pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0098795**
Facility Type	**Industrial**	APS ID	**1081081**
Major / Minor	**Minor**	Authorization ID	**1427210**

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

Applicant and Facility Information

Applicant Name	**North Fayette County Municipal Authority**	Facility Name	**Wheeler Bottom Water Treatment Plant**
Applicant Address	1634 University Drive	Facility Address	899 Riverside Drive
	Dunbar, PA 15431		Connellsville, PA 15425
Applicant Contact	Kenny Martray	Facility Contact	Rusty Covington
Applicant Phone	724-626-1211	Facility Phone	724-628-5710
Applicant email	nfcmakm@zoominternet.com		nfcmarc@zoominternet.com
Client ID	8027	Site ID	257148
SIC Code	4941	Municipality	Dunbar Township
SIC Description	Trans. & Utilities - Water Supply	County	Fayette
Date Application Received	February 13, 2023	EPA Waived?	Yes
Date Application Accepted	February 17, 2023	If No, Reason	

Purpose of Application: Renewal NPDES Permit Coverage to Discharge Industrial Wastewater

Summary of Review

The Department received an NPDES permit renewal application from Herbert, Rowland and Grubic, Inc. on behalf of the North Fayette County Municipal Authority (NFCMA) on February 13, 2023 to continue coverage of the discharge from the Wheeler Bottom Water Treatment Plant in Dunbar Township, Fayette County. The facility is a potable water treatment plant with a SIC code of 4941 (Water Supply). The potable water treatment system includes chemical addition, clarification, mixed media filtration, solids thickening and dewatering, and disinfection. The discharges authorized under the permit consist of wastewater produced from the filter backwash process, sludge dewatering, and water from various drains, including stormwater.

The Wheeler Bottom Water Treatment plant is a conventional-type surface water filtration plant, with treatment consisting of chemical fed, rapid mix flocculation, sedimentation, filtration, pH adjustment, fluoridation and disinfection. Eight up-flow suspended solid contact clarifiers provide flocculation and clarification and are followed by four granular activated carbon filters and three mixed media filters. Most of the waste generated at the plant is produced during sludge withdrawal from the clarifiers and during the backwash of the filters. Sludge, which is collected in the bottom of the clarifiers, flows by gravity to a sludge thickener. The effluent from the thickener is sent to the head of the plant and the thickened sludge goes through a mechanical belt filter press. The backwash water produced during the backwash cycle from the filters is discharged to a backwash water settling tank. The settled sludge in the backwash water settling tank is sent to the sludge thickener and then the supernatant from the settling tank is discharged to the Youghiogheny River via Outfall 001.

The site has eight outfalls that all discharge to the Youghiogheny River, designated in the 25 PA Code Chapter 93 as a High Quality – Cold Water Fishery. The outfalls are Outfall 001, Outfall 002, and Outfalls 006 through Outfall 011. Outfall 001 discharges process wastewater that consists of filter backwash, sludge dewatering, waste from various drains, belt filter

Approve	Deny	Signatures	Date
X		Adam Olesnanik, P.E. / Environmental Engineer	8/17/2023
X		Michael E. Fifth, P.E. / Environmental Engineer Manager	8/18/2023

Summary of Review

press filtrate, finished water, claricone effluent and floor drains in the pump station. Outfall 002, 006, 007, 008, 009, and 011 are stormwater outfalls. Outfall 002 discharges stormwater runoff from the area south of the Pump Room. Outfall 006 discharges stormwater runoff from the claricone area and west side of the facility. Outfall 007 discharges stormwater from the north end of the facility. Outfall 008 discharges stormwater from the area between the Pump Room and the Backwash Water Storage tank. Outfall 009 discharges stormwater from the Pump Room/clear well room. Outfall 011 discharge stormwater from the bike trail near the storage tank area. Outfall 010 is an emergency discharge for the backwash water storage tank overflow. Outfalls 002, 006, and 008 can also discharge emergency overflows/maintenance discharges. Outfall 002 can discharge maintenance flow from the raw water well sump pump drain. Outfall 006 can discharge maintenance flow from the claricone drains. Outfall 008 can discharge maintenance drain flow from the Altitude Valve Vault drain. These emergency overflow/maintenance discharges are controlled by limitations and reporting requirements in a Part C condition in the current permit. The Part C condition requires for the discharge of vault, sump or pit drain water, during maintenance, to comply with the effluent limitations derived from the Department's TSD "Development of Technology-Based Control Requirements for Water Treatment Plant Wastes in Pennsylvania" and monitoring requirement for pollutants that are believed to be present in the effluent. The condition also requires the permittee to report the effluent values to the Department when there is a discharge to ensure compliance. However, after reviewing the current permit, the Department is proposing to impose limitations on these emergency overflows/maintenance discharges in Part A of the permit to be consistent with Department practices. The limitation will be consistent with what was required as part of the Part C condition but having the limitation in Part A will lead the reporting to be done with the Discharge Monitoring Reports. Outfalls 002, 006 and 008 also discharge stormwater, therefore, internal monitoring points (IMPs) will be used for the reporting requirements of the emergency overflows/maintenance discharge. IMP 102 will be the emergency overflows/maintenance discharges to Outfall 002. IMP 106 will be the emergency overflows/maintenance discharges to Outfall 006. IMP 108 will be the emergency overflows/maintenance discharges to Outfall 008. In the previous permit, the site had an additional outfall, Outfall 005. Outfall 005 discharged Stormwater runoff from the belt filter press area. The site no longer discharges stormwater from Outfall 005. Outfall 005 was decommissioned with the construction of the filter press building in the 1990s. Outfall 005 will be removed from the Permit.

Basis for Reconsideration of Anti-Degradation Effluent Limits

In the permit that was issued on July 12, 2018, an anti-degradation analysis was performed due to discharging to a High-Quality water, and non-degrading limits were imposed at Outfall 001. The anti-degradation analysis was conducted to address previous plant expansions that the Department did not address when the facility began using chemicals for water treatment around the year 1984. Due to comments and a request from NFCMA, the Department has made a determination to re-evaluate the site's discharges to determine if anti-degradation limits are applicable to the Outfall 001 discharges.

NFCMA Wheeler Bottom WTP has discharged WTP backwash water into the Youghiogheny River directly since filtration was installed between 1900 and 1910. The stream segment of Youghiogheny River from the Youghiogheny Dam to Connell Run was designated High-Quality on September 8, 1979. Any discharges existing prior to the HQ designation are exempt from anti-degradation requirements and considered to be "Grandfathered". Grandfathering is applicable only to the extent that the quality and quantity of the wastewater discharge remains unchanged.

In 1984, the NFCMA began to use chemicals for potable water treatment and in 2002 the NFCMA started using caustic soda as a balancer and stopped the use of lime. Although these plant modifications should have been evaluated for anti-degradation impacts at that time, these operational changes resulted in improved effluent quantity and quality. Improved operational practices are not a basis to impose additional anti-degradation restrictions. Additionally, in 1996, the NFCMA introduced a detention tank to allow the backwash water to settle before discharge. This change also aided in the treatment of the wastewater, which would decrease the concentration of the pollutants in the discharge. The Department believes that any beneficial changes that would increase the discharge quality wouldn't trigger a need for an evaluated for anti-degradation impacts. These plant modifications did not result in any new or increased pollutant discharges.

During the previous (2018) permit renewal, the Department conducted an anti-degradation evaluation of NFCMA's discharges and proposed several new anti-degradation limits based on the plant upgrades conducted in years' past. NFCMA did not submit any comments regarding these proposed limits during the Draft permit comment period. The Department speculates that the appetite to seek permit modifications for the Wheeler Bottom Facility was overshadowed by expectations that the plant would be abandoned in the near future; however, this is no longer the case. Nevertheless, the Department has decided to review the previous effluent limitation development for non-degrading limitations to ensure consistency with its Standard Operating Procedures.

Summary of Review

At the various times, when NFCMA implemented process changes (1984-2002), the Department did not conduct anti-degradation evaluations. Part of the reason for this oversight is presumed to be due to the lack of comprehensive guidance for anti-degradation evaluations at that time. The Department's current anti-degradation guidance was not formalized until 2003. Since the Department did not evaluate anti-degradation when the process changes originally occurred, the Department did, by default, approve the process changes and maintenance of the existing effluent limits as adequate and protective of the receiving waterway at that time. The Department's most recent anti-degradation evaluation associated with the 2018 permit renewal was conducted to rectify past Department oversight, not in response to a new or increased pollutant discharge. The Department now recognizes that evaluation was unnecessary in this case.

Although the Department always has the option of correcting past oversight and permitting omissions, the Department has determined that it was not appropriate to revisit the anti-degradation analysis nearly 35 years after the operational changes were made. Imposition of anti-degradation limitations so long after the plant process changes could result in an unexpected burden for the plant. If the Department intended to impose anti-degradation effluent limits due to various plant modifications, it should have done so at the time those modifications were proposed to ensure that all environmental obligations were known to the plant managers at the time of their investment in plant upgrades. It is also presumed that the adoption of chemical treatment and an additional detention tank actually served to improve the quality of effluent discharges thereby providing an argument against the imposition of more stringent effluent limits in accordance with the goals of PA's Anti-Degradation policies. This is yet another argument against the late application of said anti-degradation limits. Accordingly, the Department proposes to remove the anti-degradation limits that are in the current permit as part of this renewal application. However, the Department would like to note that any future upgrades or expansions to the Wheeler Bottom facility could trigger an anti-degradation analysis and the facility could receive new anti-degradation limitations.

Therefore, based on this review, the non-degrading effluent limitations imposed on the permit issued on July 12, 2018 will be removed from the permit renewal. Justification for this determination is provided in more detail within the Anti-Backsliding section of Outfall 001 in this Fact Sheet.

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)	0.275
Latitude	39º 59' 18"	Longitude	-79º 35' 33"
Quad Name	South Connellsville	Quad Code	1909
Wastewater Description:	Filter backwash and facility drain wastewater treated in the Backwash Water Settling Tank.		
Receiving Waters	Youghiogheny River	Stream Code	37456
NHD Com ID	69918837	RMI	46.81
Drainage Area	1280	Yield (cfs/mi^2)	0.359
Q_{7-10} Flow (cfs)	460	Q_{7-10} Basis	U.S. Army Corp of Engineers
Elevation (ft)	910	Slope (ft/ft)	0.0001
Watershed No.	19-D	Chapter 93 Class.	HQ-CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Municipal Authority of Westmoreland County Yough Plant		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	55.74
PWS RMI	46.3	Distance from Outfall (mi)	0.53

Discharge, Receiving Waters and Water Supply Information

Outfall No.	010	Design Flow (MGD)	0
Latitude	39° 59′ 15″	Longitude	-79° 35′ 28″
Quad Name	South Connellsville	Quad Code	1909
Wastewater Description:	Filter backwash water storage tank overflow		
Receiving Waters	Youghiogheny River	Stream Code	37456
NHD Com ID	69918837	RMI	46.85
Drainage Area	1280	Yield (cfs/mi^2)	0.359
Q_{7-10} Flow (cfs)	460	Q_{7-10} Basis	U.S. Army Corp of Engineers
Elevation (ft)	910	Slope (ft/ft)	0.0001
Watershed No.	19-D	Chapter 93 Class.	HQ-CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Municipal Authority of Westmoreland Co.		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	55.74
PWS RMI	46.3	Distance from Outfall (mi)	< 1 mile

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002, 006 – 009, and 011	Design Flow (MGD)	0
Latitude	See Table 1	Longitude	See Table 1
Quad Name	South Connellsville	Quad Code	1909
Wastewater Description:	Storm Water Runoff from plant area (Emergency Overflows/Maintenance Discharges to Outfall 002, 006 and 008)		
Receiving Waters	Youghiogheny River	Stream Code	37456
NHD Com ID	69918837	RMI	See Table 1
Drainage Area	1280	Yield (cfs/mi^2)	0.359
Q_{7-10} Flow (cfs)	460	Q_{7-10} Basis	U.S. Army Corp of Engineers
Elevation (ft)	910	Slope (ft/ft)	0.0001
Watershed No.	19-D	Chapter 93 Class.	HQ-CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Municipal Authority of Westmoreland Co.		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	55.74
PWS RMI	46.3	Distance from Outfall (mi)	< 1 mile

Outfall 005 has been removed from the permit.

IMPs 102, 106, and 108 have been added to monitor the emergency overflows/maintenance discharges from Outfalls 002, 006 and 008, respectively.

The USGS Stream Stats Data for the drainage area is displayed in Attachment A.

Outfall locations for the above-mentioned outfalls are displayed below in Table 1.

Table 1: Outfall Locations

Outfall	Lat.	Long.	RMI	Stream
002	39° 59′ 17″	-79° 35′ 31″	46.82	Youghiogheny River
006	39° 59′ 19″	-79° 35′ 33″	46.80	Youghiogheny River
007	39° 59′ 20″	-79° 35′ 34″	46.78	Youghiogheny River
008	39° 59′ 16″	-79° 35′ 29″	46.83	Youghiogheny River
009	39° 59′ 17″	-79° 35′ 31″	46.82	Youghiogheny River
011	39° 59′ 15″	-79° 35′ 28″	46.85	Youghiogheny River

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.275
Latitude 39º 59' 18" **Longitude** -79º 35' 33"
Wastewater Description: Filter backwash and facility drain wastewater treated in the Backwash Water Settling Tank.

Technology-Based Limitations

The Wheeler Bottom Water Treatment Plant is not subject to Federal Effluent Limitation Guidelines (ELGs) as the SIC code is not listed under 40 CFR parts 405 through 471.

Regulatory Effluent Standards and Monitoring Requirements

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1) which is displayed in Table 2 below.

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code §§ 95.2(1) which is displayed in Table 2 below.

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 which is displayed in Table 2 below.

Table 2. Regulatory Effluent Standards

Parameter	Monthly Avg	Daily Max	IMAX
Flow (MGD)	Monitor	Monitor	----
pH (S.U.)	6.0 – 9.0 at all times	----	----
TRC (mg/L)	0.5	----	1.6

Best Practicable Control Technology Currently Achievable (BPT)

BPT for wastewater from treatment of WTP sludges and filter backwash is found in DEPs Technology-Based Control Requirements for Water Treatment Plant Wastes Document which falls under Best Professional Judgement under 40 CFR § 125.3 and the limits imposed are displayed in Table 3 below.

Table 3. BPT Limits for WTP sludge and filter backwash wastewater

Parameter	Monthly Avg (mg/l)	Daily Max (mg/l)
Suspended solids	30.0	60.0
Iron (total)	2.0	4.0
Aluminum (total)	4.0	8.0
Manganese (total)	1.0	2.0
Flow MGD	Monitor	----
pH (S.U.)	6.0 – 9.0 at all times	
Total Residual Chlorine	0.5	1.0

Water Quality-Based Limitations

Toxics Management Spread Sheet

The Department of Environmental Protection (DEP) has developed the DEP Toxics Management Spreadsheet (“TMS”) to facilitate calculations necessary for completing a reasonable potential (RP) analysis and determining water quality-based effluent limitations for discharges of toxic pollutants. The Toxics Management Spreadsheet is a macro-enabled Excel binary file that combines the functions of the PENTOXSD model and the Toxics Screening Analysis spreadsheet to evaluate the reasonable potential for discharges to cause excursions above water quality standards and to determine WQBELs. The Toxics Management Spread Sheet is a single discharge, mass-balance water quality calculation spread sheet that includes consideration for mixing, first-order decay and other factors to determine recommended WQBELs for

toxic substances and several non-toxic substances. Required input data including stream code, river mile index, elevation, drainage area, discharge name, NPDES permit number, discharge flow rate and the discharge concentrations for parameters in the permit application or in DMRs, which are entered into the spread sheet to establish site-specific discharge conditions. Other data such as low flow yield, reach dimensions and partial mix factors may also be entered to further characterize the conditions of the discharge and receiving water. Discharge concentrations for the parameters are chosen to represent the "worst case" quality of the discharge (i.e., maximum reported discharge concentrations). The spread sheet then evaluates each parameter by computing a Waste Load Allocation for each applicable criterion, determining a recommended maximum WQBEL and comparing that recommended WQBEL with the input discharge concentration to determine which is more stringent. Based on this evaluation, the Toxics Management Spread sheet recommends average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for Outfall 001

Discharges from Outfall 001 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are entered into the Toxics Management Spread Sheet. The maximum reported value of the parameters from the application form or from previous DMRs is used as the input concentration in the Toxics Management Spread Sheet. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion are considered to be pollutants of concern. [This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion]. The Toxics Management Spread Sheet is run with the discharge and receiving stream characteristics shown in Table 4. For IW discharges, the design flow used in modeling is the average flow during production or operation taken from the permit application. Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis. All the parameters are evaluated using the model to determine the water quality-based effluent limits applicable to the discharge and the receiving stream. The spreadsheet then compares the reported discharge concentrations to the calculated water quality-based effluent limitations to determine if a reasonable potential exists to exceed the calculated WQBELs. Effluent limitations are established in the draft permit where a pollutant's maximum reported discharge concentration equals or exceeds 50% of the WQBEL. For non-conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 25% - 50% of the WQBEL. For conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 10% - 50% of the WQBEL. The information described above including the maximum reported discharge concentrations, the most stringent water quality criteria, the pollutant-of-concern (reasonable potential) determinations, the calculated WQBELs, and the WQBEL/monitoring recommendations are displayed in the Toxics Management Spread Sheet in Attachment B of this Fact Sheet. Based on the TMS, no water quality-based effluent limitations or monitoring requirements are recommended.

Table 4: TMS Inputs for Outfall 001

Parameter	**Value**
River Mile Index	46.81
Discharge Flow (MGD)	1.97
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	1,280
Q_{7-10} (cfs)	460
Low-flow yield (cfs/mi^2)	0.3359
Elevation (ft)	910
Slope	0.0001

Total Residual Chlorine

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

Anti-Degradation

NFCMA is not proposing any additional or increased discharges from its Wheeler Bottom facility at this time; therefore, a non-degrading limitation evaluation will not be performed.

Anti-Backsliding

40 CFR 122.44(l)(2) requires that a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit. Notably, there are several exceptions to this requirement including where the Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b).

In accordance with the Department's Standard Operating Procedures for New and Reissued Individual NPDES permits, the Department's Application Manager will conduct an anti-degradation evaluation for discharges to High Quality (HQ) or Exceptional Value (EV) streams only when there is a new or increased discharge to the HQ or EV waters. The previous (2018) NPDES renewal did not include any new or increased discharges to High-Quality or Exceptional Value waters. NFCMA did not propose any additional or increased discharges from its Wheeler Bottom facility during the most recent permitting action. Therefore, antidegradation analyses were not justified at the time of the 2018 permit renewal action. Therefore, based on technical mistakes or mistaken interpretations of law, the non-degrading limitation that were imposed during the last permit renewal are being removed from the permit renewal.

Table 5: Previous Effluent Limitation for Outfall 001

Parameters	Mass (lb/day)		Concentration				Monitoring Requirements	
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/Month	Measure
Total Suspended Solids (mg/L)	XXX	XXX	XXX	8.60	13.40	XXX	2/Month	Grab
Total Residual Chlorine (mg/L)	XXX	XXX	XXX	0.5	1.0	XXX	2/Month	Grab
Total Aluminum (mg/L)	XXX	XXX	XXX	0.33	0.54	XXX	2/Month	Grab
Total Iron (mg/L)	XXX	XXX	XXX	2.0	4.0	XXX	2/Month	Grab
Total Manganese (mg/L)	XXX	XXX	XXX	1.0	2.0	XXX	2/Month	Grab
Fluoride (mg/L)	XXX	XXX	XXX	Report	Report	XXX	2/Month	Grab
Zinc (µg/L)	XXX	XXX	XXX	17.20	26.80	XXX	2/Month	Grab
Total Copper (µg/L)	XXX	XXX	XXX	6.88	10.72	XXX	2/Month	Grab
Total Lead (µg/L)	XXX	XXX	XXX	1.72	2.68	XXX	2/Month	Grab
Total Phosphorous (mg/L)	XXX	XXX	XXX	0.02	0.03	XXX	2/Month	Grab
pH (S.U.)	XXX	XXX	6.0	XXX	9.0	XXX	2/Month	Grab

Final Effluent Limitations for Outfall 001

The final effluent limitations and monitoring requirements for Outfall 001 are shown below in Table 6. The monitoring frequency will remain the same as the current permit, twice per month.

Table 6: Final Effluent Limitation for Outfall 001

Parameters	Mass (lb/day)		Concentration				Monitoring Requirements	
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/Month	Measure
Total Suspended Solids (mg/L)	XXX	XXX	XXX	30.0	60.0	XXX	2/Month	Grab
Total Residual Chlorine (mg/L)	XXX	XXX	XXX	0.5	1.0	XXX	2/Month	Grab
Total Aluminum (mg/L)	XXX	XXX	XXX	4.0	8.0	XXX	2/Month	Grab
Total Iron (mg/L)	XXX	XXX	XXX	2.0	4.0	XXX	2/Month	Grab
Total Manganese (mg/L)	XXX	XXX	XXX	1.0	2.0	XXX	2/Month	Grab
Fluoride (mg/L)	XXX	XXX	XXX	Report	Report	XXX	2/Month	Grab
Zinc (mg/L)	XXX	XXX	XXX	Report	Report	XXX	2/Month	Grab
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	2/Month	Grab

Development of Effluent Limitations

Outfall No. 010 **Design Flow (MGD)** 0
Latitude 39º 59' 15" **Longitude** -79º 35' 28"
Wastewater Description: Filter backwash water storage tank overflow

IMP No. 102, 106, and 108 **Design Flow (MGD)** 0
Latitude See Corresponding Outfall in Table 1 **Longitude** See Corresponding Outfall in Table 1
Wastewater Description: Emergency Overflows/Maintenance Discharges

Technology-Based Limitations

The Wheeler Bottom Water Treatment Plant is not subject to Federal Effluent Limitation Guidelines (ELGs) as the SIC code is not listed under 40 CFR parts 405 through 471.

Regulatory Effluent Standards and Monitoring Requirements

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1) which is displayed in Table 7 below.

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code §§ 95.2(1) which is displayed in Table 7 below.

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 which is displayed in Table 7 below.

Table 7. Regulatory Effluent Standards

Parameter	Monthly Avg	Daily Max	IMAX
Flow (MGD)	Monitor	Monitor	----
pH (S.U.)	6.0 – 9.0 at all times	----	----
TRC (mg/L)	0.5	----	1.6

Best Practicable Control Technology Currently Achievable (BPT)

BPT for wastewater from treatment of WTP wastewater is found in DEPs Technology-Based Control Requirements for Water Treatment Plant Wastes Document which falls under Best Professional Judgement under 40 CFR § 125.3 and the limits imposed are displayed in Table 8 below.

Table 8. BPT Limits for WTP wastewater

Parameter	Monthly Avg (mg/l)	Daily Max (mg/l)
Suspended solids	30.0	60.0
Iron (total)	2.0	4.0
Aluminum (total)	4.0	8.0
Manganese (total)	1.0	2.0
Flow MGD	Monitor	----
pH (S.U.)	6.0 – 9.0 at all times	
Total Residual Chlorine	0.5	1.0

Water Quality-Based Limitations

A water quality analysis was not conducted for the discharges from the Emergency Overflows/Maintenance Discharges because the discharges are not expected to occur and have not occurred within the past five years, and no data for these discharges are available.

Anti-Degradation

NFCMA is not proposing any additional or increased discharges from its Wheeler Bottom facility at this time; therefore, a non-degrading limitation evaluation will not be performed.

Anti-Backsliding

The discharge from these outfalls are the emergency overflows or maintenance discharges from the water treatment plant. In the current permit, limits from the Department's TSD "Development of Technology-Based Control Requirements for Water Treatment Plant Wastes in Pennsylvania" and monitoring requirement for pollutants that are believed to be in the effluent must be met for any discharge from these outfalls. The Limitations and Monitoring requirements were not included in Part A of the permit but were controlled via a Part C condition requiring the submission of a form containing the discharge concentrations if discharges occurred. To be consistent with Department Practices, the Limitations will now be included in Part A of the permit and the Part C condition will be removed.

Table 9: Current Effluent Limitation for the Emergency Overflows/Maintenance Discharges for Outfall 002, 006, 008, and 010

Parameters	Mass (lb/day)		Concentration				Monitoring Requirements	
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Frequency	Sample Type *
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/Discharge	Estimate
Duration (Hours)	XXX	XXX	XXX	XXXX	Report	XXX	Continuous	Recorded
Total Suspended Solids (mg/L)	XXX	XXX	XXX	XXX	60.0	XXX	2/Discharge	Grab
Oil and Grease (mg/L)	XXX	XXX	XXX	XXX	Report	XXX	2/Discharge	Grab
Total Residual Chlorine (mg/L)	XXX	XXX	XXX	XXX	1.0	XXX	2/Discharge	Grab
Total Aluminum (mg/L)	XXX	XXX	XXX	XXX	8.0	XXX	2/Discharge	Grab
Total Iron (mg/L)	XXX	XXX	XXX	XXX	4.0	XXX	2/Discharge	Grab
Total Manganese (mg/L)	XXX	XXX	XXX	XXX	2.0	XXX	2/Discharge	Grab
Fluoride (mg/L)	XXX	XXX	XXX	XXX	Report	XXX	2/Discharge	Grab
Zinc (mg/L)	XXX	XXX	XXX	XXX	Report	XXX	2/Discharge	Grab
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	2/Discharge	Grab

* *One grab is to be collected from the onset of the discharge; the second at the midpoint of the discharge. The results of any single grab sample must comply with the instantaneous maximum limitation. Samples shall be taken from the discharge before mixing with any other water.*

Final Effluent Limitations for Outfall 010, IMPs 102, 106, and 108

The final effluent limitations and monitoring requirements for Outfall 010 and IMPs 102, 106, and 108 are shown below in Table 10. The monitoring frequency will remain the same as the current permit, twice per month.

Table 10: Final Effluent Limitation for Outfall 010 and IMPs 102, 106, and 108

Parameters	Mass (lb/day)		Concentration				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Frequency	Sample Type*
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/Discharge	Estimate
Duration (Hours)	XXX	XXX	XXX	XXXX	Report	XXX	Continuous	Recorded
Total Suspended Solids (mg/L)	XXX	XXX	XXX	30.0	60.0	XXX	2/Discharge	Grab
Oil and Grease (mg/L)	XXX	XXX	XXX	XXX	Report	XXX	2/Discharge	Grab
Total Residual Chlorine (mg/L)	XXX	XXX	XXX	0.5	1.0	XXX	2/Discharge	Grab
Total Aluminum (mg/L)	XXX	XXX	XXX	4.0	8.0	XXX	2/Discharge	Grab
Total Iron (mg/L)	XXX	XXX	XXX	2.0	4.0	XXX	2/Discharge	Grab
Total Manganese (mg/L)	XXX	XXX	XXX	1.0	2.0	XXX	2/Discharge	Grab
Fluoride (mg/L)	XXX	XXX	XXX	Report	Report	XXX	2/Discharge	Grab
Zinc (mg/L)	XXX	XXX	XXX	Report	Report	XXX	2/Discharge	Grab
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	2/Discharge	Grab

* *One grab is to be collected from the onset of the discharge; the second at the midpoint of the discharge. Samples shall be taken from the discharge before mixing with any other water.*

Development of Effluent Limitations

Outfall No. 002, 006 – 009, and 011 **Design Flow (MGD)** 0
Latitude See Table 1 **Longitude** See Table 1
Wastewater Description: Stormwater

Technology-Based Limitations

The Stormwater Outfalls will be subjected to the monitoring requirements in Appendix J of the PAG-03 General Stormwater Permit as a minimum requirement because the outfall receives stormwater. The SIC code for the site is 4941 and the corresponding appendix that would apply to the facility is Appendix J of the PAG-03 and the reporting requirements are in Table 11 below.

Table 11: PAG-03 Appendix J Monitoring Requirements

Parameters	Mass (lb/day)		Concentration (mg/l)			
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum
Total Nitrogen	XXX	XXX	XXX	XXX	Report	XXX
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX
Total Suspended Solids (TSS)	XXX	XXX	XXX	XXX	Report	XXX
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX
Chemicals Oxygen Demand (COD)	XXX	XXX	XXX	XXX	Report	XXX

Water Quality-Based Limitations

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

Anti-Degradation

The site and stormwater discharges existed prior to the HQ designation of the stream and no changes have been made to the discharge. Therefore, anti-degrading limits for the stormwater outfalls are not proposed.

Anti-Backsliding

The limits in Table 12 below are from the current permit and are based on information that was provided in the previous permit application.

Table 12: Current Monitoring Requirements for Stormwater Outfalls 002, 006-009, and 011

Parameters	Mass (lb/day)		Concentration (mg/l)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Frequency	Sample Type
Total Suspended Solids (TSS)	XXX	XXX	XXX	XXX	Report	XXX	1/6 Month	Grab
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	1/6 Month	Grab
Total Zinc	XXX	XXX	XXX	XXX	Report	XXX	1/6 Month	Grab

Final Effluent Limitations

The proposed effluent monitoring requirements for Outfalls 002, 006 -009 and 011 are displayed in Table 13 below, they are the most stringent values from the above effluent limitation development. The Draft Permit requires a Corrective Action Plan when there are two consecutive exceedances of the benchmark values, which are also included in the Part C condition. The benchmark values are displayed below in Table 30. 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 13: Proposed Effluent Monitoring Requirements – Outfalls 002, 006-009, and 011

Parameter	Max Daily Concentration	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
Total Nitrogen *	Report	XXX	1/6 Months	Calculation
Total Phosphorus	Report	XXX	1/6 Months	Grab
Total Suspended Solids (TSS)	Report	100	1/6 Months	Grab
Oil and Grease	Report	30	1/6 Months	Grab
pH (S.U.)	Report	9.0	1/6 Months	Grab
Chemical Oxygen Demand (COD)	Report	120	1/6 Months	Grab
Total Zinc	Report	XXX	1/6 Months	Grab

*Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO_2+NO_3-N), where TKN and NO_2+NO_3-N are measured in the same sample.

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment **B**)
☒	TRC Model Spreadsheet (see Attachment **C**)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 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, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 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, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:

Attachments

Attachment A: Stream Stats Drainage Area
Attachment B: Toxics Management Spreadsheet for Outfall 001
Attachment C: TRC Evaluation Model for Outfall 001
Attachment D: Anti-Backsliding Regulations
Attachment E: Site Plan
Attachment F: Site Process Flow Diagram

Attachment A:
Stream Stats Drainage Area

StreamStats Report

Region ID: PA
Workspace ID: PA20230418183310643000
Clicked Point (Latitude, Longitude): 39.98983, -79.59303
Time: 2023-04-18 14:33:33 -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	1280	square miles
FOREST	Percentage of area covered by forest	72.6459	percent
PRECIP	Mean Annual Precipitation	45	inches
URBAN	Percentage of basin with urban development	1.4153	percent

Attachment B:
Toxic Management Spreadsheet for Outfall 001

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Wheeler Bottom WTP** NPDES Permit No.: **PA0098795** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **WTP Filter Backwash Wastewater**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
1.97	42.6	7.29						

					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		92									
	Chloride (PWS)	mg/L		23.9									
	Bromide	mg/L	<	0.1									
	Sulfate (PWS)	mg/L		21.8									
	Fluoride (PWS)	mg/L		0.38									
Group 2	Total Aluminum	µg/L		550									
	Total Antimony	µg/L	<	2									
	Total Arsenic	µg/L	<	2									
	Total Barium	µg/L		31.7									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L	<	100									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	2									
	Hexavalent Chromium	µg/L		0.05									
	Total Cobalt	µg/L	<	1									
	Total Copper	µg/L		5									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L		10									
	Dissolved Iron	µg/L	<	20									
	Total Iron	µg/L		330									
	Total Lead	µg/L		3									
	Total Manganese	µg/L		380									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		3.46									
	Total Phenols (Phenolics) (PWS)	µg/L		5									
	Total Selenium	µg/L	<	5									
	Total Silver	µg/L	<	0.4									
	Total Thallium	µg/L	<	2									
	Total Zinc	µg/L		21.9									
	Total Molybdenum	µg/L		2									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Wheeler Bottom WTP, NPDES Permit No. PA0098795, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: **Youghiogheny**

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	037456	46.81	910	1280			Yes
End of Reach 1	037456	46.3	875	1281		30	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	46.81	0.359	460			300	10					100	7		
End of Reach 1	46.3	0.359	460			300	10								

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	46.81														
End of Reach 1	46.3														

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Wheeler Bottom WTP, NPDES Permit No. PA0098795, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.666 Analysis Hardness (mg/l): 99.435 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	76,200	
Total Antimony	0	0		0	1,100	1,100	111,759	
Total Arsenic	0	0		0	340	340	34,544	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	2,133,589	
Total Boron	0	0		0	8,100	8,100	822,956	
Total Cadmium	0	0		0	2.003	2.12	215	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	567.126	1,795	182,341	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	1,655	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	9,652	
Total Copper	0	0		0	13.368	13.9	1,415	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	64.184	81.1	8,235	Chem Translator of 0.792 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	167	Chem Translator of 0.85 applied
Total Nickel	0	0		0	465.997	467	47,440	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	3.186	3.75	381	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	6,604	
Total Zinc	0	0		0	116.619	119	12,115	Chem Translator of 0.978 applied

☑ *CFC* CCT (min): 33.768 PMF: 1 Analysis Hardness (mg/l): 99.622 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	33,427	
Total Arsenic	0	0		0	150	150	22,791	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	622,950	
Total Boron	0	0		0	1,600	1,600	243,102	
Total Cadmium	0	0		0	0.245	0.27	41.0	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	73.885	85.9	13,054	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	1,579	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	2,887	
Total Copper	0	0		0	8.927	9.3	1,413	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	227,908	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.506	3.17	481	Chem Translator of 0.792 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	138	Chem Translator of 0.85 applied
Total Nickel	0	0		0	51.840	52.0	7,900	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	758	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	1,975	
Total Zinc	0	0		0	117.761	119	18,146	Chem Translator of 0.986 applied

☑ *THH* CCT (min): 33.768 THH PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A PWS PMF: 1

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	75,969,469	WQC applied at RMI 46.3 with a design stream flow of 460 cfs
Chloride (PWS)	0	0		0	250,000	250,000	37,984,735	WQC applied at RMI 46.3 with a design stream flow of 460 cfs
Sulfate (PWS)	0	0		0	250,000	250,000	37,984,735	WQC applied at RMI 46.3 with a design stream flow of 460 cfs
Fluoride (PWS)	0	0		0	2,000	2,000	303,878	WQC applied at RMI 46.3 with a design stream flow of 460 cfs
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	851	
Total Arsenic	0	0		0	10	10.0	1,519	
Total Barium	0	0		0	2,400	2,400	364,653	
Total Boron	0	0		0	3,100	3,100	471,011	
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	45,582	
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	151,939	
Total Mercury	0	0		0	0.050	0.05	7.6	
Total Nickel	0	0		0	610	610	92,683	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	760	WQC applied at RMI 46.3 with a design stream flow of 460 cfs
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	36.5	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ *CRL* CCT (min): 15.153 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)	75,969	mg/L	Discharge Conc ≤ 10% WQBEL
Chloride (PWS)	37,985	mg/L	Discharge Conc ≤ 10% WQBEL
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	37,985	mg/L	Discharge Conc ≤ 10% WQBEL
Fluoride (PWS)	304	mg/L	Discharge Conc ≤ 10% WQBEL
Total Aluminum	48,841	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	364,653	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	243,102	µg/L	Discharge Conc < TQL
Total Cadmium	41.0	µg/L	Discharge Conc < TQL
Total Chromium (III)	13,054	µg/L	Discharge Conc < TQL
Hexavalent Chromium	1,061	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	2,887	µg/L	Discharge Conc < TQL
Total Copper	907	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	45,582	µg/L	Discharge Conc < TQL
Total Iron	227,908	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	481	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	151,939	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	7.6	µg/L	Discharge Conc < TQL
Total Nickel	7,900	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)	760	µg/L	Discharge Conc ≤ 10% WQBEL
Total Selenium	758	µg/L	Discharge Conc < TQL
Total Silver	244	µg/L	Discharge Conc < TQL
Total Thallium	36.5	µg/L	Discharge Conc < TQL
Total Zinc	7,765	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS

Attachment C:
TRC Evaluation Model for Outfall 001

TRC EVALUATION

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

Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	**1.3.2.iii**	WLA afc =	24.094	**1.3.2.iii**	WLA cfc =	23.482
PENTOXSD TRG	**5.1a**	LTAMULT afc =	0.373	**5.1c**	LTAMULT cfc =	0.581
PENTOXSD TRG	**5.1b**	LTA_afc=	8.978	**5.1d**	LTA_cfc =	13.651

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

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

Attachment D:
Anti-Backsliding Regulations

Anti-Backsliding Regulations

40 CFR § 122.44 Establishing limitations, standards, and other permit conditions

(l) *Reissued permits.*

(1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under § 122.62.)

(2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.

(i) Exceptions - A permit with respect to which paragraph (l)(2) of this section applies may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant, if -

(A) Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation;

(B)(*1*) Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or

(2) The Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b);

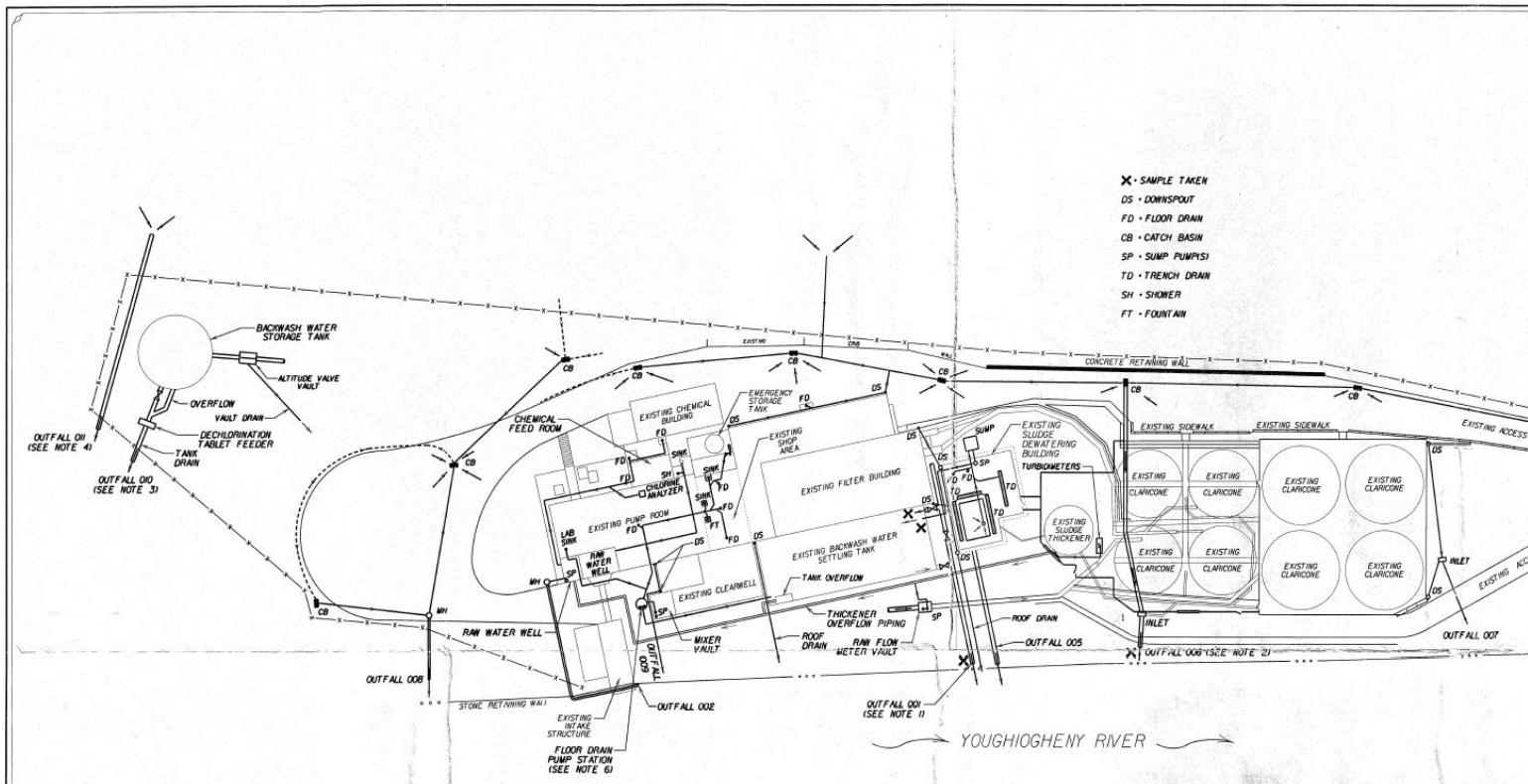
(C) A less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy;

(D) The permittee has received a permit modification under section 301(c), 301(g), 301(h), 301(i), 301(k), 301(n), or 316(a); or

(E) The permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit and has properly operated and maintained the facilities but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

(ii) *Limitations.* In no event may a permit with respect to which paragraph (l)(2) of this section applies be renewed, reissued, or modified to contain an effluent limitation which is less stringent than required by effluent guidelines in effect at the time the permit is renewed, reissued, or modified. In no event may such a permit to discharge into waters be renewed, issued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of a water quality standard under section 303 applicable to such waters.

Attachment E:
Site Plan



OUTFALLS		
OUTFALL *	LATITUDE (NORTH)	LONGITUDE (WEST)
001	39°59'18"	79°35'33"
002	39°59'17"	79°35'31"
005	39°59'18"	79°35'33"
006	39°59'19"	79°35'33"
007	39°59'20"	79°35'34"
008	39°59'16"	79°35'29"
009	39°59'17"	79°35'31"
010	39°59'15"	79°35'28"
011	39°59'15"	79°35'28"

WIDMER ENGINEERING INC.
CONSULTING ENGINEERS
225 West Crawford Avenue, Connellsville, PA 15425

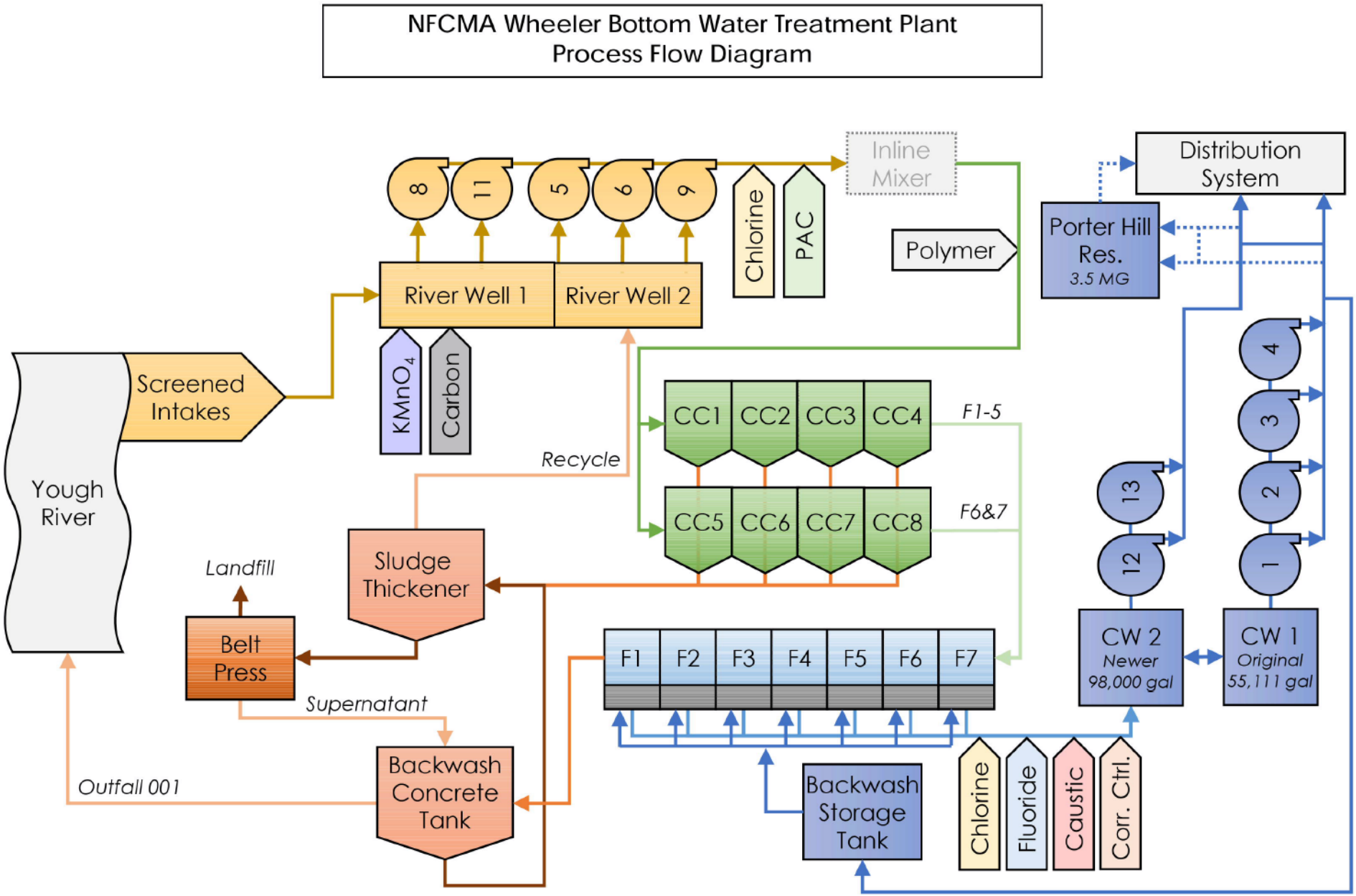
REVISIONS
DATE TYPE

THE NORTH AUTHORITY

SI STORM

FAYETTE COUNTY

Attachment F:
Site Process Flow Diagram


NFCMA Wheeler Bottom Water Treatment Plant
Process Flow Diagram
Yough River
Screened Intakes
8
11
5
6
9
Inline Mixer
Chlorine
PAC
Polymer
Distribution System
Porter Hill Res.
3.5 MG
River Well 1
River Well 2
KMnO4
Carbon
CC1
CC2
CC3
CC4
CC5
CC6
CC7
CC8
F1-5
F6&7
Recycle
Sludge Thickener
Landfill
Belt Press
Supernatant
Outfall 001
Backwash Concrete Tank
F1
F2
F3
F4
F5
F6
F7
Backwash Storage Tank
Chlorine
Fluoride
Caustic
Corr. Ctrl.
4
3
2
1
13
12
CW 2
Newer
98,000 gal
CW 1
Original
55,111 gal