

# TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

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July 21, 2005

TO: Internal File

THRU: Wayne Western, Environmental Specialist, Engineer, Team Lead

FROM: Jerriann Ernstsens, Ph.D., Environmental Specialist, Biologist

RE: North Lease Subsidence Mining, Canyon Fuel Company, LLC, Skyline Mine, C/007/0005, Task ID # 2246

## **SUMMARY:**

The Division received an amendment, on July 1, 2004, that addresses undermining perennial streams within North Lease area (Winter Quarters Tract) at the Skyline mine (#1976). The Division sent their response February of 2005. This memo describes the review of the biology and archeology sections for the second submittal of this amendment.

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**TECHNICAL ANALYSIS:**

**GENERAL CONTENTS**

**PERMIT APPLICATION FORMAT AND CONTENTS**

Regulatory Reference: 30 CFR 777.11; R645-301-120.

**Analysis:**

The Mine and Reclamation Plan (MRP) does not meet the requirements of R645-301-121.200 for the Biology Chapter and Archeology Section because of editorial or clarity issues. The Permittee must address the issues listed below in Findings of this section.

**Findings:**

Information provided in the plan does not meet the minimum Permit Application Format and Contents in General Contents requirements of the regulations. Prior to approval, the Permittee must act in accordance with the following:

**R645-301-121.200**, The Permittee must use correct citations for the locations of supporting documents. There are citations for the newly submitted documents that refers the reader to App. Vol. A-2, but this volume is filled and more likely the documents will go into App. 2<sup>nd</sup> Vol. A-2 or a new volume. There is one citation that refers the reader to App. Vol. A-3 (p. 2.71a, #1976). Although the Permittee may want to incorporate this new submittal to that volume it may be more appropriately located in App. 2<sup>nd</sup> Vol. A-2 or a new volume. Also, there is at least one citation (p. 2-71d (#2248)) that refers the reader to App. Vol. A-3. This citation is actually correct, but the referenced document may be more appropriately located in App. Vol. A-2. If the Permittee decides to leave this document in App. Vol. A-3 the table of contents for that volume needs to be updated. • The Permittee must correct the identical sentences on p. 2-67 (#2248) that pertains to “similar conditions” in the 2002/2003 survey results. The Division has no record of fish surveys conducted in 2002/2003. If the Permittee provided the documents, then the sentences are correct as written. • The Permittee must include the USFS to the list of consulting agencies, e.g., one on p. 2-71a (#1976) and two on p. 2-71b (#1976). • The Permittee must clarify the duration of macroinvertebrate monitoring. Page 2-71a (#1976) states that

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monitoring will occur every three years for an undetermined time. While page 2-71b (#1976) states that monitoring will occur for two years...unless there are negative impacts caused by subsidence.

## REPORTING OF TECHNICAL DATA

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

### Analysis:

The MRP meets the requirements of R645-301-130 because qualified professionals conducted or directed the surveys and analysis for the supporting biological- and historical resource- related documents. The MRP includes biology reports and analysis in:

- App. Vol. A-2
- App. 2<sup>nd</sup> Vol. A-2
- App. Vol. A-3.

The MRP includes historic resources reports and analysis in:

- App. 2<sup>nd</sup> Vol. A-2
- App. Vol. A-3.

As of July 2005, there are mislocated confidential or protected documents in certain volumes of the MRP (Volumes: App. A-2, App. A-3, App. 2<sup>nd</sup> Vol. North Lease). The Permittee will relocate these documents to \*Confidential Binders as the Division request on December 8, 2004.

\*This Master TA (2005) includes citations directing the reader to the Confidential Binders before the Permittee has relocated the documents. The Division will remove the \* as soon as the Permittee provides the amendment for the relocation.

### Findings:

Information provided in the plan meets the minimum Reporting of Technical Data in General Contents 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.

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**HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.12; R645-301-411.

**Analysis:**

The MRP meets the requirements of R645-301-411 regulations pertaining to historic resources. The MRP (\*Confidential Files in Division PIC room) includes narratives, maps, and evaluations of historic resources. These documents describe and show locations of historic resources, within or adjacent to the permit area, that may be included in or eligible for inclusion in the National Register. There is proof of coordination efforts and clearances from the SHPO.

The Permittee provides a summary of historic resource surveys within the permit area (Vol. 1, Sec. 2.1, p. 2-3). Appendix Vol. A-3 (\*Confidential Binder) includes the survey reports submitted for specific mining projects. Appendix 2<sup>nd</sup> Vol. A-2 (\*Confidential Binder) provides the survey reports submitted for the North Lease area (Winter Quarters Tract).

The Division, in consultation with SHPO, supports a finding of “no effect” to historic resources within or adjacent to the North Lease area because of undermining. SHPO’s comment on the undermining of the North lease is in the “Mining Plan Decision Document” (December 2002, email on November 15, 2002). The 1995 Environmental Assessment also states that the undermining of the North Lease area will have no effect to historic resources.

It is important that employees avoid all historic properties during the life of the project. In the event that construction or operations uncover historic properties, Section 106 of the National Historic Preservation Act and 36 CFR 800.13 require that the Permittee stop all work in the vicinity and notify the Division. The Permittee, Division, and other appropriate parties will develop a strategy to avoid the site or mitigate the impacts at that time.

**Findings:**

Information provided in the plan meets the minimum Environmental -Historic and Archeological Resource Information requirements of the regulations.

**VEGETATION RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.19; R645-301-320.

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### **Analysis:**

The MRP meets the requirements of R645-301-321 because there is adequate discussion of plant communities observed within the permit area. The MRP includes a summary of vegetation common to the permit area (Vol. 1A, Sec. 2.7). The MRP also includes survey reports submitted for different projects (App. Vol. A-2) and for the North Lease (Winter Quarters Tract; App. 2<sup>nd</sup> Vol. A-2). The lease for the North Lease area (Winter Quarters Tract) provides a list of USFS biology-related stipulations.

The Division, in consultation with DWR and USFS, considers that the undermining of the North Lease area will most likely have no or little impact to vegetation along the Winter Quarters and Woods stream channels. The Permittee will conduct baseline and monitoring surveys that will help detect and quantify unforeseen and evident impacts to vegetation. The Permittee will mitigate, under the direction of the Division, if subsidence-related impacts occur (Vol. 1A, p. 4-99).

The MRP (Sec. 2.7.1, 2.7.6, App. Vol. A2) provides a list of vegetation communities within the North Lease area. The MRP indicates that the ridge tops are mountain grasslands and sagebrush-grass communities. Section 2.7.1 summarizes that there are also small meadows, and riparian areas along streams and at seeps and springs. Aspen community is the primary community types along Winter Quarters and Woods stream channels (Collins 1992, App. 2<sup>nd</sup> Vol. A-2).

The Permittee will initiate a vegetation survey program, based on the principles of a USFS Level III survey, for the Winter Quarters and Woods stream channels. The program will include a baseline survey in 2005, monitoring surveys two years prior and during undermining of specific lengths of the channels, and follow-up surveys two years after undermining of these specific lengths of the channels (App. Vol. A2). The Permittee will also include additional water monitoring sites along perennial portions of Winter Quarters and Woods stream channels. This monitoring will help detect if there are evident impacts to the channel vegetation because of undermining.

The Permittee will provide baseline infrared and black/white aerial photographs. The Permittee will also provide comparative photographs and pictures annually starting August 2002 that will include the North Lease area. A qualified biologist will review the pictures.

### **Findings:**

Information provided in the plan meets the minimum Environmental - Vegetation Resource Information requirements of the regulations.

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## FISH AND WILDLIFE RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.21; R645-301-322.

### Analysis:

#### GENERAL WILDLIFE

The MRP does not meet the requirements of R645-301-322 because there is not adequate discussion, supporting documentation, or maps on fish and wildlife resource for the permit and adjacent areas. There is insufficient information to design the protection and enhancement plan.

The MRP (Vol. 1A, Secs. 2.8 through 2.10) provides summaries of fish and wildlife that may occur within or adjacent to the permit area. The MRP also includes many wildlife survey reports that focused on wildlife within or adjacent to the main facility areas (App. Vol. A2) and within the North Lease area (App. 2<sup>nd</sup> Vol. A2).

USFS, USFWS, DWR, and the Division discussed wildlife concerns, including USFS sensitive species, pertaining to the undermining of the North Lease area (Oct. 24, 2002). The USFS commented that boreal toad habitat may be present and should be evaluated during mollusk and amphibian surveys. The USFS indicated they did not require additional monitoring for tree-nesting raptors or for the three-toed woodpecker. They stated that undermining of the North Lease area would not likely impact the Northern goshawk and the Three-toed woodpecker. They also mentioned that there were no bats, sage grouse, or wolverines in the North Lease area. (See USFS "E"- mail, Nov. 14, 2002 for their comments.) Although the USFS provided these comments, the Permittee will conduct goshawk, amphibian, and three-toed woodpecker surveys. App. Vol. A2 provides details of methods for these surveys.

During a field visit (Sept. 2002), the Division observed water flowing in Winter Quarters stream, three unnamed tributaries and Bob's and Box Canyons. There was an established riparian corridor along the main stream channel. An unnamed side canyon channel (to the south approximately 1-mile from the USFS boundary) was flowing even though the channel had been dammed by beaver. Fish were also observed in the lower reaches of the main stream near the east permit boundary.

#### *Ungulates*

The Utah Natural Heritage Program database shows the entire North Lease area as critical value elk summer use area and a high value deer summer. Drawing 1.6-3 has been revised to include the additions to the permit area that includes critical value summer deer and elk and high value winter moose habitats.

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### *Macroinvertebrates, Fish, and other Aquatics*

The Permittee will conduct macroinvertebrate and fish surveys along Winter Quarters and Woods stream channels, using an USFS approved survey protocol. (Pam Jewkes 4/12/05 phone log & Katherine Foster 2/2/05 conference call). This protocol includes surveying for baseline two times a year (fall and spring) for two consecutive years prior to subsidence then monitoring every three years for a period determined by the Division and other agencies (including the USFS) “until data supports a population trend” (Vol. 1A, p.2-71a). The Permittee initiated the baseline macroinvertebrate survey during the fall 2002 (Shiozawa 2002/2003).

Plate 2.8.1-1 illustrates all the sample locations for macroinvertebrate surveys. The survey sites are along Winter Quarters, Woods, Eccles, Burnout, and James stream channels.

The Permittee will conduct fish surveys for Winter Quarters and Woods stream channels. The USFS approved protocol includes surveying for baseline one time a year (fall) for one year prior to subsidence then monitoring every three years or for a period determined by the Division and other agencies (including the USFS) “until data supports a population trend” (Vol. 1A, p.2-71b). The method for the fish survey includes using a multi-pass electro-fishing technique that estimates fish populations. The Division, however, cannot find the fish report. The Permittee must provide the missing report (R645-301-322.100).

The Permittee will conduct baseline amphibian surveys along Winter Quarters and Woods stream channels in 2005 (Vol. 1A, p. 2-98). The details of the survey protocols are in App. 2<sup>nd</sup> Vol. A2.

### *Migratory and Game Birds, and Raptors*

The MRP provides a summary of raptor surveys conducted within the main facility areas and within the North Lease area (Vol. 1A, Sec. 10). The MRP also provides results of surveys with nest locations (\*Confidential Binder: App. Vol. A2 and App. 2<sup>nd</sup> Vol. A2).

The Permittee states that there are no plans for surface disturbance for the North Lease (Vol. 1A, p. 2-111b). One concern of the Division, however, is the potential loss of cliff-nesting birds or cliff habitat for breeding, nesting, and roosting because of subsidence. The Permittee will conduct raptor surveys to obtain baseline data within one year prior to subsidence of cliff habitat (Vol. 1A, Sec. 2.10, p. 2-111b). The Permittee will also conduct follow-up surveys within one year if nests were observed during the baseline surveys and if operations resulted in subsidence. The baseline and follow-up surveys will help assess the degree of impact to the nests. These efforts will help the Division, USFS, and DWR develop a protection, enhancement, or mitigation plan, if necessary (refer to R645-301-322, R645-301-332).

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THREATENED, ENDANGERED, AND SENSITIVE ANIMAL/PLANT SPECIES

The MRP meets the requirements of R645-301-322 because there is adequate discussion, supporting documentation, or maps on threatened, endangered, or sensitive (TES) plant or animal species that could occur within or adjacent to the permit area. The Permittee will provide supplementary information by conducting baseline surveys for certain TES species.

The Division, in consultation with USFWS, supports a finding of “no effect” to threatened or endangered plant or animal species that may occur within or adjacent to the North Lease area. The USFWS’ comment on the undermining of the North Lease area is in the Mining Plan Decision Document December 2002 (letter on November 25, 2002).

The MRP (Sec. 2.1.2) indicates that there have been no TE species observed within or adjacent to project areas. Section 2.7.6 indicates that there will be no surface impacts within the permit area and therefore no impacts to threatened, endangered, endemic or sensitive species.

The Utah Natural Heritage Program database shows no records of occurrence of TES plant or animal species for the North Lease area.

According to the 1995 EA written jointly by the USFS and the BLM, the TES species that may occur within the North Lease area are the bald eagle, northern goshawk, and northern three-toed woodpecker. Suitable bald eagle nesting habitat does not occur in the permit area. The bald eagle only occurs as a winter resident.

The northern goshawk requires general presence-absence surveys in and adjacent to development areas, including the Skyline permit area. This species is a tree-nesting bird, therefore, requires ground surveys.

The Permittee will conduct northern goshawk as well as three-toed woodpecker surveys for the North Lease area in 2005. Appendix 2<sup>nd</sup> Vol. A2 provides the protocol for the goshawk and woodpecker surveys..

*Plants*

The Intermountain Proposed Endangered, Threatened, and Sensitive Species List, last updated in January 1999, indicates that there may be endangered species that inhabit the Manti La Sal area. The Permittee consulted with USFS Manti La Sal District Botanist who stated, “none of the currently listed TE species or sensitive species is found in the Winter Quarters lease area” (Vol. 1A, p. 2-63f).

**Findings:**

Information provided in the plan does not meet the minimum Environmental - Fish and Wildlife Resource Information requirements of the regulations. Prior to approval, the Permittee must act in accordance with the following:

**R645-301-322.100**, The Permittee must provide the missing fish survey report

## **OPERATION PLAN**

### **PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES**

Regulatory Reference: 30 CFR784.17; R645-301-411.

The MRP meets the requirements of R645-301-411.144 because the Permittee identifies parks or historic resources that mining operations may adversely affect.

Page 10 Section H of the Environmental Assessment for the North Lease area states "Leasing of the tract should not result in significant impacts to cultural or paleontological resources.". According to App. B of the EA, there are no public roads, cemeteries, public buildings, or occupied dwellings within the lease area. Supporting documents for these statements are in App. Vol. A-2.

**Findings:**

Information provided in the plan meets the minimum Operations - Protection of Public Parks and Historic Places requirements of the regulations.

### **FISH AND WILDLIFE INFORMATION**

Regulatory Reference: 30 CFR Sec. 784.21, 817.97; R645-301-322, -301-333, -301-342, -301-358.

**Analysis:**

The MRP meets the requirements of R645-301-333, R645-301-342, and R645-301-358 because the Permittee will use the best technology available to minimize impacting wildlife and its critical habitat. There is also sufficient information relating to protection/enhancement plans

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or there is adequate information to develop additional protection/enhancement plans, under the direction of the Division and other agencies.

**Protection and Enhancement Plan**

The DWR recently implemented a protection/mitigation agreement with the USFWS for the sage grouse. However, there will probably be no additional changes to the MRP concerning the grouse because there is no surface disturbance for facilities.

The plan for the North Lease area includes undermining perennial streams. Potential disturbance may result from subsidence that could affect stream channel habitat. The Permittee provides information supporting the unlikelihood of surface disturbance to the stream channels. Regardless, the Permittee will conduct baseline and monitoring surveys of vegetation, macroinvertebrate, and fish along Winter Quarters and Woods stream channels. The Permittee agrees to provide plans to avoid, protect, enhance, or mitigate under the direction of the Division.

The plan for the North Lease area includes also undermining some cliff habitat. Potential disturbance may result from subsidence that could affect this habitat. The Permittee provides information supporting the unlikelihood of surface disturbance to the cliffs. Regardless, the Permittee will conduct baseline and monitoring over-flight surveys of raptors and nests associated with the cliff habitat.

**Endangered and Threatened Species**

*Colorado River Fish*

The MRP includes derivations and values of consumption and addition of water to the Colorado River at the time of the North lease extension review (2002-2005). The Permittee estimated the total water balance as an annual net gain of 5,966 acre-feet (Vol.1A, Sec. 2.5, p. 2-51e). The Division, in consultation with the USFWS, considered that mining operations were “not likely to adversely affect” the endangered fishes of the Colorado River Basin because there was no indication of depleting water from the Basin.

The Permittee must update all equations and justifications with supporting documentation leading to the overall sum of water depletions or additions when projects would significantly change the current estimated value.

**Bald and Golden Eagles**

Bald eagles are not common in the area during the winter but could occasionally fly through or roost in the proposed addition to the permit area. Mining would have negligible

effects on these birds. The Forest Service stated that Bald Eagles are frequently seen around Scofield reservoir in October and November. After the reservoir freezes the waterfowl leave as do the eagles.

### **Wetlands and Habitats of Unusually High Value for Fish and Wildlife**

The perennial streams, springs and riparian areas within the North Lease area are probable habitats of high value for fish and wildlife. The 1995 EA reports that the riparian habitat appears to be in excellent condition on the forest (in the North Lease area), but below the forest boundary to the east it has been heavily impacted by livestock grazing.

The Division realizes that the USFWS generally recommends to survey for stream, spring, and seep locations and to prepare a monitoring plan. The MRP provides updated-monitoring and vegetation information along the stream channels. The Permittee considers that subsidence will not impact seeps and springs and bases their conclusion on the study conducted in Burnout Canyon.

Streams, springs, and seeps may serve as refuge for isolated populations of benthic organisms, such as mollusks. Historical records for one rare mollusk (*Physella virgata*) exist for Carbon County. The 2002/2003-macroinvertebrate survey results only list one mollusk *Spaerium*. Future surveys may show positive results for other mollusks including the rare *Physella*.

### **Findings:**

Information provided in the plan meets the minimum Operations - Fish and Wildlife Information requirements of the regulations. Prior to approval, the Permittee must act in accordance with the following:

## **VEGETATION**

Regulatory Reference: R645-301-330, -301-331, -301-332.

### **Analysis:**

The MRP meets the requirements of R645-301-330, R645-301-331, and R645-301-332 because the Permittee provided measures to disturb the smallest area possible, plans to apply interim reclamation practices when applicable, and descriptions of mitigation procedures for subsidence-related impacts.

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The MRP indicates that there is no anticipated surface effects to the North Lease permit area (Sec. 2.7.6). Regardless, the Forest Service Lease Stipulation # 7 requires monitoring of effects of mining, as follows: “The Lessee shall be required to establish a monitoring system to locate, measure and quantify the progressive and final effects of underground mining activities on the topographic surface, underground and surface hydrology and vegetation. The monitoring system shall utilize techniques, which will provide a continuing record of change over time and an analytical method for location and measurement of a number of points over the lease area. The monitoring shall incorporate and be an extension of the baseline data.”

The Permittee will implement an aerial photogrammetric monitoring program to help “determine the effects of underground coal mining on surface renewable resources (Sec. 4.17.5). The plan indicates that the monitoring program secures adequate baseline data prior to any subsidence to quantify the existing surface renewable resources....”. The Division, however, determined that the Permittee will also conduct vegetation baseline and monitoring ground surveys along Winter Quarters and Woods stream channels.

The MRP indicates (p. 2-63d) that aerial photographs were taken in August 2002 of the North Lease Tract to provide a baseline information. The Permittee plans to take annual aerial photographs, have a qualified person evaluate the data, and include a summary of the results in the Annual Report for the Skyline Mine (p. 2-63d). The MRP also describes color infrared aerial photography (CIR) on the same scale as the photogrammetric monitoring (Sec. 4.17.5). If results identify that mining operations are diminishing habitat, the MRP must describe protection measures (refer to R645-301-333.300).

### **Findings:**

Information provided in the plan meets the minimum Operations - Vegetation requirements of the regulations. Prior to approval, the Permittee must act in accordance with the following:

## **RECLAMATION PLAN**

### **GENERAL REQUIREMENTS**

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR Sec. 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

**Analysis:**

The MRP includes the approved reclamation plan. The Permittee will not disturb the surface for facilities within the North Lease Permit area, therefore, the Division did not conduct a review of the existing MRP reclamation plan.

**Findings:**

Information provided in the plan meets the minimum Reclamation - General Requirements of the regulations.

**RECOMMENDATIONS:**

Do not approve the amendment until the Permittee addresses all deficiencies.