Module 8: Hydrology
[§§77.405-407, 77.457, 77.521]

8.1 Chemical Analysis.

Provide the following data, in accordance with 8.2 for each point in the background sampling and monitoring program and report on Module 8.1(A) (separate form).

See the attached 8.1(A) sample data sheets for samples collected within 1,000 feet of the proposed site.

a) pH (field & laboratory)

b) Total Suspended Solids (mg/l)

c) Total Dissolved Solids (mg/l) <u>or</u> Specific Conductance ($\mu S/_{cm}$ at 25°C)

d) Field temperature at sample source (°C).

e) Provide the following in addition to a) through d) above, if requested by the Department. *

Total Alkalinity (mg/l)
Total Acidity (mg/l)
Total Iron (Fe) (mg/l)
Total Manganese (Mn) (mg/l)
Sulfates ($S0_4$) (mg/l)

***If the proposed noncoal minerals to be mined are located within the coal fields or other known acid producing areas or a watershed sensitive to mining impacts, additional parameters may be required by the Department. Contact the appropriate District Mining Office prior to beginning sampling to determine if these parameters are needed.**

f) Flows of perennial streams above and below the operation and surface and underground mine discharges must be measured by approved methods. In addition, other flows from springs, streams, seeps or other discharge points in the representative monitoring program should be measured to reflect seasonal variations. (The Department may waive sampling points if there is a representative sampling of the requested points.) The elevations and flows of springs, seeps, and mine discharges are required.

Flows were determined at the time of field sampling. This included the streams, springs, and other field samples. See the attached 8.1A data sheets included.

Flow measurements are made using either portable volume equipment (various containers, small pipes, timer), or weir, at the sample point. However, when this is not possible (wide channels, large flow, etc.), the cross-sectional area of the flow area is measured, the velocity is measured with a floating object over a given distance, and the following formula is used to calculate the volume: Flow = Cross-section x Peak Velocity = CFS x 7.48 gal/cu. Ft. x 60 sec./min. x 85% = Flow in GPM. The 85% coefficient is used to account for drag along the bottom and sides of a stream while calculating peak velocity. Reference is made to the Isco Open Channel Flow Measurement Handbook. See the 8.1A's data sheets included with this module for specific point data.

g) Provide a description of the type of sample point (e.g. well, spring, etc.) and its relationship to the mine site (e.g. up-gradient, perched aquifer, down-gradient).

See the attached 8.1A data sheets included.

h) Provide the name(s), address(es) and telephone number(s) of the individual(s) responsible for the collection and analysis of this data.

Current water collection:
Earthtech, Inc.
966 Pleasant Hill Road
Somerset, PA 15501
Phone: 814- 266-6402
Collection: Trained field technicians indicated on 8.1(A) data sheets

Current lab analysis:
Geochemical Testing
2005 N. Center Ave.
Somerset, PA 15501
Phone: 814-443-1671
Analysis: Sue Clay

i) Provide a description of the methodology used to collect and analyze this data.

1. The sample point is located in the field.
2. The map is marked with the sample location, and GPS recorded.
3. The sample point location is marked in the field.
4. An undisturbed sample is collected in a non-reusable container.
5. The flow rate, temperature, field pH, and the sample date are recorded.
6. The container is labeled and then the samples are taken to the lab for analysis.
7. The 8.1A data sheet is prepared from the field and lab data.

8.2 Background Sampling and Monitoring.

a) Background Sampling

Provide the results of the chemical analyses, as required by the Department, that characterize the water quality of sample points listed in 1) through 8). Background sampling points must have at least two (2) complete chemical analyses, at monthly intervals. All sampling points must be keyed to Exhibit 6.2 and identified in Module 8.1(A).

Note: ***Include sample(s) from a low flow period.***

1) each stream that receives discharge, runoff or drainage from the operation.

See the Exhibit 6.2 Map for sample point locations and the corresponding Module 8.1(A) data sheets.

2) streams, springs or wetlands that are representative of the surface and groundwater system of the general area.

See the Exhibit 6.2 Map for sample point locations and the corresponding Module 8.1(A) data sheets.

3) springs, seeps and wetlands within the permit area and springs, seeps and wetlands within 1000 feet of the permit area.

See the Exhibit 6.2 Map for sample point locations and the corresponding Module 8.1(A) data sheets.

4) impoundments within the permit area and impoundments within 1000 feet of the permit area.

See the Exhibit 6.2 Map for sample point locations and the corresponding Module 8.1(A) data sheets.

5) impoundments, impoundment discharges, and discharges from backfilled areas associated with previous or current underground or surface coal mines within the permit area and within 1000 feet of the permit area.

See the Exhibit 6.2 Map for sample point locations and the corresponding Module 8.1(A) data sheets.

6) **discharges within the permit area resulting from underground mines and discharges resulting from underground mines that are within the permit area but discharge outside the permit area.**

See the Exhibit 6.2 Map for sample point locations and the corresponding Module 8.1(A) data sheets.

7) **any monitoring wells developed to determine the characteristics of the groundwater. (The Department may require additional monitoring wells.)**

N/A – See provided discussion in Module 8.2b)

8) **private water supplies and water supplies abandoned because of degradation or pollution from mining, within the permit area and within 1000 feet of the permit area. For each water supply sampled, provide the data required on the Private Water Supply Information Exhibit 8.2(A)(8) and indicate the source of the information (e.g. owner interview, survey by operator, P.E. etc.). (Provide driller logs if available.) (The Department may require additional water supply information on a case-by-case basis.)**

Inventoried private water supplies within 1000-feet are identified on the Exhibit 6.2 Map and documented on the 8.2(A)(8) chart and in section 8.7 of this module.

b) **Monitoring Program**

Describe the proposed surface and groundwater monitoring plan that will be conducted. The monitoring plan shall include quantity and quality measurements of discharges from the operation; points that will show any effect of the discharge on the receiving stream; and points that will show any effect on the groundwater system. Unless otherwise approved by the District Mining Office prior to permit application submittal, monitoring points must have a minimum series of six (6) complete chemical analyses collected at monthly intervals and should include the month of August, September or October to reflect low flow conditions. A minimum of six (6) monthly samples should be submitted with the application and any additional samples while the application is in process.

All monitoring points must be keyed to Exhibit 6.2. Monitoring plans must provide for collection and monitoring on a quarterly basis unless otherwise specified by the Department. All monitoring data must be compiled on Module 8.1(A) or equivalent facsimile. All monitoring points should be identified in the field with durable markers that can be maintained (wooden stakes, metal or plastic tags, etc.; not just plastic flagging).

The following monitoring program is proposed for the Rockwood site.

The following monitoring locations should be included in the monitoring program:

		Monitoring Points (Key to Exhibit 6.2)
1)	receiving streams above proposed discharge points	1, 8
2)	receiving streams below proposed discharge points	9, 11
3)	abandoned underground or surface mine discharges that are hydrologically connected and may be impacted by the proposed mining	N/A
4)	representative springs and seeps within the permit area and within 1000 feet of the permit area	14, 20
5)	representative wetlands with **defined discharge points** within the permit area and wetlands within 1000 feet of the permit area that may be impacted by the proposed mining,	N/A
6)	water supplies	20 (see 8.7a)
7)	cased boreholes/piezometers	N/A

8)	point source discharges	N/A
9)	treatment pond discharges	N/A
10)	sedimentation pond discharges	001, 002
11)	pit water during active mining (identify by mineral being mined)	N/A
12)	each monitoring well developed to determine the characteristics of the groundwater	N/A

Note: In cases where cased boreholes/piezometers or monitoring wells are not necessary, insert NA above and provide an explanation.

Intercepting or influencing major groundwater aquifers is not anticipated therefore piezometers and/or monitoring wells are not proposed. Pumping of groundwater is not proposed therefore significantly altering the groundwater aquifer volume is not anticipated. See Module 8.3 Characterization of Ground Water.

8.2(A)(8) PRIVATE WATER SUPPLY INFORMATION (key to Module 6.2)

Sample Point No	Owner	Type of Supply (Dug or Drilled Well, Spring)	Use	Surface Elevation (MSL)	Depth of Casing	Diameter of Well	Static Water Elevation (MSL) or Flow, Date of Measurement	Depth of Well	Type of Treatment If Any (iron filter, etc.)
17	On The Trail, LLC	Drilled Well	Domestic	1934'	40'	6"	1892' 41.60' (Measured 8-19-24)	160'	None
18	Robert & Barbara Trout	Drilled Well	Domestic	1896'	Unknown	6"	N/A	50'	Salt & Filter
19	Greg Pavlosky	Drilled Well	Domestic	1914'	Unknown	6"	1799' 114.56' (Measured 8-19-24)	275'	None
23	James & Debra Mallory	Spring	Domestic	1892'	N/A	N/A	Tap	N/A	None

See Module 8.7 for additional information regarding water supplies within 1,000' of the proposed site.

8.3 Characterization of Groundwater [§§ 77.405, 77.457 and 77.521]

Characterize the existing hydrologic balance of the permit and general areas. Cite all references and sources of information.

a) Identify all aquifers above the lowest mineral to be mined and the first aquifer below the lowest mineral to be mined. Include stratigraphic units, depths, and current use. Discuss the general uses of these aquifers in the area and known quality or quantity issues with these aquifers in relation to their uses.

The sandstone proposed for mining is located in a hilltop area where recharge to potential perched aquifers is limited. During field reconnaissance, no noticeably significant perched aquifers were evident as is supported by the lack of springs, seeps, and heads of tributaries. It is of note that the Freeport Sandstone unit is located near the surface with little to no overlying strata, therefore the potential for any perched aquifer above it would be minor and of limited extent. This setting is the same for the sandstone itself as no significant aquifers are evident in this rock unit. Additionally, no noticeable water was encountered during drilling of the Freeport Sandstone.

The first aquifer of significance is located approximately 30-45' below the base of the Freeport Sandstone, at an approximate elevation range of 1940'-1950'. Stratigraphy below the Freeport Sandstone consisting of claystone, shale, etc. of the Upper Kittanning Coal horizon act as confining layers to separate this aquifer from the sandstone proposed for mining. This aquifer is characterized by springs found in the Kittanning Formation, and is represented by sample points 20, 21, 22, in addition to two springs located on the Joe Metzgar property represented by points 14 and 15. Sample points 20-22 were dipped from spring boxes with no significant flow or overflow coming from these locations during background sampling. The spring zone represented by these points has a water quality that is near neutral with a pH range of 5.2 to 6.9, and low iron ranging from <0.05 to 1.03 mg/l, manganese ranging from 0.01 to 0.09 mg/l, and aluminum ranging from <0.1 to 0.1 mg/l. Points 20-22 all have spring houses at their headwaters, however based on field data, property owner information, and utilizing historic photos, only point 20 is currently used as a water supply for the Mallory property. This water supply was also sampled at the residence and is represented by sample point 23. See Module 8.7a) for additional information regarding the private water supplies.

Sample points 14 and 15 represent springs on property 2 on the Exhibit 6.2 Map. Like the springs described above, these also originate at the same approximate depth below the base of the Freeport Sandstone. These springs have a pH range of 5.8 to 6.3, are near neutral to slightly acidic, with iron ranging from <0.05 to 0.41 mg/l, manganese ranging from <0.01 to 0.11 mg/l, and aluminum values <0.1 mg/l. During background sampling both locations showed typical quantity fluctuation during wet and dry months, and had low flows ranging from dry to 39 GPM showing that this aquifer is not a significant or reliable groundwater source. This is substantiated by the use of water supply wells at multiple properties instead of the springs. Water quantity of this aquifer, or lack thereof, may be influenced by piracy of water into the abandoned Lower Kittanning deep mine found roughly 110' below the base of the Freeport Sandstone. Encountering this aquifer during mining is not proposed to occur.

Deeper aquifers below the site are represented by private water supply wells such as sample points 17-19. There are no known quantity or quality issues from these points based on property owner information. Encountering these aquifers during mining is not proposed to occur based on the well depths that are significantly deeper than the base of the Freeport Sandstone proposed for mining. See Module 8.2(A)(8) and 8.7a) for additional information regarding these water supplies.

Reference is made to the Exhibit 6.2 Map, the Module 7.1a) Geologic Column, the Module 7.1c) Geologic Cross-sections and attachments, and the Module 8.1(A) data sheets.

b) Describe the groundwater movement and the conditions that control and influence the groundwater system. Include the influence on quantity and quality from underground mines, industrial or municipal effects, fracture zones, faults, karst features and cave systems. Provide a groundwater contour map, if suitable.

There are no significant groundwater aquifers above or within the Freeport Sandstone. Groundwater movement within intermediate aquifers below the proposed mining area is primarily structurally controlled as is evident by the springs, seeps, etc. found to the northwest and downdip area of the topography. Stratigraphy below the Freeport Sandstone consisting of claystone, shale, etc. of the Upper Kittanning Coal horizon act as confining layers to separate lower aquifers from the sandstone proposed for mining. Additionally, the intermediate groundwater flow system is influenced by the abandoned Lower Kittanning coal seam deep mine complex. The proposed Rockwood Quarry surface mine is underlain by previous mine workings on the Lower Kittanning Coal seam, which has influenced the movement and control of groundwater over the general area. These previous mine workings (shown on the Exhibit 6.2 Map) have helped to dewater localized recharge zones and aquifers above the mine as is evident by the lack of significant springs and/or tributaries. This can be a result of piracy of water into the abandoned deep mine complex on the Lower Kittanning Coal seam. Note the proposed Rockwood Quarry surface mining will not encounter the abandoned deep mine complex.

Mine discharges represented by points 3 and 4 and the Lower Kittanning Coal seam crop seeps represented by sample point 16 are indicative of groundwater controlled by the deep mine complex. Sample point 3 is a representative example of the influence from underground mines on the quality of groundwater. This discharge flows into the Casselman River and exhibits a water quality typically associated with underground coal mine discharges. The water quality can be summarized as net acidic with a pH of 3.1 to 3.5, elevated metals (iron 1.62 to 12.5 mg/l, manganese 0.28 to 0.77 mg/l, aluminum 6.4 to 22.3 mg/l) and sulfates of approximately 179 to 329 mg/l. Mining of the Freeport Sandstone will not encounter the abandoned deep mine or this discharge.

There are no known faults, caves, or karst features mapped or identified within the area.

c) Identify the effects any current or previous mining (including previous mining at this site) has had on the quantity and quality of the groundwater in the area, including impacts from diminution, increased turbidity, suspended solids or settleable solids. Include description of the source, rock unit involved and the reasons for the effect.

As stated above, the presence of the Lower Kittanning Coal seam deep mine workings influences the intermediate flow system by capturing groundwater associated with higher stratigraphic units through subsidence induced fracturing allowing for downward migration. This has greatly reduced the quantity of groundwater within the system and helps to explain the limited groundwater discharge points and associated flow rates located during field reconnaissance. This water discharges at mine discharges 3 and 4 and Lower Kittanning coal seam crop seep 16. The elevated metal concentrations reflect the existing water quality.

8.4 Characterization of Surface Water [§§ 77.406 77.457 and 77.521]

a) Identify each stream receiving drainage from the proposed operation and the 25 Pa Code Chapter 93 projected water use classification.

Stream	***Classification***
Unnamed Tributaries to Rhoades Creek and Rhoades Creek to	WWF
Casselman River	WWF
-and-	
Unnamed Tributaries to Casselman River	WWF

b) Identify the effects which current or previous mining (including previous mining at this site) has had on the quantity and quality of the surface waters in this area, including impacts from increased turbidity, suspended solids or settleable solids. Include the source, rock unit involved, and reasons for the effect.

Previous mining in the area consists of deep mining of the Lower Kittanning Coal seam approximately 110' below the Freeport Sandstone. Representative downdip discharges from the mine and the Lower Kittanning Coal crop such as sampling points 3, 4, and 16 contribute flow to the Casselman River. Water quality of these sample locations reveal the water to have a pH range of 3.0-3.6, net acidity, elevated metals specifically aluminum with an average of 15.3 mg/l and elevated sulfates with an average of 246 mg/l. Although this water is of poor-quality, the overall effects to the Casselman River water quality are unnoticeable. The Casselman River is represented by sample points 1 and 11 with a pH range of 5.0 to 7.9, net alkaline, iron of <0.05 1.8 mg/l, manganese range of 0.03 to 0.29 mg/l, aluminum range of <0.1 to 0.5 mg/l, and sulfates ranging from 60 to 417 mg/l at both the upstream and downstream sample point locations. Similarly, the water quality of Rhoades Creek shows no noticeable impacts from previous mining. Rhoades Creek is represented by sample points 8 and 9 with a pH range of 6.8 to 7.9, net alkaline, iron range of <0.05 to 0.95 mg/l, manganese range of 0.01 to 0.18 mg/l, aluminum range of <0.1 to 0.29 mg/l, and sulfates ranging from 6 to 31mg/l at both the upstream and downstream sample point locations.

A small non-coal surface mine permit is located at site however it was never activated therefore there are no associated impacts to surface waters due to this mining permit. See the area identified as A on the Exhibit 6.2 Map.

c) Identify any current or previous land uses that may have significant impacts on surface water quantity and quality.

No current or previous land uses at this proposed site have had noticeable impacts on the surface water quantity and quality. The Casselman River and Rhoades Creek water quality is representative of the overall area near the proposed site. Background water sampling of these streams shows no significantly noticeable impacts from the surrounding land uses. Water quality results indicate these streams to be net alkaline with a pH range of 5.0-8.4, trace to low metals, sulfates ranging from ~30 to 400 mg/l, and low suspended solids. See the Module 8.1(A) data sheets for the water quality results.

8.5 Public Water Supply Information.

Provide the name, type, and location of all current public (community and non-community) surface water supplies that have intakes on the receiving stream within 10 miles downstream of the proposed permit area; public (community and non-community) water supplies (wells or springs) in or within one half mile of the proposed permit area; and public water supply wells for which any part of the permit area is within the Wellhead Protection Zone. Show the location of these supplies on Exhibit 6.1 or 6.2.

There are no known public water supply surface water intakes within 10 miles downstream of the proposed Rockwood Quarry and there are no known public water supply wells or springs within ½ mile of the proposed permit area.

8.6 Hydrologic Impact Assessment [§ 77.457 and 77.521]

a) Describe the groundwater hydrology in relation to the proposed mining operation (at maximum depth and lateral development) - i.e. - intercept regional water table, above regional water table, intercept perched water table, etc. State if and when groundwater will be intercepted (e.g., mining below the water table, installation of a production well for support or processing facilities). Include the depth to groundwater and the water table conditions present (artesian, regional, perched, etc.), the relationship to the mineral to be mined.

The Freeport Sandstone proposed for mining is located in a hilltop area where recharge to potential perched aquifers is limited. No significant perched aquifers above the stone were evident, as is supported by the lack of springs, seeps, and heads of tributaries. It is of note that the Freeport Sandstone unit is located near the surface with little to no overlying strata, therefore the potential for any perched aquifer above would be minor and of limited extent. This setting is the same for the Freeport Sandstone itself as no significant aquifers are evident in this rock unit. Additionally, no noticeable water was encountered during drilling of the Freeport Sandstone. Based on this information, encountering perched aquifers within the mining area is not anticipated.

Stratigraphy below the Freeport Sandstone consisting of claystone, shale, etc. of the Upper Kittanning Coal horizon act as confining layers to separate lower aquifers from the sandstone proposed for mining. The underlying intermediate aquifer associated with the Kittanning Formation and adjoining units is structurally controlled, as is evidenced by the down-dip locations of representative sample points 14, 15, and 20-22. This aquifer will not be encountered during the mining process. Additionally, water associated with the abandoned Lower Kittanning Coal seam deep mine and the underlying regional aquifers associated with the lower Allegheny Formation and Pottsville Formation will not be encountered. No production wells for support or processing facilities are proposed.

b) Describe the probable hydrologic consequences of the proposed mining activities on the hydrologic system of the permit area and adjacent area both during the stages of and after the conclusion of operations. Describe the impact, during and after mining, on existing quantity and quality of the surface and groundwater as described in Sections 8.3 and 8.4.

The permit area has been investigated as outlined in this module, with the particular areas proposed for mining being based on site-specific geologic and hydrologic data. This investigative data includes, but is not limited to: field water sampling, water supply interviews and related yield data, aquifer elevations and chemistries, on-site and adjacent drill data and overburden analyses, stream flow information, spring locations, and prior mining history and hydrologic results. Consequently, probable hydrologic consequences can be predicted.

Long-term negative effects on the hydrologic system of the permit area and adjacent area due to the surface mining of the Freeport Sandstone are not anticipated. No significant amount of groundwater is expected to be encountered during the mining operation. As discussed in Section 8.3, there are no significant aquifers above or within the Freeport Sandstone as is evident by the lack of springs, seeps, tributary heads, etc. Additionally, no noticeable water was encountered during drilling of the Freeport Sandstone.

The erosion and sedimentation control facilities, as well as the mining plan, have been developed to ensure that no adverse effects occur to the hydrologic system. Sedimentation ponds will be utilized to control erosion, and a clarification pond will be utilized to control any water associated with the actual mining area. See Module 10 for the proposed mining plan. Additionally, no significant amount of potentially acidic material will be encountered by mining the Freeport Sandstone. As a "best mining practice" alkaline material will be added to allow for alkaline backfill and post mining conditions.

No known private water supplies originate within the proposed mining area. Three wells inventoried for this operation were all found to have collar elevations below the sandstone unit proposed for mining. These surface elevations indicate that the source aquifers for the wells are located stratigraphically below the unit being mined. Based on this information and their distance from the mining area, no affects to the private water supply wells are anticipated. The private water supply spring identified as point 23 also originates from an aquifer below the proposed sandstone to be mined with the source represented by point 20. This spring is located at such a distance from the proposed mining area that undesirable impacts are not anticipated to occur. See Module 8.2(A)(8) and 8.7a) for more information regarding the private water supply inventory.

c) Is pumping of groundwater planned within the life of the operation. ☐ **Yes** ☒ **No.**

If yes, indicate the estimated gallons/day to be pumped for each stage of mining. Submit a science-based estimate of the zone of influence for each proposed stage of the operation. This may require a groundwater model to be developed using existing aquifer data as well as collecting new data, tracer tests or fracture trace analysis. Provide all documentation for the modeling. Use of groundwater modeling may be required to support the discussion of potential effects of groundwater withdrawal if the withdrawal has the potential to adversely impact water supplies, wetlands and other water resources and their affiliated uses, or if the withdrawal has the potential to cause or exacerbate sinkhole formation (See section 8.7). (Key groundwater elevations to cross-sections in 7.1 (c).)

Pumping of groundwater is not planned for this operation. Encountering significant groundwater aquifers is not anticipated. See Module 10 for the operational plan details.

NOTE: Operations in karst geology areas may be required to complete the *Karst Permitting Supplement* (5600-PM-BMP0456) in addition to supplying this information.

8.7. Water Supply Replacement [§§ 77.407 and 77.533]

a) Identify water supply sources that may be contaminated, diminished or interrupted by the mining operation and the means to restore or replace the affected supply. Include a demonstration that the quantity of the water supply will be sufficient to meet the needs of the water supply use. Note why other water supplies will not be affected.

There are four residences with private water supplies located within 1000' of the proposed surface mine permit. A summary of each private water supply that was inventoried is as follows. Note that all samples were collected pre-treatment when applicable unless otherwise noted. See the Exhibit 6.2 Map for the sample point locations and the Module 8.1A's for water sample results.

Sample Point 17

Sample point 17 is a drilled well located on the On the Trail, LLC property (2) owned by Joesph Metzgar as shown on the Exhibit 6.2 Map. Mr. Metzgar indicated during the inventory conducted on August 19, 2024 that the well is of domestic use and that treatment is not utilized. The well is located at an approximate surface elevation of 1934' and finished to a reported depth of 160-feet (1774' elevation). This well is located approximately 870-feet from the proposed mining and has a collar elevation approximately 30-feet below the base of the Freeport Sandstone. Due to the topography and geology of the site, this well was not drilled within the sandstone proposed for mining. Based on the horizontal distance and the data indicating the source aquifer for this well is below the Freeport Sandstone, no affects are anticipated to occur due to the proposed mining.

Sample Point 18

Sample point 18 is a drilled well located on the Trout property (13) as shown on the Exhibit 6.2 Map. Mr. Trout indicated during the inventory conducted on August 19, 2024 that the well is of domestic use and utilizes a salt and filter system as treatment. The well is located at an approximate surface elevation of 1896' and finished to a reported depth of 50-feet (1846' elevation). This well is located approximately 650-feet from the proposed mining and has a collar elevation approximately 80-feet below the base of the Freeport Sandstone. Due to the topography and geology of the site, this well was not drilled within the sandstone proposed for mining. Based on the horizontal distance and the data indicating the source aquifer for this well is below the Freeport Sandstone, no affects are anticipated to occur due to the proposed mining.

Sample Point 19

Sample point 19 is a drilled well located on the Pavlosky property (14) as shown on the Exhibit 6.2 Map. Mr. Pavlosky indicated during the inventory conducted on August 19, 2024 that the well is of domestic use and that treatment is not utilized. The well is located at an approximate surface elevation of 1914' and finished to a reported depth of 275-feet (1639' elevation). This well is located approximately 560-feet from the proposed mining and has a collar elevation approximately 70-feet below the base of the Freeport Sandstone. Due to the topography and geology of the site, this well was not drilled within the sandstone proposed for mining. Based on the horizontal distance and the data indicating the source aquifer for this well is below the Freeport Sandstone, no affects are anticipated to occur due to the proposed mining.

Sample Point 23 (Source point 20)

Sample point 23 is a spring located on the Mallory property (38) as shown on the Exhibit 6.2 Map. Mrs. Mallory indicated during the inventory conducted on August 19, 2024 that the spring is of domestic use and no treatment is utilized. The owner indicated that they are unsure as to the exact source location however, based on field data, property owner information, and utilizing historic photos, the spring at sample point 20 is the likely origin. The headwaters of this spring zone, and therefore the source aquifer, is located below the Freeport Sandstone. As previously stated, this aquifer is separated from the sandstone proposed for mining by confining layers of the Upper Kittanning Coal horizon. Although the spring is located adjacent to the permit, the proposed mining area is at an approximate distance of 550-feet. Based on this information, no affects are anticipated to occur to the source of this water supply. It is of note that during the water supply inventory the property owner indicated that they also have a well on the property that is not being utilized.

b) **Provide a specific capacity, step-drawdown, or other approved yield test for all water supplies that may be impacted by mining and for each proposed replacement supply source. Yield tests on other wells are at the discretion of the applicant or as requested by the Department. Provide specific capacity data on Module 8.6(A). Please refer to the guidance document, "Procedures for Establishing the Quantity of Water in Low-Yield Wells" (TGD # 563-2112-606) for methods.**

N/A

c) **Provide the existing operation and maintenance costs for each water supply that may be contaminated, diminished or interrupted by the mining operation and the projected operation and maintenance costs for the proposed replacement supply.**

N/A

d) **If the operation and maintenance costs for the proposed replacement water supply will be more than for the existing water supply, identify the provisions for compensating the water supply owner for the increased costs or provide the consent to Lesser Water Supply Agreement Form 5600-FM-BMP0110 for the increased operation/maintenance costs.**

N/A

Rockwood Stone, LLC

Affidavit To: Commonwealth of Pennsylvania
Department of Environmental Protection
Cambria District Mining Office
286 Industrial Park Road
Ebensburg, PA 15931

RE: Affidavit of acknowledgment to the review of the 8.1(A)'s submitted for Rockwood Stone, LLC Rockwood Quarry non-coal mining permit application in Black Township, Somerset County.

Ladies and Gentlemen:

I certify under penalty of law that I have personally examined and am familiar with the information submitted on the "Module 8.1(A)" background/monitoring reports submitted in this application and listed below, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. The attached water sample data was collected and analyzed between July 10, 2024 and the date of this affidavit.

Respectfully submitted,

1-29-25

Signature of Permittee or Responsible Official **Date**

Spencer Svonavec

State of Pennsylvania

County of Somerset

Sworn and Subscribed to Before Me This 29th Day of January, 2025.

Notary Public Heather L Leydig

My Commission Expires 03-04-2026

Commonwealth of Pennsylvania - Notary Seal
Heather L. Leydig, Notary Public
Fayette County
My commission expires March 4, 2026
Commission number 1254652
Member, Pennsylvania Association of Notaries

5600-PM-BMP0315-8 Rev. 1/2014

Module 8.1(A)

[ ] BACKGROUND or [X] MONITORING REPORT*

(check appropriate block)

Operator: Rockwood Stone, LLC
Operation Name: Rockwood Quarry
Permit No:
Township: Black
County: Somerset

Monitoring Point I.D.: 1
Latitude: 39° 54' 20" N and
Longitude: 79° 08' 33" W
Surface Elevation (MSL): 1810'

Description of Sample Point**: Casselman River - Upstream

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
7/10/2024		TLTG	7.3	5.00	2	248	24	<10	17	<0.05	0.07	<0.1	367		Geochemical Testing - AS/JE
8/19/2024		TLTG	6.7	7.79	<2	742	20	53	-38	<0.05	0.04	<0.1	344		Geochemical Testing - AS/JE
9/24/2024		TLTG	9.2	7.80	<2	909	17	58	-44	<0.05	0.03	<0.1	413		Geochemical Testing - AS/JE
10/30/2024		TLTG	8.0	7.87	<2	745	10	57	-42	<0.05	0.03	<0.1	316		Geochemical Testing - JE
11/25/2024		TLTG	7.7	7.42	14	282	5	29	-13	1.18	0.29	0.5	62		Geochemical Testing - JE
12/26/2024		TLTG	7.9	7.48	3	276	2	30	-10	0.32	0.18	0.1	66		Geochemical Testing - JE

Signature of Permittee or Responsible Official or Authorized Representative

Date

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
XS = Cross Section
VC = Volumetric Container
EST = Estimate

Module 8.1(A)

[X] BACKGROUND or [ ] MONITORING REPORT*

(check appropriate block)

Operator: Rockwood Stone, LLC
Operation Name: Rockwood Quarry
Permit No:
Township: Black
County: Somerset

Monitoring Point I.D.: 2
Latitude: 39° 54' 23" N and
Longitude: 79° 08' 38" W
Surface Elevation (MSL): 1845'

Description of Sample Point**: Spring, from 1.5" iron pipe

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
7/10/2024	VC	0.2	7.3	6.43	<2	63	19	12	8	<0.05	<0.01	<0.1	12		Geochemical Testing - AS/JE
8/19/2024	VC	0.2	6.5	6.32	<2	63	16	11	4	<0.05	<0.01	<0.1	14		Geochemical Testing - AS/JE
9/24/2024	VC	0.1	8.9	6.44	<2	63	11	12	3	<0.05	<0.01	<0.1	13		Geochemical Testing - AS/JE

Signature of Permittee or Responsible Official or Authorized Representative

Date

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
XS = Cross Section
VC = Volumetric Container
EST = Estimate

Module 8.1(A)

[X] BACKGROUND or [ ] MONITORING REPORT*

(check appropriate block)

Operator: Rockwood Stone, LLC
Operation Name: Rockwood Quarry
Permit No:
Township: Black
County: Somerset

Monitoring Point I.D.: 3
Latitude: 39° 54' 41" N and
Longitude: 79° 09' 04" W
Surface Elevation (MSL): 1868'

Description of Sample Point**: Mine Discharge

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
7/10/2024	XS	209	4.5	3.52	14	469	14	<10	87	1.62	0.28	11.0	179		Geochemical Testing - AS/JE
8/19/2024	DIP	--	4.3	3.58	11	458	16	<10	84	12.5	0.47	6.4	184		Geochemical Testing - AS/JE
9/24/2024	EST	<1	7.3	3.31	16	541	15	<10	91	12.1	0.77	7.6	181		Geochemical Testing - AS/JE

Signature of Permittee or Responsible Official or Authorized Representative

Date

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
XS = Cross Section
VC = Volumetric Container
EST = Estimate

Module 8.1(A)

[X] BACKGROUND or [ ] MONITORING REPORT*

(check appropriate block)

Operator: Rockwood Stone, LLC
Operation Name: Rockwood Quarry
Permit No:
Township: Black
County: Somerset

Monitoring Point I.D.: 4
Latitude: 39° 54' 43" N and
Longitude: 79° 09' 14" W
Surface Elevation (MSL): 1836'

Description of Sample Point**: Mine Discharge

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
7/10/2024	XS	75	3.7	3.10	<2	769	12	<10	150	3.30	0.32	17.4	200		Geochemical Testing - AS/JE
8/19/2024	XS	49	3.6	3.04	<2	836	8	<10	170	4.74	0.39	20.2	305		Geochemical Testing - AS/JE
9/24/2024	XS	87	5.3	3.00	<2	883	9	<10	200	5.04	0.42	22.3	329		Geochemical Testing - AS/JE

Signature of Permittee or Responsible Official or Authorized Representative

Date

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
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Module 8.1(A)

[X] BACKGROUND or [ ] MONITORING REPORT*

(check appropriate block)

Operator: Rockwood Stone, LLC
Operation Name: Rockwood Quarry
Permit No:
Township: Black
County: Somerset

Monitoring Point I.D.: 5
Latitude: 39° 54' 42" N and
Longitude: 79° 09' 22" W
Surface Elevation (MSL): 1854'

Description of Sample Point**: Collection of springs, coming off bank

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
7/10/2024	VC	0.3	5.8	7.00	12	45	21	15	7	0.23	0.02	0.1	<5		Geochemical Testing - AS/JE
8/19/2024	EST	2	5.4	7.16	10	52	17	18	-2	0.20	0.02	0.1	7		Geochemical Testing - AS/JE
9/24/2024	EST	<1	6.6	6.75	<2	91	14	12	4	<0.05	0.02	<0.1	20		Geochemical Testing - AS/JE

Signature of Permittee or Responsible Official or Authorized Representative

Date

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
XS = Cross Section
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EST = Estimate

Module 8.1(A)

[X] BACKGROUND or [ ] MONITORING REPORT*

(check appropriate block)

Operator: Rockwood Stone, LLC
Operation Name: Rockwood Quarry
Permit No:
Township: Black
County: Somerset

Monitoring Point I.D.: 6
Latitude: 39° 54' 11" N and
Longitude: 79° 09' 14" W
Surface Elevation (MSL): 2016'

Description of Sample Point**: Seep/Spring, iron staining

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
7/10/2024	EST	3	6.8	6.80	11	95	11	38	-12	8.11	0.38	<0.1	9		Geochemical Testing - AS/JE
8/19/2024	EST	3	7.4	6.78	6	92	10	37	-17	8.43	0.40	<0.1	10		Geochemical Testing - AS/JE
9/24/2024	EST	3	8.0	6.66	10	86	10	34	-14	8.14	0.38	<0.1	14		Geochemical Testing - AS/JE

Signature of Permittee or Responsible Official or Authorized Representative

Date

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
XS = Cross Section
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Module 8.1(A)

[X] BACKGROUND or [ ] MONITORING REPORT*

(check appropriate block)

Operator: Rockwood Stone, LLC
Operation Name: Rockwood Quarry
Permit No:
Township: Black
County: Somerset

Monitoring Point I.D.: 7
Latitude: 39° 54' 11" N and
Longitude: 79° 09' 13" W
Surface Elevation (MSL): 2020'

Description of Sample Point**: Spring

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
7/10/2024	EST	2	7.2	7.14	7	51	17	18	3	0.16	<0.01	<0.1	5		Geochemical Testing - AS/JE
8/19/2024	EST	1.5	7.5	7.20	5	54	13	21	-2	0.37	0.03	0.1	10		Geochemical Testing - AS/JE
9/24/2024	EST	2	8.2	7.25	<2	59	15	20	-6	<0.05	<0.01	<0.1	7		Geochemical Testing - AS/JE

Signature of Permittee or Responsible Official or Authorized Representative

Date

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
XS = Cross Section
VC = Volumetric Container
EST = Estimate

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Module 8.1(A)

[ ] BACKGROUND or [X] MONITORING REPORT*

(check appropriate block)

Operator: Rockwood Stone, LLC
Operation Name: Rockwood Quarry
Permit No:
Township: Black
County: Somerset

Monitoring Point I.D.: 8
Latitude: 39° 53' 59" N and
Longitude: 79° 09' 16" W
Surface Elevation (MSL): 2028'

Description of Sample Point**: Rhoades Run - Upstream

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
7/10/2024	XS	752	7.3	7.27	8	95	23	24	-4	0.95	0.18	0.2	7		Geochemical Testing - AS/JE
8/19/2024	XS	692	7.6	7.29	5	109	17	28	-10	0.59	0.09	<0.1	22		Geochemical Testing - AS/JE
9/24/2024	XS	609	8.0	7.28	<2	106	16	30	-17	0.50	0.05	<0.1	6		Geochemical Testing - AS/JE
10/30/2024	XS	128	6.8	7.37	<2	122	11	28	-24	0.35	0.03	<0.1	10		Geochemical Testing - JE
11/25/2024	XS	3107	7.0	6.83	4	181	5	15	5	0.22	0.06	0.1	24		Geochemical Testing - JE
12/26/2024	XS	2500	6.7	7.04	<2	125	2	14	8	0.13	0.04	<0.1	18		Geochemical Testing - JE

Signature of Permittee or Responsible Official or Authorized Representative

Date

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
XS = Cross Section
VC = Volumetric Container
EST = Estimate

Module 8.1(A)

[ ] BACKGROUND or [X] MONITORING REPORT*

(check appropriate block)

Operator: Rockwood Stone, LLC
Operation Name: Rockwood Quarry
Permit No:
Township: Black
County: Somerset

Monitoring Point I.D.: 9
Latitude: 39° 54' 39" N and
Longitude: 79° 09' 36" W
Surface Elevation (MSL): 1807'

Description of Sample Point**: Rhoades Run - Downstream

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
7/10/2024	XS	1968	8.1	7.95	8	227	21	67	-50	0.18	0.05	<0.1	18		Geochemical Testing - AS/JE
8/19/2024	XS	1953	7.3	7.82	8	201	16	59	-34	0.22	0.05	0.1	31		Geochemical Testing - AS/JE
9/24/2024	XS	1328	7.9	7.82	5	194	15	60	-49	0.11	0.04	<0.1	29		Geochemical Testing - AS/JE
10/30/2024	XS	352	8.0	7.89	<2	213	9	60	-48	<0.05	0.02	<0.1	29		Geochemical Testing - JE
11/25/2024	XS	6411	7.5	7.13	4	187	5	17	2	0.16	0.03	0.1	27		Geochemical Testing - JE
12/26/2024	XS	3884	7.7	7.18	<2	127	2	16	11	0.10	0.01	<0.1	20		Geochemical Testing - JE

Signature of Permittee or Responsible Official or Authorized Representative

Date

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
XS = Cross Section
VC = Volumetric Container
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Module 8.1(A)

[X] BACKGROUND or [ ] MONITORING REPORT*

(check appropriate block)

Operator: Rockwood Stone, LLC
Operation Name: Rockwood Quarry
Permit No:
Township: Black
County: Somerset

Monitoring Point I.D.: 10
Latitude: 39° 54' 40" N and
Longitude: 79° 09'34 " W
Surface Elevation (MSL): 1826'

Description of Sample Point**: Trail side ditch - Downstream

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
7/10/2024	XS	15	6.6	7.79	<2	826	20	49	-36	<0.05	0.62	1.0	91		Geochemical Testing - AS/JE
8/19/2024	XS	9	5.7	4.77	2	262	16	<10	20	0.06	0.66	2.1	108		Geochemical Testing - AS/JE
9/24/2024	XS	11	6.0	4.56	4	281	15	<10	24	0.11	0.71	3.4	135		Geochemical Testing - AS/JE

Signature of Permittee or Responsible Official or Authorized Representative

Date

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
XS = Cross Section
VC = Volumetric Container
EST = Estimate

Module 8.1(A)

[ ] BACKGROUND or [X] MONITORING REPORT*

(check appropriate block)

Operator: Rockwood Stone, LLC
Operation Name: Rockwood Quarry
Permit No:
Township: Black
County: Somerset

Monitoring Point I.D.: 11
Latitude: 39° 54' 42" N and
Longitude: 79° 09' 33" W
Surface Elevation (MSL): 1792'

Description of Sample Point**: Casselman River - Downstream

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
7/10/2024		TLTG	7.7	7.85	<2	807	29	46	-27	0.06	0.09	0.3	295		Geochemical Testing - AS/JE
8/19/2024		TLTG	6.9	7.68	2	728	20	52	-33	0.06	0.08	0.2	334		Geochemical Testing - AS/JE
9/24/2024		TLTG	8.2	7.64	<2	895	17	55	-39	<0.05	0.07	0.2	417		Geochemical Testing - AS/JE
10/30/2024		TLTG	7.7	7.74	<2	733	10	54	-40	0.08	0.06	0.3	282		Geochemical Testing - JE
11/25/2024		TLTG	7.6	7.44	12	283	5	30	-10	0.85	0.24	0.4	60		Geochemical Testing - JE
12/26/2024		TLTG	7.8	7.52	2	274	2	24	-11	0.33	0.17	0.2	67		Geochemical Testing - JE

Signature of Permittee or Responsible Official or Authorized Representative

Date

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
XS = Cross Section
VC = Volumetric Container
EST = Estimate

Module 8.1(A)

[X] BACKGROUND or [ ] MONITORING REPORT*

(check appropriate block)

Operator: Rockwood Stone, LLC
Operation Name: Rockwood Quarry
Permit No:
Township: Black
County: Somerset

Monitoring Point I.D.: 12
Latitude: 39° 54' 31" N and
Longitude: 79° 09' 33" W
Surface Elevation (MSL): 1844'

Description of Sample Point**: Unnamed Tributary to Rhoades Creek - Downstream

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
7/10/2024	XS	40	8.9	8.39	12	486	13	171	-154	0.21	0.04	0.1	48		Geochemical Testing - AS/JE
8/19/2024	XS	30	9	8.35	15	489	13	169	-147	0.32	0.03	0.2	56		Geochemical Testing - AS/JE
9/24/2024	XS	18	9	8.27	<2	478	14	170	-159	0.12	0.02	<0.1	73		Geochemical Testing - AS/JE

Signature of Permittee or Responsible Official or Authorized Representative

Date

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
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Module 8.1(A)

[X] **BACKGROUND or** [ ] **MONITORING REPORT***

(check appropriate block)

Operator: **Rockwood Stone, LLC**
Operation Name: **Rockwood Quarry**
Permit No:
Township: **Black**
County: **Somerset**

Monitoring Point I.D.: **13**
Latitude: 39° 54' 31" N and
Longitude: 79° 09' 32" W
Surface Elevation (MSL): 1868'

Description of Sample Point**: Seep above old mine entry

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
7/10/2024	EST	<1	8.8	6.81	<2	49	14	13	2	<0.05	<0.01	<0.1	<5		Geochemical Testing - AS/JE
8/19/2024	EST	<1	7.9	6.95	<2	50	15	17	1	<0.05	<0.01	<0.1	5		Geochemical Testing - AS/JE
9/24/2024	EST	<1	8.3	6.85	6	50	16	15	-4	<0.05	<0.01	<0.1	6		Geochemical Testing - AS/JE

Signature of Permittee or Responsible Official or Authorized Representative

Date

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Abbreviation/Acronym Key:
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Module 8.1(A)

[ ] BACKGROUND or [X] MONITORING REPORT*

(check appropriate block)

Operator: Rockwood Stone, LLC
Operation Name: Rockwood Quarry
Permit No:
Township: Black
County: Somerset

Monitoring Point I.D.: 14
Latitude: 39° 54' 39" N and
Longitude: 79° 09' 23" W
Surface Elevation (MSL): 1934'

Description of Sample Point**: Spring at Joe Metzgar's property

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
7/10/2024	XS	6	7.5	5.88	<2	30	10	<10	11	<0.05	<0.01	<0.1	<5		Geochemical Testing - AS/JE
8/19/2024	XS	4	7.1	6.32	7	29	14	<10	13	0.07	0.02	<0.1	6		Geochemical Testing - AS/JE
9/24/2024	EST	3	7.8	6.00	<2	29	14	<10	8	0.09	0.06	<0.1	6		Geochemical Testing - AS/JE
10/30/2024	EST	<1	6.6	6.24	<2	27	12	<10	6	0.07	0.04	<0.1	6		Geochemical Testing - JE
11/25/2024	XS	18	6.9	5.97	8	32	10	<10	15	0.17	0.02	<0.1	5		Geochemical Testing - JE
12/26/2024	XS	39	6.2	5.92	<2	58	10	<10	10	<0.05	<0.01	<0.1	<5		Geochemical Testing - JE

Signature of Permittee or Responsible Official or Authorized Representative

Date

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
XS = Cross Section
VC = Volumetric Container
EST = Estimate

Module 8.1(A)

[X] BACKGROUND or [ ] MONITORING REPORT*

(check appropriate block)

Operator: Rockwood Stone, LLC
Operation Name: Rockwood Quarry
Permit No:
Township: Black
County: Somerset

Monitoring Point I.D.: 15
Latitude: 39° 54' 39" N and
Longitude: 79° 09' 23" W
Surface Elevation (MSL): 1934'

Description of Sample Point**: Spring #2 at Joe Metzgar's property, under concrete blocks

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
7/10/2024	DIP	--	6.7	6.13	<2	35	17	<10	8	0.41	0.11	<0.1	<5		Geochemical Testing - AS/JE
8/19/2024		Dry													AS/JE
9/24/2024		Dry													AS/JE

Signature of Permittee or Responsible Official or Authorized Representative

Date

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
XS = Cross Section
VC = Volumetric Container
EST = Estimate

Module 8.1(A)

[X] BACKGROUND or [ ] MONITORING REPORT*

(check appropriate block)

Operator: Rockwood Stone, LLC
Operation Name: Rockwood Quarry
Permit No:
Township: Black
County: Somerset

Monitoring Point I.D.: 16
Latitude: 39° 54' 43" N and
Longitude: 79° 09' 20" W
Surface Elevation (MSL): 1832'

Description of Sample Point**: Collection of ditch & hillside spring

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
8/19/2024	XS	9	3.4	3.19	<2	719	10	<10	140	0.73	0.63	17.6	308		Geochemical Testing - AS/JE
9/24/2024	XS	11	4.9	3.16	<2	749	10	<10	160	1.01	0.70	19.6	285		Geochemical Testing - AS/JE

Signature of Permittee or Responsible Official or Authorized Representative

Date

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
XS = Cross Section
VC = Volumetric Container
EST = Estimate

Module 8.1(A)

[X] BACKGROUND or [ ] MONITORING REPORT*

(check appropriate block)

Operator: Rockwood Stone, LLC
Operation Name: Rockwood Quarry
Permit No:
Township: Black
County: Somerset

Monitoring Point I.D.: 17
Latitude: 39° 54' 39" N and
Longitude: 79° 09' 24" W
Surface Elevation (MSL): 1934'

Description of Sample Point**: Joe Metzgar's property- PWS Well

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
8/19/2024	TAP	--	7.5	7.36	5	181	13	77	-62	1.67	0.10	<0.1	16		Geochemical Testing - AS/JE
9/24/2024	TAP	--	8.1	7.36	<2	177	17	80	-68	0.33	0.08	<0.1	13		Geochemical Testing - AS/JE

Signature of Permittee or Responsible Official or Authorized Representative

Date

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
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Module 8.1(A)

[X] **BACKGROUND or** [ ] **MONITORING REPORT***

(check appropriate block)

Operator: **Rockwood Stone, LLC**
Operation Name: **Rockwood Quarry**
Permit No:
Township: **Black**
County: **Somerset**

Monitoring Point I.D.: **18**
Latitude: 39° 54' 31" N and
Longitude: 79° 09' 29" W
Surface Elevation (MSL): 1896'

Description of Sample Point**:
Robert Trout PWS well
** Post treatment

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
8/19/2024	TAP	--	7.8	6.87	<2	107	24	37	-19	<0.05	0.02	<0.1	6		Geochemical Testing - AS/JE
9/24/2024	TAP	--	8.2	7.00	<2	134	20	56	-46	<0.05	<0.01	<0.1	7	**	Geochemical Testing - AS/JE

Signature of Permittee or Responsible Official or Authorized Representative

Date

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
XS = Cross Section
VC = Volumetric Container
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Module 8.1(A)

[X] BACKGROUND or [ ] MONITORING REPORT*

(check appropriate block)

Operator: Rockwood Stone, LLC
Operation Name: Rockwood Quarry
Permit No:
Township: Black
County: Somerset

Monitoring Point I.D.: 19
Latitude: 39° 54' 31" N and
Longitude: 79° 09' 27" W
Surface Elevation (MSL): 1914'

Description of Sample Point**: Greg Pavlosky PWS well

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
8/19/2024	TAP	--	8.0	7.07	<2	142	21	53	-34	<0.05	<0.01	<0.1	11		Geochemical Testing - AS/JE
9/24/2024	TAP	--	8.0	7.07	<2	144	22	55	-43	0.06	0.01	<0.1	14		Geochemical Testing - AS/JE
10/30/2024	TAP	--	7.4	7.29	<2	182	16	70	-54	0.08	0.03	<0.1	15		Geochemical Testing - JE
11/25/2024	TAP	--	7.0	6.97	<2	180	13	67	-54	0.10	0.06	<0.1	25		Geochemical Testing - JE
12/26/2024	TAP	--	6.7	7.33	<2	147	14	52	-41	0.21	<0.01	<0.1	15		Geochemical Testing - JE
1/15/2025	TAP	--		7.07	<2	173	8	66	-46	0.13	<0.01	<0.1	22		Geochemical Testing - AS

Signature of Permittee or Responsible Official or Authorized Representative

Date

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
XS = Cross Section
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Module 8.1(A)

[ ] BACKGROUND or [X] MONITORING REPORT*

(check appropriate block)

Operator: Rockwood Stone, LLC
Operation Name: Rockwood Quarry
Permit No:
Township: Black
County: Somerset

Monitoring Point I.D.: 20
Latitude: 39° 54' 34" N and
Longitude: 79° 09' 22" W
Surface Elevation (MSL): 1948'

Description of Sample Point**: Spring on property (2) Joe Metzgar/On the Trail, LLC

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
8/19/2024	DIP	--	7.7	5.52	<2	27	14	<10	10	<0.05	0.02	<0.1	<5		Geochemical Testing - AS/JE
9/24/2024	DIP	--	7.3	5.56	4	33	14	<10	10	<0.05	0.02	<0.1	<5		Geochemical Testing - AS/JE
10/30/2024	DIP	--	6.7	5.57	<2	29	12	<10	8	<0.05	0.02	<0.1	<5		Geochemical Testing - JE
11/25/2024	DIP	--	6.4	5.24	<2	27	10	<10	11	<0.05	0.02	<0.1	6.0		Geochemical Testing - JE
12/26/2024	DIP	--	5.7	5.50	<5	25	10	<10	14	<0.05	0.02	<0.1	<5		Geochemical Testing - JE
1/15/2025	DIP	--		5.37	<2	24	3	<10	13	<0.05	0.03	<0.1	<5		Geochemical Testing - AS

Signature of Permittee or Responsible Official or Authorized Representative

Date

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
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Module 8.1(A)

[X] BACKGROUND or [ ] MONITORING REPORT*

(check appropriate block)

Operator: Rockwood Stone, LLC
Operation Name: Rockwood Quarry
Permit No:
Township: Black
County: Somerset

Monitoring Point I.D.: 21
Latitude: 39° 54' 33" N and
Longitude: 79° 09' 22" W
Surface Elevation (MSL): 1953'

Description of Sample Point**: Spring house on Joe Metzgar's property

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
8/19/2024	DIP	--	7.2	5.33	<2	26	13	<10	10	<0.05	0.02	<0.1	<5		Geochemical Testing - AS/JE
9/24/2024	DIP	--	6.7	5.49	<2	27	14	<10	8	<0.05	0.01	<0.1	<5		Geochemical Testing - AS/JE

Signature of Permittee or Responsible Official or Authorized Representative

Date

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
XS = Cross Section
VC = Volumetric Container
EST = Estimate

Module 8.1(A)

[X] BACKGROUND or [ ] MONITORING REPORT*

(check appropriate block)

Operator: Rockwood Stone, LLC
Operation Name: Rockwood Quarry
Permit No:
Township: Black
County: Somerset

Monitoring Point I.D.: 22
Latitude: 39° 54' 32" N and
Longitude: 79° 09' 24" W
Surface Elevation (MSL): 1944'

Description of Sample Point**: Spring house on Pavlosky property

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
8/19/2024	DIP	--	7.4	6.54	<2	42	15	13	4	0.33	0.05	<0.1	<25		Geochemical Testing - AS/JE
9/24/2024	DIP	--	6.9	6.85	2	42	16	15	1	1.03	0.09	0.1	11		Geochemical Testing - AS/JE

Signature of Permittee or Responsible Official or Authorized Representative

Date

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
XS = Cross Section
VC = Volumetric Container
EST = Estimate

Module 8.1(A)

[X] BACKGROUND or [ ] MONITORING REPORT*

(check appropriate block)

Operator: Rockwood Stone, LLC
Operation Name: Rockwood Quarry
Permit No:
Township: Black
County: Somerset

Monitoring Point I.D.: 23
Latitude: 39° 54' 36" N and
Longitude: 79° 09' 30" W
Surface Elevation (MSL): 1892'

Description of Sample Point**:
Sample of spring water at the Mallory Property
*Spring water believed to be from point 20
** Well on property not utilized

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
8/19/2024	TAP	--	7.2	6.52	<2	30	22	11	6	0.06	0.04	<0.1	5		Geochemical Testing - AS/JE
9/24/2024	Not	Home													AS/JE
10/30/2024	TAP	--	6.7	6.23	<2	31	17	10	9	0.10	0.02	<0.1	6		Geochemical Testing - JE

Signature of Permittee or Responsible Official or Authorized Representative

Date

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
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Module 8.1(A)

[X] BACKGROUND or [ ] MONITORING REPORT*

(check appropriate block)

Operator: Rockwood Stone, LLC
Operation Name: Rockwood Quarry
Permit No:
Township: Black
County: Somerset

Monitoring Point I.D.: 24
Latitude: 39° 54' 34" N and
Longitude: 79° 09' 28" W
Surface Elevation (MSL): 1904'

Description of Sample Point**: Spring on Pavlosky property

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Lab pH	Suspended Solids mg/l	Specific Conductance (micromhos/cm) @ 25° C	Field Temp. °C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids (mg/l)	Laboratory and Name of Sampler
								Submit above as requested by the Department							
12/26/2024	VC	8.6	6.4	5.67	<2	26	7	<10	9	<0.05	<0.01	<0.1	7		Geochemical Testing - JE
1/15/2025	VC	8.2		5.66	<2	23	0	<10	14	<0.05	<0.01	<0.1	6		Geochemical Testing - AS

Signature of Permittee or Responsible Official or Authorized Representative

Date

Sampled by Earthtech, Inc.:
AS - Austin Smay
JE - Joel Emert

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Abbreviation/Acronym Key:
TLTG = Too Large to Gauge
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