Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0001406**
Facility Type	**Industrial**	APS ID	**1121506**
Major / Minor	**Minor**	Authorization ID	**1499264**

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

Applicant and Facility Information

Applicant Name	**Braeburn Alloy Steel LLC – a G.O. Carlson, Inc. Company**	Facility Name	**Braeburn Alloy Steel**
Applicant Address	175 Main Street Oil City, PA 16301-1038	Facility Address	101 Braeburn Road Lower Burrell, PA 15068-2299
Applicant Contact	Joseph C. Paparone II, President & COO	Facility Contact	Tim Long, VP Operations
Applicant Phone	(814) 678-4141	Facility Phone	(724) 226-4258
Applicant Email	jpaparone@gocarlson.com	Facility Email	tlong@gocarlson.com
Client ID	374960	Site ID	487089
SIC Code	3312, 3542	Municipality	Lower Burrell City
SIC Description	Steel Works Blast Furnaces, & Rolling Mills; Machine Tools, Metal Forming Types	County	Westmoreland
Date Application Received	August 30, 2024	EPA Waived?	Yes
Date Application Accepted	September 12, 2024	If No, Reason	
Purpose of Application	Renewal of an NPDES permit for discharges of contact and non-contact cooling water, treated sanitary wastewaters, floor drain water, and storm water.		

Summary of Review

On August 30, 2024, on behalf of Braeburn Alloy Steel, LLC ("Braeburn"), The Hillcrest Group, LLC submitted an application dated August 28, 2024 to the Department of Environmental Protection ("DEP") to renew NPDES Permit PA0001406 for discharges from Braeburn's steel rolling and forging mill in Lower Burrell, Westmoreland County. Braeburn's current NPDES permit was issued on February 4, 2020 with an effective date of March 1, 2020 and an expiration date of February 28, 2025. The deadline to submit the renewal application was September 1, 2024. Since the renewal application was received before the due date, the current permit was administratively extended past February 28, 2025.

On May 27, 2022, G.O. Carlson, Inc. acquired the Braeburn Alloy Steel facility from CCX, Inc. Pursuant to that acquisition, the NPDES permit was amended/transferred from Braeburn Alloy Steel – Division of CCX, Inc. to Braeburn Alloy Steel, LLC – a G.O. Carlson Inc. Company on May 30, 2023. G.O. Carlson, Inc. maintains ownership of Braeburn Alloy Steel, LLC.

Braeburn is classified as a specialty hot forming section mill under 40 CFR Part 420 – Iron and Steel Manufacturing Point Source Category Effluent Limitations Guidelines. The facility operates a forge press; 10-inch and 14-inch rolling mills; cold finishing facilities to turn, peel, saw, grind, and/or straighten metal products (ingots, billets, slabs, and/or bars); and annealing furnaces to heat treat metal products. Wastewaters generated by the facility include contact cooling water from a quench tank; non-contact cooling water from the rolling mills, heat exchangers, and furnaces; wastewaters collected in floor drains in the forge press building and mill building; sanitary wastewaters; excess river water from the facility's intake pump; and storm water associated with industrial activities. Based on the application, there have been no substantial changes to the facility since the permit was amended/transferred on May 30, 2023.

The facility has seven outfalls and one internal monitoring point ("IMP"). Outfalls 001 and 003 are the primary discharge locations for Braeburn's industrial wastewaters. Outfall 001 discharges contact cooling water regulated at IMP 101, non-

Approve	Deny	Signatures	Date
✓		Ryan C. Decker, P.E. / Environmental Engineer	July 30, 2025
X		Michael E. Fifth, P.E. / Environmental Engineer Manager	August 12, 2025

Summary of Review

contact cooling water from heat exchangers and furnaces, floor drain water from the Forge Press Building, and storm water. Outfall 003 discharges non-contact cooling water from the 10-inch and 14-inch rolling mills, floor drain inputs from the mill building, and storm water from the area of the mill and cold finish buildings. Outfalls 002, 005, 012, and 013 discharge storm water. Outfalls 001 and 012 also receive excess river water from the facility's intake pump that discharges continuously. Outfall 004 discharges sanitary wastewaters treated by an onsite sewage treatment plant. Outfalls 001, 002, 004, 005, and 012 discharge to the Allegheny River. Outfall 013 discharges to the ground along the eastern perimeter of the site but is still monitored under the permit to evaluate the effectiveness of best management practices employed in the contributing drainage area.

Technology-based effluent limits from 40 CFR Part 420, Subpart G – Hot Forming Subcategory Effluent Limitations Guidelines (40 CFR § 420.72(b)(2)) are imposed at IMP 101 for Braeburn's quench tank contact cooling water, which combines with other wastewaters for discharge at Outfall 001.

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

Braeburn operates a cooling water intake structure on the Allegheny River that supplies Braeburn with water that is used for cooling. Section 316(b) of the Clean Water Act requires the use of Best Technology Available (BTA) to minimize adverse environmental impact, which includes the minimization of impingement mortality and entrainment of all life stages of fish and shellfish at cooling water intake structures for power-generating and manufacturing facilities.

On August 15, 2014, EPA promulgated regulations implementing Section 316(b) of Clean Water Act pertaining 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)).

The design intake flow of Braeburn's cooling water intake structure (1.44 MGD) does not meet the applicability criteria for the specific requirements of 40 CFR Part 125, Subpart J, §§ 125.94 through 125.99. Therefore, pursuant to 40 CFR § 125.90(b) and § 316(b) of the Clean Water Act, Braeburn is subject to cooling water intake structure requirements established by DEP on a case-by-case, best professional judgement (BPJ) basis. DEP's previous BPJ-based impingement and entrainment BTA determinations for Braeburn's cooling water intake structure are unchanged from the previous permit.

Compliance History

As summarized later in this Fact Sheet, Braeburn has reported violations of effluent limits for Total Residual Chlorine (TRC) and fecal coliform at Outfall 004. The TRC and fecal coliform violations pre-date G.O. Carlson, Inc.'s acquisition of the facility, but G.O. Carlson, Inc. did not assume liability for violations pre-dating the acquisition. Nevertheless, the violations have continued intermittently since the acquisition. The previous permit imposed more stringent effluent limits for TRC, but provided a one-year schedule of compliance before those limits took effect. The Fact Sheet for the previous permit stated:

> The TRC limits from § 92a.47(a)(8) are more stringent than Braeburn's current TRC limits. The Department considers dechlorination to be an appropriate, available, and affordable technology to comply with the TRC TBELs in § 92a.47(a)(8). DMR data indicate that Braeburn's long-term average TRC concentration over the last six years is 0.52 mg/L, which exceeds the monthly average TRC TBEL. Since Braeburn is likely to violate the new TBELs, a one-year schedule of compliance will be included in the permit pursuant to 25 Pa. Code § 92a.51(b). The schedule will give Braeburn time to design, permit, and install any dechlorination systems that may be necessary to comply with the § 92a.47(a)(8) TBELs. During the interim one-year period, the current TRC limits of 1.4 mg/L monthly average and 3.3 mg/L maximum daily will be in effect pursuant to anti-backsliding requirements in 40 CFR § 122.44(l).

Notwithstanding the schedule that provided Braeburn the opportunity to take actions to comply—whether by installing dechlorination systems, replacing chlorine disinfection with ultraviolet (UV) disinfection, or connecting to the Lower Burrell municipal sewage collection system—Braeburn did not take any actions to address the noncompliance. DEP conducted a wastewater treatment system site assessment on January 25, 2022 and, in a report dated February 7, 2022 (see **Attachment D** to this Fact Sheet), recommended the use of UV disinfection as the most economical solution.

Summary of Review

Pursuant to 25 Pa. Code § 92a.75(b)(1), DEP must consider a permittee's compliance with existing DEP-issued permits, regulations, orders, and schedules of compliance as part of an NPDES permit renewal. DEP recommends that Braeburn review DEP's wastewater treatment system site assessment and consider available options to comply. DEP will be in contact with Braeburn to discuss actions to bring the facility into compliance as part of this permit renewal.

Apart from DMR violations, on February 3, 2025, DEP and other emergency responders responded to a reported release of oil and sheen on the Allegheny River from the Braeburn facility. The source was found to be a failed secondary containment structure for a 4000-gallon hydraulic oil tank (new product) and a 3000-gallon waste oil tank. Braeburn attributed the initial release from the hydraulic oil tank into secondary containment to human error or mechanical failure of a hose cam lock or cam lock connection. The release to the river is understood to have occurred from oil draining from the failed secondary containment structure into a catch basin leading to Outfall 001. McCutcheon Enterprises Inc. (MEI) responded and removed an estimated 700 gallons of oil from the secondary containment structure and performed additional cleanup activities through February 7, 2025. The exact amount of oil released to the Allegheny River is unknown. In response to the incident, the failed tank was replaced with a new double-compartment, double-walled tank.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.338
Latitude	40° 36' 56.69"	Longitude	-79° 42' 40.94"
Quad Name	New Kensington East	Quad Code	1408
Wastewater Description:	Quench tank contact cooling water and excess river water from IMP 101; non-contact cooling water from heat exchangers and furnaces, floor drain runoff from the Forge Press Building; and storm water runoff.		

Receiving Waters	Allegheny River	Stream Code	42122
NHD Com ID	123972530	RMI	24.45
Drainage Area	11,410	Yield (cfs/mi^2)	0.204
Q_{7-10} Flow (cfs)	2,390	Q_{7-10} Basis	U.S. Army Corps. of Engrs.
Elevation (ft)	745.4 (normal pool)	Slope (ft/ft)	0.0001
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired (Fish Consumption); Attaining (Potable Water Supply & Aquatic Life)		
Cause(s) of Impairment	PCBs, Chlordane		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final, 04/09/2001	Name	TMDL for Allegheny River

Background/Ambient Data		Data Source
pH (SU)	7.63	WQN 801 - Allegheny River @ Natrona (6/2008 to 6/2018)
Temperature (°F)	58.01	WQN 801 - Allegheny River @ Natrona (10/1998 to 6/2018)
Hardness (mg/L)	82.9	WQN 801 - Allegheny River @ Natrona (10/2008 to 6/2018)
Other:		

Nearest Downstream Public Water Supply Intake		Brackenridge Borough Water Dept. (PWSID: 5020006)	
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	23.2	Distance from Outfall (mi)	1.25

IMP No.	101	Design Flow (MGD)	0.021
Latitude	40° 36' 50.70"	Longitude	-79° 42' 42.02"
Wastewater Description:	Quench tank contact cooling water and excess river water		

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	Variable
Latitude	40° 36' 52.52"	Longitude	-79° 42' 48.38"
Quad Name	New Kensington East	Quad Code	1408
Wastewater Description:	Storm water		

Receiving Waters	Allegheny River	Stream Code	42122
NHD Com ID	123972530	RMI	24.35
Drainage Area	approx. 11,700	Yield (cfs/mi^2)	0.204
Q_{7-10} Flow (cfs)	2,390	Q_{7-10} Basis	U.S. Army Corps. of Engrs.
Elevation (ft)	745.4 (normal pool)	Slope (ft/ft)	0.0001
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired (Fish Consumption); Attaining (Potable Water Supply & Aquatic Life)		
Cause(s) of Impairment	PCBs, Chlordane		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final, 04/09/2001	Name	TMDL for Allegheny River

Background/Ambient Data		Data Source
pH (SU)	7.63	WQN 801 - Allegheny River @ Natrona (6/2008 to 6/2018)
Temperature (°F)	58.01	WQN 801 - Allegheny River @ Natrona (10/1998 to 6/2018)
Hardness (mg/L)	82.9	WQN 801 - Allegheny River @ Natrona (10/2008 to 6/2018)
Other:		

Nearest Downstream Public Water Supply Intake		Brackenridge Borough Water Dept. (PWSID: 5020006)	
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	23.2	Distance from Outfall (mi)	1.15

Changes Since Last Permit Issuance: This outfall is no longer used to discharge water from floor drains in the metallurgical building.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	0.23
Latitude	40° 36' 51.37"	Longitude	-79° 42' 50.80"
Quad Name	New Kensington East	Quad Code	1408
Wastewater Description:	Non-contact cooling water from the facility's 10" and 14" rolling mills; wastewater from floor drains in the mill building; and storm water from the area of the mill and cold finish buildings		

Receiving Waters	Allegheny River	Stream Code	42122
NHD Com ID	123972526	RMI	24.30
Drainage Area	approx. 11,700	Yield (cfs/mi^2)	0.204
Q_{7-10} Flow (cfs)	2,390	Q_{7-10} Basis	U.S. Army Corps. of Engrs.
Elevation (ft)	745.4 (normal pool)	Slope (ft/ft)	
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired (Fish Consumption); Attaining (Potable Water Supply & Aquatic Life)		
Cause(s) of Impairment	PCBs, Chlordane		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final, 04/09/2001	Name	TMDL for Allegheny River

Background/Ambient Data		Data Source
pH (SU)	7.63	WQN 801 - Allegheny River @ Natrona (6/2008 to 6/2018)
Temperature (°F)	58.01	WQN 801 - Allegheny River @ Natrona (10/1998 to 6/2018)
Hardness (mg/L)	82.9	WQN 801 - Allegheny River @ Natrona (10/2008 to 6/2018)
Other:		

Nearest Downstream Public Water Supply Intake		Brackenridge Borough Water Dept. (PWSID: 5020006)	
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	23.2	Distance from Outfall (mi)	1.1

Discharge, Receiving Waters and Water Supply Information

Outfall No.	004	Design Flow (MGD)	0.001
Latitude	40° 36' 49.06"	Longitude	-79° 42' 54.29"
Quad Name	New Kensington East	Quad Code	1408
Wastewater Description:	Treated sanitary wastewaters		

Receiving Waters	Allegheny River	Stream Code	42122
NHD Com ID	123972530	RMI	24.19
Drainage Area	approx. 11,700	Yield (cfs/mi^2)	0.204
Q_{7-10} Flow (cfs)	2,390	Q_{7-10} Basis	U.S. Army Corps. of Engrs.
Elevation (ft)	745.4 (normal pool)	Slope (ft/ft)	0.0001
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired (Fish Consumption); Attaining (Potable Water Supply & Aquatic Life)		
Cause(s) of Impairment	PCBs, Chlordane		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final, 04/09/2001	Name	TMDL for Allegheny River

Background/Ambient Data		Data Source
pH (SU)	7.63	WQN 801 - Allegheny River @ Natrona (6/2008 to 6/2018)
Temperature (°F)	58.01	WQN 801 - Allegheny River @ Natrona (10/1998 to 6/2018)
Hardness (mg/L)	82.9	WQN 801 - Allegheny River @ Natrona (10/2008 to 6/2018)
Other:		

Nearest Downstream Public Water Supply Intake		Brackenridge Borough Water Dept. (PWSID: 5020006)	
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	23.2	Distance from Outfall (mi)	0.99

Discharge, Receiving Waters and Water Supply Information

Outfall No.	005	Design Flow (MGD)	0.048
Latitude	40° 36' 44.94"	Longitude	-79° 42' 53.51"
Quad Name	New Kensington East	Quad Code	1408
Wastewater Description:	Storm water		

Receiving Waters	Allegheny River	Stream Code	42122
NHD Com ID	123972530	RMI	24.13
Drainage Area	approx. 11,700	Yield (cfs/mi^2)	0.204
Q_{7-10} Flow (cfs)	2,390	Q_{7-10} Basis	U.S. Army Corps. of Engrs.
Elevation (ft)	745.4 (normal pool)	Slope (ft/ft)	0.0001
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired (Fish Consumption); Attaining (Potable Water Supply & Aquatic Life)		
Cause(s) of Impairment	PCBs, Chlordane		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final, 04/09/2001	Name	TMDL for Allegheny River

Background/Ambient Data		Data Source
pH (SU)	7.63	WQN 801 - Allegheny River @ Natrona (6/2008 to 6/2018)
Temperature (°F)	58.01	WQN 801 - Allegheny River @ Natrona (10/1998 to 6/2018)
Hardness (mg/L)	82.9	WQN 801 - Allegheny River @ Natrona (10/2008 to 6/2018)
Other:		

Nearest Downstream Public Water Supply Intake		Brackenridge Borough Water Dept. (PWSID: 5020006)	
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	23.2	Distance from Outfall (mi)	0.93

Discharge, Receiving Waters and Water Supply Information

Outfall No.	012	Design Flow (MGD)	0.008
Latitude	40° 36' 54.28"	Longitude	-79° 42' 45.78"
Quad Name	New Kensington East	Quad Code	1408
Wastewater Description:	Excess river water from the intake pumps and storm water		

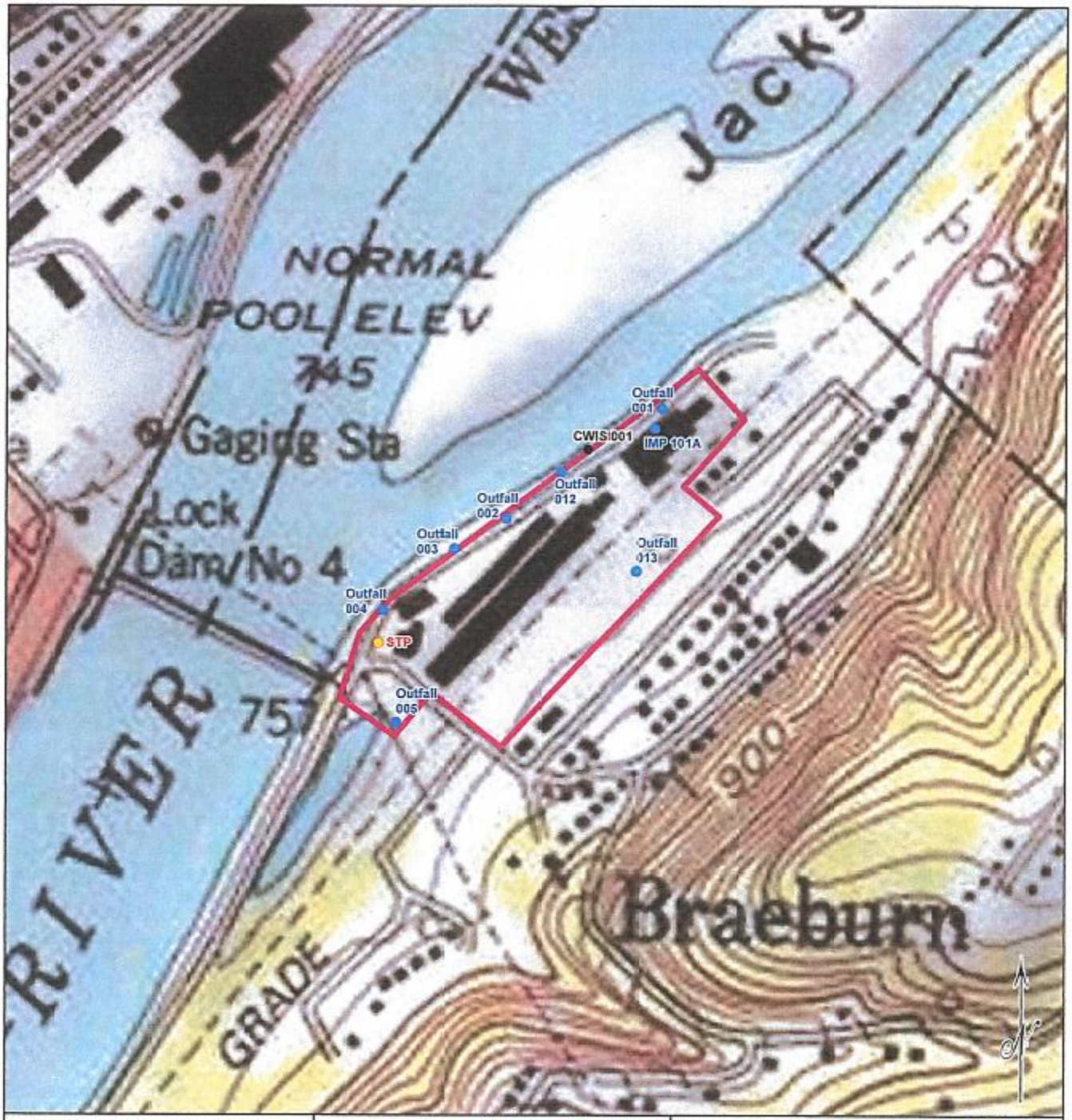
Receiving Waters	Allegheny River	Stream Code	42122
NHD Com ID	123972530	RMI	24.40
Drainage Area	approx. 11,700	Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)	2,390	Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired (Fish Consumption); Attaining (Potable Water Supply & Aquatic Life)		
Cause(s) of Impairment	PCBs, Chlordane		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final, 04/09/2001	Name	TMDL for Allegheny River

Background/Ambient Data		Data Source
pH (SU)	7.63	WQN 801 - Allegheny River @ Natrona (6/2008 to 6/2018)
Temperature (°F)	58.01	WQN 801 - Allegheny River @ Natrona (10/1998 to 6/2018)
Hardness (mg/L)	82.9	WQN 801 - Allegheny River @ Natrona (10/2008 to 6/2018)
Other:		

Nearest Downstream Public Water Supply Intake		Brackenridge Borough Water Dept. (PWSID: 5020006)	
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	23.2	Distance from Outfall (mi)	1.20

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	013	Design Flow (MGD)	Variable
Latitude	40° 36' 50.70"	Longitude	-79° 42' 42.02"
Quad Name	New Kensington East	Quad Code	1408
Wastewater Description:	Storm water		
Receiving Waters	Unnamed trib. to Allegheny River	Stream Code	N/A
NHD Com ID		RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Brackenridge Borough Water Dept. (PWSID: 5020006)		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2,390
PWS RMI	23.2	Distance from Outfall (mi)	1.25

Changes Since Last Permit Issuance: None



LEGEND

- Discharge Locations
- Cooling Water Intake Structure
- Sewage Treatment Plant
- Site Location

Prepared for : BRAEBURN ALLOY STEEL 115 Years of Quality & Service

Scale:

0 250 500

Feet

1 in = 500 ft

Map References:
- 7½ minute quadrangle New Kensington East, PA
- Service Layer Credits: Copyright © 2013 National Geographic Society, i-cubed

Notes:
- This drawing is the property of Braeburn Alloy Steel - Division of CCX, Inc. and contains information that is proprietary and confidential in nature. It may not be copied or otherwise reproduced in whole or in part without prior written consent.

FIGURE 1:
SITE LOCATION MAP

BRAEBURN ALLOY STEEL

City of Lower Burrell, Westmoreland County, PA

Project #: 16-338-LM

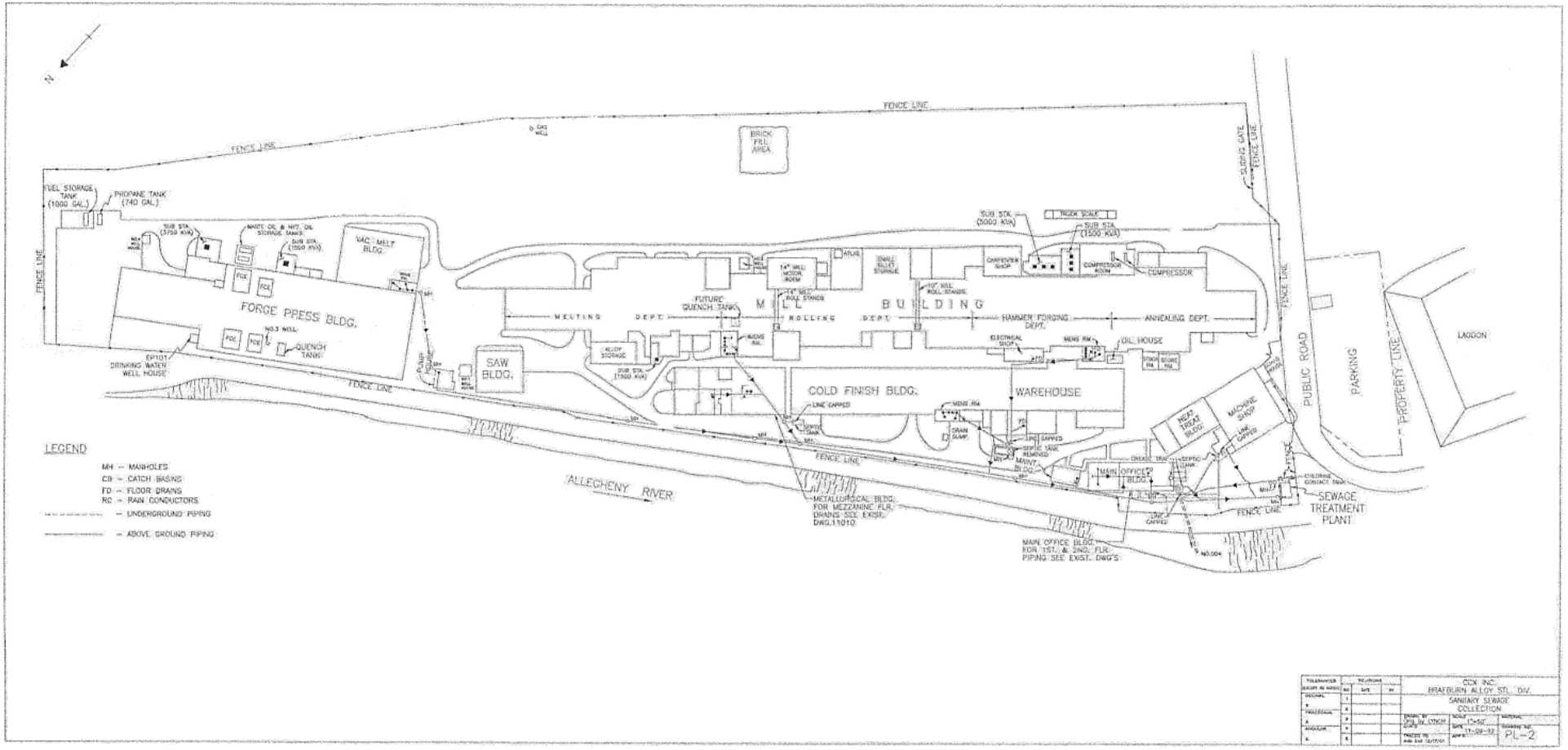
Drawn by:	BMP
Checked by:	LDM
Date:	2/20/2018
Revision:	1

199 Johnson Road
Building 2, Suite 101
Houston, PA 15342
Office: (724) 746-5200
Fax: (724) 746-5503
www.moody-s.com

Moody and Associates, Inc.

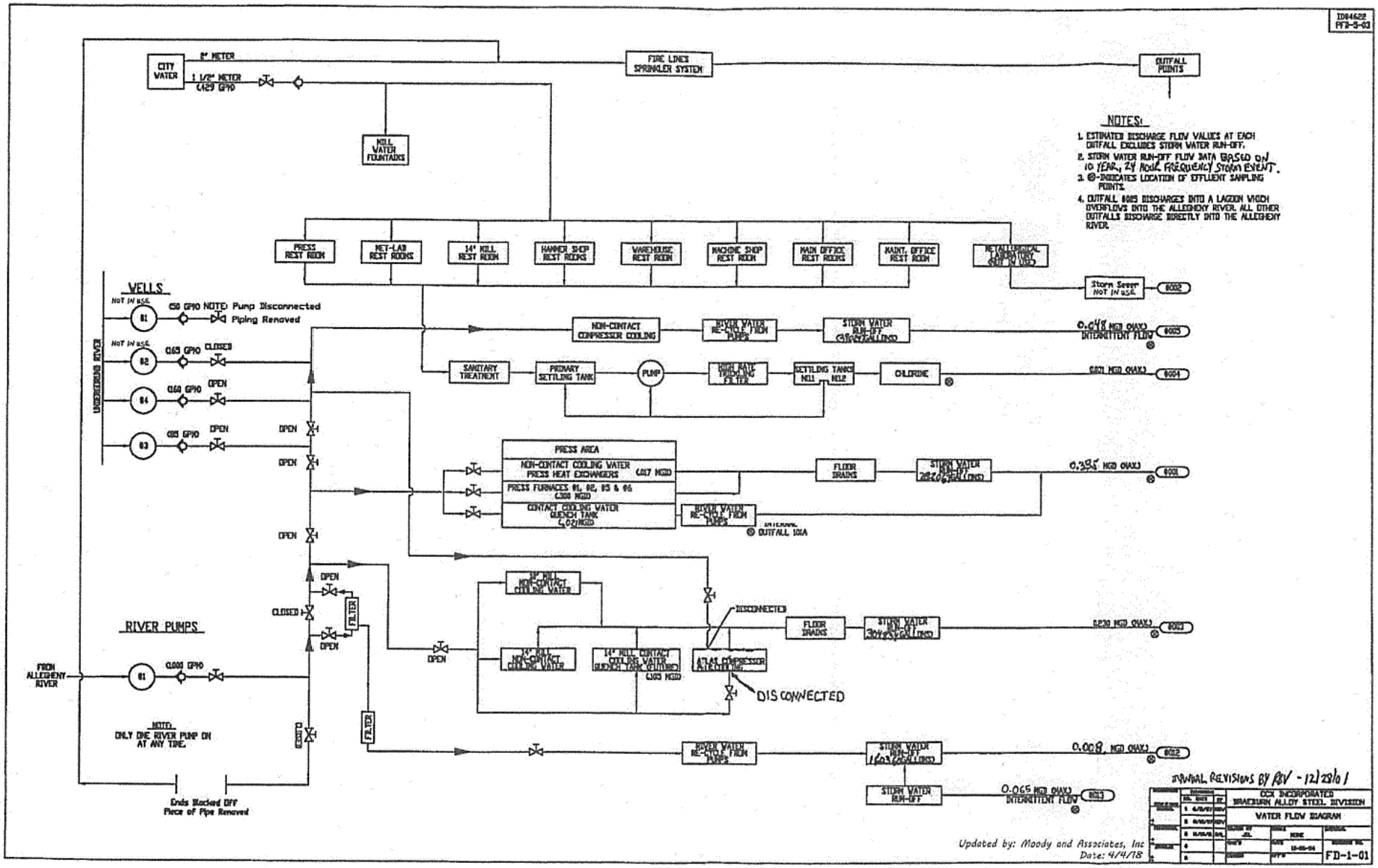
P:\GIS\Ecological\NPDES_Permitting\16338LM_Braeburn\Figure 1 - Site Location Map.mxd

Site Plan

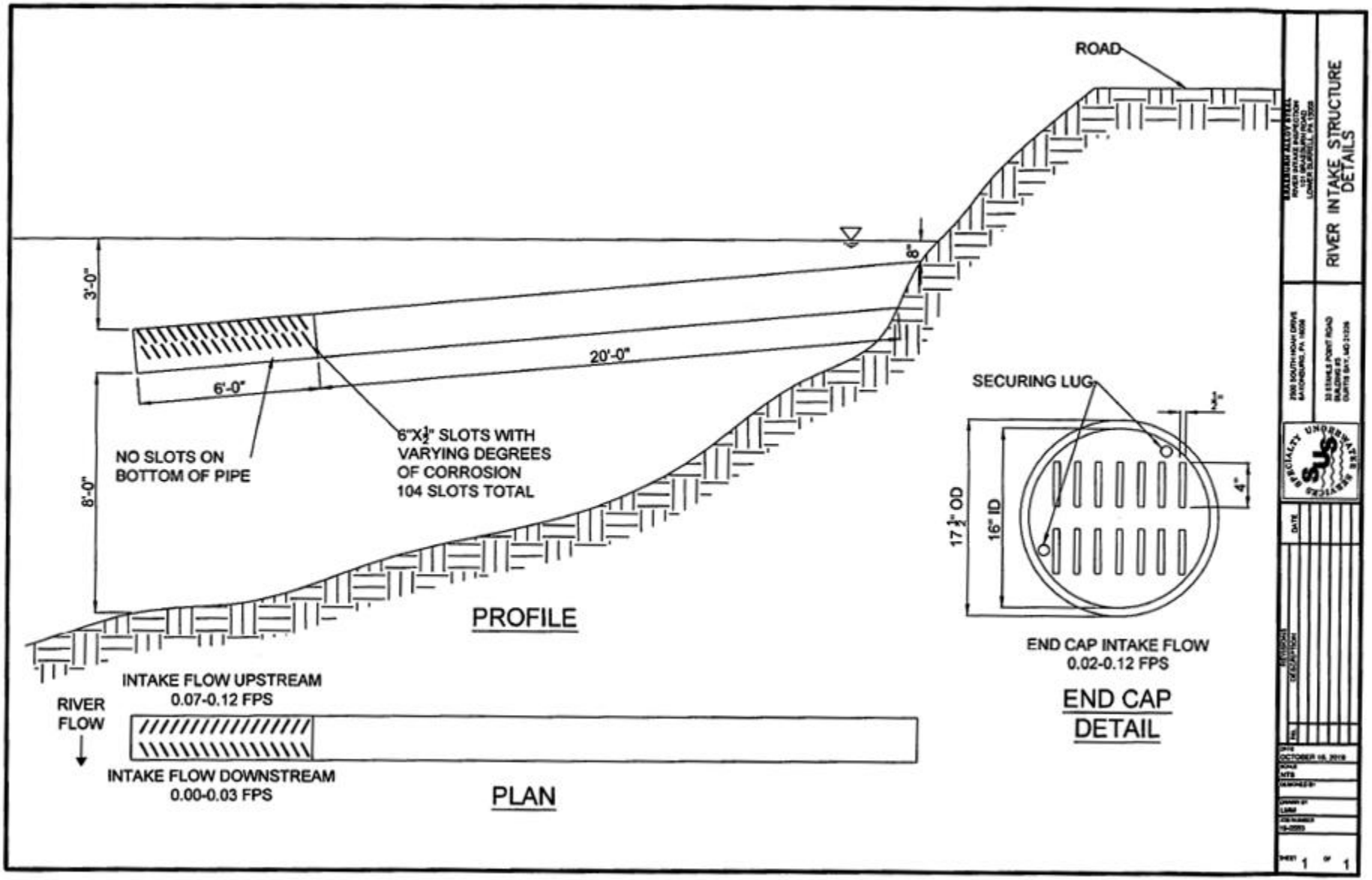

FENCE LINE
BRICK FILL AREA
FUEL STORAGE TANK (1000 GAL.)
PROPANE TANK (740 GAL.)
SUB STA. (3750 KVA)
WASTE OIL & HYD. OIL STORAGE TANKS
SUB STA. (1500 KVA)
VAC. MELT BLDG.
FORGE PRESS BLDG.
NO.3 WELL
QUENCH TANK
EP101 DRINKING WATER WELL HOUSE
SAW BLDG.
SUB STA. (5000 KVA)
TRUCK SCALE
SUB STA. (1500 KVA)
COMPRESSOR ROOM
COMPRESSOR
CARPENTER SHOP
14" MILL MOTOR ROOM
ATLAS
SMALL ROLLER STORAGE
10" MILL ROLL STANDS
FUTURE QUENCH TANK
14" MILL ROLL STANDS
MELTING DEPT.
MILL BUILDING
ROLLING DEPT.
HAMMER FORGING DEPT.
ANNEALING DEPT.
ELECTRICAL SHOP
MENS RM.
OIL HOUSE
ALLOY STORAGE
SUB STA. (1500 KVA)
COLD FINISH BLDG.
WAREHOUSE
LINE CAPPED
DRAIN SUMP
SEPTIC TANK REMOVED
MAINT. BLDG.
HEAT TREAT BLDG.
MACHINE SHOP
MAIN OFFICE BLDG.
SEPTIC TANK
CHLORINE CONTACT TANK
SEWAGE TREATMENT PLANT
PUBLIC ROAD
PARKING
PROPERTY LINE
LAGOON
SLIDING GATE
ALLEGHENY RIVER
METALLURGICAL BLDG. FOR MEZZANINE FLR. DRAINS SEE EXIST. DWG.11010
MAIN OFFICE BLDG. FOR 1ST. & 2ND. FLR. PIPING SEE EXIST. DWG'S.
LEGEND
MH – MANHOLES
CB – CATCH BASINS
FD – FLOOR DRAINS
RC – RAIN CONDUCTORS
– UNDERGROUND PIPING
– ABOVE GROUND PIPING
CCX INC.
BRAEBURN ALLOY STL. DIV.
SANITARY SEWAGE COLLECTION
SCALE 1"=50'
DATE 11-09-92
PL-2

Aerial Image of Site

Flow Diagram



Cooling Water Intake Structure Diagram



Treatment Facility Summary		
Treatment Facility Name: Sewage Treatment Plant		
WQM Permit No.	**Issuance Date**	**Purpose**
465S70	05/23/1966	Permit issued by Pennsylvania Dept. of Health - Sanitary Water Board to Braeburn Alloy Steel for sewage treatment plant
465S70 T-1	5/30/2023	Permit transferred from Braeburn Alloy Steel – Division of CCX, Inc. to Braeburn Alloy Steel, LLC.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Primary and secondary	Primary settling tank; high-rate trickling filter; settling tank no. 1; settling tank no. 2; chlorine contact tank	sodium and calcium hypochlorite	0.001

Treatment Facility Summary		
Treatment Facility Name: Dissolved air flotation		
WQM Permit No.	**Issuance Date**	**Purpose**
6579207	08/22/1980	Dissolved air flotation unit for Outfall 003 (not in use)
	5/30/2023	Permit cancelled; DAF was never installed

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Industrial	Primary	Dissolved air flotation	None	—

Changes Since Last Permit Issuance: None

Compliance History

DMR Data for Outfall 001 (from June 1, 2024 to May 31, 2025)

Parameter	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24
Flow (MGD) Average Monthly	0.0001	0.007	0.0003	0.0014	0.0957	0.0360	0.3455	0.0144	0.0158	0.0280	0.0421	0.045
Flow (MGD) Daily Maximum	0.0001	0.0012	0.0004	0.0014	0.1050	0.0432	0.4320	0.0216	0.0216	0.0316	0.0770	0.0792
pH (S.U.) Instantaneous Minimum	7.61	7.31	7.38	7.41	7.78	7.38	6.93	7.68	7.0	7.36	7.48	7.36
pH (S.U.) Instantaneous Maximum	7.77	7.33	7.46	8.05	7.83	7.46	7.59	7.82	7.25	7.38	7.68	7.43
Temperature (ºF) Daily Maximum	67.46	19.2	47.12	47.12	72.14	16.9	75.02	75.92	76.64	77.72	76.82	75.2
TSS (mg/L) Average Monthly	5.50	30.50	45.50	11.50	3.00	< 3.0	3.0	3.50	3.0	3.00	3.50	3.0
TSS (mg/L) Daily Maximum	8.00	56.0	88.0	12.00	3.00	< 3.0	3.0	4.00	3.0	3.00	4.0	3.0
Oil and Grease (mg/L) Average Monthly	7.0	3.455	5.705	3.73	2.885	< 5.0	5	5.0	5.0	5.0	5.0	5.0
Oil and Grease (mg/L) Daily Maximum	7.0	4	9	5	3.00	< 5.0	5	5.0	5.0	5.0	5.0	5.0

DMR Data for Outfall 003 (from June 1, 2024 to May 31, 2025)

Parameter	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24
Flow (MGD) Average Monthly	0.00013	0.004	0.00024	0.00072	0.00036	0.008	0.044	0.0432	0.016	0.001	0.035	0.006
Flow (MGD) Daily Maximum	0.00014	0.0072	0.00036	0.00072	0.00036	0.0144	0.0864	0.0432	0.024	0.001	0.065	0.0072
pH (S.U.) Instantaneous Minimum	7.54	7.2	7.32	8.21	6.00	7.09	7.26	7.49	7.32	7.22	7.68	7.46
pH (S.U.) Instantaneous Maximum	7.56	7.38	7.67	8.21	7.26	7.58	7.86	7.71	7.71	7.58	8.1	7.75
Temperature (ºF) Daily Maximum	67.1	19.3	46.76	41.72	48.2	7.6	64.76	59.18	77.36	76.46	79.7	78
TSS (mg/L) Average Monthly	21.5	13.5	16	5	10.0	6.5	6.5	3.5	3.5	3.0	22.5	6.0

Parameter	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24
TSS (mg/L) Daily Maximum	35.0	23	29	5.0	14.0	7.0	8	4.0	4.0	3.0	32.0	8.0
Oil and Grease (mg/L) Average Monthly	3.36	2.51	2.51	5.4	2.61	5.0	5	5.0	5.0	5.0	< 5.0	5.0
Oil and Grease (mg/L) Daily Maximum	4.0	3	3	5	3.00	5.0	5	5.0	5.0	5.0	< 5.0	5.0
Total Copper (mg/L) Average Quarterly			< 0.005			0.035			0.02			0.015
Total Copper (mg/L) Daily Maximum			< 0.005			0.05			0.02			0.02

DMR Data for Outfall 004 (from June 1, 2024 to May 31, 2025)

Parameter	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24
Flow (MGD) Average Monthly	0.00013	0.000128	0.000135	0.00013	0.000132	0.00012	0.000128	0.00013	0.000125	0.0012	0.00012	0.00012
Flow (MGD) Daily Maximum	0.00014	0.0014	0.00014	0.00014	0.00014	0.00012	0.0864	0.00014	0.00014	0.0012	0.00012	0.00012
pH (S.U.) Instantaneous Minimum	7.12	6.94	7.06	6.74	7.16	7.83	7.28	6.94	6.76	7.02	7.25	7.10
pH (S.U.) Instantaneous Maximum	7.58	7.39	7.41	7.96	8.18	7.94	7.86	7.54	7.68	7.2	7.55	7.24
TRC (mg/L) Average Monthly	0.26	0.296	0.415	0.37	0.234	0.675	1.342	0.267	0.342	0.56	0.94	1.07
TRC (mg/L) Instantaneous Maximum	0.29	< 0.1	1	0.780	0.280	1.0	2	0.40	1.3	1.0	1.0	1.15
CBOD5 (mg/L) Average Monthly	2.35	2.85	3.05	3.2	3.1	3.2	3.2	4.25	3.0	3.0	3.0	3.0
CBOD5 (mg/L) Instantaneous Maximum	2.0	3	4	4	4.0	3.4	3	6.0	3.0	3.0	3.0	3.0
TSS (mg/L) Average Monthly	19.0	3	8.5	10	5.5	8	12	4.5	5.5	3.0	4.0	4.0
TSS (mg/L) Instantaneous Maximum	19.0	3	10	15	7.0	11	17	6.0	7.0	3.0	5.0	4.0
Fecal Coliform (No./100 ml) Geometric Mean	126.08	2420	1.0	11.66	3.0	1.00	20.88	1	1.0	1.0	44.58	4

Parameter	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24
Fecal Coliform (No./100 ml) Instantaneous Maximum	1987	2420	1	136	5.0	1	436	1	1.0	1.0	1987	11

DMR Data for Outfall 005 (from June 1, 2024 to May 31, 2025)

Parameter	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24
Flow (MGD) Daily Maximum						0.0009						0.000720
pH (S.U.) Daily Maximum						7.72						7.79
TSS (mg/L) Daily Maximum						82						8.0
Oil and Grease (mg/L) Daily Maximum						< 5						< 5.0
Total Aluminum (mg/L) Daily Maximum						3.20						0.83
Total Copper (mg/L) Daily Maximum						0.06						0.01
Total Iron (mg/L) Daily Maximum						6.18						1.25
Total Lead (mg/L) Daily Maximum						0.02						< 0.02
Total Zinc (mg/L) Daily Maximum						0.18						0.05

DMR Data for Outfall 012 (from June 1, 2024 to May 31, 2025)

Parameter	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24
Flow (MGD) Daily Maximum	0.00036	0.00216	0.00018	0.00036	0.00072	0.00036	0.00036		0.0021	0.0028	0.0280	0.0086
Flow (MGD) Daily Maximum						0.0031						0.00072
pH (S.U.) Daily Maximum						7.82						7.32
TSS (mg/L) Daily Maximum			15			3			< 3.0			6.0
Oil and Grease (mg/L) Daily Maximum			< 2.51			< 5.0			< 5.0			< 5.0

Parameter	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24
Total Aluminum (mg/L) Daily Maximum						0.13						0.23
Total Copper (mg/L) Daily Maximum						0.02						0.03
Total Iron (mg/L) Daily Maximum						0.21						0.55
Total Lead (mg/L) Daily Maximum						< 0.02						< 0.02
Total Zinc (mg/L) Daily Maximum						< 0.02						< 0.02

DMR Data for Outfall 013 (from June 1, 2024 to May 31, 2025)

Parameter	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24
Flow (MGD) Daily Maximum						0.000720						0.0003
pH (S.U.) Daily Maximum						7.46						7.64
TSS (mg/L) Daily Maximum						8						19
Oil and Grease (mg/L) Daily Maximum						< 5.00						< 5.0
Total Aluminum (mg/L) Daily Maximum						0.44						0.88
Hexavalent Chromium (mg/L) Daily Maximum						< 0.005						< 0.005
Total Copper (mg/L) Daily Maximum						0.03						0.05
Total Iron (mg/L) Daily Maximum						0.6						1.46
Total Lead (mg/L) Daily Maximum						< 0.02						< 0.02
Total Zinc (mg/L) Daily Maximum						0.31						0.20

Compliance History

Effluent Violations for Outfall 001, from: July 1, 2024 To: May 31, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TSS	03/31/25	Avg Mo	45.50	mg/L	30.0	mg/L
TSS	04/30/25	Avg Mo	30.50	mg/L	30.0	mg/L
TSS	03/31/25	Daily Max	88.0	mg/L	60.0	mg/L

Summary of Inspections:

Other Comments:

Effluent Violations for Outfall 004, from: July 1, 2024 To: May 31, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TRC	07/31/24	Avg Mo	0.94	mg/L	0.5	mg/L
TRC	11/30/24	Avg Mo	1.342	mg/L	0.5	mg/L
TRC	08/31/24	Avg Mo	0.56	mg/L	0.5	mg/L
TRC	12/31/24	Avg Mo	0.675	mg/L	0.5	mg/L
TRC	11/30/24	IMAX	2	mg/L	1.6	mg/L
Fecal Coliform	04/30/25	Geo Mean	2420	No./100 ml	2000	No./100 ml
Fecal Coliform	05/31/25	IMAX	1987	No./100 ml	1000	No./100 ml
Fecal Coliform	07/31/24	IMAX	1987	No./100 ml	1000	No./100 ml

Summary of Inspections:

Other Comments:

Development of Effluent Limitations

IMP No. 101 **Design Flow (MGD)** 0.021
Latitude 40° 36' 56.00" **Longitude** -79° 42' 41.00"
Wastewater Description: Quench tank contact cooling water and excess river water

Effluent limits are imposed at Internal Monitoring Point 101 rather than another monitoring location because 40 CFR § 125.3(f) prohibits compliance with technology-based treatment requirements using "non-treatment" techniques such as flow augmentation (*i.e.*, dilution). Since the wastewaters monitored at IMP 101 combine with non-contact cooling water and other wastewaters before the next downstream monitoring location (Outfall 001), IMP 101 is the only point at which compliance with applicable Federal Effluent Limitations Guidelines can be determined without the interference of other wastewaters. This rationale is consistent with 40 CFR § 122.45(h)[1], which allows for the imposition of effluent limitations on internal waste streams in these circumstances.

Wastewaters regulated at IMP 101 are currently subject to the following effluent limits and monitoring requirements.

Table 1. Current Effluent Limits and Monitoring Requirements at Outfall 001

Parameter	Mass (pounds)		Concentration (mg/L)			Sample Type	Basis
	Avg. Mo.	Daily Max	Avg. Mo.	Daily Max	IMAX		
Flow (MGD)	Report	Report	—	—	—	2/month	25 Pa. Code § 92a.61(d)(1)
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	2/month	40 CFR § 420.77(b)(2)
Total Suspended Solids	3.43	9.14	15.0	40.0	50.0	2/month	40 CFR § 420.77(b)(2)
Oil & Grease	—	2.29	—	10.0	13.0	2/month	40 CFR § 420.77(b)(2)

The effluent limits and monitoring requirements in **Table 1** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

101.A. Technology-Based Effluent Limitations (TBELs)

Quench tank contact cooling water from Braeburn's Forge Press Building is subject to Federal Effluent Limitations Guidelines (ELGs) under 40 CFR Part 420 – Iron and Steel Manufacturing Point Source Category. Pursuant to the specialized definitions given in 40 CFR § 420.71, Braeburn is classified as a specialty hot forming section mill subject to Best Practicable Control Technology ("BPT") effluent limits under 40 CFR Part 420, Subpart G – Hot Forming Subcategory, 40 CFR § 420.72(b)(2).[2] As stated in 40 CFR § 420.73, EPA determined that there are not significant quantities of toxic pollutants in hot forming wastewaters after compliance with applicable BPT limits. Consequently, EPA did not promulgate more stringent Best Available Technology Economically Achievable (BAT) limits. Applicable Best Conventional Pollutant Control Technology (BCT) effluent limits in 40 CFR § 420.77(b)(2) for conventional pollutants are equivalent to BPT limits. Braeburn is not a new source and is not subject to New Source Performance Standards.

Table 2. BPT/BCT TBELs from 40 CFR Part 423, Subpart G - §§ 420.72(b)(2) and 420.77(b)(2)

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
	pounds per 1,000 pounds of product	
Total Suspended Solids	0.224	0.0841
Oil & Grease	0.0561	
pH	Within the range of 6.0 to 9.0	

[1] 40 CFR § 122.45(h)(1): "When permit effluent limitations or standards imposed at the point of discharge are impractical or infeasible, effluent limitations or standards for discharges of pollutants may be imposed on internal waste streams before mixing with other waste streams or cooling water streams."

[2] 40 CFR § 420.71(a) The term *hot forming* means those steel operations in which solidified, heated steel is shaped by rolls.
40 CFR § 420.71(c) The term *section mill* means those steel hot forming operations that produce a variety of finished and semi-finished steel products other than the products of those mills specified below in paragraphs (d), (e), (g), and (h) of this section.
40 CFR § 420.71(l) The term *specialty hot forming operation* (or "specialty") applies to all hot forming operations other than "carbon hot forming operations.

The ELG is production-based, which requires a reasonable measure of actual production to calculate allowable pollutant loadings. EPA considers a reasonable measure of actual production to be a single estimate of the long-term average daily production that can reasonably be expected to prevail during the next term of the permit. This value should not be the design production rate. However, EPA has allowed the use of the highest production rate reported during the previous permit term to calculate mass limits provided concentration limits also are imposed. That rationale is applied for this permit. Therefore, the maximum production rate reported within the last three years will be used to calculate mass limits.

Based on production data supplied with the NPDES permit renewal application, the month of highest production occurred in August 2022 with 505 short tons of steel products produced. With an average daily production of 20 days per month, the maximum daily production rate is:

(505 short tons / month) × (1 month / 20 days) = 25.25 short tons per day

Braeburn's maximum monthly production rate of 25.25 short tons per day equates to 50,500 pounds per day. That production rate is used to calculate production-based mass limits pursuant to 40 CFR §§ 420.72(b)(2) and 420.77(b)(2).

Average Monthly

TSS: 50,500 lbs of product/day × (0.0841 lbs TSS / 1,000 lbs of product) = 4.24 lbs TSS/day

Daily Maximum

TSS: 50,500 lbs of product/day × (0.224 lbs TSS / 1,000 lbs of product) = 11.3 lbs TSS/day
Oil & Grease: 50,500 lbs of product/day × (0.0561 lbs TSS / 1,000 lbs of product) = 2.83 lbs TSS/day

Table 3. IMP 101 Mass TBELs

Parameter	Average Monthly (lbs/day)	Maximum Daily (lbs/day)
Total Suspended Solids	4.24	11.3
Oil & Grease	—	2.83

The mass TBELs are less stringent than those imposed in the previous permit but that does not implicate backsliding because the ELGs still require the same level of treatment performance per pound of product as the previous permit. To the extent the less stringent mass limits could be construed as backsliding, such backsliding would be consistent with the exception to anti-backsliding under 40 CFR § 122.44(l)(2)(i)(B)*(1)* regarding new information that justifies the application of less stringent effluent limits—in this case, updated production data that results in higher loading allowances.

Concentration-Based Limits for IMP 101

To supplement the production-based mass limits calculated from the ELGs, DEP previously imposed concentration limits under the authority of 40 CFR § 122.45(f)(2).[3] The concentration limits are from Table IX-13 – BPT Effluent Limitations Hot Forming Subcategory on p.330 of the 1982 "Development Document for Effluent Limitations Guidelines for the Iron and Steel Manufacturing Point Source Category, Volume IV, Hot Forming Subcategory" (see **Attachment A**).

Table 4. IMP 101 Concentration TBELs

Parameter	Average Monthly (mg/L)	Maximum Daily (mg/L)	Instant. Maximum (mg/L)
Total Suspended Solids	15.0	40.0	50.0
Oil & Grease	—	10.0	13.0

The concentration TBELs will be maintained in the renewed permit based on EPA's anti-backsliding regulation at 40 CFR § 122.44(l). Instantaneous maximum limits are calculated by multiplying the maximum daily limit by a factor of 1.25 consistent with the ratio of maximum daily limits to instantaneous maximum limits in Chapter 2 of DEP's "Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits" [Doc. No. 386-0400-001].

Per- and Polyfluoroalkyl Substances (PFAS)

[3] 40 CFR 122.45(f)(2) states: "Pollutants limited in terms of mass additionally may be limited in terms of other units of measurement, and the permit shall require the permittee to comply with both limitations."

In February 2024, DEP implemented a new monitoring initiative for PFAS. PFAS are a family of thousands of synthetic organic chemicals that contain a chain of strong carbon-fluorine bonds. Many PFAS are highly stable, water- and oil-resistant, and exhibit other properties that make them useful in a variety of consumer products and industrial processes. PFAS are resistant to biodegradation, photooxidation, direct photolysis, and hydrolysis and do not readily degrade naturally; thus, many PFAS accumulate in the environment. According to the United States Department of Health and Human Services, Agency for Toxic Substances and Disease Registry (ATSDR), the environmental persistence and mobility of some PFAS, combined with decades of widespread use, have resulted in their presence in surface water, groundwater, drinking water, rainwater, soil, sediment, ice caps, outdoor and indoor air, plants, animal tissue, and human blood serum worldwide. ATSDR also reported that exposure to certain PFAS can lead to adverse human health impacts.[4] Due to their durability, toxicity, persistence, and pervasiveness, PFAS have emerged as significant pollutants of concern.

In accordance with Section II.I of DEP's "Standard Operating Procedure (SOP) for Clean Water Program – Establishing Effluent Limitations for Individual Industrial Permits" [SOP No. BCW-PMT-032] and under the authority of 25 Pa. Code § 92a.61(b), DEP has determined that monitoring for a subset of common/well-studied PFAS including Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), Perfluorobutanesulfonic acid (PFBS), and Hexafluoropropylene oxide dimer acid (HFPO-DA) is necessary to help understand the extent of environmental contamination by PFAS in the Commonwealth and the extent to which point source dischargers are contributors. SOP BCW-PMT-032 directs permit writers to consider special monitoring requirements for PFOA, PFOS, PFBS, and HFPO-DA in the following instances:

a. If sampling that is completed as part of the permit renewal application reveals a detection of PFOA, PFOS, HFPO-DA or PFBS (any of these compounds), the application manager will establish a quarterly monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds) in the permit.

b. If sampling that is completed as part of the permit renewal application demonstrates non-detect values at or below the Target QLs for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds in a minimum of 3 samples), the application manager will establish an annual monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS in the permit.

c. In all cases the application manager will include a condition in the permit that the permittee may cease monitoring for PFOA, PFOS, HFPO-DA and PFBS when the permittee reports non-detect values at or below the Target QL for four consecutive monitoring periods for each PFAS parameter that is analyzed. Use the following language: The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detects at or below Quantitation Limits of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS and 6.4 ng/L for HFPO-DA. When monitoring is discontinued, permittees should enter a No Discharge Indicator (NODI) Code of "GG" on DMRs.

Braeburn reported results for PFOA, PFOS, HFPO-DA, and PFBS at IMP 101 in the permit renewal application. The results are summarized in **Table 5**.

Table 5. Analytical Results for PFAS at IMP 101

Parameter	Maximum Concentration (ng/L)	No. of Non-Detect Results / No. of Analyses	Permit Quantitation Limit (ng/L)
Perfluoroooctanoic acid (PFOA)	<1.84	3/3	4.0
Prefluorooctanesulfonic acid (PFOS)	<1.71	3/3	3.7
Perfluorobutanesulfonic acid (PFBS)	<1.63	3/3	3.5
Hexafluoropropylene oxide dimer acid (HFPO-DA)	<1.84	3/3	6.4

Consistent with Section II.I.b of SOP No. BCW-PMT-032 and pursuant to Braeburn's reporting of non-detect values below the Target QLs, annual monitoring will be required for PFOA, PFOS, PFBS, and HFPO-DA at IMP 101. As stated in Section II.I.c of the SOP, if non-detect values at or below DEP's Target QLs are reported for four consecutive monitoring periods (*i.e.*, four consecutive annual results), then the monitoring may be discontinued.

101.B. Water Quality-Based Effluent Limitations (WQBELs)

[4] ATSDR, "Toxicological Profile for Perfluoroalkyls". Patrick N. Breysse, Ph.D., CIH Director, National Center for Environmental Health and Agency for Toxic Substances and Disease Registry Centers for Disease Control and Prevention, May 2021.

WQBELs generally are not imposed at internal monitoring points because internal waste streams do not need to comply with water quality standards until they discharge to a water of the Commonwealth. Therefore, WQBELs are evaluated for treated process wastewaters at Outfall 001—the final discharge location to the Allegheny River.

101.C. Effluent Limitations and Monitoring Requirements for IMP 101

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable requirements are summarized in the following table.

Table 6. Effluent Limits and Monitoring Requirements for IMP 101

Parameter	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(d)(1)
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	40 CFR § 420.77(b)(2)
Total Suspended Solids	4.24	11.3	15.0	40.0	50.0	40 CFR § 420.77(b)(2)
Oil and Grease	—	2.83	—	10.0	13.0	40 CFR § 420.77(b)(2)
Perfluorooctanoic acid (PFOA) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Perfluorooctanesulfonic acid (PFOS) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Perfluorobutanesulfonic acid (PFBS) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Hexafluoropropylene oxide dimer acid (HFPO-DA) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)

In accordance with the self-monitoring requirements given in Chapter 6, Table 6-4 of DEP's Permit Writers' Manual and the previous permit, TSS will require 8-hour composite sampling 2/month. The monitoring frequency and sample type for Oil & Grease and pH will be 2/month grab sampling. Flow must be measured at the time of sampling (2/month). PFAS parameters will require grab sampling 1/year.

Development of Effluent Limitations

Outfall No.	001	**Design Flow (MGD)**	0.338
Latitude	40° 36' 56.69"	**Longitude**	-79° 42' 40.94"
Wastewater Description:	Quench tank contact cooling water and excess river water from IMP 101; non-contact cooling water from heat exchangers and furnaces, floor drain runoff from the Forge Press Building; and storm water runoff.		

Excess river water from the intake pump discharges continuously from this outfall. The river water is generally filtered before use and a minimum flow rate is required for the filters to function according to an April 8, 2008 DEP inspection report. DEP's understanding is that the difference between the minimum flow requirement for filter operation and Braeburn's water demand is the source of the discharge of excess river water.

Wastewaters regulated at Outfall 001 are currently subject to the following effluent limits and monitoring requirements.

Table 7. Current Effluent Limits and Monitoring Requirements at Outfall 001

Parameter	Mass (pounds)		Concentration (mg/L)			Sample Type	Basis
	Avg. Mo.	Daily Max	Avg. Mo.	Daily Max	IMAX		
Flow (MGD)	Report	Report	—	—	—	2/month	25 Pa. Code § 92a.61(d)(1)
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	2/month	25 Pa. Code § 95.2(1)
Temperature (°F)	—	—	—	110	—	2/month	25 Pa. Code § 93.6(a)
Total Suspended Solids	—	—	30.0	60.0	—	2/month	40 CFR §§ 122.44(l) & 423.12(b)(3)
Oil and Grease	—	—	15.0	20.0	—	2/month	40 CFR § 423.12(b)(3); 25 Pa. Code § 92a.48(a)(3) [BPJ TBELs]

The effluent limits and monitoring requirements in **Table 7** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

001.A. Technology-Based Effluent Limitations (TBELs)

Non-Contact Cooling Water (NCCW)

In accordance with the recommendations given in Chapter 6, Table 6-4 of DEP's Permit Writers' Manual, self-monitoring requirements for NCCW discharges should include the following parameters: flow, pH, and temperature. Flow monitoring is required in accordance with 25 Pa. Code § 92a.61(d)(1). Limits for pH (6.0 minimum and 9.0 maximum) will be imposed at Outfall 001 based on 25 Pa. Code § 95.2(1).

A maximum daily temperature limit of 110°F is imposed at Outfall 001 if thermal WQBELs do not apply at Outfall 001 due to residual heat from contact and non-contact cooling water (refer to Section 001.B, below). The 110°F temperature limit is imposed to protect human health caused by exposure resulting from water contact consistent with the recommendations of DEP's "Implementation Guidance for Temperature Criteria", and as an implementation of general water quality criteria for thermal impacts under 25 Pa. Code § 93.6(a), which states that "[w]ater may not contain substances attributable to point or nonpoint source discharges in concentration or amounts sufficient to be inimical or harmful to the water uses to be protected or to human, animal, plant or aquatic life."

Floor Drains

EPA identifies floor drains as a low volume waste source in the Steam Electric Power Generating Point Source Category ELGs and regulates TSS and Oil & Grease in those sources. Braeburn is not a power-generating facility, but floor drain wastewater at Braeburn is analogous to floor drain wastewater regulated by the Steam Electric regulations, so the TSS and Oil & Grease TBELs in 40 CFR § 423.12(b)(3) reasonably apply to floor drain wastewater discharged elsewhere. TBELs for Oil & Grease based on § 423.12(b)(3) are imposed at Outfall 001. The TSS limits currently in effect at Outfall 001 are more stringent than the TSS limits in § 423.12(b)(3), so the current TSS limits will remain in the permit pursuant to EPA's anti-backsliding regulation (40 CFR § 122.44(l)). This rationale has not changed from the previous permit, so the TSS and Oil & Grease limits are the same as those currently in effect.

Storm Water

There is a storm water component to Outfall 001's discharges, but no monitoring specific to storm water will be required at Outfall 001. Excess river water discharges through the outfall continuously and there is no way to readily separate characterization of storm water from the river water.

Per- and Polyfluoroalkyl Substances (PFAS)

In accordance with Section II.I of DEP's "Standard Operating Procedure (SOP) for Clean Water Program – Establishing Effluent Limitations for Individual Industrial Permits" [SOP No. BCW-PMT-032] and under the authority of 25 Pa. Code § 92a.61(b), DEP has determined that monitoring for a subset of common/well-studied PFAS including Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), Perfluorobutanesulfonic acid (PFBS), and Hexafluoropropylene oxide dimer acid (HFPO-DA) is necessary to help understand the extent of environmental contamination by PFAS in the Commonwealth and the extent to which point source dischargers are contributors. Braeburn reported results for PFOA, PFOS, HFPO-DA, and PFBS at Outfall 001 in the permit renewal application. The results are summarized in **Table 8**.

Table 8. Analytical Results for PFAS at Outfall 001

Parameter	Maximum Concentration (ng/L)	No. of Non-Detect Results / No. of Analyses	Permit Quantitation Limit (ng/L)
Perfluoroooctanoic acid (PFOA)	<2.02	3/3	4.0
Prefluorooctanesulfonic acid (PFOS)	<1.88	3/3	3.7
Perfluorobutanesulfonic acid (PFBS)	<1.79	3/3	3.5
Hexafluoropropylene oxide dimer acid (HFPO-DA)	<2.02	3/3	6.4

Consistent with Section II.I.b of SOP No. BCW-PMT-032 and pursuant to Braeburn's reporting of non-detect values below the Target QLs, annual monitoring will be required for PFOA, PFOS, PFBS, and HFPO-DA at Outfall 001. As stated in Section II.I.c of the SOP, if non-detect values at or below DEP's Target QLs are reported for four consecutive monitoring periods (*i.e.*, four consecutive annual results), then the monitoring may be discontinued.

001.B. Water Quality-Based Effluent Limitations (WQBELs)

Toxics Management Spreadsheet Water Quality Modeling Program and Procedures for Evaluating Reasonable Potential

WQBELs are developed pursuant to Section 301(b)(1)(C) of the Clean Water Act and, per 40 CFR § 122.44(d)(1)(i), are imposed to "control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) that are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality." The Department of Environmental Protection developed the DEP Toxics Management Spreadsheet (TMS) to facilitate calculations necessary to complete a reasonable potential (RP) analysis and determine WQBELs for discharges of toxic and some nonconventional pollutants.

The TMS is a single discharge, mass-balance water quality modeling program for Microsoft Excel® that considers mixing, first-order decay, and other factors to determine WQBELs for toxic and nonconventional pollutants. Required input data including stream code, river mile index, elevation, drainage area, discharge flow rate, low-flow yield, and the hardness and pH of both the discharge and the receiving stream are entered into the TMS to establish site-specific discharge conditions. Other data such as reach dimensions, partial mix factors, and the background concentrations of pollutants in the stream also may be entered to further characterize the discharge and receiving stream. The pollutants to be analyzed by the model are identified by inputting the maximum concentration reported in the permit application or Discharge Monitoring Reports, or by inputting an Average Monthly Effluent Concentration (AMEC) calculated using DEP's TOXCONC.xls spreadsheet for datasets of 10 or more effluent samples. Pollutants with no entered concentration data and pollutants for which numeric water quality criteria in 25 Pa. Code Chapter 93 have not been promulgated are excluded from the modeling. If warranted, ammonia-nitrogen, CBOD-5, and dissolved oxygen are analyzed separately using DEP's WQM 7.0 model.

The TMS evaluates each pollutant by computing a wasteload allocation for each applicable criterion, determining the most stringent governing WQBEL, and comparing that governing WQBEL to the input discharge concentration to determine whether permit requirements apply in accordance with the following RP thresholds:

- Establish limits in the permit where the maximum reported effluent concentration or calculated AMEC equals or exceeds 50% of the WQBEL. Use the average monthly, maximum daily, and instantaneous maximum (IMAX) limits

for the permit as recommended by the TMS (or, if appropriate, use a multiplier of 2 times the average monthly limit for the maximum daily limit and 2.5 times the average monthly limit for IMAX).

- For non-conservative pollutants, establish monitoring requirements where the maximum reported effluent concentration or calculated AMEC is between 25% - 50% of the WQBEL.

- For conservative pollutants, establish monitoring requirements where the maximum reported effluent concentration or calculated AMEC is between 10% - 50% of the WQBEL.

In most cases, pollutants with effluent concentrations that are not detectable at the level of DEP's Target Quantitation Limits are eliminated as candidates for WQBELs and water quality-based monitoring requirements.

Reasonable Potential Analysis and WQBEL Development for Outfall 001

Discharges from Outfall 001 are evaluated based on the maximum concentrations reported on the permit renewal application. The TMS model is run for Outfall 001 with the modeled discharge and receiving stream characteristics shown in **Table 9**. Pollutants for which water quality criteria have not been promulgated (e.g., TSS, Oil and Grease, etc.) are excluded from the modeling.

The Q_{7-10} flow of the Allegheny River in the vicinity of Outfall 001 is regulated by the U.S. Army Corps of Engineers to a minimum flow of 2,390 cfs. The width of the Allegheny River downstream of Outfall 001 (and downstream of Jacks Island that divides flow in the river) is estimated to be 1,000 feet based on measurements using a topographic map. The depth is estimated to be nine feet, which is the minimum depth of the navigation channel maintained by the U.S. Army Corps of Engineers.

Table 9. TMS Inputs for Outfall 001

Discharge Characteristics		
Parameter	**Value**	
Discharge Flow (MGD)	0.338	
Hardness (mg/L)	174	
Receiving Stream Characteristics		
Parameter	**Outfall 001**	**End of Segment**
Stream Code	42122	42122
River Mile Index	24.45	23.2
Drainage Area (mi^2)	11,410	11,420
Q_{7-10} (cfs)	2,390	2,390
Low-flow Yield (cfs/mi^2)	0.1	0.1
Elevation (ft)	745.4	734.5
Slope (ft/ft)	0.0001	0.0001
PWS Intake (MGD)	—	2.5

Output from the TMS model is included in **Attachment B** to this Fact Sheet. As explained previously, the TMS compares the input discharge concentrations to the calculated WQBELs using DEP's Reasonable Potential thresholds to evaluate the need to impose WQBELs or monitoring requirements in the permit. The results of the modeling indicate that no WQBELs or water quality-based reporting requirements are necessary for Outfall 001.

Allegheny River Fish Consumption Use Impairment

There is a fish consumption use impairment for the Allegheny River caused by PCBs and chlordane. The sources of PCBs and chlordane are unknown apart from one point source discharger of PCBs: Texas Eastern Transmission LP's Delmont Compressor Station (PA0216607). Braeburn does not discharge PCBs or chlordane. Consequently, the facility will not contribute to the fish consumption use impairment caused by those pollutants and will not be subject to numerical limitations related to the impairment. However, to ensure the permit reflects the requirements of the TMDL with its 'zero' wasteload allocations for PCBs and chlordane from dischargers other than the Delmont Compressor Station, the following narrative limitation will be included as a condition in Part C of the permit: "There shall be no point source discharges of Polychlorinated Biphenyls (PCBs) or Chlordane to the Allegheny River." This conclusion applies to all outfalls from the facility.

Thermal Limits

Thermal WQBELs are evaluated using a DEP program called "Thermal Limits Spreadsheet" created with Microsoft Excel® for Windows. The program calculates temperature wasteload allocations (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 upstream of the discharge location. 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 made based on the input data which include the receiving stream flow rate (Q_{7-10}), 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.

DEP's "Implementation Guidance for Temperature Criteria" [Doc. No. 386-2000-001] directs permit writers to assume instantaneous complete mixing of the discharge with the receiving stream when calculating thermal effluent limits unless adverse factors exist. The Allegheny River is wide, which affects plume dispersion. Therefore, thermal limits are modeled by adjusting the $Q_{7\text{-}10}$ flow of the Allegheny River using the chronic partial mix factor calculated by the TMS (0.468). The chronic partial mix factor is used because temperature limits are developed to achieve compliance with temperature criteria over a 24-hour period (as opposed to acute mixing based on a criteria compliance time of 15 minutes).

The results of the thermal discharge analysis using the Thermal Limits Spreadsheet (*see* **Attachment C**) indicate that WQBELs for temperature are not required. Therefore, a maximum daily temperature limit of 110°F will control in the permit.

001.C. Effluent Limitations and Monitoring Requirements for Outfall 001

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable requirements are summarized in the following table.

Table 10. Effluent Limits and Monitoring Requirements for Outfall 001

Parameter	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(d)(1)
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	25 Pa. Code § 95.2(1)
Temperature (°F)	—	—	—	110	—	25 Pa. Code § 93.6(a)
Total Suspended Solids	—	—	30.0	60.0	—	40 CFR § 122.44(l); BPJ
Oil and Grease	—	—	15.0	20.0	—	40 CFR § 423.12(b)(3); BPJ
Perfluorooctanoic acid (PFOA) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Perfluorooctanesulfonic acid (PFOS) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Perfluorobutanesulfonic acid (PFBS) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Hexafluoropropylene oxide dimer acid (HFPO-DA) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)

Existing and previously imposed monitoring frequencies and sample types for TSS, oil and grease, and pH (2/month grab sampling) will be required at Outfall 001. Temperature must be measured 2/month using immersion stabilization sampling. Flow must be estimated 2/month. PFAS parameters will require grab sampling 1/year.

Development of Effluent Limitations

Outfall No. 002 **Design Flow (MGD)** Variable
Latitude 40° 36' 52.52" **Longitude** -79° 42' 48.38"
Wastewater Description: Storm water

Discharges monitored at Outfall 002 are currently subject to the following effluent limits and monitoring requirements.

Table 11. Current Effluent Limits and Monitoring Requirements at Outfall 002

Parameter	Concentration (mg/L)			Measurement Frequency	Sample Type	Limit Basis
	Avg. Mo.	Max Daily	IMAX			
Flow (MGD)	—	Report	—	1/6 months	Estimate	25 Pa. Code § 92a.61(h)
pH	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Oil and Grease	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Aluminum, Total	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Copper, Total	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Iron, Total	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Lead, Total	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Zinc, Total	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)

The effluent limits and monitoring requirements in **Table 11** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

002.A. Technology-Based Effluent Limitations (TBELs)

There are no Federal Effluent Limitations Guidelines (ELGs) that apply to discharges from Outfall 002. Therefore, if warranted, TBELs are developed based on DEP's Best Professional Judgment (BPJ).

Consistent with 25 Pa. Code § 92a.61(h) and DEP's policy for permitting storm water discharges associated with industrial activities, minimum standards described in DEP's "PAG-03 NPDES General Permit for Discharges of Stormwater Associated with Industrial Activity" (PAG-03) are imposed on storm water discharges authorized by individual industrial waste NPDES permits.[5] Based on Braeburn's SIC Codes of 3312 and 3542, the facility would be classified under Appendix B – Primary Metals Industry Facilities and Appendix U – Fabricated Metal Products of the PAG-03 General Permit, respectively.[6] To ensure baseline consistency with other primary metals industry and fabricated metal products facilities in Pennsylvania that discharge storm water associated with their industrial activities, the monitoring requirements and sector-specific Best Management Practices (BMPs) of the PAG-03, Appendices B and U are imposed at Outfall 002. The monitoring requirements of Appendices B and U are shown in **Tables 12** and **13**. The parameters listed in the appendices differ, so reporting is required for all unique and overlapping parameters from both appendices. Monitoring requirements for additional pollutants are considered to the extent that baseline monitoring requirements from those appendices do not capture the range of analytes present in the discharges.

Table 12. PAG-03 Appendix B – Minimum Monitoring Requirements

Discharge Parameter	Units	Sample Type	Minimum Measurement Frequency	Benchmark Values
Total Nitrogen †	mg/L	1 Grab	1/6 months	XXX
Total Phosphorus	mg/L	1 Grab	1/6 months	XXX
Total Suspended Solids	mg/L	1 Grab	1/6 months	100
Oil & Grease	mg/L	1 Grab	1/6 months	30
Aluminum, Total	mg/L	1 Grab	1/6 months	XXX
Zinc, Total	mg/L	1 Grab	1/6 months	XXX
Copper, Total	mg/L	1 Grab	1/6 months	XXX
Iron, Total	mg/L	1 Grab	1/6 months	XXX

[5] Standard Operating Procedure (SOP) for Clean Water Program, Establishing Effluent Limitations for Individual Industrial Permits, Section III.C. (SOP No. BCW-PMT-032, October 1, 2020, Version 1.6): "The applicable appendix of the PAG-03 General Permit should be considered the minimum standards for limits, benchmarks and monitoring requirements for individual industrial stormwater permits. The application manager may include other limits, benchmarks and monitoring requirements as justified in the fact sheet."

[6] The determination of which of the PAG-03 General Permit's appendices applies to a facility is based on a facility's SIC Code.

Table 12 (cont'd). PAG-03 Appendix B – Minimum Monitoring Requirements

Discharge Parameter	Units	Sample Type	Minimum Measurement Frequency	Benchmark Values
Lead, Total	mg/L	1 Grab	1/6 months	XXX

† Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO2+NO3-N), where TKN and NO2+NO3-N are measured in the same sample.

Table 13. PAG-03 Appendix U – Minimum Monitoring Requirements

Discharge Parameter	Units	Sample Type	Minimum Measurement Frequency	Benchmark Values
Total Nitrogen †	mg/L	1 Grab	1/6 months	XXX
Total Phosphorus	mg/L	1 Grab	1/6 months	XXX
pH	S.U.	1 Grab	1/6 months	9.0
Total Suspended Solids	mg/L	1 Grab	1/6 months	100
Oil & Grease	mg/L	1 Grab	1/6 months	30
Nitrate + Nitrite-Nitrogen	mg/L	1 Grab	1/6 months	3.0
Aluminum, Total	mg/L	1 Grab	1/6 months	XXX
Iron, Total	mg/L	1 Grab	1/6 months	XXX
Zinc, Total	mg/L	1 Grab	1/6 months	XXX

† Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO2+NO3-N), where TKN and NO2+NO3-N are measured in the same sample.

When the PAG-03 General Permit was renewed in 2023, the appendices were updated to include semi-annual monitoring for Total Nitrogen and Total Phosphorus. Those parameters will be added to Outfall 002's semi-annual monitoring requirements. Estimates of the storm water discharge flow rates will be required pursuant to 25 Pa. Code § 92a.61(h).

To the extent that effluent limits are necessary to ensure that storm water BMPs are adequately implemented, effluent limits are developed for industrial storm water discharges based on a determination of Best Available Technology (BAT) using BPJ. The development of case-by-case TBELs using BPJ typically involves the evaluation of end-of-pipe wastewater treatment technologies. However, consistent with 40 CFR § 122.44(k)(2), DEP considers the use of BMPs to be BAT for storm water discharges associated with industrial activities unless effluent concentrations indicate that BMPs provide inadequate pollution control. Braeburn did not report storm water results on the permit application because there were no discharges to sample. Braeburn also did not report any storm water results at Outfall 002 during the last permit cycle.

Assuming there are no impediments to sampling such as a submerged discharge pipe, and that Braeburn has been vigilant about checking for discharges after storm events, Braeburn should investigate whether the discharge pipe is connected to a source given that DMR results indicate the outfall has not discharged in almost five years.

Consistent with the PAG-03 General Permit, the benchmark values for Outfall 002's discharges will be set at 100 mg/L for TSS, 30 mg/L for Oil & Grease, and 3.0 mg/L for Nitrate-Nitrite as N. Other existing benchmark values will be maintained including 0.75 mg/L for Total Aluminum, 0.014 mg/L for Total Copper, 1.0 mg/L for Total Iron, 0.082 mg/L for Total Lead, 0.12 mg/L for Total Zinc, and 6.0 to 9.0 s.u. for pH. DEP uses benchmark monitoring in the PAG-03 General Permit as an indicator of the effectiveness of a facility's BMPs. The benchmark values are not effluent limitations and exceedances do not constitute permit violations. However, if sampling demonstrates exceedances of benchmark values for two consecutive monitoring periods, then Braeburn must submit a Corrective Action Plan within 90 days of the end of the monitoring period triggering the plan. Continued exceedances of the benchmark values will require a graduated response. The Corrective Action Plan requirement and the benchmark values will be specified in a condition in Part C of the permit. Estimates of the storm water discharge flow rates will be required pursuant to 25 Pa. Code § 92a.61(h).

002.B. <u>Water Quality-Based Effluent Limitations (WQBELs)</u>

No WQBELs are developed for Outfall 002. Pursuant to 25 Pa. Code § 96.4(g), mathematical modeling used to develop WQBELs must be performed at Q_{7-10} low flow conditions. Precipitation-induced discharges generally do not occur at Q_{7-10} design conditions because the precipitation that causes a storm water discharge also will increase the receiving stream's flow and that increased stream flow will provide additional assimilative capacity during a storm event.

Even though no mathematical modeling is performed, conditions in Part C of the permit will ensure compliance with water quality standards through a combination of best management practices including pollution prevention and exposure minimization, good housekeeping, erosion and sediment control, and spill prevention and response.

002.C. Effluent Limitations and Monitoring Requirements for Outfall 002

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable requirements are summarized in the following table.

Table 14. Effluent Limits and Monitoring Requirements for Outfall 002

Parameter	Mass (pounds)		Concentration (µg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	—	Report	—	—	—	25 Pa. Code § 92a.61(h)
pH (S.U.)	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appendix U
Total Suspended Solids	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U
Oil & Grease	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U
Nitrate-Nitrite as N	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appendix U
Nitrogen, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U
Phosphorus, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U
Aluminum, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U
Copper, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appendix B
Iron, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U
Lead, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appendix B
Zinc, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U

The sampling frequency for all parameters will be 1/6 months based on the sampling frequencies in Appendices B and U of the PAG-03 General Permit. Grab sampling is required for all parameters except Total Nitrogen, which must be calculated as the sum of Total Kjeldahl Nitrogen (TKN) plus Nitrite-Nitrate as N (NO_2+NO_3-N), where TKN and NO_2+NO_3-N are measured in the same sample. Flow should be estimated at the time of sampling.

Development of Effluent Limitations

Outfall No.	003	**Design Flow (MGD)**	0.23
Latitude	40° 36' 51.37"	**Longitude**	-79° 42' 50.80"

Wastewater Description: Non-contact cooling water from the facility's 10" and 14" rolling mills; wastewater from floor drains in the mill building; and storm water from the area of the mill and cold finish buildings

Wastewaters regulated at Outfall 003 are currently subject to the following effluent limits and monitoring requirements.

Table 15. Current Effluent Limits and Monitoring Requirements at Outfall 003

Parameter	Mass (pounds)		Concentration (mg/L)			Sample Type	Basis
	Avg. Mo.	Daily Max	Avg. Mo.	Daily Max	IMAX		
Flow (MGD)	Report	Report	—	—	—	2/month	25 Pa. Code § 92a.61(d)(1)
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	2/month	25 Pa. Code § 95.2(1)
Temperature (°F)	—	—	—	110.0	—	2/month	25 Pa. Code § 93.6(a)
Total Suspended Solids	—	—	30.0	60.0	—	2/month	40 CFR §§ 122.44(l) & 423.12(b)(3)
Oil & Grease	—	—	15.0	20.0	—	2/month	40 CFR § 423.12(b)(3); 25 Pa. Code § 92a.48(a)(3) [BPJ TBELs]
Copper, Total	—	—	Report (Avg. Qt.)	Report	—	2/quarter	25 Pa. Code § 92a.61(b)

The effluent limits and monitoring requirements in **Table 15** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

003.A. Technology-Based Effluent Limitations (TBELs)

Non-Contact Cooling Water (NCCW)

In accordance with the recommendations given in Chapter 6, Table 6-4 of DEP's Permit Writers' Manual, self-monitoring requirements for NCCW discharges should include the following parameters: flow, pH, and temperature. Flow monitoring is required in accordance with 25 Pa. Code § 92a.61(d)(1). Limits for pH (6.0 minimum and 9.0 maximum) will be imposed at Outfall 001 based on 25 Pa. Code § 95.2(1).

Pursuant to 25 Pa. Code § 93.6(a) and in accordance with DEP's "Implementation Guidance for Temperature Criteria", a maximum temperature limit of 110°F is imposed on heated discharges as a safety measure to protect sampling personnel and anyone who might come into contact with heated wastewaters at their point of discharge.

Oil/Water Separator

An oil/water separator is plumbed to the Outfall 003 discharge pipe. The separator is in the floodway of the Allegheny River on the opposite side of an earthen dike (topped by an access road) that protects the plant proper from high water. DEP observed during a January 23, 2018 inspection that the separator was inundated by the Allegheny River. A report from the Pennsylvania Fish and Boat Commission following-up on a March 1, 1979 oil release from Braeburn indicated that the oil filtration device located at Outfall 003 was silt and water covered and did not appear to be working. Based on this information, it is likely that the separator has been inoperable for at least forty-six years. In response to that same oil release in 1979, Braeburn applied for and was issued Water Quality Management (WQM) Permit No. 6579207 on August 22, 1980 for a dissolved air flotation ("DAF") system to treat wastewaters discharging at Outfall 003. That system was to be installed within the plant proper to treat wastewaters from the 10" rolling mill, which formerly used a continuous oil spray. The issuance of a WQM permit for a DAF unit further suggests that the oil/water separator located on the riverside of the earthen dike is obsolete because a DAF system to remove oil would not have been necessary if the oil/water separator was working. Notwithstanding the issuance of a WQM permit for a DAF system, such a system was never installed.

Braeburn indicated with the previous permit renewal that oils are no longer used in the processes in the mill and cold finish buildings, so oil removal devices are not needed for wastewaters from those operations. However, since there is still the potential for Outfall 003 to receive effluent from floor drains, the existing Oil & Grease limits will remain in effect.

Per- and Polyfluoroalkyl Substances (PFAS)

In accordance with Section II.I of DEP's "Standard Operating Procedure (SOP) for Clean Water Program – Establishing Effluent Limitations for Individual Industrial Permits" [SOP No. BCW-PMT-032] and under the authority of 25 Pa. Code § 92a.61(b), DEP has determined that monitoring for a subset of common/well-studied PFAS including Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), Perfluorobutanesulfonic acid (PFBS), and Hexafluoropropylene oxide dimer acid (HFPO-DA) is necessary to help understand the extent of environmental contamination by PFAS in the Commonwealth and the extent to which point source dischargers are contributors. Braeburn reported results for PFOA, PFOS, HFPO-DA, and PFBS at Outfall 003 in the permit renewal application. The results are summarized in **Table 16**.

Table 16. Analytical Results for PFAS at Outfall 003

Parameter	Maximum Concentration (ng/L)	No. of Non-Detect Results / No. of Analyses	Permit Quantitation Limit (ng/L)
Perfluorooctanoic acid (PFOA)	<1.93	3/3	4.0
Prefluorooctanesulfonic acid (PFOS)	<1.80	3/3	3.7
Perfluorobutanesulfonic acid (PFBS)	<1.71	3/3	3.5
Hexafluoropropylene oxide dimer acid (HFPO-DA)	<1.93	3/3	6.4

Consistent with Section II.I.b of SOP No. BCW-PMT-032, pursuant to Braeburn's reporting of non-detect values below the Target QLs, annual monitoring will be required for PFOA, PFOS, PFBS, and HFPO-DA at Outfall 003. As stated in Section II.I.c of the SOP, if non-detect values at or below DEP's Target QLs are reported for four consecutive monitoring periods (*i.e.*, four consecutive annual results), then the monitoring may be discontinued.

003.B. Water Quality-Based Effluent Limitations (WQBELs)

Reasonable Potential Analysis and WQBEL Development for Outfall 003

Discharges from Outfall 003 ostensibly include wastewater from floor drains in the mill building. Based on the identification of process wastewater from floor drains as a wastewater source for Outfall 003, Braeburn previously submitted analytical data for Pollutant Groups 1 through 5. For this permit renewal, Braeburn only reported results for Pollutant Group 1. DEP contacted Braeburn about the modified application sampling compared to the previous permit application and was informed that the drain still exists, but that the processes that could have discharged process wastewater to the floor drains no longer operate and the water has been shut off to that area.

Pollutant Group 1 contains a limited number of pollutants that are subject to water quality criteria that could implicate the need for modeling (BOD, Ammonia-Nitrogen, Temperature, Total Residual Chlorine, Total Dissolved Solids, Bromide, Chloride, Sulfate, and Fluoride). However, none of those pollutants are present in concentrations exceeding applicable water quality criteria. Therefore, no modeling is performed.

Modeling conducted for Outfall 003 as part of the 2020 permit renewal did not result in the imposition of any WQBELs, but monitoring for Total Copper was required because the concentration was greater than 10% of the calculated WQBEL. Monitoring for Total Copper will continue to be required.

003.C. Effluent Limitations and Monitoring Requirements for Outfall 003

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable requirements are summarized in the following table.

Table 17. Effluent Limits and Monitoring Requirements for Outfall 003

Parameter	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(d)(1)
pH (S.U.)	—	—	6.0 Inst. Min.	—	9.0	25 Pa. Code § 95.2(1)

Table 17 (cont'd). Effluent Limits and Monitoring Requirements for Outfall 003

Parameter	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Temperature (°F)	—	—	—	110	—	25 Pa. Code § 93.6(a)
Total Suspended Solids	—	—	30.0	60.0	—	40 CFR § 122.44(l)
Oil & Grease	—	—	15.0	20.0	—	40 CFR § 423.12(b)(3); BPJ
Copper, Total	—	—	Report	Report	—	25 Pa. Code § 92a.61(b)
Perfluorooctanoic acid (PFOA) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Perfluorooctanesulfonic acid (PFOS) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Perfluorobutanesulfonic acid (PFBS) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Hexafluoropropylene oxide dimer acid (HFPO-DA) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)

Existing and previously imposed monitoring frequencies and sample types for TSS, Oil & Grease, and pH (2/month grab sampling) and Total Copper (1/quarter grab sampling) will be required at Outfall 003. Temperature must be measured 2/month using immersion stabilization sampling. Flow must be estimated 2/month. PFAS parameters will require grab sampling 1/year.

Development of Effluent Limitations

Outfall No. 004 **Design Flow (MGD)** 0.001
Latitude 40° 36' 49.06" **Longitude** -79° 42' 54.29"
Wastewater Description: Treated sanitary wastewaters

Wastewaters regulated at Outfall 004 are currently subject to the following effluent limits and monitoring requirements.

Table 18. Current Effluent Limits and Monitoring Requirements at Outfall 004

Parameter	Mass (pounds)		Concentration (mg/L)		Sample Type	Basis
	Avg. Mo.	Daily Max	Avg. Mo.	IMAX		
Flow (MGD)	Report	Report	—	—	1/week	25 Pa. Code § 92a.61(d)(1)
pH (S.U.)			6.0 (IMIN)	9.0	†	25 Pa. Code § 92a.47(a)(7)
$CBOD_5$	—	—	25.0	50.0	2/month	25 Pa. Code § 92a.47(a)(1)
Total Suspended Solids	—	—	30.0	60.0	2/month	25 Pa. Code § 92a.47(a)(1)
Fecal Coliform (No. /100mL) May 1 – September 30	—	—	200 (Geo. Mean)	1,000	2/month	25 Pa. Code § 92a.47(a)(4) ORSANCO Poll. Ctrl. Stds.
Fecal Coliform (No. /100mL) October 1 – April 30	—	—	2,000 (Geo. Mean)	10,000	2/month	25 Pa. Code § 92a.47(a)(5)
Total Residual Chlorine	—	—	0.5	1.6	†	25 Pa. Code § 92a.47(a)(8)

† Daily when discharging

The effluent limits and monitoring requirements in **Table 18** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

004.A. Technology-Based Effluent Limitations (TBELs)

25 Pa. Code § 92a.47 specifies TBELs and effluent standards that apply to sewage discharges. Section 92a.47(a) requires that sewage be given a minimum of secondary treatment with significant biological treatment that achieves the following:

Table 19. TBELs for Sanitary Wastewater

Parameter	Monthly Average (mg/L)	Instant. Maximum (mg/L)	Basis
$CBOD_5$	25.0	50.0†	25 Pa. Code § 92a.47(a)(1)
Total Suspended Solids	30.0	60.0†	25 Pa. Code § 92a.47(a)(1)
Fecal Coliform (No./100 mL) May 1 – September 30	200 (Geometric Mean)	1,000	25 Pa. Code § 92a.47(a)(4)
Fecal Coliform (No./100 mL) October 1 – April 30	2,000 (Geometric Mean)	10,000	25 Pa. Code § 92a.47(a)(5)
Total Residual Chlorine	0.5 (or facility-specific)	1.6 (or facility-specific)	25 Pa. Code § 92a.47(a)(8)
pH (s.u.)	not less than 6.0 and not greater than 9.0		25 Pa. Code § 92a.47(a)(7)

†Value is calculated as two times the monthly average in accordance with Chapter 2 of DEP's Technical Guidance for the Development and Specification of Effluent Limitations.

The TBELs for TRC in **Table 19** were imposed for the first time in the previous permit subject to a one-year schedule of compliance. The schedule was intended to give Braeburn time to design, permit, and install any dechlorination systems that may have been necessary to comply with the new limits. Interim TRC limits of 1.4 mg/L monthly average and 3.3 mg/L maximum daily were in effect before the new limits took effect. Notwithstanding the one-year schedule, Braeburn did not install any dechlorination systems or take any other actions to comply and has reported intermittent violations of the new TRC limits (about 14% of reported average monthly results since the limits went into effect). Braeburn also reports intermittent fecal coliform violations. DEP will work with Braeburn to resolve the compliance issues as part of this permit renewal. To facilitate evaluations of treatment operations, monitoring will be required for ammonia-nitrogen pursuant to 25 Pa. Code § 92a.61(b).

Per- and Polyfluoroalkyl Substances (PFAS)

In accordance with Section II.I of DEP's "Standard Operating Procedure (SOP) for Clean Water Program – Establishing Effluent Limitations for Individual Industrial Permits" [SOP No. BCW-PMT-032] and under the authority of 25 Pa. Code § 92a.61(b), DEP has determined that monitoring for a subset of common/well-studied PFAS including Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), Perfluorobutanesulfonic acid (PFBS), and Hexafluoropropylene oxide dimer acid (HFPO-DA) is necessary to help understand the extent of environmental contamination by PFAS in the Commonwealth and the extent to which point source dischargers are contributors. Braeburn reported results for PFOA, PFOS, HFPO-DA, and PFBS at Outfall 004 in the permit renewal application. The results are summarized in **Table 19**.

Table 20. Analytical Results for PFAS at Outfall 004

Parameter	Maximum Concentration (ng/L)	No. of Non-Detect Results / No. of Analyses	Permit Quantitation Limit (ng/L)
Perfluorooctanoic acid (PFOA)	<1.88	3/3	4.0
Prefluorooctanesulfonic acid (PFOS)	1.80	2/3	3.7
Perfluorobutanesulfonic acid (PFBS)	<1.66	3/3	3.5
Hexafluoropropylene oxide dimer acid (HFPO-DA)	<1.88	3/3	6.4

Consistent with Section II.I.a of SOP No. BCW-PMT-032, the presence of PFOS in the effluent means that quarterly monitoring will be required for all four of the PFAS parameters. As stated in Section II.I.c of the SOP, if non-detect values at or below DEP's Target QLs are reported for four consecutive monitoring periods (*i.e.*, four consecutive quarterly results), then the monitoring may be discontinued.

004.B. Water Quality-Based Effluent Limitations (WQBELs)

For sewage discharges, DEP typically runs its WQM 7.0 water quality modeling program. WQM 7.0 is a water quality modeling program for Windows that determines waste load allocations and effluent limitations for carbonaceous biochemical oxygen demand, ammonia nitrogen, and dissolved oxygen for single and multiple point-source discharge scenarios. DEP previously determined that discharges from Outfall 004 do not have a reasonable potential to cause or contribute to an excursion above water quality criteria. That determination was based on the significant amount of mixing and dilution afforded by the Allegheny River (the discharge flow is about 0.000075% of the Allegheny River's $Q_{7\text{-}10}$ flow). Since the treated sewage discharge has not materially or substantially changed, the previous determination stands. This conclusion also applies to WQBELs for Total Residual Chlorine (normally evaluated using a separate modeling spreadsheet).

004.C. Effluent Limitations and Monitoring Requirements for Outfall 004

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable requirements are summarized in the following table.

Table 21. Effluent Limits and Monitoring Requirements for Outfall 004

Parameter	Mass (pounds)		Concentration (mg/L)		Basis
	Average Monthly	Daily Maximum	Average Monthly	Instant Maximum	
Flow (MGD)	0.001	—	—	—	25 Pa. Code § 92a.61(d)(1)
pH (S.U.)	—	—	6.0 Inst. Min.	9.0	25 Pa. Code § 92a.47(a)(7)
Total Residual Chlorine	—	—	0.5	1.6	25 Pa. Code § 92a.47(a)(8)
$CBOD_5$	—	—	25.0	50.0	25 Pa. Code § 92a.47(a)(1)
Total Suspended Solids	—	—	30.0	60.0	25 Pa. Code § 92a.47(a)(1)
Fecal Coliform (No. /100mL) May 1 – September 30	—	—	200 (Geo. Mean)	1,000	25 Pa. Code § 92a.47(a)(4)
Fecal Coliform (No. /100mL) October 1 – April 30	—	—	2,000 (Geo. Mean)	10,000	25 Pa. Code § 92a.47(a)(5)
Ammonia-Nitrogen	—	—	Report	Report	25 Pa. Code 92a.61(b)

Table 21 (cont'd). Effluent Limits and Monitoring Requirements for Outfall 004

Parameter	Mass (pounds)		Concentration (mg/L)		Basis
	Average Monthly	Daily Maximum	Average Monthly	Instant Maximum	
Perfluorooctanoic acid (PFOA) (ng/L)	—	—	—	Report	25 Pa. Code § 92a.61(b)
Perfluorooctanesulfonic acid (PFOS) (ng/L)	—	—	—	Report	25 Pa. Code § 92a.61(b)
Perfluorobutanesulfonic acid (PFBS) (ng/L)	—	—	—	Report	25 Pa. Code § 92a.61(b)
Hexafluoropropylene oxide dimer acid (HFPO-DA) (ng/L)	—	—	—	Report	25 Pa. Code § 92a.61(b)

Monitoring frequencies and sample types are based on those specified in the current permit and on the self-monitoring requirements for sewage discharges from Chapter 6, Table 6-3 in DEP's "Technical Guidance for the Development and Specification of Effluent Limitations and Other Conditions in NPDES Permits". Flow must be measured 1/week; $CBOD_5$, TSS, fecal coliform, and ammonia-nitrogen must be sampled 2/month using grab samples; and TRC and pH must be sampled daily when discharging using grab samples. These sampling requirements apply to facilities with design flows between 500 and 2,000 gpd (Braeburn's sewage plant has a design flow of 1,000 gpd). Grab samples should be representative of the effluent and are to be taken at a time when the normal daily maximum flow would reach the sampling point. PFAS parameters will require grab sampling 1/quarter.

Development of Effluent Limitations

Outfall No.	005	**Design Flow (MGD)**	Variable
Latitude	40° 36' 44.94"	**Longitude**	-79° 42' 53.51"
Wastewater Description:	Storm water		

Outfall 005 discharges into a lagoon owned by the U.S. Army Corps of Engineers. The lagoon is separated from the Allegheny River by a narrow strip of land with a two-lane road. Water from the lagoon discharges to the Allegheny River through an outlet pipe beneath the roadway.

Image Source and Date: Google Earth Pro; 4/17/2016

Outfall 005 previously discharged cooling water and storm water, but cooling water discharges from Outfall 005 were discontinued. Braeburn explained in the previous permit renewal application:

> The Fuller Compressor cooling water discharged through this outfall [005]. This compressor is no longer operational. Repairing this old compressor was not cost effective. A new air compressor which is air cooled replaced this equipment. The new air compressor was started up on 11/14/16. Cooling water was discharged through outfall 005 until approximately the end of January 2018. It is not our intent to ever run the Fuller compressor again. Therefore outfall 005 will only receive storm water from surface drains in the future.

Discharges monitored at Outfall 005 are currently subject to the following effluent limits and monitoring requirements.

Table 22. Current Effluent Limits and Monitoring Requirements at Outfall 005

Parameter	Concentration (mg/L)			Measurement Frequency	Sample Type	Limit Basis
	Avg. Mo.	Max Daily	IMAX			
Flow (MGD)	—	Report	—	1/6 months	Estimate	25 Pa. Code § 92a.61(h)
pH	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)

Table 22 (cont'd). Current Effluent Limits and Monitoring Requirements at Outfall 005

Parameter	Concentration (mg/L)			Measurement Frequency	Sample Type	Limit Basis
	Avg. Mo.	Max Daily	IMAX			
Total Suspended Solids	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Oil and Grease	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Aluminum, Total	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Copper, Total	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Iron, Total	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Lead, Total	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Zinc, Total	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)

The effluent limits and monitoring requirements in **Table 22** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

005.A. Technology-Based Effluent Limitations (TBELs)

Pursuant to 25 Pa. Code § 92a.61(h) and DEP's policy for permitting storm water discharges associated with industrial activities, minimum standards described in the PAG-03 will be applied to Outfall 005 (see **Tables 12** and **13** in Section 002.A of this Fact Sheet). No TBELs will be imposed at Outfall 005 at this time. Braeburn did not report any analytical results for Outfall 005 on the permit application because there was no flow to sample at the time. However, Braeburn has reported results for the parameters in **Table 22** on semi-annual DMRs. Concentrations of aluminum and iron are generally elevated averaging 2.98 mg/L and 4.33 mg/L, respectively. Braeburn also reported two consecutive exceedances of the TSS benchmark value of 100 mg/L in the second half of 2021 and first half of 2022 (corresponding with the highest concentrations of aluminum and iron), but there is no record of receiving a Corrective Action Plan to address TSS. TSS concentrations from the second half of 2022 through the end of 2024 did not exceed the benchmark value. For this permit renewal, no additional benchmark values will be imposed.

005.B. Water Quality-Based Effluent Limitations (WQBELs)

No WQBELs are developed for Outfall 005. Pursuant to 25 Pa. Code § 96.4(g), mathematical modeling used to develop WQBELs must be performed at $Q_{7\text{-}10}$ low flow conditions. Precipitation-induced discharges generally do not occur at $Q_{7\text{-}10}$ design conditions because the precipitation that causes a storm water discharge will also increase the receiving stream's flow and that increased stream flow will provide additional assimilative capacity during a storm event.

Even though no mathematical modeling is performed, conditions in Part C of the permit will ensure compliance with water quality standards through a combination of best management practices including pollution prevention and exposure minimization, good housekeeping, erosion and sediment control, and spill prevention and response.

005.C. Effluent Limitations and Monitoring Requirements for Outfall 005

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable requirements are summarized in the following table.

Table 23. Effluent Limits and Monitoring Requirements for Outfall 005

Parameter	Mass (pounds)		Concentration (µg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	—	Report	—	—	—	25 Pa. Code § 92a.61(h)
pH (S.U.)	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appendix U
Total Suspended Solids	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U
Oil & Grease	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U
Nitrate-Nitrite as N	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appendix U
Nitrogen, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U

Table 23 (cont'd). Effluent Limits and Monitoring Requirements for Outfall 005

Parameter	Mass (pounds)		Concentration (µg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Phosphorus, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U
Aluminum, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U
Copper, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appendix B
Iron, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U
Lead, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appendix B
Zinc, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U

The sampling frequency for all parameters will be 1/6 months based on the sampling frequency in Appendices B and U of the PAG-03 General Permit. Grab sampling is required for all parameters except Total Nitrogen, which must be calculated as the sum of Total Kjeldahl Nitrogen (TKN) plus Nitrite-Nitrate as N (NO_2+NO_3-N), where TKN and NO_2+NO_3-N are measured in the same sample. Flow should be estimated at the time of sampling.

Development of Effluent Limitations

Outfall No. 012 **Design Flow (MGD)** 0.008
Latitude 40° 36' 54.28" **Longitude** -79° 42' 45.78"
Wastewater Description: Excess river water from the intake pumps and storm water

Discharges monitored at Outfall 012 are currently subject to the following effluent limits and monitoring requirements.

Table 24. Current Effluent Limits and Monitoring Requirements at Outfall 012

Parameter	Concentration (mg/L)			Measurement Frequency	Sample Type	Limit Basis
	Avg. Mo.	Max Daily	IMAX			
Flow (MGD)	—	Report	—	1/6 months	Estimate	25 Pa. Code § 92a.61(h)
pH	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	Report	—	1/quarter	Grab	25 Pa. Code § 92a.61(h)
Oil and Grease	—	30.0	—	1/quarter	Grab	25 Pa. Code §§ 92a.61(b) and (h); 40 CFR § 122.44(l)
Aluminum, Total	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Copper, Total	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Iron, Total	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Lead, Total	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Zinc, Total	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)

The effluent limits and monitoring requirements in **Table 24** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

012.A. Technology-Based Effluent Limitations (TBELs)

Excess intake water and storm water are not subject to Federal ELGs. Pursuant to 25 Pa. Code § 92a.61(h) and DEP's policy for permitting storm water discharges associated with industrial activities, minimum standards described in Appendices B and U of the PAG-03 are applied to Outfall 012 (see **Table 12** and **13** in Section 002.A of this Fact Sheet).

Existing Requirements

Effluent limits and monitoring requirements in the current permit include an instantaneous maximum limit of 30 mg/L for Oil & Grease and reporting requirements for flow and total suspended solids. Braeburn analyzes for Oil & Grease and TSS once per quarter and reports estimated discharge flow rates once per month. The Oil & Grease limit dates to the NPDES permit issued to Braeburn by EPA on June 28, 1977. At that time, EPA wrote NPDES permits for some facilities in Pennsylvania and Pennsylvania's Department of Environmental Resources certified whether the permit complied with state law and made recommendations if permits did not comply with state requirements. As part of Pennsylvania's March 16, 1977 letter certifying EPA's 1977 NPDES permit for Braeburn, Oil & Grease limits (15 mg/L average and 30 mg/L maximum) were required at all outfalls in existence at that time (001, 002, 003, 005, and 012). The March 16, 1977 letter did not provide a justification for the requirement, but the Department of Environmental Resources previously recorded oil releases from Braeburn on September 28, 1973 and April 30, 1974. There was also the March 1, 1979 significant oil release discussed in Section 003.A of this Fact Sheet and a later release of 2,143 mg/L of oil from Outfall 012 on April 10, 1979. The oil discharged from Outfall 012 originated from a storage area for oily scrap. Soil borings in October 10, 1979 also identified oil in the subsurface.

Pursuant to EPA's anti-backsliding regulation at 40 CFR § 122.44(l), the Oil & Grease limits and quarterly reporting will be maintained at this outfall. Quarterly TSS monitoring also will be maintained pursuant to 25 Pa. Code § 92a.61(b). Like the Oil & Grease limits, TSS monitoring was required in the 1977 permit based on elevated TSS concentrations at that time (476 mg/L). DMR data and current application data exhibit wide variation in TSS concentrations ranging from <3 mg/L to 176 mg/L. The elevated TSS concentrations may be attributable to excess river water, but that is unlikely because intake river water is filtered by Braeburn. Braeburn did not report the concentrations of pollutants in its intake water so DEP cannot determine if river water is a source of TSS. Regardless, TSS reporting will be maintained.

Table 25 summarizes the analytical results reported on the permit application for Outfall 012 and DMR results for parameters monitored and reported under the previous permit. Based on the results, no additional effluent limits are imposed.

Table 25. Analytical Results for Outfall 012

Parameter	Outfall 012 Concentration (Max from Analysis Results Tables of Application)	Outfall 012 Concentration (Maximum Result from DMRs) (mg/L)	MSGP Benchmarks (mg/L)
BOD_5 (mg/L)	<3	—	30
COD (mg/L)	<10	—	120
TOC (mg/L)	3.02	—	N/A
TSS (mg/L)	<3	42	100
Ammonia-Nitrogen (mg/L)	0.02	—	N/A
Temperature (Winter) (°C)	—	—	N/A
Temperature (Summer) (°C)	25.1	—	2.0
pH – Minimum (s.u.)	7.47	6.9	6.0 – 9.0 s.u.
pH – Maximum(s.u.)	7.53	7.64	6.0 – 9.0 s.u.
Fecal Coliform (No./100mL)	345	—	N/A
Oil and Grease (mg/L)	<5	<5	N/A
TRC (mg/L)	0.14	—	N/A
Total Phosphorus (mg/L)	<0.10	—	2.0
TKN (mg/L)	<1	—	N/A
Nitrate+Nitrite Nitrogen (mg/L)	0.059	—	N/A
Total Dissolved Solids (mg/L)	<0.0005	—	N/A
Bromide (mg/L)	<0.050	—	N/A
Chloride (mg/L)	22.5	—	N/A
Sulfate (mg/L)	73.5	—	N/A
Sulfide (mg/L)	ND	—	N/A
Fluoride (mg/L)	0.17	—	N/A
Total Hardness (mg/L)	109	—	N/A
Aluminum, Total (mg/L)	—	3.72	N/A
Chromium, Hexavalent (mg/L)	—	<0.005	N/A
Copper, Total (mg/L)	—	0.1	N/A
Iron, Total (mg/L)	—	3.8	N/A
Lead, Total (mg/L)	—	<0.02	N/A
Zinc, Total (mg/L)	—	0.4	N/A

Per- and Polyfluoroalkyl Substances (PFAS)

In accordance with Section II.I of DEP's "Standard Operating Procedure (SOP) for Clean Water Program – Establishing Effluent Limitations for Individual Industrial Permits" [SOP No. BCW-PMT-032] and under the authority of 25 Pa. Code § 92a.61(b), DEP has determined that monitoring for a subset of common/well-studied PFAS including Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), Perfluorobutanesulfonic acid (PFBS), and Hexafluoropropylene oxide dimer acid (HFPO-DA) is necessary to help understand the extent of environmental contamination by PFAS in the Commonwealth and the extent to which point source dischargers are contributors. Braeburn reported results for PFOA, PFOS, HFPO-DA, and PFBS at Outfall 012 in the permit renewal application. The results are summarized in **Table 26**.

Table 26. Analytical Results for PFAS at Outfall 012

Parameter	Maximum Concentration (ng/L)	No. of Non-Detect Results / No. of Analyses	Permit Quantitation Limit (ng/L)
Perfluorooctanoic acid (PFOA)	<1.83	3/3	4.0
Prefluorooctanesulfonic acid (PFOS)	<1.70	3/3	3.7
Perfluorobutanesulfonic acid (PFBS)	<1.62	3/3	3.5
Hexafluoropropylene oxide dimer acid (HFPO-DA)	<1.83	3/3	6.4

Consistent with Section II.I.b of SOP No. BCW-PMT-032, pursuant to Braeburn's reporting of non-detect values below the Target QLs, annual monitoring will be required for PFOA, PFOS, PFBS, and HFPO-DA at Outfall 012. As stated in Section II.I.c of the SOP, if non-detect values at or below DEP's Target QLs are reported for four consecutive monitoring periods (*i.e.*, four consecutive annual results), then the monitoring may be discontinued.

012.B. Water Quality-Based Effluent Limitations (WQBELs)

No WQBELs are developed for discharges from Outfall 012. Flow-through storm water that is not detained by a facility should not discharge at Q_{7-10} design conditions. Additionally, the quality of excess river water from the intake should be the same as the quality of the river. To the extent that the effluent quality might be different, such differences should be attributable to storm water runoff, which is subject to BMPs to minimize storm water contamination.

012.C. Effluent Limitations and Monitoring Requirements for Outfall 012

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable requirements are summarized in the following table.

Table 27. Effluent Limits and Monitoring Requirements for Outfall 012

Parameter	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	—	—	—	—	25 Pa. Code § 92a.61(h)
pH (s.u.)	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appendix U
Total Suspended Solids	—	—	—	Report	—	25 Pa. Code §§ 92a.61(b) and (h); 40 CFR § 122.44(l)
Oil & Grease	—	—	—	30.0	—	25 Pa. Code §§ 92a.61(b) and (h); 40 CFR § 122.44(l)
Nitrate-Nitrite as N	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appendix U
Total Nitrogen	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U
Total Phosphorus	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U
Aluminum, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U
Copper, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appendix B
Iron, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U
Lead, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appendix B
Zinc, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U
Perfluorooctanoic acid (PFOA) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Perfluorooctanesulfonic acid (PFOS) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Perfluorobutanesulfonic acid (PFBS) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Hexafluoropropylene oxide dimer acid (HFPO-DA) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)

The existing sampling frequencies and types for flow (1/month estimate), Oil and Grease (1/quarter grab), and TSS (1/quarter grab) will remain unchanged. The sampling frequency and type for all storm water parameters will be 1/6 months using grab samples as established in Appendices B and U of the PAG-03 General Permit. PFAS parameters will require grab sampling 1/year.

Development of Effluent Limitations

Outfall No. 013 **Design Flow (MGD)** Variable
Latitude 40° 37' 10.10" **Longitude** -79° 42' 46.40"
Wastewater Description: Storm water

Although storm water discharges from Outfall 013 are not discharges to surface waters, they are potential pollutant-bearing discharges of storm water associated with industrial activities (from material laydown areas) to groundwater. Groundwater is a water of the Commonwealth pursuant to Section 1 of the Pennsylvania Clean Streams Law (35 P.S. § 691.1). DEP is choosing to regulate industrial storm water discharges from Outfall 013 under Braeburn's NPDES permit in accordance with Sections 301 and 307 of the Pennsylvania Clean Streams Law (35 P.S. §§ 691.301 and 691.307).

Discharges monitored at Outfall 013 are currently subject to the following monitoring requirements.

Table 28. Current Effluent Limits and Monitoring Requirements at Outfall 013

Parameter	Concentration (mg/L)			Measurement Frequency	Sample Type	Limit Basis
	Avg. Mo.	Max Daily	IMAX			
Flow (MGD)	—	Report	—	1/6 months	Estimate	25 Pa. Code § 92a.61(h)
pH (S.U.)	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	Report	—	1/quarter	Grab	25 Pa. Code § 92a.61(h)
Oil and Grease	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Aluminum, Total	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Chromium, Hexavalent	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Copper, Total	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Iron, Total	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Lead, Total	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)
Zinc, Total	—	Report	—	1/6 months	Grab	25 Pa. Code § 92a.61(h)

The effluent limits and monitoring requirements in **Table 28** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

013.A. Technology-Based Effluent Limitations (TBELs)

Pursuant to 25 Pa. Code § 92a.61(h) and DEP's policy for permitting storm water discharges associated with industrial activities, minimum standards described in the PAG-03 will be applied to Outfall 013 (see **Table 12** and **13** in Section 002.A of this Fact Sheet). Monitoring requirements for additional pollutants are considered to the extent that baseline monitoring requirements from Appendices B and U do not capture the range of analytes present in Outfall 013's discharges. **Table 29** summaries the analytical data reported by Braeburn in Module 1 of the NPDES permit application and DMR results where available.

Table 29. Analytical Results for Outfall 013

Parameter	Outfall 013 Conc. (mg/L)	DMR Conc. Avg. Mo. (mg/L)	DMR Conc. Daily Max (mg/L)	MSGP Benchmark (mg/L)
Oil and Grease (mg/L)	<5	<5	<5	N/A
BOD_5 (mg/L)	<3	—	—	30
COD (mg/L)	22.9	—	—	120
TSS (mg/L)	69	18.8	42.0	100
Total Nitrogen (mg/L)	0.64	—	—	N/A
Total Phosphorus (mg/L)	<0.10	—	—	2.0
pH (s.u.)	7.77	7.5 (Median)	7.64	6.0 – 9.0 s.u.
Aluminum, Total	0.217	1.35	3.72	0.64
Chromium, Hexavalent	<0.005	<0.005	<0.005	N/A
Copper, Total	0.0598	0.0512	0.1	0.014
Iron, Total	0.54	1.5	3.8	1.0
Lead, Total	0.00173	<0.02	<0.02	0.082
Zinc, Total	0.341	0.277	0.4	0.12

Based on the results in **Table 28**, no additional monitoring requirements are added to Outfall 013. However, based on DMR results, the reporting requirement for hexavalent chromium will be removed from the renewed permit based on the exception to anti-backsliding under 40 CFR § 122.44(l)(2)(i)(B)(*1*) regarding new information that justifies the application of less stringent requirements. In this case, the new information is analytical data showing that hexavalent chromium was not detected in the effluent at any time during the previous permit term.

013.B. Water Quality-Based Effluent Limitations (WQBELs)

Discharges from Outfall 013 are not direct discharges to surface waters so no WQBELs are developed.

013.C. Effluent Limitations and Monitoring Requirements for Outfall 013

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable requirements are summarized in the following table.

Table 30. Effluent Limits and Monitoring Requirements for Outfall 013

Parameter	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	—	Report	—	—	—	25 Pa. Code § 92a.61(h)
pH (s.u.)	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appendix B
Total Suspended Solids	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U
Oil and Grease	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U
Nitrate-Nitrite as N	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appendix U
Nitrogen, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U
Phosphorus, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U
Aluminum, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U
Copper, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appendix B
Iron, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U
Lead, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appendix B
Zinc, Total	—	—	—	Report	—	§ 92a.61(h); PAG-03, Appx. B & U

The sampling frequency and type for all parameters will be 1/6 months grab samples as established in Appendices B and U of the PAG-03 General Permit. Flow should be estimated at the time of sampling.

Clean Water Act Section 316(b) – Best Technology Available for Cooling Water Intake Structures

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

Braeburn's Cooling Water Intake Structure

Braeburn owns and operates an intake structure in Pool 4 along the eastern shoreline of the Allegheny River on the back-channel side of Jacks Island about one-quarter mile upstream of Lock and Dam 4. The intake structure consists of a 16-inch diameter wrought iron pipe extending through an earthen dike into the Allegheny River. An inspection of the intake pipe on October 15, 2019 by Specialty Underwater Services revealed the following characteristics: a length of pipe about twenty-six feet long protrudes from the shore at a downward angle. The pipe protrusion at the shore is about eight inches below the water surface and about three feet below the water surface and eight feet above the river bottom at the pipe's furthest extent. The final six feet of the pipe furthest from the shore has four rows of 26 slots on the top and sides of the pipe. There are no slots on the bottom of the pipe. Each slot is about six inches long and ½-inch wide. The end of the pipe is capped by a flat plate with two rows of seven vertically oriented slots about four inches long and ½-inch wide.

The cross-sectional area of the intake pipe's openings is as follows:

$$[((6 \text{ inches} \times 0.5 \text{ inches}) / \text{slot}) \times 26 \text{ slots/row} \times 4 \text{ rows}] + [((4 \text{ inches} \times 0.5 \text{ inches}) / \text{slot}) \times 7 \text{ slots/row} \times 2 \text{ rows}]$$

$$= 312 \text{ in}^2 + 28 \text{ in}^2 = 340 \text{ in}^2$$

$$340 \text{ in}^2 \div (144 \text{ in}^2 / \text{ft}^2) = 2.361 \text{ ft}^2$$

When the NPDES permit renewal application was submitted in April 2017, Braeburn operated an intake pump with a design capacity of 1,600 gallons per minute (2.304 MGD). While the renewal application was pending, Braeburn replaced the existing intake pump with a Goulds Model 3410 pump, which has a design capacity of 1,000 gallons per minute (1.44 MGD or 2.228 cfs).

At the new pump's design capacity of 1,000 gpm, the through-screen (i.e., slot) design velocity of the intake is as follows:

$$2.228 \text{ cfs} \div 2.361 \text{ ft}^2 \approx 0.94 \text{ feet per second}$$

During the October 15, 2019 intake inspection, Specialty Underwater Services recorded a maximum "through-screen" actual velocity of 0.27 feet per second with 80% restriction of the intake slots and lower velocities with no restrictions.

Applicability Criteria Evaluation

Braeburn is an "existing facility" as defined in 40 CFR § 125.92(k).[7] Existing facilities are 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) pursuant to the applicability criteria given by § 125.91(a) as follows:

(1) The facility is a point source;

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

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

[7] *Existing facility* means any facility that commenced construction as described in 40 CFR 122.29(b)(4) on or before January 17, 2002 (or July 17, 2006 for an offshore oil and gas extraction facility) and any modification of, or any addition of a unit at such a facility. A facility built adjacent to another facility would be a new facility while the original facility would remain as an existing facility for purposes of this subpart. A facility cannot both be an existing facility and a new facility as defined at §125.83.

Braeburn is a point source as defined in 40 CFR § 122.2.[8] Braeburn's point sources are permitted by NPDES Permit PA0001406.

The Design Intake Flow ("DIF")[9] of the intake structure is 1.44 MGD, which is less than the 2 MGD applicability threshold.

In the "Cooling Water Intake Structures" section of the permit renewal application, Braeburn reported the Actual Intake Flow ("AIF")[10] as 1.44 MGD (the same as the DIF) and indicated that fifty percent of that AIF is used for cooling, which exceeds the 25% applicability threshold.

Braeburn only meets two of the three applicability criteria in § 125.91(a) and is consequently not subject to the requirements of 40 CFR §§ 125.94 through 125.99. However, pursuant to § 125.90(b) reproduced below, Braeburn is subject to Best Technology Available requirements for impingement mortality and entrainment minimization established by the Department using Best Professional Judgement:

> Cooling water intake structures not subject to requirements under §§125.94 through 125.99 or subparts I or N of this part must meet requirements under section 316(b) of the CWA established by the Director on a case-by-case, best professional judgment (BPJ) basis.

Best Professional Judgement ("BPJ") of Best Technology Available for Impingement and Entrainment Minimization

DEP's "Standard Operating Procedure (SOP) for Clean Water Program, Establishing Best Technology Available (BTA) Using Best Professional Judgement (BPJ) for Cooling Water Intake Structures at Existing NPDES Facilities" [SOP No. BCW-PMT-038, 12/7/2021] describes the procedures DEP uses to make BTA determinations for existing cooling water intake structures based on BPJ.

BPJ of BTA for Impingement BTA

Pursuant to Section II.A of the SOP, facilities that have one or more of the following technologies or best management practices has BTA for impingement mortality:

1. Closed-cycle recirculating system.

2. 0.5 foot per second (fps) through-screen design velocity.

3. 0.5 fps through-screen actual velocity.

   NOTE 1: If the 0.5 fps through-screen actual velocity option is chosen, a monitoring requirement for through-screen velocity should be included in the permit.

4. Modified Traveling Screens with a fish handling and return system with sufficient water flow to return the fish directly to the source water in a manner that does not promote reimpingement of the fish or require a large vertical drop.

   NOTE 2: If the modified traveling screens option is chosen, a requirement to demonstrate that the technology is or will be optimized

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[8] *Point source* means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged.

[9] *Design intake flow* (DIF) means the value assigned during the cooling water intake structure design to the maximum instantaneous rate of flow of water the cooling water intake system is capable of withdrawing from a source waterbody. The facility's DIF may be adjusted to reflect permanent changes to the maximum capabilities of the cooling water intake system to withdraw cooling water, including pumps permanently removed from service, flow limit devices, and physical limitations of the piping. DIF does not include values associated with emergency and fire suppression capacity or redundant pumps (i.e., back-up pumps).

[10] *Actual Intake Flow* is a separate term in the Existing Facilities Rule defined as "the average volume of water withdrawn on an annual basis by the cooling water intake structures over the past three years. After October 14, 2019, Actual Intake Flow means the average volume of water withdrawn on an annual basis by the cooling water intake structures over the previous five years. Actual intake flow is measured at a location within the cooling water intake structure that the Director deems appropriate. The calculation of actual intake flow includes days of zero flow. AIF does not include flows associated with emergency and fire suppression capacity."

Of the four impingement BTA options, Braeburn currently complies with Impingement BTA Option 3: a through-screen actual velocity of 0.5 fps. Braeburn does not operate a closed-cycle recirculating system; the through-screen design velocity is greater than 0.5 fps; and the intake is not equipped with traveling screens.

Consistent with NOTE 1 in the SOP, Braeburn must monitor the intake structure's through-screen velocity at a minimum frequency of daily to ensure that a maximum velocity of 0.5 fps is achieved under all conditions. In lieu of velocity monitoring at the intake's openings, Braeburn can calculate the through-screen velocity using water flow, water depth, and the area of the intake slots.

BPJ of BTA for Entrainment

Pursuant to Section II.B of the SOP, facilities that have one or more of the following technologies or best management practices has BTA for entrainment:

1. Closed-cycle recirculating system.

2. The actual intake flow (AIF) is minimal compared to the mean annual flow of the river. For cases where this option is being used, cumulative withdrawals from nearby facilities should be considered. The application manager may contact the Bureau of Clean Water to determine if this option is applicable.

   NOTE 3: If this option is chosen, a monitoring requirement for intake flow should be included in the permit.

3. Seasonal flow reductions - If a facility can reduce flows to mimic closed cycle cooling during spawning and biologically important time periods.

   NOTE 4: If this option is chosen, a monitoring requirement for intake flow should be included in the permit.

Of these three options, Braeburn currently complies with Entrainment BTA Option 2: an Actual Intake Flow that is minimal compared to the mean annual flow of the Allegheny River.

Actual Intake Flow is calculated as the average volume of water withdrawn on an annual basis by the cooling water intake structure(s) over the previous five years according to the 40 CFR § 125.92(a) definition of AIF. Braeburn reported it's AIF on the permit application as 1.44 MGD (the same as the DIF), which is approximately equal to 2.228 cubic feet per second. The average of the mean annual flow of the Allegheny River as reported for water years 1994 through 2023 at USGS Gage 03049500 – Allegheny River at Natrona is 20,457 cfs. The percentage of the Allegheny River's mean annual flow taken in by Braeburn is:

$$2.228 \text{ cfs} \div 20{,}457 \text{ cfs} \approx 0.011\%$$

That percentage of the mean annual flow of the Allegheny River is minimal. For comparison, 40 CFR Part 125, Subpart I – "Requirements Applicable to Cooling Water Intake Structures for New Facilities Under Section 316(b) of the Act" requires cooling water intake structures to have a DIF of ≤ 5% of the source water annual mean flow.

Since Braeburn's AIF (and DIF) is minimal compared to the mean annual flow of the Allegheny River and there are no other withdrawals from nearby facilities that would increase the cumulative withdrawals, Braeburn has BTA for entrainment. Consistent with NOTE 3 of the SOP, Braeburn must monitor and report its intake flow rates.

The following conditions will be included in the permit to implement § 316(b) requirements.

COOLING WATER INTAKE STRUCTURE

A. Nothing in this permit authorizes a take of endangered or threatened species under the Endangered Species Act.

B. Technology and operational measures employed at the cooling water intake structures must be operated in a way that minimizes impingement mortality and entrainment to the smallest amount, extent, or degree reasonably possible.

C. The location, design, construction or capacity of the intake structure(s) may not be altered without prior approval of DEP.

D. The permittee must notify DEP before changing its source of cooling water.

E. The permittee shall retain data and other records for any information developed pursuant to Section 316(b) of the Clean Water Act for a minimum of ten (10) years.

F. Throughout the permit term, the permittee shall continue to operate and maintain the following technologies or BMPs that constitute Best Technology Available (BTA) for reducing impingement:

- 0.5 foot per second (fps) through-screen actual velocity. The permittee shall monitor the through-screen actual velocity once per week. In lieu of velocity monitoring, the permittee may calculate the through-screen velocity using water flow, water depth, and the screen open areas. The data shall be submitted on the Cooling Water Intake Monitoring Supplemental Report (3800-FM-BCW0010) as an attachment to monthly Discharge Monitoring Reports (DMRs).

G. Throughout the permit term, the permittee shall continue to operate and maintain the following technologies or BMPs that constitute Best Technology Available (BTA) for reducing entrainment:

- Maintenance of actual intake flow of 5% or less of the mean annual flow of the surface waters. The permittee shall monitor intake flows daily. The data shall be submitted on the Cooling Water Intake Monitoring Supplemental Report (3800-FM-BCW0010) as an attachment to monthly Discharge Monitoring Reports (DMRs).

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment B)
☐	TRC Model Spreadsheet (see Attachment)
☒	Temperature Model Spreadsheet (see Attachment C)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: Standard Operating Procedure for Clean Water Program New and Reissuance Industrial Waste and Industrial Stormwater Individual NPDES Permit Applications, SOP No. BCW-PMT-001, February 5, 2024, Version 1.7.
☒	SOP: Standard Operating Procedure for Clean Water Program Establishing Effluent Limitations for Individual Industrial Permits, SOP No. BCW-PMT-032, February 5, 2024, Version 1.7.
☒	SOP: Standard Operating Procedure (SOP)1 for Clean Water Program Establishing Best Technology Available (BTA) Using Best Professional Judgement (BPJ) for Cooling Water Intake Structures at Existing NPDES Facilities, SOP No. BCW-PMT-038, December 7, 2021, Version 1.0.
☐	Other:

ATTACHMENT A

BPT Effluent Limitations
Hot Forming Subcategory

TABLE IX-13

BPT EFFLUENT LIMITATIONS
HOT FORMING SUBCATEGORY

		Concentration (mg/l) All Hot Forming	Primary Mills		Section Mills		Flat			Pipe & Tube & Mills
			Without Scarfers	With Scarfers	Carbon	Specialty	Hot Strip & Sheet	Carbon Plate	Specialty Plate	Carbon & Specialty
Discharge Flow (gal/ton)		-	897	1,326	2,142	1,344	2,560	1,360	600	1,270
Total Suspended Solids	Avg.	15	0.0561	0.0830	0.134	0.0841	0.160	0.0851	0.0375	0.0795
	Max.	40	0.150	0.221	0.357	0.224	0.407	0.227	0.100	0.212
Oil & Grease	Avg.	-	-	-	-	-	-	-	-	-
	Max.	10	0.0374	0.0553	0.0894	0.0561	0.107	0.0567	0.0250	0.0530

330

Note: pH is also regulated at BPT and is limited to 6.0 to 9.0 standard units for all hot forming operations.

ATTACHMENT B

Toxics Management Spreadsheet Results for Outfall 001

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Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Braeburn Alloy Steel** NPDES Permit No.: **PA0001406** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Quench tank contact cooling water**

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
0.338	174	7.7						

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Strea m CV	Fate Coeff	FOS	Criteri a Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		302									
	Chloride (PWS)	mg/L		43.8									
	Bromide	mg/L		0.17									
	Sulfate (PWS)	mg/L		62									
	Fluoride (PWS)	mg/L		0.15									
Group 2	Total Aluminum	µg/L		31.3									
	Total Antimony	µg/L	<	2									
	Total Arsenic	µg/L	<	2									
	Total Barium	µg/L		106									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L	<	100									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L		2.88									
	Hexavalent Chromium	µg/L	<	5									
	Total Cobalt	µg/L		2.1									
	Total Copper	µg/L		41.6									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	5									
	Dissolved Iron	µg/L	<	20									
	Total Iron	µg/L		150									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		270									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		28.3									
	Total Phenols (Phenolics) (PWS)	µg/L	<	5									
	Total Selenium	µg/L	<	5									
	Total Silver	µg/L	<	0.4									
	Total Thallium	µg/L	<	2									
	Total Zinc	µg/L		46.9									
	Total Molybdenum	µg/L		25.2									
	Acrolein	µg/L	<	2									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	0.5									
	Benzene	µg/L	<	0.2									
	Bromoform	µg/L	<	0.5									

Group 3	Carbon Tetrachloride	µg/L	<	0.2									
	Chlorobenzene	µg/L	<	0.2									
	Chlorodibromomethane	µg/L	<	0.4									
	Chloroethane	µg/L	<	0.2									
	2-Chloroethyl Vinyl Ether	µg/L	<	0.5									
	Chloroform	µg/L	<	0.2									
	Dichlorobromomethane	µg/L	<	0.2									
	1,1-Dichloroethane	µg/L	<	0.2									
	1,2-Dichloroethane	µg/L	<	0.2									
	1,1-Dichloroethylene	µg/L	<	0.2									
	1,2-Dichloropropane	µg/L	<	0.2									
	1,3-Dichloropropylene	µg/L	<	0.2									
	1,4-Dioxane	µg/L	<	20									
	Ethylbenzene	µg/L	<	0.2									
	Methyl Bromide	µg/L	<	0.5									
	Methyl Chloride	µg/L	<	0.5									
	Methylene Chloride	µg/L	<	0.4									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.2									
	Tetrachloroethylene	µg/L	<	0.4									
	Toluene	µg/L	<	0.2									
	1,2-trans-Dichloroethylene	µg/L	<	0.5									
	1,1,1-Trichloroethane	µg/L	<	0.2									
	1,1,2-Trichloroethane	µg/L	<	0.5									
	Trichloroethylene	µg/L	<	0.2									
	Vinyl Chloride	µg/L	<	0.2									
Group 4	2-Chlorophenol	µg/L	<	0.263									
	2,4-Dichlorophenol	µg/L	<	0.263									
	2,4-Dimethylphenol	µg/L	<	0.263									
	4,6-Dinitro-o-Cresol	µg/L	<	2									
	2,4-Dinitrophenol	µg/L	<	5.26									
	2-Nitrophenol	µg/L	<	0.263									
	4-Nitrophenol	µg/L	<	0.263									
	p-Chloro-m-Cresol	µg/L	<	0.263									
	Pentachlorophenol	µg/L	<	5.26									
	Phenol	µg/L	<	0.263									
	2,4,6-Trichlorophenol	µg/L	<	0.263									
Group 5	Acenaphthene	µg/L	<	0.263									
	Acenaphthylene	µg/L	<	0.263									
	Anthracene	µg/L	<	0.263									
	Benzidine	µg/L	<	0.263									
	Benzo(a)Anthracene	µg/L	<	0.263									
	Benzo(a)Pyrene	µg/L	<	0.263									
	3,4-Benzofluoranthene	µg/L	<	0.263									
	Benzo(ghi)Perylene	µg/L	<	0.263									
	Benzo(k)Fluoranthene	µg/L	<	0.263									
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.263									
	Bis(2-Chloroethyl)Ether	µg/L	<	0.263									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.263									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	0.263									
	4-Bromophenyl Phenyl Ether	µg/L	<	0.263									
	Butyl Benzyl Phthalate	µg/L	<	0.263									
	2-Chloronaphthalene	µg/L	<	0.263									
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.263									
	Chrysene	µg/L	<	0.263									
	Dibenzo(a,h)Anthrancene	µg/L	<	0.263									
	1,2-Dichlorobenzene	µg/L	<	0.263									
	1,3-Dichlorobenzene	µg/L	<	0.263									
	1,4-Dichlorobenzene	µg/L	<	0.263									
	3,3-Dichlorobenzidine	µg/L	<	0.263									
	Diethyl Phthalate	µg/L	<	0.263									
	Dimethyl Phthalate	µg/L	<	0.263									
	Di-n-Butyl Phthalate	µg/L	<	0.263									
	2,4-Dinitrotoluene	µg/L	<	0.263									

	2,6-Dinitrotoluene	µg/L	<	0.263									
	Di-n-Octyl Phthalate	µg/L	<	0.263									
	1,2-Diphenylhydrazine	µg/L	<	0.263									
	Fluoranthene	µg/L	<	0.263									
	Fluorene	µg/L	<	0.263									
	Hexachlorobenzene	µg/L	<	0.263									
	Hexachlorobutadiene	µg/L	<	0.5									
	Hexachlorocyclopentadiene	µg/L	<	0.5									
	Hexachloroethane	µg/L	<	0.263									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.263									
	Isophorone	µg/L	<	0.263									
	Naphthalene	µg/L	<	0.263									
	Nitrobenzene	µg/L	<	0.263									
	n-Nitrosodimethylamine	µg/L	<	0.263									
	n-Nitrosodi-n-Propylamine	µg/L	<	0.263									
	n-Nitrosodiphenylamine	µg/L	<	0.263									
	Phenanthrene	µg/L	<	0.263									
	Pyrene	µg/L	<	0.263									
	1,2,4-Trichlorobenzene	µg/L	<	0.263									
Group 6	Aldrin	µg/L	<										
	alpha-BHC	µg/L	<										
	beta-BHC	µg/L	<										
	gamma-BHC	µg/L	<										
	delta BHC	µg/L	<										
	Chlordane	µg/L	<										
	4,4-DDT	µg/L	<										
	4,4-DDE	µg/L	<										
	4,4-DDD	µg/L	<										
	Dieldrin	µg/L	<										
	alpha-Endosulfan	µg/L	<										
	beta-Endosulfan	µg/L	<										
	Endosulfan Sulfate	µg/L	<										
	Endrin	µg/L	<										
	Endrin Aldehyde	µg/L	<										
	Heptachlor	µg/L	<										
	Heptachlor Epoxide	µg/L	<										
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<										
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

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Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Braeburn Alloy Steel, NPDES Permit No. PA0001406, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Allegheny River**

No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	042122	24.45	745.4	11410	0.0001		Yes
End of Reach 1	042122	23.2	734.5	11420	0.0001	2.5	Yes

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

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	24.45	0.1				1000	12					82.9	7.63		
End of Reach 1	23.2	0.1													

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	24.45														
End of Reach 1	23.2														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Braeburn Alloy Steel, NPDES Permit No. PA0001406, Outfall 001

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

☑ ***Hydrodynamics***

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

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
24.45	1,141		1,141	0.523	0.0001	12.	1000.	83.333	0.095	0.803	3294.259
23.2	1,142	3.868	1138.1325								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
24.45	3491.86		3491.86	0.523	0.0001	19.627	1000.	50.949	0.178	0.429	1575.815
23.2	3494.532	3.868	3490.66								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.067 Analysis Hardness (mg/l): 83.515 Analysis pH: 7.63

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	111,185	
Total Antimony	0	0		0	1,100	1,100	163,071	
Total Arsenic	0	0		0	340	340	50,404	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	3,113,179	
Total Boron	0	0		0	8,100	8,100	1,200,798	
Total Cadmium	0	0		0	1.690	1.78	263	Chem Translator of 0.952 applied
Total Chromium (III)	0	0		0	491.607	1,556	230,630	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	2,415	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	14,083	
Total Copper	0	0		0	11.341	11.8	1,751	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	53.050	64.9	9,623	Chem Translator of 0.817 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	244	Chem Translator of 0.85 applied
Total Nickel	0	0		0	402.046	403	59,721	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	2.360	2.78	412	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	9,636	
Total Zinc	0	0		0	100.592	103	15,248	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	445	
Acrylonitrile	0	0		0	650	650	96,360	
Benzene	0	0		0	640	640	94,878	
Bromoform	0	0		0	1,800	1,800	266,844	
Carbon Tetrachloride	0	0		0	2,800	2,800	415,091	
Chlorobenzene	0	0		0	1,200	1,200	177,896	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	2,668,439	
Chloroform	0	0		0	1,900	1,900	281,669	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	2,223,700	
1,1-Dichloroethylene	0	0		0	7,500	7,500	1,111,850	
1,2-Dichloropropane	0	0		0	11,000	11,000	1,630,713	
1,3-Dichloropropylene	0	0		0	310	310	45,956	
Ethylbenzene	0	0		0	2,900	2,900	429,915	
Methyl Bromide	0	0		0	550	550	81,536	
Methyl Chloride	0	0		0	28,000	28,000	4,150,906	
Methylene Chloride	0	0		0	12,000	12,000	1,778,960	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	148,247	
Tetrachloroethylene	0	0		0	700	700	103,773	
Toluene	0	0		0	1,700	1,700	252,019	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	1,008,077	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	444,740	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	504,039	
Trichloroethylene	0	0		0	2,300	2,300	340,967	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	83,018	
2,4-Dichlorophenol	0	0		0	1,700	1,700	252,019	
2,4-Dimethylphenol	0	0		0	660	660	97,843	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	11,860	
2,4-Dinitrophenol	0	0		0	660	660	97,843	
2-Nitrophenol	0	0		0	8,000	8,000	1,185,973	
4-Nitrophenol	0	0		0	2,300	2,300	340,967	
p-Chloro-m-Cresol	0	0		0	160	160	23,719	
Pentachlorophenol	0	0		0	16.438	16.4	2,437	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	68,193	

Acenaphthene	0	0		0	83	83.0	12,304	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	44,474	
Benzo(a)Anthracene	0	0		0	0.5	0.5	74.1	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	4,447,399	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	667,110	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	40,027	
Butyl Benzyl Phthalate	0	0		0	140	140	20,755	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	121,562	
1,3-Dichlorobenzene	0	0		0	350	350	51,886	
1,4-Dichlorobenzene	0	0		0	730	730	108,220	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	592,987	
Dimethyl Phthalate	0	0		0	2,500	2,500	370,617	
Di-n-Butyl Phthalate	0	0		0	110	110	16,307	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	237,195	
2,6-Dinitrotoluene	0	0		0	990	990	146,764	
1,2-Diphenylhydrazine	0	0		0	15	15.0	2,224	
Fluoranthene	0	0		0	200	200	29,649	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	1,482	
Hexachlorocyclopentadiene	0	0		0	5	5.0	741	
Hexachloroethane	0	0		0	60	60.0	8,895	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	1,482,466	
Naphthalene	0	0		0	140	140	20,755	
Nitrobenzene	0	0		0	4,000	4,000	592,987	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	2,520,193	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	44,474	
Phenanthrene	0	0		0	5	5.0	741	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	19,272	

☑ ***CFC*** CCT (min): 720 PMF: 0.468 Analysis Hardness (mg/l): 82.989 Analysis pH: 7.63

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	224,654	
Total Arsenic	0	0		0	150	150	153,173	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	4,186,734	
Total Boron	0	0		0	1,600	1,600	1,633,847	
Total Cadmium	0	0		0	0.216	0.24	241	Chem Translator of 0.917 applied
Total Chromium (III)	0	0		0	63.618	74.0	75,540	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	10,615	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	19,402	
Total Copper	0	0		0	7.637	7.95	8,123	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	3,274,680	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.053	2.51	2,562	Chem Translator of 0.818 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	925	Chem Translator of 0.85 applied
Total Nickel	0	0		0	44.417	44.6	45,493	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	5,095	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	13,275	
Total Zinc	0	0		0	100.874	102	104,471	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	3,063	
Acrylonitrile	0	0		0	130	130	132,750	
Benzene	0	0		0	130	130	132,750	
Bromoform	0	0		0	370	370	377,827	
Carbon Tetrachloride	0	0		0	560	560	571,847	
Chlorobenzene	0	0		0	240	240	245,077	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	3,574,041	
Chloroform	0	0		0	390	390	398,250	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	3,165,579	
1,1-Dichloroethylene	0	0		0	1,500	1,500	1,531,732	
1,2-Dichloropropane	0	0		0	2,200	2,200	2,246,540	
1,3-Dichloropropylene	0	0		0	61	61.0	62,290	
Ethylbenzene	0	0		0	580	580	592,270	
Methyl Bromide	0	0		0	110	110	112,327	
Methyl Chloride	0	0		0	5,500	5,500	5,616,350	
Methylene Chloride	0	0		0	2,400	2,400	2,450,771	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	214,442	
Tetrachloroethylene	0	0		0	140	140	142,962	
Toluene	0	0		0	330	330	336,981	

1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	1,429,616	
1,1,1-Trichloroethane	0	0		0	610	610	622,904	
1,1,2-Trichloroethane	0	0		0	680	680	694,385	
Trichloroethylene	0	0		0	450	450	459,520	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	112,327	
2,4-Dichlorophenol	0	0		0	340	340	347,193	
2,4-Dimethylphenol	0	0		0	130	130	132,750	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	16,338	
2,4-Dinitrophenol	0	0		0	130	130	132,750	
2-Nitrophenol	0	0		0	1,600	1,600	1,633,847	
4-Nitrophenol	0	0		0	470	470	479,943	
p-Chloro-m-Cresol	0	0		0	500	500	510,577	
Pentachlorophenol	0	0		0	12.611	12.6	12,878	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	92,925	
Acenaphthene	0	0		0	17	17.0	17,360	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	60,248	
Benzo(a)Anthracene	0	0		0	0.1	0.1	102	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	6,126,928	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	929,251	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	55,142	
Butyl Benzyl Phthalate	0	0		0	35	35.0	35,740	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	163,385	
1,3-Dichlorobenzene	0	0		0	69	69.0	70,460	
1,4-Dichlorobenzene	0	0		0	150	150	153,173	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	816,924	
Dimethyl Phthalate	0	0		0	500	500	510,577	
Di-n-Butyl Phthalate	0	0		0	21	21.0	21,444	
2,4-Dinitrotoluene	0	0		0	320	320	326,769	
2,6-Dinitrotoluene	0	0		0	200	200	204,231	
1,2-Diphenylhydrazine	0	0		0	3	3.0	3,063	
Fluoranthene	0	0		0	40	40.0	40,846	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	2,042	

Hexachlorocyclopentadiene	0	0		0	1	1.0	1,021	
Hexachloroethane	0	0		0	12	12.0	12,254	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	2,144,425	
Naphthalene	0	0		0	43	43.0	43,910	
Nitrobenzene	0	0		0	810	810	827,135	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	3,471,926	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	60,248	
Phenanthrene	0	0		0	1	1.0	1,021	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	26,550	

☑ ***THH*** CCT (min): 720 THH PMF: 0.468 Analysis Hardness (mg/l): N/A Analysis pH: N/A PWS PMF: 0.5925

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	#########	WQC applied at RMI 23.2 with a design stream flow of 1142 cfs
Chloride (PWS)	0	0		0	250,000	250,000	#########	WQC applied at RMI 23.2 with a design stream flow of 1142 cfs
Sulfate (PWS)	0	0		0	250,000	250,000	#########	WQC applied at RMI 23.2 with a design stream flow of 1142 cfs
Fluoride (PWS)	0	0		0	2,000	2,000	2,589,944	WQC applied at RMI 23.2 with a design stream flow of 1142 cfs
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	5,718	
Total Arsenic	0	0		0	10	10.0	10,212	
Total Barium	0	0		0	2,400	2,400	2,450,771	
Total Boron	0	0		0	3,100	3,100	3,165,579	
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	306,346	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	1,021,155	
Total Mercury	0	0		0	0.050	0.05	51.1	
Total Nickel	0	0		0	610	610	622,904	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	6,475	WQC applied at RMI 23.2 with a design stream flow of 1142 cfs
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	245	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	3,063	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	

Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	102,115	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	5,821	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	33,698	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	69,439	
Methyl Bromide	0	0		0	100	100.0	102,115	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
Tetrachloroethylene	0	0		0	N/A	N/A	N/A	
Toluene	0	0		0	57	57.0	58,206	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	102,115	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	10,211,546	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	30	30.0	30,635	
2,4-Dichlorophenol	0	0		0	10	10.0	10,212	
2,4-Dimethylphenol	0	0		0	100	100.0	102,115	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	2,042	
2,4-Dinitrophenol	0	0		0	10	10.0	10,212	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	4,084,618	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	71,481	
Anthracene	0	0		0	300	300	306,346	
Benzidine	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	204,231	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	

Butyl Benzyl Phthalate	0	0		0	0.1	0.1	102	
2-Chloronaphthalene	0	0		0	800	800	816,924	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	1,021,155	
1,3-Dichlorobenzene	0	0		0	7	7.0	7,148	
1,4-Dichlorobenzene	0	0		0	300	300	306,346	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	612,693	
Dimethyl Phthalate	0	0		0	2,000	2,000	2,042,309	
Di-n-Butyl Phthalate	0	0		0	20	20.0	20,423	
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
Fluoranthene	0	0		0	20	20.0	20,423	
Fluorene	0	0		0	50	50.0	51,058	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	4,085	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	34	34.0	34,719	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	10,212	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	20,423	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	71.5	

☑ ***CRL*** CCT (min): 720 PMF: 0.676 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	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	271	
Benzene	0	0		0	0.58	0.58	2,619	
Bromoform	0	0		0	7	7.0	31,605	
Carbon Tetrachloride	0	0		0	0.4	0.4	1,806	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	3,612	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	4,289	
1,2-Dichloroethane	0	0		0	9.9	9.9	44,699	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	4,064	
1,3-Dichloropropylene	0	0		0	0.27	0.27	1,219	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	90,300	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	903	
Tetrachloroethylene	0	0		0	10	10.0	45,150	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	2,483	
Trichloroethylene	0	0		0	0.6	0.6	2,709	
Vinyl Chloride	0	0		0	0.02	0.02	90.3	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	

2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	135	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	6,773	
Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.45	
Benzo(a)Anthracene	0	0		0	0.001	0.001	4.52	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.45	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	4.52	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	45.2	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	135	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	1,445	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	542	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.45	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	226	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	226	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	226	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	135	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.36	
Hexachlorobutadiene	0	0		0	0.01	0.01	45.2	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	452	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	4.52	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	3.16	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	22.6	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	14,900	

Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

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

☑ ***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)	647,486	mg/L	Discharge Conc ≤ 10% WQBEL
Chloride (PWS)	323,743	mg/L	Discharge Conc ≤ 10% WQBEL
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	323,743	mg/L	Discharge Conc ≤ 10% WQBEL
Fluoride (PWS)	2,590	mg/L	Discharge Conc ≤ 10% WQBEL
Total Aluminum	71,265	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	1,995,422	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	769,663	µg/L	Discharge Conc < TQL
Total Cadmium	169	µg/L	Discharge Conc < TQL
Total Chromium (III)	75,540	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	1,548	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	9,027	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	1,123	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	306,346	µg/L	Discharge Conc < TQL
Total Iron	3,274,680	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	2,562	µg/L	Discharge Conc < TQL
Total Manganese	1,021,155	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	51.1	µg/L	Discharge Conc < TQL
Total Nickel	38,279	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)	6,475	µg/L	Discharge Conc < TQL
Total Selenium	5,095	µg/L	Discharge Conc < TQL
Total Silver	264	µg/L	Discharge Conc < TQL

Total Thallium	245	µg/L	Discharge Conc < TQL
Total Zinc	9,773	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	285	µg/L	Discharge Conc < TQL
Acrylonitrile	271	µg/L	Discharge Conc < TQL
Benzene	2,619	µg/L	Discharge Conc < TQL
Bromoform	31,605	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	1,806	µg/L	Discharge Conc < TQL
Chlorobenzene	102,115	µg/L	Discharge Conc < TQL
Chlorodibromomethane	3,612	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	1,710,362	µg/L	Discharge Conc < TQL
Chloroform	5,821	µg/L	Discharge Conc < TQL
Dichlorobromomethane	4,289	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	44,699	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	33,698	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	4,064	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	1,219	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	69,439	µg/L	Discharge Conc < TQL
Methyl Bromide	52,261	µg/L	Discharge Conc < TQL
Methyl Chloride	2,660,563	µg/L	Discharge Conc < TQL
Methylene Chloride	90,300	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	903	µg/L	Discharge Conc < TQL
Tetrachloroethylene	45,150	µg/L	Discharge Conc < TQL
Toluene	58,206	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	102,115	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	285,060	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	2,483	µg/L	Discharge Conc < TQL
Trichloroethylene	2,709	µg/L	Discharge Conc < TQL
Vinyl Chloride	90.3	µg/L	Discharge Conc < TQL
2-Chlorophenol	30,635	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	10,212	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	62,713	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	2,042	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	10,212	µg/L	Discharge Conc < TQL
2-Nitrophenol	760,161	µg/L	Discharge Conc < TQL
4-Nitrophenol	218,546	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	15,203	µg/L	Discharge Conc < TQL
Pentachlorophenol	135	µg/L	Discharge Conc < TQL
Phenol	4,084,618	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	6,773	µg/L	Discharge Conc < TQL
Acenaphthene	7,887	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS

Anthracene	306,346	µg/L	Discharge Conc < TQL
Benzidine	0.45	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	4.52	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.45	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	4.52	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	45.2	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	135	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	204,231	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	1,445	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	25,655	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	102	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	816,924	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	542	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.45	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	77,916	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	7,148	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	69,365	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	226	µg/L	Discharge Conc < TQL
Diethyl Phthalate	380,080	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	237,550	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	10,452	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	226	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	226	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	135	µg/L	Discharge Conc < TQL
Fluoranthene	19,004	µg/L	Discharge Conc < TQL
Fluorene	51,058	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.36	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	45.2	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	475	µg/L	Discharge Conc < TQL
Hexachloroethane	452	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	4.52	µg/L	Discharge Conc < TQL
Isophorone	34,719	µg/L	Discharge Conc < TQL
Naphthalene	13,303	µg/L	Discharge Conc < TQL
Nitrobenzene	10,212	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	3.16	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	22.6	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	14,900	µg/L	Discharge Conc < TQL
Phenanthrene	475	µg/L	Discharge Conc < TQL
Pyrene	20,423	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	71.5	µg/L	Discharge Conc < TQL

ATTACHMENT C

Thermal Limits Spreadsheet for Outfall 001

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Instructions | *Inputs*

Facility: **Braeburn Alloy Steel**

Permit No.: **PA0001406**

Stream Name: **Allegheny River**

Analyst/Engineer: **Ryan Decker**

Stream Q7-10 (cfs)*: **1,118.5**

Outfall No.: **001**

Analysis Type*: **WWF**

Facility Flows

Semi-Monthly Increment	Intake (Stream) (MGD)*	Intake (External) (MGD)*	Consumptive Loss (MGD)*	Discharge Flow (MGD)
Jan 1-31	1.44		1.102	0.338
Feb 1-29	1.44		1.102	0.338
Mar 1-31	1.44		1.102	0.338
Apr 1-15	1.44		1.102	0.338
Apr 16-30	1.44		1.102	0.338
May 1-15	1.44		1.102	0.338
May 16-31	1.44		1.102	0.338
Jun 1-15	1.44		1.102	0.338
Jun 16-30	1.44		1.102	0.338
Jul 1-31	1.44		1.102	0.338
Aug 1-15	1.44		1.102	0.338
Aug 16-31	1.44		1.102	0.338
Sep 1-15	1.44		1.102	0.338
Sep 16-30	1.44		1.102	0.338
Oct 1-15	1.44		1.102	0.338
Oct 16-31	1.44		1.102	0.338
Nov 1-15	1.44		1.102	0.338
Nov 16-30	1.44		1.102	0.338
Dec 1-31	1.44		1.102	0.338

Stream Flows

Q7-10 Multipliers (Default Shown)	PMF	Seasonal Stream Flow (cfs)	Downstream Stream Flow (cfs)
3.2	1.00	3579.26	3577.56
3.5	1.00	3914.82	3913.12
7	1.00	7829.64	7827.94
9.3	1.00	10402.24	10400.53
9.3	1.00	10402.24	10400.53
5.1	1.00	5704.45	5702.75
5.1	1.00	5704.45	5702.75
3	1.00	3355.56	3353.86
3	1.00	3355.56	3353.86
1.7	1.00	1901.48	1899.78
1.4	1.00	1565.93	1564.22
1.4	1.00	1565.93	1564.22
1.1	1.00	1230.37	1228.67
1.1	1.00	1230.37	1228.67
1.2	1.00	1342.22	1340.52
1.2	1.00	1342.22	1340.52
1.6	1.00	1789.63	1787.93
1.6	1.00	1789.63	1787.93
2.4	1.00	2684.45	2682.74

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Thermal Limits Spreadsheet
Version 1.0, April 2024

Instructions | *WWF Results*

Recommended Limits for Case 1 or Case 2

Semi-Monthly Increment	**WWF** Target Maximum Stream Temp. (°F)	**Case 1** Daily WLA (Million BTUs/day)	**Case 2** Daily WLA (°F)
Jan 1-31	40	96,415	110.0
Feb 1-29	40	105,458	110.0
Mar 1-31	46	253,155	110.0
Apr 1-15	52	280,294	110.0
Apr 16-30	58	280,294	110.0
May 1-15	64	184,427	110.0
May 16-31	72	307,378	110.0
Jun 1-15	80	235,005	110.0
Jun 16-30	84	235,005	110.0
Jul 1-31	87	122,878	110.0
Aug 1-15	87	109,605	110.0
Aug 16-31	87	109,605	110.0
Sep 1-15	84	86,093	110.0
Sep 16-30	78	86,093	110.0
Oct 1-15	72	86,705	110.0
Oct 16-31	66	86,705	110.0
Nov 1-15	58	96,369	110.0
Nov 16-30	50	77,095	110.0
Dec 1-31	42	72,300	110.0

ATTACHMENT D

January 2022
Wastewater Treatment System Site Assessment

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February 7, 2022

Wastewater Treatment System Site Assessment

For

Braeburn Alloy Steel - Division of CCX, Inc.
Lower Burrell City, Westmoreland County
PA0001406

Prepared by:
Jeremy D. Miller, Wastewater Treatment Operations Advisor
Bureau of Clean Water, Wastewater Operations

On January 25, 2022, I met with Felix Zaffina at the site to discuss total residual chlorine (TRC) and fecal coliform effluent exceedances with the wastewater treatment plant. The facility consists of a small trickling filter plant that treats sanitary wastewater generated from employees at the site. The wastewater plant is designed to treat 0.001 million gallons per day. The wastewater plant currently discharges less than 200 gallons per day to the Allegheny River.

Braeburn Alloy Steel employs approximately thirty people and operates one shift five days a week at this site. The flow to the wastewater plant is small and only occurs during the hours the employees are working. Although the plant's permit does not have an ammonia effluent limit, it is likely that ammonia present in the wastewater is being oxidized by bacteria through a process called nitrification. Nitrification is a biological process that converts ammonia into nitrite first and then nitrate. This process can become inhibited by the lack of alkalinity, or by insufficient dissolved oxygen or detention time, and will instead only partially nitrify to nitrite only. Initial assessment of the plant data suggest that partial nitrification is occurring, and the lack of alkalinity is causing this condition. Nitrite reacts with and ties up (binds) the chlorine making it less effective as a disinfectant, and the TRC decreases. In response, operators often add additional chlorine to maintain a minimum TRC. However, when the nitrite is consumed or converted to nitrate, the chorine residual level suddenly rises above the permitted levels.

Due to the nature of the flows at the plant the most economical solution would be to change from chlorine disinfection to ultraviolet (UV) disinfection. The flow conditions along with complications from incomplete nitrification are causing issues with administering the proper dose of chlorine for disinfection and dechlorination for compliance with chlorine residual limits. A small UV unit could be utilized with little to no design change to the plant, keeping costs low. The UV unit could be shut down during no flow conditions and save on electricity and operating costs. UV disinfection is not affected by nitrate and would eliminate future fecal coliform violations if the total suspended solids are maintained at a low level in the discharge.

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February 7, 2022

A permit from the Department would be required before making this change in treatment. Please contact the Department's SW Regional Office to discuss permit requirements.

Another option might be for the facility to tie the domestic sanitary line into the municipal collection system. The facility would need to contact the municipality and explore if this option is available.

Should the facility experience problems or need technical assistance with the sanitary plant, please contact Jeremy Miller with the Technical Assistance Program at 570.830.3078.