

Part III-D and III-E

### HYDROLOGIC MONITORING PLAN

COMPANY NAME: Quality Coal Co., Inc.

MINE NAME: Dutton Hill Mine No. 2

COUNTY: Walker

NPDES: AL0078972 and AL0075086

**\*A MAP SHOWING ALL MONITORING POINTS MUST ACCOMPANY THIS PLAN**

**I. Surface Water Monitoring Program: (Discharge Points)**

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List each discharge point to be monitored and indicate the type or source of discharge	List parameters to be sampled for each discharge point	List frequency of sampling for each discharge point	Duration of Monitoring
AL0071081 – Basin 006 AL0075086 – Basin 013 AL0078972 – Basin 027	See Attachment III-D-I NPDES Parameters		Until joint approval by ASMC and ADEM. In no case sooner than ASMC approval of Phase II Bond release.

\*\*See attachment map for all monitoring site locations.

Note: Performance monitoring to commence no sooner than the original opening of the mine.

**ATTACHMNET III-D-I  
NPDES PARAMETERS**

AL0071081 – Basin 006

<u>Effluent Characteristic</u>	<u>Sample Frequency</u>	<u>Daily Min.</u>	<u>Monthly Avg.</u>	<u>Daily Max.</u>
Specific Conductance	Twice Monthly	N/A	Report	Report
Sulfate	Twice Monthly	N/A	Report	Report
pH	Twice Monthly	6.0 s.u.	N/A	9.0 s.u.
Total Suspended Solids	Weekly	N/A	35.0 mg/l	70.0 mg/l
Iron, Total	Twice Monthly	N/A	3.0 mg/l	6.0 mg/l
Manganese, Total	Twice Monthly	N/A	2.0 mg/l	4.0 mg/l
Flow, Instantaneous	Weekly	N/A	Report	Report
Toxicity (Ceriodaphnia Acute)	Once Quarterly	N/A	0 – pass(0) / fail(1)	
Toxicity (Pimephales Acute)	Once Quarterly	N/A	0 – pass(0) / fail(1)	
Total Dissolved Solids	Once Quarterly	N/A	Report	Report

AL0075086 – Basin 013

<u>Effluent Characteristic</u>	<u>Sample Frequency</u>	<u>Daily Min.</u>	<u>Monthly Avg.</u>	<u>Daily Max.</u>
Iron, Total	Twice Monthly	N/A	3.0 mg/l	6.0 mg/l
Manganese, Total	Twice Monthly	N/A	2.0 mg/l	4.0 mg/l
Total Suspended Solids	Twice Monthly	N/A	35.0 mg/l	70.0 mg/l
pH	Twice Monthly	6.0 s.u.	N/A	9.0 s.u.
Flow, Instantaneous	Twice Monthly	N/A	Report	Report

AL0078972 – Basin 027

<u>Effluent Characteristic</u>	<u>Sample Frequency</u>	<u>Daily Min.</u>	<u>Monthly Avg.</u>	<u>Daily Max.</u>
Specific Conductance	Twice Monthly	N/A	Report	Report
Sulfate	Twice Monthly	N/A	Report	Report
pH	Twice Monthly	6.0 s.u.	N/A	9.0 s.u.
Total Suspended Solids	Weekly	N/A	18.0 mg/l	36.0 mg/l
Iron, Total	Twice Monthly	N/A	3.0 mg/l	6.0 mg/l
Manganese, Total	Twice Monthly	N/A	2.0 mg/l	4.0 mg/l
Silver, Total Recoverable	Twice Monthly	N/A	N/A	3.3 µg/l
Flow, Instantaneous	Twice Monthly	N/A	Report	Report
Toxicity (Ceriodaphnia Acute)	Once Quarterly	N/A	0 – pass(0) / fail(1)	
Toxicity (Pimephales Acute)	Once Quarterly	N/A	0 – pass(0) / fail(1)	
Total Dissolved Solids	Once Quarterly	N/A	Report	Report

**A. Reporting and Recording Specifications:**

**A. Reporting and Recording Specifications:**

a) NPDES outfalls:

Reporting as required for NPDES permit to Alabama Department of Environmental Management plus a simultaneous copy to ASMC containing the following:

- 1) Name of Company
- 2) Name of Mine
- 3) ASMC permit number
- 4) NPDES number
- 5) Sampling period covered by report
- 6) List of the discharge points sampled and analysis results

b) Other:

**B. Non-Compliant Discharge Reporting:**

Reporting as required by the NPDES permit to Alabama Department of Environmental Management plus simultaneous copy (indicating ASMC permit number) to ASMC.

**II. Other Surface Water Monitoring.**

Bodies of water receiving discharges from the mine:

**Unnamed Tributary to Rocky Branch and Lost Creek**

List Monitoring Points and indicate type or describe location	List Parameters to be sampled	Frequency Minimum Quarterly	Duration of Monitoring
P-3920 SW-2 (Rocky Branch downstream)	pH TSS FeT MnT Discharge Conductivity AlT SbT As(III) BeT CdT CrT CuT HgT NiT SeT AgT TiT ZnT	Quarterly	For Life of Mine
P-3929 SW-3 (Lost Creek downstream)	same as above		
SW-4 (Rocky Branch upstream)	same as above		

**A. Reporting and Recording Specifications:**

- 1) Frequency of Reporting: Quarterly
  
- 2) Contents of Report: Name of company, mine name, ASMC permit number and for all monitoring locations, the dates samples were taken and sample results for each parameter and who collected and analyzed the samples.

**III. Monitoring requirements for removal of sediment ponds and other treatment facilities:**

Monthly for 6 months prior to application for approval to remove facility. Monitoring data will be submitted to ASMC with application to remove the facility.

Monitoring sites shall be located to sample water entering the facility. (i.e., untreated drainage).

Show proposed locations on the monitoring location map. Parameters to be sampled shall be those required by the NPDES permit.

**IV.**

**A. Monitoring requirements for Phase II bond release:**

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List each discharge point to be monitored and indicate the type or source of discharge	List parameters to be sampled for each discharge point	List frequency of sampling for each discharge point	Duration of Monitoring
Inflow * AL0071081 – Basin 006 AL0075086 – Basin 013 AL0078972 – Basin 027	See Attachment III-D-I NPDES Parameters		Until joint approval by ASMC and ADEM. In no case sooner than ASMC approval of Phase II Bond release

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\*If no inflow into the basins, then a sample of the basin discharge will be collected. If no basin discharge, then an in-pond sample will be collected.

\*\*For the increment within which the respective basin is bonded or within the respective basin's drainage area.

**B. Reporting:**

Reports shall be submitted with application for Phase II Bond Release indicating: Sample location number, monitoring period, analysis results, date for each sample, sampling and analytical data and a map showing location of the sample sites.

## V. Groundwater Monitoring

List Monitoring Points and indicate type or describe location	List Parameters to be sampled	Frequency Minimum Quarterly	Duration of Monitoring
MW-1 MW-2 P-3920 MW-2	pH Iron (Fe) Manganese (Mn) Water level	Quarterly	Until Mined Through

If, according to the results of the PHC, it is determined that groundwater monitoring may not be necessary, the applicant shall submit with the permit application sufficient documentation, including geologic and hydrologic relations, to enable the Commission to make a decision regarding a waiver of the monitoring of the groundwater.

**A. Reporting and Recording:**

Reports to be filed with ASMC quarterly supplying the following information: Company name, mine name, permit number, and for each monitoring site, the date and sample results for each parameter, including sampling and analytical information for all samples.

**VI. Maintenance of records and Availability for Inspection:**

- a) Active Mining - copies of all monitoring records shall be maintained at office.
- b) During periods of temporary cessation of operations and after active mining, all monitoring records will be kept at:

<b>Quality Coal Co., Inc.</b>	<b>(Office)</b>
<b>P.O. Box 2705</b>	<b>(Address)</b>
<b>Jasper, AL 35502</b>	<b>(City &amp; State)</b>
<b>Jon Kyle Ingle</b>	<b>(Custodian of Records)</b>

- c) All monitoring records will be made available upon request to ASMC Personnel for inspection.

**VII. Describe how the data obtained from performance monitoring may be used to determine the impacts of the operation upon the hydrologic balance. Describe how parameters to be monitored relate to the suitability of the surface and ground water for current and approved post mining land use.**

The performance monitoring as described above will provide an excellent gauge for determining most alterations in the hydrologic balance that are caused by this mining operation.

Surface water monitoring sites P-3920 SW-2 and P-3929 SW-3, are located downstream, respectively of any mining to be conducted by **Quality Coal Company, Inc., Dutton Hill Mine No. 2** site. Results of the analysis from the pre-mine analysis of Station P-3920 SW-2 and P-3929 SW-3 can be compared to the post mining results during mining to determine the impact to the receiving stream once mining begins. Monitoring wells MW-1, MW-2 and P-3920 MW-2 will monitor the characteristics of the groundwater within the permit area. This site can be compared to the results of the analysis from baseline sampling to determine the impact to the groundwater and be compared to predictions made in the PHC.

No other parameters are deemed necessary at this time. However, if, during the course of the mining operation, it is determined through the performance monitoring that problems exist, additional parameters may be monitored and the hydrologic monitoring plan will be revised (in consultation with ASMC) to reflect such changes.

- VIII. Please NOTE: ALL PERFORMANCE MONITORING REPORTS should be submitted in duplicate. For companies with multiple permits, each permit should have a corresponding monitoring report. Sites serving multiple permits should be included in all pertinent monitoring reports.
- IX. If a waiver is requested for a particular water-bearing stratum, give details. 880-X-8H.06(1)(h)(2)

## **I. Plans For Recording and Reporting Data (779.13)**

Describe how surface and groundwater quantity and quality will be collected, recorded, and reported to the Regulatory Authority according to Section 816.52.

All samples shall be taken according to Standard Methods 1060 and "Collection and Preservation of Samples" or other equally valid approved methods.

All surface water samples were taken by the grab method. Flowrate measurements of surface water samples were performed in accordance with ASTM D3858, 10.9.6, p.101 "Standard Practice for Open Channel Flow Measurement of Water by Velocity - Area Method". Specific Conductivity and pH of all samples were measured in the field. The samples were poured in a clean plastic container and stored at a temperature near 4°C and all other parameters were analyzed within 24 hours. If samples were not analyzed within 24 hours, after the pH was measured, the pH was adjusted to 2.0 S.U. or less with Nitric Acid (about 2 mL per liter) which allows samples to be stored up to six months at room temperature. Prior to analyzing other parameters, the pH was re-adjusted to between 4.0 and 5.0 S.U. with 0.1N Sodium Hydroxide. Samples for TSS and sulfates that were not run within 24 hours were refrigerated near 4°C and TSS analyzed within 7 days and sulfates within 28 days. Sample preservation if used was in accordance with Table 1060:I (Summary of Special Sampling or Handling Requirements) from Standard Methods for the Examination of Water and Wastewater 17<sup>th</sup> Edition 1989 (page1-37).

Groundwater samples shall be taken by the "grab" method.

The quantity of the water will be determined by comparing the depth to the bottom of the well and the depth to the water.

The sampling methods for pH, SpC, Fe, Mn and SO<sub>4</sub> are to be sampled in accordance to Hach Water Analysis Handbook. These methods are EPA approved and are adapted from Standard Methods for the Examination of Water and Wastewater.

Sampling will be recorded and reported to the Regulatory Authority as outlined in Part III-D & E of this application.