

COMPLIANCE EVALUATION INSPECTION REPORT
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 5

Purpose: NPDES Compliance Evaluation Inspection

Facility: Leesville Land LLC
86900 Sinfield Road
Hopedale, Ohio 43976

NPDES Permit: OH0011827

Date of Inspection: August 3 and 19, 2022

EPA Inspectors:

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Facility Representatives:

Leesville Land Representatives:

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Darrell Fraley, Surface Superintendent, Mechanic, and Welder

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Fred Blackman, President
Ronnie Vah, Operations Manager for Ohio
Zac Clift, Operations Manager for Potable Water and Sewer

Report Prepared By:

Val Dooling, Environmental Engineer

VALERIE
DOOLING

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EPA Inspector Signature and Date: _____

Approver Name and Title:

Ryan J. Bahr, Section 2 Supervisor
Water Enforcement and Compliance Assurance Branch

Ryan Bahr

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Approver Signature and Date: _____

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I. INTRODUCTION

The purpose of the report is to describe, evaluate and document Leesville Land LLC's compliance with the Clean Water Act (CWA) and its National Pollutant Discharge Elimination System (NPDES) permit at its facility.

II. BACKGROUND

Leesville Land LLC holds NPDES Permit OH0011827 (Permit) for its coal preparation plant (Facility). The permit was effective September 1, 2015 and expired August 31, 2020. A Permit application was submitted on May 29, 2020 according to Ms. Snyder. The Permit lists five sampling locations 009, 010, 012, 588 and 901 which discharge to an unnamed tributary of Cross Creek. The Permit was issued to Hopedale Mining LLC and a transfer request (Appendix D) was submitted to Ohio EPA on January 19, 2022, according to Ms. Snyder.

The preparation plant was built in 1985 and the wet refuse impoundment was built in 2005. The office wastewater treatment plant (WWTP) which discharges to Outfall 012 was built in 2005 and the preparation plant WWTP which discharges to Outfall 010 was built in the 1980s, according to Mr. Barcalow.

Hopedale Mining LLC went bankrupt and shut down the mine and preparation plant between September 2, 2020 and June 2021. Prior to the shutdown, there were approximately 100 employees. During the shutdown period, there were 14 employees and at the time of the inspection, there were around 75 employees. At the time of inspection, the facility was in operation 24-hours a day with two productions shifts and one maintenance shift for five days per week. Production was around 500,000 tons per year.

The facility has contracted with Quality Environmental Services (QES) to collect samples at its process water (Outfall 009) and its wastewater treatment plants (Outfalls 010 and 012). Zachary Clift and Roger Herbert (not present) are the operators of record at the WWTPs discharging to Outfalls 010 and 012.

Table 1 lists 30 Permit effluent limit exceedances occurring between March 2020 and March 2022 for manganese and total dissolved solids (TDS) at Outfall 009, for total suspended solids (TSS) and carbonaceous biochemical oxygen demand (BOD) at Outfall 010 and for nitrogen ammonia at Outfall 012.

Table 1

Date	Outfall Number	Parameter	Description	Permit Limit	DMR Value	Unit	Exceedance (%)
9/30/2020	9	Manganese, total [as Mn]	Monthly Average	2000	2060	ug/L	3
2/28/2021	9	Manganese, total [as Mn]	Monthly Average	2000	2210	ug/L	11
3/31/2020	9	Solids, total dissolved- 180 deg. C	Monthly Average	1500	3300	mg/L	120
4/30/2020	9	Solids, total dissolved- 180 deg. C	Monthly Average	1500	3465	mg/L	131
9/30/2020	9	Solids, total dissolved- 180 deg. C	Monthly Average	1500	1908	mg/L	27
10/31/2020	9	Solids, total dissolved- 180 deg. C	Monthly Average	1500	1843	mg/L	23
11/30/2020	9	Solids, total dissolved- 180 deg. C	Monthly Average	1500	3073	mg/L	105
2/28/2021	9	Solids, total dissolved- 180 deg. C	Monthly Average	1500	2995	mg/L	100
7/31/2021	9	Solids, total dissolved- 180 deg. C	Monthly Average	1500	1776	mg/L	18
12/31/2019	10	Solids, total suspended	Monthly Average	12	29	mg/L	142
12/31/2019	10	Solids, total suspended	Daily Maximum	18	37	mg/L	106
6/30/2020	10	Solids, total suspended	Daily Maximum	18	58	mg/L	222
6/30/2020	10	Solids, total suspended	Monthly Average	12	58	mg/L	383
6/30/2020	10	Solids, total suspended	Daily Maximum	0.1	0.11	kg/d	10
6/30/2020	10	Solids, total suspended	Monthly Average	0.068	0.11	kg/d	62
8/31/2020	10	Solids, total suspended	Daily Maximum	18	27	mg/L	50
8/31/2020	10	Solids, total suspended	Monthly Average	12	27	mg/L	125
8/31/2021	10	Solids, total suspended	Monthly Average	0.068	0.077	kg/d	13
8/31/2021	10	Solids, total suspended	Monthly Average	12	17	mg/L	42
12/31/2021	10	Solids, total suspended	Monthly Average	0.068	0.13	kg/d	91
12/31/2021	10	Solids, total suspended	Daily Maximum	0.1	0.13	kg/d	30
12/31/2021	10	Solids, total suspended	Daily Maximum	18	59	mg/L	228
12/31/2021	10	Solids, total suspended	Monthly Average	12	59	mg/L	392
3/31/2022	10	Solids, total suspended	Daily Maximum	18	24	mg/L	33
3/31/2022	10	Solids, total suspended	Monthly Average	12	24	mg/L	100
6/30/2020	10	BOD, carbonaceous [5 day, 20 C]	Monthly Average	10	12.8	mg/L	28
6/30/2022	10	BOD, carbonaceous [5 day, 20 C]	Monthly Average	10	10.6	mg/L	6
3/31/2020	12	Nitrogen, ammonia total [as N]	Daily Maximum	4.5	21.17	mg/L	370
3/31/2020	12	Nitrogen, ammonia total [as N]	Monthly Average	3	21.17	mg/L	606
12/31/2021	12	Nitrogen, ammonia total [as N]	Monthly Average	3	3.44	mg/L	15

III. OPENING CONFERENCE

On August 3, 2022, I, along with Anne Marie Vincent (EPA) drove to the Facility and met with Jean Snyder and then with Bob Henderson and Darrell Fraley between 9:20 am and 4:00 pm ET. EPA took Mine Safety and Health Administration (MSHA) hazard training prior to meeting with Leesville Land LLC representatives. EPA presented their inspector credentials to both Ms. Snyder and Mr. Henderson. I explained that as part of the inspection, EPA would take photographs and I asked if anything discussed was Confidential Business Information (CBI). Both responded that there was no CBI.

On August 19, 2022, EPA held a conference call with Facility representatives Jared Barcalow and Jean Snyder and Quality Environmental Services (QES) representatives, Fred Blackman, Ronnie Vah and Zac Clift between 10:00am and 11:40am ET to discuss specific operational questions for the WWTPs as QES representatives were not available on August 3, 2022, during the on-site inspection.

IV. FACILITY DISCUSSION

The following preparation plant processes were described to me by Mr. Henderson:

Bituminous coal and GOB (garbage of bituminous) extracted from underground enters the preparation plant via conveyor belt. Coal is separated from GOB by adding magnetite to water which raises the specific gravity of the water so the coal and GOB are separated by density. Magnetite is then recovered by magnets.

A hydrocyclone splits coal dust from coal product. Coal dust, considered less than 100 mesh, is sent to the sludge thickener. The coal product is sent to the silos to be shipped via rail. The sludge thickener separates water from coal dust slurry to be reused in a recycled water loop. Prior to construction of the wet impoundment, sludge was pressed into cakes and buried.

The belt line, built around 2007, sends GOB or junk rock refuse, to a bin on the hill. Dump trucks then take 40-ton loads to the impoundment and build around the edge of the impoundment in one-foot lifts, which is then compacted with rolling compactors according to MSHA construction regulations. The impoundment is built with banked sides graded to make a surface bowl. Once the impoundment sides are built then they will be grassed. The wet impoundment receives sludge slurry, GOB and solids from the settling ponds.

Acid mine drainage (Photos 9-11) from the wet impoundment drains into three ponds, ponds A, B and 11 (Appendix C, Image 1) which then flow into the drainage ditch. The drainage ditch is dammed at the outlet to flow into a treatment basin which then flows into the system of settling ponds: all settling ponds are operated in series. Cell 1 is the primary settling pond, Cell 2 is the secondary settling pond and Pond 9 is the polishing pond. North Pond 9 discharges to a pipe via an overflow into a wetland area prior to merging with the tributary of Cross Creek.

The facility has contracted with QES to collect samples at its process water outfall (Outfall 009) and its wastewater treatment plants (Outfall 010 and 012) and courier them to the analytical lab, Industrial Lab Analysis in Wheeling, West Virginia. Ronnie Vah collects samples for the process wastewater and Zachary Clift and Roger Herbert (not present) are operators of records at the WWTP discharging to Outfall 010 and 012. According to Mr. Barcalow, all samples were collected during the bankruptcy shutdown.

According to Ms. Snyder, after a discussion with Scott Foster of the EPA in May 2020, the location of Outfall 009 was moved from the point at the discharge pipe to a downstream location where the wetlands discharged into the unnamed tributary (Appendix B, Image 2). Mr. Vah and

Mr. Barcalow both confirm that all Outfall 009 samples are collected from this new location. At the same time, far field monitoring point 901 was moved from a location at the middle of the wetland to further downstream where the unnamed tributary drains into Cross Creek. The new latitude and longitude coordinates were sent to OEPA according to Ms. Snyder.

EPA noted that the NPDES Permit has interim and final effluent limits for Outfall 009. When questioning what changes were made at the facility after the interim limits, Mr. Barcalow acknowledged that he was not in his current role at that time, but he believed that at that time, the facility thought that they could meet the effluent requirements at Outfall 009 and that no additional treatment or changes to the treatment were made, therefore the schedule of compliance, listed in Part I.C.1 of the Permit was not applicable. EPA questioned whether the biological, chemical, or toxicological analysis of the receiving stream/ wetland was submitted to Ohio EPA listed in Part I.C.2 of the Permit. Mr. Barcalow replied that the facility elected not to conduct a study.

Mr. Henderson or Mr. Fraley will complete a daily pond water report (Photo 1) to the mining ponds in Hopedale and the mining ponds in Cadiz, Ohio (which are not covered under the NPDES permit). They will use a visual estimate of the depth of flow which is used to calculate the flow measurement that is recorded on the daily discharge monitoring reports. They also take measurements of pH, iron and in the past, has taken manganese measurements, which are not recorded on daily discharge monitoring reports forms, but used internally. According to Mr. Henderson and Ms. Snyder, non-portable water originates from Cross Creek and the potable water is from a well.

EPA questioned whether the facility had removed sludge from the treatment ponds according to Part II.O of the NPDES Permit and if the facility had the management plan available which was submitted to Ohio EPA. Mr. Barcalow stated that sludge has not been removed from the treatment ponds for around 10 years, or at least since before this permit was issued.

Mr. Clift stated that he makes two operator visits per week and usually visits both of the WWTPs on the same day. An operator's visit consists of checking that blowers are running, sludge return, and skimmers are all operating correctly, and he will also check pumps and add chlorination/dechlorination tabs as needed. He stated that if the plant were not operating or effluent exceedances were occurring, he would go over the whole plant; however, this has not occurred at either WWTP.

EPA requested records of the annual stormwater inspections and visual quarterly monitoring reports. Mr. Barcalow provided annual pond inspection reports required by Ohio Department of Natural Resources (Appendix E). EPA explained that there might be overlap between the ODNR requirements and the NPDES Permit and referred to the stormwater requirements on Part IV of the Permit. Mr. Barcalow stated that he is unaware of the requirements on Part IV of the permit and that the stormwater inspections, quarterly visual assessment, and annual site inspections were not conducted. EPA noted that the Permit requires the facility to submit benchmark monitoring as part of its monitoring and reporting requirements and questioned if these had been submitted. Mr. Barcalow stated that he took over his position in 2019 and that he did not have knowledge of the stormwater requirements in the permit and that he is not aware of any

benchmark reports that were submitted. The facility did submit a Stormwater Pollution Prevention Plan (SWPPP) facility map to EPA as part of the inspection; however, it was not able to provide EPA with the SWPPP as requested. EPA questioned why the facility has stormwater sector specific requirements that are for glass, clay, cement, concrete and gypsum products listed in Part IV.K. Mr. Barcalow stated that he does not know why the facility is under this sector and that the facility does not take in any fly ash. He further stated that water is sprayed on the roadway as needed for dust control.

V. SITE VISIT

At 11:00 am, EPA, and Mr. Henderson began to drive the facility premises starting at the Preparation Plant WWTP and its Outfall 010, then to the sludge thickener, wet impoundment, process water treatment ponds and its Outfall 009, then to the stormwater pond and finally to the Deep Mine Bathhouse and Office WWTP and its Outfall 012.

Preparation Plant WWTP

At 11:00 am, EPA and Mr. Henderson viewed the Preparation Plant WWTP and Outfall 010. In a later conversation, Mr. Clift stated the processes at the prep plant wastewater treatment include a trash trap, aeration, clarifier, sludge return, skimmer, dosing tank, sand filter, chlorination and dechlorination (Photos 2-6). Outfall 010 discharges to an acid mine drainage stream prior to treatment (Photos 7-9). Mr. Barcalow believes the TDS effluent exceedances stem from dust blown from the coal conveyor belt nearby blowing into the sand filters. He stated that in 2020 the sand bed roof was installed on the Preparation Plant WWTP.

Process Wastewater

Next, EPA viewed the sludge thickener and Mr. Henderson described the process to determine sludge depth and settleability (Photos 12-17). Flocc is added during the process and sodium hydroxide is added to keep the pH neutral. A sludge judge measures the amount of sludge and when necessary, the sludge slurry is sent to the wet impoundment using two tandem pumps. Next, EPA viewed the sludge slurry pump house and noted a sump pump discharging from the pump house onto the ground. The ground in this area is sloped towards the drainage ditches (Photos 18 and 41).

At 12:00 pm, EPA and Mr. Henderson drove to the top of the wet impoundment. A delta has formed under the discharge from the pipe which pumps sludge slurry from the sludge thickener. (Photo 19-20). Mr. Henderson stated that the pipe must be moved when the buildup gets too high to maintain head. EPA noted waterfowl residing on the top of the impoundment. EPA noted pipes periodically built into the side of the impoundment and Mr Henderson stated that they are used to check the water table in the impoundment.

At 12:50 pm, EPA and Mr. Henderson viewed the coal silos, Cell 1 and 2 treatment ponds and the polishing ponds, North Pond 9 and South Pond 9. The drainage ditch is dammed prior to entering the treatment basin which flows into the settling ponds. In the treatment basin on the other side of the dam, a 25% caustic soda drip neutralizes the water, then a flocculant solution settles out the metals at the end of the treatment basin. EPA noted that the water in the treatment basin had a visible blue color, indicative of iron at a high pH (Photos 25-26) EPA noted two 15000-gallon tanks of caustic soda onsite. There is a pH probe after the addition of caustic soda,

which has an online monitoring system called Webmaster. Mr. Henderson stated that he is able to log in and check pH remotely; however, since he does daily rounds and checks the pH level in person, he stated that he does not log in frequently. In the event of a power failure, a valve is opened which will release caustic soda. EPA viewed the chemical shed, where flocculant ECO flocc270+ is stored and must be premixed to a 1% solution.

Following the treatment basin after the dam, the water flows into the primary settling pond, Cell 1 and the secondary settling pond, Cell 2 (Photo 29). Mr. Henderson stated that the facility is operating now to intentionally drop as many solids into Cell 1 as possible. EPA noted visible blue solids in the first quarter of Cell 1, after flow enters from the treatment basin (Photo 27-28). A 100-hp pump with a hose is used to move solids from the two settling ponds to the wet impoundment. There is a mixer/aerator on a float in Cell 1 which used to be used for treatment but is not currently used.

There is a north and south portion to Pond 9. South Pond 9 was last cleaned out when a long reach excavator could scoop out solids on either side of the bank, but the long boom excavator does not reach the center of the pond. EPA noted visually on site and on satellite imagery (Photo 30 and Appendix B, Image 1) that there is a buildup of solids in the center of the pond where the excavator could not reach. According to Mr. Henderson, at the North Pond 9 an excavator would not have the necessary boom reach to clean up solids in this pond and a vacuum dredge would be needed to do that. A pH meter is on a float at the North Pond 9, but Mr. Henderson stated that it is not used. He daily tests pH and iron using an Oakton pH meter and Hach color disc test kit and records the results on the daily rounds, but this measurement is only used internally. There are sodium hydroxide briquettes at the causeway between North and South Pond 9 where pH adjustment can occur if necessary.

North Pond 9 discharges to a pipe via an overflow. Mr. Henderson takes a daily flow measurement by visually estimating depth of water in the discharge pipe. At the time of inspection, he noted that there was approximately 1" of flow in the pipe (Photo 33). This measurement is used to calculate flow that is submitted on daily discharge monitoring reports sheets. At the discharge pipe, EPA noted a sign identifying as the discharge point (Photo 35). EPA noted floating scum in orange color after the effluent discharged from the pipe (Photo 34 - 35). According to Mr. Henderson, QES collects Permit samples which are submitted on daily discharge monitoring reports sheets, not at the pipe, but in the wetland area, prior to merging with the unnamed tributary of Cross Creek. EPA and Mr. Henderson walked along the Columbus & Ohio River Railroad Company railroad spur to the location on the tracks just above the heavily vegetated wetland area where the discharge merges with the tributary of Cross Creek (Photo 37 - 38).

During the facility tour, EPA and Mr. Henderson also attempted to locate the far field monitoring location of Point 901 but ultimately did not see this location, and instead walked to the unnamed pond northeast of the impoundment (Appendix B, Image 1). During the August 19th discussion, Mr. Vah stated that Point 901 is actually 900 feet downstream from the Outfall 009 sample location and after the tributary goes under the Columbus & Ohio River Railroad Company railroad tracks, but before the confluence with Cross Creek. Mr. Vah stated that this point is always flowing when he is present and that he collects a sample at that point once a quarter.

Stormwater Pond

EPA and Mr. Henderson viewed the stormwater pond just off Sinfield Road and south of the office (Photo 42).

Deep Mine and Office Wastewater Treatment Plant

EPA and Mr. Henderson viewed the deep mine bathhouse and office wastewater treatment plant at 2:10pm. The processes include a trash trap, equalization tank, aeration basin, clarifier, two sludge returns, skimmer, dosing tank, sand beds chlorination, dechlorination and a separate sludge holding tank, according to Mr. Clift during the August 19th discussion. The effluent flows into a pond first, before discharging at Outfall 012 (Appendix B, Image 4). EPA noted duckweed on the pond and that the pipe from the WWTP was not discharging at the time of the inspection. Mr. Barcalow guessed that the last time sludge was removed was in 2015 and Mr. Clift stated that he does not expect sludge will need to be removed soon. EPA reviewed a logbook which was located at the bathhouse and office WWTP (Photos 45 - 47) and noted operator visits twice a week lasting for 30 minutes each. The last entry was dated August 3 for 17:30-18:00. When EPA questioned QES about their operator visits, Mr. Blackman stated that operators routinely do not pre-date logbook entries and that both WWTP's should have operator visits at the same times and dates so that the Preparation Plant WWTP logbook can be compared with this one in case there was a recording error for the time on the August 3rd entry for 17:30-18:00. EPA viewed the logbook at 14:20.

The facility tour ended at 2:33 pm. EPA then spoke with Ms. Snyder from 2:45 pm until 3:58 pm, when EPA left the facility.

VI. CLOSING CONFERENCE

EPA noted the following areas of concern:

1. Facility has not performed stormwater inspections, monitored stormwater samples, conducted annual site inspections, made their Stormwater Pollution Prevention Plan (SWPPP) available for review or submitted benchmark monitoring.
 - Part IV.E of the Permit states the Permittee shall conduct routine facility stormwater inspections according to Part IV.E.1, document the findings of each inspection and maintain documentation in the SWPPP.
 - Part IV.E of the Permit states that the Permittee shall collect a stormwater sample each calendar quarterly according to Part IV.E.2 and document the findings of the visual assessment in the SWPPP.
 - Part IV.E of the Permit states that the Permittee shall conduct annual comprehensive site inspections according to Part IV.E.3 and document the findings of each site inspection in the SWPPP.
 - The facility did not provide a copy of the SWPPP. Part IV.F of the Permit states that a stormwater pollution prevention plan (SWPPP) shall be developed to address discharges to water of the state that contains stormwater associated with industrial

activity and Part IV.H states that the SWPPP shall be immediately available to the US EPA.

- Monitoring and Reporting Requirements in Part V.A.1 states benchmark monitoring shall be submitted to Ohio EPA
2. The facility has had 30 effluent limitation exceedances occurring at three outfalls over the period of March 2020 through March 2022.
 3. The facility recorded time and date errors in the operator visit logbook. According to the Permit Part II.A.3, the Permittee shall maintain the records including records of daily visits to the treatment facility as required by the rule.
 4. Orange floating discoloration was visible on the water in the wetland after the Facility discharged from the final treatment pond, Pond 9 (Photos 34-35). General Conditions III.2 states the effluent shall at all times be free of floating debris in amounts that will form noticeable accumulations of scum, foam, or sheen.

Documents received during the inspection:

Daily discharge monitoring reports: 2019, 2020, 2021, 2022
Lab analysis reports and chain of custody forms: 2019, 2020, 2021, 2022
Annual sewage sludge reports: 2019, 2021
Annual impoundment inspections: 2019, 2020, 2021
Whole effluent toxicity (WET) reports: 2019, 2020, 2021, 2022
Ohio EPA correspondences
SWPPP map
Operator of record notification form
Certified Professional Operator Compliance Class A PWS
Safety Data Sheets for chemicals used onsite:
Marathon Petroleum No.2 ultralow-sulfur diesel
Multipurpose engine oil
Antifreeze coolant
Caustic soda
EcoFloc-023
EcoFloc-270
EcoFloc-7999
Freeze conditioning agent – 207
Magnetite
Bituminous coal
Potassium permanganate
Soda ash briquettes

Appendix A: Inspection Photo Log

Hopedale Mine Preparation Plant

EPA Inspection 8/3/2022

All photos taken by Anne Marie Vincent, Life Scientist/Inspector, U.S. EPA

Camera: Nikon Coolpix W300 (SN 31034297)

Leesville Land, LLC
Daily Water Report

Date: 8-2-22 Name: Joe

Location	Time	pH	Fe	Flow	Predp	Mn
Cadiz Pond 1	9:52	8.0	.2	1/2"	-	-
Cadiz Pond 2	10:06	7.5	.4	1"	-	-
Cadiz Pond 7	10:21	7.5	.5	3/4"	-	-
Cadiz Pond 6	10:41	7.5	.6	1/4"	-	-
Hopedale Pond 5	9:05	-	-	N.O FLOW	-	-
Hopedale Pond 9	7:51	7.5	.6	3/4"	-	1.8
Hopedale Castaway	7:57	9.5	.8	-	-	-
Hopedale Cell 1	8:03	10.0	1.0	-	-	-
Hopedale Basin	7:34	9.5	9.93	Proble	-	18 1/2"

Hopedale Caustic Tank Inventory	Tank 1	Tank 2	Tank 3	Reserve	Total
	10	1500	7	4500	1 1/2

Cadiz Caustic Tank Inventory	Tank 1	Tank 2	Total	Reserve	pH
	200	3"	200	2 1/2	27"

FLOCK TANK FILLED YES NO

Caustic Valve: Filled Left

Notes:

WATER TANK 7:28 AM 23 1/2"

PUMP HOUSE 7:44 AM 142

08.03.2022 10:46

1: DSCN3865

Description: Example of a Daily Water Report that includes flow measurements, pH measurement results, iron field test results, Mn field test results, and chemical inventory values.

Location: Superintendent's Office at the Preparation Plant

Camera Direction: Not Applicable.

Date/Time: 8/3/2022 / 10:46 AM



2: DSCN3866

Description: Covered sand filtration beds. Covers installed to keep coal dust from settling within the filtration beds.

Location: Preparation Plant Sewage Treatment Plant

Camera Direction: West

Date/Time: 8/3/2022 / 11:02 AM



3: DSCN3867

Description: View of the location of the covered sand filtration beds relative to the coal yard conveyors.

Location: Preparation Plant Sewage Treatment Plant

Camera Direction: South/Southeast

Date/Time: 8/3/2022 / 11:02 AM



4: DSCN3868

Description: View of the location of the covered sand filtration beds relative to the coal yard conveyors, with coal falling from the end of the conveyor in center of photograph.

Location: Preparation Plant Sewage Treatment Plant

Camera Direction: South/Southeast

Date/Time: 8/3/2022 / 11:04 AM



5: DSCN3869

Description: Final stage chlorination well for the preparation plant sewage treatment plant.

Location: Preparation Plant Sewage Treatment Plant

Camera Direction: Northeast

Date/Time: 8/3/2022 / 11:25 AM



6: DSCN3870

Description: View looking across the preparation plant sewage treatment plant. Domestic sewage from preparation plant office showers and toilets is treated here. Aerated underground tanks are located to the left of the photograph view. The covered sand filtration beds (roofed structure) and grated cover to the chlorination well are visible to the right side of the photograph.

Location: Preparation Plant Sewage Treatment Plant

Camera Direction: West/Southwest

Date/Time: 8/3/2022 / 11:27 AM



7: DSCN3871

Description: The preparation plant sewage treatment plant discharges through a white plastic pipe to the drainage ditch that collects stormwater run-off and underdrains from the mine refuse impoundment.

Location: Preparation Plant Sewage Treatment Plant

Camera Direction: North/Northwest

Date/Time: 8/3/2022 / 11:28 AM



8: DSCN3872

Description: Close-up view of the preparation plant sewage treatment plant Outfall 10 (white plastic pipe). No flow occurring at the time of inspection.

Location: Preparation Plant Sewage Treatment Plant

Camera Direction: West

Date/Time: 8/3/2022/ 11:29 AM



9: DSCN3873

Description: Close-up view of drainage ditch that receives flow from Outfall 10 as well as stormwater run-off and flow from the underdrains for the mine refuse impoundment.

Location: Drainage Ditch North of the Preparation Plant Sewage Treatment Plant

Camera Direction: North

Date/Time: 8/3/2022 / 11:29 AM



10: DSCN3874

Description: Flow observed in the drainage ditch at the base of the mine refuse impoundment, north east of the Preparation Plant. The offices for the Preparation Plant are visible in the background of the photograph.

Location: Drainage Ditch at Base of Mine Refuse Impoundment

Camera Direction: South

Date/Time: 8/3/2022 / 11:34 AM



11: DSCN3875

Description: White colored precipitate at one of the outlet pipes for the mine refuse impoundment underdrains located just northeast of the Preparation Plant.

Location: Drainage Ditch at Base of Mine Refuse Impoundment

Camera Direction: Southwest

Date/Time: 8/3/2022 / 11:35 AM



12: DSCN3876

Description: Example of sample collection by site personnel to determine settling time of the slurry in preparation plant thickener.

Location: Preparation Plant

Camera Direction: South/Southeast

Date/Time: 8/3/2022 / 11:38 AM



13: DSCN3877

Description: View into thickener unit below the walkway.

Location: Preparation Plant

Camera Direction: Not Applicable

Date/Time: 8/3/2022 / 11:38 AM



14: DSCN3878

Description: View looking over the north side of the preparation plant thickener unit. Layer of solids visible on surface of thickener.

Location: Preparation Plant

Camera Direction: East/Northeast

Date/Time: 8/3/2022 /11:40 AM



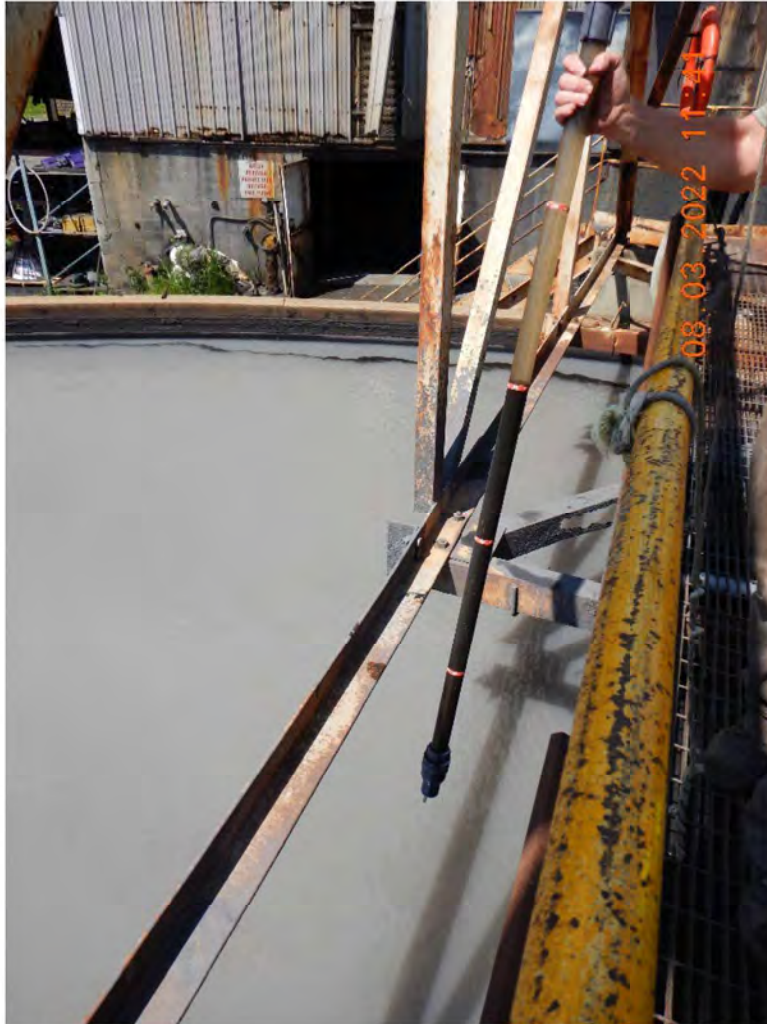
15: DSCN3879

Description: View looking over the south side of the preparation plant thickener unit. Layer of solids on surface of thickener unit visible in the center of the photograph.

Location: Preparation Plant

Camera Direction: South/Southeast

Date/Time: 8/3/2022 / 11:40 AM



16: DSCN3880

Description: Sludge judge sample from thickener pulled as an example during the inspection.

Location: Preparation Plant

Camera Direction: West

Date/Time: 8/3/2022 / 11:41 AM



17: DSCN3881

Description: Clarified water tank. This water is reused in the wash plant/preparation plant.

Location: Preparation Plant

Camera Direction: North

Date/Time: 8/3/2022 / 11:42 AM



18: DSCN3882

Description: Coal conveyor and washed coal product storage silos.

Location: Driveway along north side of Preparation Plant

Camera Direction: Northeast

Date/Time: 8/3/2022 / 11:48 AM



19: DSCN3883

Description: Standing at the top of the northeast quadrant of the mine refuse impoundment. Current location of the discharge pipe where preparation plant thickener slurry is pumped into the impoundment. Pipe was observed discharging the slurry into the impoundment.

Location: Mine Refuse Impoundment

Camera Direction: South

Date/Time: 8/3/2022 / 11:59 AM



20: DSCN3884

Description: Discharge pipe where the preparation plant thickener slurry is pumped into the impoundment. Pipe was observed discharging the slurry into the impoundment.

Location: Mine Refuse Impoundment

Camera Direction: South/Southwest

Date/Time: 8/3/2022 / 12:01 PM



21: DSCN3885

Description: Standing at the top of the southwest quadrant of the mine refuse impoundment. View of drainage ditch along west side of impoundment.

Location: Mine Refuse Impoundment

Camera Direction: Northwest

Date/Time: 8/3/2022 / 12:14 PM



22: DSCN3886

Description: Standing at the top of the southwest quadrant of the mine refuse impoundment. View of drainage ditch along west side of impoundment and the north end of Pond B.

Location: Mine Refuse Impoundment

Camera Direction: South/Southwest

Date/Time: 8/3/2022



23: DSCN3887

Description: Unnamed Pond which is not covered under the Permit. Minimal water level present.

Location: East of the Mine Refuse Impoundment

Camera Direction: East/Northeast

Date/Time: 8/3/2022 / 12:37 PM



24: DSCN3888

Description: There is a square float supporting the in situ pH meter. EPA observed the tubing that dispenses flocculant into the northeast corner of the treatment basin. The pH meter is connected to a WebMaster control panel which sends alerts to operators and operates the pump for adding caustic.

Location: Treatment Basin before Settling Ponds

Camera Direction: Southwest

Date/Time: 8/3/2022 / 12:52 PM



25: DSCN3889

Description: Overview of the treatment basin at the end of the final collection ditch prior to the settling ponds. The washed coal storage silos are to the right (west) of the ditch.

Location: Treatment Basin before Settling Ponds

Camera Direction: Southwest

Date/Time: 8/3/2022 / 12:52 PM



26: DSCN3890

Description: Close-up view of the flocculant (ECOFloc – 270+) in the southeast corner of the treatment basin.

Location: Treatment Basin before Settling Ponds

Camera Direction: West/Northwest

Date/Time: 8/3/2022 / 12:56 PM



27: DSCN3891

Description: Cell 1 (primary settling pond) used to drop out as much of the solids as possible.

Location: Settling Pond System

Camera Direction: East

Date/Time: 8/3/2022 / 13:03 PM



28: DSCN3892

Description: Close-up view of the flocculated solids in Cell 1 of the settling pond system.

Location: Settling Pond System

Camera Direction: East

Date/Time: 8/3/2022 / 13:04 PM



29: DSCN3893

Description: Overview of Cell 2 in the settling pond system. The hydraulic connection from Cell 1 into Cell 2 is visible in the lower left quadrant of the photograph.

Location: Settling Pond System

Camera Direction: Northwest

Date/Time: 8/3/2022 / 13:12 PM



30: DSCN3894

Description: Southern section of Pond 9. Washed coal storage silos visible in background.

Location: Settling Pond System

Camera Direction: Southwest

Date/Time: 8/3/2022 / 13:17 PM



31: DSCN3895

Description: Northern section of Pond 9

Location: Settling Pond System

Camera Direction: Northeast

Date/Time: 8/3/2022 / 13:19 PM



32: DSCN3896

Description: Overflow connection from the southern section of Pond 9 (to the right) into the northern section of Pond 9 (to the left).

Location: Settling Pond System

Camera Direction: East

Date/Time: 8/3/2022 / 13:21 PM



33: DSCN3897

Description: Pond 9 outlet discharging.

Location: Pond 9 Discharge Outlet

Camera Direction: East

Date/Time: 8/3/2022 / 13:27 PM



34: DSCN3898

Description: Discharge from pond 9 outlet (see previous photo) into adjacent marsh/wetland area. Flow meanders through the vegetated area to the Outfall 009 sample collection point.

Location: Pond 9 Discharge

Camera Direction: Northeast

Date/Time: 8/3/2022 / 13:27 PM



35: DSCN3899

Description: Outfall identification sign for Outfall 009. Note floating orange discoloration on surface of the water after discharge from Facility.

Location: Pond 9 Discharge

Camera Direction: North/Northeast

Date/Time: 8/3/2022 / 13:30 PM



36: DSCN3900

Description: Overflow point for the Pond 9 discharge seen in photographs 33 and 34.

Location: Northern end of northern section of Pond 9

Camera Direction: Southwest

Date/Time: 8/3/2022 / 13:30 PM



37: DSCN3901

Description: Location where the unnamed tributary curves to the west, joins with the flow from the marsh/wetland that receives the Outfall 009 discharge and the combined flow travels under the Columbus & Ohio River Railroad Company tracks before its confluence with Cross Creek.

Location: North edge of wetland/marsh area adjacent to the Outfall 009 discharge pipe.

Camera Direction: Southeast

Date/Time: 8/3/2022 / 13:36 PM



38: DSCN3902

Description: Looking across the heavily vegetated wetland/marsh area back towards the Outfall 009 discharge pipe. The truck and the yellow stairs in the background of the photograph are at the approximate location of the Outfall 009 discharge pipe.

Location: Northwest corner of wetland/marsh area, adjacent to the Columbus & Ohio River Railroad Company tracks, just west of the rail crossing over the unnamed tributary.

Camera Direction: Southwest

Date/Time: 8/3/2022 / 13:40 PM



39: DSCN3903

Description: This is the location where drainage flow from on site ditches on the north and east sides of the mine refuse impoundment is directed to discharge into the final collection ditch. Ditch drainage includes flow from stormwater run-off; discharges from the sewage treatment system for the preparation plant offices; and, flow from the mine refuse impoundment underdrains.

Location: Final Collection Ditch (east side of the washed coal storage silos)

Camera Direction: Northwest

Date/Time: 8/3/2022 / 13:48 PM



40: DSCN3904

Description: Pond A, the kidney bean-shaped pond, is located at the top of the hill. Drainage from the culvert pipe from Pond A flows downslope, under the driveway to a drainage ditch located to the south/southeast of the impoundment and preparation plant. This ditch flows northeast and becomes the final collection ditch (photograph 39) that flows to the treatment basin (photograph 25).

Location: Mine Driveway near the warehouse, south of the preparation plant office.

Camera Direction: Northwest

Date/Time: 8/3/2022 / 13:54 PM



41: DSCN3905

Description: View looking northeast towards the final collection ditch for drainage waters and the washed coal storage silos. The settling ponds and Pond 9 are located in the background towards the center of the photograph.

Location: Mine driveway south of the warehouse

Camera Direction: Northeast

Date/Time: 8/3/2022 / 13:56 PM



42: DSCN3906

Description: View looking across stormwater pond located off Sinfield Road, located south of the sewage treatment plant for the deep mine bathhouse and offices.

Location: Stormwater Pond

Camera Direction: West/Northwest

Date/Time: 8/3/2022 / 14:03 PM



43: DSCN3907

Description: WWTP discharge point designed to flow into pond upstream of Outfall 012. No flow at time of inspection.

Location: Outfall 012 for the Deep Mine Bathhouse and Office Sewage Treatment Plant

Camera Direction: South

Date/Time: 8/3/2022 / 14:07 PM



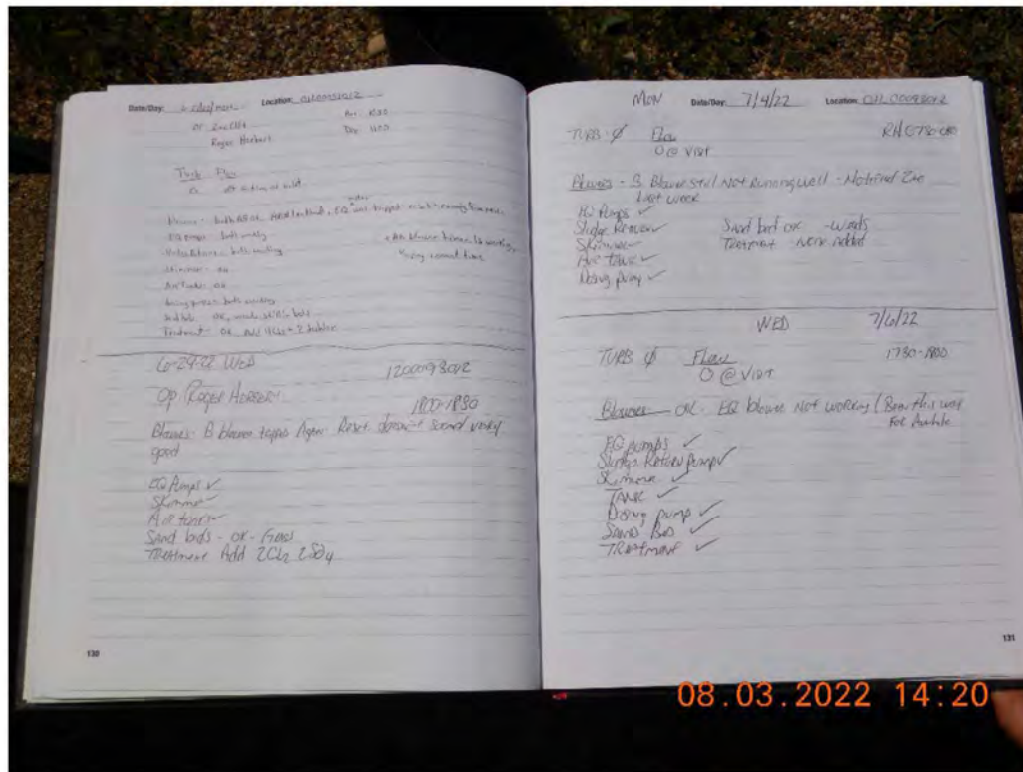
44: DSCN3908

Description: Overview of the Deep Mine Bathhouse and Office Sewage Treatment Plant.

Location: Deep Mine Bathhouse and Office Sewage Treatment Plant.

Camera Direction: West

Date/Time: 8/3/2022 / 14:12 PM



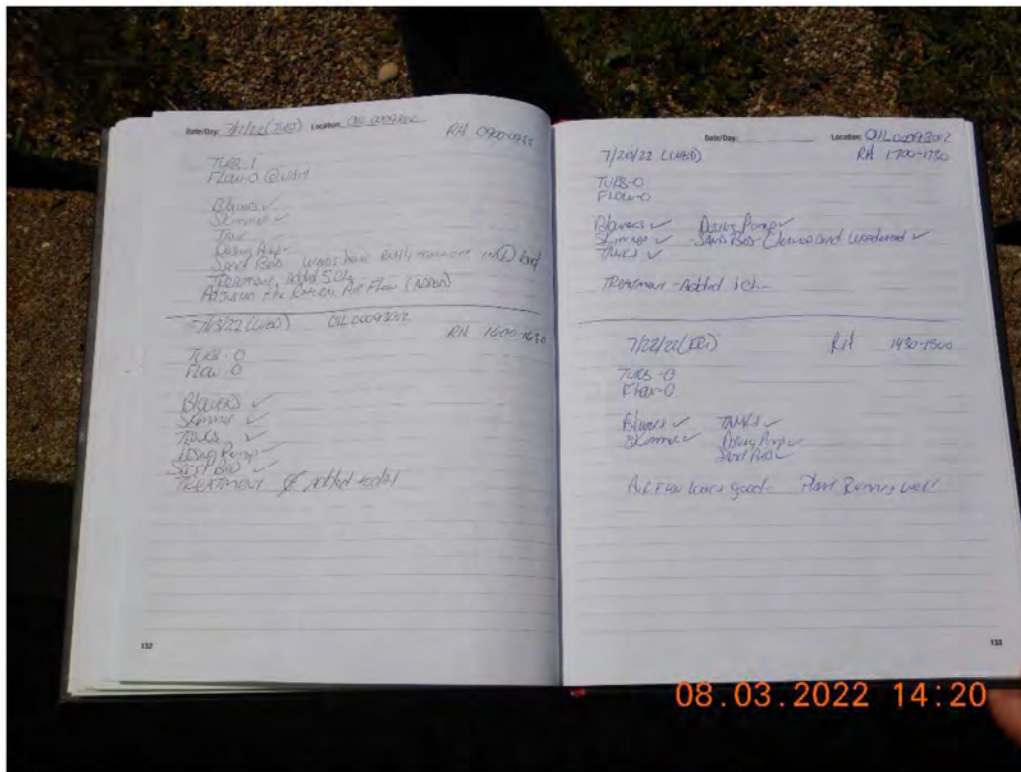
45: DSCN3909

Description: Operator logbook pages for the Deep Mine Bathhouse and Office Sewage Treatment Plant for June 27, 2022 through July 6, 2022.

Location: Deep Mine Bathhouse and Office Sewage Treatment Plant.

Camera Direction: Not Applicable.

Date/Time: 8/3/2022 / 14:20 PM



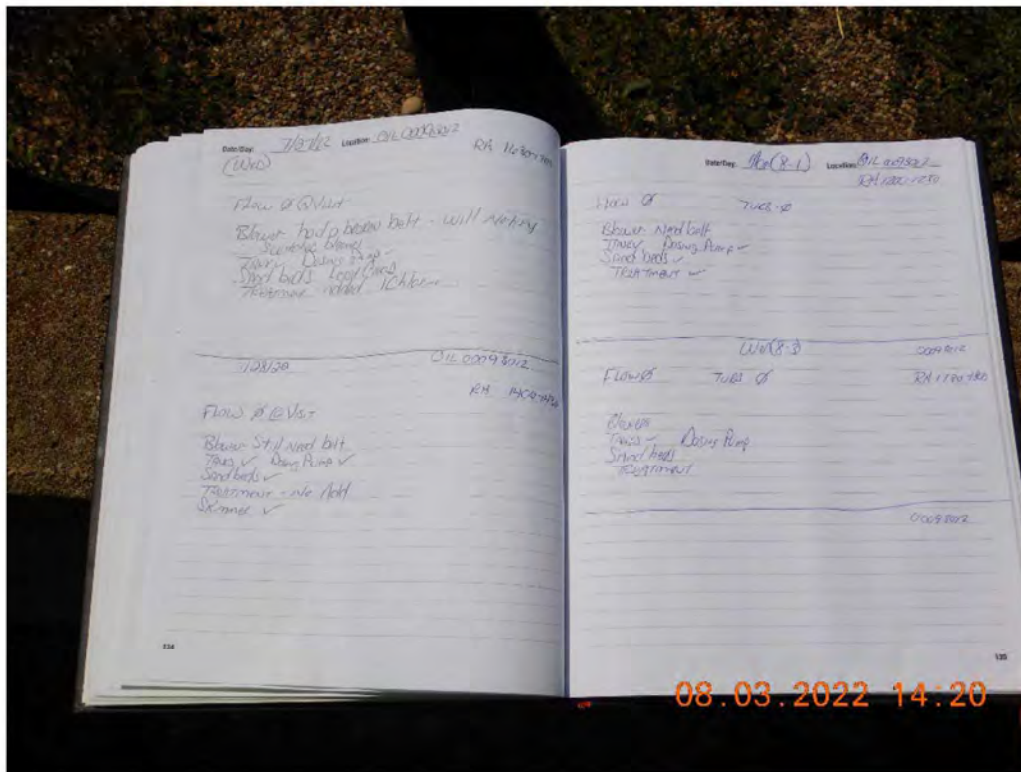
46: DSCN3910

Description: Operator logbook pages for the Deep Mine Bathhouse and Office Sewage Treatment Plant for July 12, 2022 through July 22, 2022.

Location: Deep Mine Bathhouse and Office Sewage Treatment Plant

Camera Direction: Not Applicable

Date/Time: 8/3/2022 / 14:20 PM



47: DSCN3911

Description: Operator logbook pages for the Deep Mine Bathhouse and Office Sewage Treatment Plant for July 27, 2022 through August 3, 2022. Note entry time for August 3, 2022 is noted as "1730 -1800" and the photograph was taken at 14:20.

Location: Deep Mine Bathhouse and Office Sewage Treatment Plant

Camera Direction: Not Applicable.

Date/Time: 8/3/2022 / 14:20 PM



48: HOPE0308

Camera: RICOH WG-4 GPS

Description: Outfall 012 pipe with discharge from Deep Mine Bathhouse and Office Wastewater Treatment Plant

Location: Outfall 012

Camera Direction: South.

Date/Time: 8/3/2022 / 14:28 PM

Appendix B: Aerial Images of Treatment Ponds and Outfalls

Note: Aerial images from Google Earth obtained August 23, 2022. Images do not represent conditions observed and are only to be used as reference.



Image 1. Aerial image of the Facility with collection ponds, treatment ponds and stormwater ponds labeled.



Image 2. Aerial image of Pond 9 leading to Outfall 009. In 2020, Outfall 009 was moved from the location at the blue arrow at the end of the discharge pipe to the location at the red arrow prior to merging with Cross Creek in order to prevent TDS.



Image 3. Aerial image of Outfall 010 near the conveyor belt. White square indicative of the cover built to prevent dust from conveyor belt from blowing into the sand filters.

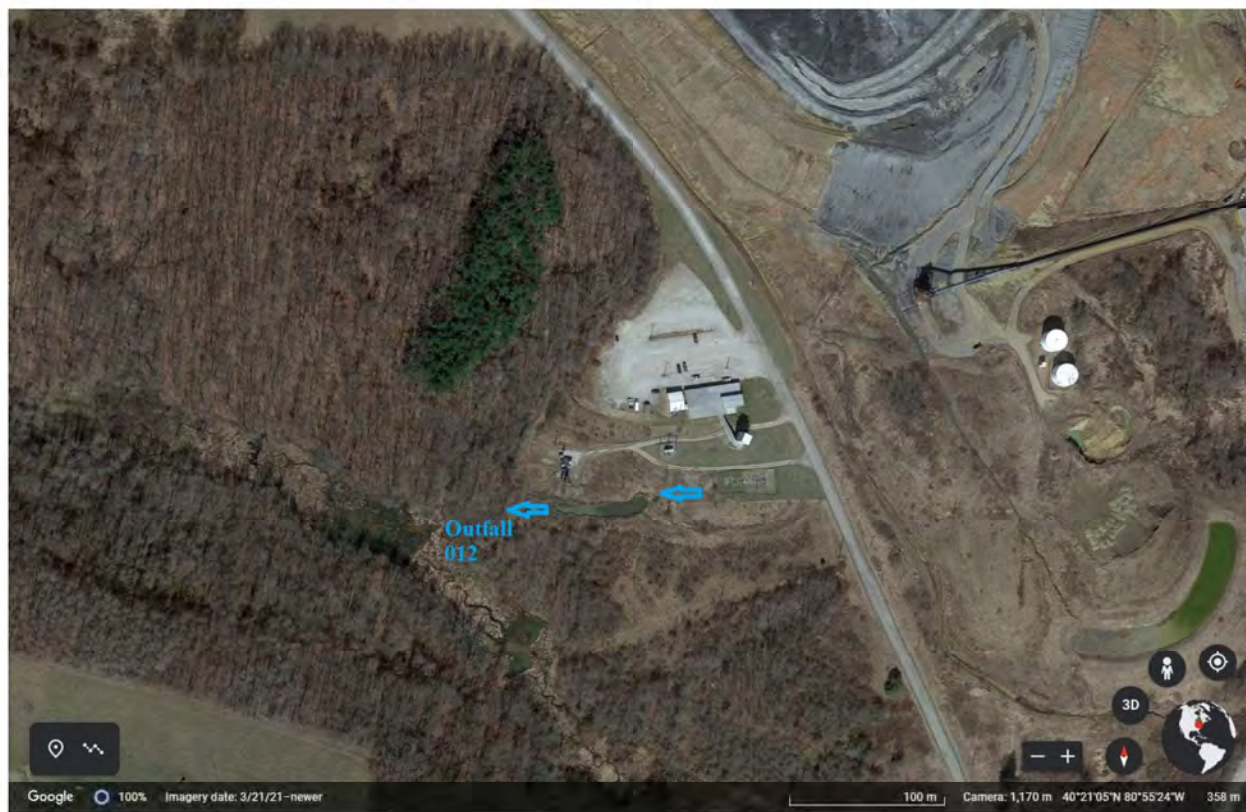


Image 4. Aerial image of the office and deep mine bathhouse WWTP discharging to a pond first prior to discharging to the Outfall 012.