pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0254720**
Facility Type	**Industrial**	APS ID	**1049798**
Major / Minor	**Minor**	Authorization ID	**1373075**

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

Applicant and Facility Information

Applicant Name	**Marcon Building Supply Inc.**	Facility Name	**Hopwood Plant**
Applicant Address	4888 Natl Pike PO Box 37	Facility Address	101 Atlas Road
	Markleysburg, PA 15459		Hopwood, PA 15945
Applicant Contact	Jubal Margroff	Facility Contact	Jubal Margroff
Applicant Phone	(724) 329-5542	Facility Phone	(724) 329-5542
Client ID	347609	Site ID	747494
SIC Code	3273	Municipality	North Union Township
SIC Description	Manufacturing - Ready-Mixed Concrete	County	Fayette
Date Application Received	January 28, 2019	EPA Waived?	Yes
Date Application Accepted	February 4, 2019	If No, Reason	

Purpose of Application: Renewal and Transfer of NPDES Permit

Summary of Review

The Department received an application for an NPDES permit renewal and transfer on January 28, 2019 from Marcon Building Supply, Inc. (Marcon) for the prior Dennis Lumber – Hopwood Plant in North Union Township, Fayette County. Marcon now owns and operates this ready-mix concrete manufacturing plant with a SIC code of 3273. After a series of communications and the submission of additional information, this application was considered complete on May 3, 2019. The prior permit term ran from July 1, 2014 through June 30, 2019, with the final permit limits becoming effective on July 1, 2017. These have been administratively extended until the renewed permit can be finalized.

Towards the end of 2019, the Department conducted an onsite inspection of the Hopwood facility. At that time the recent history of their electronic Discharge Monitoring Reports (eDMRs) were reviewed with the permittee's representatives, including some Effluent Limitation exceedances. Also, at that time some treatment possibilities were discussed. Subsequently, discharges into the receiving waters, an unnamed tributary of nearby Redstone Creek, were noted as being in excess of permitted limits under this permit, **PA0254720**. A Notice of Violation was issued in December 2019. Subsequent to this, the permittee and his consultants exchanged a series of communications with the Department, which on July 15, 2020 again requested the permittee submit an application for a Water Quality Management Part II permit.

The Department received the Water Quality Management (WQM) Part II Permit application from K2 Engineering, Inc. (K2) on behalf of Marcon on or about December 14, 2020 for Marcon's Hopwood location. This permit (**2620200**) was issued on February 5, 2021. Subsequently, Marcon began construction of the new modifications to the treatment structures, a tiered sediment pond system, with additional measures added to the site's existing three bay solids settling system and detention ponds. This modified, K2 designed system is intended to ensure compliance with effluent limits in their NPDES permit.

Approve	Deny	Signatures	Date
X		John L Duryea, Jr., P.E. / Environmental Engineering Specialist	October 20, 2021
X		Michael E. Fifth, P.E. / Environmental Engineer Manager	October 20, 2021

Summary of Review

Marcon typically does not operate their Hopwood facility year-round nor around-the-clock. The batch plant uses public water supplied by PA American Water Company – Uniontown. Mixing trucks will discharge excess cementitious materials into the bay of the washpit area. Fluids and entrained materials will proceed by gravity to the upper three sediment ponds where pond supernatant will sift through filter material before exiting. After slow settling in the upper ponds, the process fluid is transferred down gradient toward the three lower detention ponds. Chemical additives may be used to neutralize the effluent and enhance precipitation and settling of solids, starting in pond three and then continuing as it passes through the lower detention ponds. This new system of six, sequential ponds is shown in Figure 1 below.

Figure 1: Marcon Hopwood Washout, 3-Sedimentation Ponds and 3-Tiered Detention Pond System

As can be seen in the figure above, the treatment and solids removal is provided through a slow settling in a nested set of outdoor systems, including the three upper sedimentation ponds to the right of the washpit in the figure. In this initial set, solids are removed by pond supernatant passing through extruded plastic filter material, followed by a lower set of three V-notch weir detention ponds where supernatant flows over the lower pond walls, leaving settled solids behind. Finally, the effluent passes through a compost filter sock BMP before the effluent is discharged at Outfall 001.

The process water throughput for Marcon's system has historically averaged well below the original design flow of 0.052 MGD based on eDMR data. Since installation of the revised treatment, discharges have been either infrequent or curtailed entirely. Solids in the upper bays are periodically cleaned out for reuse or disposal. All materials in the lower, tiered ponds were cleaned out as part of the redesign. As this is now essentially a new system, monitoring of its performance is needed to determine the correct level of effluent monitoring or even if discharges at Outfall 001 should be expected to continue.

The applicant has complied with Act 14.

Macron' site was inspected in Late 2019 with the violation previously noted. Over the prior permit term this site has often exceeded their NPDES permit limits for Total Suspended Solids (TSS), pH and aluminum (among others). Marcon and the Department resolved these issues, after the treatment system upgrade, through execution of a Consent Assessment of Civil Penalty (CACP). This CACP was negotiated and signed on July 8, 2021. A compliance check on August 13, 2021 showed that there were no remaining open violations.

Summary of Review

Note that in late October 2021, the Department authorization was changed from a stormwater to an industrial application of type MIIW1.

It is recommended that a draft permit be published for public comment in response to this application.

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.

Compliance History

Table 1: Marcon's Hopwood Plant's Effluent Violations for Outfall 001, from: December 1, 2018 To: October 31, 2019

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
pH	07/31/19	Max	9.9	S.U.	9.0	S.U.
pH	04/30/19	Max	9.2	S.U.	9.0	S.U.
pH	06/30/19	Max	9.9	S.U.	9.0	S.U.
pH	03/31/19	Max	11.6	S.U.	9.0	S.U.
pH	05/31/19	Max	11.2	S.U.	9.0	S.U.
pH	02/28/19	Max	10.4	S.U.	9.0	S.U.
pH	01/31/19	Max	11.6	S.U.	9.0	S.U.
pH	12/31/18	Max	9.2	S.U.	9.0	S.U.
pH	10/31/19	Max	12.1	S.U.	9.0	S.U.
TSS	01/31/19	Avg Mo	112.0	mg/L	30	mg/L
TSS	12/31/18	Avg Mo	154.5	mg/L	30	mg/L
TSS	08/31/19	Avg Mo	< 633.5	mg/L	30	mg/L
TSS	04/30/19	Avg Mo	< 65	mg/L	30	mg/L
TSS	04/30/19	Daily Max	< 130	mg/L	60	mg/L
TSS	01/31/19	Daily Max	220.0	mg/L	60	mg/L
TSS	12/31/18	Daily Max	237	mg/L	60	mg/L
TSS	08/31/19	Daily Max	< 1240	mg/L	60	mg/L
Total Aluminum	05/31/19	Avg Mo	< 0.5740	mg/L	0.48	mg/L
Total Aluminum	04/30/19	Avg Mo	< 4.9448	mg/L	0.48	mg/L

Total Aluminum	12/31/18	Avg Mo	1.8835	mg/L	0.48	mg/L
Total Aluminum	10/31/19	Avg Mo	< 0.7475	mg/L	0.48	mg/L
Total Aluminum	01/31/19	Avg Mo	1.0120	mg/L	0.48	mg/L
Total Aluminum	08/31/19	Avg Mo	< 0.4820	mg/L	0.48	mg/L
Total Aluminum	03/31/19	Avg Mo	1.0026	mg/L	0.48	mg/L
Total Aluminum	12/31/18	Daily Max	3.3300	mg/L	0.75	mg/L
Total Aluminum	01/31/19	Daily Max	1.2900	mg/L	0.75	mg/L
Total Aluminum	05/31/19	Daily Max	< 0.8860	mg/L	0.75	mg/L
Total Aluminum	04/30/19	Daily Max	< 9.7900	mg/L	0.75	mg/L
Total Aluminum	10/31/19	Daily Max	< 1.2800	mg/L	0.75	mg/L
Total Aluminum	08/31/19	Daily Max	< 0.7760	mg/L	0.75	mg/L
Total Aluminum	03/31/19	Daily Max	1.9100	mg/L	0.75	mg/L
Total Iron	04/30/19	Avg Mo	< 6.2365	mg/L	1.5	mg/L
Total Iron	12/31/18	Avg Mo	1.7600	mg/L	1.5	mg/L
Total Iron	04/30/19	Daily Max	< 12.3000	mg/L	2.34	mg/L
Total Iron	12/31/18	Daily Max	3.1900	mg/L	2.34	mg/L
Total Manganese	06/30/19	Avg Mo	< 5.00	mg/L	0.64	mg/L
Total Manganese	06/30/19	Daily Max	< 5.00	mg/L	1.0	mg/L

Discharge, Receiving Waters and Water Supply Information			
Receiving Waters	UNT to Redstone Creek	Stream Code	40124
NHD Com ID	99414718	RMI	0.6
Drainage Area	1.98 mi^2	Yield (cfs/mi^2)	0.01
Q_{7-10} Flow (cfs)	0.02022	Q_{7-10} Basis	USGS Streamstats
Elevation (ft)	1,020	Slope (ft/ft)	0.0038
Watershed No.	19-C	Chapter 93 Class.	Warm Water Fishery
Existing Use	Aquatic Life, Water Supply, Recreation	Existing Use Qualifier	
Exceptions to Use	None	Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	pH, Metals		
Source(s) of Impairment	Abandoned Mine Drainage		
TMDL Status	Final, 04/09/2009	Name	Redstone Creek Watershed
Nearest Downstream Public Water Supply Intake	Newell Municipal Authority		
PWS Waters	Monongahela River	Flow at Intake (cfs)	530
PWS RMI	50.9	Distance from Outfall (mi)	27

Changes Since Last Permit Issuance: A water treatment system was added under WQM permit 2620200. Further and upon review, eMapPa no longer shows a public water supply (PWS) intake for Jefferson Township Authority on Redstone Creek at RMI 4.9. The downstream PWS is therefore now further downstream on the Monongahela River with an intake at the Newell Municipal Authority at RMI of 50.9. The distance to and volume of river flow at this downstream intake make it obvious that PWS related pollutants need no further consideration.

Other Comments: None

Treatment Facility Summary				
Treatment Facility Name: Marcon Building Supply – Hopwood Plant				
WQM Permit No.	**Issuance Date**			
2620200	February 5, 2021			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Industrial	Basic	Tiered supernatant sedimentation and filtration	N/A	< 0.001
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.05	N/A	Not overloaded	N/A	N/A

Changes Since Last Permit Issuance: A complete treatment system upgrade was permitted via WQM Part II 2620200 earlier in 2021, has since been installed and, in the Department's site inspection in April 2021, was observed to be in operation. Since the operational startup of the new system, the permittee has not reported any discharge.

On August 16, 2019, the permittee informed the Department via email that no chemical additives were being used at the facility.

Compliance History	
Summary of DMRs:	**As can be seen in Table 1, starting at the end of 2018 and continuing through all of 2019 and 2020, Marcon has reported exceedances for TSS, aluminum, iron, pH, and (to a lesser degree) manganese. Since the installation of the treatment upgrades, no discharges have been reported at Outfall 001, including all of 2021 up to the time of this document. The Department has resolved the prior exceedances through a CACP assessed on July 8, 2021. At this time the permittee is in compliance and 2021 records show no effluent limit violations.**
Summary of Inspections:	**The most recent inspection of this facility occurred on April 7, 2021 which resulted in one violation, but this was resolved on July 19, 2021. A compliance check supplied by the Department's operations supervision documents that there were no open violations as of August 13, 2021.** **Prior onsite inspections occurred on 4/30/2014, 10/8/2015, 2/28/2018 and 11/11/2019 with additional administrative reviews on 4/11/2017 and 4/1/2021. Most of the more recent inspections noted the recent effluent limit violations, now resolved.**

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0 (changing and to be determined)
Latitude 39º 53' 11.54" **Longitude** -79º 42' 14.14"
Wastewater Description: IW Process Effluent and stormwater (without ELG)

Technology-Based Limitations

Federal involvement in the regulation of discharges of industrial wastes significantly advanced with the enactment of the 1965 amendments to the Federal Water Pollution Control Act (PL 84-660). These amendments required states to initiate water quality standards for interstate waters and gave states additional authority to require control/treatment of wastes from sewage and industrial dischargers.

The primary objective of such technology-based effluent limitations (TBELs) is to decrease the total pollution load to all streams, while dealing equitably with discharges in a given class or category.

TBELs should not be looked upon from the viewpoint of whether they will or will not protect water quality; rather they should be considered as the baseline for decreasing pollution with stricter requirements being imposed as needed to protect the water quality of a receiving stream.

Marcon's Hopwood site is not subject to Federal Effluent Limitation Guidelines (ELGs) as the SIC code 3273 is not listed under 40 CFR parts 405 through 471.

Regulatory Effluent Standards and Monitoring Requirements

The pH effluent range for all IW process and non-process discharges pursuant of 25 Pa. Code § 92a.48(a)(2) and 25 Pa. Code § 95.2 is indicated in Table 2 below.

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1); effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code §§ 95.2(1). These limits are displayed in Table 2 below.

Pursuant to 25 Pa. Code § 95.2(4) effluent standards for industrial wastes may not contain more than 7 mg/L of dissolved iron as indicated in Table 2 below.

Pennsylvania regulations at 25 Pa. Code § 92a.48(b) require the imposition of technology-based TRC limits for facilities that use chlorinated sources and that are not already subject to TRC limits based on applicable federal ELGs or a facility-specific Best Professional Judgement (BPJ) evaluation which is displayed in Table 2 below. As Outfall 001 may discharge process water obtained from the Pennsylvania American Water Company - Uniontown, the source of this water being from public supply, it may therefore contain chlorine.

Table 2. Regulatory Effluent Standards

Parameter	Monthly Avg.	Daily Max	IMAX
Flow (MGD)	Monitor	Monitor	----
Iron, Dissolved	----	----	7.0 mg/L
pH (S.U.)	6-9 at all times		
TRC	0.5 mg/L	----	1.6 mg/L

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 discharges, provided that the loading was authorized prior to August 21, 2010 are exempt. Discharge loadings of TDS authorized by the Department are typically exempt from the treatment requirements of Chapter 95.10 until the net TDS loading is increased, an existing discharge proposes a hydraulic expansion or a change in the waste stream. If there are existing mass or production-based TDS effluent limits, then these are used as the basis for the existing mass loading. Although this facility is neither new nor expanding its waste loading of TDS, it

received its NPDES permit in 2014, after the August 2010 exemption date had passed, therefore, the facility is not strictly exempt from 25 Pa. Code § 95.10 treatment requirements.

Water Quality-Based Limitations

Total Maximum Daily Load (TMDL)

Wastewater discharges from Marcon's Hopwood site are located within the Redstone Creek watershed for which the Department has developed a TMDL. The TMDL was finalized on April 9, 2009 and establishes waste load allocations for the discharge of aluminum, iron and manganese within the Redstone Creek watershed. Section 303(d) of the Clean Water Act and the U.S. Environmental Protection Agency's Water Quality Planning and Management Regulations (codified at Title 40 of the *Code of Federal Regulations* Part 130) require states to develop a TMDL for impaired water bodies. A TMDL establishes the amount of a pollutant that a water body can assimilate without exceeding the water quality criteria for that pollutant. TMDLs provide the scientific basis for a state to establish water quality-based controls to reduce pollution from both point and non-point sources in order to restore and maintain the quality of the state's water resources (USEPA 1991a). Stream reaches within the Redstone Creek watershed are included in the state's 2008 Section 303(d) list because of various impairments, including metals, pH and sediment. The TMDL includes consideration for each river and tributary within the target watershed and its impairment sources. Stream data is then used to calculate minimum pollutant reductions that are necessary to attain water quality criteria levels. Target concentrations published in the TMDL were based on established water quality criteria of 0.750 $^{mg}/_{L}$ total recoverable aluminum, 1.5 $^{mg}/_{L}$ total recoverable iron based on a 30-day average and 1.0 $^{mg}/_{L}$ total recoverable manganese. The reduction needed to meet the minimum water quality standards is then allocated among each known point and non-point pollutant source in the form of a watershed allocation using a stream's assimilative capacity. TMDLs prescribe allocations that minimally achieve water quality criteria (i.e., 100 percent use of a stream's assimilative capacity).

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

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

Manganese: The specific water quality criterion for manganese is expressed as an acute or maximum daily of 1.0 mg/L in 25 Pa. Code § 93.7(a). The criterion is based on the protection of human health and is associated with chronic exposure associated with a potable water supply (PWS). Since no duration is given in Chapter 93 for the manganese criterion, a duration of 30 days is used based on the water quality criteria duration for Threshold Human Health (THH) criteria given in Section III.C.3.a., Table 3 on Page 9 of DEP's Water Quality Toxics Management Strategy. The 30-day duration for THH criteria coincides with the 30-day duration of an AML, which is why the manganese criterion is set equal to the AML for a "permitting at criteria" scenario. Because the manganese criterion is interpreted as having chronic exposure, the manganese MDL and IMAX may be made less stringent according to procedures established in Section III.C.2.h. of the Water Quality Toxics Management Strategy (AML multipliers of 2.0 and 2.5 for the MDL and IMAX respectively). Accordingly, TMDL manganese limits are proposed for the Outfalls.

All new or revised NPDES permits discharging into the Redstone Creek watershed have to be consistent with the TMDL Waste Load Allocation based on 40 CFR 122.44(d)(1)(vii)(B). The Department reviewed the TMDL and this facility does

not have an explicit WLA. Therefore, effluent limitations have been set to the TMDL criteria. Refer to Table 3 below, for a summary of the TMDL effluent concentrations.

Table 3: Summary of the TMDL effluent concentrations

Parameter	Monthly Average ($^{mg}/_{L}$)	Daily Maximum ($^{mg}/_{L}$)
Aluminum	0.75	0.75
Iron	1.5	3.0
Manganese	1.0	2.0

Toxics Screening Analysis – Procedures for Evaluating Reasonable Potential (RP) and Developing WQBELs

DEP's procedures for evaluating reasonable potential are as follows:

1. For IW discharges, the design flow to use in modeling is the average flow during production or operation and may be taken form the permit application.

2. Perform a RP analysis to identify toxic pollutants of concern using all available and reliable analytical data from DMRs, permit applications, inspections, and other sources using the Toxics Management Spreadsheet (TMS) (refer to Attachment A).

3. For any outfall with an applicable design flow, perform TMS modeling for all pollutants using the maximum reported value from the application form or from DMRs as the input on the TMS Discharge input sheet.

4. Compare the actual WQBEL from the TMS results with the maximum concentration reported on DMRs or the permit application. Use WQN data or another source to establish the existing or background concentration for naturally occurring pollutants, but generally assume zero background concentration for non-naturally occurring pollutants.

    - Establish limits in the draft permit where the maximum reported concentration equals or exceeds 50% of the WQBEL. Use the average monthly and maximum daily limits for the permit as recommended by PENTOXSD. Establish an IMAX limit at 2.5 times the average monthly limit.

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

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

The information described above including the maximum reported discharge concentrations, the most stringent water quality criteria, the pollutant-of-concern (reasonable potential) determinations, the calculated WQBELs, and the WQBEL/monitoring recommendations are collected on the TMS spreadsheet (see Attachment A).

Water Quality Modeling Program

TMS Version 1.3 is a single discharge, mass-balance water quality modeling program 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 and discharge flow rate are entered as TMS inputs 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. Pollutants are then selected that may cause, have the reasonable potential to cause, or contribute to excursions above state water quality standards (i.e., a reasonable potential analysis). Discharge concentrations for the selected pollutants are chosen to represent the "worst case" quality of the discharge (i.e., maximum reported discharge concentrations). TMS evaluates each pollutant 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, TMS recommends average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for Outfall 001

Discharges from Outfall 001 were evaluated based on concentrations reported on the various applications and update submittals provided. In August 2021, TMS was run using the modeled discharge and receiving stream characteristics shown in Table 4. All pollutants with any data supplied were modeled. Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease, etc.) were excluded from the modeling.

TMS uses a mass balance approach. After the completion of the new treatment system, the eDMR have only reported "No Discharge." Therefore, it was deemed unreasonable to use the prior discharge rate and a low, nominal value of 0.001 cfs was used for this analysis. This flow value should be revisited using actual discharge data in the next renewal. Also, the initial bases for this stream flow at Outfall 001 was flagged as outside the statistical parameters for the USGS StreamStats error analysis. Therefore, a revised value was determined using as its bases the model's downstream node on the next downstream segment at river mile index (RMI) of 0.1 miles. The yield from this node (0.01021 cubic feet/sec per square mile) was then used to calculate $Q_{7\text{-}10}$ for the upstream node using the drainage area for that upstream node (1.98 square miles). The calculated inputs were then used to model the stream and discharge flows and loads in the model. The model inputs for the final run are shown in Attachment A.

Table 4: TMS Inputs

Parameter	Value
River Mile Index	0.613
Discharge Flow (MGD)	0.001
Basin/Stream Characteristics	
Parameter	**Value**
Area (mi^2)	1.98
$Q_{7\text{-}10}$ (cfs)	0.02022
Low-flow yield (cfs/mi^2)	0.01021
Elevation (ft.)	1017
Slope	0.006

The WQBELs calculated using TMS (see results in Attachment A) are automatically compared to the maximum reported effluent concentrations from sampling results, as described in the RP analysis section above, to evaluate the need to impose WQBELs or monitoring requirements in the permit. Based on the recommendations of TMS, the WQBELs and monitoring requirements shown in Table 5 are applicable at Outfall 001.

Note that pollutants identified as Potable Water Parameters were not evaluated as the nearest Potable Water Supply intake is more than 26 miles downstream, based on professional judgement, this discharge encounters enough assimilative capacity and stream flow that it is no longer of concern and these pollutants were not evaluated using the water quality models. These include TDS, Chloride, Fluoride and Phenols.

The models calculate Partial Mix Factor for CFC, THH and CRL. Given Marcon's Hopwood site's location at the receiving stream's headwaters, no changes to these Partial Mix Factors were implemented.

The TMS model's recommended effluent limits and/or reporting requirements for the parameters shown in Table 5. Some parameters' input values were set to the reported testing laboratory MDL. Also included in Table 3 for reference are these target QLs as specified in DEP's most recent *Application for Permit to Discharge Industrial Wastewater*. The target QLs are the means by which DEP is implementing EPA's September 18, 2014 revisions to 40 CFR Parts 122 and 136 requiring applicants and permittees to use "sufficiently sensitive" EPA-approved analytical methods that are capable of detecting and measuring the pollutants at, or below, the applicable water quality criteria or permit limits.

Table 5: Outfall 001 WQBELs (with Governing Criteria and Target QLs)

Parameter	Concentration (µg/L)		Governing WQBEL (µg/L)	Target QL (µg/L)
	Monthly Avg	Maximum Daily		
Aluminum (total)	Monitor	Monitor	6.763	10.0
Cadmium (total)	Monitor	Monitor	4.06	0.2
Hexavalent Chromium	Monitor	Monitor	146	1.0

As can be seen in all cases, only monitoring is required as the results did not exceed the most stringent WQBEL value, but the reported results were too high to rule out the possibility that discharges will result in excursions above Pennsylvania's water quality standards

WQM 7.0 Model

The computer model WQM 7.0 is run to determine wasteload allocations and effluent limitations for $CBOD_5$, NH_3-N and Dissolved Oxygen for single and multiple point source discharge scenarios. In general, WQM 7.0 is run if the maximum $BOD_5/CBOD_5$ concentrations exceeds 30/25 mg/L respectively in the permit application or the DMRs. The permit application reports the highest BOD_5 concentration was of 13.9 mg/L for this outfall, therefore, the WQM 7.0 Model is not required to be run.

Total Residual Chlorine

Normally, if public drinking water is used as a source of water for industrial use, the fact that the source water will, at times be chlorinated requires consideration of the possibility that residual chlorine may be entrained in the facility's effluent. However, with the recent changes in site treatment, the process water is being held in a sequence of basins outdoors for extended periods of time and, more recently, discharges have become infrequent. In such cases, the possibility of discharge of un-volatilized chorine is significantly reduced and can be neglected. In addition, the application submittal documents that three Outfall 001 samples were taken, but total residual chlorine was undetected. Therefore, a limit is not imposed.

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard or water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation 40 CFR 122.44 **(**l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued. Interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62). (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit. These prior effluent limits are shown in Table 6 below:

Table 6: Current Outfall 001 Effluent Limitations

Parameter	Mass / Loading ($^{lb}/_{day}$)		Concentration / Quality ($^{mg}/_{L}$)				Units
	Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Instant Max	
Flow	Monitor & Report		---	---	---	---	MGD
Total Suspended Solids	---	---	---	30	60	---	$^{mg}/_{L}$
Iron, dissolved	---	---	---	Report	7.0	---	$^{mg}/_{L}$
Oil and Grease	---	---	---	Monitor and Report		---	$^{mg}/_{L}$
Aluminum, total*	---	---	---	0.48	0.75	---	$^{mg}/_{L}$
Iron, total	---	---	---	1.5	2.34	---	$^{mg}/_{L}$
Manganese, total*	---	---	---	0.64	1.0	---	$^{mg}/_{L}$
pH	---	---	6.0	---	9.0	---	S.U.

* Effective from July 1, 2017 through the permit expiration date, administratively extended.

EPA explains anti-backsliding provisions for WQBELs in Section 7.2.1.3 of the 2010 NPDES Permit Writers' Manual, excerpt provided below:

7.2.1.3 Exceptions for Limitations Based on State Standards

EPA has consistently interpreted CWA section 402(o)(1) to allow relaxation of WQBELs and effluent limitations based on state standards if the relaxation is consistent with the provisions of CWA section 303(d)(4) or if one of the exceptions in CWA section 402(o)(2) is met. The two provisions constitute independent exceptions to the prohibition against relaxation of effluent limitations. If either is met, relaxation is permissible.

CWA section 303(d)(4) has two parts: paragraph (A), which applies to nonattainment waters, and paragraph (B), which applies to attainment waters.

- Nonattainment water: CWA section 303(d)(4)(A) allows the establishment of a less stringent effluent limitation when the receiving water has been identified as not meeting applicable water quality standards (i.e., a nonattainment water) if the permittee meets two conditions. First, the existing effluent limitation must have been

based on a total maximum daily load (TMDL) or other wasteload allocation (WLA) established under CWA section 303. Second, relaxation of the effluent limitation is only allowed if attainment of water quality standards will be ensured or the designated use not being attained is removed in accordance with the water quality standards regulations. This subsection does not provide an exception for establishing less stringent limitations where the original limitation was based on state permitting standards (e.g., state treatment standards) and was not based on a TMDL or WLA.

Marcon's discharge are located in an impaired segment of the Redstone Creek watershed, which is a nonattainment segment with a final Total Maximum Daily Load. Therefore Outfall 001 discharges are to a nonattainment surface water (unnamed tributary 40124) in the Redstone Creek watershed. The TMDL did not assign waste load allocations (WLAs) to Marcon's discharge, but it did impose load allocations (LAs) for the segment for common AMD metals, aluminum, iron and manganese which implies that no point source discharges were identified in this stream segment when the TMDL was developed.

Pennsylvania's most stringent aluminum criterion is an acute fish criterion of 0.75 mg/L. To implement the TMDL's WLA for aluminum, the 2014 permit limited aluminum at Outfall 001 to the aluminum criterion. An average limit of 0.48 mg/L was calculated from the 0.75 mg/L maximum daily limit using EPA's statistically based effluent limit calculations from its *Technical Support Document For Water Quality-based Toxics Control* (March 1991). If the average limit of 0.48 mg/L for aluminum is removed from Outfall 001, then the permit will still ensure water quality standards are attained due to the imposition of the maximum daily limit at the most stringent criterion. That is, impairment could be caused by aluminum concentrations in excess of 0.75 mg/L, but limiting discharges of aluminum to a maximum concentration of 0.75 mg/L will require average aluminum concentrations to be 0.75 mg/L or less, so discharges will still comply with the water quality criterion. Limiting Outfall 001 to the aluminum criterion allows for a non-zero introduction of load to the Redstone Creek watershed, but the net effect of that load introduction will not contribute to the impairment because of the diluting effect of the water accompanying the discharge of load. DEP also notes that, unlike continuous discharges, non-continuous discharges like Marcon's storm water discharges are not required to have both maximum daily and average monthly limits per 40 CFR § 122.45(e).

Since the proposed change to the aluminum WQBELs is consistent with Section 303(d)(4) of the Clean Water Act, the change/update to the average monthly aluminum limits is permissible. The average monthly limit for aluminum will be updated to match the limit shown in Table 3 above.

An analogous argument applies to the application of TMDL supporting limitations for both iron and manganese. In these cases, the TMDL values shown in Table 3 will also be used in the renewed permit, as these support the Commonwealth's Water Quality Standards and derived Water Quality Criteria for the Redstone Creek watershed. By supporting the Water Quality Criteria, these changes are permissible under the allowed exceptions under CWA section 303(d)(4)(A).

Preliminary Effluent Limitations and Monitoring Requirements for Outfall 001

Effluent limits applicable at Outfall 001 are the more stringent of those currently enforced in the prior permit, TBELs, WQBELs, and regulatory effluent standards. In most cases, this is the most stringent effluent limitations from Tables 2, 3, 5 and 6 above. The exceptions to this included that the effluent limits from Table 3 will be used, as noted in the anti-backsliding section above. Further, given the amount of holding time in open, outdoor basins, the TRC limitations are considered unnecessary as noted in the TRC section above. Finally, the limitation on dissolved iron will be dropped as redundant since the limits on total iron are bounding. The result is shown in Table 7 below.

Table 7: Proposed Effluent Limits and Bases for Outfall 001

Parameter	Mass (pounds)		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)
Total Suspended Solids	—	—	30.0	60.0	—	40 CFR §§ 125.3 & 122.44(l)
Aluminum (total)	—	—	0.75	0.75	—	TMDL
Iron (total)	—	—	1.5	3.0	—	TMDL
Manganese, Total	—	—	1.0	2.0	—	TMDL
Oil & Grease	—	—	Report	Report	—	40 CFR § 122.44(l)
Cadmium (total)	—	—	Report	Report	—	WQBELs, Reasonable Pot.
Hexavalent Chromium	—	—	Report	Report	—	WQBELs, Reasonable Pot.
pH (S.U.)	Within the range of 6.0 to 9.0					25 Pa. Code § 95.2

In Table 7 above, no new or more stringent effluent limitations have been proposed. Two pollutants have been added for monitoring based on a reasonable potential that these may challenge Water Quality Criteria. Therefore, these proposed effluent limitations will be promulgated as final.

Monitoring requirements for the pollutants of concern are based on the previous permit monitoring requirements for the facility are displayed in Table 8 below. The newly added parameters have been set at a matching frequency.

Table 8: Monitoring Requirements for Outfall 001

Parameter	Sample Type	Minimum Sample Frequency
Flow (MGD)	Estimate	2/Month
Total Suspended Solids	Grab	2/Month
Aluminum (total)	Grab	2/Month
Iron (total)	Grab	2/Month
Manganese (total)	Grab	2/Month
Oil & Grease	Grab	2/Month
Cadmium (total)	Grab	2/Month
Hexavalent Chromium	Grab	2/Month
pH (S.U.)	Grab	2/Month

Effluent Limitation Compliance Schedule

Whenever the Department proposes the imposition of WQBELs on existing sources, the NPDES permit may include a schedule of compliance to achieve the WQBELs. Any compliance schedule contained in an NPDES permit must be an "enforceable sequence of actions or operations leading to compliance with the water quality-based effluent limitations ("WQBELs"). In accordance with 40 CFR 122.47(a)(3) and PA Code, Chapter 92a.51, compliance schedules that are longer than one year in duration must set forth interim requirements and dates for their achievement. In order to grant a compliance schedule in an NPDES permit, the permitting authority has to make a reasonable finding, adequately supported by the administrative record and described in the fact sheet, that a compliance schedule is "appropriate" and that compliance with the final WQBEL is required "as soon as possible".

In this case, since no WQBELs have been imposed (only monitoring). Therefore, no compliance schedule is warranted and the proposed effluent limitations will be imposed as final.

Storm Water Outfalls

The Department's policy for stormwater discharges is to either (1) require that the stormwater is uncontaminated, (2) impose "Monitor and Report", to establish effluent goals and require the permittee to submit a Stormwater Pollution Prevention Plan (SWPPP), or (3) impose effluent limits. In all cases, a storm water special condition is placed in the permit in Part C.

Stormwater effluent data reported in the application are compared to stream criteria, EPA's Multi-Sector General Permit "benchmark values", ELGs and other references while considering site specific conditions such as stream flow and location to determine if actual discharge concentrations of various pollutants in stormwater warrant further controls. If there is insufficient data available, or if pollutant levels are excessive, monitoring for specific pollutants and/or a SWPPP are required in the permit. Otherwise, the storm water outfalls are simply listed as discharge points. In either case, a special condition is added to the permit to include some of the key components of the Department's General Permit (PAG-03) for Discharges of Stormwater Associated with Industrial Activities.

The NPDES renewal application submittals in the first half of 2019 did not contain sufficient stormwater data to analyze. Although it is recognized that stormwater will be captured in the outdoor treatment basins and also that before discharge into the UNT of Redstone Creek, the site's discharge may mix with stormwater conveyed in a swale that runs parallel to the treatment flow, no additional requirements will be imposed at this time.

In the next renewal application, if stormwater samples can be collected, these could be analyzed and included in the submittal. If submitted, the values will be compared to the benchmark values from EPA's Multi-Sector General Permit (MSGP) (see Attachment I). EPA's MSGP is the federal equivalent of DEP's PAG-03 General Permit. EPA uses benchmark

monitoring in the MSGP as an indicator of the effectiveness of a facility's best management practices (BMPs). DEP uses benchmark values for the same purpose.

It is conceivable that if Marcon is able to entirely eliminate its process wastewater discharges, this site may qualify for coverage under the General Permit in the future. To qualify, the permittee would need to consider application of BMPs identified in Attachment N of the PAG-03 permit during this period. As noted, prior to the next renewal, stormwater samples would need to be collected, and analysis results submitted to determine if the resultant values are meaningfully elevated above benchmark values. Such a determination needs to be supported by stormwater analyses results, evaluated in the next renewal cycle.

	Tools and References Used to Develop Permit
☐	WQM for Windows Model
☒	Toxics Management Spreadsheet (see Attachment A)
☐	TRC Model Spreadsheet
☐	Temperature Model Spreadsheet
☐	Toxics Screening Analysis Spreadsheet
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☒	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: SOP for Clean Water Program, Establishing WQBELs and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers (BCW-PMT-037), Revised 3/22/2021, Ver. 1.4.
☐	Other:

Attachments

Attachment A: Toxics Management Spreadsheet for Outfall 001

ATTACHMENT A:
Toxics Management Spreadsheet for Outfall 001

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Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Marcon Building Supply, Hopwood Plant** NPDES Permit No.: **PA0254720** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Treated Ready-Mix Concrete Stormwater**

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
0.001	225.1	8.6						

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		1120									
	Chloride (PWS)	mg/L		69.4									
	Bromide	mg/L		2.4									
	Sulfate (PWS)	mg/L		462									
	Fluoride (PWS)	mg/L		0.22									
Group 2	Total Aluminum	µg/L		834									
	Total Antimony	µg/L		0.41									
	Total Arsenic	µg/L		1.2									
	Total Barium	µg/L		242									
	Total Beryllium	µg/L											
	Total Boron	µg/L	<	50									
	Total Cadmium	µg/L	<	1									
	Total Chromium (III)	µg/L		9.1									
	Hexavalent Chromium	µg/L		23									
	Total Cobalt	µg/L		2.7									
	Total Copper	µg/L		12.3									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	0.01									
	Dissolved Iron	µg/L		89.9									
	Total Iron	µg/L		1080									
	Total Lead	µg/L		1.2									
	Total Manganese	µg/L		108									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		8.7									
	Total Phenols (Phenolics) (PWS)	µg/L	<	0.05									
	Total Selenium	µg/L		2.8									
	Total Silver	µg/L	<	1									
	Total Thallium	µg/L	<	0.3									
	Total Zinc	µg/L		16.7									
	Total Molybdenum	µg/L		12									

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Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Marcon Building Supply, Hopwood Plant, NPDES Permit No. PA0254720, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Trib. 40124 to Redstone Creek**

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	040124	0.6128	1017	1.98			Yes
End of Reach 1	040124	0.1	1001	2.42			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	0.6128	0.1	0.020216			3.3	1.5					100	7		
End of Reach 1	0.1	0.1	0.0247												

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	0.6128														
End of Reach 1	0.1		0.917												

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Marcon Building Supply, Hopwood Plant, NPDES Permit No. PA0254720, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 0.091 PMF: 1 Analysis Hardness (mg/l): 108.89 Analysis pH: 7.03

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	10,551	
Total Antimony	0	0		0	1,100	1,100	15,475	
Total Arsenic	0	0		0	340	340	4,783	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	295,425	
Total Boron	0	0		0	8,100	8,100	113,950	
Total Cadmium	0	0		0	2.188	2.33	32.7	Chem Translator of 0.94 applied
Total Chromium (III)	0	0		0	610.937	1,933	27,198	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	229	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	1,336	
Total Copper	0	0		0	14.562	15.2	213	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	70.849	91.0	1,280	Chem Translator of 0.779 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	23.2	Chem Translator of 0.85 applied
Total Nickel	0	0		0	503.228	504	7,094	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	3.724	4.38	61.6	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	914	
Total Zinc	0	0		0	125.952	129	1,812	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 0.091 PMF: 1 Analysis Hardness (mg/l): 108.89 Analysis pH: 7.03

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	3,095	
Total Arsenic	0	0		0	150	150	2,110	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	57,678	
Total Boron	0	0		0	1,600	1,600	22,509	
Total Cadmium	0	0		0	0.261	0.29	4.06	Chem Translator of 0.905 applied
Total Chromium (III)	0	0		0	79.470	92.4	1,300	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	146	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	267	
Total Copper	0	0		0	9.632	10.0	141	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	21,102	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.761	3.55	49.9	Chem Translator of 0.779 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	12.7	Chem Translator of 0.85 applied
Total Nickel	0	0		0	55.893	56.1	789	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	70.2	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	183	
Total Zinc	0	0		0	126.982	129	1,812	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 0.091 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	78.8	
Total Arsenic	0	0		0	10	10.0	141	
Total Barium	0	0		0	2,400	2,400	33,763	
Total Boron	0	0		0	3,100	3,100	43,610	
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	4,220	
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	14,068	
Total Mercury	0	0		0	0.050	0.05	0.7	
Total Nickel	0	0		0	610	610	8,581	
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	3.38	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 0.021 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

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

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

No. Samples/Month: 4

Pollutants	*Mass Limits*		*Concentration Limits*				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			
Total Aluminum	Report	Report	Report	Report	Report	µg/L	6,763	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Cadmium	Report	Report	Report	Report	Report	µg/L	4.06	CFC	Discharge Conc > 10% WQBEL (no RP)
Hexavalent Chromium	Report	Report	Report	Report	Report	µg/L	146	CFC	Discharge Conc > 10% WQBEL (no RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Antimony	78.8	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	141	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	33,763	µg/L	Discharge Conc ≤ 10% WQBEL
Total Boron	22,509	µg/L	Discharge Conc < TQL
Total Chromium (III)	1,300	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	267	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	137	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	4,220	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	21,102	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	49.9	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	14,068	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.7	µg/L	Discharge Conc < TQL
Total Nickel	789	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	70.2	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	39.5	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	3.38	µg/L	Discharge Conc < TQL
Total Zinc	1,161	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS