Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0110655**
Facility Type	**Industrial**	APS ID	**1144737**
Major / Minor	**Minor**	Authorization ID	**1549813**

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

Applicant and Facility Information

Applicant Name	**North American Höganäs, Inc.**	Facility Name	**North American Höganäs**
Applicant Address	111 Höganäs Way	Facility Address	111 Höganäs Way
	Hollsopple, PA 15935-6416		Hollsopple, PA 15935-6416
Applicant Contact	David Johnson	Facility Contact	Same as applicant
Applicant Phone	(814) 479-3520	Facility Phone	Same as applicant
Client ID	79754	Site ID	245766
SIC Code	3399	Municipality	Quemahoning Township
SIC Description	Manufacturing - Primary Metal Products, Not Elsewhere Classified	County	Somerset
Date Application Received	August 29, 2025	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: Renewal of NPDES Permit Coverage

Summary of Review

The Department received a renewal NPDES permit application from North American Höganäs (NAH) on August 29, 2025 to continue coverage of its facility in Hollsopple, PA. The site manufactures iron metal powders and stainless-steel metal powder for the primary metal industry. Powders are produced by melting scrap or virgin raw materials in either an electric arc furnace or induction furnaces. Molten metal is then atomized using high-pressure water to convert to powder. Powder is then dried, screened to desired fraction, annealed in annealing furnaces, blended and packaged for shipment. The site's primary SIC is 3399 (Primary Metal Products).

The site has eleven (11) outfalls, Outfalls 002-010, Outfall 013, and Outfall 014. Outfalls 002, 006, 007, 010, and 014 discharge to Stonycreek River, designated in 25 Pa Code Chapter 93 as a trout stocking fishery (TSF). Outfalls 003, 004, 005, 008, and 009 discharge to Quemahoning Creek, designated in Pa Code Chapter 93 as a cold-water fishery (CWF). Outfall 013 discharges to an unnamed tributary to Quemahoning Creek, designated in Pa Code Chapter 93 as a cold-water fishery (CWF).

Outfall 002 discharges non-contact cooling water that is used to cool facility equipment such as the electric arc furnace (EAF), ladle metallurgy furnace (LMF), and annealing furnaces. Although most NCCW is recirculated, some will discharge based on temperature regulations and if the system gets too full. The NCCW that discharges overflows from an internal recirculating pit at the north end of the facility into a small catch basin outside and then runs via pipeline to Outfall 002.

Outfall 003 discharges stormwater from the southeast side of the facility consisting of an internal roadway, parking area, scrap receiving area and roof drainage; the drainage area of this outfall is about 8.77 acres.

Approve	Deny	Signatures	Date
X		Jamie Ley / Environmental Engineering Specialist	December 9, 2025
X		Michael E. Fifth, P.E. / Environmental Engineer Manager	December 9, 2025

Summary of Review

Outfall 004 discharges stormwater from the southeast side of the facility which consists of an internal roadway, parking area, and roof drainages; the drainage area of this outfall is about 3.21 acres.

Outfall 005 discharges uncontaminated stormwater from a small area near the sewage treatment plant; the drainage are of this outfall is about 4.1 acres.

Outfall 006 discharges stormwater from the west side of the facility which consists of an internal roadway, large parking area, shipping docks, and facility roof drainage; the drainage area of this outfall is about 5.51 acres.

Outfall 007 is a combined outfall which discharges stormwater from the northern side of the facility which mainly consists of scrap storage and the onsite slag processing facility; the drainage area of this outfall is about 105.25 acres. Outfall 007 also receives the discharge from Outfall 014 (IMP 114 and IMP 214) at a small culvert located at the slag processing area.

Outfall 008 discharges uncontaminated stormwater from a grassy area located approximately 100 yards west of the facility near the pump house; the drainage area of this outfall is about 1.76 acres.

Outfall 009 discharges uncontaminated stormwater from a grassy hillside west of the facility near Abex Road that leads to the facility; the drainage area of this outfall is about 1.65 acres.

Outfall 010 discharges stormwater from a grassy area north of Outfall 007 near the slag processing facility and near the railroad tracks that deliver scrap to the facility; the drainage area of this outfall is about 1.95 acres.

Outfall 013 discharges uncontaminated stormwater from a wooded and grassy area across Abex Road approximately 200 yards from the facility grounds; the drainage area of this outfall is about 22.04 acres.

Outfall 014 discharges the reject water from the reverse osmosis (RO) unit and non-contact cooling water from the atomization process heat exchanger. Raw water from the Quemahoning dam is brought to the facility and filtered. It is then sent through the RO unit. About 65% is used in the facility and 35% is rejected to Outfall 014. The discharge from the RO unit is monitored internally at IMP 114. IMP 214 discharges non-contact cooling water used in the atomization process heat exchanger. Outfall 014 discharges to a drainage ditch along the hillside at the edge of the site. The wastewater discharged from Outfall 014 then flows in this drainage ditch along the hillside where it is collected in a culvert that combines with the Outfall 007 discharge pipeline where it is eventually discharged to Stonycreek River.

Scrap material delivered by truck or rail is off loaded outdoors on irregular shaped piles primarily within the drainage area of Outfall 007. These materials vary considerably in size, shape, and contents. Mobile crane and trucks primarily accomplish material handling. The storage areas are unpaved. Some of the types of scrap materials purchased for melt stock are primarily comprised of clean, low residual grade scrap such as bushelling, #1 industrial bundles, slitter and some shredded. NAH purchase orders specify that all scrap shall be free of any oil and grease. Scrap materials generated by the plant in the steel making process are stored and handled similarly to the purchased scrap materials in the same general location.

Refractory material removed from the EAFs, ladles, tundish, etc. are mixed with the slag prior to crushing. Some spent refractories are processed off-site and returned as a ladles slag conditioner. Slag generated by the steel making process is transferred to the slag processing area for crushing, sizing, screening, and magnetic removal of any metallics. Spent refractories are frequently mixed in with the slag prior to the crushing operations. This work is accomplished by an outside contractor. The slag and spent refractory material are stored in uncovered piles and handled by front-end loaders. Although this material is frequently sprayed with water to obtain certain properties and for dust control, this activity does not result in any runoff to the stormwater drainage ditch as the spray water is entirely absorbed by the slag and refractory material.

Dust generated by the EAF emission control system is captured in the three baghouses and disposed into four (4), 20-yard containers. This material is currently sent to a recycling company for metal reclamation. Hot slag from the EAF is hauled outside in large pots and dumped into a pit for cooling. The hot slag is water cooled (quenching) depending on what type of properties the processor desires. The water-cooling process has little runoff because the majority of the water sprayed onto the slag turns to steam. After cooling, the slag and spent refractory is spread out for breaking and crushing by dropping a heavy ball onto the material. A magnet is then passed over the crushed material to recover all metallics. The metals that are recovered are recycled back into the EAF. The broken and crushed slag is then picked up by a front end loader and dumped onto a conveyor that conveys it through a screening system that sizes the slag for commercial purposes.

Summary of Review

The NAH facility derives its water supply from Cambria Somerset Authority (CSA). The main pipeline is located to the west of the NAH facility buried in the bed of Quemahoning Creek. Water is pumped from this line up to the facility and a 6-million-gallon reservoir located approximately 170 feet above the plant. From the reservoir, water flows by gravity to the plant. The water is used for non-contact cooling water purposes at the EAF, LMF, air compressors, and atomization water. The reservoir also supplies the plant fire protection water. A very small amount is used for makeup at incidental uses throughout the plant. The non-contact cooling water flows to a collecting pit where it is either discharged to the Stonycreek River (Outfall 002) or pumped through a cooling tower and back up to the reservoir.

There are no floor drains, catch basins or other such inlets inside the plant where an incidental use of water for other than non-contact cooling can enter the drainage system. The use of water outside of the plant is limited to very few activities, none of which result in discharge or runoff to the stormwater drainage system. Water from the atomization process is used for slag quenching and for dust control. Use is limited to prevent runoff.

Clean Water Act § 316(b) – Cooling Water Intake Structures

On August 15, 2014, EPA promulgated Clean Water Act Section 316(b) regulations applicable to cooling water intake structures. The regulations established best technology available ("BTA") standards to reduce impingement mortality and entrainment of all life stages of fish and shellfish at existing power generating and manufacturing facilities. The Final Rule took effect on October 14, 2014. Regulations implementing the 2014 Final Rule (and the previously promulgated Phase I Rule) are provided in 40 CFR Part 125, Subparts I and J for new facilities and existing facilities, respectively. Associated NPDES permit application requirements for facilities with cooling water intake structures are provided in 40 CFR Part 122, Subpart B – Permit Application and Special NPDES Program Requirements (§ 122.21(r)).

As discussed above, NAH is supplied with water for cooling by the CSA. CSA owns and operates five dams and associated reservoirs located in Cambria and Somerset Counties as well as the associated piping and appurtenances necessary for providing raw water from the dams to various users in the region. NAH may variously receive raw water from at least three of CSA's five reservoirs including the Quemahoning Reservoir, the Hinckston Run Reservoir, and the Border Dam Reservoir. CSA's primary water supply source for its customers is the Quemahoning Reservoir with Hinckston Run and Border as backups.

NAH is an "existing facility" as defined in 40 CFR § 125.92(k). As an existing facility, NAH is subject to 40 CFR Part 125, Subpart J – Requirements Applicable to Cooling Water Intake Structures for Existing Facilities Under Section 316(b) of the Clean Water Act (§§ 125.90 – 125.99) if the facility meets the rule's applicability criteria. Pursuant to the applicability criteria given by § 125.91(a), NAH is subject to the requirements of §§ 125.94 – 125.99 if:

(1) The facility is a point source;

(2) The facility uses or proposes to use one or more cooling water intake structures with a cumulative design intake flow (DIF) of greater than 2 million gallons per day (mgd) to withdraw water from waters of the United States; and

(3) Twenty-five percent or more of the water the facility withdraws on an actual intake flow basis is used exclusively for cooling purposes.

During the previous renewal review, it was determined that NAH does not use one or more cooling water intake structures with a design intake flow greater than 2 MGD because NAH's water supply arrangement with CSA does not qualify (for NAH) as "use of a cooling water intake structure". Since NAH does not meet one of the three applicability criteria in § 125.91(a), NAH is not subject to the requirements of §§ 125.94 – 125.99.

Chemical Additives

The following chemical additives have been introduced to the waste stream(s) over the past two years:

Summary of Review

Chemical Additive Name	Outfall	Purpose	Usage Frequency	Max Usage Rate	Units
Kroff KR-122 AKL	Outfall 002	Corrosive deposition protection - cooling towers	2.56	6.45	gallons/day
Kroff KR-150L	Outfall 002	Bacterial control - cooling towers	1.17	3.3	gallons/day
Kroff KR-127L	Outfall 002	General corrosive protection - entire facility	1.80	2.0	gallons/day
Kroff KR-41 KSL	Outfall 002	General corrosion protection - annealing loop	0.08	0.1	gallons/day
Kroff KR-DPO168	Outfall 002	Corrosion deposition protection - stainless steel atomizing department	0.33	2.7	gallons/day

Between 2010-2013, a series of letters were sent to the Department requesting the use of various chemical additives, including those shown in the table above. Currently, Kroff KR-127L is not listed on the Department's Approved List of Chemical Additives. Usage of Kroff KR-127L was requested in a letter to the Department dated January 2012. The Approved List of Chemical Additives was developed after this request (November 2012). During the renewal review, NAH personnel stated that Kroff is currently working to add KR-127L to the approved list.

New Copper WQBELs & Lead Monitoring – IMP 214

In addition, one of the letters, dated March 5, 2012, stated that since NAH purchased the facility back in late 1999, minimal treatment had been performed to the non-contact cooling water loops. Non-treatment resulted in severe corrosion in a number of facility pipelines and pre-mature failures on certain pieces of equipment, along with increased Legionella potential. Aside from the current chemical treatment for corrosion, no major piping replacements have been performed according to NAH personnel.

During the previous renewal review, it was determined that a heat exchanger, which provides complementary cooling to the reused water from the atomization process, would be rerouted to discharge via Outfall 014 to prevent the back-up of lines and internal flooding of plant floors. Prior to this rerouting, the non-contact cooling water from this heat exchanger discharged into the plant non-contact cooling water loop, whose overflow discharges via Outfall 002. This heat exchanger non-contact cooling water is currently monitored via IMP 214.

Analytical results submitted for the effluent discharged via IMP 214 and the facility's intake water as part of the current renewal review indicate copper and lead contamination at IMP 214:

Average & Max - Facility Influent (SC 525 Intake Line)							
Analyte		Average		Max	RL	Unit	No. Samples
Copper		1.4		1.5	1	ug/L	3
Lead	<	1	<	1	1	ug/L	3

Average & Max - IMP 214 Effluent							
Analyte		Average		Max	RL	Unit	No. Samples
Copper		138.8		358	1	ug/L	3
Lead	<	13.5		37.3	1	ug/L	3

The facility does not melt copper as part of normal operations. Copper metal powder is purchased from outside suppliers and is processed in the metal powder mixing department. There are no water sources, drains, pipes, etc. anywhere in the vicinity where the copper metal powder is processed. As discussed in greater detail in the 'Reasonable Potential Analysis and WQBEL Development for IMP 214' section beginning on page 23 of this fact sheet, new WQBELs are proposed for copper and new

Summary of Review

monitoring requirements are proposed for lead at IMP 214. A three-year compliance schedule and Toxics Reduction Evaluation (TRE) requirement for copper have been included in Part C of the draft permit. Due to the facility's prior history with pipeline corrosion, the TRE must include a Corrosion Control Feasibility Study.

Copper & Hexavalent Chromium – Outfall 002

Although no WQBELs or monitoring requirements were recommended for hexavalent chromium at Outfall 002 (see discussion on pages 10 & 11), it should be noted that upon comparison of intake and Outfall 002 concentrations, it appears that hexavalent chromium is being introduced to the non-contact cooling water. Copper has also been noted to be present in concentrations significantly above those detected in the facility's influent.

Average & Max - Facility Influent (SC 525 Intake Line)							
Analyte		**Average**		**Max**	**RL**	**Unit**	**No. Samples**
Copper		1.4		**1.5**	1.0	ug/L	3
Hexavalent Chromium	<	0.001	<	**0.001**	0.001	mg/L	1

Average & Max - Outfall 002 Effluent							
Analyte		**Average**		**Max**	**RL**	**Unit**	**No. Samples**
Copper		22.3		**33.5**	1.0	ug/L	3
Hexavalent Chromium		0.0105		**0.012**	0.0010	mg/L	3

eDMR - Copper - Outfall 002 - NOVEMBER 2023-OCTOBER 2025						
AVG MONTHLY AVG (ug/L)	**AVG MONTHLY MEDIAN (ug/L)**	**AVG MONTHLY MAX (ug/L)**		**DAILY MAX AVG (ug/L)**	**DAILY MAX MEDIAN (ug/L)**	**DAILY MAX MAX (ug/L)**
83.3	20.0	610		238	30.0	1210

A Part C condition has been added to the draft permit which states:

'*There shall be no net addition of pollutants to non-contact cooling water over intake values except for heat and water conditioning additives for which complete information was submitted in the application or is required to be submitted as a condition of this permit.*'

Draft Permit issuance is recommended.

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.	002	Design Flow (MGD)	1.8
Latitude	40º 11' 48"	Longitude	-78º 56' 02"
Quad Name	Hooversville	Quad Code	1714
Wastewater Description:	Noncontact Cooling Water (NCCW)		

Receiving Waters	Stonycreek River	Stream Code	45084
NHD Com ID	123719580	RMI	17.4
Drainage Area	145	Yield (cfs/mi^2)	0.07
Q_{7-10} Flow (cfs)	10.2	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	1535	Slope (ft/ft)	0.001
Watershed No.	18-E	Chapter 93 Class.	TSF
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	Final	Name	Kiskiminetas-Conemaugh River Watersheds TMDL

Nearest Downstream Public Water Supply Intake	Saltsburg Municipal Waterworks		
PWS Waters	Conemaugh River	Flow at Intake (cfs)	124
PWS RMI	0.54	Distance from Outfall (mi)	> 50

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	003, 004, 005, 008 & 009	Design Flow (MGD)	0
	40º 11' 27"		-78º 56' 07"
	40º 11' 34"		-78º 56' 13"
	40º 11' 38"		-78º 56' 11"
	40º 11' 46"		-78º 56' 06"
Latitude	40º 11' 42.5"	Longitude	-78º 56' 08"
Quad Name	Hooversville	Quad Code	1714
Wastewater Description:	Stormwater		
Receiving Waters	Quemahoning Creek	Stream Code	45371
			0.37
			0.37
			0.27
			0.09
NHD Com ID	123719280	RMI	0.16
Watershed No.	18-E	Chapter 93 Class.	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	Final	Name	Kiskiminetas-Conemaugh River Watersheds TMDL

Discharge, Receiving Waters and Water Supply Information

Outfall No.	006, 007 & 010	Design Flow (MGD)	0
Latitude	40º 11' 50" 40º 11' 46" 40º 11' 47"	Longitude	-78º 56' 06" -78º 55' 59.6" -78º 55' 19"
Quad Name	Hooversville	Quad Code	1714
Wastewater Description:	Stormwater		
Receiving Waters	Stonycreek River	Stream Code	45084
NHD Com ID	123719511	RMI	17.32 17.4 18.0
Watershed No.	18-E	Chapter 93 Class.	TSF
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	Final	Name	Kiskiminetas-Conemaugh River Watersheds TMDL

Discharge, Receiving Waters and Water Supply Information

Outfall No.	013	Design Flow (MGD)	0
Latitude	40º 11' 19"	Longitude	-78º 56' 08"
Quad Name	Hooversville	Quad Code	1714
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary to Quemahoning Creek	Stream Code	45382
NHD Com ID	123719280	RMI	0.15
Watershed No.	18-E	Chapter 93 Class.	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	Final	Name	Kiskiminetas-Conemaugh River Watersheds TMDL

Discharge, Receiving Waters and Water Supply Information

Outfall No.	014 (IMP 114, IMP 214)	Design Flow (MGD)	1.6
Latitude	40º 11' 48"	Longitude	-78º 55' 56"
Quad Name	Hooversville	Quad Code	1714
Wastewater Description:	Reverse Osmosis Reject Wastewater, NCCW		
Receiving Waters	Stonycreek River	Stream Code	45084
NHD Com ID	123719580	RMI	17.4
Drainage Area	145	Yield (cfs/mi^2)	0.07
Q_{7-10} Flow (cfs)	10.2	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	1535	Slope (ft/ft)	0.001
Watershed No.	18-E	Chapter 93 Class.	TSF
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	Final	Name	Kiskiminetas-Conemaugh River Watersheds TMDL
Nearest Downstream Public Water Supply Intake	Saltsburg Municipal Waterworks		
PWS Waters	Conemaugh River	Flow at Intake (cfs)	124
PWS RMI	0.54	Distance from Outfall (mi)	> 50

Changes Since Last Permit Issuance:

Other Comments:

Development of Effluent Limitations

Outfall No. 002 **Design Flow (MGD)** 1.8
Latitude 40º 11' 48" **Longitude** -78º 56' 02"
Wastewater Description: Noncontact cooling water (NCCW)

Technology Based Limitations

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.

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 002

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.

Water Quality-Based Limitations

Toxics Management Spread Sheet

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

Reasonable Potential Analysis and WQBEL Development for Outfall 002

Discharges from Outfall 002 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are entered into the Toxics Management Spread Sheet. The maximum reported value of the parameters from the application form or from previous DMRs is used as the input concentration in the Toxics Management Spread Sheet. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion are considered to be pollutants of concern. [This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion]. The Toxics Management Spread Sheet is run with the discharge and receiving stream characteristics shown in Table 2. 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. The water quality-based effluent limitations and monitoring requirements that are recommended by the Toxics Management Spread Sheet are displayed below in Table 3. The discharge concentrations used in the modeling are also included in Table 3.

Table 2: TMS Inputs for Outfall 002

Parameter	Value
River Mile Index	17.4
Discharge Flow (MGD)	0.004
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	145
Q_{7-10} (cfs)	10.2
Low-flow yield (cfs/mi^2)	0.070
Elevation (ft)	1535
Slope	0.001

Table 3: Water Quality Based Effluent Limitations at Outfall 002

Parameters	Average Monthly	Daily Maximum	Discharge Concentration Used in Modeling
Total Copper (µg/L)	Report	Report	610*

*Avg Monthly max effluent concentration reported in eDMRs between Nov 2023-Oct 2025

The average flow during production/operation provided in the renewal application for Outfall 002 was 0.362 MGD. For industrial waste discharges, the flow to use in modeling is typically the average flow during production/operation, which may be taken from the permit application. However, during review of the renewal application, it was relayed to the Department by NAH personnel that a recirculating pump at Outfall 002 was replaced mid-July 2025. Since the pump's replacement, the flow to Outfall 002 has significantly decreased. The discharge flow of 0.004 MGD used in the TMS is the average monthly average of the flows reported in the facility's eDMR for the months of August through October 2025.

Thermal WQBELs for Heated Discharges

Thermal WQBELs are evaluated using a DEP program called "Thermal Discharge Limit Calculation Spreadsheet" created with Microsoft Excel for Windows. The program calculates temperature WLAs through the application of a heat transfer equation, which takes two forms in the program depending on the source of the facility's cooling water. In Case 1, intake water to a facility is from the receiving stream. In Case 2, intake water is from a source other than the receiving stream (e.g., municipal water supply). The determination of which case applies to a given discharge is determined by the input data which include the receiving stream flow rate (Q_{7-10} or the minimum regulated flow for large rivers), the stream intake flow rate, external source intake flow rates, consumptive flow rates and site-specific ambient stream temperatures. Case 1 limits are generally expressed as heat rejection rates while Case 2 limits are usually expressed as temperatures.

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

Discharges from Outfall 002 are classified under Case 2 because water is obtained from a water supply. The flow rate used for modeling is the summation of the maximum discharge flow from all of the outfalls combined, 1.12 MGD. As previously discussed, during review of the renewal application, it was relayed to the Department by NAH personnel that a recirculating pump at Outfall 002 was replaced mid-July 2025. Since the pump's replacement, the flow to Outfall 002 has significantly decreased. The maximum daily flow of 0.01385 MGD reported for October 2025 was used in place of the maximum flow during production/operation reported in the renewal application for Outfall 002 (1.472 MGD). The results of the thermal analysis, included in Attachment C, indicate that WQBELs for temperature are required at Outfall 002 and are displayed below in Table 4.

Table 4. Thermal Limitations

Date Ranges	Instantaneous Temperature Limits (°F)
Jan 1 – Jun 30	110.0
Jul 1-31	84.0
Aug 1 – Dec 31	110.0

Total Maximum Daily Loads

Wastewater discharges from NAH are located within the Kiskiminetas-Conemaugh River Watersheds for which the Department has developed a TMDL. The TMDL was finalized on January 29, 2010 and establishes waste load allocations for the discharge of aluminum, iron and manganese within the Kiskiminetas-Conemaugh River Watersheds. Section 303(d) of the Clean Water Act and the U.S. Environmental Protection Agency's Water Quality Planning and Management Regulations (codified at Title 40 of the *Code of Federal Regulations* Part 130) require states to develop a TMDL for impaired water bodies. A TMDL establishes the amount of a pollutant that a water body can assimilate without exceeding the water quality criteria for that pollutant. TMDLs provide the scientific basis for a state to establish water quality-based controls to reduce pollution from both point and non-point sources in order to restore and maintain the quality of the state's water resources (USEPA 1991a). Stream reaches within the Kiskiminetas-Conemaugh River Watersheds are included in the state's 2008 Section 303(d) list because of various impairments, including metals, pH and sediment. The TMDL includes consideration for each river and tributary within the target watershed and its impairment sources. Stream data is then used to calculate minimum pollutant reductions that are necessary to attain water quality criteria levels. Target concentrations published in the TMDL were based on established water quality criteria of 0.750 $^{mg}/_{L}$ total recoverable aluminum, 1.5 $^{mg}/_{L}$ total recoverable iron based on a 30-day average and 1.0 $^{mg}/_{L}$ total recoverable manganese. The reduction needed to meet the minimum water quality standards is then divided between each known point and non-point pollutant source in the form of a watershed allocation. TMDLs prescribe allocations that minimally achieve water quality criteria (i.e., 100 percent use of a stream's assimilative capacity). The NAH permit, (PA0110655), is not listed in the Appendix G of the Kiskiminetas-Conemaugh River Watersheds TMDL and therefore, wasn't provided load allocations. It was assumed that discharges from Quemahoning Plant do not contain aluminum, iron, and manganese since they are not permitted to discharge these metals. Therefore, these points source were not considered as potential sources of the metal impairments in the Kiskiminetas-Conemaugh River Watersheds. In other words, if it is determined that a site is discharging wastewater containing these parameters, the site must meet the instream criterion values for these parameters at the point of discharge. Based on the permit application, the discharge indicated that aluminum, iron, and manganese are present in the discharge. Therefore, limitations equal to the instream criteria will be imposed at Outfall 002 and are displayed below in Table 5.

The specific water quality criterion for aluminum is expressed as an acute or maximum daily in 25 Pa. Code Chapter 93. Discharges of aluminum may only be authorized to the extent that they will not cause or contribute to any violation of the water quality standards. Therefore, the water quality criterion for aluminum (0.75 mg/L) is imposed as a maximum daily effluent limit (MDL). Whenever the most stringent criterion is selected for the MDL, the Department should also impose an average monthly limit (AML) and instantaneous maximum limit (IMAX) if applicable. The imposition of an AML that is more stringent than the MDL is typically not appropriate because the water quality concerns have already been fully addressed by setting the MDL equal to the most stringent applicable criterion. Therefore, where the MDL is set at the value of the most stringent applicable criterion, the AML should be set equal to the MDL.

The specific water quality criterion for iron is expressed as a 30-day average of 1.5 $^{mg}/_{L}$ in 25 Pa. Code § 93.7(a). The criterion is based on the protection of aquatic life and is associated with chronic exposure. There are no other criteria for total iron. Since the duration of the total iron criterion coincides with the 30-day duration of the AML, the 30-day average criterion for total iron is set equal to the AML. In addition, because the total iron criterion is associated with chronic exposure, the MDL (representing acute exposure) and the IMAX may be made less stringent according to established procedures described in Section III.C.3.h on Page 13 of the Water Quality Toxics Management Strategy (Doc. # 361-0100-003). These

procedures state that a MDL and IMAX may be set at 2 times and 2.5 times the AML, respectively, or there is the option to use multipliers from EPA's Technical Support Document for Water Quality-based Toxics Control, if data are available to support the use of alternative multipliers.

The specific water quality criterion for manganese is expressed as an acute or maximum daily of 1.0 mg/L in 25 Pa. Code § 93.7(a). The criterion is based on the protection of human health and is associated with chronic exposure associated with a potable water supply (PWS). Since no duration is given in Chapter 93 for the manganese criterion, a duration of 30 days is used based on the water quality criteria duration for Threshold Human Health (THH) criteria given in Section III.C.3.a., Table 1 on Page 10 of DEP's Water Quality Toxics Management Strategy. The 30-day duration for THH criteria coincides with the 30-day duration of an AML, which is why the manganese criterion is set equal to the AML for a "permitting at criteria" scenario. Because the manganese criterion is interpreted as having chronic exposure, the manganese MDL and IMAX may be made less stringent according to procedures established in Section III.C.2.h. of the Water Quality Toxics Management Strategy (AML multipliers of 2.0 and 2.5 for the MDL and IMAX respectively).

Table 5. Kiskiminetas-Conemaugh River Watersheds TMDL Limits

Parameter	Avg Monthly Avg Conc. (mg/L) *	Avg Monthly Max Conc. (mg/L) *	Daily Max Avg Conc. (mg/L) *	Daily Max Max Conc. (mg/L) *	TMDL Avg Monthly Limit (mg/L)	TMDL Daily Max Limit (mg/L)
Aluminum, Total	< 0.1	< 0.2	< 0.14	0.5	0.75	0.75
Iron, Total	< 0.33	0.67	0.49	1.68	1.5	3.0
Manganese, total	< 0.12	0.24	0.16	0.29	1.0	2.0

Reported concentrations in eDMRs between November 2023-October 2025

Anti-backsliding

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

Table 6. Existing Effluent Limitations at Outfall 002

Parameter	Monthly Average	Daily Maximum	Instantaneous Maximum	Measurement Frequency	Sample Type
Flow (MGD)	Monitor	Monitor	XXX	1/Week	Measure
Copper, Total (mg/L)	Monitor	Monitor	XXX	1/Week	Grab
Aluminum, Total	0.75	0.75	XXX	1/Week	Grab
Iron, Total	1.5	3.0	XXX	1/Week	Grab
Manganese, Total	1.0	2.0	XXX	1/Week	Grab
Temperature (°F) Jan 1 – June 30 Jul 1 – 31 Aug 1 – Nov 30 Dec 1 – Dec 31	XXX	XXX	 110 81.5 110 105.2	1/Week	I-S
pH (S.U.)	Not less than 6.0 nor greater than 9.0			1/Week	Grab

Proposed Effluent Limitations for Outfall 002

The proposed effluent limitations and monitoring requirements for Outfall 002 are shown below in Table 7. The limits are the most stringent values from the above limitation analysis.

Table 7. Proposed Effluent Limitations at Outfall 002

Parameter	Monthly Average	Daily Maximum	Instantaneous Maximum	Measurement Frequency	Sample Type
Flow (MGD)	Monitor	Monitor	XXX	1/Week	Measure

Copper, Total (mg/L)	Monitor	Monitor	XXX	1/Week	Grab
Aluminum, Total	0.75	0.75	XXX	1/Week	Grab
Iron, Total	1.5	3.0	XXX	1/Week	Grab
Manganese, Total	1.0	2.0	XXX	1/Week	Grab
Temperature (°F) Jan 1 – June 30 Jul 1 – 31 Aug 1 – Nov 30 Dec 1 – Dec 31	XXX	XXX	 110 81.5 110 105.2	1/Week	I-S
pH (S.U.)	Not less than 6.0 nor greater than 9.0			1/Week	Grab

Development of Effluent Limitations

Outfall No. 003, 004, 006, 007, and 010 **Design Flow (MGD)** 0
Latitude Varies **Longitude** Varies
Wastewater Description: Stormwater

Technology-Based Effluent limitations:

Outfalls 003, 004, 006, 007 and 010 will be subject to PAG-03 General Stormwater Permit conditions as a minimum requirement because each outfall discharges stormwater. Based on the site's SIC code the corresponding appendix that would apply to the facility is Appendix B of the PAG-03. The proposed monitoring requirements are shown in Table 8 below. The benchmark values list 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 8: PAG-03 Appendix (B) Monitoring Requirements

Parameters	Monitoring Requirements		Benchmark Values
	Minimum Measurement Frequency	Sample Type	
Total Suspended Solids (TSS) (mg/L)	1 / 6 Months	Grab	100
Total Nitrogen (mg/L)	1 / 6 Months	Grab	XXX
Total Phosphorus (mg/L)	1 / 6 Months	Grab	XXX
Oil & Grease (mg/L)	1 / 6 Months	Grab	30
Total Aluminum (mg/L)	1 / 6 Months	Grab	XXX
Total Zinc (mg/L)	1 / 6 Months	Grab	XXX
Total Copper (mg/L)	1 / 6 Months	Grab	XXX
Total Iron (mg/L)	1 / 6 Months	Grab	XXX
Total Lead (mg/L)	1 / 6 Months	Grab	XXX

Water Quality-Based Effluent limitations:

Water quality analyses are typically performed under low-flow (Q7-10) conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from Outfalls 003, 004, 006, 007, and 010 are composed entirely of stormwater, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations based on water quality analyses are not proposed.

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l) and are displayed below in Table 9. These limitations are currently imposed on Outfalls 003, 004, 006, 007, and 010. Benchmark values were included in a Part C condition for these parameters at these outfalls.

Table 9. Current Limitations at Outfall 003, 004, 006, 007 & 010

Parameter	Monthly Average	Daily Maximum	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
Total Suspended Solids	Monitor	Monitor	100	1/6 Months	Grab
Nitrate-Nitrite as Nitrogen	Monitor	Monitor	0.68	1/6 Months	Grab
Aluminum	Monitor	Monitor	XXX	1/6 Months	Grab
Cadmium	Monitor	Monitor	0.0159	1/6 Months	Grab
Copper	Monitor	Monitor	XXX	1/6 Months	Grab
Iron	Monitor	Monitor	XXX	1/6 Months	Grab
Lead	Monitor	Monitor	0.0816	1/6 Months	Grab
Zinc	Monitor	Monitor	0.117	1/6 Months	Grab

Proposed Final Effluent Limitations

The proposed effluent monitoring requirements for Outfalls 003, 004, 006, 007, and 010 are displayed in Table 10 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. 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 10: Proposed Effluent Monitoring Requirements for Outfalls 003, 004, 006, 007 & 010

Parameter	Max Daily Concentration	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
Total Suspended Solids (TSS)	Report	100.0	1/6 Months	Grab
Total Nitrogen (mg/L)	Report	XXX	1/6 Months	Grab
Total Phosphorus (mg/L)	Report	XXX	1/6 Months	Grab
Oil & Grease (mg/L)	Report	30.0	1/6 Months	Grab
Total Aluminum	Report	XXX	1/6 Months	Grab
Total Zinc	Report	0.117	1/6 Months	Grab
Total Copper	Report	XXX	1/6 Months	Grab
Total Iron	Report	XXX	1/6 Months	Grab
Total Lead	Report	0.0816	1/6 Months	Grab
Nitrate-Nitrite as Nitrogen	Report	0.68	1/6 Months	Grab
Total Cadmium	Report	0.0159	1/6 Months	Grab

Development of Effluent Limitations

Outfall No.	005, 008, 009 and 013	**Design Flow (MGD)**	0
Latitude	Varies	**Longitude**	Varies

Wastewater Description: Uncontaminated Stormwater

Outfalls 005, 008, 009 and 013 are considered uncontaminated stormwater. Therefore, no effluent limitations or monitoring is imposed. All other Part C conditions of the NPDES permit are applicable for these outfalls.

Development of Effluent Limitations

Outfall No.	014	**Design Flow (MGD)**	1.6
Latitude	40º 11' 48"	**Longitude**	-78º 56' 02"

Wastewater Description: RO Reject Wastewater, Non-contact cooling water

All wastewater discharged via Outfall 014 is monitored at internal monitoring points 114 and 214.

Development of Effluent Limitations

IMP No.	114	**Design Flow (MGD)**	0.10
Latitude	40º 11' 48"	**Longitude**	-78º 55' 56"

Wastewater Description: Reverse Osmosis Reject Wastewater

Technology-Based Limitations

Regulatory Effluent Standards and Monitoring Requirements

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

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code § 95.2(1) as indicated in Table 11.

Table 11: Regulatory Effluent Standards and Monitoring Requirements for IMP 102

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

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 relies on Best Professional Judgement in accordance with 40 CFR § 125.3. The limits proposed are displayed in Table 12 below. A Total Residual Chlorine limitation is not imposed for this discharge because no chlorine is used in the process.

Table 12. 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.)	6-9 at all times	

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 IMP 114

Discharges from IMP 114 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 13. 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 D of this Fact Sheet. No water quality-based effluent limitations or monitoring requirements were recommended by the Toxics Management Spread Sheet.

Table 13: TMS Inputs for IMP 114

Parameter	**Value**
River Mile Index	17.4
Discharge Flow (MGD)	0.0087
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	145
Q_{7-10} (cfs)	10.2
Low-flow yield (cfs/mi^2)	0.070
Elevation (ft)	1535
Slope	0.001

Total Maximum Daily Loads

Wastewater discharges from NAH are located within the Kiskiminetas-Conemaugh River Watersheds for which the Department has developed a TMDL. The TMDL was finalized on January 29, 2010 and establishes waste load allocations for the discharge of aluminum, iron and manganese within the Kiskiminetas-Conemaugh River Watersheds. Section 303(d) of the Clean Water Act and the U.S. Environmental Protection Agency's Water Quality Planning and Management Regulations (codified at Title 40 of the *Code of Federal Regulations* Part 130) require states to develop a TMDL for impaired water bodies. A TMDL establishes the amount of a pollutant that a water body can assimilate without exceeding the water quality criteria for that pollutant. TMDLs provide the scientific basis for a state to establish water quality-based controls to reduce pollution from both point and non-point sources in order to restore and maintain the quality of the state's water resources (USEPA 1991a). Stream reaches within the Kiskiminetas-Conemaugh River Watersheds are included in the state's 2008 Section 303(d) list because of various impairments, including metals, pH and sediment. The TMDL includes consideration for each river and tributary within the target watershed and its impairment sources. Stream data is then used to calculate minimum pollutant reductions that are necessary to attain water quality criteria levels. Target concentrations published in the TMDL were based on established water quality criteria of 0.750 $^{mg}/_{L}$ total recoverable aluminum, 1.5 $^{mg}/_{L}$ total recoverable iron based on a 30-day average and 1.0 $^{mg}/_{L}$ total recoverable manganese. The reduction needed to meet the minimum water quality standards is then divided between each known point and non-point pollutant source in the form of a watershed allocation. TMDLs prescribe allocations that minimally achieve water quality criteria (i.e., 100 percent use of a stream's assimilative capacity). The NAH permit, (PA0110655), is not listed in the Appendix G of the Kiskiminetas-Conemaugh River Watersheds TMDL and therefore, wasn't provided load allocations. It was assumed that discharges from the facility do not contain aluminum, iron, and manganese since they are not permitted to discharge these metals. Therefore, these points source were not considered as potential sources of the metal impairments in the Kiskiminetas-Conemaugh River Watersheds. In other words, if it is determined that a site is discharging wastewater containing these parameters, the site must meet the instream criterion values for these parameters at the point of discharge. Based on the permit application, the discharge indicated that aluminum, iron, and manganese are present in the discharge. Therefore, limitations equal to the instream criteria will be imposed at IMP 114 and are displayed below in Table 14.

The specific water quality criterion for aluminum is expressed as an acute or maximum daily in 25 Pa. Code Chapter 93. Discharges of aluminum may only be authorized to the extent that they will not cause or contribute to any violation of the water quality standards. Therefore, the water quality criterion for aluminum (0.75 mg/L) is imposed as a maximum daily effluent limit (MDL). Whenever the most stringent criterion is selected for the MDL, the Department should also impose an average monthly limit (AML) and instantaneous maximum limit (IMAX) if applicable. The imposition of an AML that is more stringent than the MDL is typically not appropriate because the water quality concerns have already been fully addressed by setting the MDL equal to the most stringent applicable criterion. Therefore, where the MDL is set at the value of the most stringent applicable criterion, the AML should be set equal to the MDL.

The specific water quality criterion for iron is expressed as a 30-day average of 1.5 $^{mg}/_{L}$ in 25 Pa. Code § 93.7(a). The criterion is based on the protection of aquatic life and is associated with chronic exposure. There are no other criteria for total iron. Since the duration of the total iron criterion coincides with the 30-day duration of the AML, the 30-day average criterion for total iron is set equal to the AML. In addition, because the total iron criterion is associated with chronic exposure, the MDL (representing acute exposure) and the IMAX may be made less stringent according to established procedures described in Section III.C.3.h on Page 13 of the Water Quality Toxics Management Strategy (Doc. # 361-0100-003). These procedures state that a MDL and IMAX may be set at 2 times and 2.5 times the AML, respectively, or there is the option to use multipliers from EPA's Technical Support Document for Water Quality-based Toxics Control, if data are available to support the use of alternative multipliers.

The specific water quality criterion for manganese is expressed as an acute or maximum daily of 1.0 mg/L in 25 Pa. Code § 93.7(a). The criterion is based on the protection of human health and is associated with chronic exposure associated with a potable water supply (PWS). Since no duration is given in Chapter 93 for the manganese criterion, a duration of 30 days is used based on the water quality criteria duration for Threshold Human Health (THH) criteria given in Section III.C.3.a., Table 1 on Page 10 of DEP's Water Quality Toxics Management Strategy. The 30-day duration for THH criteria coincides with the 30-day duration of an AML, which is why the manganese criterion is set equal to the AML for a "permitting at criteria" scenario. Because the manganese criterion is interpreted as having chronic exposure, the manganese MDL and IMAX may be made less stringent according to procedures established in Section III.C.2.h. of the Water Quality Toxics Management Strategy (AML multipliers of 2.0 and 2.5 for the MDL and IMAX respectively).

Table 14. Kiskiminetas-Conemaugh River Watersheds TMDL Limits

Parameter	Avg Monthly Avg Conc. (mg/L) *	Avg Monthly Max Conc. (mg/L) *	Daily Max Avg Conc. (mg/L) *	Daily Max Max Conc. (mg/L) *	TMDL Avg Monthly Limit (mg/L)	TMDL Daily Max Limit (mg/L)
Aluminum, Total	< 0.1	< 0.2	< 0.1	0.3	0.75	0.75
Iron, Total	< 0.28	0.67	0.48	1.1	1.5	3.0
Manganese, total	< 0.03	< 0.1	0.04	0.14	1.0	2.0

Reported concentrations in eDMRs between November 2023-October 2025

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 15.

Table 15: Existing Effluent Limitation for IMP 114

Parameters	Mass (lb/day)		Concentration (mg/L)				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	1/Week	Measure
Total Suspended Solids	XXX	XXX	XXX	30.0	60.0	XXX	1/Week	Grab
Total Aluminum	XXX	XXX	XXX	0.75	0.75	XXX	1/Week	Grab
Total Iron	XXX	XXX	XXX	1.5	3.0	XXX	1/Week	Grab

Table 15: Existing Effluent Limitation for IMP 114

Parameters	Mass (lb/day)		Concentration (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Frequency	Sample Type
Total Manganese	XXX	XXX	XXX	1.0	2.0	XXX	1/Week	Grab
BOD_5	XXX	XXX	XXX	Monitor	Monitor	XXX	1/Week	Grab
Total Dissolved Solids	XXX	XXX	XXX	Monitor	Monitor	XXX	1/Week	Grab
pH (S.U.)	XXX	XXX	6.0	XXX	9.0	XXX	1/Week	Grab

Proposed Effluent Limitations for IMP 114

The proposed effluent limitations and monitoring requirements for IMP 114 are shown below in Table 16. The limits are the most stringent values from the above limitation analysis.

Table 16: Proposed Effluent Limitation for IMP 114

Parameters	Mass (lb/day)		Concentration (mg/L)				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	1/Week	Measure
Total Suspended Solids	XXX	XXX	XXX	30.0	60.0	XXX	1/Week	Grab
Total Aluminum	XXX	XXX	XXX	0.75	0.75	XXX	1/Week	Grab
Total Iron	XXX	XXX	XXX	1.5	3.0	XXX	1/Week	Grab
Total Manganese	XXX	XXX	XXX	1.0	2.0	XXX	1/Week	Grab
BOD_5	XXX	XXX	XXX	Monitor	Monitor	XXX	1/Week	Grab
Total Dissolved Solids	XXX	XXX	XXX	Monitor	Monitor	XXX	1/Week	Grab
pH (S.U.)	XXX	XXX	6.0	XXX	9.0	XXX	1/Week	Grab

Development of Effluent Limitations

IMP No.	214	**Design Flow (MGD)**	1.5
Latitude	40º 11' 48"	**Longitude**	-78º 55' 56"

Wastewater Description: Noncontact cooling water

Technology Based Limitations

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.

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code § 95.2(1) as indicated in Table 17.

Table 17: Regulatory Effluent Standards and Monitoring Requirements for IMP 214

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.

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 IMP 214

Discharges from IMP 214 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 18. 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 water quality-based effluent limitations and monitoring requirements that are recommended by the Toxics Management Spread Sheet are displayed below in Table 19. The discharge concentrations used in the modeling are also included in Table 19.

Table 18: TMS Inputs for IMP 214

Parameter	Value
River Mile Index	17.4
Discharge Flow (MGD)	0.083
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	145
Q_{7-10} (cfs)	10.2
Low-flow yield (cfs/mi^2)	0.070
Elevation (ft)	1535
Slope	0.001

Table 19: Water Quality Based Effluent Limitations at IMP 214

Parameters	Average Monthly	Daily Maximum	Discharge Concentration Used in Modeling
Total Copper (ug/L)	214	334	358*
Total Lead (µg/L)	Monitor	Monitor	37.3*

*Max effluent concentration reported in renewal application

Thermal WQBELs for Heated Discharges

Thermal WQBELs are evaluated using a DEP program called "Thermal Discharge Limit Calculation Spreadsheet" created with Microsoft Excel for Windows. The program calculates temperature WLAs through the application of a heat transfer equation, which takes two forms in the program depending on the source of the facility's cooling water. In Case 1, intake water to a facility is from the receiving stream. In Case 2, intake water is from a source other than the receiving stream (e.g., municipal water supply). The determination of which case applies to a given discharge is determined by the input data which include the receiving stream flow rate (Q_{7-10} or the minimum regulated flow for large rivers), the stream intake flow rate, external source intake flow rates, consumptive flow rates and site-specific ambient stream temperatures. Case 1 limits are generally expressed as heat rejection rates while Case 2 limits are usually expressed as temperatures.

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

Discharges from IMP 214 are classified under Case 2 because water is obtained from water supply. The flow rate used for modeling is the summation of the maximum discharge flow from all of the outfalls combined, 1.12 MGD. As previously discussed, during review of the renewal application, it was relayed to the Department by NAH personnel that a recirculating pump at Outfall 002 was replaced mid-July 2025. Since the pump's replacement, the flow to Outfall 002 has significantly decreased. The maximum daily flow of 0.01385 MGD reported for October 2025 was used in place of the maximum flow during production/operation reported in the renewal application for Outfall 002 (1.472 MGD). The results of the thermal

analysis, included in Attachment C, indicate that WQBELs for temperature are required at IMP 214 and are displayed below in Table 20.

Table 20. Thermal Limitations

Date Ranges	Instantaneous Temperature Limits (°F)
Jan 1 – Jun 30	110.0
Jul 1-31	84.0
Aug 1 – Dec 31	110.0

Total Maximum Daily Loads

Wastewater discharges from NAH are located within the Kiskiminetas-Conemaugh River Watersheds for which the Department has developed a TMDL. The TMDL was finalized on January 29, 2010 and establishes waste load allocations for the discharge of aluminum, iron and manganese within the Kiskiminetas-Conemaugh River Watersheds. Section 303(d) of the Clean Water Act and the U.S. Environmental Protection Agency's Water Quality Planning and Management Regulations (codified at Title 40 of the *Code of Federal Regulations* Part 130) require states to develop a TMDL for impaired water bodies. A TMDL establishes the amount of a pollutant that a water body can assimilate without exceeding the water quality criteria for that pollutant. TMDLs provide the scientific basis for a state to establish water quality-based controls to reduce pollution from both point and non-point sources in order to restore and maintain the quality of the state's water resources (USEPA 1991a). Stream reaches within the Kiskiminetas-Conemaugh River Watersheds are included in the state's 2008 Section 303(d) list because of various impairments, including metals, pH and sediment. The TMDL includes consideration for each river and tributary within the target watershed and its impairment sources. Stream data is then used to calculate minimum pollutant reductions that are necessary to attain water quality criteria levels. Target concentrations published in the TMDL were based on established water quality criteria of 0.750 $^{mg}/_{L}$ total recoverable aluminum, 1.5 $^{mg}/_{L}$ total recoverable iron based on a 30-day average and 1.0 $^{mg}/_{L}$ total recoverable manganese. The reduction needed to meet the minimum water quality standards is then divided between each known point and non-point pollutant source in the form of a watershed allocation. TMDLs prescribe allocations that minimally achieve water quality criteria (i.e., 100 percent use of a stream's assimilative capacity). The NAH permit, (PA0110655), is not listed in the Appendix G of the Kiskiminetas-Conemaugh River Watersheds TMDL and therefore, wasn't provided load allocations. It was assumed that discharges from Quemahoning Plant do not contain aluminum, iron, and manganese since they are not permitted to discharge these metals. Therefore, these points source were not considered as potential sources of the metal impairments in the Kiskiminetas-Conemaugh River Watersheds. In other words, if it is determined that a site is discharging wastewater containing these parameters, the site must meet the instream criterion values for these parameters at the point of discharge. Based on the permit application, the discharge indicated that aluminum, iron, and manganese are present in the discharge. Therefore, limitations equal to the instream criteria will be imposed at IMP 214 and are displayed below in Table 21.

The specific water quality criterion for aluminum is expressed as an acute or maximum daily in 25 Pa. Code Chapter 93. Discharges of aluminum may only be authorized to the extent that they will not cause or contribute to any violation of the water quality standards. Therefore, the water quality criterion for aluminum (0.75 mg/L) is imposed as a maximum daily effluent limit (MDL). Whenever the most stringent criterion is selected for the MDL, the Department should also impose an average monthly limit (AML) and instantaneous maximum limit (IMAX) if applicable. The imposition of an AML that is more stringent than the MDL is typically not appropriate because the water quality concerns have already been fully addressed by setting the MDL equal to the most stringent applicable criterion. Therefore, where the MDL is set at the value of the most stringent applicable criterion, the AML should be set equal to the MDL.

The specific water quality criterion for iron is expressed as a 30-day average of 1.5 $^{mg}/_{L}$ in 25 Pa. Code § 93.7(a). The criterion is based on the protection of aquatic life and is associated with chronic exposure. There are no other criteria for total iron. Since the duration of the total iron criterion coincides with the 30-day duration of the AML, the 30-day average criterion for total iron is set equal to the AML. In addition, because the total iron criterion is associated with chronic exposure, the MDL (representing acute exposure) and the IMAX may be made less stringent according to established procedures described in Section III.C.3.h on Page 13 of the Water Quality Toxics Management Strategy (Doc. # 361-0100-003). These procedures state that a MDL and IMAX may be set at 2 times and 2.5 times the AML, respectively, or there is the option to use multipliers from EPA's Technical Support Document for Water Quality-based Toxics Control, if data are available to support the use of alternative multipliers.

The specific water quality criterion for manganese is expressed as an acute or maximum daily of 1.0 mg/L in 25 Pa. Code § 93.7(a). The criterion is based on the protection of human health and is associated with chronic exposure associated with a potable water supply (PWS). Since no duration is given in Chapter 93 for the manganese criterion, a duration of 30 days

is used based on the water quality criteria duration for Threshold Human Health (THH) criteria given in Section III.C.3.a., Table 1 on Page 10 of DEP's Water Quality Toxics Management Strategy. The 30-day duration for THH criteria coincides with the 30-day duration of an AML, which is why the manganese criterion is set equal to the AML for a "permitting at criteria" scenario. Because the manganese criterion is interpreted as having chronic exposure, the manganese MDL and IMAX may be made less stringent according to procedures established in Section III.C.2.h. of the Water Quality Toxics Management Strategy (AML multipliers of 2.0 and 2.5 for the MDL and IMAX respectively).

Table 21. Kiskiminetas-Conemaugh River Watersheds TMDL Limits

Parameter	Avg Monthly Avg Conc. (mg/L) *	Avg Monthly Max Conc. (mg/L) *	Daily Max Avg Conc. (mg/L) *	Daily Max Max Conc. (mg/L) *	TMDL Avg Monthly Limit (mg/L)	TMDL Daily Max Limit (mg/L)
Aluminum, Total	< 0.1	< 0.1	< 0.1	0.2	0.75	0.75
Iron, Total	0.41	0.78	0.67	1.4	1.5	3.0
Manganese, total	< 0.046	0.27	< 0.081	0.51	1.0	2.0

Reported concentrations in eDMRs between November 2023-October 2025

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.

Table 22. Existing Effluent Limitations at IMP 214

Parameter	Monthly Average	Daily Maximum	Instantaneous Maximum	Measurement Frequency	Sample Type
Flow (MGD)	Monitor	Monitor	XXX	1/Week	Measure
Aluminum, Total	0.75	0.75	XXX	1/Week	Grab
Iron, Total	1.5	3.0	XXX	1/Week	Grab
Manganese, Total	1.0	2.0	XXX	1/Week	Grab
Temperature (°F) Jan 1 – June 30 Jul 1 – 31 Aug 1 – Nov 30 Dec 1 – Dec 31	XXX	XXX	 110 81.5 110 105.2	1/Week	I-S
pH (S.U.)	Not less than 6.0 nor greater than 9.0			1/Week	Grab

Proposed Effluent Limitations for IMP 214

The proposed effluent limitations and monitoring requirements for IMP 214 are shown below in Table 23. The limits are the most stringent values from the above limitation analysis.

Table 23. Proposed Effluent Limitations at IMP 214

Parameter	Monthly Average	Daily Maximum	Instantaneous Maximum	Measurement Frequency	Sample Type
Flow (MGD)	Monitor	Monitor	XXX	1/Week	Measure
Aluminum, Total	0.75	0.75	XXX	1/Week	Grab
Iron, Total	1.5	3.0	XXX	1/Week	Grab
Manganese, Total	1.0	2.0	XXX	1/Week	Grab
Copper, Total	0.21	0.33	XXX	1/Week	Grab
Lead, Total	Monitor	Monitor	XXX	1/Week	Grab
Temperature (°F) Jan 1 – June 30 Jul 1 – 31	XXX	XXX	 110 81.5	1/Week	I-S

Aug 1 – Nov 30 Dec 1 – Dec 31			110 105.2		
pH (S.U.)	Not less than 6.0 nor greater than 9.0			1/Week	Grab

Final WQBEL Compliance Schedule and Interim Monitoring

The WQBELs listed in Table 23 above for Total Copper are new to IMP 214. NAH may not have the necessary controls in place to ensure compliance with the WQBELs upon permit issuance. Therefore, in accordance with 25 Pa. Code § 92a.51(a) of DEP's regulations, NAH will be granted three years to come into compliance with the WQBELs. Because the new WQBELs will not be effective upon permit issuance, the permit will be tiered to have interim and final effluent limitations. For the first three years, Total Copper will have monitor and report requirements, and after three years, the WQBELs will take effect. Additionally, because the WQBELs were developed using the default or model-derived estimates, the permittee shall collect site-specific data and conduct a Toxics Reduction Evaluation (TRE). The TRE must include a Corrosion Control Feasibility Study due to the suspected source of copper being corrosion of water lines at the facility (see discussion on pages 4 & 5). The site-specific data and TRE will be submitted to the Department as part of a Final WQBEL Compliance Report.

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment **B, D & E**)
☐	TRC Model Spreadsheet (see Attachment)
☒	Temperature Model Spreadsheet (see Attachment **C**)
☐	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: BCW-PMT-001, BCW-PMT-032, BCW-PMT-033, BCW-PMT-037
☐	Other:

Attachments:

Attachment A: USGS StreamStats Report

Attachment B: Toxics Management Spreadsheet for Outfall 002

Attachment C: Thermal Discharge Evaluation

Attachment D: Toxics Management Spreadsheet for IMP 114

Attachment E: Toxics Management Spreadsheet for IMP 214

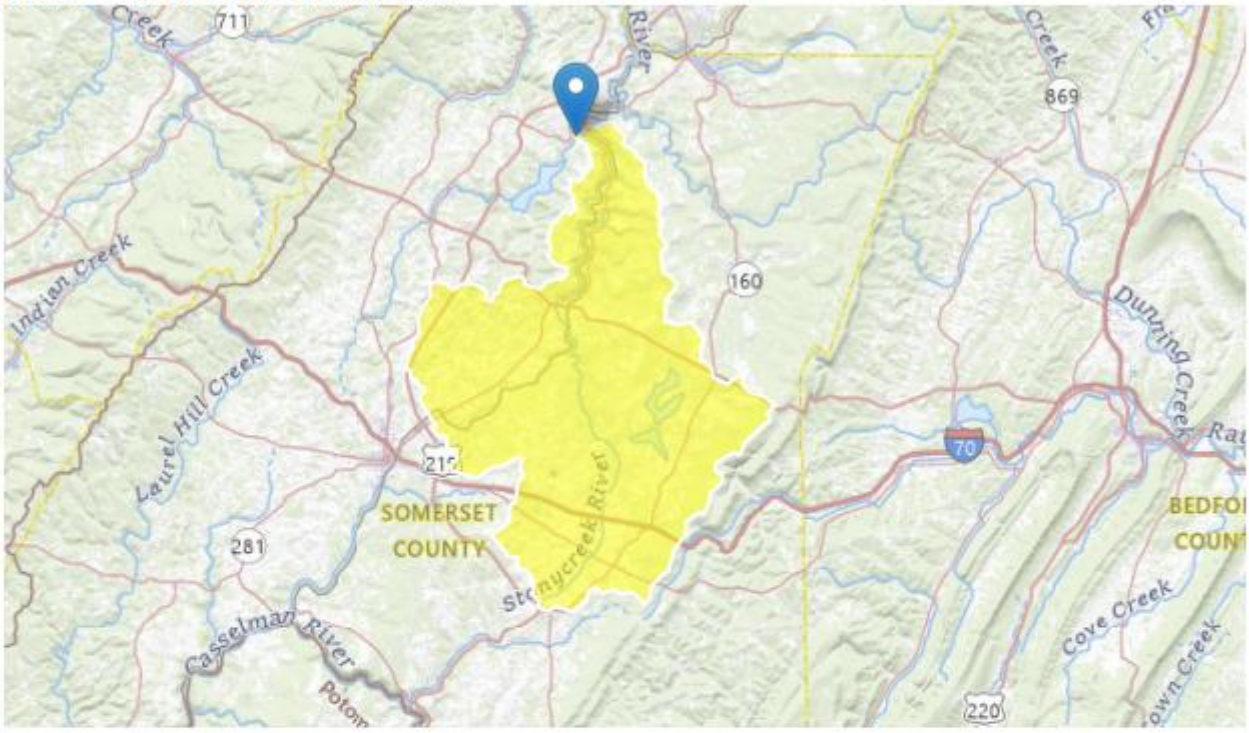
Attachment F: Site Drainage Map

Attachment G: Line Diagrams

Attachment A:

USGS StreamStats Report

Region ID: PA
Workspace ID: PA20250908192711848000
Clicked Point (Latitude, Longitude): 40.19715, -78.93388
Time: 2025-09-08 15:27:31 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	145	square miles
ELEV	Mean Basin Elevation	2254	feet
PRECIP	Mean Annual Precipitation	42	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	145	square miles	2.33	1720
ELEV	Mean Basin Elevation	2254	feet	898	2700
PRECIP	Mean Annual Precipitation	42	inches	38.7	47.9

Low-Flow Statistics Flow Report [Low Flow Region 3]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	20.2	ft^3/s	43	43
30 Day 2 Year Low Flow	26.6	ft^3/s	38	38
7 Day 10 Year Low Flow	10.2	ft^3/s	54	54
30 Day 10 Year Low Flow	12.7	ft^3/s	49	49
90 Day 10 Year Low Flow	18.2	ft^3/s	41	41

Low-Flow Statistics Citations

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

Attachment B:

Toxics Management Spreadsheet for Outfall 002

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2025

Discharge Information

Instructions | Discharge | Stream

Facility: **North American Hoganas** NPDES Permit No.: **PA0110655** Outfall No.: **002**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **NCCW**

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
0.004	92.8	7						

					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	Strea m CV	Fate Coeff	FOS	Criteri a Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		133									
	Chloride (PWS)	mg/L		19.1									
	Bromide	mg/L	<	0.2									
	Sulfate (PWS)	mg/L		51.9									
	Fluoride (PWS)	mg/L	<	0.1									
Group 2	Total Aluminum	mg/L	<	0.2									
	Total Antimony	µg/L	<	1									
	Total Arsenic	µg/L	<	1									
	Total Barium	µg/L		37.6									
	Total Beryllium	mg/L	<	0.001									
	Total Boron	mg/L	<	0.05									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	2									
	Hexavalent Chromium	mg/L		0.012									
	Total Cobalt	µg/L		0.7									
	Total Copper	µg/L		610									
	Free Cyanide	µg/L											
	Total Cyanide	mg/L	<	0.005									
	Dissolved Iron	µg/L		200									
	Total Iron	mg/L		0.67									
	Total Lead	µg/L	<	1									
	Total Manganese	mg/L		0.24									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		5.8									
	Total Phenols (Phenolics) (PWS)	µg/L	<	5									
	Total Selenium	µg/L	<	1									
	Total Silver	µg/L	<	0.2									
	Total Thallium	µg/L	<	0.2									
	Total Zinc	µg/L		25.8									
	Total Molybdenum	µg/L		29									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										
	Carbon Tetrachloride	µg/L	<										

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Toxics Management Spreadsheet
Version 1.4, May 2025

Stream / Surface Water Information

North American Hoganas, NPDES Permit No. PA0110655, Outfall 002

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Stonycreek 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	045084	17.4	1535	145	0.001		Yes
End of Reach 1	045084	17	1534	146	0.001		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	17.4	0.1	10.2									100	7		
End of Reach 1	17	0.1	10.2												

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	17.4														
End of Reach 1	17														

Model Results

North American Hoganas, NPDES Permit No. PA0110655, Outfall 002

Instructions | *Results* | RETURN TO INPUTS | SAVE AS PDF | PRINT | (●) All | ( ) Inputs | ( ) Results | ( ) Limits

☑ ***Hydrodynamics***

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

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
17.4	10.20		10.20	0.006	0.001	0.814	55.537	68.26	0.226	0.108	181.944
17	10.20		10.2								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
17.4	56.56		56.56	0.006	0.001	1.728	55.537	32.132	0.589	0.041	58.821
17	56.559		56.56								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.287 Analysis Hardness (mg/l): 99.985 Analysis pH: 7.00

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	355,717	
Total Antimony	0	0		0	1,100	1,100	521,718	
Total Arsenic	0	0		0	340	340	161,258	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	9,960,065	
Total Boron	0	0		0	8,100	8,100	3,841,739	
Total Cadmium	0	0		0	2.013	2.13	1,012	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	569.693	1,803	855,060	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	7,728	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	45,057	
Total Copper	0	0		0	13.437	14.0	6,639	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	64.571	81.6	38,716	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	781	Chem Translator of 0.85 applied
Total Nickel	0	0		0	468.176	469	222,495	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	3.216	3.78	1,794	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	30,829	
Total Zinc	0	0		0	117.165	120	56,820	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): 99.996 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	362,857	
Total Arsenic	0	0		0	150	150	247,403	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	6,762,342	
Total Boron	0	0		0	1,600	1,600	2,638,963	
Total Cadmium	0	0		0	0.246	0.27	446	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.112	86.2	142,136	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	17,145	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	31,338	
Total Copper	0	0		0	8.955	9.33	15,386	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	2,474,027	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.517	3.18	5,247	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	1,494	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.005	52.2	86,032	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	8,229	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	21,442	
Total Zinc	0	0		0	118.135	120	197,612	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	9,236	
Total Arsenic	0	0		0	10	10.0	16,494	
Total Barium	0	0		0	2,400	2,400	3,958,444	
Total Boron	0	0		0	3,100	3,100	5,112,990	
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	494,805	
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	1,649,352	
Total Mercury	0	0		0	0.050	0.05	82.5	
Total Nickel	0	0		0	610	610	1,006,105	
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	396	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 58.821 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
Total Copper	Report	Report	Report	Report	Report	µg/L	4,255	AFC	Discharge Conc > 10% WQBEL (no RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	Discharge Conc < TQL
Total Aluminum	228	mg/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	3,958,444	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	2,462	mg/L	Discharge Conc < TQL
Total Cadmium	446	µg/L	Discharge Conc < TQL
Total Chromium (III)	142,136	µg/L	Discharge Conc < TQL
Hexavalent Chromium	4.95	mg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	28,880	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	494,805	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	2,474	mg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	5,247	µg/L	Discharge Conc < TQL
Total Manganese	1,649	mg/L	Discharge Conc ≤ 10% WQBEL

Total Mercury	82.5	µg/L	Discharge Conc < TQL
Total Nickel	86,032	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	8,229	µg/L	Discharge Conc < TQL
Total Silver	1,150	µg/L	Discharge Conc < TQL
Total Thallium	396	µg/L	Discharge Conc < TQL
Total Zinc	36,420	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS

Attachment C:

Thermal Discharge Evaluation

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Instructions | *Inputs*

Facility: **North American Hoganas** Permit No.: **PA0110655**

Stream Name: **Stonycreek River** Analyst/Engineer: **Ley**

Stream Q7-10 (cfs)*: **10.2** Outfall No.: **002** Analysis Type*: **TSF**

Facility Flows

Semi-Monthly Increment	Intake (Stream) (MGD)*	Intake (External) (MGD)*	Consumptive Loss (MGD)*	Discharge Flow (MGD)
Jan 1-31		1.12		1.12
Feb 1-29		1.12		1.12
Mar 1-31		1.12		1.12
Apr 1-15		1.12		1.12
Apr 16-30		1.12		1.12
May 1-15		1.12		1.12
May 16-31		1.12		1.12
Jun 1-15		1.12		1.12
Jun 16-30		1.12		1.12
Jul 1-31		1.12		1.12
Aug 1-15		1.12		1.12
Aug 16-31		1.12		1.12
Sep 1-15		1.12		1.12
Sep 16-30		1.12		1.12
Oct 1-15		1.12		1.12
Oct 16-31		1.12		1.12
Nov 1-15		1.12		1.12
Nov 16-30		1.12		1.12
Dec 1-31		1.12		1.12

Stream Flows

Q7-10 Multipliers (Default Shown)	PMF	Seasonal Stream Flow (cfs)	Downstream Stream Flow (cfs)
3.2	1.00	32.64	34.37
3.5	1.00	35.70	37.43
7	1.00	71.40	73.13
9.3	1.00	94.86	96.59
9.3	1.00	94.86	96.59
5.1	1.00	52.02	53.75
5.1	1.00	52.02	53.75
3	1.00	30.60	32.33
3	1.00	30.60	32.33
1.7	1.00	17.34	19.07
1.4	1.00	14.28	16.01
1.4	1.00	14.28	16.01
1.1	1.00	11.22	12.95
1.1	1.00	11.22	12.95
1.2	1.00	12.24	13.97
1.2	1.00	12.24	13.97
1.6	1.00	16.32	18.05
1.6	1.00	16.32	18.05
2.4	1.00	24.48	26.21

Instructions | *TSF Results*

Recommended Limits for Case 1 or Case 2

Semi-Monthly Increment	**TSF** Target Maximum Stream Temp. (°F)	**Case 1** Daily WLA (Million BTUs/day)	**Case 2** Daily WLA (°F)
Jan 1-31	40	N/A -- Case 2	110.0
Feb 1-29	40	N/A -- Case 2	110.0
Mar 1-31	46	N/A -- Case 2	110.0
Apr 1-15	52	N/A -- Case 2	110.0
Apr 16-30	58	N/A -- Case 2	110.0
May 1-15	64	N/A -- Case 2	110.0
May 16-31	68	N/A -- Case 2	110.0
Jun 1-15	70	N/A -- Case 2	110.0
Jun 16-30	72	N/A -- Case 2	110.0
Jul 1-31	74	N/A -- Case 2	84.0
Aug 1-15	80	N/A -- Case 2	110.0
Aug 16-31	87	N/A -- Case 2	110.0
Sep 1-15	84	N/A -- Case 2	110.0
Sep 16-30	78	N/A -- Case 2	110.0
Oct 1-15	72	N/A -- Case 2	110.0
Oct 16-31	66	N/A -- Case 2	110.0
Nov 1-15	58	N/A -- Case 2	110.0
Nov 16-30	50	N/A -- Case 2	110.0
Dec 1-31	42	N/A -- Case 2	110.0

Attachment D:

Toxics Management Spreadsheet for IMP 114

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Toxics Management Spreadsheet
Version 1.4, May 2025

Discharge Information

Instructions | Discharge | Stream

Facility: **North American Hoganas** NPDES Permit No.: **PA0110655** Outfall No.: **114**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Reverse Osmosis Reject Wastewater**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.0087	281	7						

					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	Strea m CV	Fate Coeff	FOS	Criteri a Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		737									
	Chloride (PWS)	mg/L		102									
	Bromide	mg/L	<	0.2									
	Sulfate (PWS)	mg/L		271									
	Fluoride (PWS)	mg/L		0.3									
Group 2	Total Aluminum	mg/L	<	0.2									
	Total Antimony	µg/L	<	1									
	Total Arsenic	µg/L	<	1									
	Total Barium	µg/L		48.2									
	Total Beryllium	mg/L	<	0.001									
	Total Boron	mg/L	<	0.05									
	Total Cadmium	mg/L	<	0.002									
	Total Chromium (III)	µg/L	<	2									
	Hexavalent Chromium	mg/L		0.0046									
	Total Cobalt	µg/L	<	0.5									
	Total Copper	µg/L		10.4									
	Free Cyanide	µg/L											
	Total Cyanide	mg/L	<	0.005									
	Dissolved Iron	µg/L		105									
	Total Iron	mg/L		0.67									
	Total Lead	µg/L	<	1									
	Total Manganese	mg/L	<	0.1									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		7									
	Total Phenols (Phenolics) (PWS)	µg/L	<	5									
	Total Selenium	µg/L		1									
	Total Silver	µg/L	<	0.2									
	Total Thallium	µg/L	<	0.2									
	Total Zinc	µg/L		5.9									
	Total Molybdenum	µg/L	<	1									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										
	Carbon Tetrachloride	µg/L	<										

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Toxics Management Spreadsheet
Version 1.4, May 2025

Stream / Surface Water Information

North American Hoganas, NPDES Permit No. PA0110655, Outfall 114

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Stonycreek 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	045084	17.4	1535	145	0.001		Yes
End of Reach 1	045084	17	1534	146	0.001		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	17.4	0.1	10.2									100	7		
End of Reach 1	17	0.1	10.2												

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	17.4														
End of Reach 1	17														

Model Results

North American Hoganas, NPDES Permit No. PA0110655, Outfall 114

Instructions | *Results* | RETURN TO INPUTS | SAVE AS PDF | PRINT | (●) All ( ) Inputs ( ) Results ( ) Limits

☑ ***Hydrodynamics***

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

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
17.4	10.20		10.20	0.013	0.001	0.814	55.551	68.272	0.226	0.108	181.756
17	10.20		10.2								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
17.4	56.56		56.56	0.013	0.001	1.728	55.551	32.146	0.589	0.041	58.852
17	56.559		56.56								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.287 Analysis Hardness (mg/l): 100.83 Analysis pH: 7.00

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	164,038	
Total Antimony	0	0		0	1,100	1,100	240,588	
Total Arsenic	0	0		0	340	340	74,364	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	4,593,051	
Total Boron	0	0		0	8,100	8,100	1,771,605	
Total Cadmium	0	0		0	2.030	2.15	470	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	573.622	1,815	397,028	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	3,564	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	20,778	
Total Copper	0	0		0	13.544	14.1	3,086	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	65.163	82.5	18,045	Chem Translator of 0.79 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	360	Chem Translator of 0.85 applied
Total Nickel	0	0		0	471.512	472	103,334	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	3.263	3.84	840	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	14,217	
Total Zinc	0	0		0	118.002	121	26,389	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): 100.24 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	166,950	
Total Arsenic	0	0		0	150	150	113,829	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	3,111,338	
Total Boron	0	0		0	1,600	1,600	1,214,181	
Total Cadmium	0	0		0	0.246	0.27	206	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.259	86.3	65,526	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	7,888	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	14,418	
Total Copper	0	0		0	8.974	9.35	7,094	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	1,138,294	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.523	3.19	2,422	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	687	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.111	52.3	39,664	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	3,786	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	9,865	
Total Zinc	0	0		0	118.378	120	91,108	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	4,250	
Total Arsenic	0	0		0	10	10.0	7,589	
Total Barium	0	0		0	2,400	2,400	1,821,271	
Total Boron	0	0		0	3,100	3,100	2,352,475	
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	227,659	
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	758,863	
Total Mercury	0	0		0	0.050	0.05	37.9	
Total Nickel	0	0		0	610	610	462,906	
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	182	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 58.852 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	105	mg/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	1,821,271	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	1,136	mg/L	Discharge Conc < TQL
Total Cadmium	0.21	mg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	65,526	µg/L	Discharge Conc < TQL
Hexavalent Chromium	2.28	mg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	13,318	µg/L	Discharge Conc < TQL
Total Copper	1,978	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	227,659	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	1,138	mg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	2,422	µg/L	Discharge Conc < TQL
Total Manganese	759	mg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	37.9	µg/L	Discharge Conc < TQL
Total Nickel	39,664	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	3,786	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	538	µg/L	Discharge Conc < TQL
Total Thallium	182	µg/L	Discharge Conc < TQL
Total Zinc	16,915	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS

Attachment E:

Toxics Management Spreadsheet for IMP 214

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Toxics Management Spreadsheet
Version 1.4, May 2025

Discharge Information

Instructions | Discharge | Stream

Facility: **North American Hoganas** NPDES Permit No.: **PA0110655** Outfall No.: **214**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **NCCW**

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
0.083	86.4	7						

					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		170									
	Chloride (PWS)	mg/L		23.6									
	Bromide	mg/L	<	0.2									
	Sulfate (PWS)	mg/L		63.7									
	Fluoride (PWS)	mg/L	<	0.1									
Group 2	Total Aluminum	mg/L	<	0.1									
	Total Antimony	µg/L	<	1									
	Total Arsenic	µg/L	<	1									
	Total Barium	µg/L		31.2									
	Total Beryllium	mg/L	<	0.001									
	Total Boron	mg/L	<	0.05									
	Total Cadmium	mg/L	<	0.002									
	Total Chromium (III)	µg/L	<	2									
	Hexavalent Chromium	mg/L		0.0064									
	Total Cobalt	µg/L	<	0.5									
	Total Copper	µg/L		358									
	Free Cyanide	µg/L											
	Total Cyanide	mg/L	<	0.005									
	Dissolved Iron	µg/L		199									
	Total Iron	mg/L		0.78									
	Total Lead	µg/L		37.3									
	Total Manganese	mg/L		0.27									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		2									
	Total Phenols (Phenolics) (PWS)	µg/L	<	5									
	Total Selenium	µg/L	<	1									
	Total Silver	µg/L	<	0.2									
	Total Thallium	µg/L	<	0.2									
	Total Zinc	µg/L		66.6									
	Total Molybdenum	µg/L	<	1									
	Acrolein	µg/L	<	5									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	1									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	1									
	Carbon Tetrachloride	µg/L	<	0.5									

Group 3	Chlorobenzene	µg/L	<	0.5									
	Chlorodibromomethane	µg/L	<	1									
	Chloroethane	µg/L	<	0.5									
	2-Chloroethyl Vinyl Ether	µg/L	<	1									
	Chloroform	µg/L	<	0.5									
	Dichlorobromomethane	µg/L	<	0.5									
	1,1-Dichloroethane	µg/L	<	0.5									
	1,2-Dichloroethane	µg/L	<	0.5									
	1,1-Dichloroethylene	µg/L	<	0.5									
	1,2-Dichloropropane	µg/L	<	0.5									
	1,3-Dichloropropylene	µg/L	<	0.5									
	1,4-Dioxane	µg/L	<	0.5									
	Ethylbenzene	µg/L	<	0.5									
	Methyl Bromide	µg/L	<	1									
	Methyl Chloride	µg/L	<	0.5									
	Methylene Chloride	µg/L	<	1									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5									
	Tetrachloroethylene	µg/L	<	0.5									
	Toluene	µg/L	<	0.5									
	1,2-trans-Dichloroethylene	µg/L	<	1									
	1,1,1-Trichloroethane	µg/L	<	0.5									
	1,1,2-Trichloroethane	µg/L	<	1									
	Trichloroethylene	µg/L	<	0.5									
	Vinyl Chloride	µg/L	<	0.5									
Group 4	2-Chlorophenol	µg/L	<	0.5									
	2,4-Dichlorophenol	µg/L	<	0.5									
	2,4-Dimethylphenol	µg/L	<	0.5									
	4,6-Dinitro-o-Cresol	µg/L	<	2									
	2,4-Dinitrophenol	µg/L	<	2									
	2-Nitrophenol	µg/L	<	1									
	4-Nitrophenol	µg/L	<	1									
	p-Chloro-m-Cresol	µg/L	<	0.5									
	Pentachlorophenol	µg/L	<	1									
	Phenol	µg/L	<	0.5									
	2,4,6-Trichlorophenol	µg/L	<	0.5									
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	<										

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Toxics Management Spreadsheet
Version 1.4, May 2025

Stream / Surface Water Information

North American Hoganas, NPDES Permit No. PA0110655, Outfall 214

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Stonycreek 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	045084	17.4	1535	145	0.001		Yes
End of Reach 1	045084	17	1534	146	0.001		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	17.4	0.1	10.2									100	7		
End of Reach 1	17	0.1	10.2												

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	17.4														
End of Reach 1	17														

Model Results

North American Hoganas, NPDES Permit No. PA0110655, Outfall 214

Instructions | *Results* | RETURN TO INPUTS | SAVE AS PDF | PRINT | (●) All ( ) Inputs ( ) Results ( ) Limits

☑ ***Hydrodynamics***

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

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
17.4	10.20		10.20	0.128	0.001	0.815	55.765	68.463	0.227	0.108	178.823
17	10.20		10.2								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
17.4	56.56		56.56	0.128	0.001	1.723	55.765	32.366	0.59	0.041	59.331
17	56.559		56.56								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.290 Analysis Hardness (mg/l): 99.434 Analysis pH: 7.00

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	18,005	
Total Antimony	0	0		0	1,100	1,100	26,408	
Total Arsenic	0	0		0	340	340	8,162	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	504,153	
Total Boron	0	0		0	8,100	8,100	194,459	
Total Cadmium	0	0		0	2.003	2.12	50.9	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	567.119	1,795	43,085	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	391	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	2,281	
Total Copper	0	0		0	13.367	13.9	334	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	64.183	81.1	1,946	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	39.5	Chem Translator of 0.85 applied
Total Nickel	0	0		0	465.991	467	11,210	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	3.185	3.75	90.0	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	1,560	
Total Zinc	0	0		0	116.618	119	2,863	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	72.0	
Acrylonitrile	0	0		0	650	650	15,605	
Benzene	0	0		0	640	640	15,365	
Bromoform	0	0		0	1,800	1,800	43,213	
Carbon Tetrachloride	0	0		0	2,800	2,800	67,220	
Chlorobenzene	0	0		0	1,200	1,200	28,809	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	432,131	
Chloroform	0	0		0	1,900	1,900	45,614	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	360,109	
1,1-Dichloroethylene	0	0		0	7,500	7,500	180,055	
1,2-Dichloropropane	0	0		0	11,000	11,000	264,080	
1,3-Dichloropropylene	0	0		0	310	310	7,442	
Ethylbenzene	0	0		0	2,900	2,900	69,621	
Methyl Bromide	0	0		0	550	550	13,204	
Methyl Chloride	0	0		0	28,000	28,000	672,204	
Methylene Chloride	0	0		0	12,000	12,000	288,087	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	24,007	
Tetrachloroethylene	0	0		0	700	700	16,805	
Toluene	0	0		0	1,700	1,700	40,812	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	163,250	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	72,022	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	81,625	
Trichloroethylene	0	0		0	2,300	2,300	55,217	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	13,444	
2,4-Dichlorophenol	0	0		0	1,700	1,700	40,812	
2,4-Dimethylphenol	0	0		0	660	660	15,845	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	1,921	
2,4-Dinitrophenol	0	0		0	660	660	15,845	
2-Nitrophenol	0	0		0	8,000	8,000	192,058	
4-Nitrophenol	0	0		0	2,300	2,300	55,217	
p-Chloro-m-Cresol	0	0		0	160	160	3,841	
Pentachlorophenol	0	0		0	8.723	8.72	209	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	11,043	

☑ ***CFC*** CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): 99.831 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	17,696	
Total Arsenic	0	0		0	150	150	12,066	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	329,798	
Total Boron	0	0		0	1,600	1,600	128,702	
Total Cadmium	0	0		0	0.246	0.27	21.7	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.012	86.1	6,923	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	836	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	1,528	
Total Copper	0	0		0	8.943	9.32	749	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	120,658	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.512	3.17	255	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	72.9	Chem Translator of 0.85 applied
Total Nickel	0	0		0	51.932	52.1	4,190	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	401	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	1,046	
Total Zinc	0	0		0	117.970	120	9,624	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	241	
Acrylonitrile	0	0		0	130	130	10,457	
Benzene	0	0		0	130	130	10,457	
Bromoform	0	0		0	370	370	29,762	
Carbon Tetrachloride	0	0		0	560	560	45,046	
Chlorobenzene	0	0		0	240	240	19,305	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	281,535	
Chloroform	0	0		0	390	390	31,371	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	249,360	
1,1-Dichloroethylene	0	0		0	1,500	1,500	120,658	
1,2-Dichloropropane	0	0		0	2,200	2,200	176,965	
1,3-Dichloropropylene	0	0		0	61	61.0	4,907	
Ethylbenzene	0	0		0	580	580	46,654	
Methyl Bromide	0	0		0	110	110	8,848	

Methyl Chloride	0	0		0	5,500	5,500	442,412	
Methylene Chloride	0	0		0	2,400	2,400	193,053	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	16,892	
Tetrachloroethylene	0	0		0	140	140	11,261	
Toluene	0	0		0	330	330	26,545	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	112,614	
1,1,1-Trichloroethane	0	0		0	610	610	49,068	
1,1,2-Trichloroethane	0	0		0	680	680	54,698	
Trichloroethylene	0	0		0	450	450	36,197	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	8,848	
2,4-Dichlorophenol	0	0		0	340	340	27,349	
2,4-Dimethylphenol	0	0		0	130	130	10,457	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	1,287	
2,4-Dinitrophenol	0	0		0	130	130	10,457	
2-Nitrophenol	0	0		0	1,600	1,600	128,702	
4-Nitrophenol	0	0		0	470	470	37,806	
p-Chloro-m-Cresol	0	0		0	500	500	40,219	
Pentachlorophenol	0	0		0	6.693	6.69	538	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	7,320	

☑ ***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	450	
Total Arsenic	0	0		0	10	10.0	804	
Total Barium	0	0		0	2,400	2,400	193,053	
Total Boron	0	0		0	3,100	3,100	249,360	
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	24,132	
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	80,439	
Total Mercury	0	0		0	0.050	0.05	4.02	
Total Nickel	0	0		0	610	610	49,068	

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	19.3	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	241	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	8,044	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	459	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	2,654	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	5,470	
Methyl Bromide	0	0		0	100	100.0	8,044	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
Tetrachloroethylene	0	0		0	N/A	N/A	N/A	
Toluene	0	0		0	57	57.0	4,585	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	8,044	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	804,386	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	30	30.0	2,413	
2,4-Dichlorophenol	0	0		0	10	10.0	804	
2,4-Dimethylphenol	0	0		0	100	100.0	8,044	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	161	
2,4-Dinitrophenol	0	0		0	10	10.0	804	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	321,755	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 59.331 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc	Stream	Trib Conc	Fate	WQC	WQ Obj	WLA (ug/L)	Comments

Pollutants	Conc (µg/L)	CV	(µg/L)	Coef	(µg/L)	(µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	26.5	
Benzene	0	0		0	0.58	0.58	256	
Bromoform	0	0		0	7	7.0	3,090	
Carbon Tetrachloride	0	0		0	0.4	0.4	177	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	353	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	419	
1,2-Dichloroethane	0	0		0	9.9	9.9	4,371	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	397	
1,3-Dichloropropylene	0	0		0	0.27	0.27	119	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	8,830	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	88.3	
Tetrachloroethylene	0	0		0	10	10.0	4,415	

Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	243	
Trichloroethylene	0	0		0	0.6	0.6	265	
Vinyl Chloride	0	0		0	0.02	0.02	8.83	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	13.2	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	662	

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	0.15	0.23	214	334	536	µg/L	214	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Lead	Report	Report	Report	Report	Report	µg/L	255	CFC	Discharge Conc > 10% WQBEL (no RP)

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

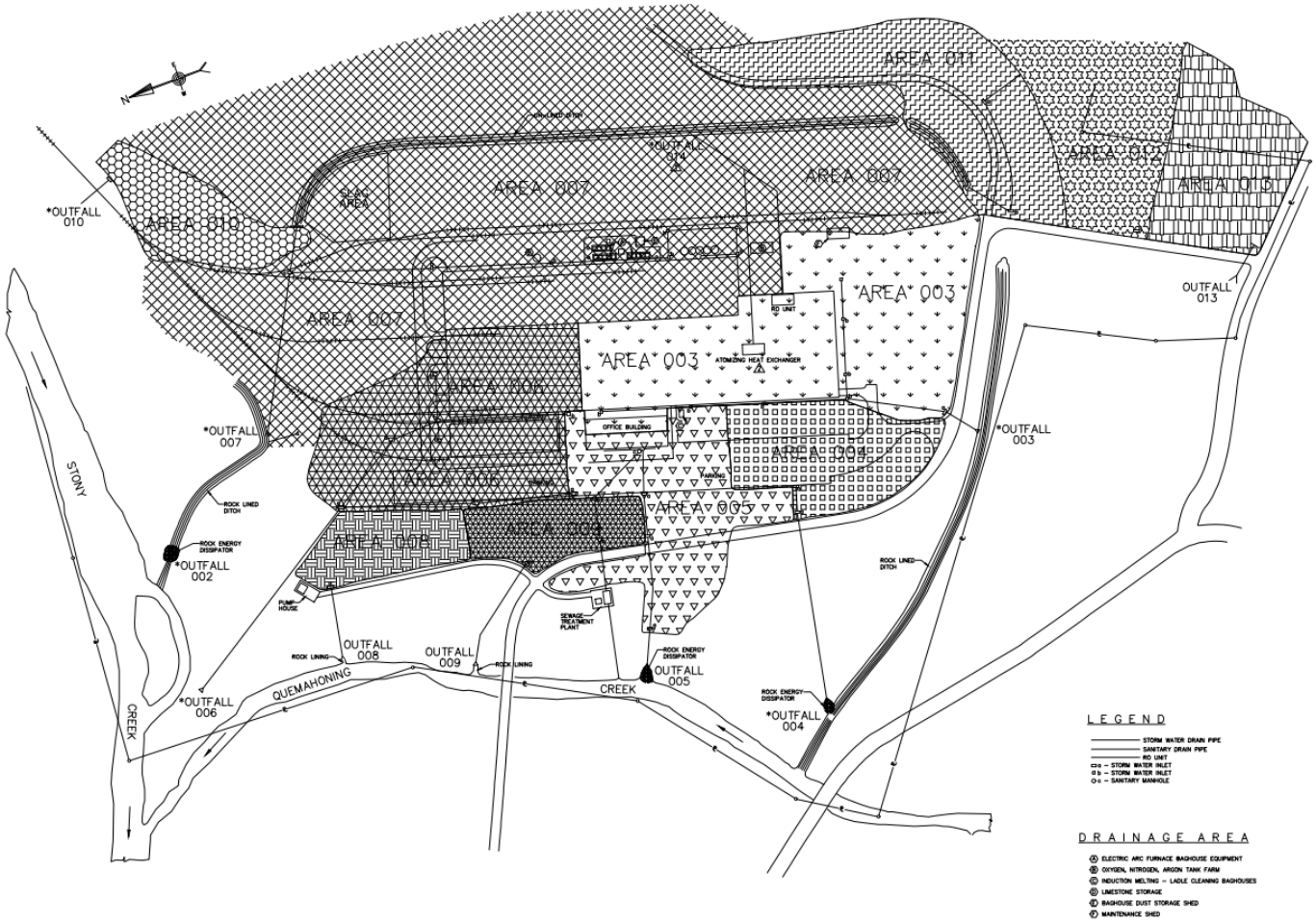
The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	Discharge Conc < TQL
Total Aluminum	11.5	mg/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	193,053	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	125	mg/L	Discharge Conc < TQL

Total Cadmium	0.022	mg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	6,923	µg/L	Discharge Conc < TQL
Hexavalent Chromium	0.25	mg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	1,462	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	24,132	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	121	mg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	80.4	mg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	4.02	µg/L	Discharge Conc < TQL
Total Nickel	4,190	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	401	µg/L	Discharge Conc < TQL
Total Silver	57.7	µg/L	Discharge Conc < TQL
Total Thallium	19.3	µg/L	Discharge Conc < TQL
Total Zinc	1,835	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	46.2	µg/L	Discharge Conc ≤ 25% WQBEL
Acrylonitrile	26.5	µg/L	Discharge Conc < TQL
Benzene	256	µg/L	Discharge Conc < TQL
Bromoform	3,090	µg/L	Discharge Conc ≤ 25% WQBEL
Carbon Tetrachloride	177	µg/L	Discharge Conc < TQL
Chlorobenzene	8,044	µg/L	Discharge Conc < TQL
Chlorodibromomethane	353	µg/L	Discharge Conc ≤ 25% WQBEL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	276,979	µg/L	Discharge Conc < TQL
Chloroform	459	µg/L	Discharge Conc < TQL
Dichlorobromomethane	419	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	4,371	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	2,654	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	397	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	119	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	5,470	µg/L	Discharge Conc < TQL
Methyl Bromide	8,044	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Chloride	430,856	µg/L	Discharge Conc < TQL
Methylene Chloride	8,830	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2,2-Tetrachloroethane	88.3	µg/L	Discharge Conc < TQL
Tetrachloroethylene	4,415	µg/L	Discharge Conc < TQL
Toluene	4,585	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	8,044	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,1-Trichloroethane	46,163	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	243	µg/L	Discharge Conc ≤ 25% WQBEL
Trichloroethylene	265	µg/L	Discharge Conc < TQL
Vinyl Chloride	8.83	µg/L	Discharge Conc < TQL
2-Chlorophenol	2,413	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	804	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	8,044	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	161	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	804	µg/L	Discharge Conc < TQL
2-Nitrophenol	123,102	µg/L	Discharge Conc < TQL
4-Nitrophenol	35,392	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	2,462	µg/L	Discharge Conc < TQL
Pentachlorophenol	13.2	µg/L	Discharge Conc < TQL
Phenol	321,755	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	662	µg/L	Discharge Conc < TQL

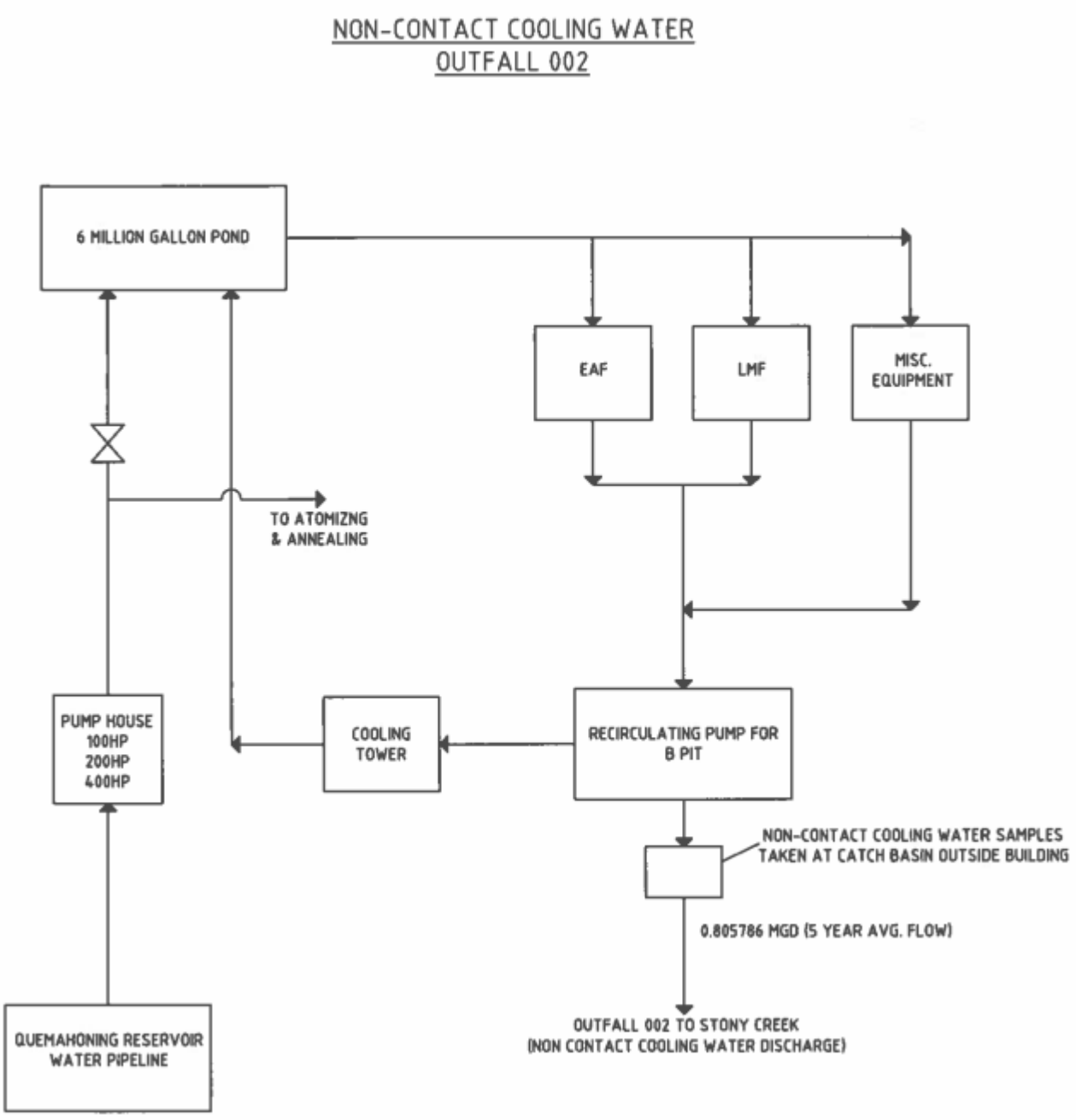
Attachment F:

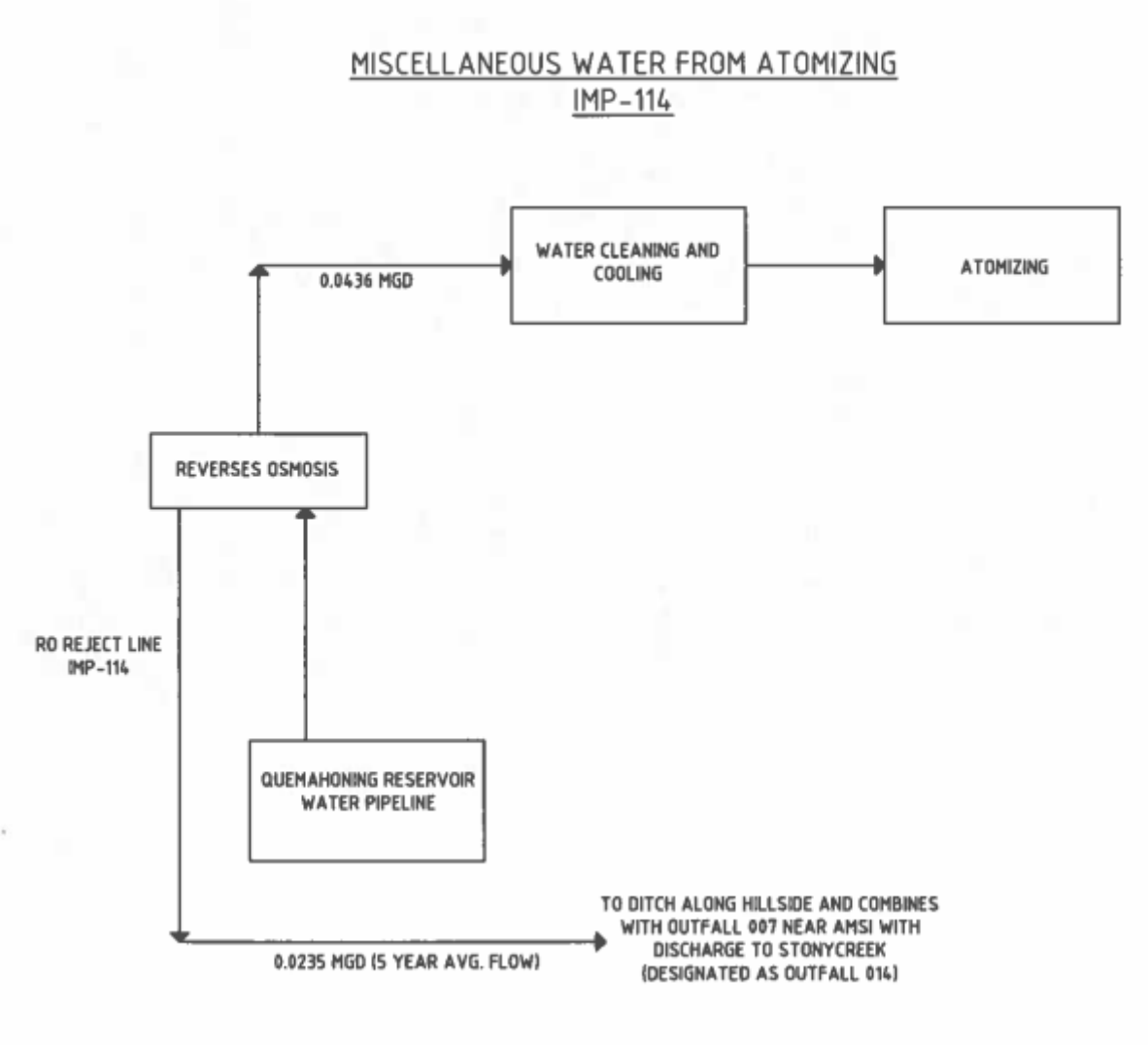
Site Drainage Map

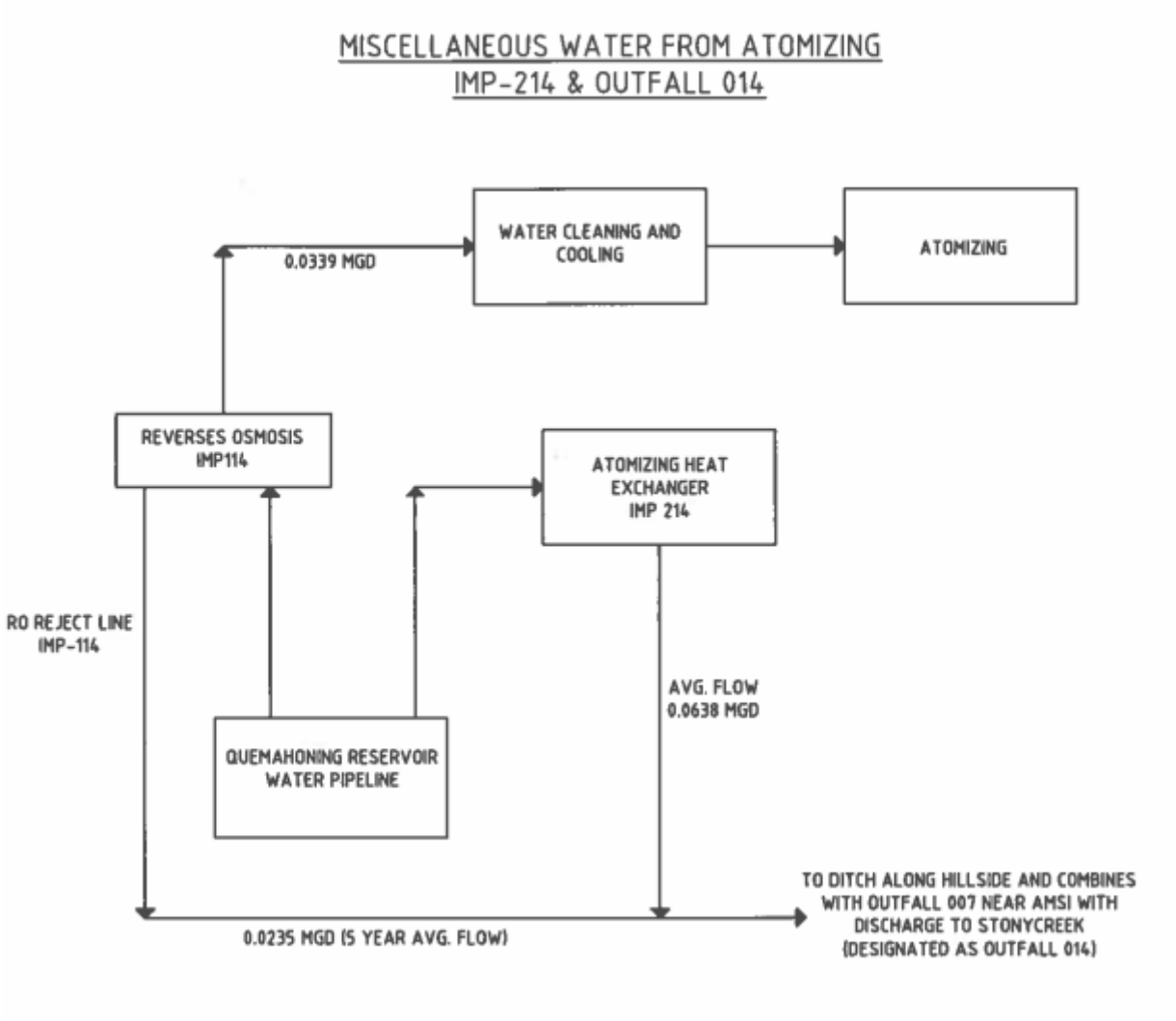

AREA 011
AREA 007
AREA 007
AREA 010
AREA 007
AREA 003
AREA 003
AREA 006
AREA 004
AREA 005
AREA 006
AREA 008
*OUTFALL 010
*OUTFALL 014
*OUTFALL 013
*OUTFALL 007
*OUTFALL 003
*OUTFALL 002
*OUTFALL 006
*OUTFALL 004
OUTFALL 008
OUTFALL 009
OUTFALL 005
STONY CREEK
QUEMAHONING CREEK
SLAG AREA
OFFICE BUILDING
PARKING
SEWAGE TREATMENT PLANT
PUMP HOUSE
ROCK LINED DITCH
ROCK ENERGY DISSIPATOR
ROCK LINING
ATOMIZING HEAT EXCHANGER
RO UNIT
LEGEND
STORM WATER DRAIN PIPE
SANITARY DRAIN PIPE
RO UNIT
a – STORM WATER INLET
b – STORM WATER INLET
c – SANITARY MANHOLE
DRAINAGE AREA
(A) ELECTRIC ARC FURNACE BAGHOUSE EQUIPMENT
(B) OXYGEN, NITROGEN, ARGON TANK FARM
(C) INDUCTION MELTING – LADLE CLEANING BAGHOUSES
(D) LIMESTONE STORAGE
(E) BAGHOUSE DUST STORAGE SHED
(F) MAINTENANCE SHED

Attachment G:

Line Diagrams


NON-CONTACT COOLING WATER
OUTFALL 002
6 MILLION GALLON POND
EAF
LMF
MISC. EQUIPMENT
TO ATOMIZNG & ANNEALING
PUMP HOUSE 100HP 200HP 400HP
COOLING TOWER
RECIRCULATING PUMP FOR B PIT
NON-CONTACT COOLING WATER SAMPLES TAKEN AT CATCH BASIN OUTSIDE BUILDING
0.805786 MGD (5 YEAR AVG. FLOW)
QUEMAHONING RESERVOIR WATER PIPELINE
OUTFALL 002 TO STONY CREEK (NON CONTACT COOLING WATER DISCHARGE)


MISCELLANEOUS WATER FROM ATOMIZING
IMP-114
WATER CLEANING AND COOLING
ATOMIZING
0.0436 MGD
REVERSES OSMOSIS
RO REJECT LINE
IMP-114
QUEMAHONING RESERVOIR WATER PIPELINE
TO DITCH ALONG HILLSIDE AND COMBINES WITH OUTFALL 007 NEAR AMSI WITH DISCHARGE TO STONYCREEK (DESIGNATED AS OUTFALL 014)
0.0235 MGD (5 YEAR AVG. FLOW)


MISCELLANEOUS WATER FROM ATOMIZING
IMP-214 & OUTFALL 014
WATER CLEANING AND COOLING
ATOMIZING
0.0339 MGD
REVERSES OSMOSIS IMP114
ATOMIZING HEAT EXCHANGER IMP 214
RO REJECT LINE IMP-114
AVG. FLOW 0.0638 MGD
QUEMAHONING RESERVOIR WATER PIPELINE
TO DITCH ALONG HILLSIDE AND COMBINES WITH OUTFALL 007 NEAR AMSI WITH DISCHARGE TO STONYCREEK (DESIGNATED AS OUTFALL 014)
0.0235 MGD (5 YEAR AVG. FLOW)