pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

**Southwest Regional Office**
**CLEAN WATER PROGRAM**

| | | | |
|---|---|---|---|
| Application Type | **Renewal** | Application No. | **PA0110655** |
| Facility Type | **Industrial** | APS ID | **591148** |
| Major / Minor | **Minor** | Authorization ID | **643150** |

# 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 |
| Applicant Phone | 814-479-3520 | Facility Phone | Same |
| Client ID | 79754 | Site ID | 245766 |
| SIC Code | 3399 | Municipality | Quemahoning Township |
| SIC Description | Mfg - Primary Metal Products, NEC | County | Somerset |
| Date Application Received | February 15, 2006 | EPA Waived? | Yes |
| Date Application Accepted | August 11, 2006 | If No, Reason | |

Purpose of Application: Renewal NPDES Permit Coverage

## Summary of Review

The Department received a renewal NPDES permit application from North American Höganäs (NAH), Inc on February 15, 2006 to continue coverage of its facility in Hollsopple, PA. An update to the application was received by the Department on October 16, 2020. 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, screen to desired faction, annealed in annealing furnaces, blended and packaged for shipment. The site SIC codes are 3399, Primary Metal Products, and 3312, Iron and Steel Mills.

The site has 11 outfalls, Outfall 002 through Outfall 010, Outfall 013, and a new Outfall 014. Outfalls 002, 006, 007, 010, 014, 015 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).

In the previous permit Outfall 002 was believed to receive reverse osmosis discharge via Internal Outfall 102; however, it has been determined that 102 does not discharge via Outfall 002 but discharges to a separate discharge point at the site. This discharge point is being named Outfall 014. Additionally, to be consistent with the Department's outfall naming convention, Internal Outfall 102 is being renamed IMP 114. Furthermore, NAH is proposing a potential rerouting of a complimentary heat exchanger discharge line from what currently discharges via Outfall 002 to discharge via Outfall 014. The current set up with the heat exchanger discharge water causes NAH to have back-ups in the lines and internal flooding on to plant floors especially during the summer months. This proposed change would eliminate that. NAH presently has a complimentary heat exchanger located in the general vicinity of the reverse osmosis (RO) unit. The RO unit reject water discharges via Outfall 014. This heat exchanger provides complimentary cooling to the reused water from the atomization process. Contact atomization water is

| Approve | Deny | Signatures | Date |
|---|---|---|---|
| X | | Adam Olesnanik / Project Manager | 11/16/2020 |
| X | | Michael E. Fifth, P.E. / Environmental Engineer Manager | 12/30/2020 |

**Summary of Review**

filtered, cooled and then reused within the atomization process. The contact atomization water needs to be cooled for production quality reasons. Presently the non-contact water from this heat exchanger discharges into the plant non-contact cooling water loop, whose overflow discharges via Outfall 002. NAH experiences issues, especially during the summer months, with back-ups and this causes internal flooding within the non-contact cooling water lines. NAH is proposing to relocate the NCCW discharge from this heat exchanger to discharge via Outfall 014. The discharge would be in the same pipeline as the RO unit reject water discharge but both waste streams will be monitored internally at different points, the RO unit reject water will be monitored via IMP 114 and the NCCW will be monitored via IMP 214. Removing the heat exchanger non-contact cooling water from Outfall 002 will not cause any flow reductions or changes to the discharge quality to Outfall 002, because this water presently discharges into a recirculating loop and consists completely of non-contact cooling water. NAH has a “dead” pipeline in this area to where the heat exchanger water can be easily routed to the discharge pipeline of Outfall 014. It will only take some valve manipulation to complete the rerouting, so the rerouting could possibly be completed in a week.

Outfall 002 discharges non-contact cooling water that is used to cool facility equipment such as the electric arc furnace, ladle metallurgy furnace, 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 discharge 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.

Outfall 004 discharges stormwater from the southwest 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 area 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 received the discharge from Outfall 014 at a small culvert located at the slag processing area.

Outfall 008 discharges uncontaminated stormwater from a small area 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 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 (previously named Internal Outfall 102). Proposed IMP 214 will discharge non-contact cooling water used in the atomization process heat exchanger. The water quality would be exactly the same as Outfall 002 since the water is drawn from the same source. The maximum discharge from IMP 214 would be 0.317 MGD and the average daily discharge would be 0.080 MGD. 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 hill side 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

**Summary of Review**

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 is storage and handled similarly to the purchased scrap materials in the same general location. Refractory material removed from the electric arc furnaces, 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 are 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 spayed 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 spay water is entirely absorbed by the slag and refectory material. Dust generated by the EAF emission control system is captured in the three baghouses and disposed into two, 30-yard containers. The material is then landfilled off site. Hot slag from the electric arc furnace 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 theater 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 the metallics. The metals that are recovered are recycled back into the electric arc furnace. The broken and crushed slag is then picked up by a font end loader and dumped onto a conveyor that conveys it though a screening system that sizes the slag for commercial purposes. After screening, the slag is stored in piles on site by size until it is sold for beneficial use.

The NAH facility derives its water from the Cambria Somerset Authority (CSA). The main pipeline is located to the west of the NAH facility buried in the bed of the Quemahoning Creek. Water is pumped from this line up to a 5.5-million-gallon reservoir located approximately 170 feet above the plant from the reservoir, water flows by gravity to the plant. The major portion of this water is for non-contact cooling water purposes at the Electric Arc Furnace, the Ladle Metallurgy Furnace, air compressors and atomization. A very small amount is used for make-up and incidental uses throughout the plant. The non-contact cooling water flows to a collection pit where it is either discharged to Stony Creek 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 other than the non-contact cooling water drainage system. The use of water outside of the plant is limited to very few activities, none of which result in a 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.

<u>Clean Water Act § 316(b) – Cooling Water Intake Structures</u>

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)).

North American Höganäs (NAH) is supplied with water for cooling by the Cambria Somerset Authority (“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;

**Summary of Review**

(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.

NAH is a point source as defined in 40 CFR § 122.2. NAH appears to use one or more cooling water intake structures (Quemahoning, Hinckston Run, or Border through NAH's water supply arrangement with CSA) with a cumulative Design Intake Flow greater than 2 MGD (the Quemahoning intake alone can withdraw 71 MGD). And NAH uses nearly 100% of the approximately 0.5 MGD of water it withdraws (via CSA) for cooling purposes, which exceeds the 25% applicability threshold. NAH appears to meet these initial applicability criteria. However, §§ 125.91(b) and (c) further state that:

> (b) Use of a cooling water intake structure includes obtaining cooling water by any sort of contract or arrangement with one or more independent suppliers of cooling water if the independent supplier withdraws water from waters of the United States but is not itself a new or existing facility as defined in subparts I or J of this part, except as provided in paragraphs (c) and (d) of this section. An owner or operator of an existing facility may not circumvent these requirements by creating arrangements to receive cooling water from an entity that is not itself a facility subject to subparts I or J of this part.
>
> (c) Obtaining cooling water from a public water system, using reclaimed water from wastewater treatment facilities or desalination plants, or recycling treated process wastewater effluent as cooling water does not constitute use of a cooling water intake structure for purposes of this subpart.

U.S. EPA Region 3 clarified the applicability of §§ 125.91(b) and (c) to CSA in a June 19, 2019 email as follows:

> Two intake structures at the Quemahoning and Wilmore Reservoirs that are owned and operated by CSA are subject to 316(b). Section 316(b) requires the use of the Best Technology Available to minimize adverse environmental impact at cooling water intake structures for power-generating and manufacturing facilities. While CSA is not a power-generating or manufacturing facility, the co-permittee, CPV Fairview, LLC, a power-generating facility, will directly use the water supplied by CSA for cooling purposes.
>
> 1) CSA meets the definition of an independent supplier.
> 2) CSA is not a public water system (they do not supply finished or potable water) so the public water system exemption doesn't apply to the facility.
> 3) In the case where CSA is a co-permittee, both CSA and CPV Fairview LLC are subject to the requirements of 316(b).

Section 125.92(p) defines "independent supplier" as "an entity, other than the regulated facility, that owns and operates its own cooling water intake structure and directly withdraws water from waters of the United States. The supplier provides the cooling water to other facilities for their use, but may itself also use a portion of the water. An entity that provides potable water to residential populations (e.g., public water system) is not a supplier for purposes of this subpart."

In an independent supplier scenario where the independent supplier is not an existing facility subject to 316(b) requirements, the facility that uses water supplied by the independent supplier for cooling purposes (i.e., NAH) is subject to 316(b) requirements and the independent supplier (i.e., CSA) is not. As EPA stated in its June 19, 2019 email, even though CSA is an independent supplier, it is subject to 316(b) requirements because it is a co-permittee with CPV Fairview (NPDES PA0253359). Also, even though § 125.91(b) only states that the independent supplier must be an existing facility for the § 125.91(b) exemption to apply to facilities like NAH, the preamble to the 2014 Existing Facilities rule (79 FR 48305) clarifies that the independent supplier must be an existing facility that is subject to 316(b) requirements for the facilities served by the independent supplier to be exempt as 'not using a cooling water intake structure'. The relevant portion of the preamble states:

> C. General Applicability
>
> > This rule applies to owners and operators of existing facilities that meet all following criteria:
> >
> > • The facility is a point source that uses or, in the case of new units at an existing facility, proposes to use cooling water from one or more cooling water intake structures, including a cooling water intake structure operated by an independent supplier not otherwise subject to 316(b) requirements that withdraws water from

**Summary of Review**

> waters of the United States and provides cooling water to the facility by any sort of contract or other arrangement; […]

In summary, if the independent supplier is an existing facility subject to 316(b) requirements, then the facilities that use water supplied by that independent supplier for cooling purposes are not considered to be using a cooling water intake structure. Consequently, the independent supplier's customers who are served by the independent suppliers' cooling water intake structures do not satisfy the § 125.91(a)(2) applicability criterion. That is, 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.

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) | 1.2 |
| Latitude | 40º 11' 48" | Longitude | -78º 56' 02" |
| Quad Name | Hooversville | Quad Code | 1714 |
| Wastewater Description: | NCCW | | |
| Receiving Waters | Stonycreek River (TSF) | Stream Code | 45084 |
| NHD Com ID | 123719580 | RMI | 17.4 |
| Drainage Area | 146 | Yield (cfs/mi$^2$) | 0.070 |
| $Q_{7-10}$ Flow (cfs) | 10.3 | $Q_{7-10}$ Basis | USGS StreamStats |
| Elevation (ft) | 1535 | Slope (ft/ft) | 0.0001 |
| 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 Municpal Waterworks | | |
| PWS Waters | Conemaugh River | Flow at Intake (cfs) | 124 |
| PWS RMI | 0.52 | Distance from Outfall (mi) | >50 |

**Discharge, Receiving Waters and Water Supply Information**

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|---|---|---|---|
| Outfall No. | 003 | Design Flow (MGD) | 0 |
| Latitude | 40º 11' 27" | Longitude | -78º 56' 07" |
| Quad Name | Hooversville | Quad Code | 1714 |
| Wastewater Description: | Stormwater | | |
| Receiving Waters | Quemahoning Creek (CWF) | Stream Code | 45371 |
| NHD Com ID | 123719512 | RMI | 0.37 |
| 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. | 004 | Design Flow (MGD) | 0 |
| Latitude | 40º 11' 34" | Longitude | -78º 56' 13" |
| Quad Name | Hooversville | Quad Code | 1714 |
| Wastewater Description: | Stormwater | | |
| Receiving Waters | Quemahoning Creek (CWF) | Stream Code | 45371 |
| NHD Com ID | 123719512 | RMI | 0.37 |
| 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. | 005 | Design Flow (MGD) | 0 |
| Latitude | 40º 11' 38" | Longitude | -78º 56' 11" |
| Quad Name | Hooversville | Quad Code | 1714 |
| Wastewater Description: | Stormwater | | |
| Receiving Waters | Quemahoning Creek (CWF) | Stream Code | 45371 |
| NHD Com ID | 123719512 | RMI | 0.27 |
| 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**

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|---|---|---|---|
| Outfall No. | 006 | Design Flow (MGD) | 0 |
| Latitude | 40º 11' 50" | Longitude | -78º 56' 06" |
| Quad Name | Hooversville | Quad Code | 1714 |
| Wastewater Description: | Stormwater | | |
| Receiving Waters | Stonycreek River (TSF) | Stream Code | 45084 |
| NHD Com ID | 123719580 | RMI | 17.32 |
| 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**

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|---|---|---|---|
| Outfall No. | 007 | Design Flow (MGD) | 0 |
| Latitude | 40º 11' 46" | Longitude | -78º 55' 59" |
| Quad Name | Hooversville | Quad Code | 1714 |
| Wastewater Description: | Stormwater | | |
| Receiving Waters | Stonycreek River (TSF) | Stream Code | 45084 |
| NHD Com ID | 123719580 | RMI | 17.4 |
| 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. | 008 | Design Flow (MGD) | 0 |
| Latitude | 40º 11' 46" | Longitude | -78º 56' 06" |
| Quad Name | Hooversville | Quad Code | 1714 |
| Wastewater Description: | Stormwater | | |
| Receiving Waters | Quemahoning Creek (CWF) | Stream Code | 45371 |
| NHD Com ID | 123719511 | RMI | 0.09 |
| 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. | 009 | Design Flow (MGD) | 0 |
| Latitude | 40º 11' 42" | Longitude | -78º 56' 08" |
| Quad Name | Hooversville | Quad Code | 1714 |
| Wastewater Description: | Stormwater | | |
| Receiving Waters | Quemahoning Creek (CWF) | Stream Code | 45371 |
| NHD Com ID | 123719512 | 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. | 010 | Design Flow (MGD) | 0 |
| Latitude | 40º 11' 47" | Longitude | -78º 55' 19" |
| Quad Name | Hooversville | Quad Code | 1714 |
| Wastewater Description: | Stormwater | | |
| Receiving Waters | Stonycreek River (TSF) | Stream Code | 45084 |
| NHD Com ID | 123719580 | RMI | 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 (CWF) | 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) | 0.1 |
| Latitude | 40º 11' 30" | Longitude | -78º 55' 56" |
| Quad Name | Hooversville | Quad Code | 1714 |
| Wastewater Description: | Reverse Osmosis Reject Wastewater, NCCW | | |
| Receiving Waters | Stonycreek River (TSF) | Stream Code | 45084 |
| NHD Com ID | 123719580 | RMI | 17.4 |
| Drainage Area | 146 | Yield (cfs/mi$^2$) | 0.070 |
| $Q_{7-10}$ Flow (cfs) | 10.3 | $Q_{7-10}$ Basis | USGS StreamStats |
| Elevation (ft) | 1535 | Slope (ft/ft) | 0.0001 |
| 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 Municpal Waterworks | | |
| PWS Waters | Conemaugh River | Flow at Intake (cfs) | 124 |
| PWS RMI | 0.52 | Distance from Outfall (mi) | >50 |

**Development of Effluent Limitations**

**Outfall No.** 002 **Design Flow (MGD)** 1.20
**Latitude** 40º 11' 48" **Longitude** -78º 56' 02"
**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 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) | 0.325 |
| **Basin/Stream Characteristics** | |
| **Parameter** | **Value** |
| Area in Square Miles | 146 |
| $Q_{7-10}$ (cfs) | 10.3 |
| Low-flow yield (cfs/mi$^2$) | 0.070 |
| Elevation (ft) | 1535 |
| Slope | 0.001 |

**Table 3: Water Quality Base Effluent Limitations at Outfall 002**

| Parameters | Average Monthly | Daily Maximum | Discharge Concentration used in modeling |
|---|---|---|---|
| Total Copper (µg/L) | Monitor | Monitor | 14.8 |

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 water supply. The flow rate used for modeling is the summation of the maximum discharge flow from all of the outfalls combined, 1.517 MGD. The results of the thermal analysis, included in Attachment C, indicate that WQBELs for temperature is 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 | 81.5 |
| Aug 1 – Nov 30 | 110.0 |
| Dec 1 – Dec 31 | 105.2 |

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 | Discharge Concentrations (mg/L) | TMDL Limits (mg/L) | |
|---|---|---|---|
| | | Average Monthly | Daily Maximum |
| Aluminum, total | 0.067 | 0.75 | 0.75 |
| Iron, total | 0.330 | 1.5 | 3.0 |
| Manganese, total | 0.140 | 1.0 | 2.0 |

**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. A Part C condition was included in the permit stating that there shall be no discharges of non-contact cooling water from the powder operation except during the period from June 1 through August 31. However, based on new information the temperature limits in the current permit will be removed and replaced with the new temperature limits that are based on current discharge flow rate of the non-contact cooling water from Outfall 002.

**Table 6. Existing Effluent Limitations at Outfall 002**

| Parameter | Monthly Average | Daily Maximum | Instantaneous Maximum | Measurement Frequency | Sample Type |
|---|---|---|---|---|---|
| Flow (MGD) | Monitor | Monitor | | 1/Week | Measure |
| Temperature (°F)<br>Jun 1 – 15<br>Jun 16 – 30<br>Jul 1 – 31<br>Aug 1 – 15<br>Aug 16 – May 31 | | | <br>84<br>81<br>76<br>91<br>110 | 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. Existing Effluent Limitations at Outfall 002**

| Parameter | Monthly Average | Daily Maximum | Instantaneous Maximum | Measurement Frequency | Sample Type |
|---|---|---|---|---|---|
| Flow (MGD) | Monitor | Monitor | | 1/Week | Measure |
| Copper, Total (mg/L) | Monitor | Monitor | | 1/Week | Grab |
| Aluminum, Total | 0.75 | 0.75 | | 1/Week | Grab |
| Iron, total | 1.5 | 3.0 | | 1/Week | Grab |
| Manganese, total | 1.0 | 2.0 | | 1/Week | Grab |
| Temperature (°F)<br>Jan 1 – June 30<br>Jul 1 – 31<br>Aug 1 – Nov 30<br>Dec 1 – Dec 31 | | | <br>110<br>81.5<br>110<br>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 limitation, and exceedances so not constitutes permit violations. However, if the permittee's sampling demonstrates exceedances of benchmark values for two consecutive monitoring periods, the permit 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 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. Effluent goals were included in a Part C conditions for these parameters at these outfalls.

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

| Parameter | Monthly Average | Daily Maximum | Goal (mg/L) | Measurement Frequency | Sample Type |
|---|---|---|---|---|---|
| Total Suspended Solids | Monitor | Monitor | 100 | 1/Quarter | Grab |
| Nitrate-Nitrite as Nitrogen | Monitor | Monitor | 0.68 | 1/Quarter | Grab |
| Cadmium | Monitor | Monitor | 0.0159 | 1/Quarter | Grab |
| Lead | Monitor | Monitor | 0.0816 | 1/Quarter | Grab |
| Zinc | Monitor | Monitor | 0.117 | 1/Quarter | 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 monitoring frequency for the existing monitoring requirements has been changed from 1/quarter to semi-annually to reflect that monitoring frequency in the PAG-03 general permit. The Draft Permit requires a Corrective Action Plan when there are two consecutive exceedances of the benchmark values, which are also included in the Part C condition. The benchmark values are displayed below in Table 10. The effluent goals for Nitrate-Nitrite as Nitrogen, Cadmium, Lead, and Zinc that were included in a Part C condition in the current permit will be converted to Benchmark values. 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 Stormwater Outfalls**

| Parameter | Max Daily Concentration | Benchmark Values (mg/L) | Measurement Frequency | Sample Type |
|---|---|---|---|---|
| Total Suspended Solids (TSS) | Report | 100.0 | 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 |
| 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)** | 0.417 |
| **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 (Previously Outfall 102) | **Design Flow (MGD)** | 0.10 |
| **Latitude** | 40º 11' 48" | **Longitude** | -78º 56' 02" |

**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 |
| Dissolved Iron | XXX | XXX | 7.0 | mg/L |
| 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 Outfall 102

Discharges from Outfall 102 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 Outfall 102***

| **Parameter** | **Value** |
|---|---|
| River Mile Index | 17.4 |
| Discharge Flow (MGD) | 0.0168 |
| **Basin/Stream Characteristics** | |
| **Parameter** | **Value** |
| Area in Square Miles | 146 |
| $Q_{7\text{-}10}$ (cfs) | 10.3 |
| 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 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 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 | Discharge Concentrations (mg/L) | TMDL Limits (mg/L) | |
|---|---|---|---|
| | | Average Monthly | Daily Maximum |
| Aluminum, total | 0.024 | 0.75 | 0.75 |
| Iron, total | 0.08 | 1.5 | 3.0 |
| Manganese, total | 0.03 | 1.0 | 2.0 |

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 Outfall 102**

| Parameters | Mass (lb/day) | | Concentration (mg/L) | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Average Monthly | Daily Maximum | 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 | 4.0 | 8.0 | XXX | 1/Week | Grab |
| Total Iron | XXX | XXX | XXX | 2.0 | 4.0 | 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 |

**Proposed Effluent Limitations for Outfall 102**

The proposed effluent limitations and monitoring requirements for Outfall 102 are shown below in Table 16. The limits are the most stringent values from the above limitation analysis.

**Table 16: Proposed Effluent Limitation for Outfall 102**

| Parameters | Mass (lb/day) | | Concentration (mg/L) | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Average Monthly | Daily Maximum | 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)** | 0.317 |
| **Latitude** | 40º 11' 48" | **Longitude** | -78º 56' 02" |

**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 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 IMP 214

Discharges from IMP 214 are evaluated based on concentrations reported on the application and on DMRs from Outfall 002 because the quality of the discharge is similar; 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. No water quality-based effluent limitations or monitoring requirements were recommended by the Toxics Management Spread Sheet.

***Table 18: TMS Inputs for IMP 214***

| **Parameter** | **Value** |
|---|---|
| River Mile Index | 17.4 |
| Discharge Flow (MGD) | 0.08 |
| **Basin/Stream Characteristics** | |
| **Parameter** | **Value** |
| Area in Square Miles | 146 |
| $Q_{7-10}$ (cfs) | 10.3 |
| Low-flow yield (cfs/mi$^2$) | 0.070 |
| Elevation (ft) | 1535 |
| Slope | 0.001 |

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, 1.517 MGD. The results of the thermal analysis, included in Attachment C, indicate that WQBELs for temperature is required at IMP 214 and are displayed below in Table 19.

**Table 19. Thermal Limitations**

| **Date Ranges** | **Instantaneous Temperature Limits (°F)** |
|---|---|
| Jan 1 – Jun 30 | 110.0 |
| Jul 1 -31 | 81.5 |
| Aug 1 – Nov 30 | 110.0 |
| Dec 1 – Dec 31 | 105.2 |

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 20.

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 20: Kiskiminetas-Conemaugh River Watersheds TMDL Limits**

| Parameter | Discharge Concentrations (mg/L) | TMDL Limits (mg/L) | |
|---|---|---|---|
| | | Average Monthly | Daily Maximum |
| Aluminum, total | 0.067 | 0.75 | 0.75 |
| Iron, total | 0.330 | 1.5 | 3.0 |
| Manganese, total | 0.140 | 1.0 | 2.0 |

**Anti-backsliding**

This is a new IMP; anti-backsliding is not appliable to this IMP.

**Proposed Effluent Limitations for Outfall 002**

The proposed effluent limitations and monitoring requirements for IMP 214 are shown below in Table 21. The limits are the most stringent values from the above limitation analysis.

**Table 21. Existing Effluent Limitations at IMP 214**

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

| Tools and References Used to Develop Permit | |
|---|---|
| | |
| ☐ | WQM for Windows Model (see Attachment ) |
| ☐ | PENTOXSD for Windows Model (see Attachment ) |
| ☐ | TRC Model Spreadsheet (see Attachment ) |
| ☒ | Temperature Model Spreadsheet (see Attachment **C**) |
| ☐ | Toxics Screening Analysis Spreadsheet (see Attachment ) |
| ☐ | Water Quality Toxics Management Strategy, 361-0100-003, 4/06. |
| ☐ | Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97. |
| ☐ | Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98. |
| ☐ | Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96. |
| ☐ | Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97. |
| ☐ | Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97. |
| ☐ | Pennsylvania CSO Policy, 385-2000-011, 9/08. |
| ☐ | Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03. |
| ☐ | Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97. |
| ☐ | Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97. |
| ☐ | Implementation Guidance Design Conditions, 391-2000-006, 9/97. |
| ☐ | Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004. |
| ☐ | Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997. |
| ☐ | Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99. |
| ☐ | Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004. |
| ☐ | Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97. |
| ☐ | Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008. |
| ☐ | Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994. |
| ☐ | Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09. |
| ☐ | Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97. |
| ☐ | Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97. |
| ☐ | Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99. |
| ☐ | Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999. |
| ☐ | Design Stream Flows, 391-2000-023, 9/98. |
| ☐ | Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98. |
| ☐ | Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97. |
| ☐ | Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07. |
| ☐ | SOP: |
| ☒ | Toxics Management Spreadsheet (see Attachment B,D) |

## Attachments

Attachment A: StreamStats Report

Attachment B: Outfall 002 Toxics Management Spreadsheet

Attachment C: Site Thermal Discharge Evaluation

Attachment D: IMP 114 Toxics Management Spreadsheet

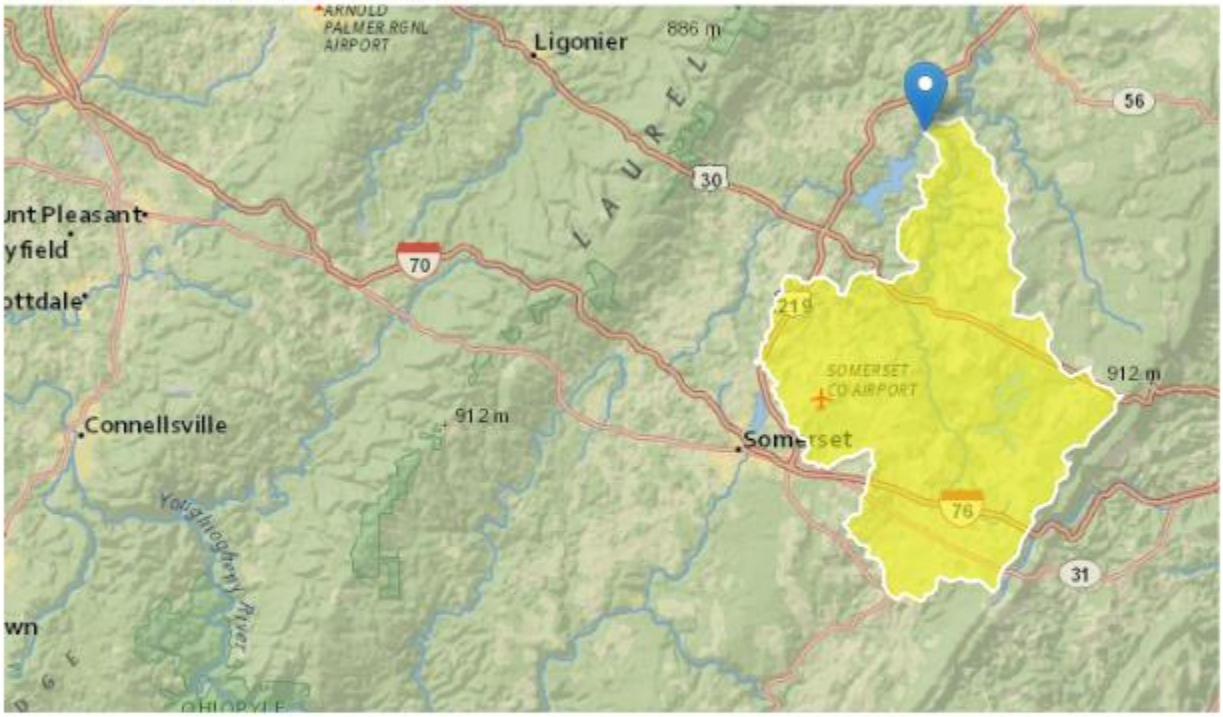
Attachment E: IMP 214 Toxics Management Spreadsheet

Attachment A:

StreamStats Report

# NAH Outfall 002 StreamStats Report

**Region ID:** PA
**Workspace ID:** PA20200320123016454000
**Clicked Point (Latitude, Longitude):** 40.19720, -78.93387
**Time:** 2020-03-20 08:30:33 -0400




Basin Characteristics

| Parameter Code | Parameter Description | Value | Unit |
|---|---|---|---|
| DRNAREA | Area that drains to a point on a stream | 146 | square miles |
| ELEV | Mean Basin Elevation | 2254.2 | feet |
| PRECIP | Mean Annual Precipitation | 42 | inches |

Low-Flow Statistics Parameters[100 Percent (145 square miles) Low Flow Region 3]

| Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit |
|---|---|---|---|---|---|
| DRNAREA | Drainage Area | 146 | square miles | 2.33 | 1720 |
| ELEV | Mean Basin Elevation | 2254.2 | feet | 898 | 2700 |
| PRECIP | Mean Annual Precipitation | 42 | inches | 38.7 | 47.9 |

Low-Flow Statistics Flow Report[100 Percent (145 square miles) Low Flow Region 3]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

| Statistic | Value | Unit | SE | SEp |
|---|---|---|---|---|
| 7 Day 2 Year Low Flow | 20.4 | ft^3/s | 43 | 43 |
| 30 Day 2 Year Low Flow | 26.8 | ft^3/s | 38 | 38 |
| 7 Day 10 Year Low Flow | 10.3 | ft^3/s | 54 | 54 |
| 30 Day 10 Year Low Flow | 12.8 | ft^3/s | 49 | 49 |
| 90 Day 10 Year Low Flow | 18.3 | 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:

Outfall 002 Toxics Management Spreadsheet

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.1, October 2020

# 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 | $Q_{7-10}$ | $Q_h$ |
| 0.325 | 81.8 | 7.88 | | | | | | |

| | | | | | *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 | | 182.4 | | | | | | | | | |
| | Chloride (PWS) | mg/L | | 18.84 | | | | | | | | | |
| | Bromide | mg/L | < | 0.243 | | | | | | | | | |
| | Sulfate (PWS) | mg/L | | 62.98 | | | | | | | | | |
| | Fluoride (PWS) | mg/L | < | 0.122 | | | | | | | | | |
| Group 2 | Total Aluminum | µg/L | | 67.6 | | | | | | | | | |
| | Total Antimony | µg/L | < | 1 | | | | | | | | | |
| | Total Arsenic | µg/L | < | 1 | | | | | | | | | |
| | Total Barium | µg/L | | 35.1 | | | | | | | | | |
| | Total Beryllium | µg/L | | 1 | | | | | | | | | |
| | Total Boron | µg/L | | 50 | | | | | | | | | |
| | Total Cadmium | µg/L | | 0.2 | | | | | | | | | |
| | Total Chromium (III) | µg/L | | 1 | | | | | | | | | |
| | Hexavalent Chromium | µg/L | < | 5 | | | | | | | | | |
| | Total Cobalt | µg/L | | 0.5 | | | | | | | | | |
| | Total Copper | µg/L | | 14.8 | | | | | | | | | |
| | Free Cyanide | µg/L | | | | | | | | | | | |
| | Total Cyanide | µg/L | < | 10 | | | | | | | | | |
| | Dissolved Iron | µg/L | | 200 | | | | | | | | | |
| | Total Iron | µg/L | | 330 | | | | | | | | | |
| | Total Lead | µg/L | | 1 | | | | | | | | | |
| | Total Manganese | µg/L | | 140 | | | | | | | | | |
| | Total Mercury | µg/L | < | 0.2 | | | | | | | | | |
| | Total Nickel | µg/L | | 6.2 | | | | | | | | | |
| | 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 | | 23 | | | | | | | | | |
| | Total Molybdenum | µg/L | | 21.4 | | | | | | | | | |

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.1, October 2020

## 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 | 146 | 0.001 | | Yes |
| End of Reach 1 | 045084 | 17 | 1534 | 147 | 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 | 10.3 | | | | | | | | | 100 | 7 | | |
| End of Reach 1 | 17 | 0.1 | 10.3 | | | | | | | | | | | | |

$Q_h$

| 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 | | | | | | | | | | | | | | |

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Toxics Management Spreadsheet
Version 1.1, October 2020

## 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***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.296 Analysis Hardness (mg/l): 97.424 Analysis pH: 7.06

| Pollutants | Stream Conc (µg/L) | Stream CV | Trib Conc (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) | Comments |
|---|---|---|---|---|---|---|---|---|
| Total Dissolved Solids (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Chloride (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Sulfate (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Fluoride (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Aluminum | 0 | 0 | | 0 | 750 | 750 | 5,300 | |
| Total Antimony | 0 | 0 | | 0 | 1,100 | 1,100 | 7,773 | |
| Total Arsenic | 0 | 0 | | 0 | 340 | 340 | 2,403 | Chem Translator of 1 applied |
| Total Barium | 0 | 0 | | 0 | 21,000 | 21,000 | 148,394 | |
| Total Boron | 0 | 0 | | 0 | 8,100 | 8,100 | 57,238 | |
| Total Cadmium | 0 | 0 | | 0 | 1.963 | 2.08 | 14.7 | Chem Translator of 0.945 applied |
| Total Chromium (III) | 0 | 0 | | 0 | 557.717 | 1,765 | 12,472 | Chem Translator of 0.316 applied |
| Hexavalent Chromium | 0 | 0 | | 0 | 16 | 16.3 | 115 | Chem Translator of 0.982 applied |
| Total Cobalt | 0 | 0 | | 0 | 95 | 95.0 | 671 | |
| Total Copper | 0 | 0 | | 0 | 13.113 | 13.7 | 96.5 | 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 | 62.772 | 79.0 | 558 | Chem Translator of 0.795 applied |
| Total Manganese | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Mercury | 0 | 0 | | 0 | 1.400 | 1.65 | 11.6 | Chem Translator of 0.85 applied |
| Total Nickel | 0 | 0 | | 0 | 458.013 | 459 | 3,243 | 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 | 3.076 | 3.62 | 25.6 | Chem Translator of 0.85 applied |
| Total Thallium | 0 | 0 | | 0 | 65 | 65.0 | 459 | |
| Total Zinc | 0 | 0 | | 0 | 114.618 | 117 | 828 | Chem Translator of 0.978 applied |

☑ *CFC* CCT (min): ####### PMF: 1 Analysis Hardness (mg/l): 99.153 Analysis pH: 7.02

| 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 | 4,727 | |
| Total Arsenic | 0 | 0 | | 0 | 150 | 150 | 3,223 | Chem Translator of 1 applied |
| Total Barium | 0 | 0 | | 0 | 4,100 | 4,100 | 88,094 | |
| Total Boron | 0 | 0 | | 0 | 1,600 | 1,600 | 34,378 | |
| Total Cadmium | 0 | 0 | | 0 | 0.245 | 0.27 | 5.78 | Chem Translator of 0.909 applied |
| Total Chromium (III) | 0 | 0 | | 0 | 73.600 | 85.6 | 1,839 | Chem Translator of 0.86 applied |
| Hexavalent Chromium | 0 | 0 | | 0 | 10 | 10.4 | 223 | Chem Translator of 0.962 applied |
| Total Cobalt | 0 | 0 | | 0 | 19 | 19.0 | 408 | |
| Total Copper | 0 | 0 | | 0 | 8.891 | 9.26 | 199 | 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 | 32,229 | WQC = 30 day average; PMF = 1 |
| Total Lead | 0 | 0 | | 0 | 2.493 | 3.15 | 67.6 | Chem Translator of 0.792 applied |
| Total Manganese | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Mercury | 0 | 0 | | 0 | 0.770 | 0.91 | 19.5 | Chem Translator of 0.85 applied |
| Total Nickel | 0 | 0 | | 0 | 51.634 | 51.8 | 1,113 | 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 | 107 | 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 | 279 | |
| Total Zinc | 0 | 0 | | 0 | 117.291 | 119 | 2,556 | 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 | 120 | |
| Total Arsenic | 0 | 0 | | 0 | 10 | 10.0 | 215 | |
| Total Barium | 0 | 0 | | 0 | 2,400 | 2,400 | 51,567 | |
| Total Boron | 0 | 0 | | 0 | 3,100 | 3,100 | 66,608 | |
| 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 | 6,446 | |
| 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 | 21,486 | |
| Total Mercury | 0 | 0 | | 0 | 0.050 | 0.05 | 1.07 | |
| Total Nickel | 0 | 0 | | 0 | 610 | 610 | 13,107 | |
| 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 | 5.16 | |
| Total Zinc | 0 | 0 | | 0 | N/A | N/A | N/A | |

☑ *CRL* CCT (min): 61.299 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 | 61.9 | 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 | 3,397 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Antimony | N/A | N/A | Discharge Conc < TQL |
| Total Arsenic | N/A | N/A | Discharge Conc < TQL |
| Total Barium | 51,567 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Beryllium | N/A | N/A | No WQS |
| Total Boron | 34,378 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Cadmium | 5.78 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Chromium (III) | 1,839 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Hexavalent Chromium | 73.8 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Cobalt | 408 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Cyanide | N/A | N/A | No WQS |
| Dissolved Iron | 6,446 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Iron | 32,229 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Lead | 67.6 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Manganese | 21,486 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Mercury | 1.07 | µg/L | Discharge Conc < TQL |
| Total Nickel | 1,113 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Phenols (Phenolics) (PWS) | | µg/L | PWS Not Applicable |
| Total Selenium | 107 | µg/L | Discharge Conc < TQL |
| Total Silver | 16.4 | µg/L | Discharge Conc < TQL |
| Total Thallium | 5.16 | µg/L | Discharge Conc < TQL |
| Total Zinc | 531 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Molybdenum | N/A | N/A | No WQS |

Attachment C:

Site Thermal Discharge Evaluation

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Facility:** | **North American Hoganas** | | | | | | |
| **Permit Number:** | PA0110655 | | | | | | **PMF** |
| **Stream Name:** | Stoneycreek River | | | | | | 1.00 |
| **Analyst/Engineer:** | Adam Olesnanik | | | | | | |
| **Stream Q7-10 (cfs):** | 10.3 | | | | | | |

| | **Facility Flows** | | | | **Stream Flows** | | |
|---|---|---|---|---|---|---|---|
| | Intake (Stream) (MGD) | Intake (External) (MGD) | Consumptive Loss (MGD) | Discharge Flow (MGD) | Upstream Stream Flow (cfs) | Adjusted Stream Flow (cfs) | Downstream Stream Flow (cfs) |
| Jan 1-31 | 0 | 1.517 | 0 | 1.517 | 32.96 | 32.96 | 35.31 |
| Feb 1-29 | 0 | 1.517 | 0 | 1.517 | 36.05 | 36.05 | 38.40 |
| Mar 1-31 | 0 | 1.517 | 0 | 1.517 | 72.10 | 72.10 | 74.45 |
| Apr 1-15 | 0 | 1.517 | 0 | 1.517 | 95.79 | 95.79 | 98.14 |
| Apr 16-30 | 0 | 1.517 | 0 | 1.517 | 95.79 | 95.79 | 98.14 |
| May 1-15 | 0 | 1.517 | 0 | 1.517 | 52.53 | 52.53 | 54.88 |
| May 16-30 | 0 | 1.517 | 0 | 1.517 | 52.53 | 52.53 | 54.88 |
| Jun 1-15 | 0 | 1.517 | 0 | 1.517 | 30.90 | 30.90 | 33.25 |
| Jun 16-30 | 0 | 1.517 | 0 | 1.517 | 30.90 | 30.90 | 33.25 |
| Jul 1-31 | 0 | 1.517 | 0 | 1.517 | 17.51 | 17.51 | 19.86 |
| Aug 1-15 | 0 | 1.517 | 0 | 1.517 | 14.42 | 14.42 | 16.77 |
| Aug 16-31 | 0 | 1.517 | 0 | 1.517 | 14.42 | 14.42 | 16.77 |
| Sep 1-15 | 0 | 1.517 | 0 | 1.517 | 11.33 | 11.33 | 13.68 |
| Sep 16-30 | 0 | 1.517 | 0 | 1.517 | 11.33 | 11.33 | 13.68 |
| Oct 1-15 | 0 | 1.517 | 0 | 1.517 | 12.36 | 12.36 | 14.71 |
| Oct 16-31 | 0 | 1.517 | 0 | 1.517 | 12.36 | 12.36 | 14.71 |
| Nov 1-15 | 0 | 1.517 | 0 | 1.517 | 16.48 | 16.48 | 18.83 |
| Nov 16-30 | 0 | 1.517 | 0 | 1.517 | 16.48 | 16.48 | 18.83 |
| Dec 1-31 | 0 | 1.517 | 0 | 1.517 | 24.72 | 24.72 | 27.07 |

*Please forward all comments to Tom Starosta at 717-787-4317, tstarosta@state.pa.us.*

Version 2.0 -- 07/01/2005 Reference: Implementation Guidance for Temperature Criteria, DEP-ID: 391-2000-017

NOTE: The user can only edit fields that are blue.

NOTE: MGD x 1.547 = cfs.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Facility: | **North American Hoganas** | | | | | | |
| Permit Number: | PA0110655 | | | | | | |
| Stream: | Stoneycreek River | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | **WWF Criteria** | **CWF Criteria** | **TSF Criteria** | **316 Criteria** | | **Q7-10 Multipliers** | **Q7-10 Multipliers** |
| | (ºF) | (ºF) | (ºF) | (ºF) | | (Used in Analysis) | (Default - Info Only) |
| Jan 1-31 | 40 | 38 | 40 | 0 | | 3.2 | 3.2 |
| Feb 1-29 | 40 | 38 | 40 | 0 | | 3.5 | 3.5 |
| Mar 1-31 | 46 | 42 | 46 | 0 | | 7 | 7 |
| Apr 1-15 | 52 | 48 | 52 | 0 | | 9.3 | 9.3 |
| Apr 16-30 | 58 | 52 | 58 | 0 | | 9.3 | 9.3 |
| May 1-15 | 64 | 54 | 64 | 0 | | 5.1 | 5.1 |
| May 16-30 | 72 | 58 | 68 | 0 | | 5.1 | 5.1 |
| Jun 1-15 | 80 | 60 | 70 | 0 | | 3 | 3 |
| Jun 16-30 | 84 | 64 | 72 | 0 | | 3 | 3 |
| Jul 1-31 | 87 | 66 | 74 | 0 | | 1.7 | 1.7 |
| Aug 1-15 | 87 | 66 | 80 | 0 | | 1.4 | 1.4 |
| Aug 16-31 | 87 | 66 | 87 | 0 | | 1.4 | 1.4 |
| Sep 1-15 | 84 | 64 | 84 | 0 | | 1.1 | 1.1 |
| Sep 16-30 | 78 | 60 | 78 | 0 | | 1.1 | 1.1 |
| Oct 1-15 | 72 | 54 | 72 | 0 | | 1.2 | 1.2 |
| Oct 16-31 | 66 | 50 | 66 | 0 | | 1.2 | 1.2 |
| Nov 1-15 | 58 | 46 | 58 | 0 | | 1.6 | 1.6 |
| Nov 16-30 | 50 | 42 | 50 | 0 | | 1.6 | 1.6 |
| Dec 1-31 | 42 | 40 | 42 | 0 | | 2.4 | 2.4 |
| | | | | | | | |
| | | | | | | | |
| NOTES: | | | | | | | |
| WWF= Warm water fishes | | | | | | | |
| CWF= Cold water fishes | | | | | | | |
| TSF= Trout stocking | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Facility: | **North American Hoganas** | | | | | | |
| Permit Number: | PA0110655 | | | | | | **PMF** |
| Stream: | Stoneycreek River | | | | | | 1.00 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | **TSF** | | | **TSF** | | **TSF** | |
| | Ambient Stream | Ambient Stream | Target Maximum | Daily | | Daily | |
| | Temperature (ºF) | Temperature (ºF) | Stream Temp.[1] | WLA[2] | | WLA[3] | at Discharge |
| | (Default) | (Site-specific data) | (ºF) | (Million BTUs/day) | | (ºF) | Flow (MGD) |
| Jan 1-31 | 34 | 0 | 40 | N/A -- Case 2 | | 110.0 | 1.517 |
| Feb 1-29 | 35 | 0 | 40 | N/A -- Case 2 | | 110.0 | 1.517 |
| Mar 1-31 | 39 | 0 | 46 | N/A -- Case 2 | | 110.0 | 1.517 |
| Apr 1-15 | 46 | 0 | 52 | N/A -- Case 2 | | 110.0 | 1.517 |
| Apr 16-30 | 52 | 0 | 58 | N/A -- Case 2 | | 110.0 | 1.517 |
| May 1-15 | 56 | 0 | 64 | N/A -- Case 2 | | 110.0 | 1.517 |
| May 16-30 | 60 | 0 | 68 | N/A -- Case 2 | | 110.0 | 1.517 |
| Jun 1-15 | 65 | 0 | 70 | N/A -- Case 2 | | 110.0 | 1.517 |
| Jun 16-30 | 69 | 0 | 72 | N/A -- Case 2 | | 110.0 | 1.517 |
| Jul 1-31 | 73 | 0 | 74 | N/A -- Case 2 | | 81.5 | 1.517 |
| Aug 1-15 | 72 | 0 | 80 | N/A -- Case 2 | | 110.0 | 1.517 |
| Aug 16-31 | 70 | 0 | 87 | N/A -- Case 2 | | 110.0 | 1.517 |
| Sep 1-15 | 68 | 0 | 84 | N/A -- Case 2 | | 110.0 | 1.517 |
| Sep 16-30 | 62 | 0 | 78 | N/A -- Case 2 | | 110.0 | 1.517 |
| Oct 1-15 | 57 | 0 | 72 | N/A -- Case 2 | | 110.0 | 1.517 |
| Oct 16-31 | 53 | 0 | 66 | N/A -- Case 2 | | 110.0 | 1.517 |
| Nov 1-15 | 47 | 0 | 58 | N/A -- Case 2 | | 110.0 | 1.517 |
| Nov 16-30 | 41 | 0 | 50 | N/A -- Case 2 | | 110.0 | 1.517 |
| Dec 1-31 | 36 | 0 | 42 | N/A -- Case 2 | | 105.2 | 1.517 |

[1] This is the maximum of the TSF WQ criterion or the ambient temperature. The ambient temperature may be either the design (median) temperature for TSF, or the ambient stream temperature based on site-specific data entered by the user. A minimum of 1ºF above ambient stream temperature is allocated.

[2] The WLA expressed in Million BTUs/day is valid for Case 1 scenarios, and disabled for Case 2 scenarios.

[3] The WLA expressed in ºF is valid only if the limit is tied to a daily discharge flow limit (may be used for Case 1 or Case 2). WLAs greater than 110ºF are displayed as 110ºF.

Attachment D:

IMP 114 Toxics Management Spreadsheet

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.1, October 2020

# Discharge Information

Instructions | Discharge | Stream

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

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

| Discharge Characteristics | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Design Flow (MGD)* | Hardness (mg/l)* | pH (SU)* | Partial Mix Factors (PMFs) | | | | Complete Mix Times (min) | |
| | | | AFC | CFC | THH | CRL | $Q_{7-10}$ | $Q_h$ |
| 0.0168 | 81.8 | 7.88 | | | | | | |

| | | | | | 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 | | 1060 | | | | | | | | | |
| | Chloride (PWS) | mg/L | | 71.7 | | | | | | | | | |
| | Bromide | mg/L | < | 0.2 | | | | | | | | | |
| | Sulfate (PWS) | mg/L | | 239 | | | | | | | | | |
| | Fluoride (PWS) | mg/L | < | 0.3 | | | | | | | | | |
| Group 2 | Total Aluminum | µg/L | | 24 | | | | | | | | | |
| | Total Antimony | µg/L | < | 1 | | | | | | | | | |
| | Total Arsenic | µg/L | < | 1 | | | | | | | | | |
| | Total Barium | µg/L | | 84.8 | | | | | | | | | |
| | Total Beryllium | µg/L | < | 1 | | | | | | | | | |
| | Total Boron | µg/L | < | 20 | | | | | | | | | |
| | Total Cadmium | µg/L | < | 0.2 | | | | | | | | | |
| | Total Chromium (III) | µg/L | | 2.4 | | | | | | | | | |
| | Hexavalent Chromium | µg/L | < | 5 | | | | | | | | | |
| | Total Cobalt | µg/L | | 0.6 | | | | | | | | | |
| | Total Copper | µg/L | | 15.8 | | | | | | | | | |
| | Free Cyanide | µg/L | | | | | | | | | | | |
| | Total Cyanide | µg/L | < | 10 | | | | | | | | | |
| | Dissolved Iron | µg/L | | 340 | | | | | | | | | |
| | Total Iron | µg/L | | 80 | | | | | | | | | |
| | Total Lead | µg/L | < | 1 | | | | | | | | | |
| | Total Manganese | µg/L | | 30 | | | | | | | | | |
| | Total Mercury | µg/L | < | 0.1 | | | | | | | | | |
| | Total Nickel | µg/L | | 9.2 | | | | | | | | | |
| | 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 | | 7.3 | | | | | | | | | |
| | Total Molybdenum | µg/L | | 4.5 | | | | | | | | | |

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.1, October 2020

## Stream / Surface Water Information

North American Hoganas, NPDES Permit No. PA0110655, Outfall 102

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 | 146 | 0.001 | | Yes |
| End of Reach 1 | 045084 | 17 | 1534 | 147 | 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 | 10.3 | | | | | | | | | 100 | 7 | | |
| End of Reach 1 | 17 | 0.1 | 10.3 | | | | | | | | | | | | |

$Q_h$

| 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 | | | | | | | | | | | | | | |

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## Model Results

North American Hoganas, NPDES Permit No. PA0110655, Outfall 102

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.287 Analysis Hardness (mg/l): 99.841 Analysis pH: 7.00

| Pollutants | Stream Conc (µg/L) | Stream CV | Trib Conc (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) | Comments |
|---|---|---|---|---|---|---|---|---|
| Total Dissolved Solids (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Chloride (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Sulfate (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Fluoride (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Aluminum | 0 | 0 | | 0 | 750 | 750 | 85,929 | |
| Total Antimony | 0 | 0 | | 0 | 1,100 | 1,100 | 126,029 | |
| Total Arsenic | 0 | 0 | | 0 | 340 | 340 | 38,954 | Chem Translator of 1 applied |
| Total Barium | 0 | 0 | | 0 | 21,000 | 21,000 | 2,406,001 | |
| Total Boron | 0 | 0 | | 0 | 8,100 | 8,100 | 928,029 | |
| Total Cadmium | 0 | 0 | | 0 | 2.011 | 2.13 | 244 | Chem Translator of 0.944 applied |
| Total Chromium (III) | 0 | 0 | | 0 | 569.022 | 1,801 | 206,309 | Chem Translator of 0.316 applied |
| Hexavalent Chromium | 0 | 0 | | 0 | 16 | 16.3 | 1,867 | Chem Translator of 0.982 applied |
| Total Cobalt | 0 | 0 | | 0 | 95 | 95.0 | 10,884 | |
| Total Copper | 0 | 0 | | 0 | 13.419 | 14.0 | 1,601 | 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 | 64.470 | 81.5 | 9,335 | 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 | 189 | Chem Translator of 0.85 applied |
| Total Nickel | 0 | 0 | | 0 | 467.606 | 469 | 53,682 | 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 | 3.208 | 3.77 | 432 | Chem Translator of 0.85 applied |
| Total Thallium | 0 | 0 | | 0 | 65 | 65.0 | 7,447 | |
| Total Zinc | 0 | 0 | | 0 | 117.023 | 120 | 13,709 | Chem Translator of 0.978 applied |

☑ ***CFC*** CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): 99.954 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 | 87,409 | |
| Total Arsenic | 0 | 0 | | 0 | 150 | 150 | 59,597 | Chem Translator of 1 applied |
| Total Barium | 0 | 0 | | 0 | 4,100 | 4,100 | 1,628,981 | |
| Total Boron | 0 | 0 | | 0 | 1,600 | 1,600 | 635,700 | |
| Total Cadmium | 0 | 0 | | 0 | 0.246 | 0.27 | 107 | Chem Translator of 0.909 applied |
| Total Chromium (III) | 0 | 0 | | 0 | 74.087 | 86.1 | 34,227 | Chem Translator of 0.86 applied |
| Hexavalent Chromium | 0 | 0 | | 0 | 10 | 10.4 | 4,130 | Chem Translator of 0.962 applied |
| Total Cobalt | 0 | 0 | | 0 | 19 | 19.0 | 7,549 | |
| Total Copper | 0 | 0 | | 0 | 8.952 | 9.33 | 3,705 | 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 | 595,969 | WQC = 30 day average; PMF = 1 |
| Total Lead | 0 | 0 | | 0 | 2.515 | 3.18 | 1,263 | 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 | 360 | Chem Translator of 0.85 applied |
| Total Nickel | 0 | 0 | | 0 | 51.986 | 52.1 | 20,717 | Chem Translator of 0.997 applied |
| Total Phenols (Phenolics) (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Selenium | 0 | 0 | | 0 | 4.600 | 4.99 | 1,982 | 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 | 5,165 | |
| Total Zinc | 0 | 0 | | 0 | 118.093 | 120 | 47,586 | 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 | 2,225 | |
| Total Arsenic | 0 | 0 | | 0 | 10 | 10.0 | 3,973 | |
| Total Barium | 0 | 0 | | 0 | 2,400 | 2,400 | 953,550 | |
| Total Boron | 0 | 0 | | 0 | 3,100 | 3,100 | 1,231,668 | |
| 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 | 119,194 | |
| 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 | 397,312 | |
| Total Mercury | 0 | 0 | | 0 | 0.050 | 0.05 | 19.9 | |
| Total Nickel | 0 | 0 | | 0 | 610 | 610 | 242,361 | |
| 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 | 95.4 | |
| Total Zinc | 0 | 0 | | 0 | N/A | N/A | N/A | |

☑ *CRL* CCT (min): 59.346 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

| Pollutants | Stream Conc (µg/L) | Stream CV | Trib Conc (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) | Comments |
|---|---|---|---|---|---|---|---|---|
| Total Dissolved Solids (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Chloride (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Sulfate (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Fluoride (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Aluminum | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Antimony | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Arsenic | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Barium | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Boron | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Cadmium | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Chromium (III) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Hexavalent Chromium | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Cobalt | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Copper | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Dissolved Iron | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Iron | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Lead | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Manganese | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Mercury | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Nickel | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Phenols (Phenolics) (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Selenium | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Silver | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Thallium | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Zinc | 0 | 0 | | 0 | N/A | N/A | N/A | |

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

**No. Samples/Month:** 4

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

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

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

| Pollutants | Governing WQBEL | Units | Comments |
|---|---|---|---|
| Total Dissolved Solids (PWS) | N/A | N/A | PWS Not Applicable |
| Chloride (PWS) | N/A | N/A | PWS Not Applicable |
| Bromide | N/A | N/A | No WQS |
| Sulfate (PWS) | N/A | N/A | PWS Not Applicable |
| Fluoride (PWS) | N/A | N/A | PWS Not Applicable |
| Total Aluminum | 55,077 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Antimony | N/A | N/A | Discharge Conc < TQL |
| Total Arsenic | N/A | N/A | Discharge Conc < TQL |
| Total Barium | 953,550 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Beryllium | N/A | N/A | No WQS |
| Total Boron | 594,829 | µg/L | Discharge Conc < TQL |
| Total Cadmium | 107 | µg/L | Discharge Conc < TQL |
| Total Chromium (III) | 34,227 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Hexavalent Chromium | 1,197 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Cobalt | 6,976 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Copper | 1,026 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Cyanide | N/A | N/A | No WQS |
| Dissolved Iron | 119,194 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Iron | 595,969 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Lead | 1,263 | µg/L | Discharge Conc < TQL |
| Total Manganese | 397,312 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Mercury | 19.9 | µg/L | Discharge Conc < TQL |
| Total Nickel | 20,717 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Phenols (Phenolics) (PWS) | | µg/L | Discharge Conc < TQL |
| Total Selenium | 1,982 | µg/L | Discharge Conc < TQL |
| Total Silver | 277 | µg/L | Discharge Conc < TQL |
| Total Thallium | 95.4 | µg/L | Discharge Conc < TQL |
| Total Zinc | 8,787 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Molybdenum | N/A | N/A | No WQS |

Attachment E:

IMP 214 Toxics Management Spreadsheet

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Toxics Management Spreadsheet
Version 1.1, October 2020

# 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 | $Q_{7-10}$ | $Q_h$ |
| 0.08 | 81.8 | 7.88 | | | | | | |

| | Discharge Pollutant | Units | Max Discharge Conc | | 0 if left blank: Trib Conc | 0 if left blank: Stream Conc | 0.5 if left blank: Daily CV | 0.5 if left blank: Hourly CV | 0 if left blank: Stream CV | 0 if left blank: Fate Coeff | 0 if left blank: FOS | 1 if left blank: Criteria Mod | 1 if left blank: Chem Transl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Group 1 | Total Dissolved Solids (PWS) | mg/L | | 182.4 | | | | | | | | | |
| | Chloride (PWS) | mg/L | | 18.84 | | | | | | | | | |
| | Bromide | mg/L | < | 0.243 | | | | | | | | | |
| | Sulfate (PWS) | mg/L | | 62.98 | | | | | | | | | |
| | Fluoride (PWS) | mg/L | < | 0.122 | | | | | | | | | |
| Group 2 | Total Aluminum | µg/L | | 67.6 | | | | | | | | | |
| | Total Antimony | µg/L | < | 1 | | | | | | | | | |
| | Total Arsenic | µg/L | < | 1 | | | | | | | | | |
| | Total Barium | µg/L | | 35.1 | | | | | | | | | |
| | Total Beryllium | µg/L | | 1 | | | | | | | | | |
| | Total Boron | µg/L | | 50 | | | | | | | | | |
| | Total Cadmium | µg/L | | 0.2 | | | | | | | | | |
| | Total Chromium (III) | µg/L | | 1 | | | | | | | | | |
| | Hexavalent Chromium | µg/L | < | 5 | | | | | | | | | |
| | Total Cobalt | µg/L | | 0.5 | | | | | | | | | |
| | Total Copper | µg/L | | 14.8 | | | | | | | | | |
| | Free Cyanide | µg/L | | | | | | | | | | | |
| | Total Cyanide | µg/L | < | 10 | | | | | | | | | |
| | Dissolved Iron | µg/L | | 200 | | | | | | | | | |
| | Total Iron | µg/L | | 330 | | | | | | | | | |
| | Total Lead | µg/L | | 1 | | | | | | | | | |
| | Total Manganese | µg/L | | 140 | | | | | | | | | |
| | Total Mercury | µg/L | < | 0.2 | | | | | | | | | |
| | Total Nickel | µg/L | | 6.2 | | | | | | | | | |
| | 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 | | 23 | | | | | | | | | |
| | Total Molybdenum | µg/L | | 21.4 | | | | | | | | | |

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## 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 | 146 | 0.001 | | Yes |
| End of Reach 1 | 045084 | 17 | 1534 | 147 | 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 | 10.3 | | | | | | | | | 100 | 7 | | |
| End of Reach 1 | 17 | 0.1 | 10.3 | | | | | | | | | | | | |

$Q_h$

| 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 | | | | | | | | | | | | | | |

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## 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***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.289 Analysis Hardness (mg/l): 99.272 Analysis pH: 7.02

| Pollutants | Stream Conc (µg/L) | Stream CV | Trib Conc (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) | Comments |
|---|---|---|---|---|---|---|---|---|
| Total Dissolved Solids (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Chloride (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Sulfate (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Fluoride (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Aluminum | 0 | 0 | | 0 | 750 | 750 | 18,760 | |
| Total Antimony | 0 | 0 | | 0 | 1,100 | 1,100 | 27,515 | |
| Total Arsenic | 0 | 0 | | 0 | 340 | 340 | 8,505 | Chem Translator of 1 applied |
| Total Barium | 0 | 0 | | 0 | 21,000 | 21,000 | 525,291 | |
| Total Boron | 0 | 0 | | 0 | 8,100 | 8,100 | 202,612 | |
| Total Cadmium | 0 | 0 | | 0 | 1.999 | 2.12 | 53.0 | Chem Translator of 0.944 applied |
| Total Chromium (III) | 0 | 0 | | 0 | 566.366 | 1,792 | 44,832 | Chem Translator of 0.316 applied |
| Hexavalent Chromium | 0 | 0 | | 0 | 16 | 16.3 | 408 | Chem Translator of 0.982 applied |
| Total Cobalt | 0 | 0 | | 0 | 95 | 95.0 | 2,376 | |
| Total Copper | 0 | 0 | | 0 | 13.347 | 13.9 | 348 | 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 | 64.070 | 80.9 | 2,023 | 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 | 41.2 | Chem Translator of 0.85 applied |
| Total Nickel | 0 | 0 | | 0 | 465.352 | 466 | 11,664 | 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 | 3.177 | 3.74 | 93.5 | Chem Translator of 0.85 applied |
| Total Thallium | 0 | 0 | | 0 | 65 | 65.0 | 1,626 | |
| Total Zinc | 0 | 0 | | 0 | 116.458 | 119 | 2,979 | Chem Translator of 0.978 applied |

☑ *CFC* CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): 99.784 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 | 18,530 | |
| Total Arsenic | 0 | 0 | | 0 | 150 | 150 | 12,634 | Chem Translator of 1 applied |
| Total Barium | 0 | 0 | | 0 | 4,100 | 4,100 | 345,325 | |
| Total Boron | 0 | 0 | | 0 | 1,600 | 1,600 | 134,761 | |
| Total Cadmium | 0 | 0 | | 0 | 0.246 | 0.27 | 22.8 | Chem Translator of 0.909 applied |
| Total Chromium (III) | 0 | 0 | | 0 | 73.983 | 86.0 | 7,246 | Chem Translator of 0.86 applied |
| Hexavalent Chromium | 0 | 0 | | 0 | 10 | 10.4 | 876 | Chem Translator of 0.962 applied |
| Total Cobalt | 0 | 0 | | 0 | 19 | 19.0 | 1,600 | |
| Total Copper | 0 | 0 | | 0 | 8.939 | 9.31 | 784 | 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 | 126,338 | WQC = 30 day average; PMF = 1 |
| Total Lead | 0 | 0 | | 0 | 2.511 | 3.17 | 267 | 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 | 76.3 | Chem Translator of 0.85 applied |
| Total Nickel | 0 | 0 | | 0 | 51.911 | 52.1 | 4,385 | 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 | 420 | 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 | 1,095 | |
| Total Zinc | 0 | 0 | | 0 | 117.923 | 120 | 10,073 | 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 | 472 | |
| Total Arsenic | 0 | 0 | | 0 | 10 | 10.0 | 842 | |
| Total Barium | 0 | 0 | | 0 | 2,400 | 2,400 | 202,141 | |
| Total Boron | 0 | 0 | | 0 | 3,100 | 3,100 | 261,099 | |
| 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 | 25,268 | |
| 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 | 84,226 | |
| Total Mercury | 0 | 0 | | 0 | 0.050 | 0.05 | 4.21 | |
| Total Nickel | 0 | 0 | | 0 | 610 | 610 | 51,378 | |
| 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 | 20.2 | |
| Total Zinc | 0 | 0 | | 0 | N/A | N/A | N/A | |

☑ *CRL* CCT (min): 59.752 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

| Pollutants | Stream Conc (µg/L) | Stream CV | Trib Conc (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) | Comments |
|---|---|---|---|---|---|---|---|---|
| Total Dissolved Solids (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Chloride (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Sulfate (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Fluoride (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Aluminum | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Antimony | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Arsenic | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Barium | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Boron | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Cadmium | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Chromium (III) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Hexavalent Chromium | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Cobalt | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Copper | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Dissolved Iron | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Iron | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Lead | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Manganese | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Mercury | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Nickel | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Phenols (Phenolics) (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Selenium | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Silver | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Thallium | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Zinc | 0 | 0 | | 0 | N/A | N/A | N/A | |

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

**No. Samples/Month:** 4

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

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

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

| Pollutants | Governing WQBEL | Units | Comments |
|---|---|---|---|
| Total Dissolved Solids (PWS) | N/A | N/A | PWS Not Applicable |
| Chloride (PWS) | N/A | N/A | PWS Not Applicable |
| Bromide | N/A | N/A | No WQS |
| Sulfate (PWS) | N/A | N/A | PWS Not Applicable |
| Fluoride (PWS) | N/A | N/A | Discharge Conc < TQL |
| Total Aluminum | 12,025 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Antimony | N/A | N/A | Discharge Conc < TQL |
| Total Arsenic | N/A | N/A | Discharge Conc < TQL |
| Total Barium | 202,141 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Beryllium | N/A | N/A | No WQS |
| Total Boron | 129,866 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Cadmium | 22.8 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Chromium (III) | 7,246 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Hexavalent Chromium | 261 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Cobalt | 1,523 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Copper | 223 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Cyanide | N/A | N/A | No WQS |
| Dissolved Iron | 25,268 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Iron | 126,338 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Lead | 267 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Manganese | 84,226 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Mercury | 4.21 | µg/L | Discharge Conc < TQL |
| Total Nickel | 4,385 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Phenols (Phenolics) (PWS) | | µg/L | PWS Not Applicable |
| Total Selenium | 420 | µg/L | Discharge Conc < TQL |
| Total Silver | 59.9 | µg/L | Discharge Conc < TQL |
| Total Thallium | 20.2 | µg/L | Discharge Conc < TQL |
| Total Zinc | 1,909 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Molybdenum | N/A | N/A | No WQS |