

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

March 12, 2007

TO: Internal File

THRU: Wayne H. Western, Environmental Scientist III *W.H.W.*

FROM: Priscilla Burton, CPSSc, Environmental Scientist III *PWB by an*

RE: 1st North Federal Lease Boundary Addition, CONSOL Energy Company, Emery Deep Mine, C/015/0015, Task ID # 2761

SUMMARY:

Approximately one-third of the federal IBC is considered prime farmland when irrigated. The Permittee has made commitments in the application to provide a pre-subsidence survey of irrigation ditches and ponds. **Conditional approval is recommended with the following stipulation:**

The information in the proposed amendment is considered adequate to meet the requirements of this section for approval of the 160-acre IBC. The Permittee must update the acid/toxic information in Chapter III.C.5 and Chapter V. A. 4 of the MRP when roof and floor analysis becomes available from drilling (see R645-301-624.300 for specific requirements).

An amendment to include full extraction within the federal Incidental Boundary Change (IBC) was received on December 15, 2006 (assigned as Task 2646). A flurry of emails and telephone calls followed to discuss the definition of permit area and how it applied to the Prime Farmland and Alluvial Valley Floor requirements for permitting. A revision to the application was received on February 14, 2007 (reviewed as Task 2749). This review is of those responses, which have been previously agreed upon by all parties.

The initial task 2646 amendment [describing full extraction within the federal Incidental Boundary Change (IBC)] was received on December 15, 2006. A previous amendment received on September 12, 2006 described first mining only in the IBC.

The IBC area encompasses approximately 160 acres of federal coal lease U50044 located on privately held surface (D.U. Company) in the Sec. 22, T. 22 S., R. 6 E., SLBM: SW/4NW/4, NW/4SW/4, NE/4SW1/4, and SE/4SE/4. Figure XIIIa shows the existence of approximately

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50 acres of prime farmland, if irrigated within the federal IBC. Plate V-5 shows subsidence due to full extraction to areas west of the IBC. Although, "coal mining and reclamation operations" will not take place on prime farmlands, the Division's CHIA should consider the effect of subsidence and undermining on irrigated prime farmlands.

This land has private ownership and will be undermined in 2007 and 2008, requiring prior landowner notification. With full extraction of the coal, subsidence is planned and ground movement is expected to be three to five feet (Chap. V, pg 27). Although asked to provide a summary of the renewable resource information under R645-301-332 (and by reference R645-301-320). Consol declined. Their point of view is that these resource values were not relevant, since the only impact will be subsidence in the First North IBC (email correspondence, February 27, 2007, John Gefferth to Mary Ann Wright).

Information from the NRCS partially fulfills the requirements of R645-301-222.400 (present and potential productivity of the soils to be affected by "Surface Operations and Impacts Incident to an Underground Coal Mine"), by contributing a historical productivity figure.

[Note: A previous IBC in April 2005 added 348 acres to the northeast of the permit area in T. 22 S., R. 6 E., SLBM as follows: Sec 22: NE1/4, SE1/4, SE1/4NW1/4 (19 acres owned by Christiansen), Sec 23: W1/2 SW1/4, Sec 27: NE1/4.]

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.

Analysis:

The Permittee met the requirements of the soil resource information section. Soils information is provided on an Order III level for the 160-acre IBC area. Figure XIII-1 illustrates the 1970 survey and Figure XIII-1a illustrates the Draft NRCS survey in 2007. Soils of the Minchey Loam, Ravola Loam, Tusher Loam and Penoyer Loam type have been identified as prime farmland soils when irrigated (Fig. XIII-1a and Sec. XIII C. 2).

Figure XIIIa shows the potential for approximately 50 acres of prime farmland, if irrigated within the federal IBC. There are more acres of prime farmland in the fee portion of the IBC. Plate VIII-6 shows irrigated pasture in the year 2006. Locations of irrigated pasture vary from year to year. With full extraction, subsidence is planned and ground movement will be monitored (Chap. V, pg 27). For the purposes of providing baseline information, the applicant was asked to provide a summary of the renewable resource information under R645-301-332 (and by reference R645-301-320) to fulfill the requirements of R645-301-222.400 (present and potential productivity of the soils to be affected by "Surface Operations and Impacts Incident to an Underground Coal Mine"). Consol declined. Their point of view is that these resource values were not relevant, since the only impact will be subsidence in the First North IBC (email correspondence, February 27, 2007, John Gefferth to Mary Ann Wright). This argument was acceptable to the Divison. Productivity information provided by the NRCS is described under the Prime Farmland heading of this memo.

Findings:

The information provided meets the requirements of the Rules for prime farmland soils.

PRIME FARMLAND

Regulatory Reference: 30 CFR 785.16, 823; R645-301-221, -302-270.

Analysis:

The IBC area is shown as Prime Farmland in Important Farmlands of Parts of Carbon, Emery, Grand, and Sevier Counties. 1981. Utah Ag Exp Sta Res Rpt No. 76. Figure XIII-1a shows that within the 160 acre IBC, there are approximately 50 acres of prime farmland soils, that is one-third of the soil is prime farmland, if irrigated. Communication with the NRCS on December 12, 2006, confirms that there are approximately forty-eight irrigated acres within the First North federal IBC at this time.

Previous communication with the NRCS confirms the designation of Penoyer soils as prime farmland in the fee portion of the IBC. (see App XII-1). Recent mapping by the NRCS has determined that the soils having potential for prime farmland within the IBC are Minchey loam, Penoyer loam, Ravola loam, and Tusher fine sandy loam, when irrigated. Plate 1-1 shows that the land surface within the federal lease portion of the First North IBC is entirely owned by D.U. Company, Inc. [The D.U. Co. land is leased and irrigated, according to Muddy Creek Irrigation Co. representative Morris Sorenson.] Productivity of the D.U.P. land was estimated by the NRCS in their February 26, 2007 prime farmland determination letter as follows:

There are two soil survey mapping units that have been designated as prime farmland ONLY WHEN THEY ARE IRRIGATED. Using the map

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symbols from your attached map they are PnA--Penoyer loam, 0 to 1 percent slopes and R1B--Ravola loam, 1 to 3 percent slopes.

The estimated yields under irrigation for the Penoyer soil with a high level of management are: alfalfa = 5 tons, barley = 75 bushels, oats = 70 to 75 bushels and pasture 10 AUMs.

The estimated yields under irrigation for the Ravola soil with a high level of management are: alfalfa = 6 tons, barley = 100 bushels, oats = 70 bushels and pasture = 13 AUMs.

The yields values are taken from the SOIL SURVEY Carbon-Emery Area, UT, issued December, 1970.

Subsidence movement between 3 and 10 ft is projected with the area shown on Plate V-5. Ground movement will be monitored (Sec V.B.1). The application should provide a summary of the crops grown on the irrigated lands and the average productivity of the prime farmland lands outlined in Figure XIII-1a.

Findings:

Division in consultation with the NRCS has determined that there are irrigated, prime farmlands within the federal IBC. However, there will be no direct surface disturbance to prime farmland from "Coal Mining and Reclamation Operations." Protection of prime farmlands from subsidence is addressed under the Operations/Subsidence heading. [In this instance, as defined by the Coal Mining Rules and by the 2003 District Court decision, "Coal Mining and Reclamation Operations" does not include all areas described as "the permit area," on Plate 1-1 or described in Chap. 1, pg. 8.]

GEOLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.22; R645-301-623, -301-724.

Analysis:

Section III.C.5 of the application and section V.A.4 of the MRP should be updated with recent roof and floor analyses. A lack of current acid/toxic information should be addressed as soon as drilling information becomes available. John Gefferth acknowledged a lack of information and agreed to provide the information in an email (January 25, 2007), but not with this application.

Findings:

The information in the proposed amendment is considered adequate to meet the requirements of this section for approval of the 160-acre IBC. The information in the proposed amendment is considered adequate to meet the requirements of this section for approval of the 160-acre IBC. The Permittee must update the acid/toxic information in Chapter III.C.5 and Chapter V. A. 4 of the MRP when roof and floor analysis becomes available from drilling (see **R645-301-624.300**).

OPERATION PLAN

SUBSIDENCE CONTROL PLAN

Regulatory Reference: 30 CFR 784.20, 817.121, 817.122; R645-301-521, -301-525, -301-724.

Analysis:

Subsidence Control Plan

MRP App. XI-3 Section 2.3.4 contains monitoring commitments for the ditch and water supply to the Jack Lewis field during operations and for a topographic survey of the AVF in the upper Quitcupah Creek valley bottom prior to bond release.

Parcels owned in T . 22 S., R. 6 E., SLBM by D.U.Company and Kenneth L. & Earlene Christiansen will be surveyed prior to full extraction mining, as per pre-subsidence survey commitment found in Chap. XIII, Sec. D.2. and Chap. V, pp. 36, 37, 41 and 42 of the MRP. Plate V-5 illustrates that subsidence is likely to be expressed as parallel depressions of the land, sloping 3 ft. in 2,500 ft. (.01% slope) to a low point and back up again, in a diagonal pattern that follows the mine panel extraction. This pattern runs perpendicular to the established irrigation drainage ditches.

The application indicates that there are no appropriated points of diversion within the IBC, but that there are surface irrigation rights (Table VI-20). The Permittee has extended protection and mitigation to points of appropriation in Chap. XIII.C.6.6.

Chap. V. vol. 2, App. V-3, the pre-subsidence survey was stamped "Received" in 1998 and will be updated with current information on pond embankments and irrigation ditches within the angle of draw in the 1st North IBC (Chap V. p. 37). Plate V-1 illustrates the locations of structures identified in the 1998 document. Structure 89 (1/4 section marker), 90 (three man

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made ponds, 100 ft. diameter), 91 (1/16 section marker), 92 (fence and dirt road), and 93 (irrigation ditches draining NW to SE and 28 acres farmland) are within or immediately adjacent to the IBC. The Division notes that items 103 and 110 shown on Plate V-1 being immediately west of the IBC will also be subsided by full extraction mining. Within the area identified as 103, there are two ponds and several irrigated fields. Within item 110 there was a two-story wood-frame barn in good condition, 150 acres of farmland, and a 300 ft. X 100 ft. pond. All ponds were full at the time of the 1998 survey, but no depths were reported. Capacity of ponds was requested, but not agreed upon by all parties during phone negotiations.

Notification

During a recent inspection, landowner notification letters were given to the Division inspector. The following landowners were notified: Byars, Christiansen, Carter, Odle, D.U. Co., Staley, Robertson, Humphrey. The letters advised that underground mining activities may occur beneath the owners' property and gave the location of the Price Field Office to review a copy of the subsidence plan. However, no pre-subsidence survey was included with the letters. Copies of the pre-subsidence survey will be provided to the Division, Water Conservancy District and landowners as per item 13, pg. 37, Chap V.

Findings:

The commitments found in the Mining and Reclamation Plan meet the requirements of the subsidence regulations as stated in the R645 Rules.

RECLAMATION PLAN

TOPSOIL AND SUBSOIL

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

Analysis:

Redistribution

The plan indicates in Chapter III, page 4a that a new reclamation plan will be developed for the surface disturbed area, based upon an analysis of past treatments and practices. The plan will be compiled during 2007 and submitted with the 2007 annual report.

Findings:

The Permittee has met the requirements for topsoil and subsoil replacement during reclamation. There is a **commitment** in the permit to provide information in the 2007 annual report to provide a new reclamation plan.

REQUIREMENTS FOR PERMITS FOR SPECIAL CATEGORIES OF MINING

PRIME FARMLAND

Regulatory Reference: 30 CFR Sec. 785.16, 823; R645-301-221, -302-300 et seq.

Analysis:

Prime Farmland Application Contents.

The prime farmlands within the federal IBC are noted on Plate XIII-1a. These lands will not be disturbed by "Coal Mining Operations." No further information on redistribution of soil is required.

Consultation with Secretary of Agriculture.

The Division consulted with the NRCS concerning the prime farmland status of the soils within the federal and fee First North IBC. See the discussion above under Environmental Resources/Prime Farmland.

Revegetation and Restoration of Soil Productivity

Findings:

Prime farmland may be affected by "Surface Operations and Impacts Incident to an Underground Coal Mine," but not by "Coal Mining Operations." For monitoring and mitigation plans, see discussion under Subsidence.

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CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT (CHIA)

Regulatory Reference: 30 CFR Sec. 784.14; R645-301-730.

Analysis:

The IBC area is shown as Prime Farmland in Important Farmlands of Parts of Carbon, Emery, Grand, and Sevier Counties. 1981. Utah Ag Exp Sta Res Rpt No. 76. One third of the acreage within the federal IBC and approximately 20 acres in the fee IBC are prime farmland when irrigated. The PHC acknowledges that a subsidence related drop in the ground surface might lower the land from 3 – 10 feet within the area shown on Plate V-5.

Findings:

The information provided met the requirements for the Division to accurately assess the Cumulative Hydrologic Impact of mining.

RECOMMENDATIONS:

Approximately one-third of the federal IBC is considered prime farmland when irrigated. The Permittee has made commitments in the application to provide a pre-subsidence survey of irrigation ditches and ponds.

A conditional approval is recommended. A lack of current acid/toxic information in Section III.C.5 of the application and section V.A.4 of the MRP should be addressed as soon as recent roof and floor analysis becomes available from 2007 drilling. John Gefferth acknowledged a lack of information and agreed to provide the information in an email (January 25, 2007), but no written commitment has been received.