Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0001198**
Facility Type	**Industrial**	APS ID	**1115062**
Major / Minor	**Minor**	Authorization ID	**1487456**

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

Applicant and Facility Information

Applicant Name	**PPG Industries Inc.**	Facility Name	**PPG Industries Inc. Springdale**
Applicant Address	125 Colfax Street Springdale, PA 15144-1506	Facility Address	125 Colfax Street Springdale, PA 15144-1506
Applicant Contact	Timothy Previni	Facility Contact	Same as Applicant
Applicant Phone	(724) 274-3495	Facility Phone	Same as Applicant
Applicant email	previni@ppg.com	Facility email	Same as Applicant
Client ID	27913	Site ID	241590
SIC Code	2821,2851	Municipality	Springdale Borough
SIC Description	Manufacturing - Paints and Allied Products, Manufacturing - Plastics Materials and Resins	County	Allegheny
Date Application Received	May 31, 2024	EPA Waived?	Yes
Date Application Accepted		If No, Reason	
Purpose of Application	Renewal NPDES Permit Coverage		

Summary of Review

The Department received a timely renewal NPDES permit application from PPG Industries, Inc. on May 31, 2024 for coverage of its facility located in Neville Township, Allegheny County.

The Springdale Complex consists of three distinct operations: a paint (industrial coatings) manufacturing plant, a development center, and a research center. The paint plant manufactures coatings (SIC Code 2851) for aluminum extrusions, general industrial, and coil-coating markets. The development center provides scale-up support for resin manufacture (SIC Code 2821) and is used to test new resins for trials in coatings manufacture. The research center (SIC 8731) consists of various research and development laboratories and office space. Auxiliary site areas include tank farms for storage of raw materials and intermediaries, a boiler house consisting of two steam boilers, and QA/QC laboratories. There is also a warehouse at the site used to store finished paint.

Non-contact cooling water discharges from the Development Center, Research Center, and Paint Plant through Outfalls 001, 002, and 003, respectively. Outfall 001 discharges to the Allegheny River. Outfalls 002 and 003 discharge to a municipal storm sewer that flows along Colfax Street on the site's eastern boundary to the Allegheny River. Outfalls 001, 002, and 003 also receive storm water runoff. Outfalls 006 and 007 discharge storm water to the municipal storm sewer on Colfax Street. Outfalls 005 and 008 discharge storm water directly to the Allegheny River.

The Springdale Complex has three active water-producing wells. There are two water-producing wells (#3 and #4) on the PPG Paint Plant site. There is one water-producing well located in the (R&D) panel farm that is west of the PPG Paint Plant warehouse. This well provides the non-contact cooling water required by condenser, reactors, etc., at this facility. Two wells (#1 and #2) that were previously used for water supply to the plant are near the rail line. Both of these wells have been capped.

Approve	Deny	Signatures	Date
X		Angela Rohrer / Environmental Engineering Specialist	September 19, 2024
X		Michael E. Fifth, P.E. / Environmental Engineer Manager	October 30, 2024

Summary of Review

There is a municipal water pumping station located on the corner of Colfax and Remaley Streets, which is approximately 300-500 feet east from the front entrance of the Springdale Complex.

The permittee has 37 open violations with the Storage Tanks Program.

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)	0.442
Latitude	40º 32' 08.49"	Longitude	-79º 47' 14.07"
Quad Name	New Kensington East	Quad Code	1408
Wastewater Description:	Once-through non-contact cooling water from the Development Center and stormwater		

Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123972852	RMI	16.2
Drainage Area	11,500 mi^2	Yield (cfs/mi^2)	0.207
Q_{7-10} Flow (cfs)	2,390	Q_{7-10} Basis	US Army Corp of Engineers
Elevation (ft)	737	Slope (ft/ft)	0.0001
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBS)		
Source(s) of Impairment	Source Unknown		
TMDL Status		Name	

Nearest Downstream Public Water Supply Intake	Oakmont Water Authority (9.2 MGD)		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	13.52	Distance from Outfall (mi)	2.68

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	0.145
Latitude	40º 32' 16.33"	Longitude	-79º 47' 03.71"
Quad Name	New Kensington East	Quad Code	1408
Wastewater Description:	Once-through non-contact cooling water from the Research Center and stormwater		

Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123972852	RMI	16.43
Drainage Area	11,500 mi^2	Yield (cfs/mi^2)	0.207
Q_{7-10} Flow (cfs)	2,390	Q_{7-10} Basis	US Army Corp of Engineers
Elevation (ft)	737	Slope (ft/ft)	0.0001
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBS)		
Source(s) of Impairment	Source Unknown		
TMDL Status		Name	

Nearest Downstream Public Water Supply Intake	Oakmont Water Authority (9.2 MGD)		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	13.52	Distance from Outfall (mi)	2.87

Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	0.137
Latitude	40º 32' 01.03"	Longitude	-79º 47' 03.52"
Quad Name	New Kensington East	Quad Code	1408
Wastewater Description:	Once-through non-contact cooling water from the Paint Plant. Steam condensate, steam mixed with non-contact cooling water, steam from one-pass heating systems and steam traps, and stormwater		

Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123972852	RMI	16.41
Drainage Area	11,500 mi^2	Yield (cfs/mi^2)	0.207
Q_{7-10} Flow (cfs)	2,390	Q_{7-10} Basis	US Army Corp of Engineers
Elevation (ft)	737	Slope (ft/ft)	0.0001
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBS)		
Source(s) of Impairment	Source Unknown		
TMDL Status		Name	

Nearest Downstream Public Water Supply Intake	Oakmont Water Authority (9.2 MGD)		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	13.52	Distance from Outfall (mi)	2.87

Discharge, Receiving Waters and Water Supply Information

Outfall No.	005	Design Flow (MGD)	0
Latitude	40º 32' 06.84"	Longitude	-79º 47' 05.23"
Quad Name	New Kensington East	Quad Code	1408
Wastewater Description:	Stormwater		

Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123972852	RMI	16.40
Drainage Area	11,500 mi^2	Yield (cfs/mi^2)	0.207
Q_{7-10} Flow (cfs)	2,390	Q_{7-10} Basis	US Army Corp of Engineers
Elevation (ft)	737	Slope (ft/ft)	0.0001
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBS)		
Source(s) of Impairment	Source Unknown		
TMDL Status		Name	

Nearest Downstream Public Water Supply Intake	Oakmont Water Authority (9.2 MGD)		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	13.52	Distance from Outfall (mi)	2.84

Discharge, Receiving Waters and Water Supply Information

Outfall No.	006	Design Flow (MGD)	0
Latitude	40º 32' 10.03"	Longitude	-79º 47' 03.52"
Quad Name	New Kensington East	Quad Code	1408
Wastewater Description:	Stormwater		
Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123972852	RMI	16.41
Drainage Area	11,500 mi^2	Yield (cfs/mi^2)	0.207
Q_{7-10} Flow (cfs)	2,390	Q_{7-10} Basis	US Army Corp of Engineers
Elevation (ft)	754	Slope (ft/ft)	0.0001
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBS)		
Source(s) of Impairment	Source Unknown		
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Oakmont Water Authority (9.2 MGD)		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	13.52	Distance from Outfall (mi)	2.88

Discharge, Receiving Waters and Water Supply Information

Outfall No.	007	Design Flow (MGD)	0
Latitude	40º 32' 14.15"	Longitude	-79º 47' 03.65"
Quad Name	New Kensington East	Quad Code	1408
Wastewater Description:	Stormwater		
Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123972852	RMI	16.41
Drainage Area	11,500 mi^2	Yield (cfs/mi^2)	0.207
Q_{7-10} Flow (cfs)	2,390	Q_{7-10} Basis	US Army Corp of Engineers
Elevation (ft)	754	Slope (ft/ft)	0.0001
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBS)		
Source(s) of Impairment	Source Unknown		
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Oakmont Water Authority (9.2 MGD)		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	13.52	Distance from Outfall (mi)	2.88

Discharge, Receiving Waters and Water Supply Information

Outfall No.	008	Design Flow (MGD)	0
Latitude	40º 32' 08"	Longitude	-79º 47' 04"
Quad Name	New Kensington East	Quad Code	1408
Wastewater Description:	Stormwater		
Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123972852	RMI	16.40
Drainage Area	11,500 mi^2	Yield (cfs/mi^2)	0.207
Q_{7-10} Flow (cfs)	2,390	Q_{7-10} Basis	US Army Corp of Engineers
Elevation (ft)	754	Slope (ft/ft)	0.0001
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBS)		
Source(s) of Impairment	Source Unknown		
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Oakmont Water Authority (9.2 MGD)		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	13.52	Distance from Outfall (mi)	2.86

Development of Effluent Limitations

Outfall No.	001	**Design Flow (MGD)**	0.442
Latitude	40º 32' 08.49"	**Longitude**	-79º 47' 14.07"
Wastewater Description:	Once-through non-contact cooling water from the Development Center and stormwater		

Technology-Based Effluent Limitations (TBELs)

There are no Federal Effluent Limitations Guidelines (ELGs) applicable to Outfall 001's discharges.

Regulatory Effluent Standards and Monitoring Requirements

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

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. The analytical discharge data submitted with the application indicated that TRC is present in the discharge at 1.10 mg/L. Although chlorination isn't used at the facility, TRC being present in the discharge at this concentration indicates that some form of chlorine is somehow getting into the wastewater or is being used in the process; thus, the limitations from 25 Pa. Code § 92a.48(b) should be imposed.

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

Table 1: Regulatory Effluent Standards and Monitoring Requirements for Outfall 001

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

Stormwater

Outfall 001 will be subject to PAG-03 General Stormwater Permit conditions because it discharges stormwater associated with industrial activity. Based on the site's SIC code, the corresponding appendix that would apply to the facility is Appendix F of the PAG-03. The proposed monitoring requirements are shown in Table 2 below. The benchmark values listed below are not effluent limitations, and exceedances do not constitute permit violations. However, if the permittee's sampling demonstrates exceedances of benchmark values for two consecutive monitoring periods, the permittee shall submit a Corrective Action Plan. This requirement will be included in Part C of the permit.

Table 2: PAG-03 Appendix (F) Monitoring Requirements

Parameters	Monitoring Requirements		Benchmark Values
	Minimum Measurement Frequency	Sample Type	
Total Nitrogen (mg/L)	1 / 6 Months	Calculation	XXX
Total Phosphorus (mg/L)	1 / 6 Months	Grab	XXX
pH (S.U)	1 / 6 Months	Grab	9.0
Chemical Oxygen Demand (COD) (mg/L)	1 / 6 Months	Grab	120
Total Suspended Solids (TSS) (mg/L)	1 / 6 Months	Grab	100
Nitrate + Nitrite-Nitrogen (mg/L)	1 / 6 Months	Grab	3.0
Total Lead (mg/L)	1 / 6 Months	Grab	XXX
Total Zinc (mg/L)	1 / 6 Months	Grab	XXX

Parameters	Monitoring Requirements		Benchmark Values
	Minimum Measurement Frequency	Sample Type	
Total Iron (mg/L)	1 / 6 Months	Grab	XXX
Total Aluminum (mg/L)	1 / 6 Months	Grab	XXX

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.

PPG Industries' sample data revealed PFAS detection, triggering quarterly reporting of PFOA, PFOS, PFBS, and HFPO-DA, consistent with Section II.I.b of SOP BCW-PMT-032. Furthermore, the Draft Permit will include a Part C condition requiring a PFAS Reduction Plan.

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, then the monitoring may be discontinued.

Water Quality-Based Effluent 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, this-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 001

Discharges from Outfall 001 are evaluated based on concentrations reported on the application and on the 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 3. 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 C of this Fact Sheet. The Toxics Management Spread Sheet did not recommend any WQBELs for Outfall 001.

Table 3: TMS Inputs for Outfall 001

Parameter	**Value**
River Mile Index	16.2
Discharge Flow (MGD)	0.442
Basin/Stream Characteristics	
Parameter	**Value**

Area in Square Miles	11,500
Q_{7-10} (cfs)	2,390
Low-flow yield (cfs/mi^2)	0.207
Elevation (ft)	737
Slope	0.0001

Total Residual Chlorine

Although chlorination isn't used at the facility, the analytical discharge data submitted with the application indicated that TRC is present in the discharge; therefore, the discharge must be analyzed to determine in WQBELs are required for TRC. 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 discharge chlorine demands for the receiving stream, 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 then proposed. The results of the modeling, included in Attachment D, indicate that no WQBELs are required for TRC.

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 4. These limitations are currently imposed on Outfall 001. The benchmark values were based on the 2015 Multi-Sector General Permit.

Table 4: Current Limitations at Outfall 001

Parameter	Mass Units (lb/day)		Concentrations (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant Minimum	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	-	-	-	-	2/month	Measured
pH (s.u.)	-	-	6.0	-	9.0		2/month	Grab
Temperature (°F)	-	-	-	-	110	-	2/month	I-S
Chemical Oxygen Demand	-	-	-	-	Report	-	1/6 months	Grab
Total Suspended Solids	-	-	-	-	Report	-	1/6 months	Grab
Nitrate + Nitrite Nitrogen	-	-	-	-	Report	-	1/6 months	Grab
Aluminum, Total	-	-	-	-	Report	-	1/6 months	Grab
Iron, Total	-	-	-	-	Report	-	1/6 months	Grab
Lead, Total	-	-	-	-	Report	-	1/6 months	Grab
Phosphorus, Total	-	-	-	-	Report	-	1/6 months	Grab
Zinc, Total	-	-	-	-	Report	-	1/6 months	Grab

Proposed Effluent Limitations and Monitoring Requirements

The proposed effluent limitations and monitoring requirements for Outfall 001 are shown below in Table 5. Based on the limitation development above, Outfall 001 will receive new limitations for TRC. At this time PPG Industries may not be able to achieve the new limits upon permit issuance, the Department is granting a one-year compliance schedule for PPG Industries to come into compliance with the new limits. During the interim period, a monitor and report requirement will be imposed for Total Residual Chloride and the final limits will become effective one year after permit issuance date.

The daily maximum reporting requirement for pH and temperature has been replaced with an instantaneous maximum reporting requirement to be consistent with current permitting practices.

Table 5: Proposed Interim Effluent Limitation at Outfall 001

Parameter	Mass Units (lb/day)		Concentrations (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant Minimum	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	-	-	-	-	2/month	Measured
pH (s.u.)	-	-	6.0	-	-	9.0	2/month	Grab
Temperature (°F)	-	-	-	-	-	110	2/month	I-S
Total Residual Chlorine	-	-	-	Report	Report	-	2/month	Grab
Chemical Oxygen Demand	-	-	-	-	Report	-	1/6 months	Grab
Total Suspended Solids	-	-	-	-	Report	-	1/6 months	Grab
Nitrate + Nitrite Nitrogen	-	-	-	-	Report	-	1/6 months	Grab
Aluminum, Total	-	-	-	-	Report	-	1/6 months	Grab
Iron, Total	-	-	-	-	Report	-	1/6 months	Grab
Lead, Total	-	-	-	-	Report	-	1/6 months	Grab
Phosphorus, Total	-	-	-	-	Report	-	1/6 months	Grab
Nitrogen, Total	-	-	-	-	Report	-	1/6 months	Grab
Zinc, Total	-	-	-	-	Report	-	1/6 months	Grab
PFOA (ng/L)	-	-	-	-	Report	-	1/quarter	Grab
PFOS (ng/L)	-	-	-	-	Report	-	1/quarter	Grab
PFBS (ng/L)	-	-	-	-	Report	-	1/quarter	Grab
HFPO-DA (ng/L)	-	-	-	-	Report	-	1/quarter	Grab

Table 6: Proposed Final Effluent Limitation at Outfall 001

Parameter	Mass Units (lb/day)		Concentrations (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant Minimum	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	-	-	-	-	2/month	Measured
pH (s.u.)	-	-	6.0	-	-	9.0	2/month	Grab
Temperature (°F)	-	-	-	-	-	110	2/month	I-S
Total Residual Chlorine (mg/L)	-	-	-	0.5	1.0	-	2/month	Grab
Chemical Oxygen Demand	-	-	-	-	Report	-	1/6 months	Grab

Parameter	Mass Units (lb/day)		Concentrations (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant Minimum	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Total Suspended Solids	-	-	-	-	Report	-	1/6 months	Grab
Nitrate + Nitrite Nitrogen	-	-	-	-	Report	-	1/6 months	Grab
Aluminum, Total	-	-	-	-	Report	-	1/6 months	Grab
Iron, Total	-	-	-	-	Report	-	1/6 months	Grab
Lead, Total	-	-	-	-	Report	-	1/6 months	Grab
Phosphorus, Total	-	-	-	-	Report	-	1/6 months	Grab
Nitrogen, Total	-	-	-	-	Report	-	1/6 months	Grab
Zinc, Total	-	-	-	-	Report	-	1/6 months	Grab
PFOA (ng/L)	-	-	-	-	Report	-	1/quarter	Grab
PFOS (ng/L)	-	-	-	-	Report	-	1/quarter	Grab
PFBS (ng/L)	-	-	-	-	Report	-	1/quarter	Grab
HFPO-DA (ng/L)	-	-	-	-	Report	-	1/quarter	Grab

EPA modified the benchmark monitoring thresholds in the 2021 MSGP for aluminum based on revised CWA section 304(a) national recommended aquatic life water quality criteria and suspended the benchmark monitoring thresholds for iron based on lack of documented acute toxicity. The renewed permit will reflect these changes, ensuring alignment with the latest regulatory requirements.

Table 7: 2021 Multi-Sector General Permit benchmark values

Discharge Parameter	Benchmark Values (mg/L)
pH (s.u.)	within the range of 6.0 to 9.0
Chemical Oxygen Demand	120
Total Suspended Solids	100
Nitrate + Nitrite Nitrogen	0.68
Phosphorus, Total	2.0
Lead, Total	0.082
Zinc, Total	0.12
Iron, Total	-
Aluminum, Total	1.1

Development of Effluent Limitations

Outfall No. 002 **Design Flow (MGD)** 0.145
Latitude 40º 32' 16.33" **Longitude** -79º 47' 03.71"
Wastewater Description: Once-through non-contact cooling water from the Research Center and stormwater

Technology-Based Effluent Limitations (TBELs)

There are no Federal Effluent Limitations Guidelines (ELGs) applicable to Outfall 002's discharges.

Regulatory Effluent Standards and Monitoring Requirements

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

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. The analytical discharge data submitted with the application indicated that TRC is present in the discharge at 0.7 mg/L. Although chlorination isn't used at the facility, TRC being present in the discharge at this concentration indicates that some form of chorine is somehow getting into the wastewater or is being used in the process; thus, the limitations from 25 Pa. Code § 92a.48(b) must be imposed.

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code § 95.2(1) as indicated in Table 8.

Table 8: Regulatory Effluent Standards and Monitoring Requirements for Outfall 002

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

Stormwater

Outfall 002 will be subject to PAG-03 General Stormwater Permit conditions because it discharges stormwater associated with industrial activity. Based on the site's SIC code, the corresponding appendix that would apply to the facility is Appendix F of the PAG-03. The proposed monitoring requirements are shown in Table 9 below. The benchmark values listed below are not effluent limitations, and exceedances do not constitute permit violations. However, if the permittee's sampling demonstrates exceedances of benchmark values for two consecutive monitoring periods, the permittee shall submit a Corrective Action Plan. This requirement will be included in Part C of the permit.

Table 9: PAG-03 Appendix (F) Monitoring Requirements

Parameters	Monitoring Requirements		Benchmark Values
	Minimum Measurement Frequency	Sample Type	
Total Nitrogen (mg/L)	1 / 6 Months	Calculation	XXX
Total Phosphorus (mg/L)	1 / 6 Months	Grab	XXX
pH (S.U))	1 / 6 Months	Grab	9.0
Chemical Oxygen Demand (COD) (mg/L)	1 / 6 Months	Grab	120
Total Suspended Solids (TSS) (mg/L)	1 / 6 Months	Grab	100
Nitrate + Nitrite-Nitrogen (mg/L)	1 / 6 Months	Grab	3.0
Total Lead (mg/L)	1 / 6 Months	Grab	XXX
Total Zinc (mg/L)	1 / 6 Months	Grab	XXX
Total Iron (mg/L)	1 / 6 Months	Grab	XXX
Total Aluminum (mg/L)	1 / 6 Months	Grab	XXX

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.

PPG Industries' sample data revealed PFAS detection, however, the detection values were below the Quantitation Limits established above. Therefore, annual 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, then the monitoring may be discontinued.

Water Quality-Based Effluent 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, this-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 the 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 10. 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 E of this Fact Sheet. The Toxics Management Spread Sheet did not recommend any WQBELs for Outfall 002.

Table 10: TMS Inputs for Outfall 002

Parameter	**Value**
River Mile Index	16.2
Discharge Flow (MGD)	0.442
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	11,500
$Q_{7\text{-}10}$ (cfs)	2,390
Low-flow yield (cfs/mi^2)	0.207
Elevation (ft)	737
Slope	0.0001

Total Residual Chlorine

Although chlorination isn't used at the facility, the analytical discharge data submitted with the application indicated that TRC is present in the discharge; therefore, the discharge must be analyzed to determine in WQBELs are required for TRC. 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 discharge chlorine demands for the receiving stream, 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 then proposed. The results of the modeling, included in Attachment F, indicate that no WQBELs are required for TRC.

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 11. These limitations are currently imposed on Outfall 002. The benchmark values were based on the 2015 Multi-Sector General Permit.

Table 11: Current Limitations at Outfall 002

Parameter	Mass Units (lb/day)		Concentrations (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant Minimum	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	-	-	-	-	2/month	Measured
pH (s.u.)	-	-	6.0	-	9.0		2/month	Grab
Temperature (°F)	-	-	-	-	110	-	2/month	I-S
Chemical Oxygen Demand	-	-	-	-	Report	-	1/6 months	Grab
Total Suspended Solids	-	-	-	-	Report	-	1/6 months	Grab
Nitrate + Nitrite Nitrogen	-	-	-	-	Report	-	1/6 months	Grab
Aluminum, Total	-	-	-	-	Report	-	1/6 months	Grab
Iron, Total	-	-	-	-	Report	-	1/6 months	Grab
Lead, Total	-	-	-	-	Report	-	1/6 months	Grab
Phosphorus, Total	-	-	-	-	Report	-	1/6 months	Grab
Zinc, Total	-	-	-	-	Report	-	1/6 months	Grab

Proposed Effluent Limitations and Monitoring Requirements

The proposed effluent limitations and monitoring requirements for Outfall 002 are shown below in Table 12. Based on the limitation development above, Outfall 002 will receive new limitations for TRC. At this time PPG Industries may not be able to achieve the new limits upon permit issuance, the Department is granting a one-year compliance schedule for PPG Industries to come into compliance with the new limits. During the interim period, a monitor and report requirement will be imposed for Total Residual Chloride and the final limits will become effective one year after permit issuance date.

The daily maximum limit for pH and temperature has been replaced with an instantaneous maximum reporting requirement to be consistent with current permitting practices.

Table 12: Proposed Interim Effluent Limitation at Outfall 002

Parameter	Mass Units (lb/day)		Concentrations (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant Minimum	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	-	-	-	-	2/month	Measured
pH (s.u.)	-	-	6.0	-	-	9.0	2/month	Grab
Temperature (°F)	-	-	-	-	-	110	2/month	I-S
Total Residual Chlorine (mg/L)	-	-	-	Report	Report	-	2/month	Grab
Chemical Oxygen Demand	-	-	-	-	Report	-	1/6 months	Grab
Total Suspended Solids	-	-	-	-	Report	-	1/6 months	Grab
Nitrate + Nitrite Nitrogen	-	-	-	-	Report	-	1/6 months	Grab
Aluminum, Total	-	-	-	-	Report	-	1/6 months	Grab
Iron, Total	-	-	-	-	Report	-	1/6 months	Grab
Lead, Total	-	-	-	-	Report	-	1/6 months	Grab
Phosphorus, Total	-	-	-	-	Report	-	1/6 months	Grab
Nitrogen, Total	-	-	-	-	Report	-	1/6 months	Grab
Zinc, Total	-	-	-	-	Report	-	1/6 months	Grab
PFOA (ng/L)	-	-	-	-	Report	-	1/year	Grab
PFOS (ng/L)	-	-	-	-	Report	-	1/year	Grab
PFBS (ng/L)	-	-	-	-	Report	-	1/year	Grab
HFPO-DA (ng/L)	-	-	-	-	Report	-	1/year	Grab

Table 13: Proposed Final Effluent Limitation at Outfall 002

Parameter	Mass Units (lb/day)		Concentrations (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant Minimum	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	-	-	-	-	2/month	Measured
pH (s.u.)	-	-	6.0	-	-	9.0	2/month	Grab
Temperature (°F)	-	-	-	-	-	110	2/month	I-S
Total Residual Chlorine (mg/L)	-	-	-	0.5	1.0	-	2/month	Grab
Chemical Oxygen Demand	-	-	-	-	Report	-	1/6 months	Grab
Total Suspended Solids	-	-	-	-	Report	-	1/6 months	Grab
Nitrate + Nitrite Nitrogen	-	-	-	-	Report	-	1/6 months	Grab
Aluminum, Total	-	-	-	-	Report	-	1/6 months	Grab
Iron, Total	-	-	-	-	Report	-	1/6 months	Grab
Lead, Total	-	-	-	-	Report	-	1/6 months	Grab
Phosphorus, Total	-	-	-	-	Report	-	1/6 months	Grab
Nitrogen, Total	-	-	-	-	Report	-	1/6 months	Grab
Zinc, Total	-	-	-	-	Report	-	1/6 months	Grab
PFOA (ng/L)	-	-	-	-	Report	-	1/year	Grab

Parameter	Mass Units (lb/day)		Concentrations (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant Minimum	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
PFOS (ng/L)	-	-	-	-	Report	-	1/year	Grab
PFBS (ng/L)	-	-	-	-	Report	-	1/year	Grab
HFPO-DA (ng/L)	-	-	-	-	Report	-	1/year	Grab

EPA modified the benchmark monitoring thresholds in the 2021 MSGP for aluminum based on revised CWA section 304(a) national recommended aquatic life water quality criteria and suspended the benchmark monitoring thresholds for iron based on lack of documented acute toxicity. The renewed permit will reflect these changes, ensuring alignment with the latest regulatory requirements.

Table 14: 2021 Multi-Sector General Permit benchmark values

Discharge Parameter	Benchmark Values (mg/L)
pH (s.u.)	within the range of 6.0 to 9.0
Chemical Oxygen Demand	120
Total Suspended Solids	100
Nitrate + Nitrite Nitrogen	0.68
Phosphorus, Total	2.0
Lead, Total	0.082
Zinc, Total	0.12
Iron, Total	-
Aluminum, Total	1.1

Development of Effluent Limitations

Outfall No.	003	**Design Flow (MGD)**	0.137
Latitude	40º 32' 01.03"	**Longitude**	-79º 47' 03.52"
Wastewater Description:	Once-through non-contact cooling water from the Paint Plant. Steam condensate, steam mixed with non-contact cooling water, steam from one-pass heating systems and steam traps, and stormwater		

Technology-Based Effluent Limitations (TBELs)

There are no Federal Effluent Limitations Guidelines (ELGs) applicable to Outfall 003's discharges.

Regulatory Effluent Standards and Monitoring Requirements

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

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. The analytical discharge data submitted with the application indicated that TRC is present in the discharge at 0.1 mg/L, however, it was below the technology limitation in 25 Pa. Code § 92a.48(b). Therefore, effluent limitations/monitoring of TRC will not be required.

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code § 95.2(1) as indicated in Table 15.

Table 15: Regulatory Effluent Standards and Monitoring Requirements for Outfall 003

Parameter	Monthly Average	Daily Maximum	IMAX	Units
Flow	Monitor and Report		XXX	MGD
Temperature	XXX	XXX	110	°F
pH	Not less than 6.0 nor greater than 9.0			S.U.

Stormwater

Outfall 003 will be subject to PAG-03 General Stormwater Permit conditions because it discharges stormwater associated with industrial activity. Based on the site's SIC code, the corresponding appendix that would apply to the facility is Appendix F of the PAG-03. The proposed monitoring requirements are shown in Table 16 below. The benchmark values listed below are not effluent limitations, and exceedances do not constitute permit violations. However, if the permittee's sampling demonstrates exceedances of benchmark values for two consecutive monitoring periods, the permittee shall submit a Corrective Action Plan. This requirement will be included in Part C of the permit.

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

Parameters	Monitoring Requirements		Benchmark Values
	Minimum Measurement Frequency	Sample Type	
Total Nitrogen (mg/L)	1 / 6 Months	Calculation	XXX
Total Phosphorus (mg/L)	1 / 6 Months	Grab	XXX
pH (S.U))	1 / 6 Months	Grab	9.0
Chemical Oxygen Demand (COD) (mg/L)	1 / 6 Months	Grab	120
Total Suspended Solids (TSS) (mg/L)	1 / 6 Months	Grab	100
Nitrate + Nitrite-Nitrogen (mg/L)	1 / 6 Months	Grab	3.0
Total Lead (mg/L)	1 / 6 Months	Grab	XXX
Total Zinc (mg/L)	1 / 6 Months	Grab	XXX

Parameters	Monitoring Requirements		Benchmark Values
	Minimum Measurement Frequency	Sample Type	
Total Iron (mg/L)	1 / 6 Months	Grab	XXX
Total Aluminum (mg/L)	1 / 6 Months	Grab	XXX

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.

PPG Industries' sample data revealed PFAS detection, triggering quarterly reporting of PFOA, PFOS, PFBS, and HFPO-DA, consistent with Section II.I.b of SOP BCW-PMT-032. Furthermore, the Draft Permit will include a Part C condition requiring a PFAS Reduction Plan.

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, then the monitoring may be discontinued.

Water Quality-Based Effluent 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, this-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 003

Discharges from Outfall 003 are evaluated based on concentrations reported on the application and on the 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 17. 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 G of this Fact Sheet. The Toxics Management Spread Sheet did not recommend any WQBELs for Outfall 003.

Table 17: TMS Inputs for Outfall 003

Parameter	**Value**
River Mile Index	16.2
Discharge Flow (MGD)	0.442
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	11,500

Q_{7-10} (cfs)	2,390
Low-flow yield (cfs/mi^2)	0.207
Elevation (ft)	737
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 discharge chlorine demands for the receiving stream, 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 then proposed. The results of the modeling, included in Attachment D, indicate that no WQBELs are required for TRC.

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 18. These limitations are currently imposed on Outfall 003. The benchmark values were based on the 2015 Multi-Sector General Permit.

Table 18: Current Limitations at Outfall 003

Parameter	Mass Units (lb/day)		Concentrations (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant Minimum	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	-	-	-	-	2/month	Measured
pH (s.u.)	-	-	6.0	-	9.0		2/month	Grab
Temperature (°F)	-	-	-	-	110	-	2/month	I-S
Chemical Oxygen Demand	-	-	-	-	Report	-	1/6 months	Grab
Total Suspended Solids	-	-	-	-	Report	-	1/6 months	Grab
Nitrate + Nitrite Nitrogen	-	-	-	-	Report	-	1/6 months	Grab
Aluminum, Total	-	-	-	-	Report	-	1/6 months	Grab
Iron, Total	-	-	-	-	Report	-	1/6 months	Grab
Lead, Total	-	-	-	-	Report	-	1/6 months	Grab
Phosphorus, Total	-	-	-	-	Report	-	1/6 months	Grab
Zinc, Total	-	-	-	-	Report	-	1/6 months	Grab

Proposed Effluent Limitations and Monitoring Requirements

The proposed effluent limitations and monitoring requirements for Outfall 003 are shown below in Table 19. The daily maximum limit requirement for pH and temperature has been replaced with an instantaneous maximum limit requirement to be consistent with current permitting practices.

Table 19: Proposed Final Effluent Limitation at Outfall 003

Parameter	Mass Units (lb/day)		Concentrations (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant Minimum	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	-	-	-	-	2/month	Measured
pH (s.u.)	-	-	6.0	-	-	9.0	2/month	Grab
Temperature (°F)	-	-	-	-	-	110	2/month	I-S
Chemical Oxygen Demand	-	-	-	-	Report	-	1/6 months	Grab
Total Suspended Solids	-	-	-	-	Report	-	1/6 months	Grab
Nitrate + Nitrite Nitrogen	-	-	-	-	Report	-	1/6 months	Grab
Aluminum, Total	-	-	-	-	Report	-	1/6 months	Grab
Iron, Total	-	-	-	-	Report	-	1/6 months	Grab
Lead, Total	-	-	-	-	Report	-	1/6 months	Grab
Phosphorus, Total	-	-	-	-	Report	-	1/6 months	Grab
Nitrogen, Total	-	-	-	-	Report	-	1/6 months	Grab
Zinc, Total	-	-	-	-	Report	-	1/6 months	Grab
PFOA (ng/L)	-	-	-	-	Report	-	1/quarter	Grab
PFOS (ng/L)	-	-	-	-	Report	-	1/quarter	Grab
PFBS (ng/L)	-	-	-	-	Report	-	1/quarter	Grab
HFPO-DA (ng/L)	-	-	-	-	Report	-	1/quarter	Grab

EPA modified the benchmark monitoring thresholds in the 2021 MSGP for aluminum based on revised CWA section 304(a) national recommended aquatic life water quality criteria and suspended the benchmark monitoring thresholds for iron based on lack of documented acute toxicity. The renewed permit will reflect these changes, ensuring alignment with the latest regulatory requirements.

Table 20: 2021 Multi-Sector General Permit benchmark values

Discharge Parameter	Benchmark Values (mg/L)
pH (s.u.)	within the range of 6.0 to 9.0
Chemical Oxygen Demand	120
Total Suspended Solids	100
Nitrate + Nitrite Nitrogen	0.68
Phosphorus, Total	2.0
Lead, Total	0.082
Zinc, Total	0.12
Iron, Total	-
Aluminum, Total	1.1

Development of Effluent Limitations

Outfall No.	005	**Design Flow (MGD)**	0.0 (varied)
Latitude	40º 32' 06.84"	**Longitude**	-79º 47' 05.23"
Wastewater Description:	Stormwater		

Outfall No.	006	**Design Flow (MGD)**	0.0 (varied)
Latitude	40º 32' 10.03"	**Longitude**	-79º 47' 03.52"
Wastewater Description:	Stormwater		

Outfall No.	007	**Design Flow (MGD)**	0.0 (varied)
Latitude	40º 32' 14.15"	**Longitude**	-79º 47' 03.65"
Wastewater Description:	Stormwater		

Technology-Based Limitations

Stormwater Technology Limits

Outfalls 005, 006 and 007 will be subject to PAG-03 General Stormwater Permit conditions because it discharges stormwater associated with industrial activity. Based on the site's SIC code, the corresponding appendix that would apply to the facility is Appendix F of the PAG-03. The proposed monitoring requirements are shown in Table 21 below. The benchmark values listed below are not effluent limitations, and exceedances do not constitute permit violations. However, if the permittee's sampling demonstrates exceedances of benchmark values for two consecutive monitoring periods, the permittee shall submit a Corrective Action Plan. This requirement will be included in Part C of the permit.

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

Parameters	Monitoring Requirements		Benchmark Values
	Minimum Measurement Frequency	Sample Type	
Total Nitrogen (mg/L)	1 / 6 Months	Calculation	XXX
Total Phosphorus (mg/L)	1 / 6 Months	Grab	XXX
pH (S.U))	1 / 6 Months	Grab	9.0
Chemical Oxygen Demand (COD) (mg/L)	1 / 6 Months	Grab	120
Total Suspended Solids (TSS) (mg/L)	1 / 6 Months	Grab	100
Nitrate + Nitrite-Nitrogen (mg/L)	1 / 6 Months	Grab	3.0
Total Lead (mg/L)	1 / 6 Months	Grab	XXX
Total Zinc (mg/L)	1 / 6 Months	Grab	XXX
Total Iron (mg/L)	1 / 6 Months	Grab	XXX
Total Aluminum (mg/L)	1 / 6 Months	Grab	XXX

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 discharge from Outfalls 005, 006 and 007 is 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) and are displayed below in Table 22. These limitations are currently imposed on Outfalls 005, 006 and 007.

Table 22. Current Effluent Limitation at Outfalls 005, 006 and 007

Parameter	Mass Units (lb/day)		Concentrations (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant Minimum	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	-	-	-	-	1/6 months	Grab
pH					Report		1/6 months	Grab
Chemical Oxygen Demand	-	-	-	-	Report	-	1/6 months	Grab
Total Suspended Solids	-	-	-	-	Report	-	1/6 months	Grab
Nitrate + Nitrite Nitrogen	-	-	-	-	Report	-	1/6 months	Grab
Aluminum, Total	-	-	-	-	Report	-	1/6 months	Grab
Iron, Total	-	-	-	-	Report	-	1/6 months	Grab
Lead, Total	-	-	-	-	Report	-	1/6 months	Grab
Phosphorus, Total	-	-	-	-	Report	-	1/6 months	Grab
Zinc, Total	-	-	-	-	Report	-	1/6 months	Grab

Proposed Effluent Limitations and Monitoring Requirements

Outfalls 005, 006 and 007 will be subject to the semi-annual monitoring requirements in Appendix U of the PAG-03 General Permit. The proposed effluent monitoring requirements for Outfalls 005, 006 and 007 are displayed in Table 23 below. A Part C condition is included in the Draft Permit requiring development and submission of a Corrective Action Plan whenever there are two or more consecutive exceedances of the benchmark values, which are also included in the Part C condition. The benchmark values are also 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 conducted 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 Final Effluent Limitation at Outfalls 005, 006 and 007

Parameter	Mass Units (lb/day)		Concentrations (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant Minimum	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	-	-	-	-	1/6 months	Grab
pH					Report		1/6 months	Grab
Chemical Oxygen Demand	-	-	-	-	Report	-	1/6 months	Grab
Total Suspended Solids	-	-	-	-	Report	-	1/6 months	Grab
Nitrate + Nitrite Nitrogen	-	-	-	-	Report	-	1/6 months	Grab
Aluminum, Total	-	-	-	-	Report	-	1/6 months	Grab
Iron, Total	-	-	-	-	Report	-	1/6 months	Grab
Lead, Total	-	-	-	-	Report	-	1/6 months	Grab
Phosphorus, Total	-	-	-	-	Report	-	1/6 months	Grab
Nitrogen, Total	-	-	-	-	Report	-	1/6 months	Grab
Zinc, Total	-	-	-	-	Report	-	1/6 months	Grab

EPA modified the benchmark monitoring thresholds in the 2021 MSGP for aluminum based on revised CWA section 304(a) national recommended aquatic life water quality criteria and suspended the benchmark monitoring thresholds for iron based on lack of documented acute toxicity. The renewed permit will reflect these changes, ensuring alignment with the latest regulatory requirements.

Table 24: 2021 Multi-Sector General Permit benchmark values

Discharge Parameter	Benchmark Values (mg/L)
pH (s.u.)	within the range of 6.0 to 9.0
Chemical Oxygen Demand	120
Total Suspended Solids	100
Nitrate + Nitrite Nitrogen	0.68
Phosphorus, Total	2.0
Lead, Total	0.082
Zinc, Total	0.12
Iron, Total	-
Aluminum, Total	1.1

Development of Effluent Limitations

Outfall No. 008 **Design Flow (MGD)** 0.0 (varied)
Latitude 40º 32' 08" **Longitude** -79º 47' 04"
Wastewater Description: Stormwater

Technology-Based Limitations

Stormwater Technology Limits

Outfall 008 will be subject to PAG-03 General Stormwater Permit conditions because it discharges stormwater associated with industrial activity. Based on the site's SIC code, the corresponding appendix that would apply to the facility is Appendix F of the PAG-03. The proposed monitoring requirements are shown in Table 25 below. The benchmark values listed below are not effluent limitations, and exceedances do not constitute permit violations. However, if the permittee's sampling demonstrates exceedances of benchmark values for two consecutive monitoring periods, the permittee shall submit a Corrective Action Plan. This requirement will be included in Part C of the permit.

Table 25: PAG-03 Appendix (F) Monitoring Requirements

Parameters	Monitoring Requirements		Benchmark Values
	Minimum Measurement Frequency	Sample Type	
Total Nitrogen (mg/L)	1 / 6 Months	Calculation	XXX
Total Phosphorus (mg/L)	1 / 6 Months	Grab	XXX
pH (S.U))	1 / 6 Months	Grab	9.0
Chemical Oxygen Demand (COD) (mg/L)	1 / 6 Months	Grab	120
Total Suspended Solids (TSS) (mg/L)	1 / 6 Months	Grab	100
Nitrate + Nitrite-Nitrogen (mg/L)	1 / 6 Months	Grab	3.0
Total Lead (mg/L)	1 / 6 Months	Grab	XXX
Total Zinc (mg/L)	1 / 6 Months	Grab	XXX
Total Iron (mg/L)	1 / 6 Months	Grab	XXX
Total Aluminum (mg/L)	1 / 6 Months	Grab	XXX

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 discharge from Outfall 008 is 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) and are displayed below in Table 26. These limitations are currently imposed on Outfall 008.

Table 26. Current Effluent Limitation at Outfalls 008

Parameter	Mass Units (lb/day)		Concentrations (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant Minimum	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	-	-	-	-	1/6 months	Grab
pH					Report		1/6 months	Grab

Parameter	Mass Units (lb/day)		Concentrations (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant Minimum	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Chemical Oxygen Demand	-	-	-	-	Report	-	1/6 months	Grab
Total Suspended Solids	-	-	-	-	Report	-	1/6 months	Grab
Nitrate + Nitrite Nitrogen	-	-	-	-	Report	-	1/6 months	Grab
Aluminum, Total	-	-	-	-	Report	-	1/6 months	Grab
Iron, Total	-	-	-	-	Report	-	1/6 months	Grab
Lead, Total	-	-	-	-	Report	-	1/6 months	Grab
Phosphorus, Total	-	-	-	-	Report	-	1/6 months	Grab
Zinc, Total	-	-	-	-	Report	-	1/6 months	Grab

Proposed Effluent Limitations and Monitoring Requirements

Outfall 008 will be subject to the semi-annual monitoring requirements in Appendix F of the PAG-03 General Permit. The proposed effluent monitoring requirements for Outfall 008 are displayed in Table 28 below. A Part C condition is included in the Draft Permit requiring development and submission of a Corrective Action Plan whenever there are two or more consecutive exceedances of the benchmark values, which are also included in the Part C condition. The benchmark values are also displayed below in Table 28. 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 conducted 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.

Pursuant to review of sample data submitted in the application and DMRs, elevated concentrations of TSS, Total Aluminum and Total Iron have been detected at Outfall 008 (See Table 27). Despite the facility's implementation of additional BMPs, the data indicates these measures are ineffective. Consequently, the monitoring frequency for Total Suspended Solids will be increased to quarterly to ensure that the quality of the discharge from Outfall 008 meets the benchmark values established in the permit.

Table 27: Benchmark exceedances summary at Outfalls 008

PARAMETER	MONITORING PERIOD	VALUE mg/L	BENCHMARK VALUE mg/L
Aluminum, Total	1/1/2023 - 6/30/2023	23.1	0.75
	7/1/2023 - 12/31/2023	29.5	
	1/1/2024 - 6/30/2024	15.8	
	Application	14	
Iron, Total	1/1/2023 - 6/30/2023	45.3	1.5
	7/1/2023 - 12/31/2023	50.9	
	1/1/2024 - 6/30/2024	35.4	
	Application	33	
Total Suspended Solids	1/1/2023 - 6/30/2023	2270	100
	7/1/2023 - 12/31/2023	1000	
	1/1/2024 - 6/30/2024	1035	
	Application	1300	

Table 28: Proposed Final Effluent Limitation at Outfalls 008

Parameter	Mass Units (lb/day)		Concentrations (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant Minimum	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	-	-	-	-	1/6 months	Grab
pH					Report		1/6 months	Grab
Chemical Oxygen Demand	-	-	-	-	Report	-	1/6 months	Grab
Total Suspended Solids	**-**	**-**	**-**	**-**	**Report**	**-**	**1/quarter**	**Grab**
Nitrate + Nitrite Nitrogen	-	-	-	-	Report	-	1/6 months	Grab
Aluminum, Total	-	-	-	-	Report	-	1/6 months	Grab
Iron, Total	-	-	-	-	Report	-	1/6 months	Grab
Lead, Total	-	-	-	-	Report	-	1/6 months	Grab
Phosphorus, Total	-	-	-	-	Report	-	1/6 months	Grab
Nitrogen, Total	-	-	-	-	Report	-	1/6 months	Grab
Zinc, Total	-	-	-	-	Report	-	1/6 months	Grab

EPA modified the benchmark monitoring thresholds in the 2021 MSGP for aluminum based on revised CWA section 304(a) national recommended aquatic life water quality criteria and suspended the benchmark monitoring thresholds for iron based on lack of documented acute toxicity. The renewed permit will reflect these changes, ensuring alignment with the latest regulatory requirements.

Table 29: 2021 Multi-Sector General Permit benchmark values

Discharge Parameter	Benchmark Values (mg/L)
pH (s.u.)	within the range of 6.0 to 9.0
Chemical Oxygen Demand	120
Total Suspended Solids	100
Nitrate + Nitrite Nitrogen	0.68
Phosphorus, Total	2.0
Lead, Total	0.082
Zinc, Total	0.12
Iron, Total	-
Aluminum, Total	1.1

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment C, E, G)
☒	TRC Model Spreadsheet (see Attachment D, F)
☐	Temperature Model Spreadsheet (see Attachment)
☐	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: Water Flow Diagram

Attachment B: StreamStats Report

Attachment C: Toxic Management Spreadsheet for Outfall 001

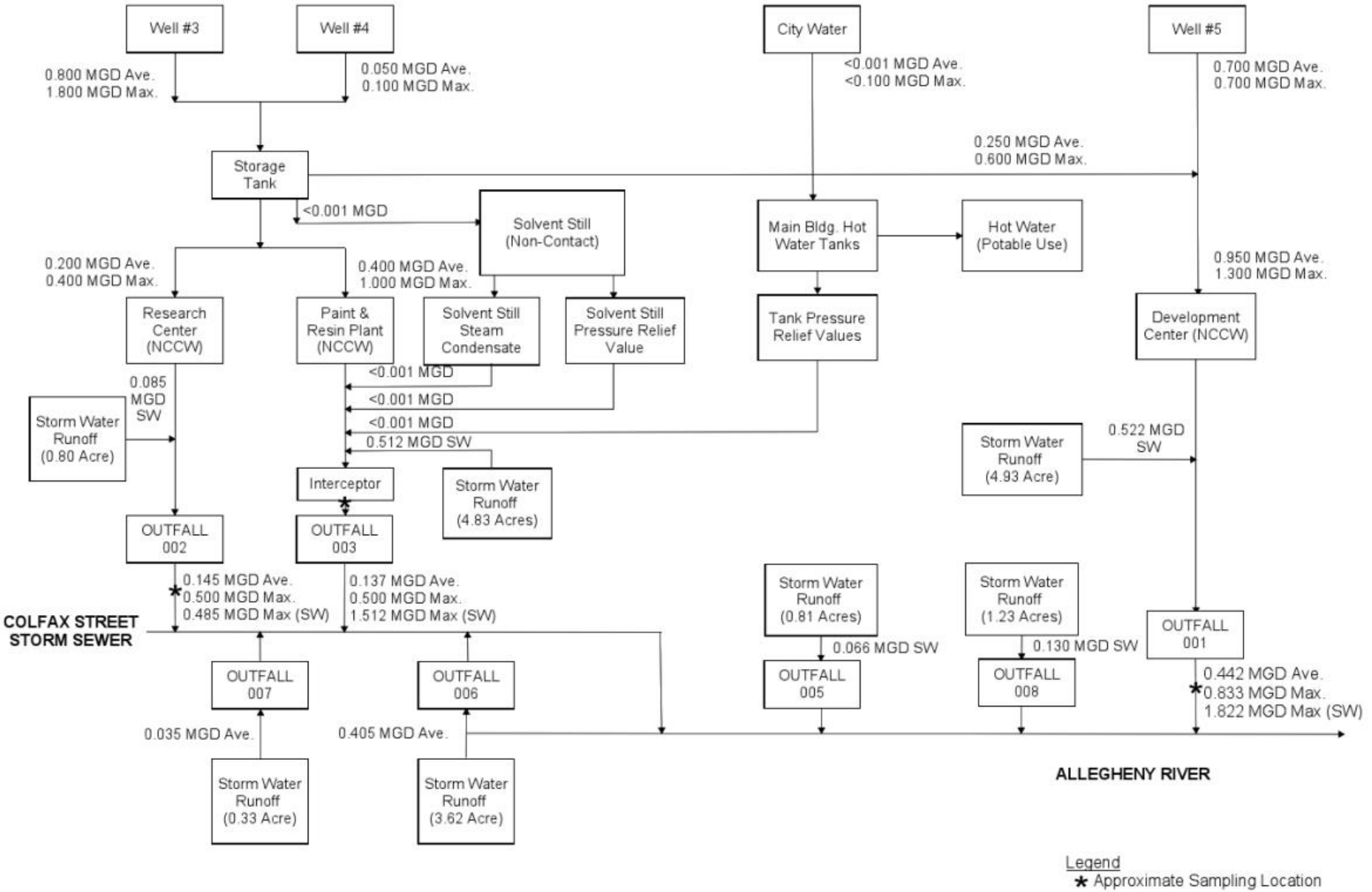
Attachment D: TRC Modeling Results for Outfall 001

Attachment E: Toxic Management Spreadsheet for Outfall 002

Attachment F: TRC Modeling Results for Outfall 002

Attachment G: Toxic Management Spreadsheet for Outfall 003

ATTACHMENT A.
Water Flow Diagram



Notes:
1) Maximum storm water runoff values are based on 10-year, 24-hour storm event (3.9 inches).
2) Average and maximum internal flows and stormwater flows are estimated.
3) Outfalls 001, 002, and 003 Average and Maximum Flows are based on data from 1/1/2022 through 12/31/2023

PPG Industries, Inc. - Springdale Complex
125 Colfax Street
Springdale Borough, Allegheny County

Outfall Line Drawing and Water Balance
NPDES Permit No. PA 0001198

Attachment B: StreamStats Report

PA0001198 - PPG Industries - StreamStats Report

Region ID: PA
Workspace ID: PA20240924135109650000
Clicked Point (Latitude, Longitude): 40.53484, -79.78849
Time: 2024-09-24 09:51:41 -0400

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	11500	square miles
ELEV	Mean Basin Elevation	1598	feet
FOREST	Percentage of area covered by forest	73.9068	percent
PRECIP	Mean Annual Precipitation	44	inches
URBAN	Percentage of basin with urban development	2.3804	percent

Attachment C: Toxic Management Spreadsheet for Outfall 001

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **PPG Industries, Inc - Springdale** NPDES Permit No.: **PA0001198** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Non-contact cooling water and stormwater**

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
0.442	330	8.08						

					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		780									
	Chloride (PWS)	mg/L		140									
	Bromide	mg/L		0.72									
	Sulfate (PWS)	mg/L		220									
	Fluoride (PWS)	mg/L		0.33									
Group 2	Total Aluminum	µg/L		317									
	Total Antimony	µg/L	<	2									
	Total Arsenic	µg/L	<	0.68									
	Total Barium	µg/L		88									
	Total Beryllium	µg/L	<	0.12									
	Total Boron	µg/L		120									
	Total Cadmium	µg/L		0.39									
	Total Chromium (III)	µg/L	<	0.55									
	Hexavalent Chromium	µg/L	<	6									
	Total Cobalt	µg/L	<	7.4									
	Total Copper	µg/L	<	3.2									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	8									
	Dissolved Iron	µg/L	<	20									
	Total Iron	µg/L		1580									
	Total Lead	µg/L	<	2									
	Total Manganese	µg/L		5600									
	Total Mercury	µg/L		0.093									
	Total Nickel	µg/L		12									
	Total Phenols (Phenolics) (PWS)	µg/L	<	3.5									
	Total Selenium	µg/L	<	0.28									
	Total Silver	µg/L	<	0.1									
	Total Thallium	µg/L		0.18									
	Total Zinc	µg/L		88									
	Total Molybdenum	µg/L		0.67									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										
	Carbon Tetrachloride	µg/L	<										
	Chlorobenzene	µg/L											
	Chlorodibromomethane	µg/L	<										
	Chloroethane	µg/L	<										
	2-Chloroethyl Vinyl Ether	µg/L	<										

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

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

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

PPG Industries, Inc - Springdale, NPDES Permit No. PA0001198, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Allgheny River**

No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	042122	16.2	737	11,500			Yes
End of Reach 1	042122	13.52	728	11,600			Yes

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

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	16.2	0.1	2,390			722	18					81	7		
End of Reach 1	13.52	0.1	2,390			749	18								

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	16.2														
End of Reach 1	13.52														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

PPG Industries, Inc - Springdale, NPDES Permit No. PA0001198, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.201 Analysis Hardness (mg/l): 81.354 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	528,026	
Total Antimony	0	0		0	1,100	1,100	774,439	
Total Arsenic	0	0		0	340	340	239,372	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	14,784,737	
Total Boron	0	0		0	8,100	8,100	5,702,684	
Total Cadmium	0	0		0	1.648	1.73	1,218	Chem Translator of 0.953 applied
Total Chromium (III)	0	0		0	481.164	1,523	1,072,015	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	11,471	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	66,883	
Total Copper	0	0		0	11.064	11.5	8,114	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	51.549	62.8	44,201	Chem Translator of 0.821 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1,160	Chem Translator of 0.85 applied
Total Nickel	0	0		0	393.227	394	277,401	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	2.256	2.65	1,868	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	45,762	
Total Zinc	0	0		0	98.382	101	70,823	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): 81.071 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	769,188	
Total Arsenic	0	0		0	150	150	524,446	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	14,334,858	
Total Boron	0	0		0	1,600	1,600	5,594,091	
Total Cadmium	0	0		0	0.213	0.23	810	Chem Translator of 0.918 applied
Total Chromium (III)	0	0		0	62.412	72.6	253,733	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	36,344	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	66,430	
Total Copper	0	0		0	7.486	7.8	27,263	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	5,244,460	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.001	2.44	8,516	Chem Translator of 0.822 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	3,167	Chem Translator of 0.85 applied
Total Nickel	0	0		0	43.547	43.7	152,712	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	17,444	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	45,452	
Total Zinc	0	0		0	98.895	100	350,678	Chem Translator of 0.986 applied

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

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	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	19,579	
Total Arsenic	0	0		0	10	10.0	34,963	
Total Barium	0	0		0	2,400	2,400	8,391,137	
Total Boron	0	0		0	3,100	3,100	10,838,551	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	1,048,892	

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	3,496,307	
Total Mercury	0	0		0	0.050	0.05	175	
Total Nickel	0	0		0	610	610	2,132,747	
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	839	
Total Zinc	0	0		0	N/A	N/A	N/A	

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	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

Recommended WQBELs & Monitoring Requirements

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments

Other Pollutants without Limits or Monitoring

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	338,444	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	8,391,137	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	3,655,190	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	780	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	253,733	µg/L	Discharge Conc < TQL
Hexavalent Chromium	7,352	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	42,870	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	5,201	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	1,048,892	µg/L	Discharge Conc < TQL
Total Iron	5,244,460	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	8,516	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	3,496,307	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	175	µg/L	Discharge Conc ≤ 10% WQBEL
Total Nickel	152,712	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	17,444	µg/L	Discharge Conc < TQL
Total Silver	1,197	µg/L	Discharge Conc < TQL
Total Thallium	839	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	45,395	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS

ATTACHMENT D
TRC Modeling Results for Outfall 001

TRC EVALUATION - Outfall 001

2,390	= Q stream (cfs)	0.5	= CV Daily
0.442	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	0.201	= 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	370.77	= 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 =	224.135	**1.3.2.iii**	WLA cfc =	1087.051
PENTOXSD TRG	**5.1a**	LTAMULT afc =	0.373	**5.1c**	LTAMULT cfc =	0.581
PENTOXSD TRG	**5.1b**	LTA_afc=	83.518	**5.1d**	LTA_cfc =	631.961

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 E: Toxic Management Spreadsheet for Outfall 002

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **PPG Industries, Inc - Springdale** NPDES Permit No.: **PA0001198** Outfall No.: **002**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Non-contact cooling water and stormwater**

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
0.145	160	8.11						

					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		300									
	Chloride (PWS)	mg/L		41									
	Bromide	mg/L		0.19									
	Sulfate (PWS)	mg/L		47									
	Fluoride (PWS)	mg/L		0.13									
Group 2	Total Aluminum	µg/L	<	70									
	Total Antimony	µg/L	<	2									
	Total Arsenic	µg/L	<	0.68									
	Total Barium	µg/L		87									
	Total Beryllium	µg/L	<	0.12									
	Total Boron	µg/L		54									
	Total Cadmium	µg/L		0.68									
	Total Chromium (III)	µg/L	<	0.55									
	Hexavalent Chromium	µg/L	<	6									
	Total Cobalt	µg/L	<	0.16									
	Total Copper	µg/L		3.4									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	8									
	Dissolved Iron	µg/L	<	20									
	Total Iron	µg/L		388									
	Total Lead	µg/L		4									
	Total Manganese	µg/L		210									
	Total Mercury	µg/L	<	0.079									
	Total Nickel	µg/L	<	0.4									
	Total Phenols (Phenolics) (PWS)	µg/L	<	3.5									
	Total Selenium	µg/L	<	0.28									
	Total Silver	µg/L	<	0.1									
	Total Thallium	µg/L	<	0.13									
	Total Zinc	µg/L		705									
	Total Molybdenum	µg/L		1.4									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

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

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

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

PPG Industries, Inc - Springdale, NPDES Permit No. PA0001198, Outfall 002

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Allgheny 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	042122	16.43	737	11,500			Yes
End of Reach 1	042122	13.52	728	11,600			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	16.43	0.1	2,390			722	18					81	7		
End of Reach 1	13.52	0.1	2,390			749	18								

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	16.43														
End of Reach 1	13.52														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

PPG Industries, Inc - Springdale, NPDES Permit No. PA0001198, Outfall 002

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.197 Analysis Hardness (mg/l): 81.038 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	1,574,985	
Total Antimony	0	0		0	1,100	1,100	2,309,978	
Total Arsenic	0	0		0	340	340	713,993	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	44,099,576	
Total Boron	0	0		0	8,100	8,100	17,009,836	
Total Cadmium	0	0		0	1.641	1.72	3,618	Chem Translator of 0.953 applied
Total Chromium (III)	0	0		0	479.633	1,518	3,187,403	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	34,216	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	199,498	
Total Copper	0	0		0	11.024	11.5	24,115	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	51.330	62.5	131,191	Chem Translator of 0.822 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	3,459	Chem Translator of 0.85 applied
Total Nickel	0	0		0	391.935	393	824,704	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	2.241	2.64	5,535	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	136,499	
Total Zinc	0	0		0	98.059	100	210,553	Chem Translator of 0.978 applied

CFC CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): 81.007 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	2,344,245	
Total Arsenic	0	0		0	150	150	1,598,349	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	43,688,205	
Total Boron	0	0		0	1,600	1,600	17,049,056	
Total Cadmium	0	0		0	0.212	0.23	2,467	Chem Translator of 0.918 applied
Total Chromium (III)	0	0		0	62.371	72.5	772,800	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	110,766	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	202,458	
Total Copper	0	0		0	7.481	7.79	83,032	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	15,983,490	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	1.999	2.43	25,928	Chem Translator of 0.822 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	9,653	Chem Translator of 0.85 applied
Total Nickel	0	0		0	43.518	43.6	465,109	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	53,163	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	138,524	
Total Zinc	0	0		0	98.829	100	1,068,045	Chem Translator of 0.986 applied

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

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	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	59,672	
Total Arsenic	0	0		0	10	10.0	106,557	
Total Barium	0	0		0	2,400	2,400	25,573,583	
Total Boron	0	0		0	3,100	3,100	33,032,545	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	

Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	3,196,698	
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	10,655,660	
Total Mercury	0	0		0	0.050	0.05	533	
Total Nickel	0	0		0	610	610	6,499,952	
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	2,557	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***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	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

Recommended WQBELs & Monitoring Requirements

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments

Other Pollutants without Limits or Monitoring

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	1,009,502	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	25,573,583	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	10,902,618	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	2,319	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	772,800	µg/L	Discharge Conc < TQL
Hexavalent Chromium	21,931	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	127,870	µg/L	Discharge Conc < TQL
Total Copper	15,456	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	3,196,698	µg/L	Discharge Conc < TQL
Total Iron	15,983,490	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	25,928	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	10,655,660	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	533	µg/L	Discharge Conc < TQL
Total Nickel	465,109	µg/L	Discharge Conc < TQL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	53,163	µg/L	Discharge Conc < TQL
Total Silver	3,548	µg/L	Discharge Conc < TQL
Total Thallium	2,557	µg/L	Discharge Conc < TQL
Total Zinc	134,956	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS

ATTACHMENT F
TRC Modeling Results for Outfall 002

TRC EVALUATION - Outfall 002

2,390	= Q stream (cfs)	0.5	= CV Daily
0.145	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	0.197	= 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	386.5	= 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 =	669.590	1.3.2.iii	WLA cfc =	3313.610
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	249.505	5.1d	LTA_cfc =	1926.378

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 G: Toxic Management Spreadsheet for Outfall 003

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **PPG Industries, Inc - Springdale** NPDES Permit No.: **PA0001198** Outfall No.: **003**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Non-contact cooling water and stormwater**

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
0.137	250	8.28						

					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		580									
	Chloride (PWS)	mg/L		91									
	Bromide	mg/L		0.34									
	Sulfate (PWS)	mg/L		140									
	Fluoride (PWS)	mg/L		0.24									
Group 2	Total Aluminum	µg/L		419									
	Total Antimony	µg/L	<	2									
	Total Arsenic	µg/L	<	0.68									
	Total Barium	µg/L		79									
	Total Beryllium	µg/L	<	0.12									
	Total Boron	µg/L		89									
	Total Cadmium	µg/L		0.24									
	Total Chromium (III)	µg/L	<	0.55									
	Hexavalent Chromium	µg/L	<	6									
	Total Cobalt	µg/L		3.6									
	Total Copper	µg/L		7									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	8									
	Dissolved Iron	µg/L	<	20									
	Total Iron	µg/L		967									
	Total Lead	µg/L		2									
	Total Manganese	µg/L		3200									
	Total Mercury	µg/L		0.11									
	Total Nickel	µg/L		6.4									
	Total Phenols (Phenolics) (PWS)	µg/L		3.6									
	Total Selenium	µg/L	<	0.28									
	Total Silver	µg/L	<	0.1									
	Total Thallium	µg/L	<	0.13									
	Total Zinc	µg/L		168									
	Total Molybdenum	µg/L		0.95									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

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

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

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Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

PPG Industries, Inc - Springdale, NPDES Permit No. PA0001198, Outfall 003

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Allgheny 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	042122	16.41	737	11,500			Yes
End of Reach 1	042122	13.52	728	11,600			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	16.41	0.1	2,390			722	18					81	7		
End of Reach 1	13.52	0.1	2,390			749	18								

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	16.41														
End of Reach 1	13.52														

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Toxics Management Spreadsheet
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Model Results

PPG Industries, Inc - Springdale, NPDES Permit No. PA0001198, Outfall 003

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.197 Analysis Hardness (mg/l): 81.076 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	1,669,778	
Total Antimony	0	0		0	1,100	1,100	2,449,007	
Total Arsenic	0	0		0	340	340	756,966	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	46,753,770	
Total Boron	0	0		0	8,100	8,100	18,033,597	
Total Cadmium	0	0		0	1.642	1.72	3,837	Chem Translator of 0.953 applied
Total Chromium (III)	0	0		0	479.819	1,518	3,380,549	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	36,275	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	211,505	
Total Copper	0	0		0	11.029	11.5	25,577	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	51.356	62.5	139,170	Chem Translator of 0.822 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	3,667	Chem Translator of 0.85 applied
Total Nickel	0	0		0	392.091	393	874,689	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	2.242	2.64	5,873	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	144,714	
Total Zinc	0	0		0	98.098	100	223,315	Chem Translator of 0.978 applied

CFC CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): 81.015 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	2,481,123	
Total Arsenic	0	0		0	150	150	1,691,674	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	46,239,102	
Total Boron	0	0		0	1,600	1,600	18,044,527	
Total Cadmium	0	0		0	0.213	0.23	2,611	Chem Translator of 0.918 applied
Total Chromium (III)	0	0		0	62.376	72.5	817,985	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	117,233	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	214,279	
Total Copper	0	0		0	7.481	7.79	87,887	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	16,916,744	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.000	2.43	27,446	Chem Translator of 0.822 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	10,216	Chem Translator of 0.85 applied
Total Nickel	0	0		0	43.522	43.7	492,305	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	56,267	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	146,612	
Total Zinc	0	0		0	98.837	100	1,130,497	Chem Translator of 0.986 applied

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

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	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	63,156	
Total Arsenic	0	0		0	10	10.0	112,778	
Total Barium	0	0		0	2,400	2,400	27,066,791	
Total Boron	0	0		0	3,100	3,100	34,961,272	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	

Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	3,383,349	
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	11,277,830	
Total Mercury	0	0		0	0.050	0.05	564	
Total Nickel	0	0		0	610	610	6,879,476	
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	2,707	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***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	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

Recommended WQBELs & Monitoring Requirements

No. Samples/Month: 4

Pollutants	*Mass Limits*		*Concentration Limits*				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			

Other Pollutants without Limits or Monitoring

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	1,070,260	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	27,066,791	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	11,558,808	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	2,459	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	817,985	µg/L	Discharge Conc < TQL
Hexavalent Chromium	23,251	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	135,566	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	16,394	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	3,383,349	µg/L	Discharge Conc < TQL
Total Iron	16,916,744	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	27,446	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	11,277,830	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	564	µg/L	Discharge Conc ≤ 10% WQBEL
Total Nickel	492,305	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	56,267	µg/L	Discharge Conc < TQL
Total Silver	3,765	µg/L	Discharge Conc < TQL
Total Thallium	2,707	µg/L	Discharge Conc < TQL
Total Zinc	143,136	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS