pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**New**	Application No.	**PA0255335**
Facility Type	**Industrial**	APS ID	**959109**
Major / Minor	**Minor**	Authorization ID	**1213633**

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	341 White Pond Drive	Facility Address	Route 837
	Akron, OH 44320		Courtney, PA 15067
Applicant Contact	William Cannon	Facility Contact	Same as Applicant
Applicant Phone	(724) 838-6018	Facility Phone	Same as Applicant
Client ID	95418	Site ID	827420
SIC Code	4953	Municipality	Union Township
SIC Description	Trans. & Utilities - Refuse Systems	County	Washington
Date Application Received	December 8, 2017	EPA Waived?	No
Date Application Accepted	March 26, 2018	If No, Reason	Expressed Interest

Purpose of Application: Renewal of NPDES Permit Coverage

Summary of Review

The Department received an updated NPDES renewal application from Allegheny Energy Supply Co. LLC for its Mitchell FGD Landfill on December 8, 2017. The site is currently covered under NPDES permit PA0002895 with two other sites. PA0002895 is to be split to separate Mitchell FGD Landfill into a separate permit distinct from the Mitchell Power Station and the Mitchell Mingo Landfill. The site has an SIC Code of 4953, Refuse System, and is a coal ash landfill.

Mitchell FGD Landfill is a coal combustion residue landfill, currently under interim closure. The site received the coal combustion residue from the Mitchell Power Station. The Mitchell Power Station is a coal and oil-fired electric generating station which was decommissioned on October 9, 2013. The Mitchell FGD Landfill has been in a PADEP-approved "Temporary Reduction of Waste Disposal Activity" status since September of 1999. Following Mitchell's decommissioning, the site was covered with 12 inches of soil and fully vegetated, following which a modification application for the closure was submitted June 30, 2014. FirstEnergy currently awaits response from the Department's Waste Management Program to a groundwater assessment; following which, focus will return to the closure plan.

The site's wastewater consists of the inactive coal combustion residue landfill surface impoundment discharge. The site has one outfall, Outfall 007. Outfall 007 discharges leachate, seeps, springs and stormwater runoff from the inactivated, fully covered and vegetated landfill to an Unnamed Tributary to the Monongahela River. Prior to discharging through Outfall 007, the landfill leachate is treated by the use of a sedimentation pond. No water treatment chemicals are used in the treatment process. Any sediments removed from this pond will be properly disposed of in accordance with Department regulations. The average annual wastewater flow discharge through Outfall 007 is 0.0559 MGD, as displayed in the site's flow diagram in Attachment A.

The sedimentation pond collects and treats a combination of landfill underdrain, leachate and surface stormwater discharge. The discharge of this sedimentation pond is Outfall 007. Stormwater that falls onto the site goes to the pond and is not separated from the process discharge.

Approve	Deny	Signatures	Date
x		Adam Olesnanik / Environmental Engineering Specialist	2-12-20
✓		Michael E. Fifth, P.E. / Environmental Engineer Manager	2/14/2020

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 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. Changes Since Last Permit Issuance: The site is being covered by its own permit and being separated from two other sites in its current permit.

Compliance History	
Summary of DMRs:	This specific outfall of permit PA0002895 is in compliance with permit conditions, Outfall 006 of permit PA0002895 has shown to be out of compliance with the permit limitations.
Summary of Inspections:	The site has no open violations. The site was last inspected on November 9, 2018; one violations were noted, violation of effluent limits in Part A of permit. This violation is from exceedances of the limitations at Outfall 006 of PA0002895, which is going to be covered under a separate permit.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	007	Design Flow (MGD)	0.0795
		Long Term Average Discharge Flow (MGD)	0.0559
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

USGS StreamStates Drainage Area and Flow Report is include in Attachment D.

Development of Effluent Limitations

Outfall No. 007 **Design Flow (MGD)** 0.0795
Latitude 40º 13' 26.00" **Longitude** -79º 58' 37.00"
Wastewater Description: Coal Ash Landfill Leachate, Seeps, Springs, and Stormwater

Technology-Based Limitations:

Federal Effluent Limitation Guidelines (ELGs)

The site is subject to Federal Effluent Limitation Guidelines (ELGs) pursuant to 40 CFR 423.12(b) (11) (Steam Electric Power Generating Point Source Category) and must achieve the limits in Table 1 below. Based on the type of discharge and 40 CFR 423.12(b) (12), the limitations will be expressed as concentration limitation instead of mass-based limitations

Table 1. Federal ELGs

Parameter	Monthly Avg. (mg/L)	Maximum Daily (mg/L)
TSS	30	100
Oil and Grease	15	20

Total Dissolved Solids Considerations

Outfall 007 is also subject to Chapter 95.10 Effluent Standards for total dissolved solids (TDS). The provisions of Chapter 95.10 were adopted on August 20, 2010 and became effective August 21, 2010. Chapter 95.10 of the Department's regulations establishes the effluent standards applicable to new and expanding discharges of TDS. Under the provisions of this regulation, dischargers that are subject to the requirements of 95.10 must be identified; discharges that are exempt from any treatment requirements under this chapter must be identified; the existing mass loadings of TDS that are exempt from the treatment requirements must be identified and quantified; and discharges of new and expanding mass loadings of TDS must be evaluated.

Integral to the implementation of Chapter 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. Generally, no permit actions are required until an NPDES permit is issued, renewed, or amended. 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 there is 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.

The discharge from Outfall 007 was authorized, and existed prior to August 21, 2010. Therefore, the discharge is considered to be an existing, authorized mass loading of TDS and is exempt from any treatment requirements.

The TDS discharge reported in the application is 2,107 lb/day measured as an average daily discharge, over the course of a calendar year, otherwise known as an annual average daily load. With the load being greater than 2,000 $^{lb}/_{day}$, monitoring for TDS is imposed at Outfall 007.

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 2

Table 2: 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 Limitations:

Toxics Screening Analysis – Procedures for Evaluating Reasonable Potential 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 from the permit application.

2. Perform a Toxics Screening Analysis to identify toxic pollutants of concern. 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 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]. List all toxic pollutants of concern in a Toxics Screening Analysis section of the fact sheet (see Attachment B).

3. For any outfall with an applicable design flow, perform PENTOXSD modeling for all pollutants of concern. Use the maximum reported value from the application form or from DMRs as the input concentration for the PENTOXSD model run.

4. Compare the actual WQBEL from PENTOXSD 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 a spreadsheet titled "Toxics Screening Analysis" and is displayed in Attachment B.

PENTOXSD Water Quality Modeling Program

PENTOXSD Version 2.0 for Windows 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 into PENTOXSD 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 for analysis based on those present or likely to be present in a discharge at levels 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). PENTOXSD then 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, PENTOXSD recommends average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for Outfall 007

Table 3: PENTOXSD Inputs

Parameter	Value
River Mile Index	0.56
Discharge Flow (MGD)	0.0559
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	0.0656
Q_{7-10} (cfs)	0.00272
Low-flow yield (cfs/mi^2)	0.00415
Elevation (ft)	980
Slope	0.085

Discharges from Outfall 007 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are used for toxics screening as described above. The PENTOXSD model is run with the discharge and receiving stream characteristics shown in Table 3. The pollutants selected for analysis include those identified as candidates for modeling by the Toxics Screening Analysis spreadsheet (in accordance with Step 2 of the Toxics Screening Analysis procedure discussed above). Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis.

The WQBELs calculated using PENTOXSD are compared to the maximum reported effluent concentrations as described in the Toxics Screening Analysis section above to evaluate the need to impose WQBELs or monitoring requirements in the permit. Based on the recommendations of the Toxics Screening Analysis, effluent limitations for Arsenic and Boron are proposed at Outfall 007. These limits are shown in Table 4 below. Output from the PENTOXSD model runs are included in Attachment C. The PWS parameters that were suggested from the toxics screening analysis were analyzed as if the discharge was directly to the Monongahela River. No water quality limits for these PWS parameters were determined at this location. Therefore, because the discharge is further away from the PWS intake, no water quality limits will be imposed for the PWS parameters at Outfall 007.

Table 4. WQBELs from PENTOXSD and Toxics Screening Analysis for Outfall 007

Parameter	Monthly average (µg/L)	Daily maximum (µg/L)
Arsenic	10.031	15.651
Boron (mg/L)	1.605	2.504

Total Dissolved Solids, Chloride, Bromide, and Sulfate

The Toxics Screening Analysis' reporting recommendations for TDS, chloride, bromide and sulfate are the result of a new monitoring initiative. TDS and its major constituents including chloride, bromide and sulfate have emerged as pollutants of concern in several major watersheds in the Commonwealth. The conservative nature of these solids allows them to accumulate in surface waters and they may remain a concern even if the immediate downstream public water supply is not directly impacted. Bromide has been linked to the formation of disinfection byproducts at increased levels in public water systems. In addition, the Environmental Quality Board has directed DEP to collect additional data related to sulfate and chloride. Furthermore, EPA has expressed concern related to bromide and the importance of monitoring all point sources for bromide when it may be present.

Based on the concerns identified above and under the authority of 25 Pa. Code § 92a.61, DEP has determined that it should implement increased monitoring in NPDES permits for TDS, chloride, bromide and sulfate. The new/increased monitoring is prompted for discharges that exceed the following thresholds:

- Where the concentration of TDS in the discharge exceeds 1,000 mg/L, or the net TDS load from a discharge exceeds 20,000 lb/day, and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for TDS, chloride, bromide and sulfate. Allegheny Energy reported a TDS concentration of 4,580 mg/L however the discharge rate was reported to be 0.0559 MGD, therefore monitoring will not be imposed for these parameters.

- Where the concentration of bromide in a discharge exceeds 1 mg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for bromide. Allegheny Energy reported a bromide concentration of 7.57 mg/L however the discharge rate was reported to be 0.0559 MGD, therefore monitoring will not be imposed for bromide.

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.

Table 5. Current Permit (PA0002895) Limits for Outfall 007

Parameter	Average Monthly (mg/L)	Maximum Daily (mg/L)	IMAX (mg/L)	Monitoring Frequency
Flow	Monitor	Monitor		2/Month
TSS	30	100		2/Month
Oil & Grease	15	20	30	2/Month
Iron	3.5	7.0		2/Month
pH	Between 6.0 and 9.0			2/Month

Final Effluent Limitations:

The final effluent limitations for Outfall 007 are displayed in Table 6 below, they are the most stringent values from the above effluent limitation development. Instantaneous maximum limitations are typically imposed to gauge compliance with composite sampling limits using grab samples or for Departmental sampling compliance purposes. Since the sampling type imposed at Mitchell FGD is grab sampling the instantaneous maximum limitation for oil & grease is not needed and has been removed.

Table 6. Proposed Permit Limits for Outfall 007

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

Final WQBEL Compliance Report and Interim Monitoring

The WQBELs listed in Table 6 above for Arsenic and Boron are new to Outfall 007. Allegheny Energy does not have the necessary controls in place to ensure compliance with the WQBELs upon permit issuance. Therefore, in accordance with 25 Pa. Code § 92a.51(a) of DEP's regulations, Allegheny Energy will be granted three years to come into compliance with the WQBELs. Because the new WQBELs will not be effective upon permit issuance, the permit will be tiered to have interim and final effluent limitations. For the first three years, Arsenic and Boron will have monitor and report requirements, and after three years, the WQBELs will take effect. Additionally, because the WQBELs were developed using the default or model-derived estimates in PENTOXSD, the permittee shall collect site-specific data and conduct a Toxics Reduction Evaluation (TRE). The site-specific data and TRE will be submitted to DEP as part of a Final WQBEL Compliance Report.

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	PENTOXSD for Windows Model (see Attachment **C**)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☒	Toxics Screening Analysis Spreadsheet (see Attachment **B**)
☐	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: USGS StreamStats (see Attachment D)

Attachments

Attachment A: Mitchell FDG Landfill Flow Diagram

Attachment B: Toxics Screening Analysis Results

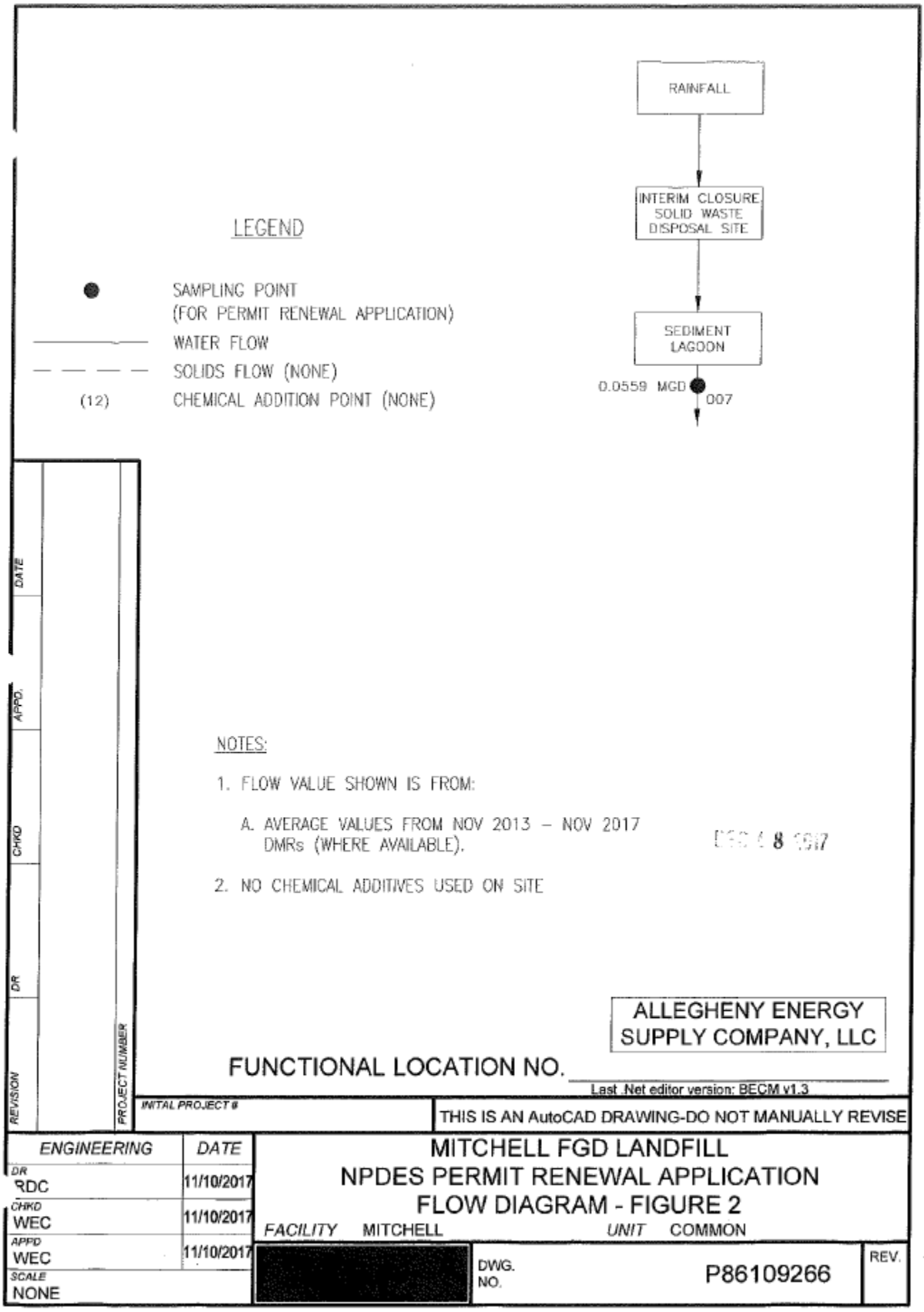
Attachment C: PENTOXSD Analysis Results

Attachment D: USGS StreamStates Drainage Area and Flow Report

Attachment E: Federal Effluent Limitation Guidelines in 40 CFR § 423.12

Attachment A:

Mitchell FDG Landfill Flow Diagram


RAINFALL
INTERIM CLOSURE SOLID WASTE DISPOSAL SITE
SEDIMENT LAGOON
0.0559 MGD
007
LEGEND
SAMPLING POINT (FOR PERMIT RENEWAL APPLICATION)
WATER FLOW
SOLIDS FLOW (NONE)
(12) CHEMICAL ADDITION POINT (NONE)
NOTES:
1. FLOW VALUE SHOWN IS FROM:
A. AVERAGE VALUES FROM NOV 2013 – NOV 2017 DMRs (WHERE AVAILABLE).
2. NO CHEMICAL ADDITIVES USED ON SITE
DEC 18 2017
ALLEGHENY ENERGY SUPPLY COMPANY, LLC
FUNCTIONAL LOCATION NO.
Last .Net editor version: BECM v1.3
INITAL PROJECT #
THIS IS AN AutoCAD DRAWING-DO NOT MANUALLY REVISE
REVISION
DR
CHKD
APPD.
DATE
PROJECT NUMBER
ENGINEERING
DR RDC 11/10/2017
CHKD WEC 11/10/2017
APPD WEC 11/10/2017
SCALE NONE
MITCHELL FGD LANDFILL
NPDES PERMIT RENEWAL APPLICATION
FLOW DIAGRAM - FIGURE 2
FACILITY MITCHELL
UNIT COMMON
DWG. NO. P86109266
REV.

Attachment B:

Toxics Screening Analysis Results

TOXICS SCREENING ANALYSIS
WATER QUALITY POLLUTANTS OF CONCERN
VERSION 2.4

Facility: **Mitchell FDG Landfill** NPDES Permit No.: **PA0255335** Outfall: **007**
Analysis Hardness (mg/L): **100** Discharge Flow (MGD): **0.0559** Analysis pH (SU): **7**

	Parameter		Maximum Concentration in Application or DMRs (µg/L)	Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Group 1	Total Dissolved Solids		4580000	500000	Yes	2236510000	No Limits/Monitoring
	Chloride		663000	250000	Yes	1118250000	FALSE
	Bromide		7570	N/A	No		
	Sulfate		1530000	250000	Yes	1118250000	FALSE
	Fluoride		279	2000	No		
Group 2	Total Aluminum		149	750	No		
	Total Antimony	<	0.9	5.6	No (Value < QL)		
	Total Arsenic		19.4	10	Yes	10.031	Establish Limits
	Total Barium		62.8	2400	No		
	Total Beryllium	<	1	N/A	No (Value < QL)		
	Total Boron		2860	1600	Yes	1605.033	Establish Limits
	Total Cadmium	<	0.2	0.271	No (Value < QL)		
	Total Chromium	<	4	N/A	No (Value < QL)		
	Hexavalent Chromium	<	1	10.4	No (Value < QL)		
	Total Cobalt	<	5	19	No		
	Total Copper	<	5	9.3	No		
	Total Cyanide	<	10	N/A	No (Value < QL)		
	Total Iron		636	1500	No		
	Dissolved Iron		67.5	300	No		
	Total Lead	<	1	3.2	No (Value < QL)		
	Total Manganese		675	1000	No		
	Total Mercury	<	0.2	0.05	No (Value < QL)		
	Total Molybdenum		43.4	N/A	No		
	Total Nickel		12.2	52.2	No		
	Total Phenols (Phenolics)	<	10	5	Yes	22365.18	No Limits/Monitoring
	Total Selenium	<	5	5.0	No (Value < QL)		
	Total Silver	<	0.4	3.8	No (Value < QL)		
	Total Thallium	<	0.9	0.24	No (Value < QL)		
	Total Zinc	<	25	119.8	No		

Attachment C:

PENTOXSD Analysis Results

PENTOXSD

Modeling Input Data

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
39584	0.56	980.00	0.07	0.08500	0.00	☑

Stream Data

	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Rch Velocity (fps)	Rch Trav Time (days)	Tributary Hard (mg/L)	Tributary pH	Stream Hard (mg/L)	Stream pH	Analysis Hard (mg/L)	Analysis pH
Q7-10	0.1	0	0.00027	0	0	0	0	0	100	7	0	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard (mg/L)	Disc pH
Outfall 007	PA0255335	0.0559	0	0	0	0	0	0	0	1640	7.72

Parameter Data

Parameter Name	Disc Conc (µg/L)	Trib Conc (µg/L)	Disc Daily CV	Disc Hourly CV	Steam Conc (µg/L)	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc (µg/L)
ARSENIC	1000000	0	0.5	0.5	0	0	0	0	1	0
BORON	1000000	0	0.5	0.5	0	0	0	0	1	0

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
39584	0.05	730.00	0.14	0.00000	0.00	☑

Stream Data

	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Rch Velocity (fps)	Rch Trav Time (days)	Tributary Hard (mg/L)	Tributary pH	Stream Hard (mg/L)	Stream pH	Analysis Hard (mg/L)	Analysis pH
Q7-10	0.1	0	0	0	0	0	0	0	100	7	0	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard (mg/L)	Disc pH
		0	0	0	0	0	0	0	0	100	7

Parameter Data

Parameter Name	Disc Conc (µg/L)	Trib Conc (µg/L)	Disc Daily CV	Disc Hourly CV	Steam Conc (µg/L)	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc (µg/L)
ARSENIC	0	0	0.5	0.5	0	0	0	0	1	0
BORON	0	0	0.5	0.5	0	0	0	0	1	0

PENTOXSD Analysis Results

Hydrodynamics

SWP Basin	Stream Code:	Stream Name:
19C	39584	Trib 39584 to Monongahela River

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope	Depth (ft)	Width (ft)	WD Ratio	Velocity (fps)	Reach Trav Time (days)	CMT (min)
Q7-10 Hydrodynamics											
0.560	0.0003	0	0.0003	0.08647	0.085	0.4124	1.7087	4.1433	0.1231	0.2532	0
0.050	0.0077	0	0.0077	NA	0	0	0	0	0	0	NA
Qh Hydrodynamics											
0.560	0.0057	0	0.0057	0.08647	0.085	0.4235	1.7087	4.0343	0.1273	0.2447	0
0.050	0.1058	0	0.1058	NA	0	0	0	0	0	0	NA

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number
0.56	**Outfall 007**	**PA0255335**

AFC

Q7-10: **CCT (min)** 0 **PMF** 1 **Analysis pH** 7.714 **Analysis Hardness** 1635.17

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
ARSENIC	0	0	0	0	340	340	341.069
Dissolved WQC. Chemical translator of 1 applied.							
BORON	0	0	0	0	8100	8100	8125.477

CFC

Q7-10: **CCT (min)** 0 **PMF** 1 **Analysis pH** 7.714 **Analysis Hardness** 1635.17

Parameter	Stream Conc. (µg/L)	Stream CV	Trib Conc. (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
ARSENIC	0	0	0	0	150	150	150.472
Dissolved WQC. Chemical translator of 1 applied.							
BORON	0	0	0	0	1600	1600	1605.033

THH

Q7-10: **CCT (min)** 0 **PMF** 1 **Analysis pH** NA **Analysis Hardness** NA

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
ARSENIC	0	0	0	0	10	10	10.031
BORON	0	0	0	0	3100	3100	3109.75

CRL

Qh: **CCT (min)** 0 **PMF** 1

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
ARSENIC	0	0	0	0	NA	NA	NA
BORON	0	0	0	0	NA	NA	NA

PENTOXSD Analysis Results

Recommended Effluent Limitations

SWP Basin	Stream Code:	Stream Name:
19C	39584	Trib 39584 to Monongahela River

RMI	Name	Permit Number	Disc Flow (mgd)
0.56	Outfall 007	PA0255335	0.0559

Parameter	Effluent Limit (µg/L)	Governing Criterion	Max. Daily Limit (µg/L)	Most Stringent WQBEL (µg/L)	Most Stringent WQBEL Criterion
ARSENIC	10.031	THH	15.651	10.031	THH
BORON	1605.033	CFC	2504.109	1605.033	CFC

PENTOXSD

Modeling Input Data

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
37185	29.48	730.00	5320.00	0.00000	0.00	☑

Stream Data

	LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary Hard	Tributary pH	Stream Hard	Stream pH	Analysis Hard	Analysis pH
	(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)		(mg/L)	
Q7-10	0.1	0	550	0	770	20	0	0	100	7	0	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow	Permitted Disc Flow	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard	Disc pH
		(mgd)	(mgd)	(mgd)						(mg/L)	
RMI 29.48	PA0255335	0.0795	0	0	0	0	0	0	0	100	7

Parameter Data

Parameter Name	Disc Conc (µg/L)	Trib Conc (µg/L)	Disc Daily CV	Disc Hourly CV	Steam Conc (µg/L)	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc (µg/L)
CHLORIDE (PWS)	1000000	0	0.5	0.5	0	0	0	0	1	0
PHENOLICS (PWS)	1000000	0	0.5	0.5	0	0	0	0	1	0
SULFATE (PWS)	1000000	0	0.5	0.5	0	0	0	0	1	0
TOTAL DISSOLVED SOLIDS (PWS)	1000000	0	0.5	0.5	0	0	0	0	1	0

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
37185	25.55	727.00	5330.00	0.00000	70.00	☑

Stream Data

	LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary Hard	Tributary pH	Stream Hard	Stream pH	Analysis Hard	Analysis pH
	(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)		(mg/L)	
Q7-10	0.1	0	550	0	900	20	0	0	100	7	0	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow	Permitted Disc Flow	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard	Disc pH
		(mgd)	(mgd)	(mgd)						(mg/L)	
		0	0	0	0	0	0	0	0	100	7

Parameter Data

Parameter Name	Disc Conc (µg/L)	Trib Conc (µg/L)	Disc Daily CV	Disc Hourly CV	Steam Conc (µg/L)	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc (µg/L)
CHLORIDE (PWS)	0	0	0.5	0.5	0	0	0	0	1	0
PHENOLICS (PWS)	0	0	0.5	0.5	0	0	0	0	1	0
SULFATE (PWS)	0	0	0.5	0.5	0	0	0	0	1	0
TOTAL DISSOLVED SOLIDS (PWS)	0	0	0.5	0.5	0	0	0	0	1	0

PENTOXSD Analysis Results

Hydrodynamics

SWP Basin	Stream Code:	Stream Name:
19A	37185	MONONGAHELA RIVER

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope	Depth (ft)	Width (ft)	WD Ratio	Velocity (fps)	Reach Trav Time (days)	CMT (min)
Q7-10 Hydrodynamics											
29.480	550	0	550	0.12298	0.0001	20	770	38.5	0.0357	6.7232	755.305
25.550	550	108.29	441.71	NA	0	0	0	0	0	0	NA
Qh Hydrodynamics											
29.480	1845.3	0	1845.3	0.12298	0.0001	34.065	770	22.604	0.0704	3.4136	339.89
25.550	1845.3	108.29	1737.0	NA	0	0	0	0	0	0	NA

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number
29.48	**RMI 29.48**	**PA0255335**

AFC

Q7-10: **CCT (min)** 15 **PMF** 0.14 **Analysis pH** 7 **Analysis Hardness** 100

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
TOTAL DISSOLVED SOLIDS (PWS)	0	0	0	0	NA	NA	NA
CHLORIDE (PWS)	0	0	0	0	NA	NA	NA
SULFATE (PWS)	0	0	0	0	NA	NA	NA
PHENOLICS (PWS)	0	0	0	0	NA	NA	NA

CFC

Q7-10: **CCT (min)** 720 **PMF** 0.976 **Analysis pH** 7 **Analysis Hardness** 100

Parameter	Stream Conc. (µg/L)	Stream CV	Trib Conc. (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
TOTAL DISSOLVED SOLIDS (PWS)	0	0	0	0	NA	NA	NA
CHLORIDE (PWS)	0	0	0	0	NA	NA	NA
SULFATE (PWS)	0	0	0	0	NA	NA	NA
PHENOLICS (PWS)	0	0	0	0	NA	NA	NA

THH

Q7-10: **CCT (min)** 720 **PMF** 1 **Analysis pH** NA **Analysis Hardness** NA

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
TOTAL DISSOLVED SOLIDS (PWS)	0	0	0	0	500000	500000	2.23651E+09
	WQC applied at RMI 25.55 with a design stream flow of 550.						
CHLORIDE (PWS)	0	0	0	0	250000	250000	1.11825E+09
	WQC applied at RMI 25.55 with a design stream flow of 550.						
SULFATE (PWS)	0	0	0	0	250000	250000	1.11825E+09
	WQC applied at RMI 25.55 with a design stream flow of 550.						
PHENOLICS (PWS)	0	0	0	0	5	5	22365.18
	WQC applied at RMI 25.55 with a design stream flow of 550.						

CRL

Qh: **CCT (min)** 339.89 **PMF** 1

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number
29.48	RMI 29.48	PA0255335

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
TOTAL DISSOLVED SOLIDS (PWS)	0	0	0	0	NA	NA	NA
CHLORIDE (PWS)	0	0	0	0	NA	NA	NA
SULFATE (PWS)	0	0	0	0	NA	NA	NA
PHENOLICS (PWS)	0	0	0	0	NA	NA	NA

PENTOXSD Analysis Results

Recommended Effluent Limitations

SWP Basin	Stream Code:	Stream Name:
19A	37185	MONONGAHELA RIVER

RMI	Name	Permit Number	Disc Flow (mgd)
29.48	RMI 29.48	PA0255335	0.0795

Parameter	Effluent Limit (µg/L)	Governing Criterion	Max. Daily Limit (µg/L)	Most Stringent WQBEL (µg/L)	Most Stringent WQBEL Criterion
CHLORIDE (PWS)	1000000	INPUT	1560000	1.11825E+09	THH
PHENOLICS (PWS)	22365.18	THH	34893.27	22365.18	THH
SULFATE (PWS)	1000000	INPUT	1560000	1.11825E+09	THH
TOTAL DISSOLVED SOLIDS (PWS	1000000	INPUT	1560000	2.23651E+09	THH

Attachment D:

USGS StreamStates Drainage Area and Flow Report

Mitchell FGD Landfill Outfall 007 StreamStats Report

Region ID:	PA
Workspace ID:	PA20180412111950571000
Clicked Point (Latitude, Longitude):	40.22386, -79.97637
Time:	2018-04-12 07:20:06 -0400

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.0656	square miles
ELEV	Mean Basin Elevation	1099	feet

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.0656	square miles	2.26	1400
ELEV	Mean Basin Elevation	1099	feet	1050	2580

Low-Flow Statistics Disclaimers [Low Flow Region 4]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.00117	ft^3/s
30 Day 2 Year Low Flow	0.00255	ft^3/s
7 Day 10 Year Low Flow	0.000272	ft^3/s
30 Day 10 Year Low Flow	0.000708	ft^3/s
90 Day 10 Year Low Flow	0.00162	ft^3/s

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 E:

Federal Effluent Limitation Guidelines in 40 CFR § 423.12

PART 423—STEAM ELECTRIC POWER GENERATING POINT SOURCE CATEGORY

§423.12 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

(a) In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, utilization of facilities, raw materials, manufacturing processes, non-water quality environmental impacts, control and treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES Permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations. The phrase "other such factors" appearing above may include significant cost differentials. In no event may a discharger's impact on receiving water quality be considered as a factor under this paragraph.

(b) Any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction by the application of the best practicable control technology currently available (BPT):

(11) The quantity of pollutants discharged in FGD wastewater, flue gas mercury control wastewater, combustion residual leachate, or gasification wastewater shall not exceed the quantity determined by multiplying the flow of the applicable wastewater times the concentration listed in the following table:

Pollutant or pollutant property	BPT Effluent limitations	
	Maximum for any 1 day (mg/l)	Average of daily values for 30 consecutive days shall not exceed (mg/l)
TSS	100.0	30.0
Oil and grease	20.0	15.0

(12) At the permitting authority's discretion, the quantity of pollutant allowed to be discharged may be expressed as a concentration limitation instead of the mass-based limitations specified in paragraphs (b)(3) through (b)(7), and (b)(11), of this section. Concentration limitations shall be those concentrations specified in this section.