File in Expandable 05312006 (Refer to Record No. 0026 in C0070019, 2006, Incoming

110 MINIMUM REQUIREMENTS FOR LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION

111 Introduction

This project is a "Ventilation Assistance Program", wherein hazardous "gob gas" from the longwall will be partially vented to the surface. The quantity and quality of the vented gas will be the same as that presently being discharged at the mine fan. The discharged "gob gas" will be of no commercial value.

Five holes have been approved and drilled in 2005. These are holes GVH#1, GVH#3, GVH#4, GVH#5 and GVH#6. Four additional holes were approved for the 2006 drilling. These were GVH #5A, GVH #7, GVH #8 and GVH #9. GVH #5A will not be drilled, and GVH #10 is proposed to be drilled instead.

The holes will be located on surface property owned by Dave R. and Mildred Cave, et al., and Mathis Land, Inc. The mineral rights are owned by Mathis Land, Inc. And the United States Government (B.L.M.) And are under lease by Andalex Resources, Inc.

The existing and proposed hole locations are described in Table 1-1 and are shown on Figure 1-1.

TABLE 1-1
Gob Gas Well Locations (see Figure 1-1)
Deadman Canyon, Utah Quadrangle, Salt Lake Meridian

Hole Number	Status	Section	Township and Range
GVH-1	Hole Completed	31	T.12S., R.11E.
GVH-3	Hole Completed	31	T.12S., R.11E.
GVH-4	Hole Completed	1	T.13S., R.10E.
GVH-5	Hole Completed	31	T.12S., R.11E.
GVH-6	Hole Completed	31	T.12S., R.11E.
~~GVH-5A~~	~~Proposed~~	~~31~~	~~T.12S., R.11E.~~
GVH-7	Proposed	31	T.12S., R.11E.
GVH-8	Proposed	36	T.12S., R.10E.
GVH-9	Proposed	36	T.12S., R.10E.
GVH-10	Proposed	31	T.12S., R.11E.

TABLE 1-2
Disturbed Acres by Well Site

Well Site	Status	Disturbed Acres	
		Original	Existing
GVH-1	Hole Completed	1.15	0.52
GVH-3	Hole Completed	1.11	0.55
GVH-4	Hole Completed	0.95	0.45
GVH-5	Hole Completed	0.97	0.51
GVH-6	Hole Completed	1.49	0.46
~~GVH-5A~~	~~Proposed~~	~~1.00~~	-
GVH-7	Proposed	1.00	-
GVH-8	Proposed	1.00	-
GVH-9	Proposed	1.00	-
GVH-10	Proposed	1.00	-

115 Status of Unsuitability Claims

Refer to the same section of the approved M&RP.

116 Permit Term

Refer to the same section of the approved M&RP.

117 Insurance, Proof of Publication, and Facilities and Structures Used in Common

The certificate of insurance(s) for each well will be obtained if required when the well is drilled. The certificate of insurance(s) will be included in Appendix B of the approved M&RP.

118 Filing Fees

Refer to the same section of the approved M&RP.

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210 INTRODUCTION

This chapter and associated attachments address the pertinent data required for the 5 degassification well sites for the Centennial Project (GVH#1, GVH#2, GVH#4, GVH#5 and GVH#6) as well as the proposed additional well sites (GVH#5A, GVH#7, GVH#8, and GVH#9 and GVH#10). GVH#5A will not be drilled and GVH#10 is proposed instead. Only those sections of the Division regulations that apply to the well sites have been addressed. The remainder of the regulations have already been addressed in the existing M&RP. The M&RP and this document contain pertinent information relating to the identification, management, and reclamation activities associated with the soil resources.

220 ENVIRONMENTAL DESCRIPTION

The well sites range in elevation from approximately 8400 to 8600 feet. The well sites are located in the Summit Creek/Emma Park area of the Book Cliffs. General vegetation includes sagebrush-grass, aspen and oak brush communities.

221 Prime Farmland Investigation

Due to limiting terrain, lack of water for irrigation and no evidence of past cultivation of the sites, it is concluded that no prime farmland exists within the area of the well site disturbance.

222 Soil Survey

221.100 Soils Map

An order I soil survey has been conducted of the area to help define the previous conditions at well sites 1, 3, 4, 5 and 6. This information will be used for final reclamation for these sites. An order 3 Soil Survey has been conducted for the proposed sites GVH#5A, GVH#7, GVH#8 and GVH#9. Results of this survey are provided in Attachment 2-1 "Soil Inventory and Assessment". Since GVH#5A will not be drilled, GVH#10 is proposed to be drilled instead. A soils survey has also been completed on GVH#10 and results will be provided in Attachment 2-1 when the report is completed.

222.200 Soil Identification

See Attachment 2-1, Order 3 Soil Survey

222.300 Soil Description

See Attachment 2-1, Order 3 Soil Survey

222.400 Soil Productivity

See Attachment 2-1, Order 3 Soil Survey

TABLE 2-1
Topsoil Volumes

Note: 2400 CY per Well is assumed until final surveys are done. Actual size of the pads could be less than 1 acre, in which case the volume stored will be reduced accordingly.

Well No.	Status	Cubic Yards of Material	
		Original	Remaining*
GVH-1	Hole Completed	2778	1250
GVH-3	Hole Completed	2689	1333
GVH-4	Hole Completed	2300	1083
GVH-5	Hole Completed	2347	1228
GVH-6	Hole Completed	3611	1111
~~GVH-5A~~	~~Proposed~~	~~2400~~	-
GVH-7	Proposed	2400	-
GVH-8	Proposed	2400	-
GVH-9	Proposed	2400	-
GVH-10	Proposed	2400	-

* Remaining soil is after original pad reduction and contemporaneous reclamation.

223 Soil Characterization

See attachment 2-1, Order 3 Soil Survey

224 Substitute Topsoil

Andalex Resources, Inc. does not plan to use substitute topsoil as growth media unless described in Section 222.400.

230 OPERATION PLAN

231 General Requirements

231.100 Removing and Storing Topsoil Methods

The topsoil will be removed (and replaced) to a depth of 18 inches where the thickness exists, stockpiled and protected with a berm and/or silt fence. A qualified person will be on site during soil salvage to monitor and supervise the operation for the purpose of maximizing salvage volumes. Prior to topsoil salvage shrubs/vegetation will be removed and placed/wind rowed along the inside perimeter of the disturbed area. Stockpiled topsoil will not be allowed to remain at the angle of repose (1h:1v) for a period of longer than two weeks. During contemporaneous reclamation, or after two weeks, the stockpiled topsoil slopes will be reduced to less than 2h:1v. The topsoil will then be immediately seeded after the proper angle is achieved. Reseeding will use the approved seed mixture found in ARI's Mining and Reclamation Plan (page 3-21), or a mix recommended by the Division, and will be hand broadcast, raked in slightly and mulched with straw or alfalfa hay. Hand broadcasting requires twice the seed rate per acre as drilling.

After the topsoil is removed, the mud pit will be excavated and the soils from the mud pit excavation will be stored immediately adjacent to the mud pit. Mud pit excavation of subsoil will be approximately 110 CY at each well site. Generally, it is expected that mud pits will be excavated in an area roughly 200 square feet by 15 feet deep. A larger area is possible, should the depth not be achievable, or multiple pits may be employed . However a mud pit volume of roughly 3000 cubic feet per drill site is needed. A portable container for drilling fluids will be used if necessary, should there not be sufficient subsoil depth to excavate a mud pit (where bed rock is encountered).

Topsoil beneath the topsoil stockpiles will not be removed. Ribbon or a marking fabric will be placed on top of the topsoil prior to placement of the topsoil from the well pad area.

The volume of subsoil to be salvaged and used to create berms around the perimeter of the well including the topsoil stockpile perimeter is approximately 30 cubic yards.

231.200 Suitability of Topsoil Substitutes/Supplements

See Section 224.

231.300 Testing of Topsoil Handling and Reclamation Procedures Regarding Revegetation

Andalex Resources, Inc. will exercise care to guard against erosion during and after application of topsoil and will employ the necessary measures to ensure the stability on graded slopes. Erosion control measures will include silt fences, berms, seeding, straw bales, soil roughening, and mulching of the soils.

Topsoil will be redistributed and the original soil surface beneath the topsoil stockpile will be roughened as presented in Section 242.100 and seeded with the seed mix described in Chapter 3, Section 356.

231.400 Construction, Modification, Use, and Maintenance of Topsoil Storage Pile

Topsoil removed from the drill pad sites will be stockpiled on the site. The estimated volumes of topsoil stockpile for each site are shown in Table 2-1. The stockpiles will be sized as shown in Table 2-2.

The slopes of the stockpile will be 1H:1V or approximately 45° during the construction phase. Soils in these areas generally have an angle of repose greater than 50 degrees, making a stockpile with 1:1 slopes feasible. The steeper slope also help minimize the area to be disturbed. During the operational phase the remaining topsoil will be stockpiled with slopes of 2H:1V.

TABLE 2-2
Topsoil Stockpile Dimensions

Well No.	Status	Length (ft)	Width (ft)	Height (ft)
GVH-1	Existing	75	40	11
GVH-3	Existing	100	40	9
GVH-4	Existing	95	35	9
GVH-5	Existing	100	35	9.5
GVH-6	Existing	105	35	8.5
~~GVH-5A~~	~~*Proposed~~	~~100~~	~~40~~	~~16~~
GVH-7	*Proposed	100	40	16
GVH-8	*Proposed	100	40	16
GVH-9	*Proposed	100	40	16
GVH-10	*Proposed	100	40	16

* These are approximate dimensions of the topsoil stockpile for the proposed well sited, based on the estimated 2400 CY from Table 2-1. Actual construction dimensions may vary.

See section 234.200 for detailed information on the topsoil stockpile(s).

232 Topsoil and Subsoil Removal

232.100 Topsoil Removal and Segregation

All topsoil will be removed as a single layer with no segregation to a depth of 18 inches, where available. Topsoil will be removed using a dozer and/or loader. Refer to Section 231.100 for additional details.

232.200 Poor Topsoil

Not Anticipated

232.300 Thin Topsoil

Not Anticipated

232.400 Minor Disturbances Not Requiring Topsoil Removal

Not Anticipated

232.500 Subsoil Segregation

The B and C soil horizons will generally not be removed. However, in drill pad locations where the A horizon is 18 inches or less, up to six inches of sub-soil may be removed for the purpose of constructing a berm around the perimeter of the drill pad. Construction of this berm, which will be roughly triangular in shape and roughly one foot in height (1V:1H), will accumulate an additional storage of either lower A or possibly B horizon soil of approximately 800 cubic feet or 30 cubic yards of material, per site.

232.600 Timing

Topsoil removal will take place after all vegetation that could interfere with salvaging the topsoil has been grubbed.

232.700 Topsoil and Subsoil Removal Under Adverse Conditions

The topsoil will be removed first and stockpiled and the remaining soil horizons will be left in place, except where natural conditions render removal operations hazardous or detrimental to soils outside the disturbed area then topsoil will not be removed.

Conventional Machines - In locations where steep grades, adverse terrains, sever rockiness, limited depth of soils, or other adverse conditions exist that render soil removal activities using conventional machines hazardous, soils will not be salvaged and stockpiled. Such conditions are not likely to occur in these areas.

Substitute Topsoil - Importing of substitute topsoil is not anticipated (Section 224).

233 Topsoil Substitutes and Supplements

233.100 Overburden Materials Supplementing and/or Replacing Topsoil

No overburden material will be used.

233.200 Suitability of Topsoil Substitutes and Supplements

No substitute topsoil is planned.

233.300 Physical and Chemical Analyses

See Section 243

233.400 Testing of Substitute Topsoil

No substitute topsoil is planned.

234 Topsoil Storage

234.100 Topsoil Stockpiling

Topsoil will be stockpiled for later use in reclamation operations.

234.200 Topsoil Stockpile

Stable Stockpile Site - Stockpiled material will be placed on a stable site.

Protection from Contaminants and Compaction - To protect the topsoil from contaminants and unnecessary compaction that could interfere with vegetation, the stockpile will be isolated from the main surface area by a berm and/or silt fence. A sign designating "topsoil" will be installed on the stockpile.

The topsoil stockpile will be constructed in such a manner as to allow access for repair of the pile surfaces and diversion structures.

Wind and Water Erosion Protection - The topsoil stockpile will be protected from water erosion by berms, which trap sediment runoff from the stockpile. The berms have been designed to completely contain the 10-year 24-hour storm event (see Attachment 7-1). The stockpile will be surface pitted, gouged and/or roughened and revegetated using the seeds listed in Table 3-2 to prevent wind erosion.

Topsoil Redistribution - Stockpile soil will not be moved until redistribution during contemporaneous or final reclamation operations unless approved by the Division.

234.300 Topsoil Stockpile Relocation

Stockpiles soil in jeopardy of being detrimentally affected in terms of its quality by drilling operations may be temporarily redistributed or relocated on approval by the Division and modification of this M&RP.

240 RECLAMATION PLAN

241 General Information

Reclamation of the sites (topsoil redistribution, amendments, and stabilization) is discussed in Sections 242, 243 and 244 respectively.

242 Soil Redistribution

242.100 Soil Redistribution Practices

The topsoil will be placed after recontouring of the site has occurred. Topsoil will be handled when loose or in a friable condition. The moisture content will be visually monitored and water will be added as needed to enhance the soil's condition for handling. The approximate amount of topsoil available for each site is shown in Table 2-1.

The topsoil will be distributed in two phases at each well site. The first phase will be the contemporaneous reclamation of a portion of the pad area used during well construction (see Figures 5-2). During contemporaneous reclamation topsoil from the stockpile will be distributed on each site in the depths shown in Table 2-3.

Final reclamation will occur at all well sites after venting of the gob gas is complete, venting equipment has been removed and the well has been plugged. The topsoil stockpile storage area and any access road required to be removed will be reclaimed during this final phase. If access roads were pre-existing, they will not be reclaimed. Refer to Section 341 for additional information.

Soil Thickness - The topsoil will be distributed during contemporaneous and final reclamation in the thickness shown in Table 2-3. (Note: A topsoil thickness of 18" is assumed for all sites until actual measurements can be taken.)

TABLE 2-3
Approximate Topsoil Distribution Thickness

Well Site No.	Status	Topsoil Thickness (inches)
GVH-1	Actual	18
GVH-2	Actual	18
GVH-3	Actual	18
GVH-5	Actual	18
GVH-6	Actual	18
~~GVH-5A~~	~~Proposed~~	~~18~~
GVH-7	Proposed	18
GVH-8	Proposed	18
GVH-9	Proposed	18
GVH-10	Proposed	18

Compaction - Prior to the application of topsoil, compacted subsoils will be roughened or loosened for a depth of 18 to 24 inches. To prevent compaction of topsoil, soil moving equipment will refrain from unnecessary operation over spread topsoil. The topsoil will be in a loosened condition prior to seeding.

Following the drying of the mud pit materials, the dirt excavated to create the mud pit will be mixed with the drill cutting and returned to the pit to prevent a boundary of hard material from forming in the mud pit are that would hamper root penetration and then compacted to minimize settling.

Erosion - Care will be exercised to ensure the stability of topsoil on graded slopes to guard against erosion during and after topsoil application. Post reclamation (contemporaneous and final) erosion control measures will be surface roughing, mulching and seeding. Outslopes along all the access roads will be seeded with a fast growing type of seed, western wheatgrass grass for example. This will quickly establish an erosion control measure on the outslopes.

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LIST OF ATTACHMENTS

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Attachment 3-2	Threatened, Endangered, and Sensitive Species Information
Attachment 3-3	2005 Raptor Survey (Relocated to Confidential Binder)
Attachment 3-4	Photos of GVH Sites

310 INTRODUCTION

This chapter presents a description of the biological resources found on the completed Centennial Project gob gas vent hole sites GVH#1, GVH#3, GVH#4, GVH#5 and GVH#6 as well as the proposed sites GVH#5A, GVH#7, GVH#8, GVH#9 and GVH#10. Please note that GVH#5A will not be drilled. GVH#10 is proposed instead. Details for each of the sites are provided in this Appendix.

311 Vegetation, Fish and Wildlife Resources

Vegetative, fish, and wildlife resource conditions in and adjacent to the proposed degassification wells are discussed in Section 320 of this submittal and the approved M&RP.

312 Potential Impacts to Vegetative, Fish, and Wildlife Resources

Potential impacts to vegetative, fish, and wildlife resources and the associated mitigation plan is presented in Section 330 and 340 of this chapter.

313 Description of Reclamation Plan

The reclamation plan used to restore the vegetative, fish, and wildlife resources to a condition suitable for the post mining land use is presented in Section 340.

320 ENVIRONMENTAL DESCRIPTION

321 Vegetation Information

This section and the approved M&RP contain the environmental descriptions of the vegetation for the permit and adjacent areas.

Andalex Resources has been drilling "gob" gas vent holes as a safety requirement necessary to conduct their coal mining operations within the plateaus of the Book Cliffs mountain range. Because of the extreme urgency of the situation in early 2005, permitting of some emergency gas holes began in January 2005, with drilling proceeding soon afterwards. Initially, drill holes numbered GVH-01, GVH-02, GVH-03 were proposed for drilling (GVH-02 was later dropped for the plan). Following these drilling activities, additional drilling was necessary in the late-winter/early spring months the same year (sites: GVH-05 and GVH-06). Because it was necessary for the drilling to proceed during in the winter and spring months, or when quantitative assessment of the impacted plant communities was not possible, Andalex employed "**Range Site**" methods in the permitting process to drive the revegetation plan and provide final revegetation standards of success.

More gas holes were necessary for venting requirements in the spring of 2005 beginning with GVH-04. Prior to disturbance by the drill rig, the plant communities to be impacted by the drilling operations were quantitatively sampled including the proposed access road and drill pad. Additionally, a "**Reference Area**" with the same plant community was sampled. The Reference Area was used for comparisons of the proposed disturbed site at that time and will also be used at the time of final reclamation for standards of final revegetation success.

The next proposed gob gas holes were numbered GVH-05A, GVH-07, GVH-08, and GVH-09. The plant communities that would be impacted by these drilling operations were quantitatively sampled in the growing season of 2005. Reference Areas were also chosen and sampled for these communities during the same time period. The following document was submitted to Andalex to report the results of the 2005 vegetation sampling period; and is included as Attachment 3-1 of this Appendix:

VEGETATION OF THE GAS VENT HOLES:
GVH-04, GVH-05A, GVH-07, GVH-08,
GVH-09 & REFERENCE AREAS
2005

for the
CENTENNIAL MINE

by
MT. NEBO SCIENTIFIC, INC.

January 2006

Because the aforementioned emergency drill sites GVH-01, GVH-03, GVH-05 and GVH-06 were constructed in the winter and early spring months, or before vegetation sampling could be conducted, Reference Areas for them were chosen later in the growing season of 2005 when a better assessment of them could be made. These Reference Areas will be used later as standards for final revegetation success at these sites instead of using the Range Site method mentioned above. Based on a qualitative assessment of these sites, the **Sagebrush/Grass Reference Area** as reported in the above document will be used for the emergency, or first drill sites. Please note that GVH#5A will not be drilled. A new hole, GVH#10 is proposed instead. Vegetation studies have been completed for this hole and will be provided upon completion of the report.

Soil Surveys are included in Attachment 2-1 and Vegetation Surveys are included in Attachment 3-1 for the proposed sites.

321.100 Plant Communities Within the Proposed Permit Area

Plate 19A of the M&RP shows the sites to be generally in the sagebrush-grass, aspen and oak brush communities. Vegetation specific to each of the sites is provided in this Appendix. A qualitative vegetative inventory (analysis) was completed during the summer of 2005. (See Attachment 3-1)

Also, ARI has taken photographs of the proposed sites prior to disturbance. These photo locations are identifiable and repeatable. Although the photo locations were not staked, landmarks in the photos provide for identification as well as direction and location. The photos are included in Attachment 3-4.

321.200 Land Productivity Prior to Mining

TABLE 3-1
Land Productivity

Well No.	Range Site	Productivity (lbs.) Per Acre
GVH-1	High Mountain Loam	1800
GVH-3	High Mountain Loam	1800
GVH-4	High Mountain Loam	1800
GVH-5	High Mountain Loam	1800
GVH-6	High Mountain Loam	1800
~~GVH-5A~~	~~High Mountain Loam~~	~~1800~~
GVH-7	High Mountain Loam	1800
GVH-8	High Mountain Loam	1800
GVH-9	High Mountain Loam	1800
GVH-10	High Mountain Loam	1800

322 Fish and Wildlife Information

Fish and wildlife information associated with the degas wells is provided in this chapter. A summary of the fish and wildlife resource information for th permit and adjacent areas is contained in Section 322.100 through 322.200 of the approved M&RP.

322.100 Level of Detail

The scope and level of detail within the "Gob Gas Vent Holes" amendment are sufficient to design the protection and enhancement plan for wildlife and fish associated with the degas wells. Additional information pertaining to fish and wildlife in the permit area is located in the M&RP.

322.200 Site-Specific Resource Information

Raptors - An aerial raptor nest survey was done of the area by the Utah Division of Wildlife Resource personnel in 2004. The results of the survey are provided in Appendix D of the M&RP. An additional survey has been done in 2005, and is included with this submittal in the Confidential Binder for the Centennial Project.

A raptor survey will be conducted of the well site areas, each year that the wells are in operation.

Bats - No known open mine shafts, caves, adits or other man made structures that might provide habitats for bats are known to exist in the degas project area. The sites are open and the lack of a food source would force the bats to seek habitat and nourishment elsewhere.

Threatened and Endangered Plant and Wildlife Species - There are no known federally or state listed threatened and endangered plant and wildlife species within the sites planned for degassification wells. This is based on research and analysis by Mt. Nebo Scientific of Springville, Utah and EIS of Helper Utah. The Bureau of Land Management has also reviewed the access and drill sites and has stated that although this area represents important habitat for both Mule deer and Elk, it is not characterized as crucial or critical.

There are no known groundwater or surface water flows to the Colorado or Green Rivers with potential for impact by the drilling of the degas wells. Potential adverse affects to the four Colorado River endangered fish species (refer to Table 3-3) would not be likely since there is no direct route to the Colorado River or Green River from the proposed well locations. Per the Windy Gap Process consumption estimates for the degas wells are as follows: Drilling - approximately 100,000 gallons per hole; road watering - approximately 5,000 gallons per day for 70 days per year; evaporation from ventilation - zero, drill holes will not intersect the coal seam being mined, therefore no access to mine ventilation until after area is sealed; coal preparation - zero, no coal preparation at degas sites (see Sections 522 and 523); sediment pond evaporation - zero, no sediment pond at degas sites (see Section 732.200); subsidence effects on springs - zero, no anticipated subsidence at degas sites (see Section 525); alluvial aquifer abstraction into mines - zero, no alluvial aquifer abstractions associated with degas drill holes (see Sections 513.500 and 600); postmining inflow to workings - zero, no workings for postmining inflow associated with degas wells (see Sections 513.500 and 600); coal moisture loss - zero, no coal therefore

no moisture loss (See Sections 522 and 523). The overall impact of the mining operations, (including the degas holes) is shown on Table 3-4. Based on these calculations, the mining operation has a net positive impact to the Colorado River Drainage by the addition of 45.001 ac.ft./year.

Table 3-3
Federal and State Listed, Threatened, Endangered and Candidate Species
Plants and Wildlife
Carbon County, Utah
October, 2002

CARBON

Graham Beardtongue	*Penstemon grahamii*
Uinta Basin Hookless Cactus	*Schlerocactus glaucus*
Bonytail[4, 10]	*Gila elagans* E
Colorado Pikeminnow[4, 10]	*Ptychocheilus lucius*
Humpback Chub[4, 10] E	*Gila cypha*
Razorback Sucker [4, 10] E	*Xyrauchen texanus*
Bald Eagle [3] T	*Haliaeetus leucocephalus*
Mexican Spotted Owl [4] T	*Strix occidentalis lucida*
Western Yellow-billed Cuckoo	*Coccyzus americanus occidentalis*
Black-footed Ferret [6] E	*Mustela nigripes*

1 Nests in this county of Utah
2 Migrates through Utah, no resident populations.
3 Wintering populations (only five known nesting pairs in Utah).
4 Critical habitat designated in this county.
5 Critical habitat proposed in this county
6 Historical range.
7 Experimental nonessential population
8 Introduced, refugia population.
9 Candidate species have no legal population under the Endangered Species Act. However, these species are under active consideration by the Service for addition to the Federal List of Endangered and Threatened Species and my be proposed or listed during the development of the proposed project.
10 Water depletions from any portion of the occupied drainage basin are considered to adversely affect or adversely modify the critical habitat of the endangered fish species, and must be evaluated with regard to the criteria described in the pertinent fish recovery programs.

For additional information contact: U.S. Fish and Wildlife Service, Utah Field Office, 2369 West Orton Circle, Suite 50, West Valley City, Utah 84119 Telephone (801) 975-3330.

Table 3-4
Potential Water Depletion
to
Colorado River Drainage

The following calculations are intended to define the potential depletion or addition of water to the Colorado River Drainage System, as a result of mining at this operation. It should be noted that the criteria is based on the U.S. Fish and Wildlife Service Windy Gap Process, and only those parameters that apply to this operation have been calculated.

Projected Water Depletion

1- Bathhouse/Office
   a. 140 people @ 35 gpd/ea x 240 days/yr = 1,176,000 gal/yr

2- Ventilation
   a. Evaporation
      1) 450,000 cfm = 236,520 M cf/yr
      2) 2.5 gallon/M cf = 591,300 gal/yr

3- Drilling GVH Wells
   a. 5 holes/yr @ 100,000 gal/hole = 500,000 gal/yr

4- Road Watering (GVH Sites)
   a. 5,000 gpd x 70 days/yr = 350,000 gal/yr

Total Loss = 2,617,300 gal/yr
8.033 ac ft/yr

Projected Water Addition

1- Mine Discharge
   a. 100 gpm x 120 days/yr = 17,280,000 gal/yr

Total Gain = 17,280,000 gal/yr
53.034 ac ft/yr

Summary

Projected Depletion = -8.033 ac ft/yr
Projected Addition = +53.034 ac ft/yr

Total Addition = +45.001 ac ft/yr

Note: Moisture loss from mined coal and use of sprays have not been included, since the spray water is derived from perched aquifers and is recycled within the mine. Any excess water from the perched aquifers is eventually discharged, resulting in the addition to streamflow.

322.300 Fish and Wildlife Service Review

If requested, Andalex Resources, Inc. authorizes the release of information pertaining to Section 322 and 333 to the U.S. Fish And Wildlife Service Regional and Field Office for their review.

323 Maps and Aerial Photographs

Location of the well sites can be seen in Figure 1-1 of this submittal.

323.100 Location and Boundary of Proposed Reference Area

Reference areas for all well sites have been established as described in Section 321. Subsequent holes will also use standard reference areas including baseline data.

323.200 Elevation and Locations of Monitoring Stations

N/A

323.300 Facilities for Protection and Enhancement

Section 333.300 and 358.500 of the approved M&RP contain additional discussion pertaining to protective measures to be taken by Andalex Resources, Inc.

323.400 Vegetation Type and Plant Communities

Vegetative types and plant communities are outlined in the vegetative report in Attachment 3-1. Information for GVH#10 will be provided for Attachment 3-1 upon completion of the report.

330 OPERATION PLAN

331 Measures Taken to Disturb the Smallest Possible Area

The well sites will be sized to disturb the smallest acreage possible and still meet the requirements for the drilling equipment. The drainage control required will be built to satisfy the environmental requirements. Please refer to the typical proposed site plans for the gob gas wells which show estimated dimensions, location and type of sediment control, location of topsoill storage as well as approximate size and set-up of equipment.

332 Description of Anticipated Impacts of Subsidence

Refer to Section 525.

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410 LAND USE

411 Environmental Description

A statement of the conditions and capabilities of the land to be affected by mining and reclamation operations follows in this section.

411.100 Premining Land Use

The area is utilized for the landowners private use, including hunting and as open range for livestock and wildlife.

411.110 Land Use Map and Narrative

Refer to the same section of the approved M&RP.

411.120 Land Capability

The major plant communities at the well sites are identified in Section 321. No cultivated lands lie within the well boundaries, due to the limiting terrain and lack of water for irrigation. Refer to Section 321.200, Table 3-1 of this submittal for forage production per acre for each well site.

411.130 Land Use Description

The wells are located on land administered by Dave R. & Mildred Cave, et al., and Mathis Land, Inc. and zoned by Carbon County for mining and grazing (MG-1).

No industrial or municipal facilities are located on or immediately adjacent to the well sites.

411.140 Cultural and Historic Resources Information

Archeological surveys will be conducted on any future proposed well sites as soon as weather and ground conditions allow. The Cultural Resource Survey will be included in Attachment 4-1 of this application. For Gob Gas Holes 1, 3, 4, 5 and 6, preliminary research and file search has been conducted by Senco-Phenix of Price, Utah and the research indicates that there is a very low probability of the occurrence of cultural resources at the proposed drill sites. Senco-Phenox has also completed a Cultural Resource Survey of the proposed sites GVH#5A, GVH#7, GVH#8 and GVH#9. Results of this survey are included in Attachment 4-1. (Confidential Binder) Please note that GVH#5A will not be drilled. A new hole, GVH#10 is proposed instead. An archaeological survey has been conducted on the GVH#10 site by Sagebrush Consultants of Ogden, Utah. This survey will also be provided in Attachment 4-1. (Confidential Binder)

Andalex Resources, Inc. agrees to notify the Division and State Historical Preservation Office (SHPO) of previously unidentified cultural resources discovered in the course of operations. Andalex also agrees to have any such cultural resources evaluated in terms of NRHP eligibility criteria. Protection of eligible cultural resources will be in accordance with Division and SHPO requirements. Andalex will also instruct its employees that it is a violation of federal and state low to collect individual artifacts or to otherwise disturb cultural resources.

411.200 Previous Mining Activity

Andalex Resource, Inc. has no knowledge of the removal of coal or other minerals in the well site areas.

412 Reclamation Plan

412.100 Postmining Land-Use Plan

All uses of the land prior to the wells construction/operation and the capacity of the land to support prior alternate uses will remain available throughout the life of the sites.

Andalex Resource, Inc. intends the postmining land use to be livestock and wildlife grazing and other uses as indicated by the land owner (hunting, etc.). Final reclamation activities will be completed in a manner to provide the lands to parallel the premining land use.

412.200 Land Owner or Surface Manager Comments

Surface lands are owned by Dave R. & Mildred Cave, et al., and Mathis Land, Inc. Appropriate landowner approvals have been obtained for the proposed wells. Required notification of drilling will be sent to the landowners prior to start. Copies of the notification letters have been included in Attachment 4-2.

413 Performance Standards

413.100 Postmining Land Use

Postmining land uses are discussed in Section 412.100. The postmining lands will be reclaimed in a timely manner and capable of supporting such uses (see Chapters 2, 3, 5 and 7).

413.200 Determining Premining Uses of Land

Refer to Section 411.100.

413.300 Criteria for Alternative Postmining Land Use

No alternative postmining land uses have been planned.

414 Alternative Land Use

No alternative postmining land uses have been planned.

420 AIR QUALITY

421 Air Quality Standards

Gob gas vent hole activities will be conducted in compliance with the requirements of the Federal Clean Air Act and the Utah Air Conservation Rules.

422 Compliance Efforts

See Fugitive Dust Control Plan, Section 424.

423 Monitoring Program

Refer to the same section in the approved M&RP.

424 Fugitive Dust Control Plan

Operational areas that are used by mobile equipment will be water sprayed to control fugitive dust. The application of water will be of sufficient frequency and quantity to maintain the surface material in a damp/moist condition unless it is below freezing.

425 Additional Division Requirements

Refer to the same section of the approved M&RP.

As shown on Figure 1-1, proposed GVH sites 7, 8, 9 and 10 are located on existing access roads. GVH-8 can be accessed via an existing road along the fence line without crossing either the Right or Left Fork of Antone Creek. GVH#5A, previously approved, will not be drilled. GVH#10 is proposed instead.

Variance from Approximate Original Contour - No variance from approximate original contour is required for the well sites.

513 Compliance with MSHA Regulations and MSHA Approval

513.100 Coal Processing Waste Dams and Embankments

No coal processing waste dams and embankments will exist at the well sites.

513.200 Impoundments and Sedimentation Ponds

Refer to Section 733.200 of this submittal.

513.300 Underground Development Waste, Coal Processing Waste, and Excess Spoil

No underground waste, coal processing waste, and excess spoil will exist at the well sites.

513.400 Refuse Piles

No refuse piles will exist at the well sites.

513.500 Underground Openings to the Surface

The well will be equipped with a valve that will be closed and locked when not in use. A typical well head is shown in Figure 5-4.

513.600 Discharge to Underground Mine

No discharge to the underground mine will occur at the well sites.

513.700 Surface Coal Mining and Reclamation Activities

No surface coal mining, or reclamation activities associated with surface coal mining will occur at the well sites.

513.800 Coal Mine Waste Fire

No coal waste will be developed, therefore, no coal waste fires will occur at the well sites.

constructed by the surface owner; however, it did require minor drainage control upgrades in the form of 18" and 24" culverts, and slight widening of sharp turns for drilling equipment access. This road is approximately 12,300' long with an average slope of 11.79% and is approximately 16' wide. The road runs from the Centennial Minesite to the top of the ridge. The road is native rock and gravel surfaced, and is protected from runoff by a combination of berms, road ditches and culverts. This road will remain in place upon completion of the drilling project.

GVH-5 - This road runs from the top of Deadman Canyon to the GVH-5 Site. This is an existing road, approximately 16' wide, 4400' in length, with an average slope of approximately 5.00%. The road is constructed on native material and protected from runoff by berms, ditches and culverts as needed.. There are no plans to remove or reclaim this road.

GVH-1 - This is a short section of road running from Road GVH-5 to the GVH-1 Site. The road was constructed on native material by ARI, and is approximately 16' wide, 300' in length and has an average slope of 3.33%. The drainage is controlled by ditches and berms, with runoff retained on the pad. This road will be removed and reclaimed unless requested otherwise by the landowner.

GVH-6 - This is a constructed access road running from Road GVH-5 to the GVH-6 Site. The road is approximately 16' wide, 4300' long and has an average slope of 2.67%. It is constructed on native material, with gravel used as needed on soft areas. Drainage is controlled by a combination of ditches and berms. This road will be removed and reclaimed unless otherwise directed by the landowner.

GVH-10 - This is an existing road from the GVH-5 site to the GVH-10 site. The road parallels the fence line and is approximately 16' wide, 1700' long and has an average grade of approximately 12.5%. The road is constructed on native material and hydrologic controls are primarily from ditches and berms. This road is not scheduled for removal after the project is completed.

Ridge Road - This is an existing road along the ridge above the Right and Left Forks of Deadman Canyon. The road is approximately 16' wide, 7100' long and has an average grade of 3.10%. It runs westward from the top of the Right Fork of Deadman Canyon to the turnoff to the road to GVH-9. The road is constructed on native material and being on the ridgeline, has need for only minimal drainage control in the form of ditches where needed. This road will remain in place after the project is completed.

GVH-3 - This is an existing road from the Ridge Road to the GVH-3 Site. The road is approximately 16' wide, 1200' long and has an average grade of 4.17%. The road is constructed on native material and hydrologic controls consist of berms and ditches. This road is not scheduled for removal after the project is completed.

GVH-7 - This section of road is from GVH-3 to GVH-7 and is a continuation of the existing road to GVH-3. This section is approximately 16' wide, 1600' long and at an average grade of 8.13%. The road is constructed on native material and hydrologic controls are primarily from ditches. This road is also scheduled to remain after the project.

GVH-8 - This is a road from the Ridge Road , north along the fence line and then west to the GVH-8 site. The road is existing; however, it will require some upgrading to provide access for a drill rig. The upgrade will consist of grading and slight widening as needed. The road is to be approximately 16' wide, 2500' long , and will have an average grade of approximately 5.33%. The road is on native material and runoff is controlled by ditches. Since this is an existing road, it will not be removed unless requested by the landowner.

GVH-4 - This road runs from the Ridge Road to the GVH-4 Site. This road was constructed by ARI, and is approximately 16' wide, 1100' long at an average grade of approximately 3.64%. The road was constructed on native material, and runoff is controlled by ditches and berms with containment on the pad. This road will be removed and reclaimed unless otherwise requested by the landowner.

GVH-9 - This is an existing road from the Ridge Road to the GVH-9 Site. The road is approximately 16' wide, 3500' long and has an average grade of approximately 8.14%. The road is constructed on native material and runoff is controlled by ditches and berms. Since this is also an existing road, it will not be removed unless requested by the landowner.

All roads described above are shown on Figure 1-1 of this Appendix.

528 Handling and Disposal of Coal, Excess Spoil, and Coal Mine Waste

No disposal of coal, excess spoil, and coal mine waste will occur at the well sites.

HYDROLOGY CALCULATIONS

General - The potential runoff for each of the Gob Gas Vent Hole sites is calculated using the 10 year - 24 hour precipitation event of 1.82" and other criteria as described in the approved M.R.P. Section R645-301-512.240.

Runoff and controls for completed sites are based on existing sizes and conditions. Contemporaneously reclaimed areas have been mulched and roughened, seeded, and protected by silt fences as needed, and are therefore considered adequate for runoff protection and control.

Proposed sites are based on the projected original disturbed area size of approximately 1.0 acre, with a length of 200' and a slope of 2%.

Runoff protection and control for all sites is primarily through total containment by berms; however, silt fences are used as needed to provide additional protection below slope areas.

The following is a summary of runoff calculations for the existing as well as the proposed gob gas vent holes, along with controls and treatment of runoff.

GVH Runoff Summary					
Hole	Status	Disturbed Area (ac.)	Peak Flow (cfs)	Runoff Volume (ac. ft.)	Control/Treatment
GVH#1	Hole Completed	0.52	0.44	0.04	Berm/Containment
GVH#3	Hole Completed	0.55	0.47	0.04	Berm/Containment
GVH#4	Hole Completed	0.45	0.38	0.04	Berm/Containment /Silt Fence
GVH#5	Hole Completed	0.51	0.44	0.04	Berm/Containment
GVH#6	Hole Completed	0.46	0.39	0.04	Berm/Containment
~~GVH#5A~~	~~Proposed~~	~~1.0~~	~~0.86~~	~~0.08~~	~~Berm/Containment~~
GVH#7	Proposed	1.0	0.86	0.08	Berm/Containment
GVH#8	Proposed	1.0	0.86	0.08	Berm/Containment
GVH#9	Proposed	1.0	0.86	0.08	Berm/Containment
GVH#10	Proposed	1.0	0.86	0.08	Berm/Containment