

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

May 22, 2006

TO: Internal File

THRU: Wayne Hedberg, Permit Supervisor, Task Manager
Peter H. Hess, Environmental Scientist/Engineering, Team Lead

FROM: Priscilla W. Burton, CPSSc, Environmental Scientist/Soils

RE: Degas Wells G-13 thru G-17, Canyon Fuel Company, Dugout Canyon Mine, C/007/0039, Task ID #2456

SUMMARY:

Attachment 2-1 of the **Methane Degassification Volume** of the MRP contains baseline survey information gathered from sites G1 through G17. The well sites G-13 through G-17 were surveyed in June and October 2005. These sites are located along the road up Pace Canyon and on the plateau in Sec 17, 18 & 19 of T13 S., R.13 E (Table 1.1 and Plate 1-4). Together degas well sites 13 through 17 will disturb an additional 10.5 acres (Table 1.2). Total well acreage for degas wells 2 through 17 is 24.85 acres.

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.21; 30 CFR 817.22; 30 CFR 817.200(c); 30 CFR 823; R645-301-220; R645-301-411.

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Analysis:

Appendix 2-2, Volume 1 of the MRP provides a general outlook on the soils of the Book Cliffs in the vicinity of the Dugout Mine. Figure 1-1 and Plate 1-4 (**Methane Degassification Amendment Volume**) shows the location of the degas wells. Table 1-1 provides locations of the wells and Table 1-2 states acreage for each well. Total acreage for the well sites G-1 through G-17 comes to 24.85 acres (Division calculation).

The specific soils information for degasification well sites G-2 through G-17 is found in Attachment 2-1 (**Methane Degassification Amendment**) of the MRP. (Site G-1 was not developed.)

Baseline soil chemistry information for soils at sites G-2 through G-7 was collected at the time of disturbance (Attachment 2-1), all subsequent sites were surveyed and soil analyzed prior to disturbance. The following parameters were analyzed: texture (particle size analysis), pH, Electrical Conductivity, Sodium Adsorption Ratio, percent CaCO₃, plant available Nitrogen, Potassium, and Phosphorus (Section 243). Soil sample analyses are found in Attachment 2-1.

The sites are located at approximately 7,400 to 8,900 ft (see Fig 1-1 and Plate 1.4). The site descriptions, drawings, and photographs are in Attachment 2-1. Some of the sites were previously disturbed by logging (Table 3-1, pg 3-16, Attachment 2-1 section 4.3), previous exploration or road construction (sites G-6, G-9, G-11, G-12, G-14, G-15, G-16, G-17).

Site descriptions, sketches, profiles, and soil analyses are in Attachment 2-1.

Findings:

The information provided meets the requirements of the Regulations.

OPERATION PLAN

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-230.

Analysis:

Topsoil Removal and Storage

Sites G-8 through G-17: [05192006]

Site configurations are provided in Attachment 5-1. Disturbed acreage for each well site is tallied in Table 1-2, however topsoil will not be salvaged from beneath the topsoil storage area. Topsoil salvage areas vary from 0.32 acres at site G-6 to 2.75 acres at site G-13 (Table 1-2).

Topsoil removal volumes are listed in Table 2-1 and Section 222.400 and Attachment 2-2. Stripping depths vary from site to site and within each site. Topsoil stockpile volumes are provided in Table 2-1 and approximate dimensions are listed in Table 2-2. Stockpiles are constructed against the slope; therefore, height measurements reflect the original ground surface. Stockpiles for sites G-11 and G-12 will be constructed with 1.5h:1v side slopes (Attach. 2-2). Erosion control methods will include a berm around the base of the stockpile and surface gouging.

Although slopes steeper than 2h:1v creates difficulty for establishment of vegetation, the steeper slopes will allow for less disturbed area. In addition, the contemporaneous reclamation of the drilling pad will allow for more storage area and the topsoil pile will be reconfigured to a lesser slope.

Subsoil will be excavated for use as berms; a mud pit will be developed in subsoil at each site (Sec. 231.100, Methane Degassing Volume).

Findings:

The information provided meets the requirements of the Regulations.

RECLAMATION PLAN

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-240

Analysis:

Degas Well Sites [05/19/06]

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The reclamation timetable is shown on Figures 5-15 and 5-26. Unless otherwise specified, sites will be reclaimed in one phase after methane venting ceases. The well sites will be graded, topsoiled, roughened, seeded, and mulched (see Figures 5-4, 5-8, and 5-12). Topsoil replacement depth for each site is listed in Table 2-3. Delays in well plugging will occur as described in Sec.242.100.

The plan describes the reclamation of the drilling mud pits in Section 242.100. The mud pit will be allowed to dry and will be filled with sub-soil that will be compacted to minimize settling. There will be mixing of the cover material with the rock fragments and sediments of the mud pit to avoid creating an abrupt boundary between the layers.

The plan indicates the sites will be ripped to a depth of eighteen to twenty four inches (Section 242.100 and 341.200) to reduce compaction.

Topsoil will be re-spread using a trackhoe. The soils will be handled when loose and friable (not too wet, not too dry), see Section 242.100. Redistribution thickness is shown in Table 2-3.

Soil Nutrients and Amendments

Soil nutrients and amendments will be applied to the redistributed soils based on analyses of samples collected from the stockpiled topsoil as compared with baseline information.

Soil Stabilization

Soil may be replaced at grades of up to 1.5h: 1v (p. 5-70). The steepness of these slopes will be reduced at their base, providing a concave slope. Soil stabilization techniques also include ripping the subsoils (see p. 2-39), gouging all slopes 3H: 1V or greater after topsoil application (p. 2-40 and 5-76) and hydro mulching the seeded surface (p. 2-41 and 3-44 and 3-50). Slopes that are 3h: 1v or steeper will be gouged using a trackhoe (p. 5-70).

Findings:

The information provided meets the requirements of the Regulations.

RECOMMENDATIONS:

The application is recommended for approval.