pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0205222**
Facility Type	**Industrial**	APS ID	**1115242**
Major / Minor	**Minor**	Authorization ID	**1487788**

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

Applicant and Facility Information

Applicant Name	**Tenaris Koppel**	Facility Name	**Tenaris Koppel**
Applicant Address	PO Box 750 Beaver Falls, PA 15010-0750	Facility Address	6403 6th Ave Koppel, PA 16136
Applicant Contact	Seth Staffen	Facility Contact	Same as Applicant
Applicant Phone	724-312-8127	Facility Phone	Same as Applicant
Applicant Email	sstaffen@tenaris.com	Facility Email	Same as Applicant
Client ID	64804	Site ID	236661
SIC Code	3312	Municipality	Koppel Borough
SIC Description	Manufacturing - Blast Furnaces And Steel Mills	County	Beaver
Date Application Received	April 1, 2010	EPA Waived?	Yes
Date Application Accepted	June 30, 2010	If No, Reason	
Purpose of Application	NPDES Renewal Coverage		

Summary of Review

The Department received an NPDES permit renewal application from IPSCO Koppel Tubulars Corporation for its site in Koppel Borough, Beaver County on April 1, 2010. The Department later received an updated renewal application and transfer application from Tenaris Koppel on May 30, 2024 to transfer the ownership of the site from IPSCO Koppel Tubulars Corporation to Tenaris Koppel. The site is an electric arc furnace steel mill and ancillary facility with a SIC code of 3312, blast furnaces and steel mills.

The site has eight outfalls (Outfalls 001 – 007, and 009) and one internal monitoring point (IMP 102) that all discharge to the Beaver River, designated in 25 PA Code Chapter 93 as a Warm Water Fishery (WWF).

Outfall 001 discharges stormwater and groundwater from seeps which enter the water conveyance system. The drainage area consists of the product storage area.

Outfall 002 discharges effluent from IMP 102, stormwater, and groundwater from seeps which enter the water conveyance system. Prior to discharging to the Beaver River but after IMP 102, the wastewater is treated with acid for neutralization. The drainage area consists of facility access roadways.

IMP 102 receives effluent from the Wastewater Treatment Plant. Quench and temper contact and non-contact cooling water, #4 melt shop contact and non-contact cooling water, water softener water and the wastewater from blooming mile scale pit are collected and treated at the Wastewater Treatment Plant. The Wastewater Treatment Plant consists of gravity filtration, oil and grease removal, equalization, coagulation, flocculation, and plate settling (including gravity thickening and vacuum

Approve	Deny	Signatures	Date
X		Adam Olesnanik, P.E. / Environmental Engineer	September 18, 2024
X		Michael E. Fifth, P.E. / Environmental Engineer Manager	September 19, 2024

Summary of Review

filtration). The treated effluent is partially reused and partially discharged via Outfall 002. The effluent from the treatment plant is monitored at IMP 102 before comingling with stormwater and groundwater and discharging via Outfall 002.

Outfall 003 discharges stormwater. The drainage area consists of the facility access roadways.

Outfall 004 discharges stormwater. The drainage area consists of the facility access roadways.

Outfall 005 discharges stormwater. The drainage area consists of the product storage area.

Outfall 006 discharges stormwater. The drainage area consists of the product storage area.

Outfall 007 discharges stormwater. The drainage area consists of the product storage area.

Outfall 009 discharges stormwater. The drainage area consists of the rail tracks.

Outfalls 006, 007, and 009 exit the North Plant property and discharge to a 48-inch BCCM water conveyance pipe that crosses under the property. The conveyance pipe eventually discharges to the Beaver River. This pipe is owned by others and is permitted as Outfall 013 in the Swagelok Processing Corporation NPDES Permit (PA0003239).

The site was last inspected on July 26, 2023; no violations were noted. The Permittee has no open violations.

It is recommended that a Draft NPDES Permit be published for public comment in response to this application.

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.	001	Design Flow (MGD)	0
Latitude	40º 50' 22"	Longitude	-80º 19' 16"
Quad Name	Beaver Falls	Quad Code	1203
Wastewater Description:	Stormwater and Groundwater		
Receiving Waters	Beaver River (WWF)	Stream Code	33953
NHD Com ID	123918297	RMI	11.4
Drainage Area	3090	Yield (cfs/mi^2)	0.207
Q_{7-10} Flow (cfs)	640	Q_{7-10} Basis	US Army Corp of Engineers
Elevation (ft)	734	Slope (ft/ft)	0.0001
Watershed No.	20-B	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Cause Unknown, Polychlorinated Biphenyls (PCBs)		
Source(s) of Impairment	Source Unknown, Source Unknown		
TMDL Status	Name		
Nearest Downstream Public Water Supply Intake	Beaver Falls Municipal Authority		
PWS Waters	Beaver River	Flow at Intake (cfs)	640
PWS RMI	5.6	Distance from Outfall (mi)	5.8

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002 (102)	Design Flow (MGD)	0.115
Latitude	40º 50' 18"	Longitude	-80º 19' 12"
Quad Name	Beaver Falls	Quad Code	1203
Wastewater Description:	IW Process Effluent with ELG, Noncontact Cooling Water (NCCW), Other Miscellaneous Discharges, Stormwater		
Receiving Waters	Beaver River (WWF)	Stream Code	33953
NHD Com ID	123918297	RMI	11.4
Drainage Area	3090	Yield (cfs/mi^2)	0.207
Q_{7-10} Flow (cfs)	640	Q_{7-10} Basis	US Army Corp of Engineers
Elevation (ft)	734	Slope (ft/ft)	0.0001
Watershed No.	20-B	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Cause Unknown, Polychlorinated Biphenyls (PCBs)		
Source(s) of Impairment	Source Unknown, Source Unknown		
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Beaver Falls Municipal Authority		
PWS Waters	Beaver River	Flow at Intake (cfs)	640
PWS RMI	5.6	Distance from Outfall (mi)	5.8

Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	0.073
Latitude	40º 50' 03"	Longitude	-80º 19' 00"
Quad Name	Beaver Falls	Quad Code	1203
Wastewater Description:	Stormwater		
Receiving Waters	Beaver River (WWF)	Stream Code	33953
NHD Com ID	123918297	RMI	11.0
Drainage Area	3090	Yield (cfs/mi^2)	0.207
Q_{7-10} Flow (cfs)	640	Q_{7-10} Basis	US Army Corp of Engineers
Elevation (ft)	734	Slope (ft/ft)	0.0001
Watershed No.	20-B	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Cause Unknown, Polychlorinated Biphenyls (PCBs)		
Source(s) of Impairment	Source Unknown, Source Unknown		
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Beaver Falls Municipal Authority		
PWS Waters	Beaver River	Flow at Intake (cfs)	640
PWS RMI	5.6	Distance from Outfall (mi)	5.4

Discharge, Receiving Waters and Water Supply Information

Outfall No.	004	Design Flow (MGD)	0.0
Latitude	40º 49' 55"	Longitude	-80º 18' 48"
Quad Name	Beaver Falls	Quad Code	1203
Wastewater Description:	Stormwater		

Receiving Waters	Beaver River (WWF)	Stream Code	33953
NHD Com ID	123918297	RMI	10.7
Drainage Area	3090	Yield (cfs/mi^2)	0.207
Q_{7-10} Flow (cfs)	640	Q_{7-10} Basis	US Army Corp of Engineers
Elevation (ft)	734	Slope (ft/ft)	0.0001
Watershed No.	20-B	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Cause Unknown, Polychlorinated Biphenyls (PCBs)		
Source(s) of Impairment	Source Unknown, Source Unknown		
TMDL Status		Name	

Nearest Downstream Public Water Supply Intake	Beaver Falls Municipal Authority		
PWS Waters	Beaver River	Flow at Intake (cfs)	640
PWS RMI	5.6	Distance from Outfall (mi)	5.1

Discharge, Receiving Waters and Water Supply Information

Outfall No.	005	Design Flow (MGD)	0.0
Latitude	40º 50' 20"	Longitude	-80º 19' 17"
Quad Name	Beaver Falls	Quad Code	1203
Wastewater Description:	Stormwater		
Receiving Waters	Beaver River (WWF)	Stream Code	33953
NHD Com ID	123918297	RMI	11.4
Drainage Area	3090	Yield (cfs/mi^2)	0.207
Q_{7-10} Flow (cfs)	640	Q_{7-10} Basis	US Army Corp of Engineers
Elevation (ft)	734	Slope (ft/ft)	0.0001
Watershed No.	20-B	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Cause Unknown, Polychlorinated Biphenyls (PCBs)		
Source(s) of Impairment	Source Unknown, Source Unknown		
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Beaver Falls Municipal Authority		
PWS Waters	Beaver River	Flow at Intake (cfs)	640
PWS RMI	5.6	Distance from Outfall (mi)	5.8

Discharge, Receiving Waters and Water Supply Information

Outfall No.	006	Design Flow (MGD)	0.0
Latitude	40º 50' 33"	Longitude	-80º 19' 23"
Quad Name	Beaver Falls	Quad Code	1203
Wastewater Description:	Stormwater		

Receiving Waters	Beaver River (WWF)	Stream Code	33953
NHD Com ID	123918297	RMI	11.6
Drainage Area	3090	Yield (cfs/mi^2)	0.207
Q_{7-10} Flow (cfs)	640	Q_{7-10} Basis	US Army Corp of Engineers
Elevation (ft)	734	Slope (ft/ft)	0.0001
Watershed No.	20-B	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Cause Unknown, Polychlorinated Biphenyls (PCBs)		
Source(s) of Impairment	Source Unknown, Source Unknown		
TMDL Status		Name	

Nearest Downstream Public Water Supply Intake	Beaver Falls Municipal Authority		
PWS Waters	Beaver River	Flow at Intake (cfs)	640
PWS RMI	5.6	Distance from Outfall (mi)	6.0

Discharge, Receiving Waters and Water Supply Information

Outfall No.	007	Design Flow (MGD)	0.0
Latitude	40º 50' 34"	Longitude	-80º 19' 23"
Quad Name	Beaver Falls	Quad Code	1203
Wastewater Description:	Stormwater		
Receiving Waters	Beaver River (WWF)	Stream Code	33953
NHD Com ID	123918297	RMI	11.6
Drainage Area	3090	Yield (cfs/mi^2)	0.207
Q_{7-10} Flow (cfs)	640	Q_{7-10} Basis	US Army Corp of Engineers
Elevation (ft)	734	Slope (ft/ft)	0.0001
Watershed No.	20-B	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Cause Unknown, Polychlorinated Biphenyls (PCBs)		
Source(s) of Impairment	Source Unknown, Source Unknown		
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Beaver Falls Municipal Authority		
PWS Waters	Beaver River	Flow at Intake (cfs)	640
PWS RMI	5.6	Distance from Outfall (mi)	6.0

Discharge, Receiving Waters and Water Supply Information

Outfall No.	009	Design Flow (MGD)	0.0
Latitude	40º 50' 36"	Longitude	-80º 19' 20"
Quad Name	Beaver Falls	Quad Code	1203
Wastewater Description:	Stormwater		
Receiving Waters	Beaver River (WWF)	Stream Code	33953
NHD Com ID	123918297	RMI	11.6
Drainage Area	3090	Yield (cfs/mi^2)	0.207
Q_{7-10} Flow (cfs)	640	Q_{7-10} Basis	US Army Corp of Engineers
Elevation (ft)	734	Slope (ft/ft)	0.0001
Watershed No.	20-B	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Cause Unknown, Polychlorinated Biphenyls (PCBs)		
Source(s) of Impairment	Source Unknown, Source Unknown		
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Beaver Falls Municipal Authority		
PWS Waters	Beaver River	Flow at Intake (cfs)	640
PWS RMI	5.6	Distance from Outfall (mi)	6.0

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0
Latitude 40º 50' 22" **Longitude** -80º 19' 16"
Wastewater Description: Stormwater and Groundwater

Stormwater Technology Limits

Outfall 001 will be subject to PAG-03 General Stormwater Permit conditions as a minimum requirement because the outfall discharges stormwater associated with industrial activity. The SIC code for the site is 3312 and the corresponding appendix of the PAG-03 that would apply to the facility is Appendix B. The reporting requirements applicable to stormwater discharges are shown in Table 1 below.

Table 1: PAG-03 Appendix (B) Monitoring Requirements

Parameter	Max Daily Concentration	Measurement Frequency	Sample Type
Total Nitrogen	Monitor and Report	1/6 Months	Grab
Total Phosphorous	Monitor and Report	1/6 Months	Grab
Total Suspended Solids (TSS)	Monitor and Report	1/6 Months	Grab
Oil and Grease	Monitor and Report	1/6 Months	Grab
Total Aluminum	Monitor and Report	1/6 Months	Grab
Total Zinc	Monitor and Report	1/6 Months	Grab
Total Copper	Monitor and Report	1/6 Months	Grab
Total Iron	Monitor and Report	1/6 Months	Grab
Total Lead	Monitor and Report	1/6 Months	Grab

Water Quality-Based Limitations

Stormwater WQBELs

Water quality analyses are typically performed under low-flow (Q7-10) conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from Outfall 009 are composed entirely of stormwater and groundwater, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations based on water quality analyses are not proposed.

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l). The previous limitations for Outfalls 001 are displayed below in Table 2.

Table 2: Effluent Limitations in the Current Permit for Outfall 001

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	1/quarter	Estimate
Fecal Coliform (CFU/100 mL)	XXX	Report	XXX	1/quarter	grab
Total Iron	XXX	Report	XXX	1/quarter	grab

Proposed Effluent Limitations and Monitoring Requirements

The proposed effluent monitoring requirements for Outfall 001 are displayed in Table 3 below, they are the most stringent values from the above effluent limitation development. The flow monitoring requirement from the current permit has been removed from this outfall because flow monitoring is not appropriate for stormwater discharges. The sample frequency for the parameters that are currently monitored at Outfall 001 have been reduced from 1/quarter to 1/6 months to be more consistent with current stormwater monitoring requirements. The Draft Permit requires a Corrective Action Plan when there are two consecutive exceedances of the benchmark values. The benchmark values are listed in Part C of the permit and displayed below in Table 3. These values are not effluent limitations, an exceedance of the benchmark value is not a violation. As described above, if there are two consecutive exceedances of the benchmark value, a Corrective Action Plan

must be developed and submitted to evaluate site stormwater controls and BMPs. Benchmark monitoring is a feedback tool, along with routine inspections and visual assessments, for assessing the effectiveness of stormwater controls and BMPs. An exceedance of the benchmark provides permittees with an indication that the facility's controls may not be sufficiently controlling pollutants in stormwater.

Table 3: Proposed Effluent Monitoring Requirements – Outfall 001

Parameter	Max Daily Concentration	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
Fecal Coliform (CFU/100 mL)	Report	XXX	1/6 Months	Grab
Total Nitrogen	Report	XXX	1/6 Months	Grab
Total Phosphorous	Report	XXX	1/6 Months	Grab
Total Suspended Solids (TSS)	Report	100	1/6 Months	Grab
Oil and Grease	Report	30	1/6 Months	Grab
Total Aluminum	Report	XXX	1/6 Months	Grab
Total Zinc	Report	XXX	1/6 Months	Grab
Total Copper	Report	XXX	1/6 Months	Grab
Total Iron	Report	XXX	1/6 Months	Grab
Total Lead	Report	XXX	1/6 Months	Grab

Development of Effluent Limitations

Outfall No. 002 **Design Flow (MGD)** 0.115
Latitude 40º 50' 18" **Longitude** -80º 19' 12"
Wastewater Description: IW Process Effluent with ELG, Noncontact Cooling Water (NCCW), Other Miscellaneous Discharges, Stormwater

Federal Effluent Limitation Guidelines (ELGs)

The ELG limitations will be evaluated and imposed at the Internal Monitoring Point (IMP 102).

Regulatory Effluent Standards and Monitoring Requirements

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1).

As oil-bearing wastewaters, discharges from Outfall 002 are subject to effluent standards for oil and grease from 25 Pa. Code § 95.2(2).

Pennsylvania regulations at 25 Pa. Code § 92a.48(b) require the imposition of technology-based TRC limits for facilities that use chlorination and that are not already subject to TRC limits based on applicable federal ELGs or a facility-specific BPJ evaluation.

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code § 95.2(1).

Temperature limits will be imposed per the Department's "*Implementation Guidance for Temperature Criteria*." As a policy, DEP normally imposes a maximum temperature limit of 110°F on discharges that contain residual heat. The limit is intended as a safety measure to protect sampling personnel or anyone who may come into contact with the heated discharge where it enters the receiving water.

Table 4: Regulatory Effluent Standards and Monitoring Requirements for Outfall 002

Parameter	Monthly Average	Daily Maximum	IMAX	Units
Flow	Monitor and Report		XXX	MGD
Oil & Grease	15	30	XXX	mg/L
Total Residual Chlorine	0.5	1.0	XXX	mg/L
Temperature	XXX	XXX	110	°F
pH	Not less than 6.0 nor greater than 9.0			S.U.

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.

Tenaris Koppel’s application sampling for PFOA, PFOS, PFBS, and HFPO-DA indicated that PFAS is present in the discharge (PFOA and PFOS were detected above the Department’s QL twice, and PFBS was detected above the Department’s QL three times). Therefore, quarterly reporting of PFOA, PFOS, PFBS, and HFPO-DA will be required consistent with Section II.I.b of SOP BCW-PMT-032.

As stated in Section II.I.c of the SOP, if non-detect values at or below DEP’s Target QLs are reported for four consecutive monitoring periods (i.e., four consecutive annual results in Tenaris Koppel’s case), then the monitoring may be discontinued.

Additionally, because PFAS was detected in the discharge, a Part C condition will be included in the Draft permit requiring the permittee to develop a PFAS Reduction Plan.

Water Quality-Based Limitations

Toxics Management Spread Sheet

The Department of Environmental Protection (DEP) has developed the DEP Toxics Management Spreadsheet (“TMS”) to facilitate calculations necessary for completing a reasonable potential (RP) analysis and determining water quality-based effluent limitations for discharges of toxic pollutants. The Toxics Management Spreadsheet is a macro-enabled Excel binary file that combines the functions of the PENTOXSD model and the Toxics Screening Analysis spreadsheet to evaluate the reasonable potential for discharges to cause excursions above water quality standards and to determine WQBELs. The Toxics Management Spread Sheet is a single discharge, mass-balance water quality calculation spread sheet that includes consideration for mixing, first-order decay and other factors to determine recommended WQBELs for toxic substances and several non-toxic substances. Required input data including stream code, river mile index, elevation, drainage area, discharge name, NPDES permit number, discharge flow rate and the discharge concentrations for parameters in the permit application or in DMRs, which are entered into the spread sheet to establish site-specific discharge conditions. Other data such as low flow yield, reach dimensions and partial mix factors may also be entered to further characterize the conditions of the discharge and receiving water. Discharge concentrations for the parameters are chosen to represent the "worst case" quality of the discharge (i.e., maximum reported discharge concentrations). The spread sheet then evaluates each parameter by computing a Waste Load Allocation for each applicable criterion, determining a recommended maximum WQBEL and comparing that recommended WQBEL with the input discharge concentration to determine which is more stringent. Based on this evaluation, the Toxics Management Spread sheet recommends average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for Outfall 002

Discharges from Outfall 002 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are entered into the Toxics Management Spread Sheet. The maximum reported value of the parameters from the application form or from previous DMRs is used as the input concentration in the Toxics Management Spread Sheet. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion are considered to be pollutants of concern. [This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion]. The Toxics Management Spread Sheet is run with

the discharge and receiving stream characteristics shown in Table 5. For IW discharges, the design flow used in modeling is the average flow during production or operation taken from the permit application. Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis. All the parameters are evaluated using the model to determine the water quality-based effluent limits applicable to the discharge and the receiving stream. The spreadsheet then compares the reported discharge concentrations to the calculated water quality-based effluent limitations to determine if a reasonable potential exists to exceed the calculated WQBELs. Effluent limitations are established in the draft permit where a pollutant's maximum reported discharge concentration equals or exceeds 50% of the WQBEL. For non-conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 25% - 50% of the WQBEL. For conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 10% - 50% of the WQBEL. The information described above including the maximum reported discharge concentrations, the most stringent water quality criteria, the pollutant-of-concern (reasonable potential) determinations, the calculated WQBELs, and the WQBEL/monitoring recommendations are displayed in the Toxics Management Spread Sheet in Attachment B of this Fact Sheet. Based on the results of the reasonable potential analysis, the Toxics Management Spread Sheet prescribed monitoring requirements for Total Aluminum and Total Copper.

Table 5: TMS Inputs for Outfall 002

Parameter	**Value**
River Mile Index	11.4
Discharge Flow (MGD)	0.115
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	3090
$Q_{7\text{-}10}$ (cfs)	640
Low-flow yield (cfs/mi^2)	0.207
Elevation (ft)	724
Slope	0.0001

Total Residual Chlorine

To determine if WQBELs are required for discharges containing total residual chlorine (TRC), a discharge evaluation is performed using a DEP program called TRC_CALC created with Microsoft Excel for Windows. TRC_CALC calculates TRC Waste Load Allocations (WLAs) through the application of a mass balance model which considers TRC losses due to stream and discharge chlorine demands and first-order chlorine decay. Input values for the program include flow rates and chlorine demands for the receiving stream and the discharge, the number of samples taken per month, coefficients of TRC variability, partial mix factors, and an optional factor of safety. The mass balance model calculates WLAs for acute and chronic criteria that are then converted to long term averages using calculated multipliers. The multipliers are functions of the number of samples taken per month and the TRC variability coefficients (normally kept at default values unless site specific information is available). The most stringent limitation between the acute and chronic long-term averages is converted to an average monthly limit for comparison to the BAT average monthly limit of 0.5 mg/l from 25 Pa. Code § 92a.48(b)(2). The more stringent of these average monthly TRC limitations is imposed in the permit. The results of the modeling, included in Attachment C, indicate that no WQBELs are required for TRC.

Thermal WQBELs for Heated Discharges

Thermal WQBELs are evaluated using DEP's "Thermal Discharge Limit Calculation Spreadsheet" created with Microsoft Excel for Windows. The program calculates temperature WLAs through the application of a heat transfer equation, which takes two forms in the program depending on the source of the facility's cooling water. In Case 1, intake water to a facility is from the receiving stream. In Case 2, intake water is from a source other than the receiving stream (e.g., municipal water supply). The determination of which case applies to a given discharge is determined by the input data which include the

receiving stream flow rate (Q_{7-10} or the minimum regulated flow for large rivers), the stream intake flow rate, external source intake flow rates, consumptive flow rates and site-specific ambient stream temperatures. Case 1 limits are generally expressed as heat rejection rates while Case 2 limits are usually expressed as temperatures.

Since the temperature criteria from 25 Pa. Code Chapter 93.7(a) are expressed on monthly and semi-monthly bases for three different aquatic life-uses—cold water fishes, warm water fishes and trout stocking—the program generates monthly and semi-monthly limits for each use. DEP selects the output that corresponds to the aquatic life-use of the receiving stream and consequently which limits apply to the discharge. Temperature WLAs are bounded by an upper limit of 110°F for the safety of sampling personnel and anyone who may come into contact with the heated discharge where it enters the receiving water. If no WLAs below 110°F are calculated, an instantaneous maximum limit of 110°F is recommended by the program.

Discharges from Outfall 002 are classified under Case 2 because water is obtained from municipal water supply. The flow rate used for modeling is 0.115 MGD, which is the average discharge flow from Outfall 002. The results of the thermal analysis, included in Attachment D, indicate that no WQBELs for temperature are required at Outfall 002. Therefore, the 110°F daily maximum temperature limit will be imposed at Outfall 002.

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l) and are displayed below in Table 6.

Table 6: Current Effluent Limitations for Outfall 002

Parameter	Average Monthly (lbs/day)	Daily Maximum (lbs/day)	Instant. Minimum (mg/L)	Average Monthly (mg/L)	Daily Maximum (mg/L)	Instant. Maximum (mg/L)	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	1/day	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Measured
Oil and Grease	XXX	XXX	XXX	Report	XXX	30	1/week	Grab
Temperature (ºF)	XXX	XXX	XXX	Report	XXX	110	1/week	I-S

Proposed Effluent Limitations

The proposed effluent limitations for Outfall 002 are displayed in Table 7 below, they are the most stringent values from the above effluent limitation development.

Table 7: Proposed Effluent Limitations for Outfall 002

Parameter	Average Monthly (lbs/day)	Daily Maximum (lbs/day)	Instant. Minimum (mg/L)	Average Monthly (mg/L)	Daily Maximum (mg/L)	Instant. Maximum (mg/L)	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	1/day	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Measured
Oil and Grease	XXX	XXX	XXX	15	30	XXX	1/week	Grab
Temperature (ºF)	XXX	XXX	XXX	Report	XXX	110	1/week	I-S
TRC	XXX	XXX	XXX	0.5	1.0	XXX	1/week	Grab
Total Aluminum	XXX	XXX	XXX	Report	Report	XXX	1/week	Grab
Total Copper	XXX	XXX	XXX	Report	Report	XXX	1/week	Grab
PFOA (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
PFOS (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
PFBS (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
HFPO-DA (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab

Development of Effluent Limitations

IMP No. 102 **Design Flow (MGD)** 0.136
Latitude 40º 50' 8" **Longitude** -80º 19' 5"
Wastewater Description: IW Process Effluent with ELG, Noncontact Cooling Water (NCCW), Other Miscellaneous Discharges

Technology-Based Limitations

Federal Effluent Limitation Guidelines (ELGs)

IMP 102 is subject to Federal Effluent Limitation Guidelines (ELGs) under 40 CFR 420.62 and 63, the Iron and Steel Manufacturing Subpart F- Continuous Casting Subcategory (BPT and BAT, respectively). The effluent limitations from the subcategory are broken down below in Table 8. The production used in determining the loading limitations is the final, out-the-door, production rate. The anticipated daily production rate at the site was calculated to be 3,373,000 lbs/day which is consistent with the production rates from the past 5 years. The anticipated daily production rate was calculated by using the anticipated annual average production of 404,785 tons/year and converting it to lbs/day by using conversion factors and the average operational days in a month (20 days per month).

Table 8: Mass Limitation Calculation – Iron and Steel – Continuous Casting

Parameter	Limitations in ELGs		Production Rate (thousand lbs/day)	Mass-Based Effluent Limits (lbs/day)	
	Monthly Average	Maximum Daily		Monthly Average	Maximum Daily
Total Suspended Solids (2)	0.0260(1)	0.0780(1)	3,373	87.6	263
Oil & Grease (2)	0.0078(1)	0.0234(1)		26.3	78.9
Lead (3)	0.0000313(1)	0.0000939(1)		0.105	0.316
Zinc (3)	0.0000469(1)	0.000141(1)		0.158	0.475
pH (2)	Within the range of 6.0 to 9.0			Within the range of 6.0 to 9.0	

[1]Pounds per 1000 lbs (or g/kg) of product.
[2]40 CFR 420.62.
[3]40 CFR 420.63

Sample Calculation:

$$Mass - Based\ Effluent\ Limit\ \left(\frac{lbs}{day}\right) = \left[ELG\ Max\ for\ any\ 1\ day\ \left(\frac{lbs}{thousand - lbs\ production}\right)\right] * \left[Average\ Daily\ Production\ \left(\frac{thousand - lbs\ production}{day}\right)\right]$$

$$TSS\ Max\ Daily\ Mass - Based\ Effluent\ Limit\ \left(\frac{lbs}{day}\right) = \left[\left(\frac{0.0780\ lbs}{thousand\ lbs\ production}\right)\right] * \left[\left(\frac{3{,}373\ thousand\ lbs\ production}{day}\right)\right]$$

$$TSS\ Max\ Daily\ Mass - Based\ Effluent\ Limit\ \left(\frac{lbs}{day}\right) = [263\ \left(\frac{lbs}{day}\right)]$$

Regulatory Effluent Standards and Monitoring Requirements

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1).

As oil-bearing wastewaters, discharges from IMP 102 are subject to effluent standards for oil and grease from 25 Pa. Code § 95.2(2)

Industrial waste discharges cannot contain more than 7 milligrams per liter of dissolved iron per 25 Pa. Code § 95.2(4).

Temperature limits will be imposed per the Department's "*Implementation Guidance for Temperature Criteria*." As a policy, DEP normally imposes an Instantaneous Maximum temperature limit of 110°F on discharges that contain residual heat. The limit is intended as a safety measure to protect sampling personnel or anyone who may come into contact with the heated discharge where it enters the receiving water

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code § 95.2(1) as indicated in Table 9.

Table 9: Regulatory Effluent Standards and Monitoring Requirements for IMP 102

Parameter	Monthly Average	Daily Maximum	IMAX	Units
Flow	Monitor and Report		XXX	MGD
Dissolved Iron	-	7.0	XXX	mg/L
Oil & Grease	15	30	XXX	mg/L
Temperature	-	XXX	110	°F
pH	Not less than 6.0 nor greater than 9.0			S.U.

Water Quality-Based Limitations

Water quality limitation will be evaluated at the point of discharge (Outfall 002).

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l) and are displayed below in Table 10.

Table 10: Current Effluent Limitations for IMP 102

Parameter	Average Monthly (lbs/day)	Daily Maximum (lbs/day)	Instant. Minimum (mg/L)	Average Monthly (mg/L)	Daily Maximum (mg/L)	Instant. Maximum (mg/L)	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	1/day	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
TSS	73	218	XXX	25	70	88	1/week	24-hr composite
Oil and Grease	22	65	XXX	10	30	XXX	1/week	Grab
Total Lead	0.09	0.26	XXX	0.3	0.9	1.13	1/week	24-hr composite
Total Zinc	0.13	0.39	XXX	0.45	1.35	1.69	1/week	24-hr composite

Proposed Effluent Limitations and Monitoring Requirements

The proposed effluent limitations for IMP 102 are displayed in Table 11 below, they are the most stringent values from the above effluent limitation development. The loading limits have been updated to reflect the change in production.

Table 11: Proposed Effluent Limitations for IMP 102

Parameter	Average Monthly (lbs/day)	Daily Maximum (lbs/day)	Instant. Minimum (mg/L)	Average Monthly (mg/L)	Daily Maximum (mg/L)	Instant. Maximum (mg/L)	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	1/day	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
TSS	87.6	263	XXX	25.0	70.0	88.0	1/week	24-hr composite
Oil and Grease	26.3	78.9	XXX	10	30	XXX	1/week	Grab
Dissolved Iron	XXX	XXX	XXX	XXX	7.0	XXX	1/week	Grab
Total Lead	0.105	0.316	XXX	0.3	0.9	1.13	1/week	24-hr composite
Total Zinc	0.158	0.475	XXX	0.45	1.35	1.69	1/week	24-hr composite

Development of Effluent Limitations

Outfall No.	003	**Design Flow (MGD)**	0.0
Latitude	40º 50' 03"	**Longitude**	-80º 19' 00"
Wastewater Description:	Stormwater		

Stormwater Technology Limits

Outfall 003 will be subject to PAG-03 General Stormwater Permit conditions as a minimum requirement because the outfall discharges stormwater associated with industrial activity. stormwater. The SIC code for the site is 3312 and the corresponding appendix of the PAG-03 that would apply to the facility is Appendix B. The reporting requirements applicable to stormwater discharges are shown in Table 12 below.

Table 12: PAG-03 Appendix (B) Monitoring Requirements

Parameter	Max Daily Concentration	Measurement Frequency	Sample Type
Total Nitrogen	Monitor and Report	1/6 Months	Grab
Total Phosphorous	Monitor and Report	1/6 Months	Grab
Total Suspended Solids (TSS)	Monitor and Report	1/6 Months	Grab
Oil and Grease	Monitor and Report	1/6 Months	Grab
Total Aluminum	Monitor and Report	1/6 Months	Grab
Total Zinc	Monitor and Report	1/6 Months	Grab
Total Copper	Monitor and Report	1/6 Months	Grab
Total Iron	Monitor and Report	1/6 Months	Grab
Total Lead	Monitor and Report	1/6 Months	Grab

Water Quality-Based Limitations

Stormwater WQBELs

Water quality analyses are typically performed under low-flow (Q7-10) conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from Outfall 003 are composed entirely of stormwater, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations based on water quality analyses are not proposed.

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l); however, Outfall 003 did not have any limitations in the previous permit.

Proposed Effluent Limitations and Monitoring Requirements

The proposed effluent monitoring requirements for Outfall 003 are displayed in Table 13 below, they are the most stringent values from the above effluent limitation development. The Draft Permit requires a Corrective Action Plan when there are two consecutive exceedances of the benchmark values, which are also included in the Part C condition. The benchmark values are displayed below in Table 13. These values are not effluent limitations, an exceedance of the benchmark value is not a violation. As described above, if there are two consecutive exceedances of the benchmark value, a Corrective Action Plan must be developed and submitted to the Department to evaluate site stormwater controls and BMPs. Benchmark monitoring is a feedback tool, along with routine inspections and visual assessments, for assessing the effectiveness of stormwater controls and BMPs. An exceedance of the benchmark provides permittees with an indication that the facility's controls may not be sufficiently controlling pollutants in stormwater.

Table 13: Proposed Effluent Monitoring Requirements – Outfall 003

Parameter	Max Daily Concentration	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
Total Nitrogen	Report	XXX	1/6 Months	Grab
Total Phosphorous	Report	XXX	1/6 Months	Grab
Total Suspended Solids (TSS)	Report	100	1/6 Months	Grab
Oil and Grease	Report	30	1/6 Months	Grab
Total Aluminum	Report	XXX	1/6 Months	Grab
Total Zinc	Report	XXX	1/6 Months	Grab
Total Copper	Report	XXX	1/6 Months	Grab
Total Iron	Report	XXX	1/6 Months	Grab
Total Lead	Report	XXX	1/6 Months	Grab

Development of Effluent Limitations

Outfall No.	004	**Design Flow (MGD)**	0
Latitude	40º 49' 55"	**Longitude**	-80º 18' 48"
Wastewater Description:	Stormwater		

Stormwater Technology Limits

Outfall 004 will be subject to PAG-03 General Stormwater Permit conditions as a minimum requirement because the outfall discharges stormwater associated with industrial activity. stormwater. The SIC code for the site is 3312 and the corresponding appendix of the PAG-03 that would apply to the facility is Appendix B. The reporting requirements applicable to stormwater discharges are shown in Table 14 below.

Table 14: PAG-03 Appendix (B) Monitoring Requirements

Parameter	Max Daily Concentration	Measurement Frequency	Sample Type
Total Nitrogen	Monitor and Report	1/6 Months	Grab
Total Phosphorous	Monitor and Report	1/6 Months	Grab
Total Suspended Solids (TSS)	Monitor and Report	1/6 Months	Grab
Oil and Grease	Monitor and Report	1/6 Months	Grab
Total Aluminum	Monitor and Report	1/6 Months	Grab
Total Zinc	Monitor and Report	1/6 Months	Grab
Total Copper	Monitor and Report	1/6 Months	Grab
Total Iron	Monitor and Report	1/6 Months	Grab
Total Lead	Monitor and Report	1/6 Months	Grab

Water Quality-Based Limitations

Stormwater WQBELs

Water quality analyses are typically performed under low-flow (Q7-10) conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from Outfall 004 are composed entirely of stormwater, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations based on water quality analyses are not proposed.

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l). However, Outfall 004 did not have any limitations or monitoring requirements in the previous permit; therefore, anti-backsliding is not applicable.

Proposed Effluent Limitations and Monitoring Requirements

The proposed effluent monitoring requirements for Outfall 004 are displayed in Table 15 below, they are the most stringent values from the above effluent limitation development. The Draft Permit requires a Corrective Action Plan when there are two consecutive exceedances of the benchmark values, which are also included in the Part C condition. The benchmark values are displayed below in Table 15. These values are not effluent limitations, an exceedance of the benchmark value is not a violation. As described above, if there are two consecutive exceedances of the benchmark value, a Corrective Action Plan must be developed and submitted to the Department to evaluate site stormwater controls and BMPs. Benchmark monitoring is a feedback tool, along with routine inspections and visual assessments, for assessing the effectiveness of stormwater controls and BMPs. An exceedance of the benchmark provides permittees with an indication that the facility's controls may not be sufficiently controlling pollutants in stormwater.

Table 15: Proposed Effluent Monitoring Requirements – Outfall 004

Parameter	Max Daily Concentration	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
Total Nitrogen	Report	XXX	1/6 Months	Grab
Total Phosphorous	Report	XXX	1/6 Months	Grab
Total Suspended Solids (TSS)	Report	100	1/6 Months	Grab
Oil and Grease	Report	30	1/6 Months	Grab
Total Aluminum	Report	XXX	1/6 Months	Grab
Total Zinc	Report	XXX	1/6 Months	Grab
Total Copper	Report	XXX	1/6 Months	Grab
Total Iron	Report	XXX	1/6 Months	Grab
Total Lead	Report	XXX	1/6 Months	Grab

Development of Effluent Limitations

Outfall No.	005	**Design Flow (MGD)**	0
Latitude	40º 50' 20"	**Longitude**	-80º 19' 17"
Wastewater Description:	Stormwater		

Stormwater Technology Limits

Outfall 005 will be subject to PAG-03 General Stormwater Permit conditions as a minimum requirement because the outfall discharges stormwater associated with industrial activity. stormwater. The SIC code for the site is 3312 and the corresponding appendix of the PAG-03 that would apply to the facility is Appendix B. The reporting requirements applicable to stormwater discharges are shown in Table 16 below.

Table 16: PAG-03 Appendix (B) Monitoring Requirements

Parameter	Max Daily Concentration	Measurement Frequency	Sample Type
Total Nitrogen	Monitor and Report	1/6 Months	Grab
Total Phosphorous	Monitor and Report	1/6 Months	Grab
Total Suspended Solids (TSS)	Monitor and Report	1/6 Months	Grab
Oil and Grease	Monitor and Report	1/6 Months	Grab
Total Aluminum	Monitor and Report	1/6 Months	Grab
Total Zinc	Monitor and Report	1/6 Months	Grab
Total Copper	Monitor and Report	1/6 Months	Grab
Total Iron	Monitor and Report	1/6 Months	Grab
Total Lead	Monitor and Report	1/6 Months	Grab

Water Quality-Based Limitations

Stormwater WQBELs

Water quality analyses are typically performed under low-flow (Q7-10) conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from Outfall 005 are composed entirely of stormwater, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations based on water quality analyses are not proposed.

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l). However, Outfall 005 did not have any limitations or monitoring requirements in the previous permit; therefore, anti-backsliding is not applicable

Proposed Effluent Limitations and Monitoring Requirements

The proposed effluent monitoring requirements for Outfall 005 are displayed in Table 17 below, they are the most stringent values from the above effluent limitation development. The Draft Permit requires a Corrective Action Plan when there are two consecutive exceedances of the benchmark values, which are also included in the Part C condition. The benchmark values are displayed below in Table 17. These values are not effluent limitations, an exceedance of the benchmark value is not a violation. As described above, if there are two consecutive exceedances of the benchmark value, a Corrective Action Plan must be developed and submitted to the Department to evaluate site stormwater controls and BMPs. Benchmark monitoring is a feedback tool, along with routine inspections and visual assessments, for assessing the effectiveness of stormwater controls and BMPs. An exceedance of the benchmark provides permittees with an indication that the facility's controls may not be sufficiently controlling pollutants in stormwater.

Table 17: Proposed Effluent Monitoring Requirements – Outfall 005

Parameter	Max Daily Concentration	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
Total Nitrogen	Report	XXX	1/6 Months	Grab
Total Phosphorous	Report	XXX	1/6 Months	Grab
Total Suspended Solids (TSS)	Report	100	1/6 Months	Grab
Oil and Grease	Report	30	1/6 Months	Grab
Total Aluminum	Report	XXX	1/6 Months	Grab
Total Zinc	Report	XXX	1/6 Months	Grab
Total Copper	Report	XXX	1/6 Months	Grab
Total Iron	Report	XXX	1/6 Months	Grab
Total Lead	Report	XXX	1/6 Months	Grab

Development of Effluent Limitations

Outfall No.	006	**Design Flow (MGD)**	0
Latitude	40º 50' 33"	**Longitude**	-80º 19' 23"
Wastewater Description:	Stormwater		

Stormwater Technology Limits

Outfall 006 will be subject to PAG-03 General Stormwater Permit conditions as a minimum requirement because the outfall discharges stormwater associated with industrial activity. stormwater. The SIC code for the site is 3312 and the corresponding appendix of the PAG-03 that would apply to the facility is Appendix B. The reporting requirements applicable to stormwater discharges are shown in Table 18 below.

Table 18: PAG-03 Appendix (B) Monitoring Requirements

Parameter	Max Daily Concentration	Measurement Frequency	Sample Type
Total Nitrogen	Monitor and Report	1/6 Months	Grab
Total Phosphorous	Monitor and Report	1/6 Months	Grab
Total Suspended Solids (TSS)	Monitor and Report	1/6 Months	Grab
Oil and Grease	Monitor and Report	1/6 Months	Grab
Total Aluminum	Monitor and Report	1/6 Months	Grab
Total Zinc	Monitor and Report	1/6 Months	Grab
Total Copper	Monitor and Report	1/6 Months	Grab
Total Iron	Monitor and Report	1/6 Months	Grab
Total Lead	Monitor and Report	1/6 Months	Grab

Water Quality-Based Limitations

Stormwater WQBELs

Water quality analyses are typically performed under low-flow (Q7-10) conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from Outfall 006 are composed entirely of stormwater, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations based on water quality analyses are not proposed.

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l). The previous limitations for Outfalls 006 are displayed below in Table 19.

Table 19: Effluent Limitations in the Current Permit for Outfall 006

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
pH (S.U)	XXX	Report	XXX	1/quarter	grab
CBOD5	XXX	Report	XXX	1/quarter	grab
COD	XXX	Report	XXX	1/quarter	grab
TSS	XXX	Report	XXX	1/quarter	grab
Oil and Grease	XXX	Report	XXX	1/quarter	grab
Total Kjeldahl Nitrogen	XXX	Report	XXX	1/quarter	grab

Proposed Effluent Limitations and Monitoring Requirements

The proposed effluent monitoring requirements for Outfall 006 are displayed in Table 20 below, they are the most stringent values from the above effluent limitation development. The sample frequency for the parameters that are currently monitoring at Outfall 006 have been reduced from 1/quarter to 1/6 months to be more consistent with current stormwater monitoring requirements. The Draft Permit requires a Corrective Action Plan when there are two consecutive

exceedances of the benchmark values, which are also included in the Part C condition. The benchmark values are displayed below in Table 20. These values are not effluent limitations, an exceedance of the benchmark value is not a violation. As described above, if there are two consecutive exceedances of the benchmark value, a Corrective Action Plan must be developed and submitted to the Department to evaluate site stormwater controls and BMPs. Benchmark monitoring is a feedback tool, along with routine inspections and visual assessments, for assessing the effectiveness of stormwater controls and BMPs. An exceedance of the benchmark provides permittees with an indication that the facility's controls may not be sufficiently controlling pollutants in stormwater.

Table 20: Proposed Effluent Monitoring Requirements – Outfall 006

Parameter	Max Daily Concentration	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
pH (S.U)	Report	XXX	1/6 Months	Grab
CBOD5	Report	XXX	1/6 Months	Grab
COD	Report	XXX	1/6 Months	Grab
Total Kjeldahl Nitrogen	Report	XXX	1/6 Months	Grab
Total Nitrogen	Report	XXX	1/6 Months	Grab
Total Phosphorous	Report	XXX	1/6 Months	Grab
Total Suspended Solids (TSS)	Report	100	1/6 Months	Grab
Oil and Grease	Report	30	1/6 Months	Grab
Total Aluminum	Report	XXX	1/6 Months	Grab
Total Zinc	Report	XXX	1/6 Months	Grab
Total Copper	Report	XXX	1/6 Months	Grab
Total Iron	Report	XXX	1/6 Months	Grab
Total Lead	Report	XXX	1/6 Months	Grab

Development of Effluent Limitations

Outfall No.	007	**Design Flow (MGD)**	0
Latitude	40º 50' 34"	**Longitude**	-80º 19' 23"
Wastewater Description:	Stormwater		

Stormwater Technology Limits

Outfall 007 will be subject to PAG-03 General Stormwater Permit conditions as a minimum requirement because the outfall discharges stormwater associated with industrial activity. stormwater. The SIC code for the site is 3312 and the corresponding appendix of the PAG-03 that would apply to the facility is Appendix B. The reporting requirements applicable to stormwater discharges are shown in Table 21 below.

Table 21: PAG-03 Appendix (B) Monitoring Requirements

Parameter	Max Daily Concentration	Measurement Frequency	Sample Type
Total Nitrogen	Monitor and Report	1/6 Months	Grab
Total Phosphorous	Monitor and Report	1/6 Months	Grab
Total Suspended Solids (TSS)	Monitor and Report	1/6 Months	Grab
Oil and Grease	Monitor and Report	1/6 Months	Grab
Total Aluminum	Monitor and Report	1/6 Months	Grab
Total Zinc	Monitor and Report	1/6 Months	Grab
Total Copper	Monitor and Report	1/6 Months	Grab
Total Iron	Monitor and Report	1/6 Months	Grab
Total Lead	Monitor and Report	1/6 Months	Grab

Water Quality-Based Limitations

Stormwater WQBELs

Water quality analyses are typically performed under low-flow (Q7-10) conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from Outfall 007 are composed entirely of stormwater, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations based on water quality analyses are not proposed.

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l). The previous limitations for Outfalls 007 are displayed below in Table 22.

Table 22: Effluent Limitations in the Current Permit for Outfall 007

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
pH (S.U)	XXX	Report	XXX	1/quarter	grab
CBOD5	XXX	Report	XXX	1/quarter	grab
COD	XXX	Report	XXX	1/quarter	grab
TSS	XXX	Report	XXX	1/quarter	grab
Oil and Grease	XXX	Report	XXX	1/quarter	grab
Total Kjeldahl Nitrogen	XXX	Report	XXX	1/quarter	grab

Proposed Effluent Limitations and Monitoring Requirements

The proposed effluent monitoring requirements for Outfall 007 are displayed in Table 23 below, they are the most stringent values from the above effluent limitation development. The sample frequency for the parameters that are currently monitoring at Outfall 007 have been reduced from 1/quarter to 1/6 months to be more consistent with current Stormwater monitoring requirements. The Draft Permit requires a Corrective Action Plan when there are two consecutive

exceedances of the benchmark values, which are also included in the Part C condition. The benchmark values are displayed below in Table 23. These values are not effluent limitations, an exceedance of the benchmark value is not a violation. As described above, if there are two consecutive exceedances of the benchmark value, a Corrective Action Plan must be developed and submitted to the Department to evaluate site stormwater controls and BMPs. Benchmark monitoring is a feedback tool, along with routine inspections and visual assessments, for assessing the effectiveness of stormwater controls and BMPs. An exceedance of the benchmark provides permittees with an indication that the facility's controls may not be sufficiently controlling pollutants in stormwater.

Table 23: Proposed Effluent Monitoring Requirements – Outfall 007

Parameter	Max Daily Concentration	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
pH (S.U)	Report	XXX	1/6 Months	Grab
CBOD5	Report	XXX	1/6 Months	Grab
COD	Report	XXX	1/6 Months	Grab
Total Kjeldahl Nitrogen	Report	XXX	1/6 Months	Grab
Total Nitrogen	Report	XXX	1/6 Months	Grab
Total Phosphorous	Report	XXX	1/6 Months	Grab
Total Suspended Solids (TSS)	Report	100	1/6 Months	Grab
Oil and Grease	Report	30	1/6 Months	Grab
Total Aluminum	Report	XXX	1/6 Months	Grab
Total Zinc	Report	XXX	1/6 Months	Grab
Total Copper	Report	XXX	1/6 Months	Grab
Total Iron	Report	XXX	1/6 Months	Grab
Total Lead	Report	XXX	1/6 Months	Grab

Development of Effluent Limitations

Outfall No.	009	**Design Flow (MGD)**	0
Latitude	40º 50' 36"	**Longitude**	-80º 19' 20"
Wastewater Description:	Stormwater		

Stormwater Technology Limits

Outfall 009 will be subject to PAG-03 General Stormwater Permit conditions as a minimum requirement because the outfall discharges stormwater associated with industrial activity. stormwater. The SIC code for the site is 3312 and the corresponding appendix of the PAG-03 that would apply to the facility is Appendix B. The reporting requirements applicable to stormwater discharges are shown in Table 24 below.

Table 24: PAG-03 Appendix (B) Monitoring Requirements

Parameter	Max Daily Concentration	Measurement Frequency	Sample Type
Total Nitrogen	Monitor and Report	1/6 Months	Grab
Total Phosphorous	Monitor and Report	1/6 Months	Grab
Total Suspended Solids (TSS)	Monitor and Report	1/6 Months	Grab
Oil and Grease	Monitor and Report	1/6 Months	Grab
Total Aluminum	Monitor and Report	1/6 Months	Grab
Total Zinc	Monitor and Report	1/6 Months	Grab
Total Copper	Monitor and Report	1/6 Months	Grab
Total Iron	Monitor and Report	1/6 Months	Grab
Total Lead	Monitor and Report	1/6 Months	Grab

Water Quality-Based Limitations

Stormwater WQBELs

Water quality analyses are typically performed under low-flow (Q7-10) conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from Outfall 009 are composed entirely of stormwater, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations based on water quality analyses are not proposed.

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l). However, Outfall 009 did not have any limitations or monitoring requirements in the previous permit; therefore, anti-backsliding is not applicable

Proposed Effluent Limitations and Monitoring Requirements

The proposed effluent monitoring requirements for Outfall 009 are displayed in Table 25 below, they are the most stringent values from the above effluent limitation development. The Draft Permit requires a Corrective Action Plan when there are two consecutive exceedances of the benchmark values, which are also included in the Part C condition. The benchmark values are displayed below in Table 25. These values are not effluent limitations, an exceedance of the benchmark value is not a violation. As described above, if there are two consecutive exceedances of the benchmark value, a Corrective Action Plan must be developed and submitted to the Department to evaluate site stormwater controls and BMPs. Benchmark monitoring is a feedback tool, along with routine inspections and visual assessments, for assessing the effectiveness of stormwater controls and BMPs. An exceedance of the benchmark provides permittees with an indication that the facility's controls may not be sufficiently controlling pollutants in stormwater.

Table 25: Proposed Effluent Monitoring Requirements – Outfall 009

Parameter	Max Daily Concentration	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
Total Nitrogen	Report	XXX	1/6 Months	Grab
Total Phosphorous	Report	XXX	1/6 Months	Grab
Total Suspended Solids (TSS)	Report	100	1/6 Months	Grab
Oil and Grease	Report	30	1/6 Months	Grab
Total Aluminum	Report	XXX	1/6 Months	Grab
Total Zinc	Report	XXX	1/6 Months	Grab
Total Copper	Report	XXX	1/6 Months	Grab
Total Iron	Report	XXX	1/6 Months	Grab
Total Lead	Report	XXX	1/6 Months	Grab

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment **B**)
☒	TRC Model Spreadsheet (see Attachment **C**)
☒	Temperature Model Spreadsheet (see Attachment **D**)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:

Attachments

Attachment A: Outfall 002 StreamStats Report
Attachment B: Outfall 002 Toxics Management Spread Sheet
Attachment C: Outfall 002 TRC Evaluation
Attachment D: Outfall 002 Thermal Discharge Evaluation
Attachment E: Site Flow Diagram
Attachment F: Site Plan

Attachment A:

Outfall 002 StreamStats Report

Tenaris Koppel StreamStats Report

Region ID: PA
Workspace ID: PA20240717182415308000
Clicked Point (Latitude, Longitude): 40.84092, -80.31607
Time: 2024-07-17 14:24:50 -0400

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	3090	square miles
ELEV	Mean Basin Elevation	1128	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3090	square miles	2.26	1400
ELEV	Mean Basin Elevation	1128	feet	1050	2580

Low-Flow Statistics Disclaimers [Low Flow Region 4]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	252	ft^3/s
30 Day 2 Year Low Flow	333	ft^3/s
7 Day 10 Year Low Flow	160	ft^3/s
30 Day 10 Year Low Flow	186	ft^3/s
90 Day 10 Year Low Flow	254	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

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Application Version: 4.21.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Attachment B:

Outfall 002 Toxics Management Spread Sheet

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Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Tenaris Koppel** NPDES Permit No.: **PA0205222** Outfall No.: **002**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **ELG, NCCW, CCW, other Misc Wastewater**

Discharge Characteristics									
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.115	260	7.35						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		690									
	Chloride (PWS)	mg/L		179									
	Bromide	mg/L		0.12									
	Sulfate (PWS)	mg/L		172									
	Fluoride (PWS)	mg/L		9.02									
Group 2	Total Aluminum	µg/L		32000									
	Total Antimony	µg/L		5.94									
	Total Arsenic	µg/L		4.58									
	Total Barium	µg/L		85									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L		490									
	Total Cadmium	µg/L		0.52									
	Total Chromium (III)	µg/L		28.9									
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L		3.12									
	Total Copper	µg/L		629									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	50									
	Dissolved Iron	µg/L		0.1									
	Total Iron	µg/L		17100									
	Total Lead	µg/L		19									
	Total Manganese	µg/L		505									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		46.7									
	Total Phenols (Phenolics) (PWS)	µg/L	<	5									
	Total Selenium	µg/L	<	5									
	Total Silver	µg/L		1.69									
	Total Thallium	µg/L		2									
	Total Zinc	µg/L		103.45									
	Total Molybdenum	µg/L		134									
	Acrolein	µg/L	<	2									
	Acrylamide	µg/L	<	30									
	Acrylonitrile	µg/L	<	0.5									
	Benzene	µg/L	<	0.2									
	Bromoform	µg/L	<	0.5									

Group 3	Carbon Tetrachloride	µg/L	<	0.2										
	Chlorobenzene	µg/L	<	0.2										
	Chlorodibromomethane	µg/L	<	0.4										
	Chloroethane	µg/L	<	0.2										
	2-Chloroethyl Vinyl Ether	µg/L	<	0.5										
	Chloroform	µg/L		2.8										
	Dichlorobromomethane	µg/L		0.7										
	1,1-Dichloroethane	µg/L	<	0.2										
	1,2-Dichloroethane	µg/L	<	0.2										
	1,1-Dichloroethylene	µg/L	<	0.2										
	1,2-Dichloropropane	µg/L	<	0.2										
	1,3-Dichloropropylene	µg/L	<	0.2										
	1,4-Dioxane	µg/L	<	20										
	Ethylbenzene	µg/L	<	0.2										
	Methyl Bromide	µg/L	<	0.5										
	Methyl Chloride	µg/L	<	0.5										
	Methylene Chloride	µg/L	<	0.4										
	1,1,2,2-Tetrachloroethane	µg/L	<	0.2										
	Tetrachloroethylene	µg/L	<	0.4										
	Toluene	µg/L	<	0.2										
	1,2-trans-Dichloroethylene	µg/L	<	0.5										
	1,1,1-Trichloroethane	µg/L	<	0.2										
	1,1,2-Trichloroethane	µg/L	<	0.5										
	Trichloroethylene	µg/L	<	0.2										
	Vinyl Chloride	µg/L	<	0.2										
Group 4	2-Chlorophenol	µg/L	<	0.278										
	2,4-Dichlorophenol	µg/L	<	0.278										
	2,4-Dimethylphenol	µg/L	<	0.278										
	4,6-Dinitro-o-Cresol	µg/L	<	2.22										
	2,4-Dinitrophenol	µg/L	<	5.56										
	2-Nitrophenol	µg/L	<	0.278										
	4-Nitrophenol	µg/L	<	0.278										
	p-Chloro-m-Cresol	µg/L	<	0.278										
	Pentachlorophenol	µg/L	<	5.56										
	Phenol	µg/L	<	0.278										
	2,4,6-Trichlorophenol	µg/L	<	0.278										
Group 5	Acenaphthene	µg/L	<	0.278										
	Acenaphthylene	µg/L	<	0.278										
	Anthracene	µg/L	<	0.278										
	Benzidine	µg/L	<	0.278										
	Benzo(a)Anthracene	µg/L	<	0.278										
	Benzo(a)Pyrene	µg/L	<	0.278										
	3,4-Benzofluoranthene	µg/L	<	0.278										
	Benzo(ghi)Perylene	µg/L	<	0.278										
	Benzo(k)Fluoranthene	µg/L	<	0.278										
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.278										
	Bis(2-Chloroethyl)Ether	µg/L	<	0.278										
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.278										
	Bis(2-Ethylhexyl)Phthalate	µg/L		8.78										
	4-Bromophenyl Phenyl Ether	µg/L	<	0.278										
	Butyl Benzyl Phthalate	µg/L	<	0.278										
	2-Chloronaphthalene	µg/L	<	0.278										
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.278										
	Chrysene	µg/L	<	0.278										
	Dibenzo(a,h)Anthrancene	µg/L	<	0.278										
	1,2-Dichlorobenzene	µg/L	<	0.278										
	1,3-Dichlorobenzene	µg/L	<	0.278										
	1,4-Dichlorobenzene	µg/L	<	0.278										
	3,3-Dichlorobenzidine	µg/L	<	0.278										
	Diethyl Phthalate	µg/L	<	0.278										
	Dimethyl Phthalate	µg/L	<	0.278										
	Di-n-Butyl Phthalate	µg/L		1.62										
	2,4-Dinitrotoluene	µg/L	<	0.278										

	2,6-Dinitrotoluene	µg/L	<	0.278										
	Di-n-Octyl Phthalate	µg/L	<	0.278										
	1,2-Diphenylhydrazine	µg/L	<	0.278										
	Fluoranthene	µg/L	<	0.278										
	Fluorene	µg/L	<	0.278										
	Hexachlorobenzene	µg/L	<	0.278										
	Hexachlorobutadiene	µg/L	<	0.556										
	Hexachlorocyclopentadiene	µg/L	<	0.556										
	Hexachloroethane	µg/L	<	0.278										
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.278										
	Isophorone	µg/L	<	0.278										
	Naphthalene	µg/L	<	0.278										
	Nitrobenzene	µg/L	<	0.278										
	n-Nitrosodimethylamine	µg/L	<	0.278										
	n-Nitrosodi-n-Propylamine	µg/L	<	0.278										
	n-Nitrosodiphenylamine	µg/L	<	0.278										
	Phenanthrene	µg/L	<	0.278										
	Pyrene	µg/L	<	278										
	1,2,4-Trichlorobenzene	µg/L	<	0.278										
Group 6	Aldrin	µg/L	<											
	alpha-BHC	µg/L	<											
	beta-BHC	µg/L	<											
	gamma-BHC	µg/L	<											
	delta BHC	µg/L	<											
	Chlordane	µg/L	<											
	4,4-DDT	µg/L	<											
	4,4-DDE	µg/L	<											
	4,4-DDD	µg/L	<											
	Dieldrin	µg/L	<											
	alpha-Endosulfan	µg/L	<											
	beta-Endosulfan	µg/L	<											
	Endosulfan Sulfate	µg/L	<											
	Endrin	µg/L	<											
	Endrin Aldehyde	µg/L	<											
	Heptachlor	µg/L	<											
	Heptachlor Epoxide	µg/L	<											
	PCB-1016	µg/L	<											
	PCB-1221	µg/L	<											
	PCB-1232	µg/L	<											
	PCB-1242	µg/L	<											
	PCB-1248	µg/L	<											
	PCB-1254	µg/L	<											
	PCB-1260	µg/L	<											
	PCBs, Total	µg/L	<											
	Toxaphene	µg/L	<											
	2,3,7,8-TCDD	ng/L	<											
Group 7	Gross Alpha	pCi/L												
	Total Beta	pCi/L	<											
	Radium 226/228	pCi/L	<											
	Total Strontium	µg/L	<											
	Total Uranium	µg/L	<											
	Osmotic Pressure	mOs/kg												

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Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Tenaris Koppel, NPDES Permit No. PA0205222, Outfall 002

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Beaver River**

No. Reaches to Model: 1

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	033953	11.4	734	3090	0.0001		Yes
End of Reach 1	033953	10.4	732	3091	0.0001		Yes

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

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	11.4	0.207	640			430	8					100	7		
End of Reach 1	10.4	0.207	640			380	8								

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	11.4														
End of Reach 1	10.4														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Tenaris Koppel, NPDES Permit No. PA0205222, Outfall 002

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.116 Analysis Hardness (mg/l): 100.38 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	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	313,073	
Total Antimony	0	0		0	1,100	1,100	459,174	
Total Arsenic	0	0		0	340	340	141,927	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	8,766,058	
Total Boron	0	0		0	8,100	8,100	3,381,194	
Total Cadmium	0	0		0	2.021	2.14	894	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	571.551	1,809	755,011	Chem Translator of 0.316 applied
Total Cobalt	0	0		0	95	95.0	39,656	
Total Copper	0	0		0	13.488	14.0	5,865	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	64.851	82.0	34,248	Chem Translator of 0.79 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	688	Chem Translator of 0.85 applied
Total Nickel	0	0		0	469.754	471	196,483	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	3.238	3.81	1,590	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	27,133	
Total Zinc	0	0		0	117.561	120	50,178	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	1,252	
Acrylamide	0	0		0	N/A	N/A	N/A	

Acrylonitrile	0	0		0	650	650	271,330	
Benzene	0	0		0	640	640	267,156	
Bromoform	0	0		0	1,800	1,800	751,376	
Carbon Tetrachloride	0	0		0	2,800	2,800	1,168,808	
Chlorobenzene	0	0		0	1,200	1,200	500,918	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	7,513,764	
Chloroform	0	0		0	1,900	1,900	793,120	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	6,261,470	
1,1-Dichloroethylene	0	0		0	7,500	7,500	3,130,735	
1,2-Dichloropropane	0	0		0	11,000	11,000	4,591,745	
1,3-Dichloropropylene	0	0		0	310	310	129,404	
Ethylbenzene	0	0		0	2,900	2,900	1,210,551	
Methyl Bromide	0	0		0	550	550	229,587	
Methyl Chloride	0	0		0	28,000	28,000	11,688,077	
Methylene Chloride	0	0		0	12,000	12,000	5,009,176	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	417,431	
Tetrachloroethylene	0	0		0	700	700	292,202	
Toluene	0	0		0	1,700	1,700	709,633	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	2,838,533	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	1,252,294	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	1,419,267	
Trichloroethylene	0	0		0	2,300	2,300	960,092	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	233,762	
2,4-Dichlorophenol	0	0		0	1,700	1,700	709,633	
2,4-Dimethylphenol	0	0		0	660	660	275,505	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	33,395	
2,4-Dinitrophenol	0	0		0	660	660	275,505	
2-Nitrophenol	0	0		0	8,000	8,000	3,339,451	
4-Nitrophenol	0	0		0	2,300	2,300	960,092	
p-Chloro-m-Cresol	0	0		0	160	160	66,789	
Pentachlorophenol	0	0		0	8.728	8.73	3,643	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	192,018	
Acenaphthene	0	0		0	83	83.0	34,647	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	125,229	
Benzo(a)Anthracene	0	0		0	0.5	0.5	209	
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	12,522,940	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	1,878,441	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	112,706	
Butyl Benzyl Phthalate	0	0		0	140	140	58,440	

2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	342,294	
1,3-Dichlorobenzene	0	0		0	350	350	146,101	
1,4-Dichlorobenzene	0	0		0	730	730	304,725	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	1,669,725	
Dimethyl Phthalate	0	0		0	2,500	2,500	1,043,578	
Di-n-Butyl Phthalate	0	0		0	110	110	45,917	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	667,890	
2,6-Dinitrotoluene	0	0		0	990	990	413,257	
1,2-Diphenylhydrazine	0	0		0	15	15.0	6,261	
Fluoranthene	0	0		0	200	200	83,486	
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	4,174	
Hexachlorocyclopentadiene	0	0		0	5	5.0	2,087	
Hexachloroethane	0	0		0	60	60.0	25,046	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	4,174,313	
Naphthalene	0	0		0	140	140	58,440	
Nitrobenzene	0	0		0	4,000	4,000	1,669,725	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	7,096,333	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	125,229	
Phenanthrene	0	0		0	5	5.0	2,087	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	54,266	

☑ ***CFC*** CCT (min): 720 PMF: 0.802 Analysis Hardness (mg/l): 100.06 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	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	634,947	
Total Arsenic	0	0		0	150	150	432,918	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	11,833,096	
Total Boron	0	0		0	1,600	1,600	4,617,793	
Total Cadmium	0	0		0	0.246	0.27	781	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.148	86.2	248,838	Chem Translator of 0.86 applied
Total Cobalt	0	0		0	19	19.0	54,836	
Total Copper	0	0		0	8.960	9.33	26,937	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	5,397,638	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.518	3.18	9,189	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	2,614	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.031	52.2	150,619	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	14,399	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	37,520	
Total Zinc	0	0		0	118.194	120	345,967	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	8,658	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	130	130	375,196	
Benzene	0	0		0	130	130	375,196	
Bromoform	0	0		0	370	370	1,067,865	
Carbon Tetrachloride	0	0		0	560	560	1,616,228	
Chlorobenzene	0	0		0	240	240	692,669	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	10,101,423	
Chloroform	0	0		0	390	390	1,125,587	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	8,946,975	
1,1-Dichloroethylene	0	0		0	1,500	1,500	4,329,181	
1,2-Dichloropropane	0	0		0	2,200	2,200	6,349,466	
1,3-Dichloropropylene	0	0		0	61	61.0	176,053	
Ethylbenzene	0	0		0	580	580	1,673,950	
Methyl Bromide	0	0		0	110	110	317,473	
Methyl Chloride	0	0		0	5,500	5,500	15,873,665	
Methylene Chloride	0	0		0	2,400	2,400	6,926,690	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	606,085	
Tetrachloroethylene	0	0		0	140	140	404,057	
Toluene	0	0		0	330	330	952,420	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	4,040,569	
1,1,1-Trichloroethane	0	0		0	610	610	1,760,534	
1,1,2-Trichloroethane	0	0		0	680	680	1,962,562	
Trichloroethylene	0	0		0	450	450	1,298,754	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	317,473	
2,4-Dichlorophenol	0	0		0	340	340	981,281	
2,4-Dimethylphenol	0	0		0	130	130	375,196	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	46,178	
2,4-Dinitrophenol	0	0		0	130	130	375,196	
2-Nitrophenol	0	0		0	1,600	1,600	4,617,793	
4-Nitrophenol	0	0		0	470	470	1,356,477	

p-Chloro-m-Cresol	0	0		0	500	500	1,443,060	
Pentachlorophenol	0	0		0	6.696	6.7	19,327	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	262,637	
Acenaphthene	0	0		0	17	17.0	49,064	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	170,281	
Benzo(a)Anthracene	0	0		0	0.1	0.1	289	
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	17,316,725	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	2,626,370	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	155,851	
Butyl Benzyl Phthalate	0	0		0	35	35.0	101,014	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	461,779	
1,3-Dichlorobenzene	0	0		0	69	69.0	199,142	
1,4-Dichlorobenzene	0	0		0	150	150	432,918	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	2,308,897	
Dimethyl Phthalate	0	0		0	500	500	1,443,060	
Di-n-Butyl Phthalate	0	0		0	21	21.0	60,609	
2,4-Dinitrotoluene	0	0		0	320	320	923,559	
2,6-Dinitrotoluene	0	0		0	200	200	577,224	
1,2-Diphenylhydrazine	0	0		0	3	3.0	8,658	
Fluoranthene	0	0		0	40	40.0	115,445	
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	5,772	
Hexachlorocyclopentadiene	0	0		0	1	1.0	2,886	
Hexachloroethane	0	0		0	12	12.0	34,633	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	6,060,854	
Naphthalene	0	0		0	43	43.0	124,103	
Nitrobenzene	0	0		0	810	810	2,337,758	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	9,812,811	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	170,281	
Phenanthrene	0	0		0	1	1.0	2,886	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	75,039	

☑ ***THH*** CCT (min): 720 PMF: 0.802 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	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	16,162	
Total Arsenic	0	0		0	10	10.0	28,861	
Total Barium	0	0		0	2,400	2,400	6,926,690	
Total Boron	0	0		0	3,100	3,100	8,946,975	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	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	865,836	
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	2,886,121	
Total Mercury	0	0		0	0.050	0.05	144	
Total Nickel	0	0		0	610	610	1,760,534	
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	693	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	8,658	
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	288,612	
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	16,451	
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	95,242	
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	196,256	

Methyl Bromide	0	0		0	100	100.0	288,612	
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	164,509	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	288,612	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	28,861,209	
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	86,584	
2,4-Dichlorophenol	0	0		0	10	10.0	28,861	
2,4-Dimethylphenol	0	0		0	100	100.0	288,612	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	5,772	
2,4-Dinitrophenol	0	0		0	10	10.0	28,861	
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	11,544,483	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	202,028	
Anthracene	0	0		0	300	300	865,836	
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	577,224	
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	289	
2-Chloronaphthalene	0	0		0	800	800	2,308,897	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	2,886,121	
1,3-Dichlorobenzene	0	0		0	7	7.0	20,203	
1,4-Dichlorobenzene	0	0		0	300	300	865,836	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	1,731,673	
Dimethyl Phthalate	0	0		0	2,000	2,000	5,772,242	
Di-n-Butyl Phthalate	0	0		0	20	20.0	57,722	
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	57,722	
Fluorene	0	0		0	50	50.0	144,306	
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	11,544	
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	98,128	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	28,861	
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	57,722	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	202	

☑ ***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	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	
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	829	
Acrylonitrile	0	0		0	0.06	0.06	711	
Benzene	0	0		0	0.58	0.58	6,869	
Bromoform	0	0		0	7	7.0	82,897	
Carbon Tetrachloride	0	0		0	0.4	0.4	4,737	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	9,474	
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	11,250	
1,2-Dichloroethane	0	0		0	9.9	9.9	117,239	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	10,658	
1,3-Dichloropropylene	0	0		0	0.27	0.27	3,197	
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	236,847	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	2,368	
Tetrachloroethylene	0	0		0	10	10.0	118,424	
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	6,513	
Trichloroethylene	0	0		0	0.6	0.6	7,105	
Vinyl Chloride	0	0		0	0.02	0.02	237	
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	355	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	17,764	
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	1.18	
Benzo(a)Anthracene	0	0		0	0.001	0.001	11.8	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	1.18	

3,4-Benzofluoranthene	0	0		0	0.001	0.001	11.8	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	118	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	355	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	3,790	
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	1,421	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	1.18	
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	592	
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	592	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	592	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	355	
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	0.95	
Hexachlorobutadiene	0	0		0	0.01	0.01	118	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	1,184	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	11.8	
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	8.29	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	59.2	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	39,080	
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

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	Report	Report	Report	Report	Report	µg/L	200,667	AFC	Discharge Conc > 10% WQBEL (no RP)

Total Copper	Report	Report	Report	Report	Report	µg/L	3,759	AFC	Discharge Conc > 10% WQBEL (no RP)

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Antimony	16,162	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	28,861	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	5,618,689	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	2,167,209	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	573	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	248,838	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	25,418	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	865,836	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	5,397,638	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	9,189	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	2,886,121	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	144	µg/L	Discharge Conc < TQL
Total Nickel	125,938	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	14,399	µg/L	Discharge Conc < TQL
Total Silver	1,019	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	693	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	32,162	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	803	µg/L	Discharge Conc < TQL
Acrylamide	829	µg/L	Discharge Conc ≤ 25% WQBEL
Acrylonitrile	711	µg/L	Discharge Conc < TQL
Benzene	6,869	µg/L	Discharge Conc < TQL
Bromoform	82,897	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	4,737	µg/L	Discharge Conc < TQL
Chlorobenzene	288,612	µg/L	Discharge Conc < TQL
Chlorodibromomethane	9,474	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	4,816,019	µg/L	Discharge Conc < TQL
Chloroform	16,451	µg/L	Discharge Conc ≤ 25% WQBEL

Dichlorobromomethane	11,250	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	117,239	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	95,242	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	10,658	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	3,197	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	196,256	µg/L	Discharge Conc < TQL
Methyl Bromide	147,156	µg/L	Discharge Conc < TQL
Methyl Chloride	7,491,586	µg/L	Discharge Conc < TQL
Methylene Chloride	236,847	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	2,368	µg/L	Discharge Conc < TQL
Tetrachloroethylene	118,424	µg/L	Discharge Conc < TQL
Toluene	164,509	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	288,612	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	802,670	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	6,513	µg/L	Discharge Conc < TQL
Trichloroethylene	7,105	µg/L	Discharge Conc < TQL
Vinyl Chloride	237	µg/L	Discharge Conc < TQL
2-Chlorophenol	86,584	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	28,861	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	176,587	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	5,772	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	28,861	µg/L	Discharge Conc < TQL
2-Nitrophenol	2,140,453	µg/L	Discharge Conc < TQL
4-Nitrophenol	615,380	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	42,809	µg/L	Discharge Conc < TQL
Pentachlorophenol	355	µg/L	Discharge Conc < TQL
Phenol	11,544,483	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	17,764	µg/L	Discharge Conc < TQL
Acenaphthene	22,207	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	865,836	µg/L	Discharge Conc < TQL
Benzidine	1.18	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	11.8	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	1.18	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	11.8	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	118	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	355	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	577,224	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	3,790	µg/L	Discharge Conc ≤ 25% WQBEL
4-Bromophenyl Phenyl Ether	72,240	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	289	µg/L	Discharge Conc < TQL

2-Chloronaphthalene	2,308,897	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	1,421	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	1.18	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	219,396	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	20,203	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	195,316	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	592	µg/L	Discharge Conc < TQL
Diethyl Phthalate	1,070,227	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	668,892	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	29,431	µg/L	Discharge Conc ≤ 25% WQBEL
2,4-Dinitrotoluene	592	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	592	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	355	µg/L	Discharge Conc < TQL
Fluoranthene	53,511	µg/L	Discharge Conc < TQL
Fluorene	144,306	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.95	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	118	µg/L	Discharge Conc ≤ 25% WQBEL
Hexachlorocyclopentadiene	1,338	µg/L	Discharge Conc < TQL
Hexachloroethane	1,184	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	11.8	µg/L	Discharge Conc < TQL
Isophorone	98,128	µg/L	Discharge Conc < TQL
Naphthalene	37,458	µg/L	Discharge Conc < TQL
Nitrobenzene	28,861	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	8.29	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	59.2	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	39,080	µg/L	Discharge Conc < TQL
Phenanthrene	1,338	µg/L	Discharge Conc < TQL
Pyrene	57,722	µg/L	Discharge Conc ≤ 25% WQBEL
1,2,4-Trichlorobenzene	202	µg/L	Discharge Conc < TQL

Attachment C:

Outfall 002 TRC Evaluation

TRC EVALUATION

640	= Q stream (cfs)	0.5	= CV Daily
0.115	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	0.995	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
	= %Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	**1.3.2.iii**	WLA afc = 1141.860	**1.3.2.iii**	WLA cfc = 1118.810
PENTOXSD TRG	**5.1a**	LTAMULT afc = 0.373	**5.1c**	LTAMULT cfc = 0.581
PENTOXSD TRG	**5.1b**	LTA_afc= 425.484	**5.1d**	LTA_cfc = 650.424

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.170	

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

Attachment D:

Outfall 002 Thermal Discharge Evaluation

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Thermal Limits Spreadsheet
Version 1.0, April 2024

Instructions | *Inputs*

Facility: **Tenaris Koppel**

Permit No.: **PA0205222**

Stream Name: **Beaver River**

Analyst/Engineer: **Adam Olesnanik**

Stream Q7-10 (cfs)*: **640.0**

Outfall No.: **002**

Analysis Type*: **WWF**

Facility Flows

Semi-Monthly Increment	Intake (Stream) (MGD)*	Intake (External) (MGD)*	Consumptive Loss (MGD)*	Discharge Flow (MGD)
Jan 1-31		0.115		0.115
Feb 1-29		0.115		0.115
Mar 1-31		0.115		0.115
Apr 1-15		0.115		0.115
Apr 16-30		0.115		0.115
May 1-15		0.115		0.115
May 16-31		0.115		0.115
Jun 1-15		0.115		0.115
Jun 16-30		0.115		0.115
Jul 1-31		0.115		0.115
Aug 1-15		0.115		0.115
Aug 16-31		0.115		0.115
Sep 1-15		0.115		0.115
Sep 16-30		0.115		0.115
Oct 1-15		0.115		0.115
Oct 16-31		0.115		0.115
Nov 1-15		0.115		0.115
Nov 16-30		0.115		0.115
Dec 1-31		0.115		0.115

Stream Flows

Q7-10 Multipliers (Default Shown)	PMF	Seasonal Stream Flow (cfs)	Downstream Stream Flow (cfs)
3.2	1.00	2048.00	2048.18
3.5	1.00	2240.00	2240.18
7	1.00	4480.00	4480.18
9.3	1.00	5952.00	5952.18
9.3	1.00	5952.00	5952.18
5.1	1.00	3264.00	3264.18
5.1	1.00	3264.00	3264.18
3	1.00	1920.00	1920.18
3	1.00	1920.00	1920.18
1.7	1.00	1088.00	1088.18
1.4	1.00	896.00	896.18
1.4	1.00	896.00	896.18
1.1	1.00	704.00	704.18
1.1	1.00	704.00	704.18
1.2	1.00	768.00	768.18
1.2	1.00	768.00	768.18
1.6	1.00	1024.00	1024.18
1.6	1.00	1024.00	1024.18
2.4	1.00	1536.00	1536.18

Temperature

Ambient Stream Temperature (°F)*

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Thermal Limits Spreadsheet
Version 1.0, April 2024

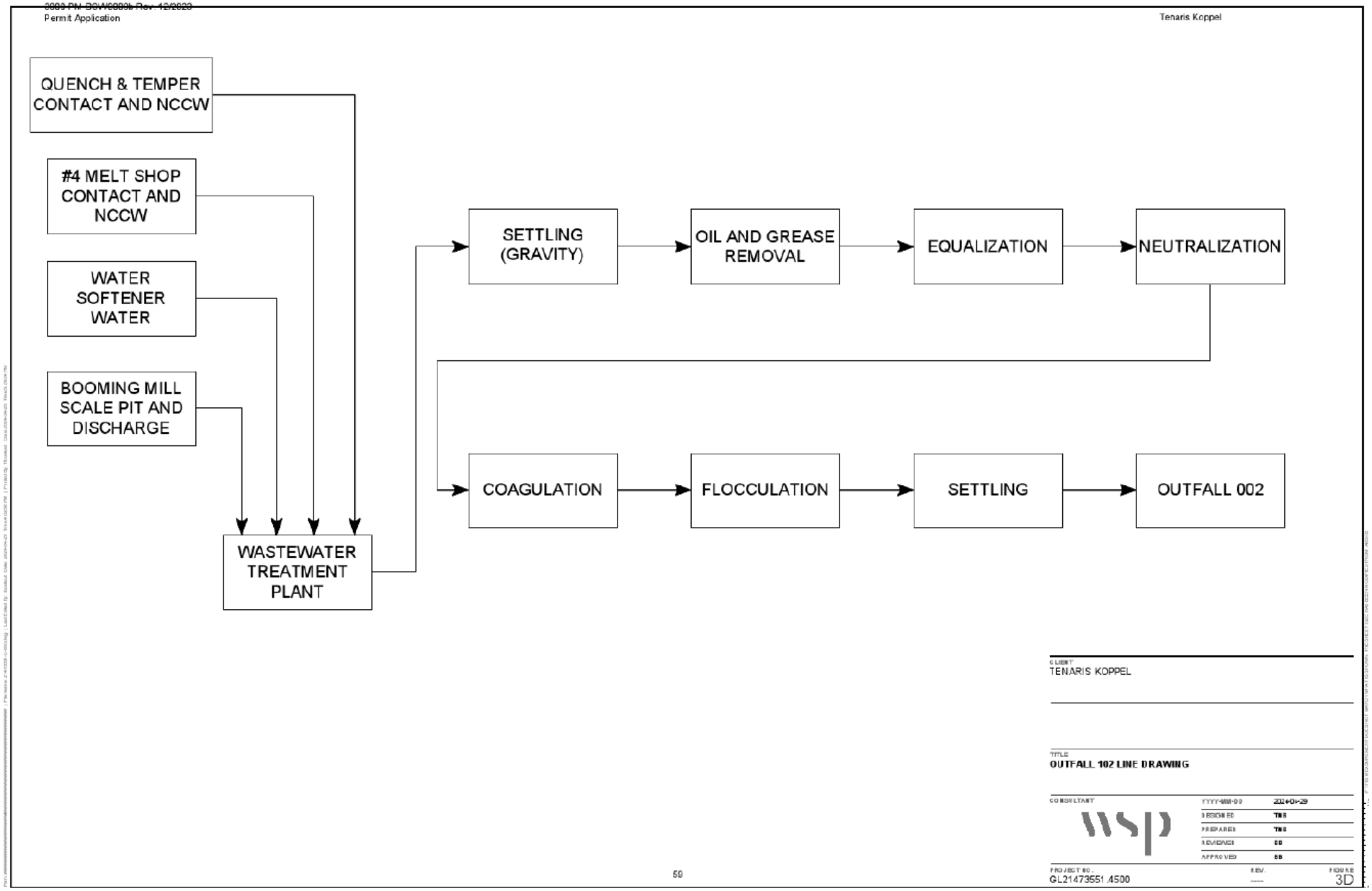
Instructions | *WWF Results*

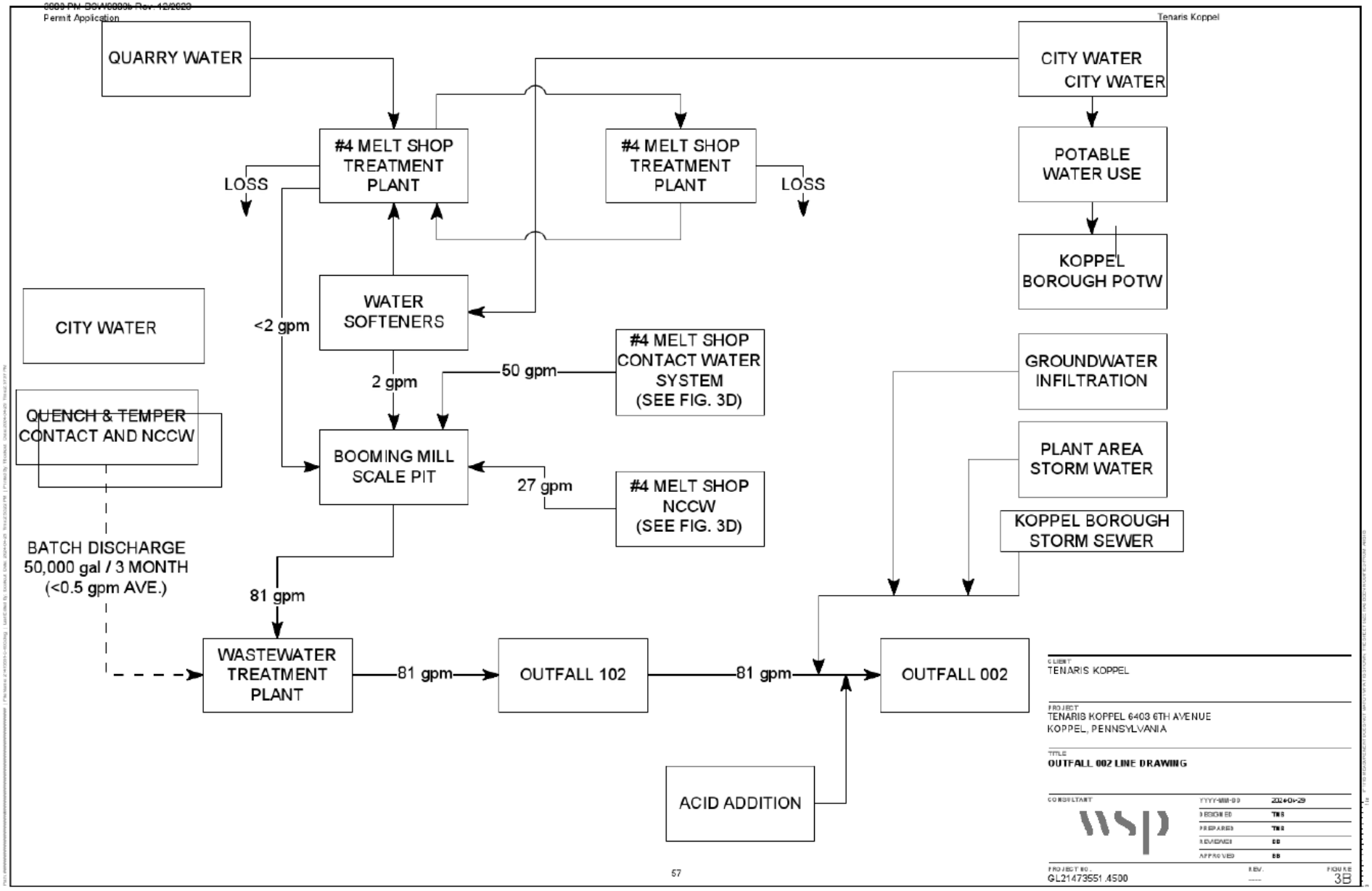
Recommended Limits for Case 1 or Case 2

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

Attachment E:

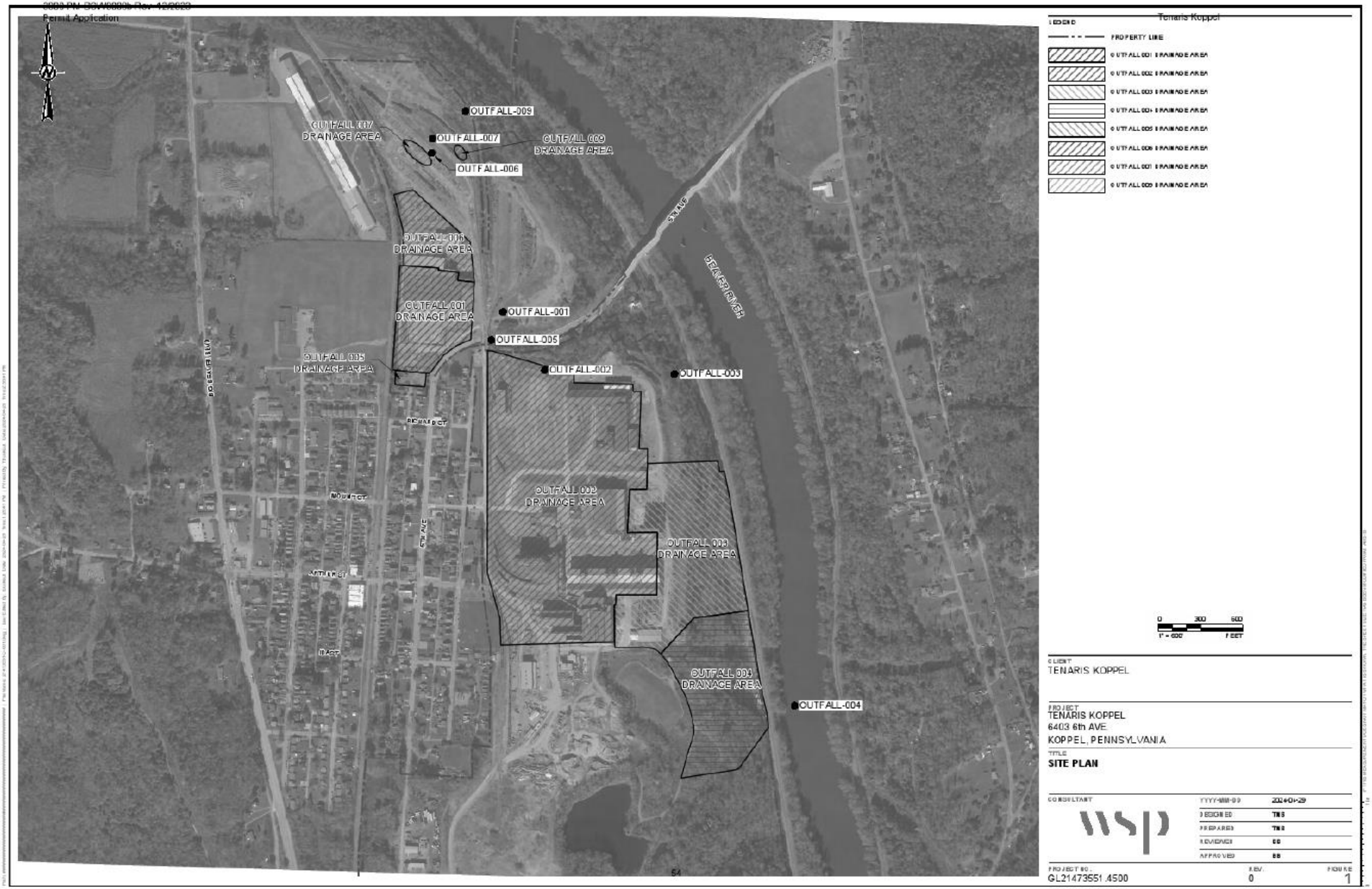
Site Flow Diagram


Permit Application
Tenaris Koppel
QUENCH & TEMPER CONTACT AND NCCW
#4 MELT SHOP CONTACT AND NCCW
WATER SOFTENER WATER
BOOMING MILL SCALE PIT AND DISCHARGE
WASTEWATER TREATMENT PLANT
SETTLING (GRAVITY)
OIL AND GREASE REMOVAL
EQUALIZATION
NEUTRALIZATION
COAGULATION
FLOCCULATION
SETTLING
OUTFALL 002
CLIENT
TENARIS KOPPEL
TITLE
OUTFALL 102 LINE DRAWING
CONSULTANT
wsp
YYYY-MM-DD 2024-01-29
DESIGNED TMS
PREPARED TMS
REVIEWED BB
APPROVED BB
PROJECT NO. GL21473551.4500
REV. ---
FIGURE 3D
59


Permit Application
Tenaris Koppel
QUARRY WATER
CITY WATER
CITY WATER
#4 MELT SHOP TREATMENT PLANT
#4 MELT SHOP TREATMENT PLANT
LOSS
LOSS
POTABLE WATER USE
KOPPEL BOROUGH POTW
WATER SOFTENERS
CITY WATER
<2 gpm
2 gpm
50 gpm
#4 MELT SHOP CONTACT WATER SYSTEM (SEE FIG. 3D)
GROUNDWATER INFILTRATION
QUENCH & TEMPER CONTACT AND NCCW
BOOMING MILL SCALE PIT
27 gpm
#4 MELT SHOP NCCW (SEE FIG. 3D)
PLANT AREA STORM WATER
KOPPEL BOROUGH STORM SEWER
BATCH DISCHARGE 50,000 gal / 3 MONTH (<0.5 gpm AVE.)
81 gpm
WASTEWATER TREATMENT PLANT
81 gpm
OUTFALL 102
81 gpm
OUTFALL 002
ACID ADDITION
CLIENT
TENARIS KOPPEL
PROJECT
TENARIS KOPPEL 6403 6TH AVENUE
KOPPEL, PENNSYLVANIA
TITLE
OUTFALL 002 LINE DRAWING
CONSULTANT
wsp
YYYY-MM-DD 2024-01-29
DESIGNED TMS
PREPARED TMS
REVIEWED BB
APPROVED BB
PROJECT NO. GL21473551.A500
REV. ---
FIGURE 3B
57

Attachment F:

Site Plan


Permit Application
OUTFALL-009
OUTFALL 009 DRAINAGE AREA
OUTFALL-007
OUTFALL-006
OUTFALL 006 DRAINAGE AREA
OUTFALL 001 DRAINAGE AREA
OUTFALL-001
OUTFALL-005
OUTFALL 005 DRAINAGE AREA
OUTFALL-002
OUTFALL-003
OUTFALL 002 DRAINAGE AREA
OUTFALL 003 DRAINAGE AREA
OUTFALL 004 DRAINAGE AREA
OUTFALL-004
BEAVER RIVER
6TH AVE
Tenaris Koppel
LEGEND
PROPERTY LINE
0 300 600
1" = 600' FEET
CLIENT
TENARIS KOPPEL
PROJECT
TENARIS KOPPEL
6403 6th AVE.
KOPPEL, PENNSYLVANIA
TITLE
SITE PLAN
CONSULTANT
wsp
YYYY-MM-DD 2024-01-29
DESIGNED TMS
PREPARED TMS
REVIEWED BB
APPROVED BB
PROJECT NO. GL21473551.4500
REV. 0
FIGURE 1