pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal / Transfer**	Application No.	**PA0217778 / 2698201 T-3**
Facility Type	**Industrial**	APS ID	**1100732 / 1099178**
Major / Minor	**Minor**	Authorization ID	**1461484 / 14588**

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

Applicant and Facility Information

Applicant Name	**Chance Gas & Oil LLC**	Facility Name	**Dawson Water Treatment Facility**
Applicant Address	416 Kirkland Road	Facility Address	No street address
	Clymer, PA 15728-6318		Connellsville, PA 15425
Applicant Contact	Michael Bucheit	Facility Contact	Michael Bucheit
Applicant Phone	724-771-4275	Facility Phone	724-771-4275
Client ID	380457	Site ID	610096
SIC Code	1389	Municipality	Dunbar Township
SIC Description	Mining - Oil And Gas Field Services, Not Elsewhere Classified	County	Fayette
Date Application Received	November 8, 2023	EPA Waived?	Yes
Date Application Accepted	November 13, 2023	If No, Reason	

Purpose of Application: Renewal of existing NPDES permit under new permittee and transfer of WQM permit

Summary of Review

The Department received an NPDES permit renewal application from Chance Gas & Oil LLC for the Dawson Water Treatment Facility on 11/8/2024 which was accepted 11/13/2024 after correcting client information. The NPDES permit and associated WQM permit #2698201 T-2 is being transferred from Apollo Resources LLC to Chance Gas & Oil LLC for this renewal. The permits were originally held by Belden & Blake Corporation, then transferred to Keyrock Energy LLC, then to Apollo Resources LLC. The new WQM permit will be #2698201 T-3.

The Dawson Water Treatment Facility is an existing passive water treatment facility for coalbed methane (CBM) wastewater consisting of a lined, two-celled, U-shaped pond with a design flow of 0.06 MGD. Coal seams contain adsorbed methane, and groundwater saturating the coal seams is known as connate. In order to allow the methane to desorb from coal matrix and to flow through the natural cleat systems (fractures) in the coal seams, the connate water must be removed from the coal seams and the pressure must be reduced. Connate is pumped from 25 CBM wells through pipes and directed to the pond for passive treatment. There are no chemical additives, no aeration, and no filtration. The treatment capacity of the pond is 179,423.55 gallons with an additional two feet of freeboard giving a total holding capacity of 250,861.78 gallons. When necessary, solid residue is removed from the pond and sent to DEP-approved landfill.

The pond discharges through a 6” PVC pipe, Outfall 001, to the Youghiogheny River. The Youghiogheny River has a 25 PA Code Chapter 93 Warm Water Fishes designation and is considered impaired for aquatic life use at the point of discharge due to unknown causes originating from acid mine drainage and a dam/impoundment. It is not considered impaired for recreational use (source: *2024 Integrated Report*).

Approve	Deny	Signatures	Date
x		Jace William Marsh / Environmental Engineering Specialist	March 12, 2024
X		Michael E. Fifth, P.E. / Environmental Engineer Manager	March 29, 2024

Summary of Review

The Outfall 001 discharge valve has been closed for three years, and accordingly no effluent has been reported through DMR. Only 4 or 5 of the 25 wells are currently pumping and producing, and less and less water migrates from the coal seams over time throughout production. All connate water entering the system is offset by evaporation. Sample data used for analysis was collected from a 5-gallon bucket placed under the pond influent pipe, so is not representative of any recent treated final effluent.

The facility was last inspected on 2/8/2022 by Jim Stewart with one violation noted for effluent exceedances in 2018 and 2019. This violation was resolved and neither the facility nor the permittee have any open violations.

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)	0.06
Latitude	40º 02' 11"	Longitude	-79º 38' 27"
Quad Name	Dawson	Quad Code	1808
Wastewater Description:	Treated CBM connate water		
Receiving Waters	Youghiogheny River (WWF)	Stream Code	37456
NHD Com ID	69917475	RMI	39.87
Drainage Area	1370 mi^2	Yield (cfs/mi^2)	0.336
Q_{7-10} Flow (cfs)	460	Q_{7-10} Basis	US Army Corps of Engineers
Elevation (ft)	836 (at Outfall 001)	Slope (ft/ft)	0.13811 (mean basin slope)
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Not Assessed		
Cause(s) of Impairment	Cause Unknown		
Source(s) of Impairment	Dam or Impoundment; Acid Mine Drainage		
TMDL Status	n/a	Name	n/a
Nearest Downstream Public Water Supply Intake	Municipal Authority of Westmoreland County—McKeesport		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	510
PWS RMI	1.39	Distance from Outfall (mi)	38

Development of Effluent Limitations			
Outfall No.	001	**Design Flow (MGD)**	0.06
Latitude	40º 02' 11"	**Longitude**	-79º 38' 27"
Wastewater Description:	Treated CBM connate water		

001.A. Technology-Based Limitations

Federal Effluent Limitation Guidelines (ELGs)

No ELGs apply to this facility. A reserved ELG category exists in 40 CFR Part 435 Subpart H for CBM point source discharges specifically, but no ELGs have yet been promulgated. While the Dawson Water Treatment Facility does collect and treat CBM connate water from multiple wells—categorizing it as a centralized waste treatment (CWT) facility—it is not mixed with other wastewaters thus is exempt from CWT ELGs in 40 CFR Part 437. This specific exemption applies to facility wastewater as described in 40 CFR 437.1(b)(3):

> *Wastewater from the treatment of wastes received from off-site via conduit (e.g., pipelines, channels, ditches, trenches, etc.) from the facility that generates the wastes unless the resulting wastewaters are commingled with other wastewaters subject to this provision. A facility that acts as a waste collection or consolidation center is not a facility that generates wastes.*

Total Dissolved Solids (TDS)

Integral to the implementation of 25 Pa. Code § 95.10 is the principle that existing, authorized mass loadings of TDS are exempt from any treatment requirements under these provisions. Existing mass loadings of TDS up to and including the maximum daily discharge loading for any existing discharge, provided that the loading was authorized prior to August 21, 2010, are exempt. The discharge has been permitted since 1998. In Part C of the current permit, the TDS loadings considered to exist prior to August 21, 2010 are 561 lbs/day (average daily) and 1,802 lbs/day (maximum daily). The facility has not come close to exceeding those loadings since at least the prior permit renewal, and no discharge has occurred since 2020 so there is no TDS load currently being contributed to the Youghiogheny River. Accordingly, the facility is exempt from 25 Pa. Code § 95.10 treatment requirements. The Part C condition regarding TDS loadings from the current permit is included in Part C of the draft permit.

Regulatory Effluent Standards and Monitoring Requirements

Applicable regulatory standards for flow, Dissolved Iron, and pH from 25 Pa. Code § 92a.61(d)(1) and 25 Pa. Code § 95.2 are shown in Table 1 below.

Table 1. Regulatory Effluent Standards

Parameter	Average Monthly	Daily Max	Instantaneous Max	Basis
Flow (MGD)	Monitor	Monitor	—	25 Pa. Code § 92a.61(d)(1)
Dissolved Iron	—	—	7.0 mg/L	25 Pa. Code § 95.2(4)
pH (S.U.)	Wastes must have a pH of not less than 6.0 nor greater than 9.0			25 Pa. Code § 95.2(1)

001.B. Water Quality-Based Limitations

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)

Annual sampling of PFAS, a group of emerging contaminants, is now a minimum requirement for all individual industrial waste discharges regardless of industry. 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. This monitoring is imposed based on 25 Pa. Code § 92a.61(b) which states

> *The Department may impose reasonable monitoring requirements on any discharge, including monitoring of the surface water intake and discharge of a facility or activity, other operational parameters that may affect effluent quality, and of surface waters adjacent to or associated with the intake or discharge flow of a facility or activity. The Department may require submission of data related to the monitoring.*

Perfluoroalkyl and polyfluoroalkyl substances (PFAS) are man-made chemicals, are resistant to heat, water and oil, and persist in the environment and the human body. PFAS are not found naturally in the environment, and can be found in air, soil, and water (both groundwater and surface water) They have been used to make cookware, carpets, clothing, fabrics for furniture, paper packaging for food, and other materials that are resistant to water, grease, or stains. They are also used in firefighting foams and in a number of industrial processes.

Toxics Management Spread Sheet

The Department of Environmental Protection has developed the DEP Toxics Management Spreadsheet ("TMS") to facilitate calculations necessary for completing a reasonable potential (RP) analysis and determining water quality-based effluent limitations for discharges of toxic pollutants. The TMS is a macro-enabled Excel binary file that combines the functions of the PENTOXSD model and the Toxics Screening Analysis spreadsheet to evaluate the reasonable potential for discharges to cause excursions above water quality standards and to determine WQBELs. The TMS is a single discharge, mass-balance water quality calculation spread sheet that includes consideration for mixing, first-order decay and other factors to determine recommended WQBELs for toxic substances and several non-toxic substances. Required input data including stream code, river mile index, elevation, drainage area, discharge name, NPDES permit number, discharge flow rate and the discharge concentrations for parameters in the permit application or in DMRs, which are entered into the spread sheet to establish site-specific discharge conditions. Other data such as low flow yield, reach dimensions and partial mix factors may also be entered to further characterize the conditions of the discharge and

receiving water. Discharge concentrations for the parameters are chosen to represent the "worst case" quality of the discharge (i.e., maximum reported discharge concentrations). The spread sheet then evaluates each parameter by computing a Waste Load Allocation for each applicable criterion, determining a recommended maximum WQBEL and comparing that recommended WQBEL with the input discharge concentration to determine which is more stringent. Based on this evaluation, the TMS recommends average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for Outfall 001

Discharges from Outfall 001 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are entered into the TMS. The maximum reported value of the parameters from the application form or from previous DMRs is used as the input concentration in the TMS. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion are considered to be pollutants of concern. This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion. The TMS is run with the discharge and receiving stream characteristics shown in Table 5. Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis. All the parameters are evaluated using the model to determine the water quality-based effluent limits applicable to the discharge and the receiving stream. The spreadsheet then compares the reported discharge concentrations to the calculated water quality-based effluent limitations to determine if a reasonable potential exists to exceed the calculated WQBELs. Effluent limitations are established in the draft permit where a pollutant's maximum reported discharge concentration equals or exceeds 50% of the WQBEL. For non-conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 25% - 50% of the WQBEL. For conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 10% - 50% of the WQBEL.

Sample data provided in the application was utilized in this case. The data is from pond influent collected in a bucket due to low flow conditions that do not create a discharge from the lined treatment pond. Any influent is offset by evaporation and the discharge valve has been closed for the past three years. Effluent limitations recommended by the TMS are shown in Table 2. **No WQBELs were recommended by the TMS.** The Output from the TMS is included in Attachment B.

Table 2. TMS Inputs for Outfall 001

Discharge Information	
Parameter	**Value**
River Mile Index	39.87
Discharge Flow (MGD)	0.06
Basin/Stream Information	
Parameter	**Value**
Drainage Area (mi^2)	1370
Q_{7-10} (cfs)	460
Low-flow yield (cfs/mi^2)	0.336
Elevation (ft)	836
Slope (ft/ft)	0.13811

001.C. Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l), and are displayed below in Table 3.

Table 3. Effluent limitations from current permit

Parameter	Mass (pounds)		Concentration (mg/L)			Samples	
	Average Monthly	Daily Maximum	Daily Minimum	Average Monthly	Daily Maximum	Frequency	Sample Type
Flow (MGD)	Report	0.06	—	—	—	1/day	Measure
pH (S.U.)	—	—	6.0	—	9.0	2/month	Grab
Total Suspended Solids	—	—	—	30.0	60.0	2/month	Grab
Total Dissolved Solids	—	—	—	Report	Report	2/month	Grab
Oil & Grease	—	—	—	15.0	30.0	2/month	Grab

Total Acidity (as CaCO3)	—	—	—	Report	Report	2/month	Grab
Total Alkalinity (as CaCO3)	—	—	—	Report	Report	2/month	Grab
Total Alkalinity (as CaCO3) Effluent Net	—	—	0.0	—	—	2/month	Calculation
Dissolved Iron	—	—	—	Report	Report	2/month	Grab
Total Iron	—	—	—	3.5	7.0	2/month	Grab
Total Sulfate	Report	Report	—	Report	Report	2/month	Grab
Chloride	Report	Report	—	Report	Report	2/month	Grab
Bromide	Report	Report	—	Report	Report	2/month	Grab

001.D. Proposed Effluent Limitations

Effluent limits applicable at Outfall 001 are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements as summarized in Table 4 with legal basis for the effluent limits in Table 5.

Table 4. Effluent limits and monitoring requirements for Outfall 001

Parameter	Mass (pounds)		Concentration (mg/L)					Samples	
	Average Monthly	Daily Maximum	Instantaneous Minimum	Daily Minimum	Average Monthly	Daily Maximum	Instantaneous Maximum	Frequency	Sample Type
Flow (MGD)	Report	0.06	—	—	—	—	—	1/day	Measure
pH (S.U.)	—	—	6.0	—	—	—	9.0	2/month	Grab
Total Suspended Solids	—	—	—	—	30.0	60.0	—	2/month	Grab
Total Dissolved Solids	—	—	—	—	Report	Report	—	2/month	Grab
Oil & Grease	—	—	—	—	15.0	30.0	—	2/month	Grab
Total Acidity (as CaCO3)	—	—	—	—	Report	Report	—	2/month	Grab
Total Alkalinity (as CaCO3)	—	—	—	—	Report	Report	—	2/month	Grab
Total Alkalinity (as CaCO3) Effluent Net	—	—	—	0.0	—	—	—	2/month	Calculation
Dissolved Iron	—	—	—	—	Report	Report	—	2/month	Grab
Total Iron	—	—	—	—	3.5	7.0	—	2/month	Grab
Total Sulfate	Report	Report	—	—	Report	Report	—	2/month	Grab
Chloride	Report	Report	—	—	Report	Report	—	2/month	Grab
Bromide	Report	Report	—	—	Report	Report	—	2/month	Grab
PFOA (ng/L)	—	—	—	—	—	Report	—	1/year	Grab
PFOS (ng/L)	—	—	—	—	—	Report	—	1/year	Grab
PFBS (ng/L)	—	—	—	—	—	Report	—	1/year	Grab
HFPO-DA (ng/L)	—	—	—	—	—	Report	—	1/year	Grab

Table 5. Legal basis for effluent limits and monitoring requirements in Table 4

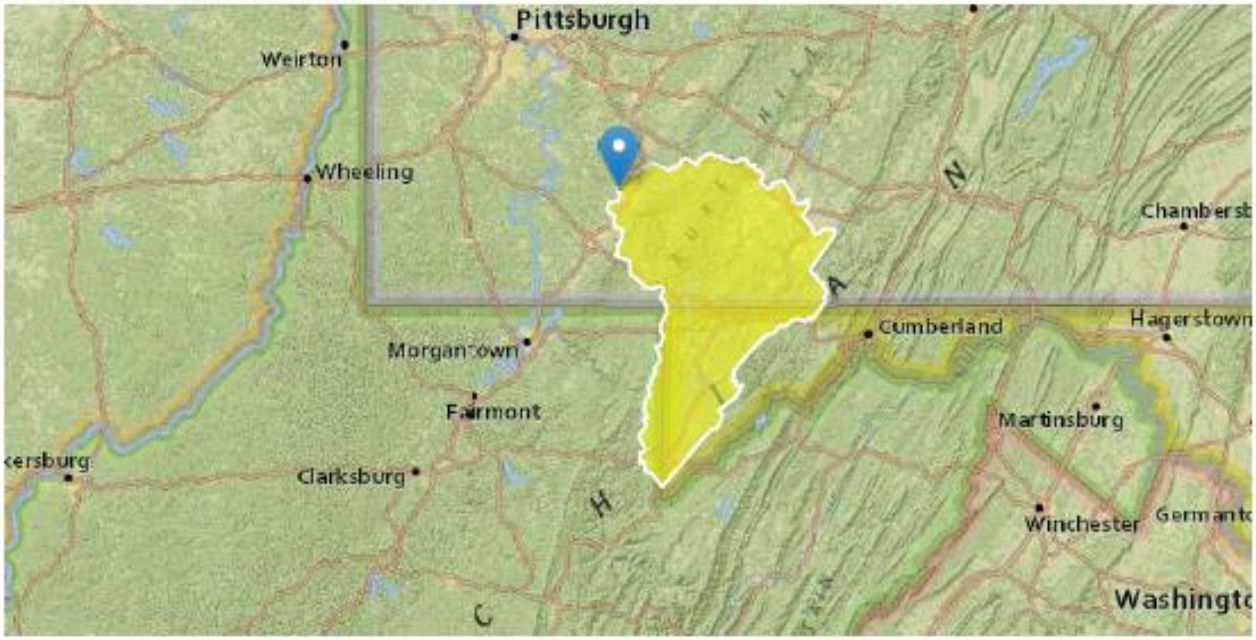
Parameter	Basis
Flow (MGD)	40 CFR 122.44(l)
pH (S.U.)	25 Pa. Code § 95.2(1)
Total Suspended Solids	40 CFR 122.44(l)
Total Dissolved Solids	40 CFR 122.44(l)
Oil & Grease	40 CFR 122.44(l)
Total Acidity (as CaCO3)	40 CFR 122.44(l)
Total Alkalinity (as CaCO3)	40 CFR 122.44(l)
Total Alkalinity (as CaCO3) Effluent Net	40 CFR 122.44(l)
Dissolved Iron	40 CFR 122.44(l)
Total Iron	40 CFR 122.44(l)
Total Sulfate	40 CFR 122.44(l)
Chloride	40 CFR 122.44(l)
Bromide	40 CFR 122.44(l)
PFOA	25 Pa. Code § 92a.61(b)
PFOS	25 Pa. Code § 92a.61(b)
PFBS	25 Pa. Code § 92a.61(b)
HFPO-DA	25 Pa. Code § 92a.61(b)

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment C)
☐	TRC Model Spreadsheet
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP: Establishing Effluent Limits for Individual Industrial Permits (BCW-PMT-032)
☒	Other: USGS StreamStats (see Attachment A), USACE Upper Ohio Basin Low Flows (see Attachment B)

Attachment A:
USGS StreamStats Report

PA0217778 Dawson Water Treatment Facility

Region ID: PA
Workspace ID: PA20240307142753938000
Clicked Point (Latitude, Longitude): 40.03720, -79.64067
Time: 2024-03-07 09:28:20 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	7.8633	degrees
DRNAREA	Area that drains to a point on a stream	1370	square miles
ELEV	Mean Basin Elevation	2232	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1370	square miles	2.26	1400
ELEV	Mean Basin Elevation	2232	feet	1050	2580

Low-Flow Statistics Flow Report [Low Flow Region 4]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	176	ft^3/s	43	43
30 Day 2 Year Low Flow	252	ft^3/s	38	38
7 Day 10 Year Low Flow	86	ft^3/s	66	66
30 Day 10 Year Low Flow	113	ft^3/s	54	54
90 Day 10 Year Low Flow	188	ft^3/s	41	41

Low-Flow Statistics Citations

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

Attachment B:
USACE Upper Ohio Basin Low Flows

$Q_{7\text{-}10}$ Flows of Major Rivers

Nicolas Lazzaro, P.E.
U.S. Army Corp of Engineers
Pittsburgh District Water Management
December 1, 2017

UPPER OHIO BASIN LOW FLOWS		
Location		Q7, 10 Flow (cfs)
Allegheny River		
Franklin downstream of French Creek (RMI 123.96)		1,450
L&D 9 at Templeton (RMI 62.2; Upper Pool El. 822.2)		2,070
L&D 8 at Templeton (RMI 52.6; Upper Pool El. 800.2)		2,070
L&D 7 at Kittanning (RMI 45.7; Upper Pool El. 782.4)	Crooked Creek enters at RMI 40.11	2,070
L&D 6 at Freeport (RMI 36.3; Upper Pool El. 769.4)		2,070
L&D 5 at Freeport (RMI 30.4; Upper Pool El. 757.0)	Kiskiminetas R. enters at RMI 30.2	2,070
L&D 4 at Natrona (RMI 24.2; Upper Pool El. 745.4)		2,390
C.W. Bill Young L&D at New Kensington (RMI 14.5; Upper Pool El. 734.5)		2,390
L&D 2 at Pittsburgh (RMI 6.7, Pool El. 721.0)		2,390
Monongahela River		
Point Marion L&D (RMI 90.8; Upper Pool El. 797.0)	Cheat River enters at RMI 89.68 Dunkard Creek enters at RMI 87.18	420
Grays Landing L&D (RMI 82.0; Upper Pool El. 778.0)	Tenmile Creek enters at RMI 65.62	530
Maxwell L&D (RMI 61.2; Upper Pool El. 763.0)	Redstone Creek enters at RMI 54.90	530
L&D 4 at Charleroi (RMI 41.5; Upper Pool El. 743.5)		550
L&D 3 at Elizabeth (RMI 23.8; Upper Pool El. 726.9)		550
McKeesport downstream of the Youghiogheny River (RMI 15.53)		1,060
Braddock L&D (RMI 11.2; Upper Pool El. 718.7)		1,230
Youghiogheny River		
Youghiogheny Dam at Confluence (RMI 74.8)		390
Dam at Connellsville (RMI 46.27)		460
Sutersville downstream of Sewickley Creek (~RMI 15.0)		510
Beaver River		
Beaver Falls		640
Ohio River		
Emsworth L&D (RMI 974.8; Pool El. 710.0)	Q7,10 is halved for each side of Neville Island	4,730
Dashields L&D (RMI 967.7; Upper Pool El. 692.0)		4,730
Montgomery L&D (RMI 949.3; Upper Pool El. 682.0)		5,880
New Cumberland L&D (RMI 926.7; Upper Pool El. 664.5)		5,880
Pike Island L&D (RMI 896.8; Upper Pool El. 664.0)		5,880
Hannibal L&D (RMI 854.6; Upper Pool El. 623.0)		5,880

Attachment C:
Toxics Management Spreadsheet

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Dawson Water Treatment Facility** NPDES Permit No.: **PA0217778** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Treated CBM connate 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
0.06	6540	7.68						

					0 if left blank		0.6 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		33400									
	Chloride (PWS)	mg/L		23400									
	Bromide	mg/L		131									
	Sulfate (PWS)	mg/L		200									
	Fluoride (PWS)	mg/L		5									
Group 2	Total Aluminum	µg/L		131									
	Total Antimony	µg/L		20									
	Total Arsenic	µg/L		10									
	Total Barium	µg/L		83900									
	Total Beryllium	µg/L		5									
	Total Boron	µg/L		562									
	Total Cadmium	µg/L		5									
	Total Chromium (III)	µg/L		6									
	Hexavalent Chromium	µg/L		100									
	Total Cobalt	µg/L		5									
	Total Copper	mg/L		0.005									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L		5									
	Dissolved Iron	µg/L		5950									
	Total Iron	µg/L		89300									
	Total Lead	µg/L		5									
	Total Manganese	µg/L		1700									
	Total Mercury	µg/L		0.2									
	Total Nickel	µg/L		5									
	Total Phenols (Phenolics) (PWS)	µg/L		250									
	Total Selenium	µg/L		20									
	Total Silver	µg/L		5									
	Total Thallium	µg/L		10									
	Total Zinc	mg/L		0.01									
	Total Molybdenum	µg/L		5									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										
	Carbon Tetrachloride	µg/L	<										

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

	1,2-Diphenylhydrazine	µg/L	<											
	Fluoranthene	µg/L	<											
	Fluorene	µg/L	<											
	Hexachlorobenzene	µg/L	<											
	Hexachlorobutadiene	µg/L	<											
	Hexachlorocyclopentadiene	µg/L	<											
	Hexachloroethane	µg/L	<											
	Indeno(1,2,3-cd)Pyrene	µg/L	<											
	Isophorone	µg/L	<											
	Naphthalene	µg/L	<											
	Nitrobenzene	µg/L	<											
	n-Nitrosodimethylamine	µg/L	<											
	n-Nitrosodi-n-Propylamine	µg/L	<											
	n-Nitrosodiphenylamine	µg/L	<											
	Phenanthrene	µg/L	<											
	Pyrene	µg/L	<											
	1,2,4-Trichlorobenzene	µg/L	<											
Group 6	Aldrin	µg/L	<											
	alpha-BHC	µg/L	<											
	beta-BHC	µg/L	<											
	gamma-BHC	µg/L	<											
	delta BHC	µg/L	<											
	Chlordane	µg/L	<											
	4,4-DDT	µg/L	<											
	4,4-DDE	µg/L	<											
	4,4-DDD	µg/L	<											
	Dieldrin	µg/L	<											
	alpha-Endosulfan	µg/L	<											
	beta-Endosulfan	µg/L	<											
	Endosulfan Sulfate	µg/L	<											
	Endrin	µg/L	<											
	Endrin Aldehyde	µg/L	<											
	Heptachlor	µg/L	<											
	Heptachlor Epoxide	µg/L	<											
	PCB-1016	µg/L	<											
	PCB-1221	µg/L	<											
	PCB-1232	µg/L	<											
	PCB-1242	µg/L	<											
	PCB-1248	µg/L	<											
	PCB-1254	µg/L	<											
	PCB-1260	µg/L	<											
	PCBs, Total	µg/L	<											
	Toxaphene	µg/L	<											
	2,3,7,8-TCDD	ng/L	<											
Group 7	Gross Alpha	pCi/L		213										
	Total Beta	pCi/L		125										
	Radium 226/228	pCi/L		221.2										
	Total Strontium	µg/L		81700										
	Total Uranium	µg/L		544.93										
	Osmotic Pressure	mOs/kg		880										

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Dawson Water Treatment Facility, NPDES Permit No. PA0217778, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: Youghiogheny River

No. Reaches to Model: 1

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	037456	39.87	836	1370	0.13811		Yes
End of Reach 1	037456	15	738	1710	0.13811		Yes

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

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	39.87	0.336										100	7		
End of Reach 1	15	0.298													

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	39.87														
End of Reach 1	15														

Model Results

Dawson Water Treatment Facility, NPDES Permit No. PA0217778, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 2.224 PMF: 1 Analysis Hardness (mg/l): 101.3 Analysis pH: 7.00

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	3,720,207	
Total Antimony	0	0		0	1,100	1,100	5,456,304	
Total Arsenic	0	0		0	340	340	1,686,494	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	#########	
Total Boron	0	0		0	8,100	8,100	40,178,236	
Total Cadmium	0	0		0	2.039	2.16	10,721	Chem Translator of 0.943 applied
Total Chromium (III)	0	0		0	575.815	1,822	9,038,609	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	80,819	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	471,226	
Total Copper	0	0		0	13.603	14.2	70,288	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	65.495	83.0	411,687	Chem Translator of 0.789 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	8,170	Chem Translator of 0.85 applied
Total Nickel	0	0		0	473.374	474	2,352,769	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	3.289	3.87	19,193	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	322,418	
Total Zinc	0	0		0	118.468	121	600,854	Chem Translator of 0.978 applied
Total Strontium	0	0		0	N/A	N/A	N/A	
Osmotic Pressure	0	0		0	50	50.0	248,014	

☑ *CFC* CCT (min): 2.224 PMF: 1 Analysis Hardness (mg/l): 101.3 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	1,091,261	
Total Arsenic	0	0		0	150	150	744,041	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	20,337,132	
Total Boron	0	0		0	1,600	1,600	7,936,442	
Total Cadmium	0	0		0	0.248	0.27	1,355	Chem Translator of 0.908 applied
Total Chromium (III)	0	0		0	74.902	87.1	432,015	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	51,562	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	94,245	
Total Copper	0	0		0	9.055	9.43	46,787	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	7,440,414	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.552	3.23	16,043	Chem Translator of 0.789 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	4,493	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.577	52.7	261,582	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	24,748	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	64,484	
Total Zinc	0	0		0	119.437	121	600,854	Chem Translator of 0.986 applied
Total Strontium	0	0		0	N/A	N/A	N/A	
Osmotic Pressure	0	0		0	N/A	N/A	N/A	

☑ *THH* CCT (min): 2.224 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	27,778	
Total Arsenic	0	0		0	10	10.0	49,603	
Total Barium	0	0		0	2,400	2,400	11,904,662	
Total Boron	0	0		0	3,100	3,100	15,376,856	

Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	1,488,083	
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	4,960,276	
Total Mercury	0	0		0	0.050	0.05	248	
Total Nickel	0	0		0	610	610	3,025,768	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	1,190	
Total Zinc	0	0		0	N/A	N/A	N/A	
Total Strontium	0	0		0	4,000	4,000	19,841,104	
Osmotic Pressure	0	0		0	N/A	N/A	N/A	

☑ *CRL* CCT (min): 0.986 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

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

Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Total Strontium	0	0		0	N/A	N/A	N/A	
Osmotic Pressure	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

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

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	2,384,502	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	27,778	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	49,603	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	11,904,662	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	7,936,442	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	1,355	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	432,015	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	51,562	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	94,245	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	45.1	mg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	1,488,083	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	7,440,414	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	16,043	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	4,960,276	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	248	µg/L	Discharge Conc ≤ 10% WQBEL
Total Nickel	261,582	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	24,748	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	12,302	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	1,190	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	385	mg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Gross Alpha	N/A	N/A	No WQS
Total Beta	N/A	N/A	No WQS
Radium 226/228	N/A	N/A	No WQS
Total Strontium	19,841,104	µg/L	Discharge Conc ≤ 10% WQBEL
Total Uranium	N/A	N/A	No WQS
Osmotic Pressure	158,967	mOs/kg	Discharge Conc ≤ 10% WQBEL