pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Amendment, Major**	Application No.	**PA0255335 A-1**
Facility Type	**Industrial**	APS ID	**1070260**
Major / Minor	**Minor**	Authorization ID	**1408049**

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

Applicant and Facility Information

Applicant Name	**Allegheny Energy Supply Co. LLC**	Facility Name	**Mitchell FGD Landfill**
Applicant Address	800 Cabin Hill Drive	Facility Address	Route 837
	Greensburg, PA 15601		Courtney, PA 15067
Applicant Contact	William Cannon	Facility Contact	William Cannon
Applicant Phone	(724) 838-6018	Facility Phone	(724) 678-2384
Client ID	95418	Site ID	827420
SIC Code	4953	Municipality	Union Township
SIC Description	Trans. & Utilities - Refuse Systems	County	Washington
Date Application Received	August 29, 2022	EPA Waived?	No
Date Application Accepted	August 30, 2022	If No, Reason	DEP Discretion

Purpose of Application: NPDES Permit Amendment to relocate discharge

Summary of Review

The Department received an NPDES Permit Amendment application from Allegheny Energy Supply Company (AESC) for its Mitchell FGD Landfill on August 26, 2022. The amendment application is to relocate the existing discharge from the site's Outfall 007 from the unnamed tributary to the Monongahela River to the Monongahela River.

Site Summary:

Mitchell Flue Gas Desulfurization (FGD) Landfill is an inactive Solid Waste disposal facility. The landfill historically received coal combustion residuals (CCRs) from the deactivated Mitchell Power Station and has been inactive since October 2013. The Landfill is regulated by the Department under both the Clean Water and Solid Waste Permitting programs. The facility is a 43-acre, unlined captive facility that accepted CCRs (fly ash, bottom ash, and FGD material) from the Mitchell Power station beginning in 1982 and is currently regulated under the Department's Solids Waste Permit No. 300809. The Mitchell Power Station was decommissioned in October 2013 and the Landfill has received no additional CCRs since that time. The landfill has not attained final closure under its Solid Waste permit but does have a one-foot-thick vegetated intermediate cover soil layer placed atop all the landfilled CCRs. Although the Landfill is unlined, the entire disposal area footprint is underlain by a two-foot-thick bottom ash leachate and ground collection blanket that flows into two tow drains. The two toe drains discharge into an approximately 0.9-acre sedimentation pond identified as the Mitchell Sludge Sedimentation Pond, where it comingles with stormwater runoff from the landfill's top surface and benches. The pond is a valley impoundment formed by a single downstream embankment that meets the height criteria to be classified and regulated as a dam under PADEP dam Safety Permit D63-100. The Pond has a concrete riser structure that directs discharges to the head waters of an unnamed tributary to the Monongahela River. This discharge location is identified as Outfall 007. The unnamed tributary flows southeast towards State Route 837, a railroad line, and beneath the Mitchell Power Station property before it discharges to the Monongahela River.

Approve	Deny	Signatures	Date
X		Adam Olesnanik / Project Manager	October 18, 2022
X		Michael E. Fifth, P.E. / Environmental Engineer Manager	October 20, 2022

Summary of Review

Historically, both the landfill and the power station were regulated under the same NPDES permit; however, as part of the latest permit renewal, the landfill was issued a separate NPDES permit. That permit imposed new water quality-based effluent limitations (WQBELs) for arsenic and boron that will apply to the landfill's discharge at Outfall 007 effective September 1, 2024. In accordance with a condition of the new permit, on November 24, 2021, AESC submitted an alternative work plan to the Department to meet the WQBELs. The work plan determined that rerouting the pond discharge via a buried pipeline from the current Outfall 007 location directly to a larger body of water, as has been done at other CCR disposal site, was feasible and was the preferred compliance option. The larger body of water would be the Monongahela River since there are no appreciable tributaries to the unnamed tributary downstream of the existing Outfall 007 location.

Project Summary:

The proposed pipeline will relocate that discharge from Outfall 007 directly to the Monongahela River utilizing a gravity flow pipeline running along the existing landfill access road and discharge into an existing concrete inlet structure that is located on the 48-inch culvert pipe running below SR 837, the railroad, and the Mitchell Power Station property.

Therefore, because the discharge location will be relocated for the Final Permit limitation period, the Final Permit limits will be re-evaluated based upon the new discharge location and shall become effective upon completion of construction of the pipeline or by September 1, 2024; whichever is sooner. The existing interim discharge period will not be re-evaluated as part of this amendment. The re-evaluation is discussed further in this fact sheet.

Amendment Changes:

The Final Effluent Limitation page in Part A of the NPDES Permit has been revised to reflect the relocated discharge point at the Monongahela River. The final limitations for Arsenic and Boron have been removed from the permit consistent with the updated water quality analysis. Footnote three has been added to Part A of the permit describing when the final limits become effective.

The annual fee section has been updated and has been changed to Part A.III. E.

Part C. II (Water Quality-Based Effluent Limitations for Toxic Pollutants) has been removed and replaced with the following:

> Final Effluent Limitations
>
> The Final Effluent Limitations in Part A of this Permit for the discharge via Outfall 007 to Monongahela River will become effective upon completion of the construction of the discharge pipeline or by September 1, 2024, whichever occurs first. The permittee shall provide written notice to the Department at least 30 days prior to its intent to commence discharges via the pipeline. Any direct discharges from Outfall 007 to the unnamed tributary of Monongahela River after the construction of the pipeline will be considered an unpermitted discharge and subject to enforcement action by the Department.
>
> The permittee shall submit written annual progress reports summarizing installation of the pipeline conveyance to the Monongahela River. The first report will be due one year after the Permit Amendment is issued. Additional reports shall be submitted subsequently each year until construction of the discharge pipeline is completed. The permittee shall notify the Department in writing when construction of the discharge pipeline is completed.

Conclusion and Recommendations:

This NPDES permit is being amended in conjunction with WQM permit amendment 6380204A-1.

The site has not been inspected in the past five years. The Permittee has seven open violations with Residual Waste for the Hatfield Power Station RWO.

Draft Permit issuance is recommended.

Summary of Review
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.	007 (Current Discharge Location)	Discharge Flow (MGD)	0.068
Latitude	40º 13' 26"	Longitude	-79º 58' 37"
Quad Name	Monongahela	Quad Code	1706
Wastewater Description:	Coal Ash Landfill Leachate, Seeps, Springs, and Stormwater		
Receiving Waters	Unnamed Tributary of Monongahela	Stream Code	39584
NHD Com ID	134839796	RMI	0.56
Drainage Area	0.0656	Yield (cfs/mi^2)	0.00415
Q_{7-10} Flow (cfs)	0.000272	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	980	Slope (ft/ft)	0.085
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation		
Source(s) of Impairment	Abandoned Mine Drainage		
TMDL Status	Name		
Nearest Downstream Public Water Supply Intake	PA American Water Co -Pittsburgh		
PWS Waters	Monongahela River	Flow at Intake (cfs)	550
PWS RMI	25.55	Distance from Outfall (mi)	4.45

Discharge, Receiving Waters and Water Supply Information

Outfall No.	007 (Proposed Discharge Location)	Discharge Flow (MGD)	0.068
Latitude	40º 13' 24"	Longitude	-79º 58' 11"
Quad Name	Monongahela	Quad Code	1706
Wastewater Description:	Coal Ash Landfill Leachate, Seeps, Springs, and Stormwater		

Receiving Waters	Monongahela River	Stream Code	37185
NHD Com ID	99409154	RMI	29.5
Drainage Area	5,320	Yield (cfs/mi^2)	0.103
Q_{7-10} Flow (cfs)	550	Q_{7-10} Basis	U.S Army Corp of Engineers
Elevation (ft)	727	Slope (ft/ft)	0.0001
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	PCB		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Monongahela River TMDL

Nearest Downstream Public Water Supply Intake	PA American Water Co -Pittsburgh		
PWS Waters	Monongahela River	Flow at Intake (cfs)	550
PWS RMI	25.5	Distance from Outfall (mi)	3.63

Development of Effluent Limitations

Outfall No. 007 (Current Discharge Location) **Design Flow (MGD)** 0.68
Latitude 40º 13' 36.00" **Longitude** -79º 58' 41.00"
Wastewater Description: IW Process Effluent with ELG

Current Limits at the Current Discharge location for Outfall 007

Table 1. Current Interim Permit Limits for Outfall 007
(effective from September 1, 2021 through August 31, 2024)

Parameter	Instant Minimum (mg/L)	Average Monthly (mg/L)	Maximum Daily (mg/L)	IMAX (mg/L)	Sample Type	Monitoring Frequency
Flow	XXX	Report	Report	XXX	Measure	2/Month
TSS	XXX	30	100	XXX	Grab	2/Month
TDS	XXX	Report	Report	XXX	Grab	2/Month
Oil & Grease	XXX	15	20	XXX	Grab	2/Month
Iron, Total	XXX	3.5	7.0	XXX	Grab	2/Month
Arsenic (µg/L)	XXX	Report	Report	XXX	Grab	2/Month
Boron	XXX	Report	Report	XXX	Grab	2/Month
pH	6.0	XXX	XXX	9.0	Grab	2/Month

Table 2. Current Final Permit Limits for Outfall 007
(effective from September 1, 2024 through August 31, 2026)

Parameter	Instant Minimum (mg/L)	Average Monthly (mg/L)	Maximum Daily (mg/L)	IMAX (mg/L)	Sample Type	Monitoring Frequency
Flow	XXX	Report	Report	XXX	Measure	2/Month
TSS	XXX	30	100	XXX	Grab	2/Month
TDS	XXX	Report	Report	XXX	Grab	2/Month
Oil & Grease	XXX	15	20	XXX	Grab	2/Month
Iron, Total	XXX	3.5	7.0	XXX	Grab	2/Month
Arsenic (µg/L)	XXX	10.031	15.651	XXX	Grab	2/Month
Boron	XXX	1.605	2.504	XXX	Grab	2/Month
pH	6.0	XXX	XXX	9.0	Grab	2/Month

Development of Effluent Limitations

Outfall No. 007 (Proposed Discharge Location) **Design Flow (MGD)** 0.068
Latitude 40º 13' 24" **Longitude** -79º 58' 11"
Wastewater Description: IW Process Effluent with ELG

Technology Based Effluent Limitations:

Regulatory Effluent Standards and Monitoring Requirements

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

As oil-bearing wastewaters, discharges from Outfall 007 are subject to effluent standards for oil and grease from 25 Pa. Code § 95.2(2)

Waste may not contain more than 7 milligrams per liter of dissolved iron per 25 Pa. Code § 95.2(4).

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code § 95.2(1) as indicated in Table 3.

Table 3: Regulatory Effluent Standards and Monitoring Requirements for Outfall 007

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
Iron, Dissolved	-	7.0	mg/L
Oil & Grease	15	30	mg/L
pH	Not less than 6.0 nor greater than 9.0		S.U.

Water Quality-Based Effluent Limitations:

Toxics Management Spread Sheet

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

Reasonable Potential Analysis and WQBEL Development for Outfall 007

Discharges from Outfall 007 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are entered into the Toxics Management Spread Sheet. The maximum reported value of the parameters from the application form or from previous DMRs is used as the input concentration in the Toxics Management Spread Sheet. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion are considered to be pollutants of concern. [This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion]. The Toxics Management Spread Sheet is run with the discharge and receiving stream characteristics shown in Table 4. For IW discharges, the design flow used in modeling is the average flow during production or operation taken from the permit application. Pollutants for which water quality

standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis. All the parameters are evaluated using the model to determine the water quality-based effluent limits applicable to the discharge and the receiving stream. The spreadsheet then compares the reported discharge concentrations to the calculated water quality-based effluent limitations to determine if a reasonable potential exists to exceed the calculated WQBELs. Effluent limitations are established in the draft permit where a pollutant's maximum reported discharge concentration equals or exceeds 50% of the WQBEL. For non-conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 25% - 50% of the WQBEL. For conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 10% - 50% of the WQBEL. The information described above including the maximum reported discharge concentrations, the most stringent water quality criteria, the pollutant-of-concern (reasonable potential) determinations, the calculated WQBELs, and the WQBEL/monitoring recommendations are displayed in the Toxics Management Spread Sheet in Attachment A of this Fact Sheet. The Toxics Management Spread Sheet did not recommend any WQBELs for Outfall 007.

Table 4: TMS Inputs for Outfall 007

Parameter	**Value**
River Mile Index	29.5
Discharge Flow (MGD)	0.068
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	5,320
Q_{7-10} (cfs)	550
Low-flow yield (cfs/mi^2)	0.103
Elevation (ft)	727
Slope	0.0001

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 5. Arsenic and Boron were WQBELs previously imposed based on the receiving stream of the previous discharge location of Outfall 007; however, because Outfall 007 will be relocated for the Final Permit Limitation Period, these WQBELs will no longer be applicable and can be removed from the permit.

Table 5. Current Final Permit Limits for Outfall 007 (effective from September 1, 2024 through August 31, 2026)

Parameter	Instant Minimum (mg/L)	Average Monthly (mg/L)	Maximum Daily (mg/L)	IMAX (mg/L)	Sample Type	Monitoring Frequency
Flow	XXX	Report	Report	XXX	Measure	2/Month
TSS	XXX	30	100	XXX	Grab	2/Month
TDS	XXX	Report	Report	XXX	Grab	2/Month
Oil & Grease	XXX	15	20	XXX	Grab	2/Month
Iron, Total	XXX	3.5	7.0	XXX	Grab	2/Month
Arsenic (µg/L)	XXX	10.031	15.651	XXX	Grab	2/Month
Boron	XXX	1.605	2.504	XXX	Grab	2/Month
pH	6.0	XXX	XXX	9.0	Grab	2/Month

Final Effluent Limitations:

The final effluent limitations for the relocated Outfall 007 are displayed in Table 6 below, they are the most stringent values from the above effluent limitation development.

Table 6. Proposed Final Permit Limits for the relocated Outfall 007
Effective from Conveyance of Effluent to Monongahela River

Parameter	Instant Minimum (mg/L)	Average Monthly (mg/L)	Maximum Daily (mg/L)	IMAX (mg/L)	Sample Type	Monitoring Frequency
Flow	XXX	Report	Report	XXX	Measure	2/Month
TSS	XXX	30	100	XXX	Grab	2/Month
TDS	XXX	Report	Report	XXX	Grab	2/Month
Oil & Grease	XXX	15	20	XXX	Grab	2/Month
Iron, Total	XXX	3.5	7.0	XXX	Grab	2/Month
pH	6.0	XXX	XXX	9.0	Grab	2/Month

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	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, 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:
☐	Other:

Attachment A: Relocated Outfall 007 TMS

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Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Mitchell FGD Landfill** NPDES Permit No.: **PA0255335** Outfall No.: **007**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **CoalAsh Leachate**

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
0.068	1266	7.99						

					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		4580000									
	Chloride (PWS)	mg/L		663000									
	Bromide	mg/L		7570									
	Sulfate (PWS)	mg/L		1530000									
	Fluoride (PWS)	mg/L		279									
Group 2	Total Aluminum	µg/L		149									
	Total Antimony	µg/L	<	0.9									
	Total Arsenic	µg/L		25									
	Total Barium	µg/L		62.8									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L		3015									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	4									
	Hexavalent Chromium	µg/L	<	1									
	Total Cobalt	µg/L	<	5									
	Total Copper	µg/L	<	5									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	10									
	Dissolved Iron	µg/L		67.5									
	Total Iron	µg/L		636									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		675									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		12.2									
	Total Phenols (Phenolics) (PWS)	µg/L	<	10									
	Total Selenium	µg/L	<	5									
	Total Silver	µg/L	<	0.4									
	Total Thallium	µg/L	<	0.9									
	Total Zinc	µg/L	<	25									
	Total Molybdenum	µg/L		43.4									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

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Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Mitchell FGD Landfill, NPDES Permit No. PA0255335, Outfall 007

Instructions | Discharge | Stream

Receiving Surface Water Name: **Monogahela River**

No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	037185	29.5	727	5320	0.0001		Yes
End of Reach 1	037185	28.5	721	5321	0.0001		Yes

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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	29.5	0.1	550			749	9					100	7		
End of Reach 1	28.5	0.1													

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	29.5														
End of Reach 1	28.5														

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Mitchell FGD Landfill, NPDES Permit No. PA0255335, Outfall 007

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.073 Analysis Hardness (mg/l): 103.06 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	285,386	
Total Antimony	0	0		0	1,100	1,100	418,566	
Total Arsenic	0	0		0	340	340	129,375	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	7,990,805	
Total Boron	0	0		0	8,100	8,100	3,082,168	
Total Cadmium	0	0		0	2.074	2.2	837	Chem Translator of 0.943 applied
Total Chromium (III)	0	0		0	584.023	1,848	703,257	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	6,200	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	36,149	
Total Copper	0	0		0	13.827	14.4	5,481	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	66.738	84.8	32,284	Chem Translator of 0.787 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	627	Chem Translator of 0.85 applied
Total Nickel	0	0		0	480.346	481	183,145	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	3.388	3.99	1,517	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	24,733	
Total Zinc	0	0		0	120.216	123	46,773	Chem Translator of 0.978 applied

☑ *CFC* CCT (min): 720 PMF: 0.503 Analysis Hardness (mg/l): 100.44 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	578,678	
Total Arsenic	0	0		0	150	150	394,553	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	10,784,451	
Total Boron	0	0		0	1,600	1,600	4,208,566	
Total Cadmium	0	0		0	0.247	0.27	714	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.383	86.5	227,506	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	27,343	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	49,977	
Total Copper	0	0		0	8.990	9.36	24,631	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	7,844,004	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.529	3.2	8,416	Chem Translator of 0.79 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	2,383	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.202	52.4	137,722	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	13,123	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	34,195	
Total Zinc	0	0		0	118.583	120	316,343	Chem Translator of 0.986 applied

☑ *THH* CCT (min): 720 PMF: 0.503 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	14,730	
Total Arsenic	0	0		0	10	10.0	26,304	
Total Barium	0	0		0	2,400	2,400	6,312,849	
Total Boron	0	0		0	3,100	3,100	8,154,097	
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	789,106	
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	2,630,354	
Total Mercury	0	0		0	0.050	0.05	132	
Total Nickel	0	0		0	610	610	1,604,516	
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	631	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ *CRL* CCT (min): 720 PMF: 0.750 Analysis Hardness (mg/l): N/A Analysis pH: N/A

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

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

No. Samples/Month: 4

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

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	182,921	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	26,304	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	5,121,784	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	1,975,545	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	536	µg/L	Discharge Conc < TQL
Total Chromium (III)	227,506	µg/L	Discharge Conc < TQL
Hexavalent Chromium	3,974	µg/L	Discharge Conc < TQL
Total Cobalt	23,170	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	3,513	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	789,106	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	7,844,004	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	8,416	µg/L	Discharge Conc < TQL
Total Manganese	2,630,354	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	132	µg/L	Discharge Conc < TQL
Total Nickel	117,388	µg/L	Discharge Conc ≤ 10% WQBEL

Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	13,123	µg/L	Discharge Conc < TQL
Total Silver	972	µg/L	Discharge Conc < TQL
Total Thallium	631	µg/L	Discharge Conc < TQL
Total Zinc	29,980	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS