b. If sampling that is completed as part of the permit renewal application demonstrates non-detect values at or below the Target QLs for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds in a minimum of 3 samples), the application manager will establish an annual monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS in the permit.
- c. In all cases the application manager will include a condition in the permit that the permittee may cease monitoring for PFOA, PFOS, HFPO-DA and PFBS when the permittee reports non-detect values at or below the Target QL for four consecutive monitoring periods for each PFAS parameter that is analyzed. Use the following language: The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detects at or below Quantitation Limits of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS and 6.4 ng/L for HFPO-DA. When monitoring is discontinued, permittees should enter a No Discharge Indicator (NODI) Code of "GG" on DMRs.

The Sharon Tube – Church St. Plant application was submitted before the addition of PFAS monitoring into the permit application. Since no data is available the PFAS monitoring will be implemented on a quarterly basis. As stated in Section II.I.c of the SOP, if non-detect values at or below DEP's Target QLs are report for four consecutive monitoring periods (i.e. four consecutive quarterly results in Sharon Tube's case), then monitoring may be discontinued. This information will also be included as a footnote in the NPDES Permit.

**Anti-Backsliding**

According to the Clean Water Act Section 402(o)(1) “In the case of effluent limitations established on the basis of subsection (a)(1)(B) of this section, a permit may not be renewed, reissued, or modified on the bases of effluent guidelines promulgated under section 1314(b) of this title subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit. In the case of effluent limitations established on the bases of section 1311(b)(1)(C) or section 1313(d) of this title, a permit may not be renewed, reissued, or modified to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit except in compliance with section 1313(d)(4) of this title.”

**Outfall001 , Continued (from Permit Effective Date through Permit Expiration Date )**

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/week	Estimate
pH (S.U.)	XXX	XXX	6.0	XXX	9.0	XXX	2/month	Grab
Total Suspended Solids	XXX	XXX	XXX	Report	XXX	XXX	1/month	Grab
Oil and Grease	XXX	XXX	XXX	15	30 Daily Max	XXX	2/month	Grab
Lead, Total	XXX	XXX	XXX	Report	XXX	XXX	2/month	Grab

**Development of Effluent Limitations**

<b>Outfall No.</b>	101	<b>Design Flow (MGD)</b>	0.216, Average Flow During Production (0.025)
<b>Latitude</b>	41° 12' 10.00"	<b>Longitude</b>	-80° 30' 21.00"
<b>Wastewater Description:</b> Acid Pickling Wastewaters, Cold Forming Wastewaters, Metal Finishing Wastewaters			

**Technology-Based Limitations**

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

**40 CFR 420 – Subpart I (Acid Pickling) Technology Based Limits**

Pollutant	ELG – BPT/BAT/BCT Effluent Limits (lbs/1,000 lbs of product)	
	Max for Any 1 Day	Average Daily Value for 30 Consecutive Days
Total Suspended Solids (BPT/BCT)	0.146	0.0626
pH (BPT/BCT)	Within the range of 6.0 to 9.0	
Total Lead (BPT/BAT)	0.000939	0.000313
Total Zinc (BPT/BAT)	0.00125	0.000417
Oil and Grease (BPT/BCT)	0.0626	0.0209

**40 CFR 420 – Subpart J (Cold Forming) Technology Based Limits**

Pollutant	ELG – BPT/BAT/BCT Effluent Limits	
	Max for Any 1 Day	Average Daily Value for 30 Consecutive Days
Total Suspended Solids (BPT/BCT)	0.00125	0.000626
pH (BPT/BCT)	Within the range of 6.0 to 9.0	
Total Chromium (BPT/BAT)	0.0000209	0.0000084
Total Nickel (BPT/BAT)	0.0000188	0.0000063
Oil and Grease (BPT/BCT)	0.000522	0.000209
Naphthalene (BPT/BCT)	0.0000021	XXX
Tetrachloroethylene (BPT/BAT)	0.0000031	XXX

These technology limits are based on thousands of pounds of products produced using a calculated Daily Max Production value from the table provided in the permit application. The Daily Max Production is calculated by taking the Max Monthly Production provided in the table divided by the Average Production Days per Month provided in the table. For this instance the Max Monthly Production in the table occurred in 2017 and the Average Production Days per Month for that year was 23. Using these values the Daily Max Production was calculated to be 614.09 tppd (thousand pounds of product per day). This Daily Max Production value was then multiplied by the factors above to calculate mass loading limits for the respectable parameters.

These limits are all apart of 40 CFR Part 420 which describes Effluent Limitation Guidelines for manufacturers in the Iron and Steel category. Since the facility does multiple operations applicable to limits in this ELG the limits in each applicable subpart get combined together after the calculations are made for each separate subpart. Based on the multiplication factors above and the Daily Max Production of 614.09 tppd the final mass-based limits for the 40 CFR Part 420 are as follows:

Pollutant	Allowable Mass Loading (lbs/day) Total	
	Average Monthly	Daily Maximum
Total Suspended Solids	38.83	90.42
Total Chromium	0.00516	0.0128
Total Nickel	0.004	0.0115
Oil and Grease	12.963	38.76
Total Zinc	0.26	0.77
Total Lead	0.19	0.58
Naphthalene	XXX	0.00129
Tetrachloroethylene	XXX	0.0019
pH	Between 6.0 and 9.0 at all times	

Although the facility is eligible to receive limits from 40 CFR Part 433 Metal Finishing based on their operations, the facility will not receive limitations based on this ELG due to the exception in 40 CFR § 433.10(b) which says that if regulations and limits from 40 CFR Part 420 are implemented they will take precedent and the limits in 40 CFR Part 433 will not apply.

The IMAX concentration for these parameters is based on the conversion of the mass-based limits to a concentration. The formula and example can be found below.

Mass Based Limit = Average Flow During Production x 8.34 x Concentration Based Limit

To find the concentration of the pollutant the formula then would look like this:

Mass Based Limit / Average Flow During Production x 8.34 = Concentration Based Limit

Total Zinc IMAX Calculation

$0.26 / 0.026 * 8.34 = \text{Concentration Based Limit}$

$0.26 / 0.21684 = \text{Concentration Based Limit}$

1.2 mg/L = Average Monthly Concentration Based Limit

Using a multiplier of 2.5 to get the IMAX concentration based on the multiplier found in the Permit Writer's Manual

$1.2 \text{ mg/L} \times 2.5 = 3 \text{ mg/L IMAX Concentration Limit}$

### Water Quality-Based Limitations

This discharge was modeled using the Toxics Management Spreadsheet. The Toxics Management Spreadsheet uses a mass-balance approach to calculate limits based on in-stream data for Q<sub>7-10</sub>, Yield, Drainage Area, pH, and Hardness. The model also uses existing concentrations of pollutants reported at the facility for pollutant groups 1-5, the maximum concentrations reported are used if there are less than 10 samples of any given parameter and the long-term average concentrations are used for parameters with a sample size greater than 10.

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC
Total Copper	1.1	Average Monthly
	1.72	Maximum Daily
	2.75	IMAX
Dissolved Iron (ug/L)	Report	Average Monthly, Daily Maximum
Total Iron	Report	Average Monthly, Daily Maximum
Total Zinc (ug/L)	9466	Average Monthly
	14768	Daily Maximum
	23665	IMAX
Benzo(a)Pyrene (ug/L)	0.32	Average Monthly
	0.5	Daily Maximum
	0.81	IMAX

\*Testing frequency for these parameters will be set to 2/month.

#### Dissolved Iron

The Dissolved Iron monitoring requirement will not be implemented at this outfall. Since Outfall 001 modeling suggested limits for the Dissolved Iron parameter the implementation of the effluent standards in 25 PA Code Chapter 95.2(4) will be implemented. Therefore, monitoring for Dissolved Iron through this outfall would be redundant and will not be implemented.

#### Total Zinc

The limits for Total Zinc were compared to the limits calculated based on the ELG limitations to determine which of the two were more stringent. The limits for the ELG were more stringent for Total Zinc so those mass-based limits will apply. For compliance purposes an IMAX concentration limit is coded into WMS which is considered the maximum concentration a facility can reach before exceeding the mass-based limits for any given day.

Benzo(a)Pyrene

The TMS suggested limits for Benzo(a)Pyrene of 0.32 ug/l Average Monthly, 0.5 ug/l Maximum Daily, and 0.81 ug/l IMAX. Since these limits are below the Departments QL the Part C Condition for WQBELs below quantitation limits will be used in the permit. Based on the inputs used in the TMS and taking a look at the testing data submitted by the facility, the laboratory used a lower detection limit than the Departments QL but had a detection which caused limits to be developed because the water quality criterion for chronic human health is 0.0001 ug/L.

**Best Professional Judgment (BPJ) Limitations**

Comments: No BPJ limits are being proposed for this renewal.

**Anti-Backsliding**

According to the Clean Water Act Section 402(o)(1) "In the case of effluent limitations established on the basis of subsection (a)(1)(B) of this section, a permit may not be renewed, reissued, or modified on the bases of effluent guidelines promulgated under section 1314(b) of this title subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit. In the case of effluent limitations established on the bases of section 1311(b)(1)(C) or section 1313(d) of this title, a permit may not be renewed, reissued, or modified to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit except in compliance with section 1313(d)(4) of this title."

**Outfall 101 , Continued (from Permit Effective Date through Permit Expiration Date )**

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	Continuous	Measured
Total Suspended Solids	63.2	147.5	XXX	Report	Report	44	2/month	24-Hr Composite
Oil and Grease	21.1	25.3	XXX	Report	Report	14.6	2/month	Grab
Iron, Total	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Lead, Total	0.2	0.6	XXX	Report	Report	0.15	2/month	24-Hr Composite
Zinc, Total	0.8	1.4	XXX	Report	Report	0.6	2/month	24-Hr Composite

**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) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/week	Estimate
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	2/month	Grab
Temperature (°F)	XXX	XXX	XXX	XXX	110.0	XXX	2/month	I-S
Oil and Grease	XXX	XXX	XXX	15.0	30.0	XXX	2/month	Grab
Total Nitrogen	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	1/6 months	Grab
Total Phosphorus	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	1/6 months	Grab
Total Aluminum (ug/L)	XXX	XXX	XXX	Report	Report	XXX	2/month	24-Hr Composite
Dissolved Iron	XXX	XXX	XXX	7.0 Daily Max	XXX	XXX	2/month	24-Hr Composite
Dibenzo(a,h)-Anthracene (ug/L)	XXX	XXX	XXX	0.16	0.25	0.4	2/month	24-Hr Composite
PFOA (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
PFOS (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
HFPO-DA (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
PFBS (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab

Compliance Sampling Location: Outfall 001.

**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 101, Effective Period: Permit Effective Date through Permit Expiration Date.**

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	Continuous	Measured
TSS	38.83	90.42	XXX	Report	Report	186	2/month	24-Hr Composite
Oil and Grease	12.96	38.76	XXX	15.0	30	37.5	2/month	Grab
Total Chromium (ug/L)	0.005	0.012	XXX	Report	Report	61.8	2/month	24-Hr Composite
Total Copper	XXX	XXX	XXX	1.1	1.72	2.75	2/month	24-Hr Composite
Total Iron	XXX	XXX	XXX	Report	Report	XXX	2/month	24-Hr Composite
Total Lead	0.19	0.58	XXX	Report	Report	2.27	2/month	24-Hr Composite
Total Nickel (ug/L)	0.004	0.011	XXX	Report	Report	38.36	2/month	24-Hr Composite
Total Zinc	0.26	0.77	XXX	Report	Report	3.12	2/month	24-Hr Composite
Benzo(a)Pyrene (ug/L)	XXX	XXX	XXX	0.32	0.5	0.81	2/month	24-Hr Composite
Naphthalene (ug/L)	XXX	0.001	XXX	XXX	Report	5.98	2/month	24-Hr Composite
Tetrachloro-ethylene (ug/L)	XXX	0.001	XXX	XXX	Report	5.98	2/month	24-Hr Composite

Compliance Sampling Location: Outfall 101, after wastewater treatment but prior to mixing with other wastewaters.

Toxics Management Spreadsheet Modeling  
Outfall 001



Toxics Management Spreadsheet  
Version 1.4, May 2023

## Discharge Information

Instructions Discharge Stream

Facility: Sharon Tube NPDES Permit No.: PA0222933 Outfall No.: 001  
 Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: Non-Contact Cooling Water, IMP 101, Stor

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q <sub>7-10</sub>	Q <sub>h</sub>
0.051	2010	6.79						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
			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	2060								
	Chloride (PWS)	mg/L	27.7								
	Bromide	mg/L	< 1								
	Sulfate (PWS)	mg/L	4500								
	Fluoride (PWS)	mg/L	1.32								
Group 2	Total Aluminum	µg/L	5220								
	Total Antimony	µg/L	< 2								
	Total Arsenic	µg/L	4.18								
	Total Barium	µg/L	41.3								
	Total Beryllium	µg/L	< 1								
	Total Boron	µg/L	3.45								
	Total Cadmium	µg/L	0.29								
	Total Chromium (III)	µg/L	1270								
	Hexavalent Chromium	µg/L	29								
	Total Cobalt	µg/L	13.4								
	Total Copper	µg/L	70								
	Free Cyanide	µg/L									
	Total Cyanide	µg/L	17								
	Dissolved Iron	mg/L	224								
	Total Iron	mg/L	218								
	Total Lead	µg/L	1.01								
	Total Manganese	µg/L	8870								
	Total Mercury	µg/L	< 0.09								
	Total Nickel	µg/L	557								
	Total Phenols (Phenolics) (PWS)	µg/L	140								
Total Selenium	µg/L	< 5									
Total Silver	µg/L	< 0.4									
Total Thallium	µg/L	2									
Total Zinc	µg/L	1638									
Total Molybdenum	µg/L	90.4									
Acrolein	µg/L	< 1									
Acrylamide	µg/L	< 0.5									
Acrylonitrile	µg/L	< 0.5									
Benzene	µg/L	< 0.5									
Bromoform	µg/L	< 0.5									
Carbon Tetrachloride	µg/L	< 0.5									
Chlorobenzene	µg/L	< 0.5									
Chlorodibromomethane	µg/L	1.1									
Chloroethane	µg/L	< 0.5									
2-Chloroethyl Vinyl Ether	µg/L	< 0.5									







Stream / Surface Water Information

Sharon Tube, NPDES Permit No. PA0222933, Outfall 001

Instructions Discharge Stream

Receiving Surface Water Name: Shenango River No. Reaches to Model: 1

- Statewide Criteria
- Great Lakes Criteria
- ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi <sup>2</sup> )*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	035482	25.67	818	701			Yes
End of Reach 1	035482	24.95	814	703			Yes

Q<sub>7-10</sub>

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	25.67	0.036										85	7		
End of Reach 1	24.95	0.036													

Q<sub>h</sub>

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	25.67														
End of Reach 1	24.95														



Model Results

Sharon Tube, NPDES Permit No. PA0222933, Outfall 001

All
  Inputs
  Results
  Limits

- Hydrodynamics
- Wasteload Allocations

AFC
 CCT (min): 
 PMF: 
 Analysis Hardness (mg/l): 
 Analysis pH:

Pollutants	Stream Conc	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	47,446	
Total Antimony	0	0		0	1,100	1,100	69,587	
Total Arsenic	0	0		0	340	340	21,509	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	1,328,483	
Total Boron	0	0		0	8,100	8,100	512,415	
Total Cadmium	0	0		0	2,315	2,47	156	Chem Translator of 0.938 applied
Total Chromium (III)	0	0		0	640,814	2,028	128,287	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	1,031	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	6,010	
Total Copper	0	0		0	15,385	16.0	1,014	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	75,475	98.0	6,200	Chem Translator of 0.77 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1,400	1.65	104	Chem Translator of 0.85 applied
Total Nickel	0	0		0	528,670	530	33,511	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	4,117	4.84	306	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	4,112	
Total Zinc	0	0		0	132,329	135	8,560	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	190	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	650	650	41,120	

Benzene	0	0	0	640	640	40,487
Bromoform	0	0	0	1,800	1,800	113,870
Carbon Tetrachloride	0	0	0	2,800	2,800	177,131
Chlorobenzene	0	0	0	1,200	1,200	75,913
Chlorodibromomethane	0	0	0	N/A	N/A	N/A
2-Chloroethyl Vinyl Ether	0	0	0	18,000	18,000	1,138,700
Chloroform	0	0	0	1,900	1,900	120,196
Dichlorobromomethane	0	0	0	N/A	N/A	N/A
1,2-Dichloroethane	0	0	0	15,000	15,000	948,917
1,1-Dichloroethylene	0	0	0	7,500	7,500	474,458
1,2-Dichloropropane	0	0	0	11,000	11,000	695,872
1,3-Dichloropropylene	0	0	0	310	310	19,611
Ethylbenzene	0	0	0	2,900	2,900	183,457
Methyl Bromide	0	0	0	550	550	34,794
Methyl Chloride	0	0	0	28,000	28,000	1,771,311
Methylene Chloride	0	0	0	12,000	12,000	759,133
1,1,2,2-Tetrachloroethane	0	0	0	1,000	1,000	63,261
Tetrachloroethylene	0	0	0	700	700	44,283
Toluene	0	0	0	1,700	1,700	107,544
1,2-trans-Dichloroethylene	0	0	0	6,800	6,800	430,176
1,1,1-Trichloroethane	0	0	0	3,000	3,000	189,783
1,1,2-Trichloroethane	0	0	0	3,400	3,400	215,088
Trichloroethylene	0	0	0	2,300	2,300	145,501
Vinyl Chloride	0	0	0	N/A	N/A	N/A
2-Chlorophenol	0	0	0	560	560	35,426
2,4-Dichlorophenol	0	0	0	1,700	1,700	107,544
2,4-Dimethylphenol	0	0	0	660	660	41,752
4,6-Dinitro-o-Cresol	0	0	0	80	80	5,061
2,4-Dinitrophenol	0	0	0	660	660	41,752
2-Nitrophenol	0	0	0	8,000	8,000	506,089
4-Nitrophenol	0	0	0	2,300	2,300	145,501
p-Chloro-m-Cresol	0	0	0	160	160	10,122
Pentachlorophenol	0	0	0	8.686	8.69	549
Phenol	0	0	0	N/A	N/A	N/A
2,4,6-Trichlorophenol	0	0	0	460	460	29,100
Acenaphthene	0	0	0	83	83.0	5,251
Anthracene	0	0	0	N/A	N/A	N/A
Benzidine	0	0	0	300	300	18,978
Benzo(a)Anthracene	0	0	0	0.5	0.5	31.6
Benzo(a)Pyrene	0	0	0	N/A	N/A	N/A
3,4-Benzofluoranthene	0	0	0	N/A	N/A	N/A
Benzo(k)Fluoranthene	0	0	0	N/A	N/A	N/A
Bis(2-Chloroethyl)Ether	0	0	0	30,000	30,000	1,897,833
Bis(2-Chloroisopropyl)Ether	0	0	0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0	0	4,500	4,500	284,675
4-Bromophenyl Phenyl Ether	0	0	0	270	270	17,080
Butyl Benzyl Phthalate	0	0	0	140	140	8,857

2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthracene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	51,874	
1,3-Dichlorobenzene	0	0		0	350	350	22,141	
1,4-Dichlorobenzene	0	0		0	730	730	46,181	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	253,044	
Dimethyl Phthalate	0	0		0	2,500	2,500	158,153	
Di-n-Butyl Phthalate	0	0		0	110	110	6,959	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	101,218	
2,6-Dinitrotoluene	0	0		0	990	990	62,628	
1,2-Diphenylhydrazine	0	0		0	15	15.0	949	
Fluoranthene	0	0		0	200	200	12,652	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	633	
Hexachlorocyclopentadiene	0	0		0	5	5.0	316	
Hexachloroethane	0	0		0	60	60.0	3,796	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	632,611	
Naphthalene	0	0		0	140	140	8,857	
Nitrobenzene	0	0		0	4,000	4,000	253,044	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	1,075,439	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	18,978	
Phenanthrene	0	0		0	5	5.0	316	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	8,224	

**CFC**      CCT (min): #####      PMF: 1      Analysis Hardness (mg/l): 91      Analysis pH: 7.00

Pollutants	Stream Conc	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	70,589	
Total Arsenic	0	0		0	150	150	48,129	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	1,315,526	
Total Boron	0	0		0	1,600	1,600	513,376	
Total Cadmium	0	0		0	0.230	0.25	81.0	Chem Translator of 0.913 applied
Total Chromium (III)	0	0		0	68.605	79.8	25,596	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	3,335	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	6,096	
Total Copper	0	0		0	8.262	8.61	2,762	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	481,290	WQC = 30 day average; PMF = 1
Total Lead	0	0	0	2,271	2.82	905	Chem Translator of 0.805 applied
Total Manganese	0	0	0	N/A	N/A	N/A	
Total Mercury	0	0	0	0.770	0.91	291	Chem Translator of 0.85 applied
Total Nickel	0	0	0	48.018	48.2	15,453	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	1,601	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	4,171	
Total Zinc	0	0	0	109,065	111	35,492	Chem Translator of 0.986 applied
Acrolein	0	0	0	3	3.0	963	
Acrylamide	0	0	0	N/A	N/A	N/A	
Acrylonitrile	0	0	0	130	130	41,712	
Benzene	0	0	0	130	130	41,712	
Bromoform	0	0	0	370	370	118,718	
Carbon Tetrachloride	0	0	0	560	560	179,682	
Chlorobenzene	0	0	0	240	240	77,006	
Chlorodibromomethane	0	0	0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0	0	3,500	3,500	1,123,010	
Chloroform	0	0	0	390	390	125,135	
Dichlorobromomethane	0	0	0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0	0	3,100	3,100	994,666	
1,1-Dichloroethylene	0	0	0	1,500	1,500	481,290	
1,2-Dichloropropane	0	0	0	2,200	2,200	705,892	
1,3-Dichloropropylene	0	0	0	61	61.0	19,572	
Ethylbenzene	0	0	0	580	580	186,099	
Methyl Bromide	0	0	0	110	110	35,295	
Methyl Chloride	0	0	0	5,500	5,500	1,764,730	
Methylene Chloride	0	0	0	2,400	2,400	770,064	
1,1,2,2-Tetrachloroethane	0	0	0	210	210	67,381	
Tetrachloroethylene	0	0	0	140	140	44,920	
Toluene	0	0	0	330	330	105,884	
1,2-trans-Dichloroethylene	0	0	0	1,400	1,400	449,204	
1,1,1-Trichloroethane	0	0	0	610	610	195,725	
1,1,2-Trichloroethane	0	0	0	680	680	218,185	
Trichloroethylene	0	0	0	450	450	144,387	
Vinyl Chloride	0	0	0	N/A	N/A	N/A	
2-Chlorophenol	0	0	0	110	110	35,295	
2,4-Dichlorophenol	0	0	0	340	340	109,092	
2,4-Dimethylphenol	0	0	0	130	130	41,712	
4,6-Dinitro-o-Cresol	0	0	0	16	16.0	5,134	
2,4-Dinitrophenol	0	0	0	130	130	41,712	
2-Nitrophenol	0	0	0	1,600	1,600	513,376	
4-Nitrophenol	0	0	0	470	470	150,804	
p-Chloro-m-Cresol	0	0	0	500	500	160,430	
Pentachlorophenol	0	0	0	6.664	6.66	2,138	
Phenol	0	0	0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0	0	91	91.0	29,198	

Acenaphthene	0	0	0	17	17.0	5,455	
Anthracene	0	0	0	N/A	N/A	N/A	
Benzidine	0	0	0	59	59.0	18,931	
Benzo(a)Anthracene	0	0	0	0.1	0.1	32.1	
Benzo(a)Pyrene	0	0	0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0	0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0	0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0	0	6,000	6,000	1,925,160	
Bis(2-Chloroisopropyl)Ether	0	0	0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0	0	910	910	291,983	
4-Bromophenyl Phenyl Ether	0	0	0	54	54.0	17,326	
Butyl Benzyl Phthalate	0	0	0	35	35.0	11,230	
2-Chloronaphthalene	0	0	0	N/A	N/A	N/A	
Chrysene	0	0	0	N/A	N/A	N/A	
Dibenzo(a,h)Anthracene	0	0	0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0	0	160	160	51,338	
1,3-Dichlorobenzene	0	0	0	69	69.0	22,139	
1,4-Dichlorobenzene	0	0	0	150	150	48,129	
3,3-Dichlorobenzidine	0	0	0	N/A	N/A	N/A	
Diethyl Phthalate	0	0	0	800	800	256,688	
Dimethyl Phthalate	0	0	0	500	500	160,430	
Di-n-Butyl Phthalate	0	0	0	21	21.0	6,738	
2,4-Dinitrotoluene	0	0	0	320	320	102,675	
2,6-Dinitrotoluene	0	0	0	200	200	64,172	
1,2-Diphenylhydrazine	0	0	0	3	3.0	963	
Fluoranthene	0	0	0	40	40.0	12,834	
Fluorene	0	0	0	N/A	N/A	N/A	
Hexachlorobenzene	0	0	0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0	0	2	2.0	642	
Hexachlorocyclopentadiene	0	0	0	1	1.0	321	
Hexachloroethane	0	0	0	12	12.0	3,850	
Indeno(1,2,3-cd)Pyrene	0	0	0	N/A	N/A	N/A	
Isophorone	0	0	0	2,100	2,100	673,806	
Naphthalene	0	0	0	43	43.0	13,797	
Nitrobenzene	0	0	0	810	810	259,897	
n-Nitrosodimethylamine	0	0	0	3,400	3,400	1,090,924	
n-Nitrosodi-n-Propylamine	0	0	0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0	0	59	59.0	18,931	
Phenanthrene	0	0	0	1	1.0	321	
Pyrene	0	0	0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0	0	26	26.0	8,342	

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

Pollutants	Stream Conc	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	0	500,000	500,000	N/A	
Chloride (PWS)	0	0	0	0	250,000	250,000	N/A	
Sulfate (PWS)	0	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	1,797
Total Arsenic	0	0	0	10	10.0	3,209
Total Barium	0	0	0	2,400	2,400	770,064
Total Boron	0	0	0	3,100	3,100	994,666
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	96,258
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	320,860
Total Mercury	0	0	0	0.050	0.05	16.0
Total Nickel	0	0	0	610	610	195,725
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	77.0
Total Zinc	0	0	0	N/A	N/A	N/A
Acrolein	0	0	0	3	3.0	963
Acrylamide	0	0	0	N/A	N/A	N/A
Acrylonitrile	0	0	0	N/A	N/A	N/A
Benzene	0	0	0	N/A	N/A	N/A
Bromoform	0	0	0	N/A	N/A	N/A
Carbon Tetrachloride	0	0	0	N/A	N/A	N/A
Chlorobenzene	0	0	0	100	100.0	32,086
Chlorodibromomethane	0	0	0	N/A	N/A	N/A
2-Chloroethyl Vinyl Ether	0	0	0	N/A	N/A	N/A
Chloroform	0	0	0	5.7	5.7	1,829
Dichlorobromomethane	0	0	0	N/A	N/A	N/A
1,2-Dichloroethane	0	0	0	N/A	N/A	N/A
1,1-Dichloroethylene	0	0	0	33	33.0	10,588
1,2-Dichloropropane	0	0	0	N/A	N/A	N/A
1,3-Dichloropropylene	0	0	0	N/A	N/A	N/A
Ethylbenzene	0	0	0	68	68.0	21,818
Methyl Bromide	0	0	0	100	100.0	32,086
Methyl Chloride	0	0	0	N/A	N/A	N/A
Methylene Chloride	0	0	0	N/A	N/A	N/A
1,1,2,2-Tetrachloroethane	0	0	0	N/A	N/A	N/A
Tetrachloroethylene	0	0	0	N/A	N/A	N/A
Toluene	0	0	0	57	57.0	18,289
1,2-trans-Dichloroethylene	0	0	0	100	100.0	32,086
1,1,1-Trichloroethane	0	0	0	10,000	10,000	3,208,601
1,1,2-Trichloroethane	0	0	0	N/A	N/A	N/A
Trichloroethylene	0	0	0	N/A	N/A	N/A
Vinyl Chloride	0	0	0	N/A	N/A	N/A

2-Chlorophenol	0	0	0	30	30.0	9,626	
2,4-Dichlorophenol	0	0	0	10	10.0	3,209	
2,4-Dimethylphenol	0	0	0	100	100.0	32,086	
4,6-Dinitro-o-Cresol	0	0	0	2	2.0	642	
2,4-Dinitrophenol	0	0	0	10	10.0	3,209	
2-Nitrophenol	0	0	0	N/A	N/A	N/A	
4-Nitrophenol	0	0	0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0	0	N/A	N/A	N/A	
Pentachlorophenol	0	0	0	N/A	N/A	N/A	
Phenol	0	0	0	4,000	4,000	1,283,440	
2,4,6-Trichlorophenol	0	0	0	N/A	N/A	N/A	
Acenaphthene	0	0	0	70	70.0	22,460	
Anthracene	0	0	0	300	300	96,258	
Benzidine	0	0	0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0	0	N/A	N/A	N/A	
Benzo(a)Pyrene	0	0	0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0	0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0	0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0	0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0	0	200	200	64,172	
Bis(2-Ethylhexyl)Phthalate	0	0	0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0	0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0	0	0.1	0.1	32.1	
2-Chloronaphthalene	0	0	0	800	800	256,688	
Chrysene	0	0	0	N/A	N/A	N/A	
Dibenzo(a,h)Anthracene	0	0	0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0	0	1,000	1,000	320,860	
1,3-Dichlorobenzene	0	0	0	7	7.0	2,246	
1,4-Dichlorobenzene	0	0	0	300	300	96,258	
3,3-Dichlorobenzidine	0	0	0	N/A	N/A	N/A	
Diethyl Phthalate	0	0	0	600	600	192,516	
Dimethyl Phthalate	0	0	0	2,000	2,000	641,720	
Di-n-Butyl Phthalate	0	0	0	20	20.0	6,417	
2,4-Dinitrotoluene	0	0	0	N/A	N/A	N/A	
2,6-Dinitrotoluene	0	0	0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0	0	N/A	N/A	N/A	
Fluoranthene	0	0	0	20	20.0	6,417	
Fluorene	0	0	0	50	50.0	16,043	
Hexachlorobenzene	0	0	0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0	0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0	0	4	4.0	1,283	
Hexachloroethane	0	0	0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0	0	N/A	N/A	N/A	
Isophorone	0	0	0	34	34.0	10,909	
Naphthalene	0	0	0	N/A	N/A	N/A	
Nitrobenzene	0	0	0	10	10.0	3,209	
n-Nitrosodimethylamine	0	0	0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0	0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0	0	N/A	N/A	N/A	

Phenanthrene	0	0		0	N/A	N/A	N/A
Pyrene	0	0		0	20	20.0	6,417
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	22.5

**CRL**      CCT (min):       PMF:       Analysis Hardness (mg/l):       Analysis pH:

Pollutants	Stream Conc	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	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylamide	0	0		0	0.07	0.07	111	
Acrylonitrile	0	0		0	0.06	0.06	95.0	
Benzene	0	0		0	0.58	0.58	918	
Bromoform	0	0		0	7	7.0	11,083	
Carbon Tetrachloride	0	0		0	0.4	0.4	633	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	1,267	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	1,504	
1,2-Dichloroethane	0	0		0	9.9	9.9	15,675	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	1,425	
1,3-Dichloropropylene	0	0		0	0.27	0.27	427	
Ethylbenzene	0	0		0	N/A	N/A	N/A	

Methyl Bromide	0	0		0	N/A	N/A	N/A
Methyl Chloride	0	0		0	N/A	N/A	N/A
Methylene Chloride	0	0		0	20	20.0	31,666
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	317
Tetrachloroethylene	0	0		0	10	10.0	15,833
Toluene	0	0		0	N/A	N/A	N/A
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A
1,1,2-Trichloroethane	0	0		0	0.55	0.55	871
Trichloroethylene	0	0		0	0.6	0.6	950
Vinyl Chloride	0	0		0	0.02	0.02	31.7
2-Chlorophenol	0	0		0	N/A	N/A	N/A
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A
2-Nitrophenol	0	0		0	N/A	N/A	N/A
4-Nitrophenol	0	0		0	N/A	N/A	N/A
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A
Pentachlorophenol	0	0		0	0.030	0.03	47.5
Phenol	0	0		0	N/A	N/A	N/A
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	2,375
Acenaphthene	0	0		0	N/A	N/A	N/A
Anthracene	0	0		0	N/A	N/A	N/A
Benzidine	0	0		0	0.0001	0.0001	0.16
Benzo(a)Anthracene	0	0		0	0.001	0.001	1.58
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.16
3,4-Benzofluoranthene	0	0		0	0.001	0.001	1.58
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	15.8
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	47.5
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	507
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A
Chrysene	0	0		0	0.12	0.12	190
Dibenzo(a,h)Anthracene	0	0		0	0.0001	0.0001	0.16
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	79.2
Diethyl Phthalate	0	0		0	N/A	N/A	N/A
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A
2,4-Dinitrotoluene	0	0		0	0.05	0.05	79.2
2,6-Dinitrotoluene	0	0		0	0.05	0.05	79.2
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	47.5
Fluoranthene	0	0		0	N/A	N/A	N/A
Fluorene	0	0		0	N/A	N/A	N/A

Hexachlorobenzene	0	0	0	0.00008	0.00008	0.13	
Hexachlorobutadiene	0	0	0	0.01	0.01	15.8	
Hexachlorocyclopentadiene	0	0	0	N/A	N/A	N/A	
Hexachloroethane	0	0	0	0.1	0.1	158	
Indeno(1,2,3-cd)Pyrene	0	0	0	0.001	0.001	1.58	
Isophorone	0	0	0	N/A	N/A	N/A	
Naphthalene	0	0	0	N/A	N/A	N/A	
Nitrobenzene	0	0	0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0	0	0.0007	0.0007	1.11	
n-Nitrosodi-n-Propylamine	0	0	0	0.005	0.005	7.92	
n-Nitrosodiphenylamine	0	0	0	3.3	3.3	5,225	
Phenanthrene	0	0	0	N/A	N/A	N/A	
Pyrene	0	0	0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0	0	N/A	N/A	N/A	

**Recommended WQBELs & Monitoring Requirements**

No. Samples/Month: **4**

Pollutants	Mass Limits		Concentration Limits				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			
Total Aluminum	Report	Report	Report	Report	Report	µg/L	30,411	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	Report	Report	Report	Report	Report	µg/L	650	AFC	Discharge Conc > 10% WQBEL (no RP)
Dissolved Iron	40.9	63.9	96.3	150	241	mg/L	96.3	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Iron	Report	Report	Report	Report	Report	mg/L	481	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	5,486	AFC	Discharge Conc > 10% WQBEL (no RP)
Dibenzo(a,h)Anthracene	0.00007	0.0001	0.16	0.25	0.4	µg/L	0.16	CRL	Discharge Conc ≥ 50% WQBEL (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 Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	3,209	µg/L	Discharge Conc ≤ 10% WQBEL

Total Barium	770,064	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	328,437	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	81.0	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	25,596	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	661	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	3,852	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Total Lead	905	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	320,860	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	16.0	µg/L	Discharge Conc < TQL
Total Nickel	15,453	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	1,601	µg/L	Discharge Conc < TQL
Total Silver	196	µg/L	Discharge Conc < TQL
Total Thallium	77.0	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	122	µg/L	Discharge Conc < TQL
Acrylamide	111	µg/L	Discharge Conc ≤ 25% WQBEL
Acrylonitrile	95.0	µg/L	Discharge Conc < TQL
Benzene	918	µg/L	Discharge Conc < TQL
Bromoform	11,083	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	633	µg/L	Discharge Conc < TQL
Chlorobenzene	32,086	µg/L	Discharge Conc < TQL
Chlorodibromomethane	1,267	µg/L	Discharge Conc ≤ 25% WQBEL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	729,861	µg/L	Discharge Conc < TQL
Chloroform	1,829	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	1,504	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	15,675	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethylene	10,588	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	1,425	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	427	µg/L	Discharge Conc ≤ 25% WQBEL
Ethylbenzene	21,818	µg/L	Discharge Conc < TQL
Methyl Bromide	22,301	µg/L	Discharge Conc < TQL
Methyl Chloride	1,135,339	µg/L	Discharge Conc < TQL
Methylene Chloride	31,666	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2,2-Tetrachloroethane	317	µg/L	Discharge Conc < TQL
Tetrachloroethylene	15,833	µg/L	Discharge Conc < TQL
Toluene	18,289	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	32,086	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	121,643	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	871	µg/L	Discharge Conc < TQL
Trichloroethylene	950	µg/L	Discharge Conc < TQL
Vinyl Chloride	31.7	µg/L	Discharge Conc < TQL
2-Chlorophenol	9,626	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	3,209	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	26,762	µg/L	Discharge Conc < TQL

4,6-Dinitro-o-Cresol	642	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	3,209	µg/L	Discharge Conc < TQL
2-Nitrophenol	324,383	µg/L	Discharge Conc < TQL
4-Nitrophenol	93,260	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	6,488	µg/L	Discharge Conc < TQL
Pentachlorophenol	47.5	µg/L	Discharge Conc < TQL
Phenol	1,283,440	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	2,375	µg/L	Discharge Conc < TQL
Acenaphthene	3,365	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	96,258	µg/L	Discharge Conc < TQL
Benzidine	0.16	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	1.58	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.16	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	1.58	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	15.8	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	47.5	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	64,172	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	507	µg/L	Discharge Conc ≤ 25% WQBEL
4-Bromophenyl Phenyl Ether	10,948	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	32.1	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	256,688	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	190	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	33,249	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	2,246	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	29,600	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	79.2	µg/L	Discharge Conc < TQL
Diethyl Phthalate	162,191	µg/L	Discharge Conc ≤ 25% WQBEL
Dimethyl Phthalate	101,370	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	4,460	µg/L	Discharge Conc ≤ 25% WQBEL
2,4-Dinitrotoluene	79.2	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	79.2	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	47.5	µg/L	Discharge Conc < TQL
Fluoranthene	6,417	µg/L	Discharge Conc < TQL
Fluorene	16,043	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.13	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	15.8	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	203	µg/L	Discharge Conc < TQL
Hexachloroethane	158	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	1.58	µg/L	Discharge Conc ≤ 25% WQBEL
Isophorone	10,909	µg/L	Discharge Conc < TQL
Naphthalene	5,677	µg/L	Discharge Conc < TQL
Nitrobenzene	3,209	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	1.11	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	7.92	µg/L	Discharge Conc < TQL

n-Nitrosodiphenylamine	5,225	µg/L	Discharge Conc < TQL
Phenanthrene	203	µg/L	Discharge Conc < TQL
Pyrene	6,417	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	22.5	µg/L	Discharge Conc < TQL

**Toxics Management Spreadsheet Modeling  
Outfall 101**



Toxics Management Spreadsheet  
Version 1.4, May 2023

## Discharge Information

Instructions **Discharge** Stream

Facility: Sharon Tube NPDES Permit No.: PA0222933 Outfall No.: 101

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: Acid Pickling, Cold Forming, Metal Finishin

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q <sub>7-10</sub>	Q <sub>n</sub>
0.025	1460	6.95						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
			Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
<b>Group 1</b>											
Total Dissolved Solids (PWS)	mg/L	5900									
Chloride (PWS)	mg/L	26.9									
Bromide	mg/L	< 1									
Sulfate (PWS)	mg/L	5360									
Fluoride (PWS)	mg/L	0.94									
<b>Group 2</b>											
Total Aluminum	µg/L	5220									
Total Antimony	µg/L	< 2									
Total Arsenic	µg/L	4.71									
Total Barium	µg/L	41.3									
Total Beryllium	µg/L	< 1									
Total Boron	mg/L	3.45									
Total Cadmium	µg/L	0.29									
Total Chromium (III)	µg/L	1270									
Hexavalent Chromium	µg/L	44									
Total Cobalt	µg/L	13.4									
Total Copper	mg/L	28									
Free Cyanide	µg/L										
Total Cyanide	µg/L	9									
Dissolved Iron	µg/L	93500									
Total Iron	mg/L	224									
Total Lead	µg/L	2.57									
Total Manganese	µg/L	7910									
Total Mercury	µg/L	< 0.09									
Total Nickel	µg/L	557									
Total Phenols (Phenolics) (PWS)	µg/L	180									
Total Selenium	µg/L	< 5									
Total Silver	µg/L	< 0.4									
Total Thallium	µg/L	3									
Total Zinc	µg/L	95100									
Total Molybdenum	µg/L	109									
Acrolein	µg/L	< 1									
Acrylamide	µg/L	< 0.5									
Acrylonitrile	µg/L	< 0.5									
Benzene	µg/L	< 0.5									
Bromoform	µg/L	< 0.5									

Group 3	Carbon Tetrachloride	µg/L	<	0.5																		
	Chlorobenzene	µg/L	<	0.5																		
	Chlorodibromomethane	µg/L	<	0.5																		
	Chloroethane	µg/L	<	0.5																		
	2-Chloroethyl Vinyl Ether	µg/L	<	0.5																		
	Chloroform	µg/L			6.6																	
	Dichlorobromomethane	µg/L			1.2																	
	1,1-Dichloroethane	µg/L	<	0.5																		
	1,2-Dichloroethane	µg/L	<	0.5																		
	1,1-Dichloroethylene	µg/L	<	0.5																		
	1,2-Dichloropropane	µg/L	<	0.5																		
	1,3-Dichloropropylene	µg/L	<	0.5																		
	1,4-Dioxane	µg/L	<	0.5																		
	Ethylbenzene	µg/L	<	0.5																		
	Methyl Bromide	µg/L	<	0.5																		
	Methyl Chloride	µg/L	<	0.5																		
	Methylene Chloride	µg/L	<	0.5																		
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5																		
	Tetrachloroethylene	µg/L	<	0.5																		
	Toluene	µg/L			19.8																	
	1,2-trans-Dichloroethylene	µg/L	<	0.5																		
1,1,1-Trichloroethane	µg/L	<	0.5																			
1,1,2-Trichloroethane	µg/L	<	0.5																			
Trichloroethylene	µg/L	<	0.5																			
Vinyl Chloride	µg/L	<	0.5																			
Group 4	2-Chlorophenol	µg/L	<	0.101																		
	2,4-Dichlorophenol	µg/L	<	0.0911																		
	2,4-Dimethylphenol	µg/L	<	0.486																		
	4,6-Dinitro-o-Cresol	µg/L	<	0.131																		
	2,4-Dinitrophenol	µg/L	<	3.33																		
	2-Nitrophenol	µg/L	<	0.0567																		
	4-Nitrophenol	µg/L	<	0.0456																		
	p-Chloro-m-Cresol	µg/L	<	0.11																		
	Pentachlorophenol	µg/L	<	0.116																		
	Phenol	µg/L	<	0.05																		
	2,4,6-Trichlorophenol	µg/L	<	0.11																		
Group 5	Acenaphthene	µg/L		40																		
	Acenaphthylene	µg/L	<	0.101																		
	Anthracene	µg/L	<	0.0686																		
	Benzidine	µg/L	<	0.103																		
	Benzo(a)Anthracene	µg/L	<	0.101																		
	Benzo(a)Pyrene	µg/L		0.489																		
	3,4-Benzofluoranthene	µg/L		0.34																		
	Benzo(ghi)Perylene	µg/L	<	0.0911																		
	Benzo(k)Fluoranthene	µg/L	<	0.0922																		
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.0944																		
	Bis(2-Chloroethyl)Ether	µg/L	<	0.0867																		
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.0986																		
	Bis(2-Ethylhexyl)Phthalate	µg/L		1.28																		
	4-Bromophenyl Phenyl Ether	µg/L	<	0.115																		
	Butyl Benzyl Phthalate	µg/L	<	0.0733																		
	2-Chloronaphthalene	µg/L	<	0.101																		
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.106																		
	Chrysene	µg/L		40																		
	Dibenzo(a,h)Anthracene	µg/L	<	0.0589																		
	1,2-Dichlorobenzene	µg/L	<	0.5																		
	1,3-Dichlorobenzene	µg/L	<	0.5																		
	1,4-Dichlorobenzene	µg/L		40																		
	3,3-Dichlorobenzidine	µg/L	<	0.154																		
Diethyl Phthalate	µg/L		0.3																			
Dimethyl Phthalate	µg/L	<	0.101																			
Di-n-Butyl Phthalate	µg/L		1.14																			
2,4-Dinitrotoluene	µg/L	<	3.33																			





Stream / Surface Water Information

Sharon Tube, NPDES Permit No. PA0222933, Outfall 101

Instructions Discharge Stream

Receiving Surface Water Name: Shenango River No. Reaches to Model: 1

- Statewide Criteria
- Great Lakes Criteria
- ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi <sup>2</sup> )*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	035482	25.67	818	701			Yes
End of Reach 1	035482	24.95	814	703			Yes

Q<sub>7-10</sub>

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	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	25.67	0.036										85	7		
End of Reach 1	24.95	0.036													

Q<sub>n</sub>

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	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	25.67														
End of Reach 1	24.95														



Model Results

Sharon Tube, NPDES Permit No. PA0222933, Outfall 101

All
  Inputs
  Results
  Limits

- Hydrodynamics
- Wasteload Allocations

AFC
 CCT (min): 
 PMF: 
 Analysis Hardness (mg/l): 
 Analysis pH:

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	95,906	
Total Antimony	0	0		0	1,100	1,100	140,662	
Total Arsenic	0	0		0	340	340	43,477	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	2,685,359	
Total Boron	0	0		0	8,100	8,100	1,035,781	
Total Cadmium	0	0		0	1.931	2.04	261	Chem Translator of 0.946 applied
Total Chromium (III)	0	0		0	549.867	1,740	222,512	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	2,083	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	12,148	
Total Copper	0	0		0	12.901	13.4	1,718	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	61.599	77.3	9,879	Chem Translator of 0.797 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	211	Chem Translator of 0.85 applied
Total Nickel	0	0		0	451.355	452	57,832	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	2.985	3.51	449	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	8,312	
Total Zinc	0	0		0	112.950	115	14,768	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	384	

Acrylamide	0	0	0	N/A	N/A	N/A
Acrylonitrile	0	0	0	650	650	83,118
Benzene	0	0	0	640	640	81,840
Bromoform	0	0	0	1,800	1,800	230,174
Carbon Tetrachloride	0	0	0	2,800	2,800	358,048
Chlorobenzene	0	0	0	1,200	1,200	153,449
Chlorodibromomethane	0	0	0	N/A	N/A	N/A
2-Chloroethyl Vinyl Ether	0	0	0	18,000	18,000	2,301,736
Chloroform	0	0	0	1,900	1,900	242,961
Dichlorobromomethane	0	0	0	N/A	N/A	N/A
1,2-Dichloroethane	0	0	0	15,000	15,000	1,918,113
1,1-Dichloroethylene	0	0	0	7,500	7,500	959,057
1,2-Dichloropropane	0	0	0	11,000	11,000	1,406,617
1,3-Dichloropropylene	0	0	0	310	310	39,641
Ethylbenzene	0	0	0	2,900	2,900	370,835
Methyl Bromide	0	0	0	550	550	70,331
Methyl Chloride	0	0	0	28,000	28,000	3,580,479
Methylene Chloride	0	0	0	12,000	12,000	1,534,491
1,1,2,2-Tetrachloroethane	0	0	0	1,000	1,000	127,874
Tetrachloroethylene	0	0	0	700	700	89,512
Toluene	0	0	0	1,700	1,700	217,386
1,2-trans-Dichloroethylene	0	0	0	6,800	6,800	869,545
1,1,1-Trichloroethane	0	0	0	3,000	3,000	383,623
1,1,2-Trichloroethane	0	0	0	3,400	3,400	434,772
Trichloroethylene	0	0	0	2,300	2,300	294,111
Vinyl Chloride	0	0	0	N/A	N/A	N/A
2-Chlorophenol	0	0	0	560	560	71,610
2,4-Dichlorophenol	0	0	0	1,700	1,700	217,386
2,4-Dimethylphenol	0	0	0	660	660	84,397
4,6-Dinitro-o-Cresol	0	0	0	80	80.0	10,230
2,4-Dinitrophenol	0	0	0	660	660	84,397
2-Nitrophenol	0	0	0	8,000	8,000	1,022,994
4-Nitrophenol	0	0	0	2,300	2,300	294,111
p-Chloro-m-Cresol	0	0	0	160	160	20,460
Pentachlorophenol	0	0	0	8.720	8.72	1,115
Phenol	0	0	0	N/A	N/A	N/A
2,4,6-Trichlorophenol	0	0	0	460	460	58,822
Acenaphthene	0	0	0	83	83.0	10,614
Anthracene	0	0	0	N/A	N/A	N/A
Benzidine	0	0	0	300	300	38,362
Benzo(a)Anthracene	0	0	0	0.5	0.5	63.9
Benzo(a)Pyrene	0	0	0	N/A	N/A	N/A
3,4-Benzofluoranthene	0	0	0	N/A	N/A	N/A
Benzo(k)Fluoranthene	0	0	0	N/A	N/A	N/A
Bis(2-Chloroethyl)Ether	0	0	0	30,000	30,000	3,836,227
Bis(2-Chloroisopropyl)Ether	0	0	0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0	0	4,500	4,500	575,434
4-Bromophenyl Phenyl Ether	0	0	0	270	270	34,526

Butyl Benzyl Phthalate	0	0	0	140	140	17,902
2-Chloronaphthalene	0	0	0	N/A	N/A	N/A
Chrysene	0	0	0	N/A	N/A	N/A
Dibenzo(a,h)Anthracene	0	0	0	N/A	N/A	N/A
1,2-Dichlorobenzene	0	0	0	820	820	104,857
1,3-Dichlorobenzene	0	0	0	350	350	44,756
1,4-Dichlorobenzene	0	0	0	730	730	93,348
3,3-Dichlorobenzidine	0	0	0	N/A	N/A	N/A
Diethyl Phthalate	0	0	0	4,000	4,000	511,497
Dimethyl Phthalate	0	0	0	2,500	2,500	319,686
Di-n-Butyl Phthalate	0	0	0	110	110	14,066
2,4-Dinitrotoluene	0	0	0	1,600	1,600	204,599
2,6-Dinitrotoluene	0	0	0	990	990	126,595
1,2-Diphenylhydrazine	0	0	0	15	15.0	1,918
Fluoranthene	0	0	0	200	200	25,575
Fluorene	0	0	0	N/A	N/A	N/A
Hexachlorobenzene	0	0	0	N/A	N/A	N/A
Hexachlorobutadiene	0	0	0	10	10.0	1,279
Hexachlorocyclopentadiene	0	0	0	5	5.0	639
Hexachloroethane	0	0	0	60	60.0	7,672
Indeno(1,2,3-cd)Pyrene	0	0	0	N/A	N/A	N/A
Isophorone	0	0	0	10,000	10,000	1,278,742
Naphthalene	0	0	0	140	140	17,902
Nitrobenzene	0	0	0	4,000	4,000	511,497
n-Nitrosodimethylamine	0	0	0	17,000	17,000	2,173,862
n-Nitrosodi-n-Propylamine	0	0	0	N/A	N/A	N/A
n-Nitrosodiphenylamine	0	0	0	300	300	38,362
Phenanthrene	0	0	0	5	5.0	639
Pyrene	0	0	0	N/A	N/A	N/A
1,2,4-Trichlorobenzene	0	0	0	130	130	16,624

CFC      CCT (min): #####      PMF: 1      Analysis Hardness (mg/l): 87.104      Analysis pH: 7.00

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	0	N/A	N/A	N/A	
Chloride (PWS)	0	0	0	0	N/A	N/A	N/A	
Sulfate (PWS)	0	0	0	0	N/A	N/A	N/A	
Fluoride (PWS)	0	0	0	0	N/A	N/A	N/A	
Total Aluminum	0	0	0	0	N/A	N/A	N/A	
Total Antimony	0	0	0	0	220	220	143,773	
Total Arsenic	0	0	0	0	150	150	98,027	Chem Translator of 1 applied
Total Barium	0	0	0	0	4,100	4,100	2,679,410	
Total Boron	0	0	0	0	1,600	1,600	1,045,623	
Total Cadmium	0	0	0	0	0.223	0.24	160	Chem Translator of 0.915 applied
Total Chromium (III)	0	0	0	0	66.190	77.0	50,298	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0	0	0	10	10.4	6,793	Chem Translator of 0.962 applied

Total Cobalt	0	0	0	19	19.0	12,417	
Total Copper	0	0	0	7.959	8.29	5,418	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	980,272	WQC = 30 day average; PMF = 1
Total Lead	0	0	0	2.165	2.67	1,744	Chem Translator of 0.811 applied
Total Manganese	0	0	0	N/A	N/A	N/A	
Total Mercury	0	0	0	0.770	0.91	592	Chem Translator of 0.85 applied
Total Nickel	0	0	0	46.273	46.4	30,331	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	3,260	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	8,496	
Total Zinc	0	0	0	105.096	107	69,657	Chem Translator of 0.986 applied
Acrolein	0	0	0	3	3.0	1,961	
Acrylamide	0	0	0	N/A	N/A	N/A	
Acrylonitrile	0	0	0	130	130	84,957	
Benzene	0	0	0	130	130	84,957	
Bromoform	0	0	0	370	370	241,800	
Carbon Tetrachloride	0	0	0	560	560	365,968	
Chlorobenzene	0	0	0	240	240	156,843	
Chlorodibromomethane	0	0	0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0	0	3,500	3,500	2,287,301	
Chloroform	0	0	0	390	390	254,871	
Dichlorobromomethane	0	0	0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0	0	3,100	3,100	2,025,895	
1,1-Dichloroethylene	0	0	0	1,500	1,500	980,272	
1,2-Dichloropropane	0	0	0	2,200	2,200	1,437,732	
1,3-Dichloropropylene	0	0	0	61	61.0	39,864	
Ethylbenzene	0	0	0	580	580	379,038	
Methyl Bromide	0	0	0	110	110	71,887	
Methyl Chloride	0	0	0	5,500	5,500	3,594,330	
Methylene Chloride	0	0	0	2,400	2,400	1,568,435	
1,1,2,2-Tetrachloroethane	0	0	0	210	210	137,238	
Tetrachloroethylene	0	0	0	140	140	91,492	
Toluene	0	0	0	330	330	215,660	
1,2-trans-Dichloroethylene	0	0	0	1,400	1,400	914,920	
1,1,1-Trichloroethane	0	0	0	610	610	398,644	
1,1,2-Trichloroethane	0	0	0	680	680	444,390	
Trichloroethylene	0	0	0	450	450	294,082	
Vinyl Chloride	0	0	0	N/A	N/A	N/A	
2-Chlorophenol	0	0	0	110	110	71,887	
2,4-Dichlorophenol	0	0	0	340	340	222,195	
2,4-Dimethylphenol	0	0	0	130	130	84,957	
4,6-Dinitro-o-Cresol	0	0	0	16	16.0	10,456	
2,4-Dinitrophenol	0	0	0	130	130	84,957	

2-Nitrophenol	0	0	0	1,600	1,600	1,045,623
4-Nitrophenol	0	0	0	470	470	307,152
p-Chloro-m-Cresol	0	0	0	500	500	326,757
Pentachlorophenol	0	0	0	6,690	6.69	4,372
Phenol	0	0	0	N/A	N/A	N/A
2,4,6-Trichlorophenol	0	0	0	91	91.0	59,470
Acenaphthene	0	0	0	17	17.0	11,110
Anthracene	0	0	0	N/A	N/A	N/A
Benzidine	0	0	0	59	59.0	38,557
Benzo(a)Anthracene	0	0	0	0.1	0.1	65.4
Benzo(a)Pyrene	0	0	0	N/A	N/A	N/A
3,4-Benzofluoranthene	0	0	0	N/A	N/A	N/A
Benzo(k)Fluoranthene	0	0	0	N/A	N/A	N/A
Bis(2-Chloroethyl)Ether	0	0	0	6,000	6,000	3,921,087
Bis(2-Chloroisopropyl)Ether	0	0	0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0	0	910	910	594,698
4-Bromophenyl Phenyl Ether	0	0	0	54	54.0	35,290
Butyl Benzyl Phthalate	0	0	0	35	35.0	22,873
2-Chloronaphthalene	0	0	0	N/A	N/A	N/A
Chrysene	0	0	0	N/A	N/A	N/A
Dibenzo(a,h)Anthracene	0	0	0	N/A	N/A	N/A
1,2-Dichlorobenzene	0	0	0	160	160	104,562
1,3-Dichlorobenzene	0	0	0	69	69.0	45,093
1,4-Dichlorobenzene	0	0	0	150	150	98,027
3,3-Dichlorobenzidine	0	0	0	N/A	N/A	N/A
Diethyl Phthalate	0	0	0	800	800	522,812
Dimethyl Phthalate	0	0	0	500	500	326,757
Di-n-Butyl Phthalate	0	0	0	21	21.0	13,724
2,4-Dinitrotoluene	0	0	0	320	320	209,125
2,6-Dinitrotoluene	0	0	0	200	200	130,703
1,2-Diphenylhydrazine	0	0	0	3	3.0	1,961
Fluoranthene	0	0	0	40	40.0	26,141
Fluorene	0	0	0	N/A	N/A	N/A
Hexachlorobenzene	0	0	0	N/A	N/A	N/A
Hexachlorobutadiene	0	0	0	2	2.0	1,307
Hexachlorocyclopentadiene	0	0	0	1	1.0	654
Hexachloroethane	0	0	0	12	12.0	7,842
Indeno(1,2,3-cd)Pyrene	0	0	0	N/A	N/A	N/A
Isophorone	0	0	0	2,100	2,100	1,372,381
Naphthalene	0	0	0	43	43.0	28,101
Nitrobenzene	0	0	0	810	810	529,347
n-Nitrosodimethylamine	0	0	0	3,400	3,400	2,221,949
n-Nitrosodi-n-Propylamine	0	0	0	N/A	N/A	N/A
n-Nitrosodiphenylamine	0	0	0	59	59.0	38,557
Phenanthrene	0	0	0	1	1.0	654

Pyrene	0	0	0	N/A	N/A	N/A
1,2,4-Trichlorobenzene	0	0	0	26	26.0	16,991

THH      CCT (min): #####      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	0	500,000	500,000	N/A	
Chloride (PWS)	0	0	0	0	250,000	250,000	N/A	
Sulfate (PWS)	0	0	0	0	250,000	250,000	N/A	
Fluoride (PWS)	0	0	0	0	2,000	2,000	N/A	
Total Aluminum	0	0	0	0	N/A	N/A	N/A	
Total Antimony	0	0	0	0	5.6	5.6	3,660	
Total Arsenic	0	0	0	0	10	10.0	6,535	
Total Barium	0	0	0	0	2,400	2,400	1,568,435	
Total Boron	0	0	0	0	3,100	3,100	2,025,895	
Total Cadmium	0	0	0	0	N/A	N/A	N/A	
Total Chromium (III)	0	0	0	0	N/A	N/A	N/A	
Hexavalent Chromium	0	0	0	0	N/A	N/A	N/A	
Total Cobalt	0	0	0	0	N/A	N/A	N/A	
Total Copper	0	0	0	0	N/A	N/A	N/A	
Dissolved Iron	0	0	0	0	300	300	196,054	
Total Iron	0	0	0	0	N/A	N/A	N/A	
Total Lead	0	0	0	0	N/A	N/A	N/A	
Total Manganese	0	0	0	0	1,000	1,000	653,515	
Total Mercury	0	0	0	0	0.050	0.05	32.7	
Total Nickel	0	0	0	0	610	610	398,644	
Total Phenols (Phenolics) (PWS)	0	0	0	0	5	5.0	N/A	
Total Selenium	0	0	0	0	N/A	N/A	N/A	
Total Silver	0	0	0	0	N/A	N/A	N/A	
Total Thallium	0	0	0	0	0.24	0.24	157	
Total Zinc	0	0	0	0	N/A	N/A	N/A	
Acrolein	0	0	0	0	3	3.0	1,961	
Acrylamide	0	0	0	0	N/A	N/A	N/A	
Acrylonitrile	0	0	0	0	N/A	N/A	N/A	
Benzene	0	0	0	0	N/A	N/A	N/A	
Bromoform	0	0	0	0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0	0	0	N/A	N/A	N/A	
Chlorobenzene	0	0	0	0	100	100.0	65,351	
Chlorodibromomethane	0	0	0	0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0	0	0	N/A	N/A	N/A	
Chloroform	0	0	0	0	5.7	5.7	3,725	
Dichlorobromomethane	0	0	0	0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0	0	0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0	0	0	33	33.0	21,566	

1,2-Dichloropropane	0	0	0	N/A	N/A	N/A
1,3-Dichloropropylene	0	0	0	N/A	N/A	N/A
Ethylbenzene	0	0	0	68	68.0	44,439
Methyl Bromide	0	0	0	100	100.0	65,351
Methyl Chloride	0	0	0	N/A	N/A	N/A
Methylene Chloride	0	0	0	N/A	N/A	N/A
1,1,2,2-Tetrachloroethane	0	0	0	N/A	N/A	N/A
Tetrachloroethylene	0	0	0	N/A	N/A	N/A
Toluene	0	0	0	57	57.0	37,250
1,2-trans-Dichloroethylene	0	0	0	100	100.0	65,351
1,1,1-Trichloroethane	0	0	0	10,000	10,000	6,535,145
1,1,2-Trichloroethane	0	0	0	N/A	N/A	N/A
Trichloroethylene	0	0	0	N/A	N/A	N/A
Vinyl Chloride	0	0	0	N/A	N/A	N/A
2-Chlorophenol	0	0	0	30	30.0	19,605
2,4-Dichlorophenol	0	0	0	10	10.0	6,535
2,4-Dimethylphenol	0	0	0	100	100.0	65,351
4,6-Dinitro-o-Cresol	0	0	0	2	2.0	1,307
2,4-Dinitrophenol	0	0	0	10	10.0	6,535
2-Nitrophenol	0	0	0	N/A	N/A	N/A
4-Nitrophenol	0	0	0	N/A	N/A	N/A
p-Chloro-m-Cresol	0	0	0	N/A	N/A	N/A
Pentachlorophenol	0	0	0	N/A	N/A	N/A
Phenol	0	0	0	4,000	4,000	2,614,058
2,4,6-Trichlorophenol	0	0	0	N/A	N/A	N/A
Acenaphthene	0	0	0	70	70.0	45,746
Anthracene	0	0	0	300	300	196,054
Benzidine	0	0	0	N/A	N/A	N/A
Benzo(a)Anthracene	0	0	0	N/A	N/A	N/A
Benzo(a)Pyrene	0	0	0	N/A	N/A	N/A
3,4-Benzofluoranthene	0	0	0	N/A	N/A	N/A
Benzo(k)Fluoranthene	0	0	0	N/A	N/A	N/A
Bis(2-Chloroethyl)Ether	0	0	0	N/A	N/A	N/A
Bis(2-Chloroisopropyl)Ether	0	0	0	200	200	130,703
Bis(2-Ethylhexyl)Phthalate	0	0	0	N/A	N/A	N/A
4-Bromophenyl Phenyl Ether	0	0	0	N/A	N/A	N/A
Butyl Benzyl Phthalate	0	0	0	0.1	0.1	65.4
2-Chloronaphthalene	0	0	0	800	800	522,812
Chrysene	0	0	0	N/A	N/A	N/A
Dibenzo(a,h)Anthracene	0	0	0	N/A	N/A	N/A
1,2-Dichlorobenzene	0	0	0	1,000	1,000	653,515
1,3-Dichlorobenzene	0	0	0	7	7.0	4,575
1,4-Dichlorobenzene	0	0	0	300	300	196,054
3,3-Dichlorobenzidine	0	0	0	N/A	N/A	N/A
Diethyl Phthalate	0	0	0	600	600	392,109

Dimethyl Phthalate	0	0	0	2,000	2,000	1,307,029
Di-n-Butyl Phthalate	0	0	0	20	20.0	13,070
2,4-Dinitrotoluene	0	0	0	N/A	N/A	N/A
2,6-Dinitrotoluene	0	0	0	N/A	N/A	N/A
1,2-Diphenylhydrazine	0	0	0	N/A	N/A	N/A
Fluoranthene	0	0	0	20	20.0	13,070
Fluorene	0	0	0	50	50.0	32,676
Hexachlorobenzene	0	0	0	N/A	N/A	N/A
Hexachlorobutadiene	0	0	0	N/A	N/A	N/A
Hexachlorocyclopentadiene	0	0	0	4	4.0	2,614
Hexachloroethane	0	0	0	N/A	N/A	N/A
Indeno(1,2,3-cd)Pyrene	0	0	0	N/A	N/A	N/A
Isophorone	0	0	0	34	34.0	22,219
Naphthalene	0	0	0	N/A	N/A	N/A
Nitrobenzene	0	0	0	10	10.0	6,535
n-Nitrosodimethylamine	0	0	0	N/A	N/A	N/A
n-Nitrosodi-n-Propylamine	0	0	0	N/A	N/A	N/A
n-Nitrosodiphenylamine	0	0	0	N/A	N/A	N/A
Phenanthrene	0	0	0	N/A	N/A	N/A
Pyrene	0	0	0	20	20.0	13,070
1,2,4-Trichlorobenzene	0	0	0	0.07	0.07	45.7

**CRL**      CCT (min): #####      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	0	N/A	N/A	N/A	
Chloride (PWS)	0	0	0	0	N/A	N/A	N/A	
Sulfate (PWS)	0	0	0	0	N/A	N/A	N/A	
Fluoride (PWS)	0	0	0	0	N/A	N/A	N/A	
Total Aluminum	0	0	0	0	N/A	N/A	N/A	
Total Antimony	0	0	0	0	N/A	N/A	N/A	
Total Arsenic	0	0	0	0	N/A	N/A	N/A	
Total Barium	0	0	0	0	N/A	N/A	N/A	
Total Boron	0	0	0	0	N/A	N/A	N/A	
Total Cadmium	0	0	0	0	N/A	N/A	N/A	
Total Chromium (III)	0	0	0	0	N/A	N/A	N/A	
Hexavalent Chromium	0	0	0	0	N/A	N/A	N/A	
Total Cobalt	0	0	0	0	N/A	N/A	N/A	
Total Copper	0	0	0	0	N/A	N/A	N/A	
Dissolved Iron	0	0	0	0	N/A	N/A	N/A	
Total Iron	0	0	0	0	N/A	N/A	N/A	
Total Lead	0	0	0	0	N/A	N/A	N/A	
Total Manganese	0	0	0	0	N/A	N/A	N/A	
Total Mercury	0	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
Acrolein	0	0		0	N/A	N/A	N/A
Acrylamide	0	0		0	0.07	0.07	226
Acrylonitrile	0	0		0	0.06	0.06	194
Benzene	0	0		0	0.58	0.58	1,873
Bromoform	0	0		0	7	7.0	22,603
Carbon Tetrachloride	0	0		0	0.4	0.4	1,292
Chlorobenzene	0	0		0	N/A	N/A	N/A
Chlorodibromomethane	0	0		0	0.8	0.8	2,583
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A
Chloroform	0	0		0	N/A	N/A	N/A
Dichlorobromomethane	0	0		0	0.95	0.95	3,067
1,2-Dichloroethane	0	0		0	9.9	9.9	31,966
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A
1,2-Dichloropropane	0	0		0	0.9	0.9	2,906
1,3-Dichloropropylene	0	0		0	0.27	0.27	872
Ethylbenzene	0	0		0	N/A	N/A	N/A
Methyl Bromide	0	0		0	N/A	N/A	N/A
Methyl Chloride	0	0		0	N/A	N/A	N/A
Methylene Chloride	0	0		0	20	20.0	64,579
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	646
Tetrachloroethylene	0	0		0	10	10.0	32,289
Toluene	0	0		0	N/A	N/A	N/A
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A
1,1,2-Trichloroethane	0	0		0	0.55	0.55	1,776
Trichloroethylene	0	0		0	0.6	0.6	1,937
Vinyl Chloride	0	0		0	0.02	0.02	64.6
2-Chlorophenol	0	0		0	N/A	N/A	N/A
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A
2-Nitrophenol	0	0		0	N/A	N/A	N/A
4-Nitrophenol	0	0		0	N/A	N/A	N/A
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A
Pentachlorophenol	0	0		0	0.030	0.03	96.9
Phenol	0	0		0	N/A	N/A	N/A
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	4,843
Acenaphthene	0	0		0	N/A	N/A	N/A

Anthracene	0	0	0	N/A	N/A	N/A
Benzidine	0	0	0	0.0001	0.0001	0.32
Benzo(a)Anthracene	0	0	0	0.001	0.001	3.23
Benzo(a)Pyrene	0	0	0	0.0001	0.0001	0.32
3,4-Benzofluoranthene	0	0	0	0.001	0.001	3.23
Benzo(k)Fluoranthene	0	0	0	0.01	0.01	32.3
Bis(2-Chloroethyl)Ether	0	0	0	0.03	0.03	96.9
Bis(2-Chloroisopropyl)Ether	0	0	0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0	0	0.32	0.32	1,033
4-Bromophenyl Phenyl Ether	0	0	0	N/A	N/A	N/A
Butyl Benzyl Phthalate	0	0	0	N/A	N/A	N/A
2-Chloronaphthalene	0	0	0	N/A	N/A	N/A
Chrysene	0	0	0	0.12	0.12	387
Dibenzo(a,h)Anthracene	0	0	0	0.0001	0.0001	0.32
1,2-Dichlorobenzene	0	0	0	N/A	N/A	N/A
1,3-Dichlorobenzene	0	0	0	N/A	N/A	N/A
1,4-Dichlorobenzene	0	0	0	N/A	N/A	N/A
3,3-Dichlorobenzidine	0	0	0	0.05	0.05	161
Diethyl Phthalate	0	0	0	N/A	N/A	N/A
Dimethyl Phthalate	0	0	0	N/A	N/A	N/A
Di-n-Butyl Phthalate	0	0	0	N/A	N/A	N/A
2,4-Dinitrotoluene	0	0	0	0.05	0.05	161
2,6-Dinitrotoluene	0	0	0	0.05	0.05	161
1,2-Diphenylhydrazine	0	0	0	0.03	0.03	96.9
Fluoranthene	0	0	0	N/A	N/A	N/A
Fluorene	0	0	0	N/A	N/A	N/A
Hexachlorobenzene	0	0	0	0.00008	0.00008	0.26
Hexachlorobutadiene	0	0	0	0.01	0.01	32.3
Hexachlorocyclopentadiene	0	0	0	N/A	N/A	N/A
Hexachloroethane	0	0	0	0.1	0.1	323
Indeno(1,2,3-cd)Pyrene	0	0	0	0.001	0.001	3.23
Isophorone	0	0	0	N/A	N/A	N/A
Naphthalene	0	0	0	N/A	N/A	N/A
Nitrobenzene	0	0	0	N/A	N/A	N/A
n-Nitrosodimethylamine	0	0	0	0.0007	0.0007	2.26
n-Nitrosodi-n-Propylamine	0	0	0	0.005	0.005	16.1
n-Nitrosodiphenylamine	0	0	0	3.3	3.3	10,655
Phenanthrene	0	0	0	N/A	N/A	N/A
Pyrene	0	0	0	N/A	N/A	N/A
1,2,4-Trichlorobenzene	0	0	0	N/A	N/A	N/A

Recommended WQBELs & Monitoring Requirements

No. Samples/Month: 4



Total Silver	288	µg/L	Discharge Conc < TQL
Total Thallium	157	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	246	µg/L	Discharge Conc < TQL
Acrylamide	226	µg/L	Discharge Conc ≤ 25% WQBEL
Acrylonitrile	194	µg/L	Discharge Conc < TQL
Benzene	1,873	µg/L	Discharge Conc < TQL
Bromoform	22,603	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	1,292	µg/L	Discharge Conc < TQL
Chlorobenzene	65,351	µg/L	Discharge Conc < TQL
Chlorodibromomethane	2,583	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	1,475,320	µg/L	Discharge Conc < TQL
Chloroform	3,725	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	3,067	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	31,966	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	21,566	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	2,906	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	872	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	44,439	µg/L	Discharge Conc < TQL
Methyl Bromide	45,079	µg/L	Discharge Conc < TQL
Methyl Chloride	2,294,942	µg/L	Discharge Conc < TQL
Methylene Chloride	64,579	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	646	µg/L	Discharge Conc < TQL
Tetrachloroethylene	32,289	µg/L	Discharge Conc < TQL
Toluene	37,250	µg/L	Discharge Conc ≤ 25% WQBEL
1,2-trans-Dichloroethylene	65,351	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	245,887	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	1,776	µg/L	Discharge Conc < TQL
Trichloroethylene	1,937	µg/L	Discharge Conc < TQL
Vinyl Chloride	64.6	µg/L	Discharge Conc < TQL
2-Chlorophenol	19,605	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	6,535	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	54,095	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	1,307	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	6,535	µg/L	Discharge Conc < TQL
2-Nitrophenol	655,698	µg/L	Discharge Conc < TQL
4-Nitrophenol	188,513	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	13,114	µg/L	Discharge Conc < TQL
Pentachlorophenol	96.9	µg/L	Discharge Conc < TQL
Phenol	2,614,058	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	4,843	µg/L	Discharge Conc < TQL
Acenaphthene	6,803	µg/L	Discharge Conc ≤ 25% WQBEL

Acenaphthylene	N/A	N/A	No WQS
Anthracene	196,054	µg/L	Discharge Conc < TQL
Benzidine	0.32	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	3.23	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	3.23	µg/L	Discharge Conc ≤ 25% WQBEL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	32.3	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	96.9	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	130,703	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	1,033	µg/L	Discharge Conc ≤ 25% WQBEL
4-Bromophenyl Phenyl Ether	22,130	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	65.4	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	522,812	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	387	µg/L	Discharge Conc ≤ 25% WQBEL
Dibenzo(a,h)Anthracene	0.32	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	67,209	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	4,575	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	59,832	µg/L	Discharge Conc ≤ 25% WQBEL
3,3-Dichlorobenzidine	161	µg/L	Discharge Conc < TQL
Diethyl Phthalate	327,849	µg/L	Discharge Conc ≤ 25% WQBEL
Dimethyl Phthalate	204,906	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	9,016	µg/L	Discharge Conc ≤ 25% WQBEL
2,4-Dinitrotoluene	161	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	161	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	96.9	µg/L	Discharge Conc < TQL
Fluoranthene	13,070	µg/L	Discharge Conc < TQL
Fluorene	32,676	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.26	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	32.3	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	410	µg/L	Discharge Conc < TQL
Hexachloroethane	323	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	3.23	µg/L	Discharge Conc < TQL
Isophorone	22,219	µg/L	Discharge Conc < TQL
Naphthalene	11,475	µg/L	Discharge Conc < TQL
Nitrobenzene	6,535	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	2.26	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	16.1	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	10,655	µg/L	Discharge Conc < TQL
Phenanthrene	410	µg/L	Discharge Conc ≤ 25% WQBEL
Pyrene	13,070	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	45.7	µg/L	Discharge Conc < TQL





Thermal Limits Spreadsheet  
Version 1.0, April 2024

Instructions **WWF Results**

**Recommended Limits for Case 1 or Case 2**

Semi-Monthly Increment	WWF Target Maximum Stream Temp. (°F)	Case 1 Daily WLA (Million BTUs/day)	Case 2 Daily WLA (°F)
Jan 1-31	40	N/A -- Case 2	110.0
Feb 1-29	40	N/A -- Case 2	110.0
Mar 1-31	46	N/A -- Case 2	110.0
Apr 1-15	52	N/A -- Case 2	110.0
Apr 16-30	58	N/A -- Case 2	110.0
May 1-15	64	N/A -- Case 2	110.0
May 16-31	72	N/A -- Case 2	110.0
Jun 1-15	80	N/A -- Case 2	110.0
Jun 16-30	84	N/A -- Case 2	110.0
Jul 1-31	87	N/A -- Case 2	110.0
Aug 1-15	87	N/A -- Case 2	110.0
Aug 16-31	87	N/A -- Case 2	110.0
Sep 1-15	84	N/A -- Case 2	110.0
Sep 16-30	78	N/A -- Case 2	110.0
Oct 1-15	72	N/A -- Case 2	110.0
Oct 16-31	66	N/A -- Case 2	110.0
Nov 1-15	58	N/A -- Case 2	110.0
Nov 16-30	50	N/A -- Case 2	110.0
Dec 1-31	42	N/A -- Case 2	110.0

**Effluent Limitation Guideline Calculations**

**Production Based Effluent Limitation Guideline Calculator**

**Production Line and Process Description**

Iron and Steel Manufacturing Point Source

**Applicable ELG**

40 CFR 420 - Subpart I (Acid Pickling) BPT - 420.92(a)(4) BAT - 420.93(a)(4) BCT - 420.97(a)(4)

**Outfall / IMP No. receiving wastewater**

101

**Units of Production measurement for ELG**

1,000 lbs of product.

**Design Production Capacity**

Unknown

Parameter	Production Years					5 Year Averages
	2016	2017	2018	2019	2020	
<b>Total Annual Production</b>	88,590.00	119,801.00	126,596.00	103,158.00	109,037.00	109,436.40
<b>Max Monthly Production</b>	9,423.00	14,124.00	13,812.00	10664	12242	12,053.00
<b>Month of Max Production</b>	June	September	September	September	March	
<b>Avg Annual Production</b>	334	452	478	389	441	418.8
<b>Avg Production Hours/Day</b>	24	24	24	24	24	24
<b>Avg Production Days/Month</b>	20	23	23	22	22	22
<b>Avg Annual Water Usage (MGD)</b>	0.22	0.174	0.156	0.094	0.138	0.1564
<b>Avg Annual Wastewater Flow (MGD)</b>	0.48	0.48	0.48	0.48	0.48	0.48

**Average Annual Production Over Past 5 years**

109,436.00 1,000 lbs of product

**Anticipated Average Annual Production over next 5 years**

110,000.00 1,000 lbs of product

**Daily Max Production**

Max Monthly Production/Avg Production Days/Month  
**614.09 1,000 lbs of product**

14124 / 23 = 614.09

ELG Limit Calculation				
Pollutant	ELG - BPT/BAT/BCT Effluent Limits (lbs/1,000 lbs of product)		Mass Based Effluent Limits (lbs/day)	
	Max for Any 1 Day	Average Daily Value for 30 Consecutive Days	Average Monthly	Maximum Daily
Total Suspended Solids (BPT/BCT)	0.146	0.0626	38.44	89.66
pH (BPT/BCT)	Within the range of 6.0 to 9.0		Within the range of 6.0 to 9.0	
Total Lead (BPT/BAT)	0.000939	0.000313	0.19	0.58
Total Zinc (BPT/BAT)	0.00125	0.000417	0.26	0.77
Oil and Grease (BPT/BCT)	0.0626	0.0209	12.83	38.44

  

	<b>Example Calculation</b>		<b>TSS</b>	
Daily Max Production x ELG BPT Effluent Limits	TSS	0.146 x 614.09 =	89.66	
		0.0626 x 614.09 =	38.44	
		* Repeat process for Total Lead, Total Zinc, and Oil and Grease		

The limitations found in 40 CFR Part 420 Subpart I (Acid Pickling) include limit calculations for Total Suspended Solids, pH, Total Lead, Total Zinc, and Oil and Grease which are mass based limits based on pounds per 1,000 pounds of product. The BPT limitations cover all parameters mentioned, BAT limitations cover the metals portion listed, and BCT limitations cover conventional pollutants. An evaluation of which method of calculating the limits is more stringent are not necessary as there is no difference in the conversion factors between BPT, BAT, and BCT.

**Production Line and Process Description**

Iron and Steel Manufacturing Point Source

**Applicable ELG**

40 CFR 420 - Subpart J (Cold Forming) BPT - 420.102(b)(2) BAT - 420.103(b)(2) BCT - 420.107(b)(2)

**Outfall / IMP No. receiving wastewater**

101

**Units of Production measurement for ELG**

1,000 lbs of product.

**Design Production Capacity**

Unknown

ELG Limit Calculation	
ELG - BPT/BAT/BCT Effluent Limits	Mass Based Effluent Limits (lbs/day)

Pollutant	Max for Any 1 Day	Average Daily Value for 30 Consecutive Days	
		Average Monthly	Maximum Daily
Total Suspended Solids (BPT/BCT)	0.00125	0.000626	0.38
pH (BPT/BCT)	Within the range of 6.0 to 9.0		Within the range of 6.0 to 9.0
Total Chromium (BPT/BAT)	0.0000209	0.0000084	0.00516
Total Nickel (BPT/BAT)	0.0000188	0.0000063	0.004
Oil and Grease (BPT/BCT)	0.000522	0.000209	0.128
Naphthalene (BPT/BAT)	0.0000021		0.00129
Tetrachloroethylene (BPT/BAT)	0.0000031		0.0019
<b>Example Calculation</b>			
		<b>TSS</b>	
Daily Max Production x ELG BPT Effluent Limits	TSS	0.00125 x 614.09 =	0.77
		0.000626 x 614.09 =	0.38
*Repeat process for Total Chromium, Total Nickel, Oil and Grease, Naphthalene, and Tetrachloroethylene			
<p>The limitations found in 40 CFR Part 420 Subpart J (Cold Forming) include limit calculations for Total Suspended Solids, pH, Total Lead, Total Zinc, Total Chromium, Total Nickel, Naphthalene, Tetrachloroethylene, and Oil and Grease which are mass based limits based on pounds per 1,000 pounds of product. The BPT limitations cover all parameters mentioned, BAT limitations cover the metals and volatiles portion listed, and BCT limitations cover conventional pollutants. An evaluation of which method of calculating the limits is more stringent are not necessary as there is no difference in the conversion factors between BPT, BAT, and BCT. Based on footnote 1 in 40.102(b)(2) limitations for chromium and nickel shall be applicable in lieu of those for lead and zinc when cold forming wastewaters are treated with descaling or combination acid pickling wastewaters. Since the facility utilizes acid pickling and limits are calculated for Zinc and Lead in the Acid Pickling subcategory the facility will not get credit for Zinc and Lead based on the Cold Forming subcategory.</p>			

**Applicable Limits from 40 CFR Part 420**

**Case Name:** Wheatland Tube LLC  
**Facility:** Sharon Tube - Church Street Plant  
**Permit No.:** PA0222933  
**Outfall:** IMP 101  
**Industry Category:** Iron and Steel  
**Applicable Subcategories:** Subpart I - Acid Pickling      **Production Rate:** 614.09 tppd  
Subpart J - Cold Forming

Parameter	Allowable Mass Loading (lbs/day) Acid Pickling Subcategory		Allowable Mass Loading (lbs/day) Cold Forming Subcategory		Allowable Mass Loading (lbs/day) Total	
	Avg Monthly	Daily Max	Avg Monthly	Daily Max	Avg Monthly	Daily Max
	Total Suspended Solids	38.44	89.66	0.38	0.77	38.83
Total Chromium			0.00516	0.0128	0.00516	0.0128
Total Nickel			0.004	0.0115	0.004	0.0115
Oil and Grease	12.834	38.44	0.128	0.321	12.963	38.76
Total Zinc	0.26	0.77			0.26	0.77
Total Lead	0.19	0.58			0.19	0.58
Naphthalene				0.00129		0.00129
Tetrachloroethylene				0.0019		0.0019
pH	Between 6.0 to 9.0 at all times		Between 6.0 to 9.0 at all times		Between 6.0 to 9.0 at all times	

Mussels Discussion with Biologists

**Hargenrater, Dustin**

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**From:** Grassi, James  
**Sent:** Thursday, August 7, 2025 9:02 AM  
**To:** Hargenrater, Dustin; Brancato, Joseph  
**Subject:** RE: Potential T&E Mussel permits

**Categories:** Red Category

Hi Dustin,

Following up on these permits with potential T&E Mussel concerns.

Ellwood National Forge (Brokenstraw Creek)

We were there on 8/5. During our 62 minutes of search time we did not find any live mussels and or shell material within the vicinity of Outfall 001. The historic species list we work off of does not include any T&E species within Brokenstraw Creek. Also this is not an area that is designated or proposed critical habitat at this time. We did take an upstream and in plume water sample. I can share those results with you when they come in.

Sharon Tube (Shenango River)

After doing some more research and a site visit I could not find evidence of T&E mussels in this stretch of the Shenango River. Most are restricted to the Shenango River between Pymatuning Lake and Shenango River Lake and or just downstream of Shenango River Lake. Also the area around Sharon Tube is not currently designated or proposed critical habitat.

Cochranton Boro STP (French Creek)

I think we already talked about this one and I got you latest mussel survey from a few years back.

If you have any questions, feel free to let me know.

Thanks!

Josh

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**From:** Hargenrater, Dustin <dhargenrat@pa.gov>  
**Sent:** Wednesday, June 18, 2025 11:26 AM  
**To:** Brancato, Joseph <jbrancato@pa.gov>  
**Cc:** Grassi, James <jagrassi@pa.gov>  
**Subject:** Potential T&E Mussel permits

Hey Guys,

Here are the permits I currently have in house with T&E Mussels concerns, I will try to include some basic information so if you need any additional information please feel free to reach out.