

# TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

May 3, 2006

TO: Internal File

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

FROM: Jerriann Ernstsens, Ph. D., Environmental Specialist/Biology

RE: Degasification Wells G-11 and G-12, Canyon Fuel Company, LLC., Dugout Canyon Mine, C/007/039, Task ID #2455

## **SUMMARY:**

The Division received an amendment that addresses the drilling of G11-G12 degasification wells at the Dugout Canyon Mine. This project would add to the G1-10 well series previously approved. The Division reviewed the submittal for the G1-G3 wells in 2003, G4-G6 wells in 2004, G7 and G8-G10 in 2005. This memo reviews the biology and archeology information for this amendment. Direct references to figures, tables, or appendices apply to the MRP volume: *Degas Methane Amendment G1-G10*. References to records from the primary MRP are noted as such.

The Dugout Mine G11-G12 drill project is in Carbon County, Utah, (Pine Canyon 7.5 Minute Quadrangle map). The legal description is Township 13 South and Ranges 13 East Sections 20.

## **TECHNICAL ANALYSIS:**

## **GENERAL CONTENTS**

## **PERMIT APPLICATION FORMAT AND CONTENTS**

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

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## TECHNICAL MEMO

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### **Analysis:**

The MRP meets the requirements of R645-301-121.100 and R645-301-121.200 for the biology chapter and archeology section because the information is generally current, clear, and concise.

The MRP includes many different volumes, including the following “stand-alone” volumes (as of September 2005):

- “Dugout Canon Mine – Leach Field Addendum A-1” (LFA, March 2001).
- “Refuse Pile Amendment – Dugout Canyon Mine” (RPA, January 2003).
- “Methane Degasification Amendment” (MDA, 2003/2004).

The “stand-alone” volumes provide exclusive information, supporting documents, and maps for each proposed project.

The current degas well amendment is an amendment for the stand-alone volume MDA 2003/2004.

### **Findings:**

Information provided in the plan meets the minimum Permit Application Format and Contents in General Contents requirements of the regulations.

## **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 archeological resource-related documents.

### **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.

## HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION [Sheila Mo1]

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

### **Analysis:**

The MRP meets the requirements of R645-301-411 that pertains to historic resources. The MRP (Confidential Binder, Ch. 4, Vols. MRP & Methane Degassification Amendment, App. 4-1) includes numerous evaluations of historic resources that focus on the permit area. It also includes narratives and maps of historic resources that may be included in or eligible for inclusion in the National Register. There is proof of previous coordination efforts with the SHPO.

The MRP includes a Class III ground survey for the G1-G6 holes sites (Senulis 2003, Confidential Binder, Vol. MDA, App. 4-1). Mr. Senulis reported one eligible site (42CB292) and issued a “no effect” finding. The MRP includes a Class I survey (literature search) for the G7 and G8 drill sites (Senulis 2005, Confidential Binder, Vol. MDA, App. 4-1). The summary showed that none of the Class III surveys was positive for historic resources near the G7 or G8 sites.

The Permittee provided a Class III survey for the proposed degas wells G9 and G10 as well as for future wells G11-G13 (Senulis 2003, Confidential Binder, Vol. MDA, App. 4-1). The results showed that there was one historic resource (42CB2435) within or adjacent to the project area. Senulis (2005) considered this site in poor condition and not eligible for the NRHP. The Division contacted the SHPO with the results of this survey, however, SHPO offered no reply for the G9 and G10 project. SHPO stated that agencies should assume SHPO's concurrence with an agency's determination if SHPO does not issue a reply (SHPO presentation at DOGM 2/2006).

The proposed G11-G12 holes are near the G9-G10 holes, but adjacent to Pace Creek. The G11 and G12 holes would occupy 1.6 and 2 acres, respectively. Most of the area for G11 and 50% of the area for G12 has already been disturbed during previous road construction. The Division determined that this drill project would have “no effect” to historic resources because:

- The Class III survey did not show positive results for these two sites.
- The SHPO provided no response for the G9-G10 project, which the correspondence included discussion of the Class III survey for the G11-G12 sites.
- Much of the disturbance for these holes would be primarily on previously disturbed land.

### **Findings:**

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

**TECHNICAL MEMO**

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**VEGETATION RESOURCE INFORMATION**<sub>[Sheila Mo2]</sub>

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

**Analysis:**

The MRP meets the requirements of R645-301-321 because there is adequate discussion of plant communities observed within the project area. The MRP contains many supporting documents on vegetation for the project and permit area. The baseline vegetation information is adequate for assessing reclamation potential and success.

The MRP includes vegetation surveys for the G1-G6 and G8-10 the degas well projects (Collins 2003, 2005; Vol. Methane Degasification Amendment, Att. 3-1). The survey results cover the well sites (~200 x 300 feet) and associated reference sites. Dr. Collins repeatedly mentions that the reference areas that would be used for previously disturbed degas well sites are of higher standards than if “based on the existing conditions of the drill sites”. The Division reminds the Permittee that the regulation (refer to R645-301-356.250) pertaining to previously disturbed sites relates to coal mining disturbances not other development impacts.

Dr. Collins conducted a vegetation survey for the G11 and G12 degas well project (2005, Vol. Methane Degasification Amendment, Att. 3-1).

NRCS provides productivity values and condition evaluations for the degas well sites (Vol. MDA, Att. 3-1: G1-G6, 9/2003; G7, 8/2004; G7-13, 6/2005). The MRP lists the production values in Table 3-1. The results reflect the estimates either for the actual sites (if previously undisturbed) or for surrounding undisturbed areas (if previously disturbed). NRCS assigned a high seral state in good condition for previously disturbed sites.

The reference areas for the degas program include: (see Methane Degasification Amendment, Fig. 3-1)

- Sagebrush/Snowberry                      G2-G5, G7
- Aspen/Maple/Douglas fir                G1, G6, G8
- Transitional Mt. Brush/Conifer        G9-G11
- Mt. Brush/Conifer/Pinyon-juniper    G12-G13, G15

The areas of the proposed G1, G4, G6, G8-G12 well sites have been previously disturbed from historic logging and other development projects. The Permittee never constructed G1 or G8.

**Findings:**

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

## FISH AND WILDLIFE RESOURCE INFORMATION<sup>[Sheila Mo3]</sup>

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

### Analysis:

#### GENERAL WILDLIFE

The MRP meets the requirements of R645-301-322 because there is adequate narrative, supporting documentation, or maps on wildlife within or adjacent to the project area.

##### *Ungulates*

Plate 3-2 (Confidential Binder) illustrates that the G1-G12 degas wells are in elk high value yearlong range and deer critical summer range. The exclusionary periods for deer are December 1 through April 15 and May 15 through July 5.

##### *Raptors*

The Annual Reports (Confidential Incoming) or Confidential Binder (Ch. 3, Vol. MRP, Raptor Survey) provide the results and maps for the most current helicopter raptor surveys. The Permittee also provides results for tree-dwelling raptor species.

#### 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, and sensitive (TES) species that could occur within or adjacent to the project area. All supporting documents on TES plant and animal species show that there were no observations of threatened or endangered species.

##### *TES Plants*

The Permittee provides the results of a literature search on TES plant species for the G1-G12 degas well project (Collins 2003, 2005, Vol. Methane Degasification Amendment, Att. 3-1). The results show that the area includes suitable habitat for canyon sweetvetch (*Hedysarum occidentale* var. *canone*). The Division knows that the permit area also provides suitable habitat for three other Carbon County listed species (Tufted cryptantha, Helenium hymenoxys, or Graham beardtongue; Environmental and Engineering Consultants 2002). Dr. Collins ground-truthed (June 2005) for TES plant species and did not observe TES species growing at any of the degas well sites or reference areas for G8-G12.

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**TECHNICAL MEMO**

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*TES Animals*

The supporting documents in the MRP show there have been no observations of TE animal species, but there may be suitable habitat for the bald eagle, black-footed ferret, and MSO. The DWR overflight surveys have not shown bald eagle nests within or adjacent to the permit area. This species may use the area during the winter months, but the area is not considered critical habitat even as wintering range (DWR, 2005). For the black-footed ferret, there have been no confirmed sightings within or adjacent to the project area (DWR, 2005).

The supporting documents also show that there may be suitable habitat for the following sensitive animal species: peregrine falcon and loggerhead shrike. The supporting documentation shows no observations for these species.

*Mexican Spotted Owl (MSO)*

The Permittee conducted a two-year calling survey (Vol. 3, App. 3-3; EIS, 2003/2004) for drill holes G1-G6 as well as a short reach along Pace Creek. The results for both surveys were negative for MSO individuals, but show there were northern saw-whet and great horned owls. The Division accepts the MSO calling survey for the G8-G12 degas well project because of proximity and similarity in MSO habitat to the G1-G6 sites.

**Findings:**

Information provided in the plan meets the minimum Environmental - Fish and Wildlife Resource Information requirements of the regulations.

**MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION**<sub>[Sheila Mo4]</sub>

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

**Analysis:**

**Archeological Site Maps**<sub>[Sheila Mo5]</sub>

The MRP meets the requirements of R645-301-411.141 because there are archeological maps showing known resource locations within the project area. These maps are in the Confidential Binder.

### **Vegetation Reference Area Maps**[Sheila Mo6]

The MRP meets the requirements of R645-301-323.100 because the project vegetation maps illustrate community types within the disturbed area and the reference areas for the degas well project (Vol. Methane Degasification Amendment, Fig. 3-1 and 3-2; Vol. 2, Ch. 3, Fig. 3-1 and 3-1E). The Permittee will submit, as a separate amendment, a map that shows all the reference areas for the permit area as originally requested.

#### **Findings:**

Information provided in the plan meets the minimum Environmental - Maps, Plans, and Cross Section Resource Information requirements of the regulations.

## **OPERATION PLAN**

### **PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES**[Sheila Mo7]

Regulatory Reference: 30 CFR 784.17; R645-301-411.

#### **Analysis:**

There are no known public parks or historic places within the project area.

#### **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 does not meet the requirements of R645-301-333, R645-301-342, or R645-301-358 because the MRP does not provide adequate information on TES or discussion concerning protection and enhancement during construction and reclamation phases.

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**TECHNICAL MEMO**

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**Protection and Enhancement Plan** [Sheila Mo8]

The Division, in consultation with DWR, considers that this drill project would not likely impact ungulates, raptors, or their habitat because:

- The Permittee would conduct raptor surveys every year the wells are in operation (Vol. 1, Sec. 322, p. 3-13).
- The Permittee would initiate projects outside of exclusionary periods for ungulates and raptors.

*Ungulates*

The G8-G12 degas wells are in elk high value yearlong range and deer critical summer range. The Permittee must comply with exclusionary periods during construction and reclamation phases. The general exclusionary periods are December 1 through April 15 and May 15 through July 5.

*Raptors*

The Permittee would conduct raptor fly-over surveys every year the wells are in operation (Vol. 1, Sec. 322, p. 3-13). Raptor reports are provided in Confidential Binder, Ch. 3, Vol. MRP, Raptor Surveys.

The volume Methane Degasification Amendment refers the reader to Volume MRP, Section 333.330 for wildlife protection measures. The Permittee must comply with exclusionary periods during construction and reclamation phases. The general exclusionary periods for raptors are February 1 through July 15, but may be waived or extended depending on species or evaluation/survey results.

The 2005 fly-over survey map shows that the types of raptor nests observed within or adjacent to the permit area are: golden eagle, red-tail hawk (or other buteo), falcon, and raven. The golden eagle and raven are the types of nests near the degas well projects. The proposed drill sites for G11 and G12 are not within a 0.5-mile buffer zone of a raptor nest.

The Permittee would conduct ground surveys for goshawks and northern saw-whet owls in areas with suitable habitat and areas planned for mining facilities. The G8-G12 sites are not within dense canopy habitat for the goshawk or within Douglas fir, mixed conifer habitat for Northern saw whet owl (NSO). DWR considers the 2004 NSO mitigation project adequate for enhancing the area, at this time.

### **Endangered and Threatened Species** [Sheila Mo9]

The Carbon County TES list includes Graham Beardtongue, Uinta Basin hookless cactus, bonytail chub, Colorado pikeminnow, humpback chub, razorback sucker, Mexican spotted owl (MSO), black-footed ferret, bald eagle, and western yellow-billed cuckoo (candidate).

The Division determined that mining operations would have no effect on TE species or their habitat listed for Carbon County because:

- There have been no observations of TE plant species during vegetation surveys.
- There were no MSO observed in the area during the calling survey.
- The bald eagle is an occasional user of the area, but typically only in the winter when there is no drilling construction.
- There have been no recent sightings of prairie dog or black-footed ferret.
- The water balance for mining operations is a net gain to the Colorado River drainage.
- There is no habitat to support western yellow-billed cuckoo.
- Many of the degas wells are planned for areas previously disturbed by other activities than mining. (G2, 3, 5, and 7 are wells planned for undisturbed areas.)

The Division did not initiate informal communication with the USFWS because they no longer provide concurrence letters for "no effect" determinations (January 2006).

### *Colorado River Fish*

The Permittee provided water consumption values for the entire mining operation. The over all water balance is a net gain to the Colorado River drainage system. The Division is currently developing a worksheet that Permittees may use to update water budget values. This worksheet will provide a process that will allow consistency of reported values between years and among mines. The Division will request that the Permittee re-calculate the water balance once this worksheet is available in summer 2006. The Division did not request OSM to initiate formal consultation with the USFWS because the water balance is a net contribution to not consumption of the Colorado River drainage.

### **Bald and Golden Eagles** [Sheila Mo10]

There were two golden eagle nests (9 and 10) within or adjacent to the drill site G8. The Permittee would initiate drilling after the raptor exclusionary period.

### **Wetlands and Habitats of Unusually High Value for Fish and Wildlife**[Sheila Mo11]

There are no wetlands near the G1-G12 degas wells.

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## TECHNICAL MEMO

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### Findings:

Information provided in the plan meets the minimum Operations - Fish and Wildlife Information requirements of the regulations.

### VEGETATION<sup>[Sheila Mo12]</sup>

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 would disturb the smallest area as possible and apply contemporaneous reclamation practices when applicable.

### Findings:

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

## RECLAMATION PLAN

### GENERAL REQUIREMENTS<sup>[Sheila Mo13]</sup>

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:

There are discussions throughout the MRP on ripping, gouging, and incorporating hay during gouging, or mulching. Areas recommended for fertilizer application would receive fertilizer by cyclone spreader, hydroseeded, or other equipment. The reclamation plan does not include irrigation. The Division does not anticipate the necessity to irrigate as long as the Permittee uses water-harvesting methods, such as gouging.

**Findings:**

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

**POSTMINING LAND USES**<sup>[Sheila Mo14]</sup>

Regulatory Reference: 30 CFR Sec. 784.15, 784.200, 785.16, 817.133; R645-301-412, -301-413, -301-414, -302-270, -302-271, -302-272, -302-273, -302-274, -302-275.

**Analysis:**

The postmining land uses are livestock and wildlife grazing and reestablishment of preexisting roads.

**Findings:**

Information provided in the plan meets the minimum Reclamation - Postmining Land Uses requirements of the regulations.

**PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES**<sup>[Sheila Mo15]</sup>

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

**Analysis:**

The MRP meets the requirements of R645-301-342 and R645-301-358 because there are adequate enhancement and protection measures for fish, wildlife, and habitat during the reclamation or postmine phases.

The Permittee considers that reclamation of the well sites would enhance wildlife habitat for the area because these sites have been previously disturbed. The seed mix would provide some of the same species as those in adjacent, undisturbed areas.

**Findings:**

Information provided in the plan meets the minimum Reclamation - Protection of Fish, Wildlife, and Related Environmental Values requirements of the regulations.

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**TECHNICAL MEMO**

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## **CONTEMPORANEOUS RECLAMATION**[Sheila Mo16]

Regulatory Reference: 30 CFR Sec. 785.18, 817.100; R645-301-352, -301-553, -302-280, -302-281, -302-282, -302-283, -302-284.

### **Analysis:**

Within the constraints of seasonal weather, the Permittee would reclaim the well sites in two phases: Phase I - Contemporaneous reclamation (described in the reclamation section) and Phase II - Final reclamation.

### **Findings:**

Information provided in the plan meets the minimum Reclamation - Contemporaneous Reclamation requirements of the regulations.

## **REVEGETATION**

Regulatory Reference: 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

### **Analysis:**

#### **Revegetation: General Requirements**[Sheila Mo17]

The MRP meets the requirements of R645-301-330, R645-301-331, and R645-301-332 because there is adequate reclamation plan or discussion of how reclamation measures would meet the performance standards.

The Permittee would reclaim the well sites in two phases.

- Phase I - Contemporaneous reclamation:  
Apply final reclamation procedures to site-specific areas no longer needed for operations.
  - ◆ Grade.
  - ◆ Rip to 18-24”.
  - ◆ Apply topsoil and leave in roughened state by gouging.
  - ◆ Hydroseed the final seed mix.
  - ◆ Apply wood fiber mulch.

## TECHNICAL MEMO

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- Phase II - Final reclamation:  
Apply final reclamation procedures to the remaining disturbed areas no longer needed for operations.
  - ◆ Plug the wells.
  - ◆ Prepare the site.
  - ◆ Hydroseed.

Reclamation plan for the well sites includes hydroseeding with a slurry that contains a small amount of fiber. The seed mix (Vol. Methane Degasification Amendment, Table 3-2) is the same for both Phase I and II for the well site reclamation.

The seed mix provides a vegetative cover composed of native species (Welsh considers Kentucky Bluegrass a native). The goals are to quickly stabilize the disturbed site and provide compatible browsable and foragable habitat for the postmine land use. The Permittee would fence the well sites to prevent grazing until bond release.

As requested by the landowner in 2005 (Vol. Methane Degasification Amendment, Ch. 5, Attachment 5-3), the Permittee would apply the following revegetation techniques to G11 and G12: Regrade, topsoil the pads but not the road, seed with native grasses, and treat the topsoil pile similarly. The requested techniques for G11 and G12 are different from the plan for the other degas drill hole sites in this MRP. In the near future, the Permittee will request a PMLU change for G11 and G12 from wildlife/grazing to commercial in order to meet the request and needs for the landowner's cattle business.

### **Revegetation: Timing**[Sheila Mo18]

The Permittee would seed the prepared areas most likely in the fall.

### **Revegetation: Mulching and Other Soil Stabilizing Practices**[Sheila Mo19]

Reclamation plan includes ripping the area to a roughened state and applying wood fiber mulch at a rate of 2,000 pounds per acre and tackifier at a rate recommended by the manufacturer.

### **Revegetation: Standards For Success**[Sheila Mo20]

The Permittee would follow the sampling requirements and analysis identified in the Division's "Vegetation Information And Monitoring Guidelines". The Permittee would use reference areas for the standards of success for the degas well sites.

**TECHNICAL MEMO**

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The Permittee would use husbandry practices approved by the Division as needed.

**Findings:**

Information provided in the plan meets the minimum Reclamation - Revegetation requirements of the regulations.

**RECOMMENDATIONS:**

Approve the amendment.