

MR - Pratt One, L.L.C.

Pratt Mine

HYDROLOGIC
RECLAMATION PLAN

submitted by:

Perc Engineering Co., Inc.

P.O. Box 1712

Jasper, AL. 35502-1712

Hydrologic Reclamation Plan (880-X-8H-.06(1)(g)):

I. Steps to Minimize Hydrologic Balance Disturbance:

Mining and reclamation activities conducted on the MR-Pratt One, L.L.C. - Pratt Mine area will be conducted to minimize disturbance to the hydrologic balance. Several ways in which this will be accomplished are, but not limited to the following:

- a. Monitoring and Reporting of all constructed sediment basins 001P, 003P, and 004P at this mine site (where all runoff from the mine area will drain), surface water monitoring site 402-009, and monitoring groundwater from the mine mouth as required by the Regulatory Authorities will be performed in accordance with the approved Hydrologic Monitoring Plan.
- b. Physical and chemical treatment of the outfalls at this mine site as necessary to comply with State and Federal Water Quality Laws.
- c. Upon completion of mining, overburden materials utilized to seal the mine mouth and regrade surface disturbance will be sampled systematically and sent to the Auburn University Testing Laboratory, for analyses to determine type and amount of soil amendments necessary to maintain vegetative growth as reported in Part IV-C-1 of the permit application due to a topsoil variance being applied for at this facility. This sampling system should be adequate (see below).
 1. The chemical analyses will consist of the followings parameters: pH, % Sulfur, Phosphorus, Potassium, Magnesium, Calcium, Maximum Potential Acidity, Neutralizing Potential, NO₃-N, and Recommendations for the amounts of Limestone, Nitrogen, P₂O₅, and K₂O to be added to the soil.
 2. The physical analyses will consist of the following parameters: Sieve Analysis, % Sand, % Silt, % Clay, Textural Classification, and Available Water Capacity.
- d. Husbandry practices will include, seeding spot areas within the Pratt Mine to increase cover and the addition of proper nutrients. Suitable mulch shall be used on all regraded areas to control erosion, promote germination of seeds and increase the moisture retention capacity of the soil. A maximum of 3 tons per acre of hay will be used as mulch.
- e. With respect to quantity of the Hydrologic Balance, because mining at this site is not expected to significantly affect the regional aquifer in the area, there should be no significant adverse effect on the Hydrologic Balance from mining within the permit area.

II. Material Damage Outside the Permit Area:

All mining and reclamation activities within the Pratt Mine will be conducted to minimize and prevent material damage to the hydrologic balance. Several ways in which this will be accomplished are, but not limited to the following:

1. Observing the 300 ft. setbacks from occupied dwellings, unless acceptable waivers are submitted and approved by ASMC.
2. Mining within the permit boundary.
3. Observing and complying with all State and Federal Water Quality Limits.
4. Mine openings within the permit area (other than blast holes) will be eliminated in the following methods:
 - A) Exploration Holes - Exploration holes will be backfilled with the drill cuttings and capped with two (2) feet of clay.
 - B) Monitoring Wells - Groundwater monitoring wells will be sealed at the time of abandonment with a concrete cap (1.5'x1.5'x.5').
 - C) Mine Openings - After mining is completed the openings will be sealed by constructing concrete block walls and by utilizing other available material, in accordance with the requirements of M.S.H.A.. The earthen material used in the sealing process will consist of non-toxic, nonacid, and noncombustible material compacted to 90% of the standard proctor. (See Attachment III-A-6) Upon completion of the sealing of the openings the pit will be filled to a minimum height of 2' above the openings and regraded to a maximum slope of 2.5H to 1V.
5. Timely regrading for drainage control.
6. On site sediment control to prevent sediment from entering ponds.
7. Timely revegetation of all disturbed areas.

III. Applicable State and Federal Water Quality Laws:

To meet the applicable State and Federal effluent limitation

standards as set forth by the Environmental Protection Agency and the Alabama Department of Environmental Management, the applicant shall minimize potential water quality problems by properly handling and disposing of any acid or toxic forming materials including both coarse and fine washer refuse and treating contaminated drainage. To assure water quality standards, periodic performance monitoring will be conducted as approved in the Hydrologic Monitoring Plan. Sediment basins will be utilized as collection sites for surface water treatment when runoff from the mine site requires it. In the event quality problems should arise, the following procedures will be used :

- 1) Lime or caustic soda to raise a low pH.
- 2) Potassium permanganate to decrease manganese levels if the pH is too high.
- 3) Alum to decrease total suspended solid concentrations.

In the event alternative methods or chemicals are needed, the Regulatory Authority will be notified and new methods or chemicals will be approved prior to use.

IV. Rights of Present Water Users:

As stated in the groundwater section, a well inventory conducted by PERC Engineering Co., Inc. between January and March of 1997 revealed that 271 residences are located within both 1/2 mile of proposed surface disturbance and 1/4 mile of the proposed recovery area. Of the 271, and as shown on the attached Table 2, four (4)

residences were abandoned, eight (8) residents refused to participate in the well inventory, and thirty-six (36) residents were not at home during numerous (at least 5) attempts to contact them including trips to the site on Saturday and Sunday. Only three residences (PM-68, PM-148, and PM-153) had wells and only one well (PM-153) is used (for livestock). The other two residences do not use their groundwater sources due to the fact that they are connected to a municipal source. All other residences inventoried utilized municipal water from either the City of Birmingham or the City of Graysville as their only source. This mine site is located in close proximity to residential areas and as such a developed municipal water supply is known to be available to all residences within the inventory area, in the event a residence not inventoried (resident not at home) has a well which is affected by mining at this site.

V.A. Acid and Toxic Drainage:

Historically, discharge quality from abandoned Pratt Seam works have been acid-forming (see data from the adjacent New Castle Mining, Inc. - Coal Creek Mine, P-3652). In addition, a miscellaneous seep sample collected by qualified personnel of the Perc Engineering Laboratory on 01-13-97 reveals that discharge from this abandoned underground mine within the proposed permit area is acid-forming. However, that being said, there are several significant differences between discharge from an abandoned underground mine and discharge associated with dewatering activities at an active underground facility: 1) The contact time between infiltrated groundwater and

in-place coal within an abandoned underground mine is extended (lengthy) based on infiltration rate, volume of water impounded, strata orientation, and discharge rate. This extended contact time increases the likelihood of a change (decrease) in groundwater quality. At an active facility, infiltrated groundwater is usually dewatered immediately, especially in this case where the direction of mine development is down dip, therefore infiltrated groundwater would pool at the working face if not dewatered. This indicates that infiltrated groundwater at the Pratt Mine will be immediately dewatered and the contact time between infiltrated groundwater and coal surfaces will be minimal therefore this decreases the likelihood of acid-forming discharge from dewatered groundwater. 2) The second significant difference between discharge from an abandoned underground mine and discharge associated with dewatering activities at an active underground facility is in-situ treatment of infiltrated groundwater. At an abandoned facility, no chance for treatment exists, other than passive interaction with alkaline non-coal strata that may be exposed within the mine area (if this strata exists). Currently, at active facilities, MSHA requires that all surfaces be coated with 'rock dust' (an industry term) to suppress coal dust which can cause mine explosions. Rock dust is a limestone derivative which, in addition to guarding against an underground explosion, pre-treats discharge when the mine is dewatered. All surfaces within the developed mine area are continually coated with rock dust therefore infiltrated groundwater is inevitably treated prior to dewatering. The above discussion is not an argument saying discharge from the mine mouth will not require treatment, but it is

an argument saying that there is little likelihood of discharge from dewatering at this site being acid-forming. Coal stockpiles will be created by constructing a pad made of compacted clay or shale of acceptable permeability of desired thickness to carry the weight of loading and transportation equipment. Coal stockpiles will be located in such a manner whereas excess drainage may be diverted from coal stockpile areas. When the coal stockpile becomes no longer necessary it will be reclaimed by removing the coal which makes up the pad by truck, covering the pad area with four feet of the best available non-toxic, non-combustible material and revegetating in accordance with the approved Reclamation Plan (Part IV-C-5). Any material such as oil, grease, rags, etc., that may present a fire hazard will be properly disposed of in an approved landfill. Any non-coal waste will be disposed of at approved off-site landfills which meet all applicable local, state and federal requirements.

V.B. Contribution of TSS to Streamflow:

Total Suspended Solids within the permit area will be controlled by utilizing sediment basins to control runoff. These sediment basins will be designed to retain all settleable solids, skim and retain all floating solids and provide adequate detention volume and time to minimize the contribution of total suspended solids into the receiving streams. In the event that a problem arises with the TSS in the discharge of the sediment basins, Alum will be introduced into the basins to decrease total suspended solid concentrations. An alternative to Alum could be the construction of a floating silt fence to cause the solid to floc and settle to the bottom.

V.C. Water Treatment Facilities:

The sediment basins will be the primary treatment facility to which chemical treatment may be introduced as needed to maintain effluent limits set forth by the Regulatory Authority. Sediment basins will be constructed downstream of the permit area to control drainage and collect sediment from the disturbed area during mining and reclamation phases. In the event quality problems should arise, the following procedures will be used :

- 1) Lime or caustic soda to raise a low pH.
- 2) Potassium permanganate to decrease manganese levels if the pH is too high.
- 3) Alum to decrease total suspended solid concentrations.

In the event alternative methods or chemicals are needed, the Regulatory Authority will be notified and new methods or chemicals will be approved prior to use.

V.D. Drainage Control:

Sediment basins will be constructed during mining operations to control drainage and collect sediment from the disturbed area during the mining and reclamation phases. All surface and groundwater runoff will be controlled through these basins whose design are shown in Part III-B of the application. The basins will be constructed, prior to any disturbance in its drainage area, under the supervision of a qualified Registered Professional Engineer or be a qualified person under his direct supervision. Upon completion

of construction the basins will then be certified to the Regulatory Authority as having been constructed by bringing desirable material in and compacting it in lifts until the construction specifications are met. Drainage structures will be installed as per design plans with any necessary erosion control and/or stabilization procedures such as riprap, concrete, drop structures, energy dissipaters, etc. being implemented as deemed necessary by the project engineer. Upon completion of construction the entire disturbed area will be revegetated in accordance with the approved Reclamation Plan (IV-C-5). Silt fences, hay filter dams, dust control on roads, lush vegetation, diversions ditches and other prudent practices will be utilized in controlling runoff.

V.E. Restore Approximate Recharge Capacity:

Due to the fact that this is an underground facility, no decrease in recharge capacity is anticipated therefore restoration of the recharge in this area is not an important consideration.

V.F. Rights of Present Water Users:

In the event that it is shown that mining by MR-Pratt One, L.L.C. has diminished the quality or quantity of surrounding well(s), one of the following methods of replacing the resident's domestic supply will be implemented: 1) an existing well that penetrates unaffected aquifers but that has insufficient casing to prevent impact from this operation will be cased to an unaffected aquifer or, 2) a new well will be drilled and cased into an aquifer unaffected by this operation or, 3) the residence(s) will be connected to an existing

municipal water line or, 4) Other methods which replace the groundwater users' supply and is agreeable to both the user and the operator will be considered an alternative.

V.G. Potential Adverse Consequences from PHC:

None anticipated.

CERTIFICATION STATEMENT:

The preceding Hydrologic Reclamation Plan was prepared for MR - Pratt One, L.L.C. at the Pratt Mine site by me or under my supervision and I hereby certify that it is true and correct to the best of my knowledge or belief.



Date: 1-17-97

TIMOTHY S. THOMAS

PROFESSIONAL ENGINEER

REGISTRATION NO. 18830

