

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

May 11, 2005

TO: Internal File

THRU: Pamela Grubaugh-Littig, Permit Supervisor

THRU: Peter H. Hess, Environmental Scientist III/Engineering, Team Lead

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

RE: Degasification Wells G-7, Canyon Fuel Company, LLC., Dugout Canyon Mine, C/007/0039, Task ID #2178

SUMMARY:

The submittal, received on, March 11, 2005, expands the Methane Degasification Amendment Volume to include degas well G-7, another ventilation borehole for the Rock Canyon seam to reduce methane along the longwall panel.

Figure 1-1 and Plate 1-4 shows the location of G-7 in T. 13 S. R 12 E. Section 24, within the same section as earlier wells. The G-7 well will add an estimated 1.25 acres to the permit area (Table 1-2). G-7 is in similar topography and soils as well site G-3 that was developed in November 2003. Baseline information gathered from site G-3 during its construction is found in Attachment 2-1 of the Degas Well Volume of the MRP.

As with previous degas wells, the Permittee has committed to describe the landscape (slope, vegetative cover), evaluate depth of topsoil, and sample the topsoil at site G-7 during soil salvage, with the intention of gathering baseline information for inclusion in Attachment 2-1. The following parameters will be analyzed: texture (particle size analysis), pH, Electrical Conductivity, Sodium Adsorption Ratio, percent CaCO₃, plant available Nitrogen, Potassium, and Phosphorus (Section 243).

The land is owned by the Thayn Family Trust. This property falls under the Surface Land Owner Agreement dated November 22, 1999, and First Amendment to Surface Use Agreement dated August 13, 2001 between Canyon Fuel Company (CFC) and Thayn. As required by these agreements, CFC will contact Thayn in writing of the proposed disturbance (Section 412.200). Attachment 4-2 contains a letter (dated March 2004) notifying the Thayn Trust of five degas wells and an internal document (dated March 2004) indicating the Permittee's intention to notify the Thayn Trust of up to nine degas wells, but it does not provide verification of the notification of the Thayn Trust of more than 5 existing degas wells.

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TECHNICAL ANALYSIS:

GENERAL CONTENTS

REPORTING OF TECHNICAL DATA

Regulatory Reference: 30 CFR 777.13; R645-301-130.

Analysis:

Productivity estimates and Order III level soil survey for Degas well G-7 was provided by the Mr. Dean Stacey of the Natural Resources Conservation Service.

Findings

The information provided meets the requirements for the reporting of technical data requirements of the regulations.

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.

Analysis:

Appendix 2-2 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 shows the location of G-7 in T. 13 S. R 12 E. Section 24, within the same section as earlier wells. The G-7 well will add an estimated 1.25 acres to the permit area (Table 1-2). G-7 is in similar topography and soils as well site G-3 that was developed in November 2003.

The specific soils information for degasification well sites G-2 through G-6 is found in Attachment 2-1 of the Methane Degasification Amendment of the MRP.

As with previous degas wells, the Permittee has committed to sample the topsoil at site G-7 with the intention of gathering baseline information for inclusion in Attachment 2-1. The

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following parameters will be sampled during soil salvage: Texture (particle size analysis), pH, Electrical Conductivity, Sodium Adsorption Ratio, percent CaCO₃, plant available Nitrogen, Potassium, and Phosphorus (Section 243).

Site G-3 and G-7

The 1988 Soil Survey of Carbon County Utah (an Order 3 soil survey) places G-3 and G-7 in the Beje-Trag complex (Appendix 6.2 – 6.4 of Attachment 2-1). The sites are located on a ridge and are vegetated with sagebrush, snowberry, and “associated species”. Site G-3 has a 10 – 20 % gradient to the east. Topsoil ranges from 8 inches on the west and northwest to 16 inches on the south and southeast (Appendix 6-7). The profile description of site G-3 (Appendix 6-6 of Attachment 2-1) identifies the soil type as Trag (Fine-loamy, mixed, superactive, frigid Typic Argiustolls).

The Trag Series consists of very deep soils formed from weathered bedrock. The nine-inch topsoil layer transitions to a six-inch BA layer (having characteristics of both A and B horizons). The mollic epipedon is the zone from 0 – 15 inches. The soil has an argillic horizon from 15 – 35 inches. The effective rooting depth is 60 inches. The potential plant community on the Trag soil is 60% grasses, 15% forbs, and 25% shrubs. Important plants are Antelope bitterbrush, Utah serviceberry, Mountain big sagebrush, snowberry, Salina wildrye, bluegrass, bluebunch wheatgrass, Indian ricegrass, and Letterman needlegrass. The Trag soil is in the Mountain Loam (Salina Wildrye) range site. In a normal year productivity is expected to be 1,500 lbs/acre (1988 Carbon County Soil Survey).

A soil sample analysis for the salvaged topsoil at G-3 is found in Attachment 2-1. G-7 falls in the same Order III map unit as G-3. Site-specific information will be collected for site G-7 prior to disturbance (personal communication with Vicky Miller, May 10, 2005).

All Sites:

Soils were not analyzed during the topsoil survey. The application indicates that the topsoil from all sites will be analyzed for the following parameters during soil salvage: Texture (particle size analysis), pH, Electrical Conductivity, Sodium Adsorption Ratio, percent CaCO₃, plant available Nitrogen, Potassium, and Phosphorus (Section 243). A commitment to have a qualified soil scientist gather site specific information just prior to development of site G-7 such as the slope, topsoil depth and depth to lithic contact is included in the plan and was confirmed by email communication (Vicky Miller to Pete Hess on May 11, 2005).

Findings:

The information provided meets the requirements for soils resource information.

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RIGHT OF ENTRY

Regulatory Reference: 30 CFR 778.15; R645-301-114

Analysis:

The land is owned by the Thayn Family Trust. This property falls under the Surface Land Owner Agreement dated November 22, 1999, and First Amendment to Surface Use Agreement dated August 13, 2001 between Canyon Fuel Company (CFC) and Thayn. As required by these agreements, CFC will contact Thayn in writing of the proposed disturbance (Section 412.200). Attachment 4-2 contains a letter (dated March 2004) notifying the Thayn Trust of five degas wells and an internal document (dated March 2004) indicating the Permittee's intention to notify the Thayn Trust of up to nine degas wells, but it does not provide verification of the notification of the Thayn Trust of more than 5 existing degas wells. However, the Division is aware of the fact that permittee and the Thayn Family Trustee have been in communication for well G-7. The Division will require notification verification of any wells in addition to G-7.

Findings:

The information provided meets the Land Use requirements of the Regulations.

RECOMMENDATIONS:

Due to the difficulty of access during the winter months and the necessity of drilling the wells during the 2005 field season, Order 1 Soil Survey information required by the R645 Rules for disturbed areas will be acquired as the site is accessed for drilling, by a qualified soil scientist (email communication from Vicky Miller to Pete Hess on May 11, 2005).

The Permittee has committed to sampling and analysis of the sites for baseline topsoil information including depth and profile information from all sites during development. Topsoil samples will be taken and will be analyzed for the following parameters during soil salvage: Texture (particle size analysis), pH, Electrical Conductivity, Sodium Adsorption Ratio, percent CaCO₃, plant available Nitrogen, Potassium, and Phosphorus (Section 243). The information gained from this analysis is added to Attachment 2-1 of the MRP as it is obtained, along with quantities of topsoil salvaged.

The application is recommended for approval at this time.