R645-201-200. Notice of Intention to Conduct Minor Coal Exploration

Canyon Fuel Company, LLC (CFC) proposes to drill up to 7 exploratory holes and conduct one seismic survey to evaluate the reserves and quality of coal seams within the Blackhawk Formation. The exploration sites and associated access routes occur on private lands. This document provides the details of the proposed drilling program, including a description of the surface and sub-surface resource protection and reclamation. CFC estimates that less than 250 tons of coal (in the form of drill core) will be removed during drilling.

R645-201-221 Applicant

Canyon Fuel Company, LLC.
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Midvale, Utah 84047
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R645-201-222 Applicant's Representative

The Canyon Fuel Company representatives who are responsible for directing the drilling and related activities are shown below. CFC or its affiliate Ark Land Company, will have an authorized representative present during drilling operations. A contractor may be hired to serve as the representative of the applicant during the exploration activities.

REPRESENTATIVE OF APPLICANT:

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ALTERNATE:

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NOTICE OF INTENTION
TO CONDUCT MINOR COAL EXPLORATION
DUGOUT and PACE CANYON AREAS,
CARBON COUNTY, UTAH

Re-Submittal A

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CANYON FUEL COMPANY, LLC.

August, 2001

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INTRODUCTION

This Notice of Intention to Conduct Minor Coal Exploration Approval has been prepared by Canyon Fuel Company, LLC., in accordance with the requirements of the State of Utah Coal Mining Regulations, R645-200 through R645-203. The proposed exploration area covers lands in Carbon County, Utah, within which Canyon Fuel Company plans to conduct an exploration drilling program. As described herein, Canyon Fuel Company plans to complete up to 7 exploration drill holes and one seismic survey to evaluate the reserves and quality of coal seams within the Blackhawk Formation.

The format used in the State of Utah Coal Mining Regulations (R645) is used as the format for this Notice of Intent to Conduct Coal Exploration. The exploration plan outlined within this application is also consistent with the requirements of 43 CFR, Part 3482.

The information contained in this Notice of Intention demonstrates that environmental protection and reclamation are integral parts of the proposed exploration program, and that reclamation will be performed in tandem with exploration activities. Sufficient information is provided in this exploration application to demonstrate the effectiveness of Canyon Fuel Company's proposed reclamation methods.

It is expected that drilling would span the years 2001 and 2002 with half the holes being drilled in each year. Holes may be deferred based upon drilling results.

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R645-201-223 Narrative Description of Exploration Area

LOCATION:

Canyon Fuel Company, LLC desires to conduct coal exploration activities by drilling up to 7 drill holes and conducting approximately 2 miles of surficial seismic investigations in an area located approximately 12 miles northeast of the town of Wellington, Utah and 0.5 to 3.5 miles east of the existing Dugout Canyon Mine.

The proposed exploration area lies within T.13 S., R.12 E. and T. 13 S., R. 13 E. This area occurs within the Book Cliffs Coal Field and lies entirely within Carbon County, Utah.

Five (5) of the drill holes and the seismic investigation will be drilled on private surface over Federal Coal. The remaining two (2) holes will be drilled on private surface over State Coal. The proposed exploration sites are shown on Map 1 (See Map 1 in Appendix A).

The proposed drill holes and seismic investigation are described in following Tables 1 and 2.

Table 1
Proposed Drilling Locations and Estimates of Disturbed Acres
(All elevations & depths are estimates)

Hole I.D.	Year Drilled	Surface and Mineral Rights Status	Location	Collar Elev.	Coal Elev.	Total Depth *	Disturbed Acres **
A	2001	Private/Federal	T 13 S, R 12 E, Sec. 24; NE ¼of SW ¼	8,320	7,080	1,320	0.25
B	2001	Private/Federal	T 13 S, R 13 E, Sec. 19; SW ¼of NW ¼	8,300	6,590	1,790	0.28
C	2002	Private/Federal	T 13 S, R 12 E, Sec. 24; NW ¼of NE ¼	8,355	6,585	1,850	0.28
E	2002	Private/Federal	T 13 S, R 13 E, Sec. 18; SE ¼of SE ¼	8,190	6,120	2,150	0.54
J	2001	Private/Federal	T 13 S, R 13 E, Sec. 30; NE ¼of NW ¼	7,050	6,880	245	0.15
DT-1	2001	Private/State	T 13 S, R 13 E, Sec. 19; SE ¼of SE ¼	7,250	6,578	750	0.15
DT-2	2002	Private/State	T 13 S, R 13 E, Sec. 20; SE ¼of SW ¼	7,520	6,328	1,270	0.15
					Total all holes	**9,375**	**1.80**

* Includes additional 75' rat hole for geophysical logging.
** Includes access roads.

Table 2
Proposed Location of Seismic Investigation

Seismic Line	Land and Mineral Rights Status	Length	Location
A - A'	Private/Federal	9,500'	T 13 S R 12 E, Sec 24; S ½, NE ¼ T 13 S R 13 E, Sec 19; NW ¼ T 13 S R 13 E, Sec 18; S ½

SURFACE TOPOGRAPHY:

The exploration area is located in the Book Cliffs physiographic area and drilling activities will take place primarily in the upland portions of the exploration area. The elevation of the proposed exploration area ranges from 7,200 feet in the south along the base of the Book Cliffs to 9,700 feet in the north atop the high mesas. The rugged terrain consists of relatively gently sloping mesas capped by the Tertiary Flagstaff and North Horn Formations that are bounded by the steep slopes of the Price River, Castlegate Sandstone, Blackhawk Formation, and the underlying Mancos Shale. Relatively deep and narrow valleys bisect the highlands and drain southward away from the Book Cliffs.

GEOLOGY:

The proposed exploration application area lies along the north-central portions of the Book Cliffs Coal Field, occurring on the Pine Canyon U.S.G.S. 7 1/2 minute quadrangle map. The general stratigraphy of the area consists of members of the Upper Cretaceous System underlying deposits of Tertiary Age. The Mancos Shale outcrops lowest in the exploration area and forms the base of Book Cliffs. Overlying the Mancos Shale, the Star Point Sandstone is poorly developed and thins eastward. The lower members of the Blackhawk Formation (Aberdeen and Kenilworth sandstone tongues) are well exposed along the Book Cliffs. Above these regressive marine sandstone beds, the middle coal bearing section of the Blackhawk Formation is exposed along many of the steeper slopes. Above the Blackhawk, the Castlegate Sandstone and rocks of the Price River Formation Sandstone complete the Late Cretaceous deposits. Tertiary Age rocks of the North Horn Formation and Flagstaff Limestone overlay the Cretaceous Rocks and cap most of the higher mesas.

The Upper Cretaceous Age Blackhawk Formation contains the major coal-bearing units in the area. The Gilson, Rock Canyon, and Sunnyside coal beds have all been mined within the general vicinity. The coal beds of primary interest are the Rock Canyon and Gilson coal beds. The extent of these coal beds beneath the exploration area is only partially understood and additional exploration drilling is needed to better define the minability and marketability of the existing coal reserves.

The strata in the Pace Canyon area lies on the northward plunging end of the San Rafael Swell and generally dip at approximately 7 degrees to the north and northeast. The dip of the beds rotate to a more easterly direction on the eastern flank of the San Rafael Swell.

SOILS

Soils in the exploration areas are mainly derived from the North Horn, Price River and Blackhawk Formations and often have a relatively high clay content. Soil cover varies with location and slope, with bare sandstone cliffs along the upper portion of the canyons, shallow silty soils on the milder slopes, and shallow sand-gravel alluvium or gravel-boulder colluvium in the channel bottoms. Locally, bedrock is exposed with little or no soil cover. Surface horizons can range from shallow to deep depending upon location. Subsoils are typically loam with a high rock content, and the infiltration rate of the soils is moderately high.

Previously disturbed roads and trails will be used to access most of the sites in order to minimize new surface disturbances. By limiting the size of drill sites and retaining topsoil for reclamation purposes, revegetation should not be a problem in the application area, as demonstrated by numerous previous drill sites and access roads that have been successfully reclaimed.

SURFACE WATER RESOURCES:

Snow melt is the major source of water for the perennial streams in the exploration area. Maximum flows occur during spring snow melt, however, summer precipitation in the form of torrential rainstorms may also cause short-term large volumes of runoff.

Springs may occur locally within the exploration area at the higher elevations. Typically spring flows vary greatly during the year indicating that recharge zones are localized and largely dependent upon the time and amount of precipitation. Springs will not be affected by the proposed drilling program.

The Price River is the primary drainage system in the region. The Price River flows northwest to southeast and is located approximately 12 miles southwest of the exploration area and flows into the Green River approximately 40 miles to the southeast. The exploration area is drained by Dugout Creek and Pace Creek, both of which ultimately flow into the Price River.

Surface water resources of the area will not be affected by the planned exploration activities. Water use in the higher elevations is primarily for stock watering. Within the lower valley areas the majority of the inflowing water is consumed for agricultural use.

GROUND WATER RESOURCES:

Previous drilling operations in the Dugout Canyon area have encountered groundwater locally. These isolated perched ground water aquifers are occasionally found in the lenticular sandstones of the Price River and Blackhawk Formations, but rarely produce more than a one or two gallons per minute. Occurring below the Rock Canyon and

Gilson Coal Beds, tongues of the Star Point Sandstone might also contain groundwater locally, but appear to have limited potential as more regional aquifers.

Based upon previous drilling experience in this area, it is expected that the proposed drill holes will not encounter any significant flows of groundwater within the Blackhawk or overlying formations. If a significant flow of water is encountered in drill holes DT-1 or DT-2, one of these drill holes will be converted to a water monitoring well.

VEGETATION:

A wide variety of vegetative communities occur within the application area, dependent upon topography, elevation, and exposure. Vegetation in the exploration area is dominated by pinyon-juniper, mountain shrubs, sagebrush-grass, conifer-aspen, and ponderosa pine communities. Drill sites J, DT-1, and DT-2 are located within the deciduous stream bank communities. The sagebrush-grass and mountain shrub communities fringe and intermix with the other communities throughout the area.

WILDLIFE:

Big game wildlife consists of mule deer and elk. Other animals in the area include bear, cougar, coyotes, porcupine, skunk, rabbit, squirrel, mice and other rodents. The proposed exploration program will be scheduled to avoid conflicts with the deer and elk on critical summer and winter range and with raptor nesting. The exploration activities will commence after July 15th, in both the years 2001 and 2002. Hence, the drilling activities would have no impact on raptor nesting or critical deer summer range.

THREATENED OR ENDANGERED SPECIES:

The exploration activities will occur above 7,400 feet in elevation (see Table 1) and at sites previously disturbed or heavily grazed. No threatened or endangered plant or animal species are believed to occur within the proposed exploration area (see Appendices E and F).

LAND USE:

The present land use of the proposed exploration area consists of domestic grazing, wildlife habitat, recreational lands, and seasonal big game hunting

Over the years numerous coal mines have operated within the Book Cliffs. Most of the older mines have ceased production. Occurring near the planned exploration area, Canyon Fuel Company is presently mining coal underground at its Dugout Canyon Mine. The nearest other mine is CFC's Soldier Canyon Mine, which is presently idle, but has mined coal underground a few miles to the west of the proposed exploration area.

CULTURAL RESOURCES:

Numerous cultural resource surveys have been completed previously within the general area (SENCO-PHENIX, 1996, 2001 & AERC, 1978 - 1981, 1995, 1998). Because of the small area of planned new surface disturbance, the likelihood of encountering significant cultural resources is low. There are no known structures or sites eligible for listing on the National Register of Historic Places within the proposed areas of new surface disturbance (see Appendix B).

R645-201-224. Period of Intended Exploration

The proposed exploration is expected to be conducted in the years 2001 & 2002. Four of the seven drill holes would be drilled in 2001 (A, J, DT-1, B), with the remaining three holes (C, E, DT-2) drilled in 2002.

Drilling activity in each year would commence mid-July and end mid-November. Reclamation would be concurrent with the drilling activities.

Non-disturbing exploration activities (flagging, etc.) will likely commence during May, or as soon as road conditions allow access.

The seismic survey would be completed within a few days and conducted concurrently with drilling operations.

R645-201-225. Narrative Description of Coal Exploration Methods:

PRE-DRILLING ACTIVITIES:

Prior to any construction or drilling activities, an on-site inspection of proposed drill sites and access routes will be conducted with representatives from the appropriate regulatory agencies, if so requested, to discuss site-specific concerns. Proper authorizations and permits will be obtained prior to the commencement of drilling operations. Any significant changes in the exploration plan after permit approval will be reviewed with the appropriate regulatory agencies before the changes take effect.

Both the surface landowners and the regulatory authorities will be notified before any construction or exploration equipment is moved into the project areas. All construction and exploration activities will be supervised by an authorized representative of the applicant. A copy of the exploration permit and all pertinent permit documents will be available from the company representative for inspection.

PROPOSED ACCESS ROUTES:

An improved, gravel road through Clark's Valley, herein called the Clark Valley Road (see attached Map 1), will be used to access the drill hole and seismic sites. From the Clark Valley road, a private dirt/gravel road will be used to access Pace Canyon. These two roads will provide the main access for all the drilling and seismic activities. All the access roads in Pace Canyon and the project area are located on private surface lands. The project area has several existing roads from previous logging and drilling activities, and the drill holes sites and seismic line will be accessed via these roads. Most of the existing roads will require some upgrading to allow safe travel of the drilling equipment.

The proposed drill sites and seismic survey have been located along the existing roads to minimize new surface disturbances. Some newly constructed roads will be required to access some of the drill sites, and the site specific access routes to the sites are shown on Map 1. During construction of any new roads and drill pads, the topsoil and vegetation will be removed and stored to use in reclamation purposes.

Table 3
AREAS OF DISTURBANCE ASSOCIATED WITH ACCESS ROAD AND EXPLORATION SITE CONSTRUCTION:

Proposed Site No.	New Rd. * Const. (ft)	New Rd * Const. (Ac)	Drill Pad (Ac)	Total New Disturbance
A	0'	0.00	0.25	0.25
B	100'	0.03	0.25	0.28
C	100'	0.03	0.25	0.28
E	1,250'	0.29	0.25	0.54
J	0'	0.00	0.15	0.15
DT-1	0'	0.00	0.15	0.15
DT-2	0'	0.00	0.15	0.15
Seismic A-A'	0'	0.00	0.00	0.00
TOTAL	1,450	0.35	1.45	1.80

* Assumes 10 feet average road width.

A brief discussion of the access to the drill sites follows. See Map 1 for more details.

Site A: This site will be accessed via a road from a previous drilling/logging road that will be upgraded to allow safe access. The drill site will be constructed adjacent to the road on a small 0.25 acre pad.

Site B: Access to Site B will follow much of the same road used to access Site A. A 100 ft. long road will be constructed to the site, and a 0.25 acre pad will be constructed.

Site C: The access to Site C will follow the a portion of the same road used for Sites A and B. Near Site B, the access will follow an existing road that forks to the west. This road will be upgraded. Site C will be located directly adjacent to the road and will require a 0.25 acre pad. A short, 100 ft. long road may be required to access the site.

Site E: The access to Site E follows part of the road to Sites A, B, and C. A new road 1,250 ft. long will be constructed to the south from this road. A drill pad of 0.25 acres will be constructed at the end of the road.

Site J: Site J is located directly adjacent to the road in the bottom of Pace Canyon and will not require any new road construction. A 0.15 acre pad will be constructed.

Site DT-1: Site DT-1 is also located adjacent to the road in the bottom of Pace Canyon. No new road construction will be required. A small 0.15 acre pad will be constructed.

Site DT-2: Site DT-2 is located adjacent to the road in the bottom of Pace Canyon as well. No new road construction will be required. A small 0.15 acre pad will be constructed.

ROAD CONSTRUCTION AND MAINTENANCE:

Existing roads and/or previously dozed trails will be used whenever possible. New or additional roads will be constructed only when necessary and only as the drilling program progresses. Although a 10 ft road width is envisioned, greater road widths may be required during this project in locations where the additional width is needed for the drill rig to negotiate a sharp turn. Although use of the roads to access to the drill sites is brief, the roads will be constructed or maintained in a manner to allow safe travel. Road use will be limited during periods of inclement weather to promote safety and limit rutting.

Topsoil removed during road construction will be stockpiled or wind-rowed adjacent to the road and redistributed evenly when the roads are reclaimed to assure successful revegetation. Where topsoil is stockpiled, a shallow berm will be constructed on the downhill side of the stockpile to prevent loss of the resource. Erosion control structures (water bars, berms, straw bales, etc.) may also be installed along newly constructed roads, where warranted, to prevent runoff erosion (Figures 1,2 & 3).

Roads will be reclaimed upon completion of their use and will be accomplished using a small dozer or backhoe. Rehabilitation of existing trails and reclamation of constructed roads will be done in accordance with applicable regulations and stipulations. Additional information regarding site conditions and access is provided under R645-202-232 and R645-202-233.

DRILL SITE CONSTRUCTION:

Most drill sites have been located close to existing roads (see Map 1). Each drill site will be sized to allow sufficient space for all necessary drilling equipment, or the minimum size necessary for efficient drilling operations. Larger drill pads (100' x 100' maximum) will be needed to accommodate the deeper drill holes. A typical layout for site construction and equipment placement is shown in Figure 4. Significantly smaller drill sites can be used to accommodate the shallower holes.

Site preparation will be done with one D-8 sized bulldozer and a backhoe. Brush and/or shrubs will be cleared from the site and stored for later redistribution. After grubbing, the topsoil present will be stripped from the drill sites and stockpiled on the uphill side of the drill pad to prevent loss or contamination. A shallow berm will be constructed on the downhill side of the pile to prevent loss. Topsoil stockpiles may be further protected with strawbales/silt fences. Sediment control devices will also be utilized on the downslope side of the drill pad, where necessary, to prevent sediment loss.

Mud pit(s) will be dug sufficiently large and deep to contain all drill cuttings and fluids and to ensure all materials placed within are sufficiently buried (Figure 5).

Water for drilling operations will be hauled or pumped to the sites. Pumping will require a water line be lain adjacent to the access roads. One or more pump staging areas may be required for the pumping operations and will be on or adjacent to the access roads. Water may be obtained from Pace Creek and other sources such as stock ponds. Where appropriate, the necessary approvals for the use of water sources will be obtained prior to water use.

METHODS AND EQUIPMENT FOR DRILLING:

Rotary drilling and coring will be done by one rubber-tired truck-mounted drilling rig and/or a truck or skid mounted wireline coring rig. Support equipment may consist of one or two water trucks, one rig-up or support truck, and 4x4 pickups for the crews and company representatives. Stationary equipment at each site may include a pipe truck or trailer, and one or more truck-mounted air compressors or boosters and a doghouse/supply trailer for the deeper holes. One truck mounted geophysical logging unit will visit each hole location.

The size of the drill holes may range from 3¼ inches to 10 inches in diameter. All holes will be rotary drilled to a point approximately 30' above the top of the uppermost mineably thick coal seam. A 6 or 7 inch casing will be installed in the hole as necessary to keep the hole open and to prevent drilling and circulation problems. Approximately 100 - 200 feet of core will be recovered per hole. See Table 1 for a listing of the drill hole depths. After the core is retrieved from the hole, the hole will be logged with a standard suite of geophysical coal logs. The hole will then be plugged according to the standards set forth in 43 CFR II 3484.1(a).

Drilling fluids may include water, soap, foam, bentonite or other drilling polymers. Drilling fluids and cuttings will be contained on site in mud pits or portable containers.

AMOUNT OF COAL TO BE REMOVED:

Coal to be removed during this exploration will be in the form of 1 7/8 inch to 3 inch diameter cores. An estimated maximum of 105 lbs of coal may be removed from each hole. This is based upon a combined total coal thickness of 25 feet of coal core in each hole at a maximum diameter of 3" and having a weight of 86 lbs/cubic ft. The estimated maximum coal that is likely to be removed for the project is 740 lbs (0.37 tons) which is substantially less than the 250 tons "minor exploration" criteria. Coal cores will be tested for a wide range of quality parameters by a certified analytical laboratory.

PROPOSED DRILL HOLE PLUGGING METHODS:

The hole plugging method described in 43 CFR II 3484.1(a) will be used for all holes. Each hole will be plugged with cement through mineably thick coal beds and aquifers for a distance of at least 50 feet above and below. The rest of the hole will be filled with an approved completion mud, bentonite chips, cuttings, or cement to within 10 feet of the surface. When utilized, hole plug (grout) will be pumped through the drill rods cementing the hole from the bottom to the top. A 10 foot cement surface plug will be set, and an appropriately labeled monument marker will be cemented into the surface plug. For safety considerations, the surface casing will be cut off at or below the level of the soil surface.

RECLAMATION PLAN:

Reclamation activities will closely follow the completion of each hole and be conducted in accordance with the applicable requirements of R645-202.

1. Upon completion of drilling activities at a given site, all debris, trash, and drilling related equipment will be removed from the site.

2. When the mud pit is sufficiently dry, it will be filled with stored sub-soil material and compacted to minimize any settling.

3. A backhoe and a bulldozer will redistribute the sub-soil material on and around the drill pad to achieve as closely as practicable the original contour of the site.

4. Stored topsoil will be evenly distributed over the disturbed pad area and the site will be graded back to its approximate original contour. Sediment control structures will be left in place at appropriate locations.

5. The entire drill pad area will be extremely roughened and re-seeded shortly thereafter using the seed mix that has been approved for use by the UDOGM for reclamation. The suggested mix that has been approved is described below:

Species	PLS lb/Acre
Western wheatgrass - Agropyron smithii	2
Blue bunchgrass - Agropyron spicatum	2
Indian ricegrass - Oryzopsis hymenoides	2
Thickspike wheatgrass - Agropyron lanceolatus	2
Kentucky bluegrass - Poa pratensis	.5
Palmer penstemon – Penstemon palmeri	1
Bitterbrush - Purshia tridentata	2
Fourwing saltbrush - Atriplex canescens	2
Pacific aster - Aster chilensis	.1

This seed mixture will be applied at the rate of 13.6 lbs per acre.

6. Shortly after the seeding of disturbed areas the seed, in most cases, will be lightly buried and protected by raking the re-seeded surface area. Care will be taken to not bury the seeds to deeply. Based upon site specific conditions, however, straw or hay mulch (certified as free of noxious weeds) will be applied at the rate of 2000 lbs/acre, where warranted, to provide better protection from erosion. Seeds will be protected either by raking of the surface or by applying mulch.

7. Where access roads are newly created or logging trails are reconstructed, they will be restored and re-seeded as above. Related areas of surface disturbance where the preexisting vegetation was bladed, will be ripped and seeded. Sediment control structures will be left in place at appropriate locations.

8. The drill pad and access road reclamation procedure outlined above will apply only to those areas disturbed as a result of this exploration. Preexisting roads will be left in a condition equal to or better than that observed on Canyon Fuel Company's entry into the area. The reclamation methods described above may be modified to address considerations of the surface owner, however, before such changes are enacted an amended reclamation plan will be filed and approved by the Division.

METHODS AND EQUIPMENT FOR SEISMIC SURVEYING:

A shallow reflection seismic survey is to be conducted above the area of proposed mining. The 9,500' long seismic survey traverse or "line" is oriented generally NE-SW and along the road between drill holes KCC-C and KCC-E (denoted A-A' on Map 1).

The energy source for this geophysical survey would be a "P-Shooter" or thumper mounted to an Army style 6 x 6 truck. The truck would follow the existing roadway with minimal surface disturbance. A geophone array would be aligned in linear fashion between the nearest drill holes and along the roadway. The thumper truck or "P-shooter" base is 804 square inches which distributes the impact to the roadway such that the imprint is hardly visible.

An alternate energy source of small charges (1/2 to 1 lb) of thermex (type "C" explosive) placed in shallow auger drilled holes might also be used. The charges in some cases can enhance the return of the reflected seismic waves. When needed, three inch diameter holes would be drilled to an approximate depth of 6 feet with a hand held auger. Because the explosive is type "C" two component material, it does not require special storage facilities. The explosive shots create a surface depression that is one to two feet in diameter and 3 to 6 inches deep.

The proposed survey traverse will be staked every 100 feet with wire pin flags to mark the thumper or auger hole locations. Equipment will consist of the thumper truck ("P-Shooter"), light pick-up trucks and possibly an ATV (4-wheeler). Upon completion of the seismic survey, all pin flags, shot wire, or other debris will be picked up and disposed of properly. If shot holes are needed, cuttings from the auger holes will be used to back fill the settled depressions around the shot holes. The approved seed mix will be used to re-seed any disturbed areas.

ESTIMATED TIMING FOR EXPLORATION RELATED ACTIVITIES:

Because access to the proposed exploration area is dependent on the weather and ground conditions, the desired start-up date for construction and drilling activities is July 15, but will not commence until approval of the required permits. Access road and drill site construction should commence a few days prior to the arrival of the drilling rig(s). Drilling should take approximately 4 to 12 weeks to complete depending upon the number of drill rigs used. The seismic survey would be completed within 2 to 4 days and conducted concurrently with drilling operations. Reclamation efforts will be conducted concurrently with the drilling operations and continue for a few weeks after completion of the last drill hole. Exploration and reclamation activities should finish during November.

R645-201-324. Surface and Subsurface Owners of Record

The recorded subsurface owners of property in the exploration area are as follows. The owners shown control mineral rights.

United States of America
Department of Interior
Bureau of Land Management
Price Coal Office
900 North 700 East
Price, UT 84501

State of Utah
Division of State Lands
411 Empire Building
231 East 400 South
Salt Lake City, UT 84111

The recorded surface owner of property in the exploration area is as follows. A copy of the agreement giving Canyon Fuel Company rights to access the area for exploration drilling can be found in Appendix C.

Milton and Ardith Thayn Trust
7730 East Hwy 6
Price, UT 84501

Other adjacent surface and subsurface landowners in the general vicinity of the exploration area are shown below and have been included for general information. No drill sites associated with the proposed drilling project occur on property held by these adjacent landowners.

United States of America
Department of Interior
Bureau of Land Management
Price Coal Office
900 North 700 East

Price, UT 84501

R645-201-326. Right of Entry (Landowner Consent)

All the proposed drill sites occur on surface lands held privately by the Milton and Ardith Thayn Trust. See Appendix C for a copy of the surface use agreement between Canyon Fuel Company and the Milton and Ardith Thayn Trust.

Canyon Fuel Company has leased the coal mineral property at drill sites A, B, C, E, and J through Federal Lease U-07064-027821. Canyon Fuel Company has also leased the coal mineral property at sites DT-1 and DT-2 from the State of Utah through lease ML 48435-OBA.

R645-201-327 Reclamation Bonding

Reclamation bonding is not required under R645-201-200, governing minor coal exploration permitting.

R645-202-200. Compliance with Performance Standards

Canyon Fuel Company's coal exploration program will be conducted in accordance with the coal exploration requirements of the State Program, and comply with any conditions of approval for exploration and reclamation imposed by the Utah Division of Oil, Gas, and Mining.

Canyon Fuel Company has reviewed, and will comply with all applicable requirements stated in the State of Utah Coal Mining Regulations R645-301. The previous text describes the applicant's plans to comply with these performance standards.

R645-202-231. Wildlife Habitat

Canyon Fuel Company's exploration activities will not be damaging to critical wildlife habitat. In accordance with R645-202-231, if a Threatened and Endangered Species Survey and/or Raptor Surveys are required, CFC will submit the results of the surveys to the Division prior to approval.

R645-202-232. Roads

CFC's road use for coal exploration activities will comply with applicable regulations. Specific regulations as they pertain to R645-202-232 are addressed below:

R645-301-358

To the extent practical with current technology, CFC will minimize all adverse impacts to *Wildlife* and *Threatened & Endangered Species* related to this drilling project.

R645-301-512.250

The access to the drill sites will be via public and private roadways. There will be no construction or reconstruction of primary roadways. All other roads occur on privately owned lands and are considered ancillary roads.

R645-301-526.200

No utility or support facility installations are associated with this short duration exploration program.

R645-301-527.100

The primary access into the exploration area will be via the Clark's Valley Road. No exploration related construction activities will occur on this roadway. Access to the specific drilling sites will be via the existing secondary roadways. Specifically these roads are located along Pace Canyon, and the lesser associated trails used for access (refer to Map 1 for access road location). Also see response to R645-301-512.250.

R645-301-527.230

All ancillary roads utilized for access will be maintained according to the criteria and stipulations required by the Utah Division of Oil, Gas and Mining. Grading of the existing secondary roads may be conducted upon completion of the project, if desired by the landowner, to improve their condition. Existing roads will be returned a condition equal or better than their pre-exploration condition. Newly created roads or those requiring earth removal will be ripped and seeded to promote revegetation.

R645-301-527.240

Ancillary roads that are damaged by catastrophic event, such as by flood or earthquake, will be repaired as soon as practical after the damage has occurred.

R645-301-534.100 through R645-534.300
R645-301-542.600 and R645-301-742.410 through R645-742.420
R645-301-752.200 and R645-301-762

Roads will be located, designed, constructed, reconstructed, used, maintained, and reclaimed so as to prevent or control damage to public or private property and to control erosion and prevent siltation. Diagrams for typical sediment control structures are contained in Appendix C.

Because of the temporary nature of road use, no road surfacing is planned. Road rehabilitation and new road construction will be conducted per regulation (above) and in accordance with current, prudent engineering practices. Roads will be reclaimed immediately after they are no longer used.

Roads will be located, designed, constructed, reconstructed, used, maintained, and reclaimed per regulation (above) to address environmental and safety concerns appropriate for their intended use and the size of equipment to be used.

R645-202-233. Topsoil

Topsoil will be separately removed, stored, and redistributed on areas disturbed by the coal exploration activities as necessary to assure successful revegetation. The topsoil handling methods are described under R645-201-225 (see ROAD CONSTRUCTION AND MAINTENANCE, DRILL SITE CONSTRUCTION, and the RECLAMATION PLAN).

Where topsoil has been previously removed during logging road construction, the disturbed topsoil material, if present, will be handled as topsoil and separately removed, stored, and redistributed as if it were native topsoil. Where practical to do so, the original topsoil material will be recovered and redistributed to promote future revegetation and further rehabilitate the logging roads.

R645-202-234. Stream Diversions

No diversions of streams are proposed.

R645-202-235. Hydrologic Balance

CFC's coal exploration will be conducted as described in this application and in a manner which minimizes disturbance to the prevailing hydrologic balance.

As required, any siltation structures that were installed to control run off will be left in place during reclamation activities and will be maintained until their removal is authorized by DOGM.

R645-202-236. Acid or Toxic Forming Materials

In compliance with R645-202-236, mud pits will be dug greater than four feet deep and sufficiently deep to allow for the burial of potentially acid/toxic materials below a minimum of four feet of cover.

R645-202-240 through R645-202-244. Reclamation Standards

CFC's exploration reclamation will be conducted as previously described and in accordance with regulation.

In compliance with R645-202-242, seeding will immediately follow the subsoil and topsoil redistribution at all disturbed sites. Mulching will follow where warranted.

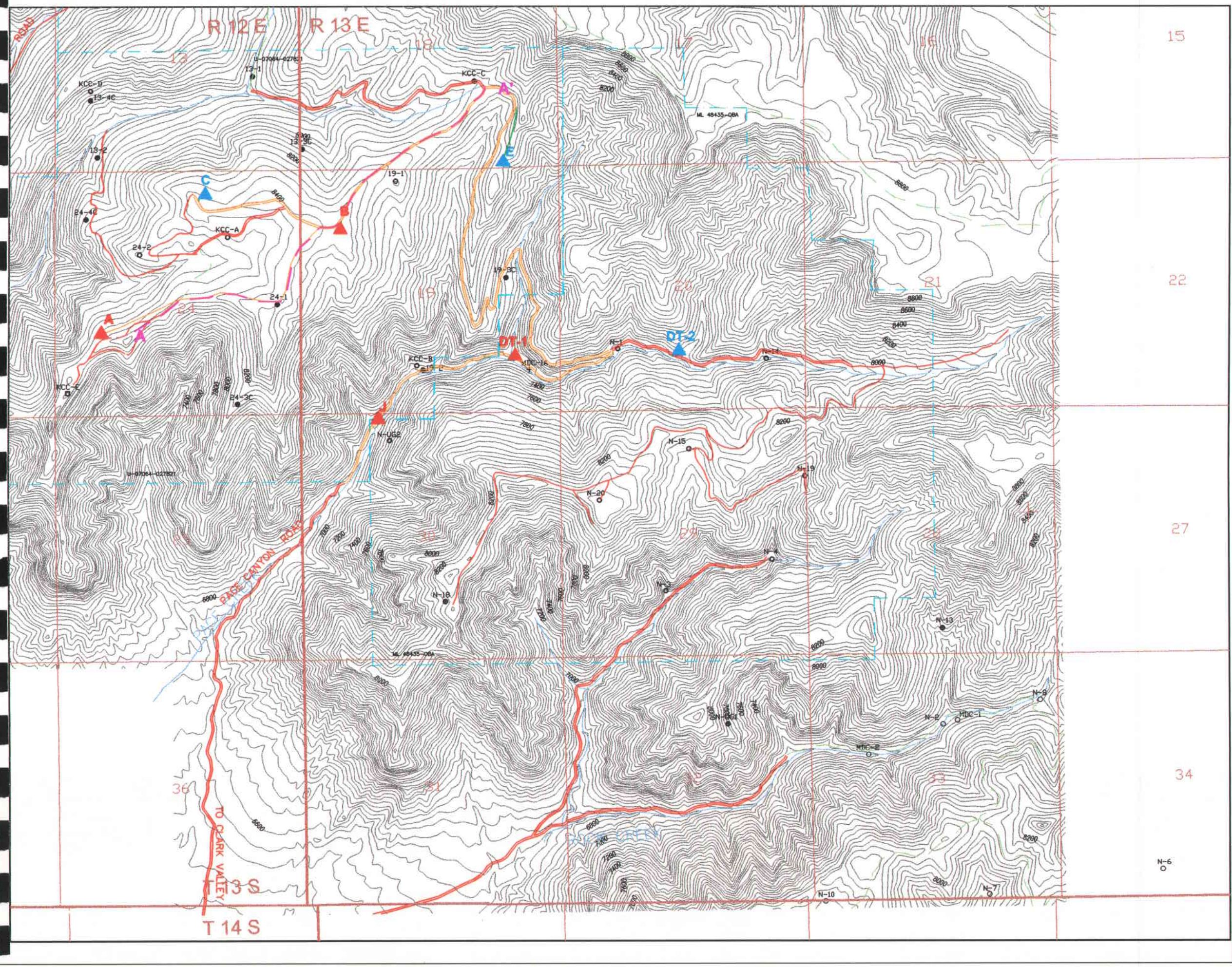
If a significant flow of water from any of the two holes (DT-1 or DT-2) occurs, one of the holes will be converted into a groundwater monitoring well.

R645-203-100. Public Availability of Records

In accordance with R645-203-100, Canyon Fuel Company acknowledges that this exploration application and subsequent supporting information will be made available for public information and copying at the Division.

R645-203-200. Confidentiality

Canyon Fuel Company understands that upon written request, information related to its coal exploration activities will be kept confidential and not be disclosed or made available for public inspection.



EXPLANATION

- Existing Road No Upgrade
- Existing Road Requires Upgrage
- Newly Constructed Road
- Trail
- Lease Boundary
- 2001 Drill Holes
- 2002 Drill Holes
- A – – – A' 2001 Seismic Line

Scale: 1" = 2000'

Canyon Fuel Co., LLC.
Dugout Canyon Mine

MAP
Proposed Exploration Plan

P.O BOX 1029
WELLINGTON, UTAH 84542

DRAWING OR MAP NUMBER
2001_permit.dwg

SENCO–PHENIX

AN INTENSIVE CULTURAL RESOURCE SURVEY AND INVENTORY OF THE DUGOUT CANYON MINE DRILL HOLES AND ACCESS ROADS

Private/BLM Lands

Carbon County, Utah

PERFORMED FOR
Dugout Canyon Mine of
Canyon Fuel Company, LLC

In Accordance with BLM and
Utah State Guidelines
Antiquities Permit #U01SC0240bp

SPUT-387
June 20, 2001

John A. Senulis

Direct Charge of Fieldwork

ARCHEOLOGICAL CONSULTING SERVICES • 1405 West 620 North • Price, Utah 84501 • PHONE 435.613.9091 • FAX 435.613.9116

UTAH SHPO

COVER SHEET

Project Name: AN INTENSIVE CULTURAL RESOURCE SURVEY AND INVENTORY OF THE DUGOUT CANYON MINE DRILL HOLES AND ACCESS ROADS

Dugout Canyon Mine of Canyon Fuels LLC.

State #U01SC0240bp

Report Date: June 20, 2001 County (ies): Carbon

Principal Investigator/ Field Supervisor: John A. Senulis/John Senulis

Records Search/Location/Dates: May 17, 2001, Price River Field Office of the BLM

Acreage Surveyed: 104 acres

Intensive Acres: 85 Recon/Intuitive Acres: 19

U.S.G.S. 7.5 Quad: Pine Canyon, Utah (1972), Mount Bartles, Utah (1972)

Sites Reported	Number	Smithsonian Site #(s):
Archeological Sites:	3	
Revisit (No IMACS update)	0	
Revisit (IMACS update attch.)	1	42CB292
New Sites (IMACS attached)	2	42CB1595, 42CB1596
Archeological Site Total:	3	
Historic Structures:		
(USHS Site Form Attached)		
Total NRHP Eligible Sites,	0	

Checklist of Required Items:

1. X 1 Copy of Final Report
2. X Copy of U.S.G.S. 7.5' map showing surveyed/excavated area
3. Completed IMACS Site Inventory Forms Including
   - X Parts A and B or C
   - X IMACS Encoding Form
   - X Site Sketch Map
   - X Photographs
   - X Copy of USGS 7.5' Quad with Smithsonian site Number
4. X Completed Cover Sheet

U.S. Department of the Interior
Bureau of Land Management
Utah State Office

Summary Report of
Inspection for Cultural Resources

For BLM Use Only
BLM Report ID No. ☐☐☐ ☐☐☐☐☐☐☐ (1 4 10)

Report Acceptable Yes☐ No☐
Mitigation Acceptable Yes☐ No☐
Comments:

Report Title: **AN INTENSIVE CULTURAL RESOURCE SURVEY AND INVENTORY OF THE DUGOUT CANYON MINE DRILL HOLES AND ACCESS ROADS**

2. Development Company: Dugout Canyon Mine of Canyon Fuel LLC.

3. Report Date: (month) June 20, (W) 2001 (year)

4. Antiquities Permit: No.U01SC0240bp
BLM 01UT54633

5. Responsible Institution: SENCO-PHENIX County: Carbon County

6. Fieldwork Location:

Section 24, T13S, R12E; Sections 18, 19, 20, 30, T13S, R13E

7. Resource Area: Price River Field Office

PO=Pony Express, BR=Bear River, PR=Price River, WS=Warm Springs
BC=Book Cliffs, HR=House Range, Sevier River, HM=Henry Mountains
BE=Beaver River, DX=Dixie ,KA=Kanab, ES=Escalante, SJ=SanJuan
GR=Grand, SR=San Rafael, DM=Diamond Mountain

V=Vernal Meridian
H=Half Township

8. Description of Examination Procedures:

Class III walkover survey

9. Linear Miles Surveyed: 6.1 miles
and/or
Definable Acres Surveyed 31
and/or
Undefinable Acres Survey

10. Inventory Type: I

R=Reconnaisance
I=Intensive
S=Statistical Sample

11. Description of Findings (attach appendices, if appropriate) 12. Number of Sites: 3 13. Collection: N Y=Yes, N=No

42CB292, 1595, 1596

14. Actual/Potential National Register Properties Affected:

None

15. Literature Search, Location(s)/Date(s):

May 17, 2001, Price River Resource Area Office of the Bureau of Land Management.

16. Conclusions/Recommendations:

Archeological clearance is recommended.

17. Signatures

Administrator:

Field Supervisor: John A. Hamilis

*For extra locationals use additional 8100-3 forms.

UT 8100-3 (2/85)

Abstract

SENCO-PHENIX performed an intensive cultural resource survey on eight proposed drill holes and connecting access roads for the Dugout Canyon Mine of Canyon Fuel LLC. The proposed drill holes and access roads are located on lands managed by the BLM and on private land. The purpose of the survey was to identify and evaluate cultural resources that may exist within the project area.

Cultural resources were located consisting of three archeological sites and two isolated findings:

- 42CB292 The site is the historic Snow mine first recorded by AERC in 1980. At that time there was a standing coal loadout and foundation with depth potential. The area has been heavily logged since the initial recordation and the area around the mine extensively disturbed by heavy equipment, probably dozed. The foundation has been destroyed and the coal loadout has been collapsed and pushed into the bed of Pace Creek. The rock-covered adit and adjacent stonewall are still there on the other side of Pace Creek. There are two 6 x 10 dugouts used as coal loadouts on the west side of the road. Other than recent trash no artifacts were observed. The integrity of the site has been basically destroyed. The site is not recommended for the NRHP.
- 42CB1595 The site is a wood frame and sided one room cabin adjacent to a log foundation under a pile of trash that is predominantly lumber and boards that have been removed from the cabin. The cabin is made of two by four wood framing covered by two courses of slanted cut wood with variable size boards ranging in size from one by four to one by sixteen inches. The two courses of wood were separated by tarpaper. The roof is wood boards covered by asphalt strip roofing. There is an aluminum flashing for a stovepipe in the cabin and part of a pipe in the adjacent debris. The structure measures 13' 3" x 7' 4 ¾" and stands 6' 2" tall. The interior of the cabin is 6' from floor to ceiling. The door opening is 2' 5" x 5' 10" with two windows on the east and west ends measuring 2' 9" high by 1' 2" wide. The cabin has no foundation and appears to be of the same size as the adjacent log foundation. The cabin may have been moved off the foundation. There are a few fragments of clear glass that may have been windows at one point. The adjacent trash pile is predominantly lumber from the cabin. The only datable artifact is a steel full size railroad rail embossed with "BS BO Steelton 1948." There is no domestic refuse at the site except for a metal cot and bedspring inside the cabin. The site is not recommended for the NRHP. The site has no further information potential and is probably less than 50 years old. Robert Hackney hunted this area in the early 1950s and stated that the roads at that time stopped at the mine, which would make the cabin and road post 1950s.
- 42CB1596 The site is an old deteriorating corral with some Aspen carvings and a small trash pile. The corral is a post, wire and twine structure that has been rebuilt many times. It is about 20 feet in diameter. There is a small trash scatter across the road. The trash scatter is metal fragments, one hole in top can and recent (30 years) trash, i.e. aluminum cans etc. The Aspen carvings are "JB JB JB, May 14, Martin Davin, 1933, 7-30-67, Jim Hanna, Don PavdVlton (hard to read), Jim Hanna + Kayla Merrill." Most of the Aspen carvings cannot be read. The site is not recommended for nomination to the NRHP. The site has no further information potential and parts are less than 50 years old.
    - IF #1 This is the base of a Sierran Variety of the Desert Side Notch projectile point. The gray chalcedony projectile point base measures 21 x

18 x 4 mms. The notched base is a Sierran characteristic although all DSN varieties date to the periods A.D. 800-1200 (Early) or A.D. 1200-1700 (Late). The point was found in the SE/SW/NW/NW ¼ of Section 19, T13S, R13E, (541898 e, 4392590 n).

- IF #2 This is the site of an old sawmill located well beyond the survey area in the NW/NE/SE/SW ¼ of Section 20, T13S, R13 E (544078 e, 4391792 n). The site is on the south side of Pace Creek and was noted by the observation of a discard pile on a bench above the creek. The sawmill is noted for future reference.

No other cultural resources were located and the potential for undetected remains is remote. A finding of **no effect** is appropriate and **archeological clearance** without stipulations is recommended.

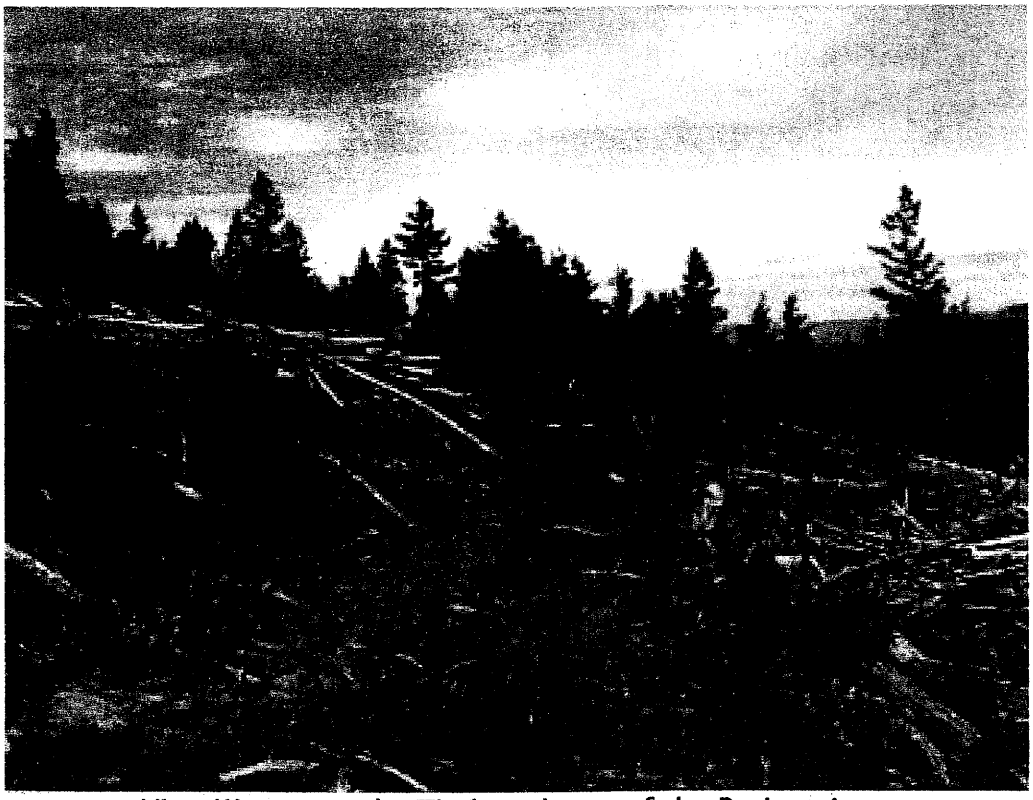
Project Location

The project begins at the previously surveyed Snow Mine site in the NW/NW ¼ of Section 30, T13S, R13E, Carbon County, Utah. Access to the drill holes will mostly follow existing improved dirt roads that were built to facilitate logging in the general area. A total of 6.1 miles were included in the study area. 1.3 miles were in the bottom of Pace Canyon in Sections 19, 20 and 30, T13S, R13E. 2.2 miles of road were slide slope in Sections 18, 19 and 20, T13S, R13E. 2.6 miles of road were on the bench on top. One area of a proposed steep side hill road was located in Sections 19 and 20, T13S, R13E. Seven minimal disturbance drill locations were surveyed as roughly 3 acre plots in Section 24, T13S, R12E, and Sections 18, 19 20 and 30 T13S, R13E. One ten-acre plot was surveyed for a coal methane well in Section 19, T13S, R13E. All drill locations and the well pad were flagged. The proposed project is noted on the enclosed copy of U.S.G.S. Composite 7.5' Quad: Pine Canyon, Utah (1972) and Mount Bartles, Utah (1972).

Environment

The project area begins in narrow Pace Canyon. Pace Canyon is periodically scoured by torrential rain and floodwaters leaving the canyon floor strewn with large boulders and gravels. The cliffs above the canyon reveal various layers of sandstone and shale. Vegetation falls within the Mixed Conifer Forest type with Ponderosa pine, Douglas fir, Limber pine, aspen, big sagebrush, serviceberry, and bitterbrush. Pace Creek is a perennial stream with typical riparian vegetation on its banks.

The upper bench is basically a sagebrush flat intermixed with pockets of Pinyon-Juniper and stands of Aspen. The understory consists of mountain mahogany, rabbitbrush, ephedra, galleta grass, yucca, and serviceberry.



View West over the Timbered part of the Project Area

Previous Research

A file search at the Price River Field Office of the BLM on May 17, 2001 revealed that the following projects and sites are reported for the project area:

- 1980, AERC surveyed several sample blocks in Sections 13 and 24, T13S, R12E and Sections 18, 19 and 30 T13S, R13E. They also surveyed the access road into the Snow Mine site. One archeological site was located:
    - 42CB292 The site was described as "Coal mine located in Pace Canyon consists of one known mine portal which has been closed. Site of historic Snow Mine in Pace Canyon which was active in 1906 but had its primary production period from 1932-1940." The site was relatively pristine at the time and still contained a standing coal loadout and foundation with depth potential. Avoidance was recommended pending further historic research. As noted the site has since been extensively modified.
- 1983, Metcalf-Zier Archeologists surveyed several access roads and drill locations in Sections 13 and 24, T13S, R12E and Section 19, T13S, R13E. The only cultural resource located was an isolated prehistoric waste flake.

Methodology

SENCO-PHENIX performed a Class III intensive walkover survey on June 5, 2001. John Senulis directed the field crew consisting of Jeanne Senulis, Robert Hackney and Brett and Lee Richman. Meandering transects no further spaced than 15 meters were employed for the well pad and drill holes. The drill holes, which were mostly in previously disturbed areas, were given a roughly 3 acre buffers. The site of the proposed coal methane well pad was surveyed with a ten-acre buffer. The access roads were surveyed to a right of way of 30 meters. Exceptions to this were the steep sideslope existing road, which was surveyed in areas where there was some width and possibility of containing cultural resource locations. The area of the proposed sideslope access in extremely steep terrain in Section 19 and 20, T13S, R13E was broad-brush surveyed with emphasis on rock faces for rock art or habitation rockshelters. Special attention was given to those areas of subsurface soil exposure from animal burrowing and erosion.

All field notes and digital photographs are on file at the offices of SENCO-PHENIX in Price, Utah.

Findings and Recommendations

Cultural resources were located consisting of three archeological sites and two isolated findings:

- 42CB292 The site is the historic Snow mine first recorded by AERC in 1980. At that time there was a standing coal loadout and foundation with depth potential. The area has been heavily logged since the initial recordation and the area around the mine extensively disturbed by heavy equipment, probably dozed. The foundation has been destroyed and the coal loadout has been collapsed and pushed into the bed of Pace Creek. The rock-covered adit and adjacent stonewall are still there on the other side of Pace Creek. There are two 6 x 10 dugouts used as coal loadouts on the west side of the road. Other than recent trash no artifacts were observed. The integrity of the site has been basically destroyed. The site is not recommended for the NRHP.
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ranging in size from one by four to one by sixteen inches. The two courses of wood were separated by tarpaper. The roof is wood boards covered by asphalt strip roofing. There is an aluminum flashing for a stovepipe in the cabin and part of a pipe in the adjacent debris. The structure measures 13' 3" x 7' 4 ¾" and stands 6' 2" tall. The interior of the cabin is 6' from floor to ceiling. The door opening is 2' 5" x 5' 10" with two windows on the east and west ends measuring 2' 9" high by 1' 2" wide. The cabin has no foundation and appears to be of the same size as the adjacent log foundation. The cabin may have been moved off the foundation. There are a few fragments of clear glass that may have been windows at one point. The adjacent trash pile is predominantly lumber from the cabin. The only datable artifact is a steel full size railroad rail embossed with "BS BO Steelton 1948." There is no domestic refuse at the site except for a metal cot and bedspring inside the cabin. The site is not recommended for the NRHP. The site has no further information potential and is probably less than 50 years old. Robert Hackney hunted this area in the early 1950s and stated that the roads at that time stopped at the mine, which would make the cabin and road post 1950s.

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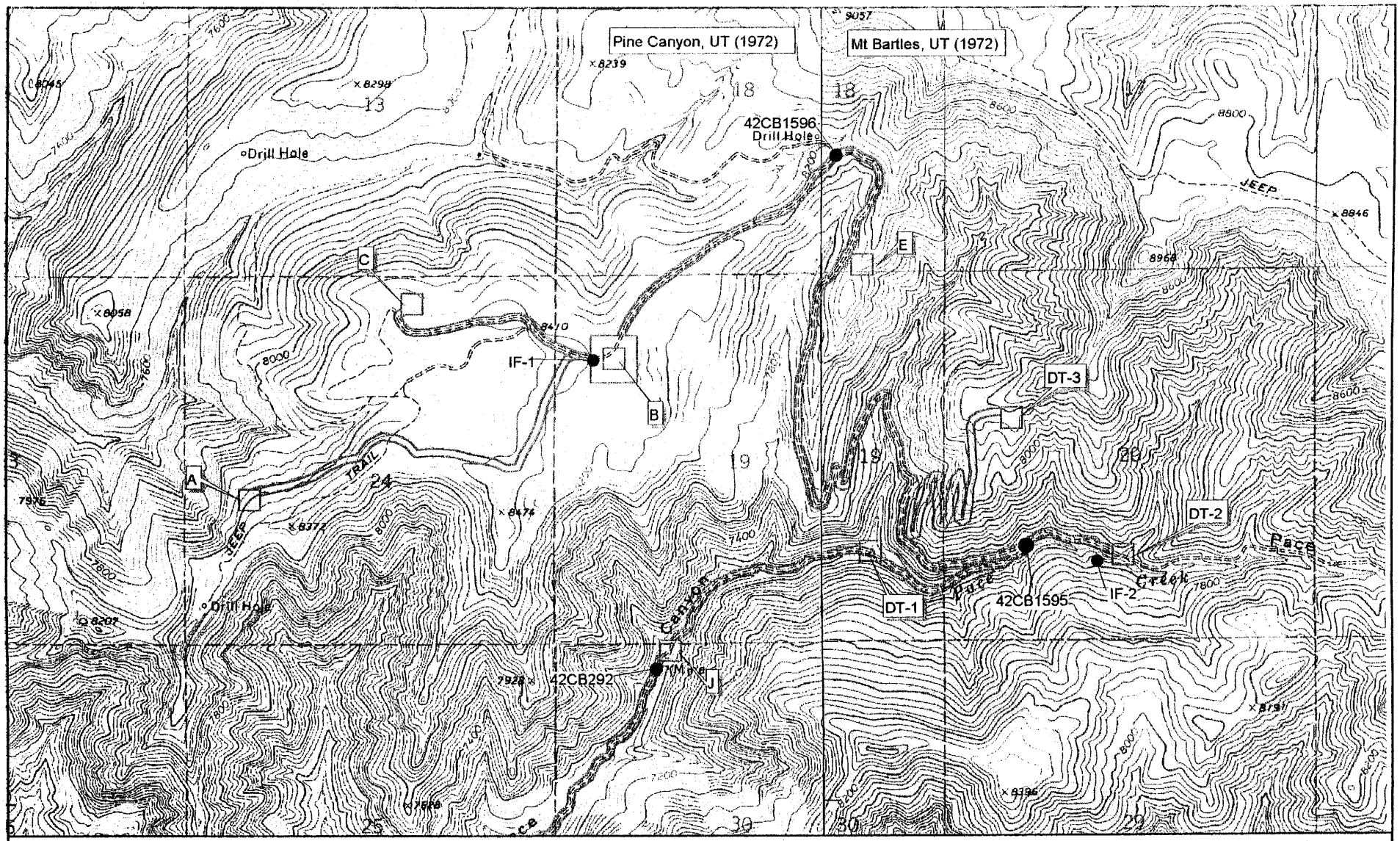
    - IF #2 This is the site of an old sawmill located well beyond the survey area in the NW/NE/SE/SW ¼ of Section 20, T13S, R13 E (544078 e, 4391792 n). The site is on the south side of Pace Creek and was noted by the observation of a discard pile on a bench above the creek. The sawmill is noted for future reference.

No other cultural resources were located and the potential for undetected remains is remote. A finding of **no effect** is appropriate and **archeological clearance** without stipulations is recommended.

These recommendations are subject to modification and review by the BLM Field Office Manager and the Utah SHPO.

IF #2 Sawmill Remains view South


Pine Canyon, UT (1972)
Mt Bartles, UT (1972)
42CB1596
Drill Hole
Drill Hole
Drill Hole
JEEP
TRAIL
JEEP
A
B
C
E
IF-1
DT-1
DT-2
DT-3
42CB1595
IF-2
42CB292
Mine
Pace
Creek
Canyon
Pace
Creek
N
Scale 1:24000
1"=2,000'
Previous Survey
Current Survey
Eligible Sites
Ineligible Sites
SENCO-PHENIX
Drill Holes and Access Roads
Dugout Mine of Canyon Fuel Company, LLC
Sections 18, 19, 20, 30, T13S, R13E
Section 24, T13S, R12E
June 2001
SPUT- 387

IMACS SITE FORM

Part A - Administrative Data

INTERMOUNTAIN ANTIQUITIES COMPUTER SYSTEM
Form approved for use by:
BLM - Utah, Idaho, Wyoming, Nevada
Division of State History - Utah, Wyoming
USFS - Intermountain Region
NPS - Utah, Wyoming

***1. State No. 42CB292 (Revised from AERC 1980)**
***2. Agency No.**
***3. Temp. No.**

4. State: Utah **County** Carbon
5. Project: Dugout Drill Hole Series
***6. Report No:** U01SC240bp
7. Site Name / Property Name:
8. Class ☐ Prehistoric ☒ Historic ☐ Paleontologic ☐ Ethnographic
9. Site Type: Historic Snow Mine
***10. Elevation:** 7020 ft..
***11. UTM Grid Zone:** 12 542170 **m E** 4391244 **m N**
***12.** SE 1/4 **of** NE 1/4 **of** NW 1/4 **of** NW ¼ of **Section: 30** **T.13S** **R.13E**
***13. Meridian:** SLC
***14. Map Reference:** Pine Canyon, Utah (1972)
15. Aerial Photo:
16. Location and Access: From Wellington, Utah travel east on Highway 6 for ca. 7 miles. Turn left onto Pace Canyon road. Follow the improved dirt road northerly ca. 4.5 miles to northwesterly tending dirt road. Follow that road northwesterly ca. 1.2 miles to mine site. Locked gate at 1 mile on last road.

***17. Land Owner:** Private
***18. Federal Administrative Units:**
***19. Location of Curated Materials:**
20. Site Description: The site is the historic Snow mine first recorded by AERC in 1980. At that time there was a standing coal loadout and foundation with depth potential. The area has been heavily logged since the initial recordation and the area around the mine extensively disturbed by heavy equipment, probably dozed. The foundation has been destroyed and the coal loadout has been collapsed and pushed into the bed of Pace Creek. The rock-covered adit and adjacent stonewall are still there on the other side of Pace Creek. There are two 6 x 10 dugouts used as coal loadouts on the west side of the road. Other than recent trash no artifacts were observed. The integrity of the site has been basically destroyed. The site is not recommended for the NRHP.

***21. Site Condition** ☐ Excellent (A) ☐ Good (B) ☐ Fair (C) ☒ Poor (D)
***22. Impact Agent(s):** Construction, grazing

***23. National Register Status** ☐ Significant (C) ☒ Non-Significant (D) ☐ Unevaluated (Z)
Justify: The integrity of the site has been destroyed. The site is not recommended for the NRHP.
24. Photos: 00CB292: 1-4
25. Recorded by: John Senulis
***26. Survey Organization:** SENCO-PHENIX **28. Survey Date:** 6-5-2001
27. Assisting Crew Members: Jeanne Senulis, Brett & Lee Richman, Robert Hackney

List of Attachments:
☐ Part B ☒ Topo Map ☒ Photos ☐ Continuation Sheets
☒ Part C ☒ Site Sketch ☐ Artifact/Feature Sketch
☐ Part E ☐ Other

BLM 8100-1
FS R-4 2300-2
3/90

*Encoded data items

IMACS SITE FORM

Part A - Administrative Data

INTERMOUNTAIN ANTIQUITIES COMPUTER SYSTEM
Form approved for use by:
BLM - Utah, Idaho, Wyoming, Nevada
Division of State History - Utah, Wyoming
USFS - Intermountain Region
NPS - Utah, Wyoming

***1. State No. 42CB1595**
***2. Agency No.**
***3. Temp. No.**

4. State: Utah **County** Carbon
5. Project: Dugout Drill Hole Series
***6. Report No:** U01SC240bp
7. Site Name / Property Name:
8. Class ☐ Prehistoric ☒ Historic ☐ Paleontologic ☐ Ethnographic
9. Site Type: Historic Cabin
***10. Elevation:** 7020 ft..
***11. UTM Grid Zone:** 12 543771 **m E** 4391790 **m N**
***12.** SE **of** SE 1/4 **of** NW 1/4 **of** SW 1/4 **Section:** 20 **T.**13S **R.**13E
***13. Meridian:** SLC
***14. Map Reference:** Mount Bartles, Utah (1972)
15. Aerial Photo:
16. Location and Access: From Wellington, Utah travel east on Highway 6 for ca. 7 miles. Turn left onto Pace Canyon road. Follow the improved dirt road northerly ca. 4.5 miles to northwesterly tending dirt road. Follow that road northwesterly ca. 2.2 miles to cabin site. Locked gate at 1 mile on last road.

***17. Land Owner:** Private
***18. Federal Administrative Units:**
***19. Location of Curated Materials:**
20. Site Description: The site is a wood frame and sided one room cabin adjacent to a log foundation under a pile of trash that is predominantly lumber and boards that have been removed from the cabin. The cabin is made of two by four wood framing covered by two courses of slanted cut wood with variable size boards ranging in size from one by four to one by sixteen inches. The two courses of wood were separated by tarpaper. The roof is wood boards covered by asphalt strip roofing. There is an aluminum flashing for a stovepipe in the cabin and part of a pipe in the adjacent debris. The structure measures 13' 3" x 7' 4 ¾" and stands 6' 2" tall. The interior of the cabin is 6' from floor to ceiling. The door opening is 2' 5" x 5' 10" with two windows on the east and west ends measuring 2' 9" high by 1' 2" wide. The cabin has no foundation and appears to be of the same size as the adjacent log foundation. The cabin may have been moved off the foundation. There are a few fragments of clear glass that may have been windows at one point. The adjacent trash pile is predominantly lumber from the cabin. The only datable artifact is a steel full size railroad rail embossed with "BS BO Steelton 1948." There is no domestic refuse at the site except for a metal cot and bedspring inside the cabin. Robert Hackney hunted this area in the early 1950s and stated that the roads at that time stopped at the mine.

***21. Site Condition** ☐ Excellent (A) ☐ Good (B) ☒ Fair (C) ☐ Poor (D)
***22. Impact Agent(s):** Construction

***23. National Register Status** ☐ Significant (C) ☒ Non-Significant (D) ☐ Unevaluated (Z)
Justify: The site has no further information potential and is probably less than 50 years old.
24. Photos: 00CB1595: 1-4
25. Recorded by: John Senulis
***26. Survey Organization:** SENCO-PHENIX **28. Survey Date:** 6-5-2001
27. Assisting Crew Members: Jeanne Senulis, Brett & Lee Richman, Robert Hackney

List of Attachments:
☐ Part B ☒ Topo Map ☒ Photos ☐ Continuation Sheets
☒ Part C ☒ Site Sketch ☐ Artifact/Feature Sketch
☐ Part E ☐ Other

BLM 8100-1
FS R-4 2300-2
3/90

*Encoded data items

Part A - Environmental Data

*29. **Slope:** 01 (Degrees) 175**Aspect:** (Degrees) **Site No: 42CB1595**

*30. **Distance to Permanent Water** 0 x 100 meters

Type of Water Source ☐ Spring/Seep (A) ☒ Stream/River (B) ☐ Lake (C) ☐ Other (D)

Name of Water Source: Pace Creek

*31. **Geographic Unit:** CAC Mancos Shale Lowlands

*32. **Topographic Location**

PRIMARY LANDFORM			SECONDARY LANDFORM	
☐ Mountain Spine (A)	☐ Alluvial Fan (A)	☐ Dune (I)	☐ Slope (Q)	☐ Riser (Y)
☐ Hill (B)	☐ Alcove/Rockshelter (B)	☐ Floodplain (J)	☒ Terrace/Bench (R)	☐ Multiple Landforms (1)
☐ Tableland/Mesa (C)	☐ Arroyo (C)	☐ Ledge (K)	☐ Talus Slope (S)	☐ Bar (2)
☐ Ridge (D)	☐ Basin (D)	☐ Mesa/Butte (L)	☐ Island (T)	☐ Lagoon (3)
☒ Valley (E)	☐ Cave (E)	☐ Playa (M)	☐ Outcrop (U)	☐ Ephemeral Wash (4)
☐ Plain (F)	☐ Cliff (F)	☐ Port.Geo.(N)	☐ Spring Mound/Bog (V)	☐ Kipuka (5)
☐ Canyon (G)	☐ Delta (G)	☐ Plain (O)	☐ Valley (W)	☐ Saddle/Pass (6)
☐ Island (H)	☐ Detached Monolith (H)	☐ Ridge/Knoll(P)	☐ Cutbank (X)	☐ Graben (7)

Describe: The site is located on a bench above Pace Creek drainage

*33. **Onsite Depositional Context**

☐ Fan (A)	☐ Outcrop (Q)	☐ Moraine (J)	☐ Desert Pavement (P)
☐ Talus (B)	☐ Extinct Lake (F)	☐ Flood Plain (K)	☐ Stream Bed (R)
☐ Dune (C)	☐ Extant Lake (G)	☐ Marsh (L)	☐ Aeolian (S)
☐ Stream Terrace (D)	☒ Alluvial Plain (H)	☐ Landslide/Slump (M)	☐ None (T)
☐ Playa (E)	☐ Colluvium (I)	☐ Delta (N)	☐ Residual (U)

Description of Soil: Tan sandy loams

34. **Vegetation**

a. **Life Zone**

☐ Arctic-Alpine(A) ☐ Hudsonian(B) ☐ Canadian(C) ☐ Transitional(D) ☒ Upper Sonoran(E) ☐ Lower Sonoran(F)

b. **Community** **Primary Onsite: Q** **Secondary Onsite: H** **Surrounding Site: G**

Aspen (A)	Other/Mixed Conifer (G)	Grassland/Steppe(M)	Marsh/Swamp(S)
Spruce/Fir (B)	Pinyon-Juniper Woodland (H)	Desert Lake Shore (N)	Lake/Reservoir (T)
Douglas Fir (C)	Wet Meadow (I)	Shadscale Community (O)	Agricultural (U)
Alpine Tundra (D)	Dry Meadow (J)	Tall Sagebrush (P)	Blackbrush (V)
Ponderosa Pine (E)	Oak-Maple Shrub (K)	Low Sagebrush (Q)	Creosote Brush (Y)
Lodgepole Pine (F)	Riparian (L)	Barren (R)	

Describe: Sagebrush and grasses surrounded by PJ & Pine

*35. **Miscellaneous Text:**

36. **Comments/Continuations:**

Part C - Historic Sites

Site No. 42CB292
Temp No.

11. Glass: # **Manufacture** **Color** **Function** **Trademarks** **Decoration**

Describe:

12. Maximum Density - #/sq m (glass and ceramics):

13. Tin Cans

Type **Opening** **Size** **Modified** **Label/Mark** **Function**

Describe:

14. Landscape and Constructed Features (locate on site map)

- ☐ Trail/Road (TR)
- ☒ Tailings (MT, ML)
- ☐ Rock Alignment (RA)
- ☐ Dump (DU)
- ☐ Depression (DE)
- ☐ Cemetery/Burial (CB)
- ☐ Dam, Earthen (DA)
- ☐ Ditch (DI)
- ☐ Inscriptions (IN)
- ☐ Hearth/Campfire (HE)
- ☐ Quarry (QU)
- ☐ Other (OT)

Describe: Mine tailings spread throughout site

15. Buildings and Structures (locate on site map)

#	Material	Type	#	Material	Type
2	Earthen/subterranean (I)	Dugouts (AK)	1	Wooden	Coal Loadout (BE)
1	Dry laid stone	Wall (BG)	1	Stone	Adit

Describe: Two 6' x 10' dugouts used as coal loadouts. One wooden coal loadout, which has been partially destroyed measuring roughly 60 x 20 x 10 feet before demolition.

16. Comments/Continuations - *Please make note of any Historic Record searches performed (for example - County Records, General Land Office, Historical Society, Land Management Agency Records, Oral Histories/Interviews)*

1990

IMACS ENCODING FORM

To be completed for each site form.
For instructions and codes, see IMACS Users Guide.

Encoder's Name: J SENULIS

1 42CB292 — State Site Number
2 [-] — Agency Site Number
6 [ ] — Agency Report Number
10 7020 — Elevation
11 Zone: 12 | Easting: 542170 | Northing: 4391244

12 1/4: NE | 1/4: NW | 1/4: NW | Sec.: 30 | T.: 13 S | R.: 13 E

13 1 — Merid.
14 PINE CANYON, UTAH (1972) — USGS Map
17 PR — Owner

18 Forest: [ ] | Dist./Park: J6
19 [ ] — Loc. Cur. Materials
21 D — Cond.
22 DM ER GR — Impacts
23 D — N.R.
26 SC — Organ.
28 06 - 05 - 01 — Survey Date
29 03 — Slope | 175 — Aspect

30 Water: distance/type: 0 B
31 CAC — Geog. Unit
32 Topographic Locatio: 1st E | 2st J
33 K — Dep.
34 E — Vegetation: 1 Q | 2 H | 3 G
35 [ ] — Misc. Text, Site Name

---

2 [ ] [ ] — Culture/Dating Method
3 [ ] — Area
4 [ ] — Collect
5 [ ] — Depth
6 [ ] — Excav. Status
7 [ ] — Prehistoric Artifacts

8 [ ] — Lithic Tools: # / type
9 [ ] # | [ ] Flaking Stages
11 [ ] — Ceramics: #/type
13 [ ] — Features: # / type
14 [ ] — Architecture: # / material / type

---

2 MN [ ] — Historic Themes
3 EA F | EA I — Culture/Dating Method
4 1900 1940 — Dates
5 1500 — Area
6 A — Collect
7 A — Depth
8 C — Excav. Status
9 WO — Artifacts

14 1 MT | 1 RA | 2 DE — Features: # / type
15 2 I AK | 1 B BG — Architecture: # / material / type

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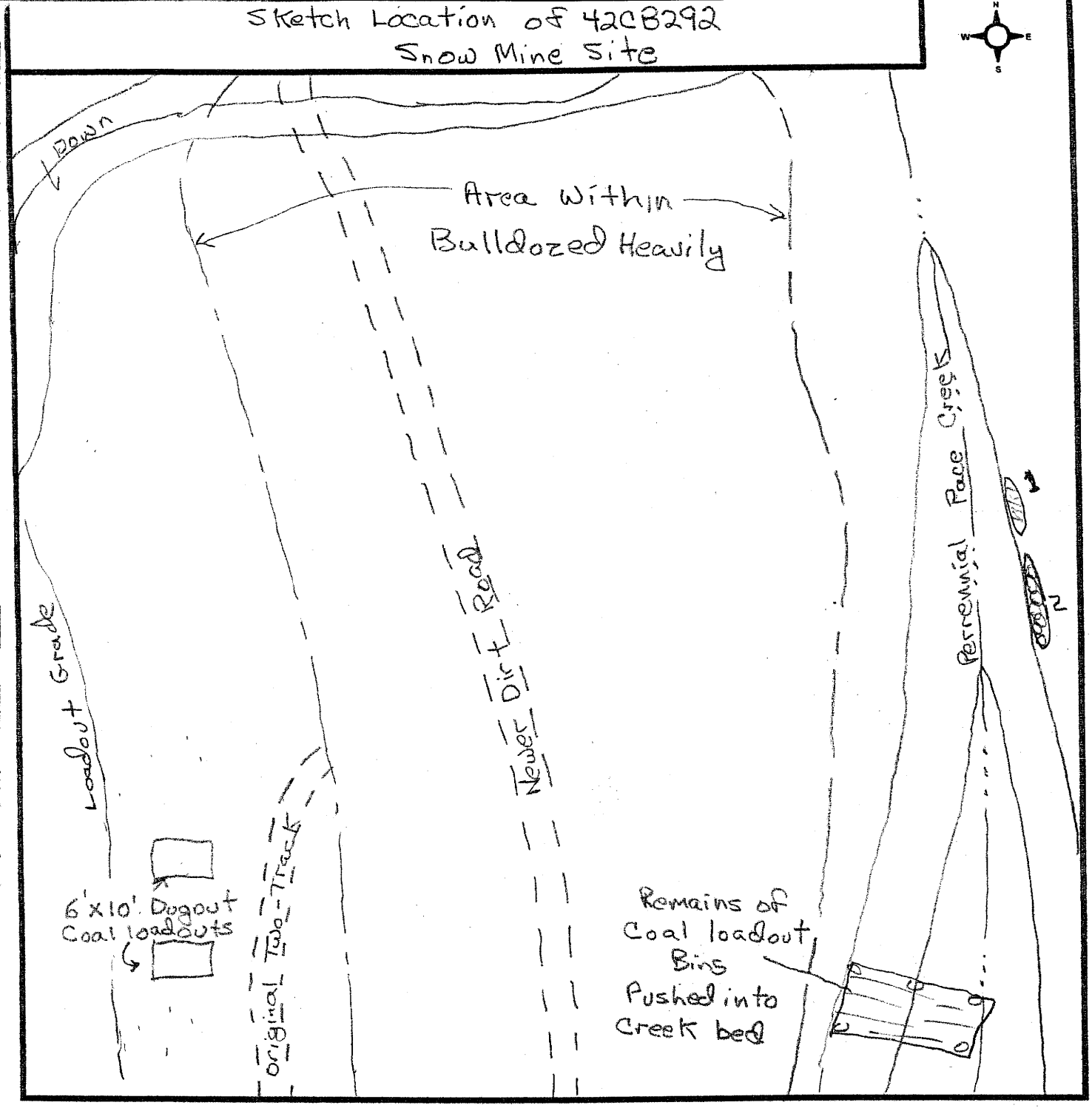
Sketch Location of 42CB292
Snow Mine Site

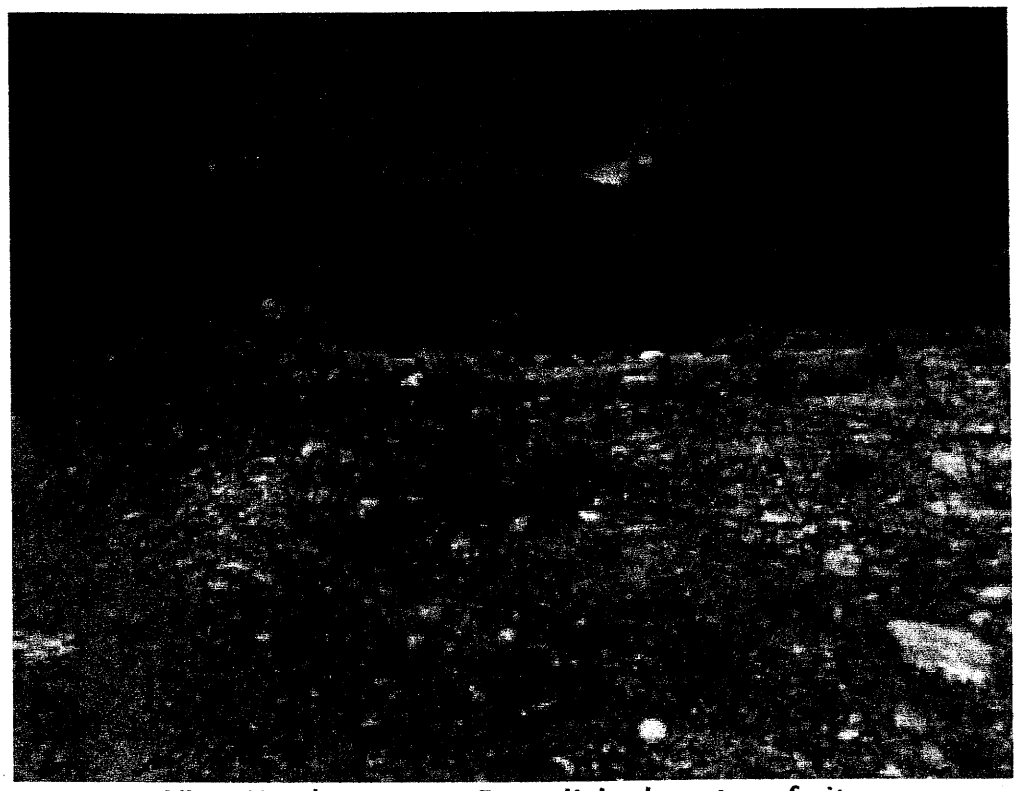


No Scale

1. Closed Mine Adit
2. Dry laid stone (Erosion Control) wall

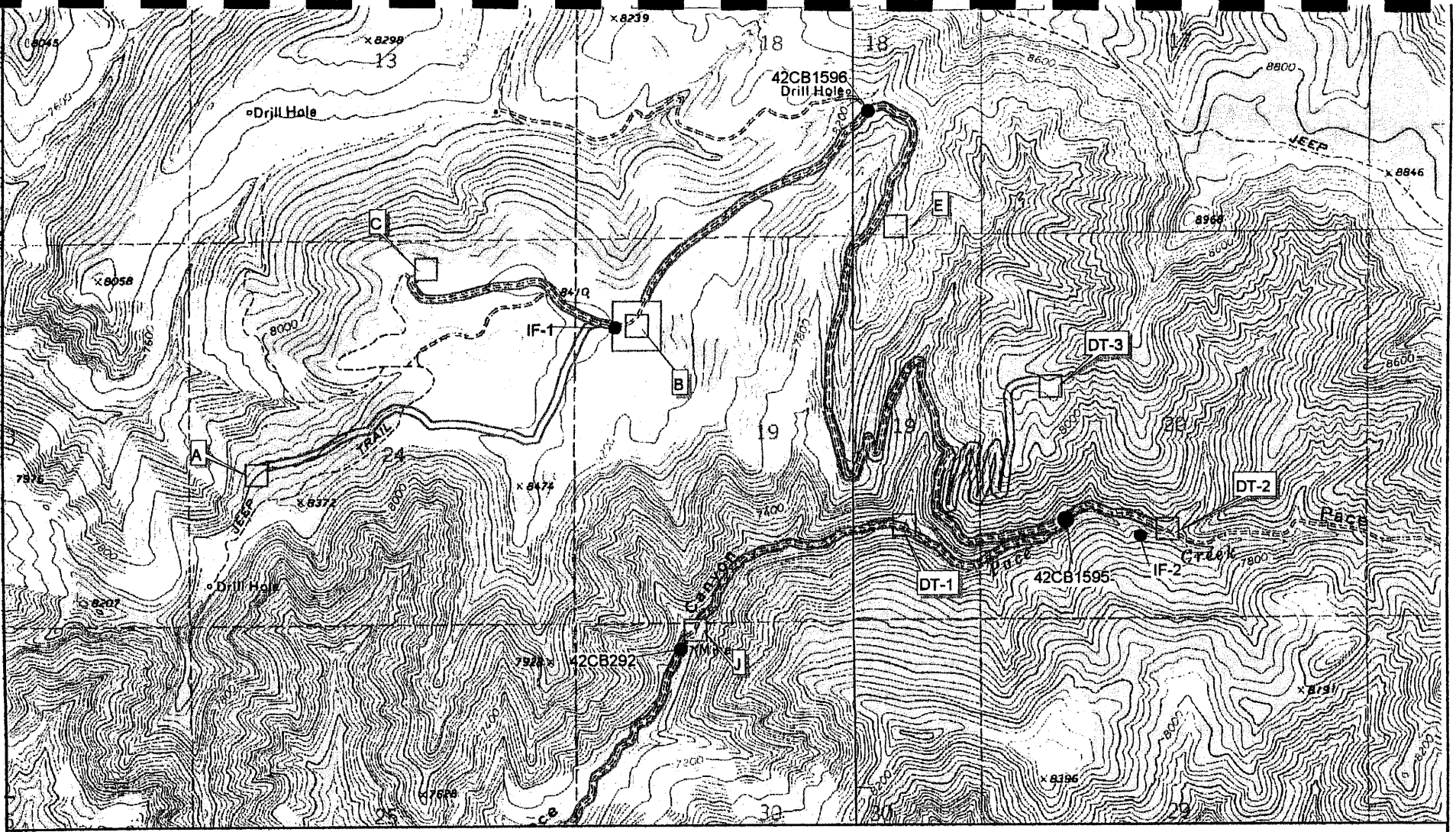
SENCO-PHENIX

42CB292



View Northeast over Demolished center of site

View Southeast of destroyed Loadout



SENCO-PHENIX

Drill Holes and Access Roads
Dugout Mine of Canyon Fuel Company, LLC
Sections 18, 19, 20, 30, T13S, R13E
Section 24, T13S, R12E
June 2001
SPUT- 387

Part A - Environmental Data

*29. **Slope:** 03 (Degrees) 175 **Aspect:** (Degrees) **Site No: 42CB292**

*30. **Distance to Permanent Water** 0 x 100 meters

Type of Water Source ☐ Spring/Seep (A) ☒ Stream/River (B) ☐ Lake (C) ☐ Other (D)

Name of Water Source: Pace Creek

*31. **Geographic Unit:** CAC Mancos Shale Lowlands

*32. **Topographic Location**

PRIMARY LANDFORM		SECONDARY LANDFORM		
☐ Mountain Spine (A)	☐ Alluvial Fan (A)	☐ Dune (I)	☐ Slope (Q)	☐ Riser (Y)
☐ Hill (B)	☐ Alcove/Rockshelter (B)	☒ Floodplain (J)	☐ Terrace/Bench (R)	☐ Multiple Landforms (1)
☐ Tableland/Mesa (C)	☐ Arroyo (C)	☐ Ledge (K)	☐ Talus Slope (S)	☐ Bar (2)
☐ Ridge (D)	☐ Basin (D)	☐ Mesa/Butte (L)	☐ Island (T)	☐ Lagoon (3)
☒ Valley (E)	☐ Cave (E)	☐ Playa (M)	☐ Outcrop (U)	☐ Ephemeral Wash (4)
☐ Plain (F)	☐ Cliff (F)	☐ Port.Geo.(N)	☐ Spring Mound/Bog (V)	☐ Kipuka (5)
☐ Canyon (G)	☐ Delta (G)	☐ Plain (O)	☐ Valley (W)	☐ Saddle/Pass (6)
☐ Island (H)	☐ Detached Monolith (H)	☐ Ridge/Knoll(P)	☐ Cutbank (X)	☐ Graben (7)

Describe: The site is located within the floodplain of Pace Creek drainage

*33. **Onsite Depositional Context**

☐ Fan (A)	☐ Outcrop (Q)	☐ Moraine (J)	☐ Desert Pavement (P)
☐ Talus (B)	☐ Extinct Lake (F)	☒ Flood Plain (K)	☐ Stream Bed (R)
☐ Dune (C)	☐ Extant Lake (G)	☐ Marsh (L)	☐ Aeolian (S)
☐ Stream Terrace (D)	☐ Alluvial Plain (H)	☐ Landslide/Slump (M)	☐ None (T) .
☐ Playa (E)	☐ Colluvium (I)	☐ Delta (N)	☐ Residual (U)

Description of Soil: Tan sandy loams

34. **Vegetation**

a. **Life Zone**

☐ Arctic-Alpine(A) ☐ Hudsonian(B) ☐ Canadian(C) ☐ Transitional(D) ☒ Upper Sonoran(E) ☐ Lower Sonoran(F)

b. **Community** **Primary Onsite: Q** **Secondary Onsite: H** **Surrounding Site: G**

Aspen (A)	Other/Mixed Conifer (G)	Grassland/Steppe(M)	Marsh/Swamp(S)
Spruce/Fir (B)	Pinyon-Juniper Woodland (H)	Desert Lake Shore (N)	Lake/Reservoir (T)
Douglas Fir (C)	Wet Meadow (I)	Shadscale Community (O)	Agricultural (U)
Alpine Tundra (D)	Dry Meadow (J)	Tall Sagebrush (P)	Blackbrush (V)
Ponderosa Pine (E)	Oak-Maple Shrub (K)	Low Sagebrush (Q)	Creosote Brush (Y)
Lodgepole Pine (F)	Riparian (L)	Barren (R)	

Describe: Regrowth grasses and sagebrush surrounded by PJ & Pine

*35. **Miscellaneous Text:**

36. **Comments/Continuations:**

Part C - Historic Sites

Site No: 42CB292
Temp No:

1. Site Type: Snow Mine site

2. Historic Theme(s): Mining

CULTURAL AFFILIATION	DATING METHOD	CULTURAL AFFILIATION	DATING METHOD
3. Culture: Euro-American	Cross Dating		

Describe: Historic Research

4. Oldest Date: 1900's **Recent Date:** 1940s

How Determined: Original site form

5. Site Dimensions: 30 **m X** 50 **m** **Area:** 1,500 **sq m**

6. Surface Collections Method
☒ None (A) ☐ Designed Sample (C)
☐ Grab Sample (B) ☐ Complete Collection (D)

Sampling Method:

7. Estimated Depth of Cultural Fill
☒ Surface (A) ☐ 20-100 cm (C) ☐ Fill noted but unknown (E)
☐ 0-20 cm (B) ☐ 100 cm + (D) ☐ Depth suspected, but not tested (F)

How Estimated:
(If tested, show location of site map)

8. Excavation Status ☐ Excavated (A) ☐ Tested (B) ☒ Unexcavated (C)

Testing Method:

9. Summary of Artifacts and Debris

☐ Glass (GL)	☐ Bone (BO)	☐ Leather (LE)	☐ Ammunition (AM)	☐ Domestic Items (DI)
☐ Metal (ME	☐ Ceramics(CS)	☐ Wire (WI)	☒ Wood (WD)	☐ Kitchen Utensils (KU)
☐ Nails (NC,NW)	☐ Fabric (FA)	☐ Tin Cans	☐ Rubber (RB)	☐ Car/Car Parts (CR)

Describe: There is a closed mine portal, retaining wall, destroyed coal loadout and two dugout coal loaders. Other than recent trash no artifacts were observed.

10. Ceramic Artifacts: **Paste** **Glaze/Slip** **Decoration** **Pattern** **Vessel Form(s)** **#**

a. Estimated Number of Ceramic Trademarks: 0
Describe:

Part C - Historic Sites

Site No: 42CB1595
Temp No:

1. Site Type: Cabin site

2. Historic Theme(s): Farming Ranching

CULTURAL AFFILIATION	DATING METHOD	CULTURAL AFFILIATION	DATING METHOD
3. Culture: Euro-American	Cross Dating		

Describe: Cabin style

4. Oldest Date: 1950's **Recent Date:** 1960s

How Determined: History of area

5. Site Dimensions: 10 **m X** 8 **m** **Area:** 80 **sq m**

6. Surface Collections Method
☒ None (A) ☐ Designed Sample (C)
☐ Grab Sample (B) ☐ Complete Collection (D)

Sampling Method:

7. Estimated Depth of Cultural Fill
☒ Surface (A) ☐ 20-100 cm (C) ☐ Fill noted but unknown (E)
☐ 0-20 cm (B) ☐ 100 cm + (D) ☐ Depth suspected, but not tested (F)

How Estimated:
(If tested, show location of site map)

8. Excavation Status ☐ Excavated (A) ☐ Tested (B) ☒ Unexcavated (C)

Testing Method:

9. Summary of Artifacts and Debris

☒ Glass (GL)	☐ Bone (BO)	☐ Leather (LE)	☐ Ammunition (AM)	☒ Domestic Items (DI)
☐ Metal (ME	☐ Ceramics(CS)	☐ Wire (WI)	☒ Wood (WD)	☐ Kitchen Utensils (KU)
☒ Nails (NC,NW)	☐ Fabric (FA)	☐ Tin Cans	☐ Rubber (RB)	☐ Car/Car Parts (CR)

Describe: There are a few fragments of clear glass that may have been windows at one point. The adjacent trash pile is predominantly lumber from the cabin. The only datable artifact is a steel rail embossed with "BS BO Steelton 1948." There is no domestic refuse at the site except for a metal bedspring and cot inside the cabin.

10. Ceramic Artifacts: **Paste** **Glaze/Slip** **Decoration** **Pattern** **Vessel Form(s)** **#**

a. Estimated Number of Ceramic Trademarks: 0
Describe:

Part C - Historic Sites

Site No. 42CB1595
Temp No.

11. Glass: # **Manufacture** **Color** **Function** **Trademarks** **Decoration**

Describe:

12. Maximum Density - #/sq m (glass and ceramics):

13. Tin Cans

Type **Opening** **Size** **Modified** **Label/Mark** **Function**

Describe:

14. Landscape and Constructed Features (locate on site map)

- ☐ Trail/Road (TR)
- ☐ Tailings (MT, ML)
- ☐ Rock Alignment (RA)
- ☐ Dump (DU)
- ☐ Depression (DE)
- ☐ Cemetery/Burial (CB)
- ☐ Dam, Earthen (DA)
- ☐ Ditch (DI)
- ☐ Inscriptions (IN)
- ☐ Hearth/Campfire (HE)
- ☐ Quarry (QU)
- ☐ Other (OT)

Describe:

15. Buildings and Structures (locate on site map)

#	Material	Type	#	Material	Type
1	Frame (K)	Single room structure	1	Log (P)	Foundation (BY)

Describe: The site is a wood frame and sided one room cabin adjacent to a log foundation under a pile of trash that is predominantly lumber and boards that have been removed from the cabin. The cabin is made of two by four wood framing covered by two courses of slanted cut wood with variable size boards ranging in size from one by four to one by sixteen inches. The two courses of wood were separated by tarpaper. The roof is wood boards covered by asphalt strip roofing. There is an aluminum flashing for a stovepipe inside the cabin and part of a pipe in the adjacent debris. The structure measures 13' 3" x 7' 4 ¾" and stands 6' 2" tall. The interior of the cabin is 6' from floor to ceiling. The door opening is 2' 5" x 5' 10" with two windows on the east and west ends measuring 2' 9" high by 1' 2" wide. The cabin has no foundation and appears to be of the same size as the adjacent log foundation.

16. Comments/Continuations - *Please make note of any Historic Record searches performed (for example - County Records, General Land Office, Historical Society, Land Management Agency Records, Oral Histories/Interviews)*

1990

IMACS ENCODING FORM

Encoder's Name J SENULIS

To be completed for each site form.
For instructions and codes, see IMACS Users Guide.

1 State Site Number: 42 CB 1595
2 Agency Site Number:
6 Agency Report Number:
10 Elevation: 7020
11 Zone: 12 | Easting: 543771 | Northing: 4391790
12 1/4: SE | 1/4: NW | 1/4: SW | Sec.: 20 | T.: 13 S | R.: 13 E
13 Merid.: 1
14 USGS Map: MOUNT BARTLES, UTAH (1972)
17 Owner: PR
18 Forest:
Dist./Park: J6
19 Loc. Cur. Materials:
21 Cond.: C
22 Impacts: PR
23 N.R.: D
26 Organ.: SC
28 Survey Date: 06-05-01
29 Slope: 01
Aspect: 175
30 Water: distance/type: 0 B
31 Geog. Unit: CAC
32 Topographic Locatio: 1st E | 2st R
33 Dep.: H
34 Vegetation: E | Q H G (1 2 3)
35 Misc. Text, Site Name:

---

2 Culture/Dating Method:
3 Area:
4 Collect:
5 Depth:
6 Excav. Status:
7 Prehistoric Artifacts:
8 Lithic Tools: # / type:
9 #:
Flaking Stages:
11 Ceramics: #/type:
13 Features: # / type:
14 Architecture: # / material / type:

---

2 Historic Themes: FR
3 Culture/Dating Method: EA F
4 Dates: 1950 | 1960
5 Area: 80
6 Collect: A
7 Depth: A
8 Excav. Status: C
9 Artifacts: GL | NC | WD
14 Features: # / type:
15 Architecture: # / material / type: 1 K AR | 1 P BY

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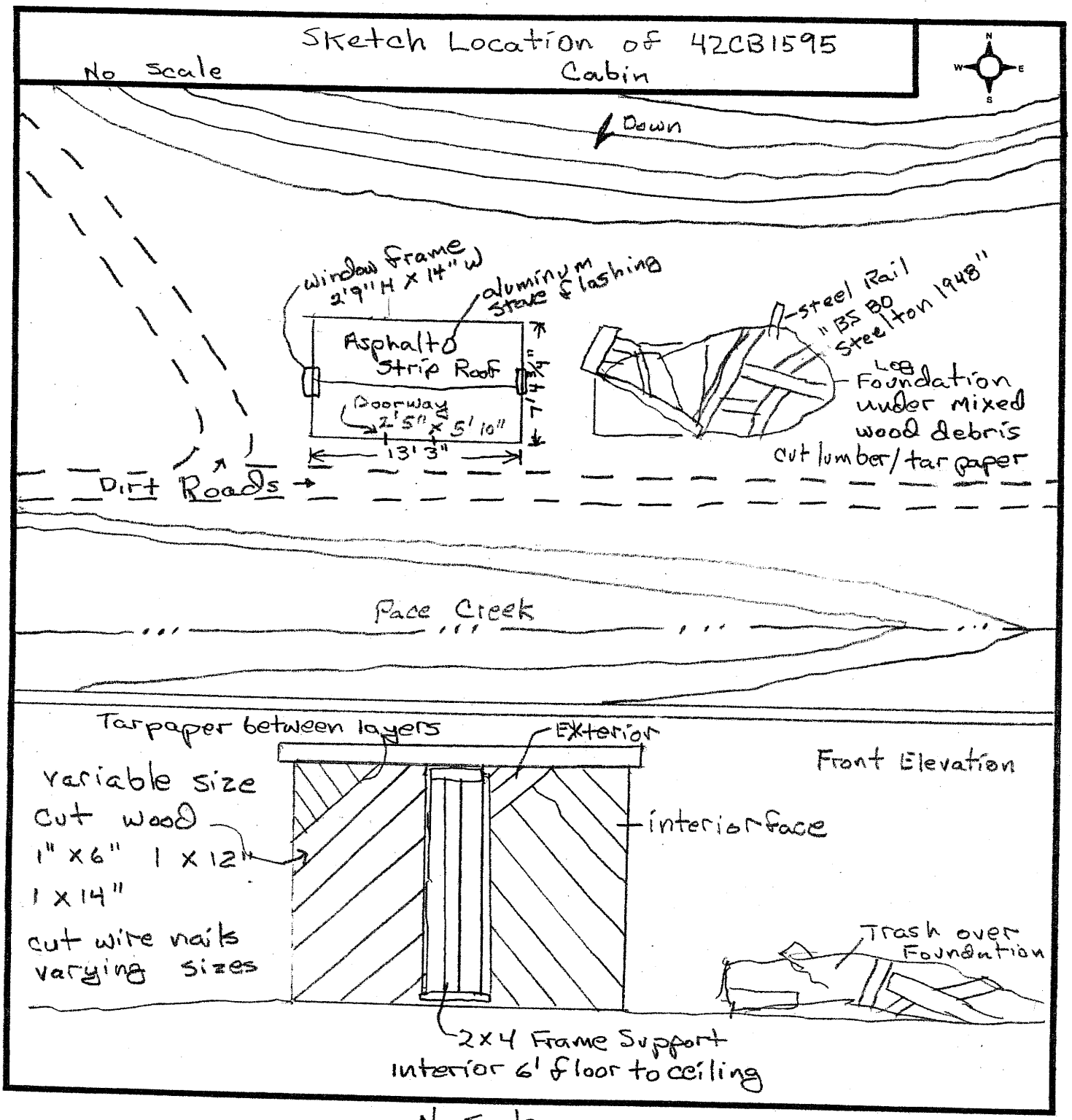


No Scale

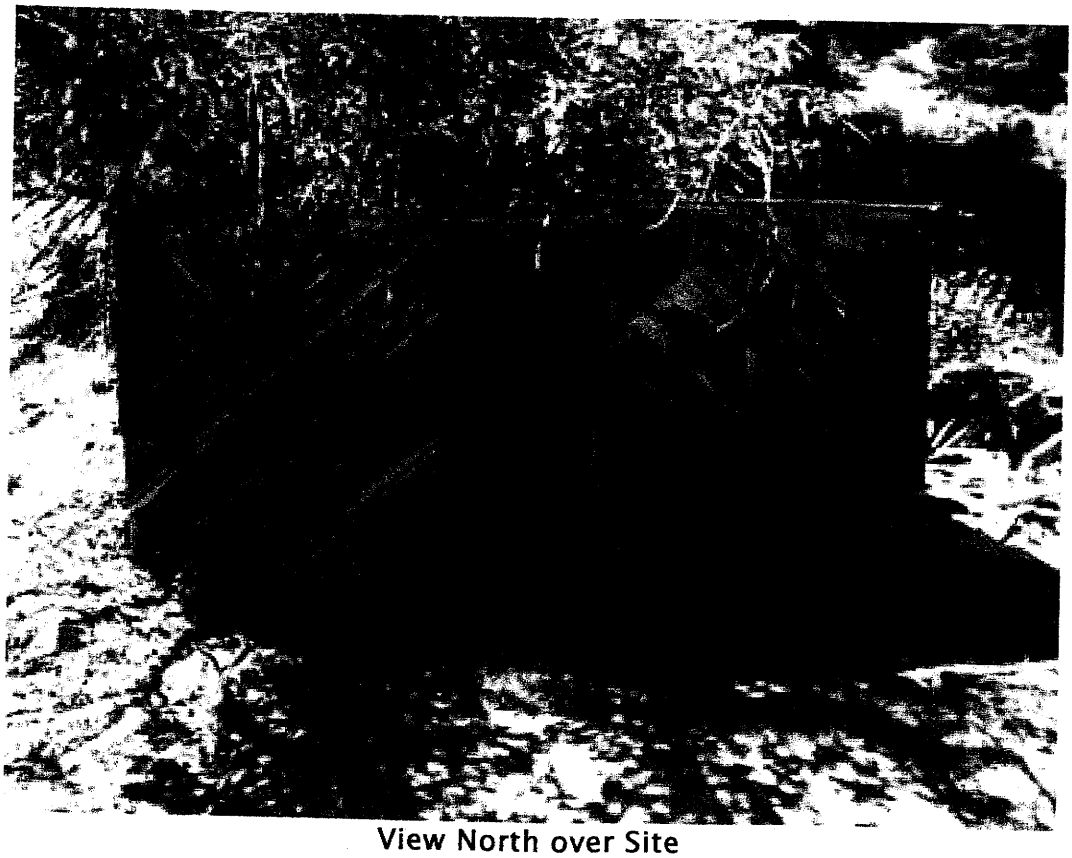
SENCO-PHENIX

Interior

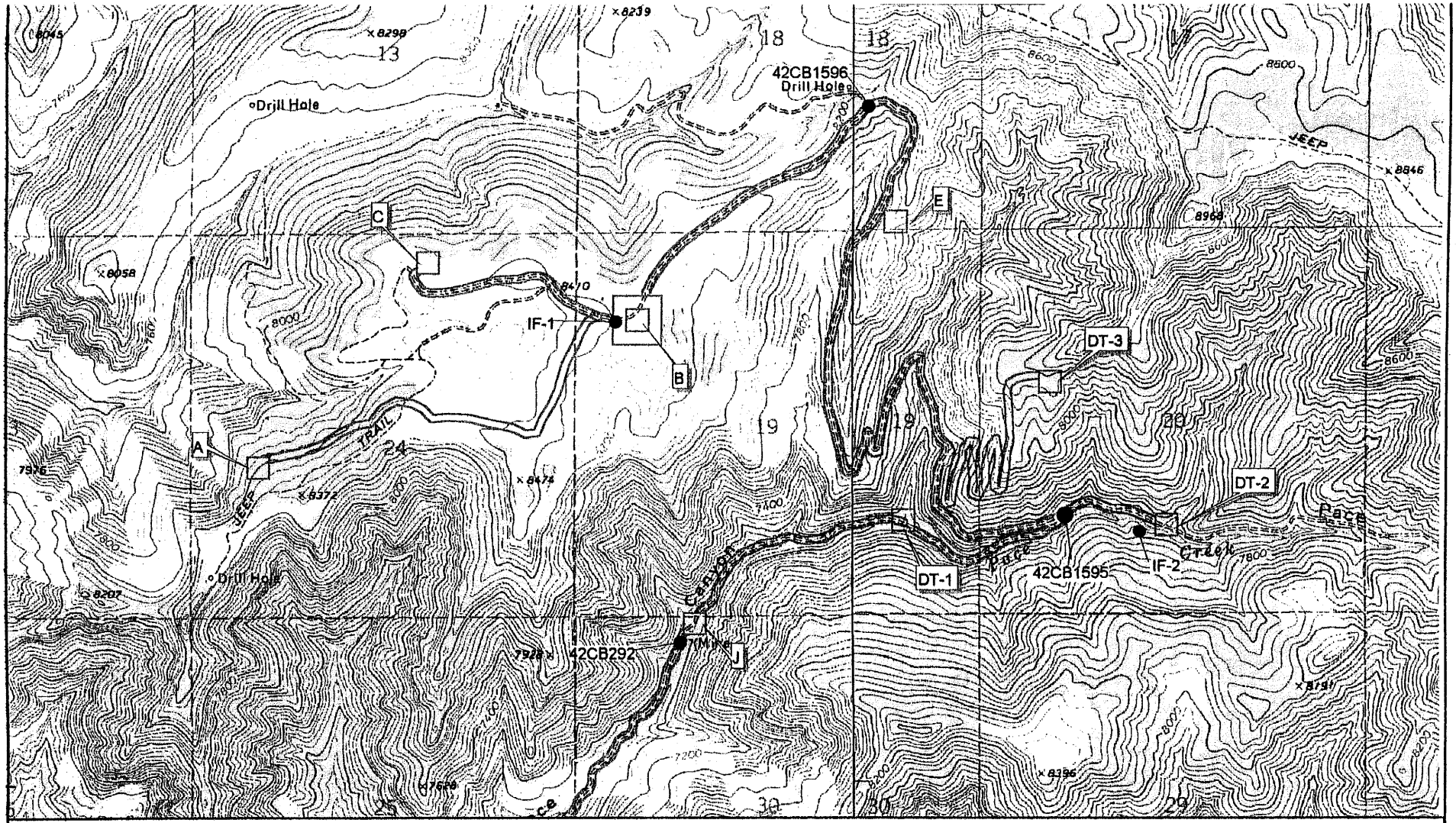
variable width cut wood floor
one metal 6' x 3' Cot
one twin bedspring

42CB1595

View Northwest over Site



View North over Site


42CB1596
Drill Hole
Drill Hole
IF-1
A
B
C
E
DT-1
DT-2
DT-3
42CB1595
IF-2
42CB292
TRAIL
JEEP
JEEP
Creek
Pace
N
Scale 1:24000
1"=2,000'
Previous Survey
Current Survey
Eligible Sites
Ineligible Sites
SENCO-PHENIX
Drill Holes and Access Roads
Dugout Mine of Canyon Fuel Company, LLC
Sections 18, 19, 20, 30, T13S, R13E
Section 24, T13S, R12E
June 2001
SPUT- 387

IMACS SITE FORM

Part A - Administrative Data

INTERMOUNTAIN ANTIQUITIES COMPUTER SYSTEM
Form approved for use by:
BLM - Utah, Idaho, Wyoming, Nevada
Division of State History - Utah, Wyoming
USFS - Intermountain Region
NPS - Utah, Wyoming

***1. State No. 42CB1596**
***2. Agency No.**
***3. Temp. No.**

4. State: Utah **County** Carbon
5. Project: Dugout Drill Hole Series
***6. Report No:** U01SC240bp
7. Site Name / Property Name:
8. Class ☐ Prehistoric ☒ Historic ☐ Paleontologic ☐ Ethnographic
9. Site Type: Historic Corral & Aspen Carvings
***10. Elevation:** 8180 ft..
***11. UTM Grid Zone:** 12 542935 **m E** 4393487 **m N**
***12.** NE **of** SE 1/4 **of** NW 1/4 **of** SE 1/4 **Section:** 18 **T.**13S **R.**13E
***13. Meridian:** SLC
***14. Map Reference:** Mount Bartles, Utah (1972)
15. Aerial Photo:
16. Location and Access: From Wellington, Utah travel east on Highway 6 for ca. 7 miles. Turn left onto Pace Canyon road. Follow the improved dirt road northerly ca. 4.5 miles to northwesterly tending dirt road. Follow that road northwesterly ca. 2.2 miles to road juncture. Take side hill road up mountain to north for ca. 2.4 miles to road juncture. Site is in southwest part of juncture.

***17. Land Owner:** Private
***18. Federal Administrative Units:**
***19. Location of Curated Materials:**
20. Site Description: The site is an old deteriorating corral with some Aspen carvings and a small trash pile. The corral is a post, wire and twine structure that has been rebuilt many times. It is about 20 feet in diameter. There is a small trash scatter across the road. The trash scatter is metal fragments, one hole in top can and recent (30 years) trash, i.e. aluminum cans etc. The Aspen carvings are "JB JB JB, May 14, Martin Davin, 1933, 7-30-67, Jim Hanna, Don PavdVlton (hard to read), Jim Hanna + Kayla Merrill." Most of the Aspen carvings cannot be read.

***21. Site Condition** ☐ Excellent (A) ☐ Good (B) ☐ Fair (C) ☒ Poor (D)
***22. Impact Agent(s):** Erosion

***23. National Register Status** ☐ Significant (C) ☒ Non-Significant (D) ☐ Unevaluated (Z)
Justify: The site has no further information potential and parts are less than 50 years old.
24. Photos: Did not turn out-none
25. Recorded by: John Senulis
***26. Survey Organization:** SENCO-PHENIX **28. Survey Date:** 6-5-2001
27. Assisting Crew Members: Jeanne Senulis, Brett & Lee Richman, Robert Hackney

List of Attachments:
☐ Part B ☒ Topo Map ☐ Photos ☐ Continuation Sheets
☒ Part C ☒ Site Sketch ☐ Artifact/Feature Sketch
☐ Part E ☐ Other

BLM 8100-1
FS R-4 2300-2
3/90

*Encoded data items

Part A - Environmental Data

*29. **Slope:** 01 (Degrees) **Aspect:** 125 (Degrees) **Site No: 42CB1596**

*30. **Distance to Permanent Water** 20 x 100 meters

Type of Water Source ☐ Spring/Seep (A) ☒ Stream/River (B) ☐ Lake (C) ☐ Other (D)

Name of Water Source: Pace Creek

*31. **Geographic Unit:** CAC Mancos Shale Lowlands

*32. **Topographic Location**

PRIMARY LANDFORM		SECONDARY LANDFORM		
☐ Mountain Spine (A)	☐ Alluvial Fan (A)	☐ Dune (I)	☐ Slope (Q)	☐ Riser (Y)
☐ Hill (B)	☐ Alcove/Rockshelter (B)	☐ Floodplain (J)	☒ Terrace/Bench (R)	☐ Multiple Landforms (1)
☒ Tableland/Mesa (C)	☐ Arroyo (C)	☐ Ledge (K)	☐ Talus Slope (S)	☐ Bar (2)
☐ Ridge (D)	☐ Basin (D)	☐ Mesa/Butte (L)	☐ Island (T)	☐ Lagoon (3)
☐ Valley (E)	☐ Cave (E)	☐ Playa (M)	☐ Outcrop (U)	☐ Ephemeral Wash (4)
☐ Plain (F)	☐ Cliff (F)	☐ Port.Geo.(N)	☐ Spring Mound/Bog (V)	☐ Kipuka (5)
☐ Canyon (G)	☐ Delta (G)	☐ Plain (O)	☐ Valley (W)	☐ Saddle/Pass (6)
☐ Island (H)	☐ Detached Monolith (H)	☐ Ridge/Knoll(P)	☐ Cutbank (X)	☐ Graben (7)

Describe: The site is located on a broad bench above Pace Creek drainage

*33. **Onsite Depositional Context**

☐ Fan (A)	☐ Outcrop (Q)	☐ Moraine (J)	☐ Desert Pavement (P)
☐ Talus (B)	☐ Extinct Lake (F)	☐ Flood Plain (K)	☐ Stream Bed (R)
☐ Dune (C)	☐ Extant Lake (G)	☐ Marsh (L)	☐ Aeolian (S)
☐ Stream Terrace (D)	☒ Alluvial Plain (H)	☐ Landslide/Slump (M)	☐ None (T)
☐ Playa (E)	☐ Colluvium (I)	☐ Delta (N)	☐ Residual (U)

Description of Soil: Tan sandy loams

34. **Vegetation**

a. **Life Zone**

☐ Arctic-Alpine(A) ☐ Hudsonian(B) ☐ Canadian(C) ☐ Transitional(D) ☒ Upper Sonoran(E) ☐ Lower Sonoran(F)

b. **Community** **Primary Onsite: A** **Secondary Onsite: H** **Surrounding Site: G**

Aspen (A)	Other/Mixed Conifer (G)	Grassland/Steppe(M)	Marsh/Swamp(S)
Spruce/Fir (B)	Pinyon-Juniper Woodland (H)	Desert Lake Shore (N)	Lake/Reservoir (T)
Douglas Fir (C)	Wet Meadow (I)	Shadscale Community (O)	Agricultural (U)
Alpine Tundra (D)	Dry Meadow (J)	Tall Sagebrush (P)	Blackbrush (V)
Ponderosa Pine (E)	Oak-Maple Shrub (K)	Low Sagebrush (Q)	Creosote Brush (Y)
Lodgepole Pine (F)	Riparian (L)	Barren (R)	

Describe: Aspen grove with sagebrush and grasses surrounded by PJ & Pine

*35. **Miscellaneous Text:**

36. **Comments/Continuations:**

Part C - Historic Sites

Site No: 42CB1596
Temp No:

1. Site Type: Corral and Aspen carvings

2. Historic Theme(s): Farming Ranching

CULTURAL AFFILIATION	DATING METHOD	CULTURAL AFFILIATION	DATING METHOD
3. Culture: Euro-American	Cross Dating		

Describe: carving dates

4. Oldest Date: 1930's **Recent Date:** 1990s

How Determined: carvings, artifacts

5. Site Dimensions: 30 **m X** 20 **m** **Area:** 600 **sq m**

6. Surface Collections Method
☒ None (A) ☐ Designed Sample (C)
☐ Grab Sample (B) ☐ Complete Collection (D)

Sampling Method:

7. Estimated Depth of Cultural Fill
☒ Surface (A) ☐ 20-100 cm (C) ☐ Fill noted but unknown (E)
☐ 0-20 cm (B) ☐ 100 cm + (D) ☐ Depth suspected, but not tested (F)

How Estimated:
(If tested, show location of site map)

8. Excavation Status ☐ Excavated (A) ☐ Tested (B) ☒ Unexcavated (C)

Testing Method:

9. Summary of Artifacts and Debris

☒ Glass (GL)	☐ Bone (BO)	☐ Leather (LE)	☐ Ammunition (AM)	☐ Domestic Items (DI)
☒ Metal (ME	☐ Ceramics(CS)	☒ Wire (WI)	☒ Wood (WD)	☐ Kitchen Utensils (KU)
☒ Nails (NC,NW)	☐ Fabric (FA)	☒ Tin Cans	☐ Rubber (RB)	☐ Car/Car Parts (CR)

Describe: The corral is a post, wire and twine structure that has been rebuilt many times. It is about 20 feet in diameter. There is a small trash scatter across the road. The trash scatter is metal fragments, one hole in top can and recent (30 years) trash, i.e. aluminum cans etc. The Aspen carvings are "JB JB JB, May 14, Martin Davin, 1933, 7-30-67, Jim Hanna, Don PavdVlton (hard to read), Jim Hanna + Kayla Merrill." Most of the Aspen carvings can not be read

10. Ceramic Artifacts: **Paste** **Glaze/Slip** **Decoration** **Pattern** **Vessel Form(s)** **#**

a. Estimated Number of Ceramic Trademarks: 0
Describe:

Part C - Historic Sites

Site No. 42CB1596
Temp No.

11. Glass:

#	Manufacture	Color	Function	Trademarks	Decoration
1	ABS	clear	bottle	none	none
1	ABS	brown	"	none	none

Describe: Two whole bottles with no markings on base but recent.

12. Maximum Density - #/sq m (glass and ceramics):

13. Tin Cans

Type	Opening	Size	Modified	Label/Mark	Function
Hole in top	cut around	12 oz.	no	no	food?
Aluminum	pull tab	12 oz.	no	no	beer

Describe:

14. Landscape and Constructed Features (locate on site map)

- ☐ Trail/Road (TR)
- ☐ Dump (DU)
- ☐ Dam, Earthen (DA)
- ☐ Hearth/Campfire (HE)
- ☐ Tailings (MT, ML)
- ☐ Depression (DE)
- ☐ Ditch (DI)
- ☐ Quarry (QU)
- ☐ Rock Alignment (RA)
- ☐ Cemetery/Burial (CB)
- ☐ Inscriptions (IN)
- ☐ Other (OT)

Describe:

15. Buildings and Structures (locate on site map)

#	Material	Type	#	Material	Type
1	combination	corral			

Describe: Wood post, wire and twine corral about 20 feet in diameter. Rebuilt and patched many times. Still in use today.

16. Comments/Continuations - *Please make note of any Historic Record searches performed (for example - County Records, General Land Office, Historical Society, Land Management Agency Records, Oral Histories/Interviews)*

1990

IMACS ENCODING FORM

Encoder's Name J SENULIS

To be completed for each site form.
For instructions and codes, see IMACS Users Guide.

1 42CB1596 State Site Number

2 [ ] - [ ] Agency Site Number

6 [ ] Agency Report Number

10 8180 Elevation

11 12 | 542935 | 4393487 — Zone | Easting | Northing

12 SE | NW | SE | 18 | 13 | S | 13 | E — 1/4 | 1/4 | 1/4 | Sec. | T. | R.

13 1 Merid.

14 MOUNT BARTLES, UTAH (1972) USGS Map

17 PR Owner

18 [ ] Forest | J6 Dist./Park

19 [ ] Loc. Cur. Materials

21 D Cond.

22 FR | RD | [ ] Impacts

23 D N.R.

26 SC Organ.

28 06 - 05 - 01 Survey Date

29 01 Slope | 125 Aspect

30 20 | B — Water: distance/type

31 CAC Geog. Unit

32 C | R — 1st | 2st Topographic Locatio

33 H Dep.

34 E | A | H | G — Vegetation 1 2 3

35 [ ] Misc. Text, Site Name

---

2 [ ] [ ] Culture/Dating Method

3 [ ] Area

4 [ ] Collect

5 [ ] Depth

6 [ ] Excav. Status

7 [ ] Prehistoric Artifacts

8 [ ] [ ] Lithic Tools: # / type

9 [ ] # [ ] Flaking Stages

11 [ ] [ ] [ ] Ceramics: #/type

13 [ ] [ ] Features: # / type

14 [ ] [ ] [ ] Architecture: # / material / type

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2 FR [ ] Historic Themes

3 EA | F [ ] Culture/Dating Method

4 1930 | 1990 Dates

5 600 Area

6 A Collect

7 A Depth

8 C Excav. Status

9 GL / ME / NW | WI / TC / WD | [ ] Artifacts

14 [ ] [ ] [ ] Features: # / type

15 1 | W | AJ [ ] [ ] [ ] Architecture: # / material / type

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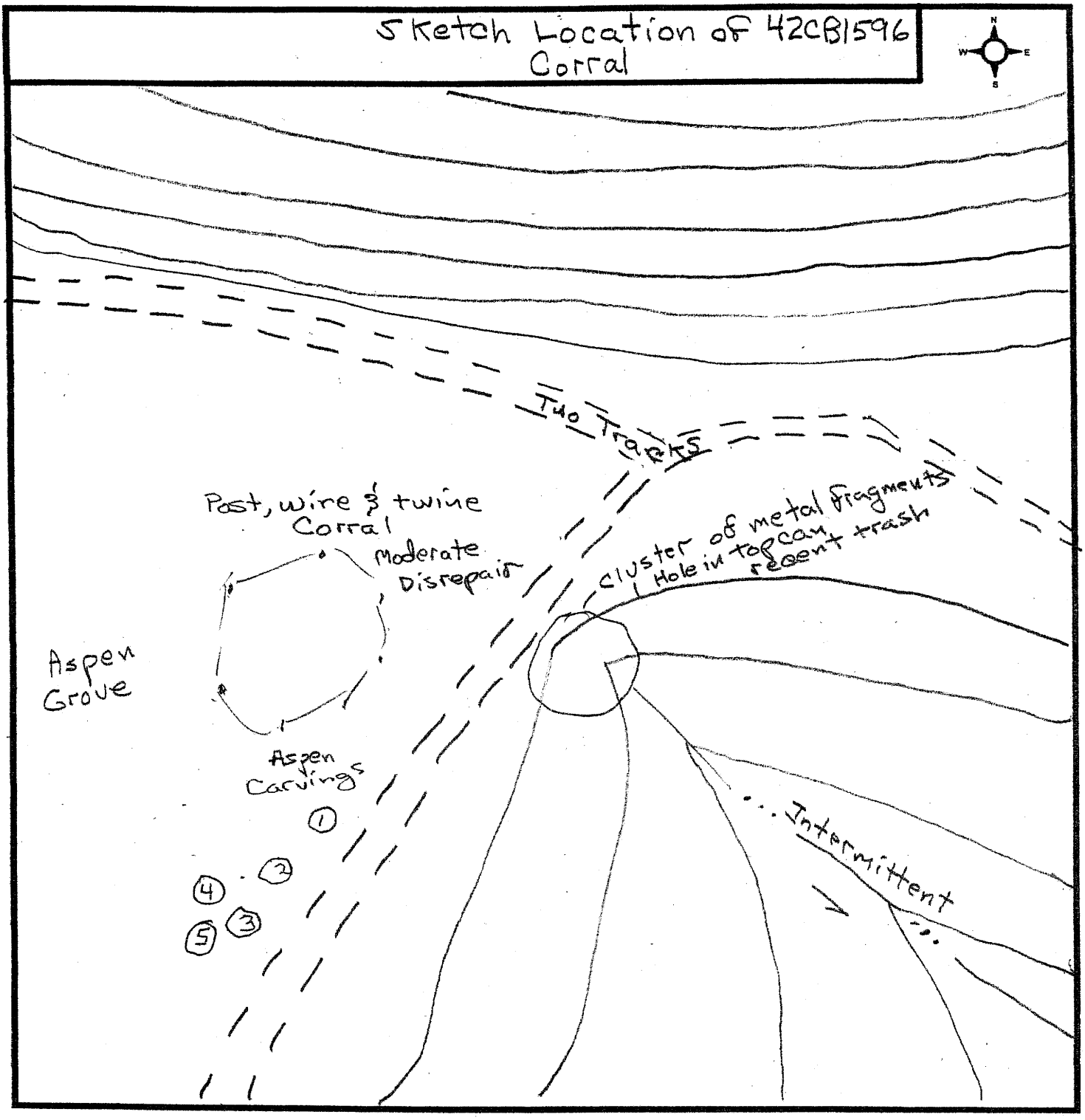
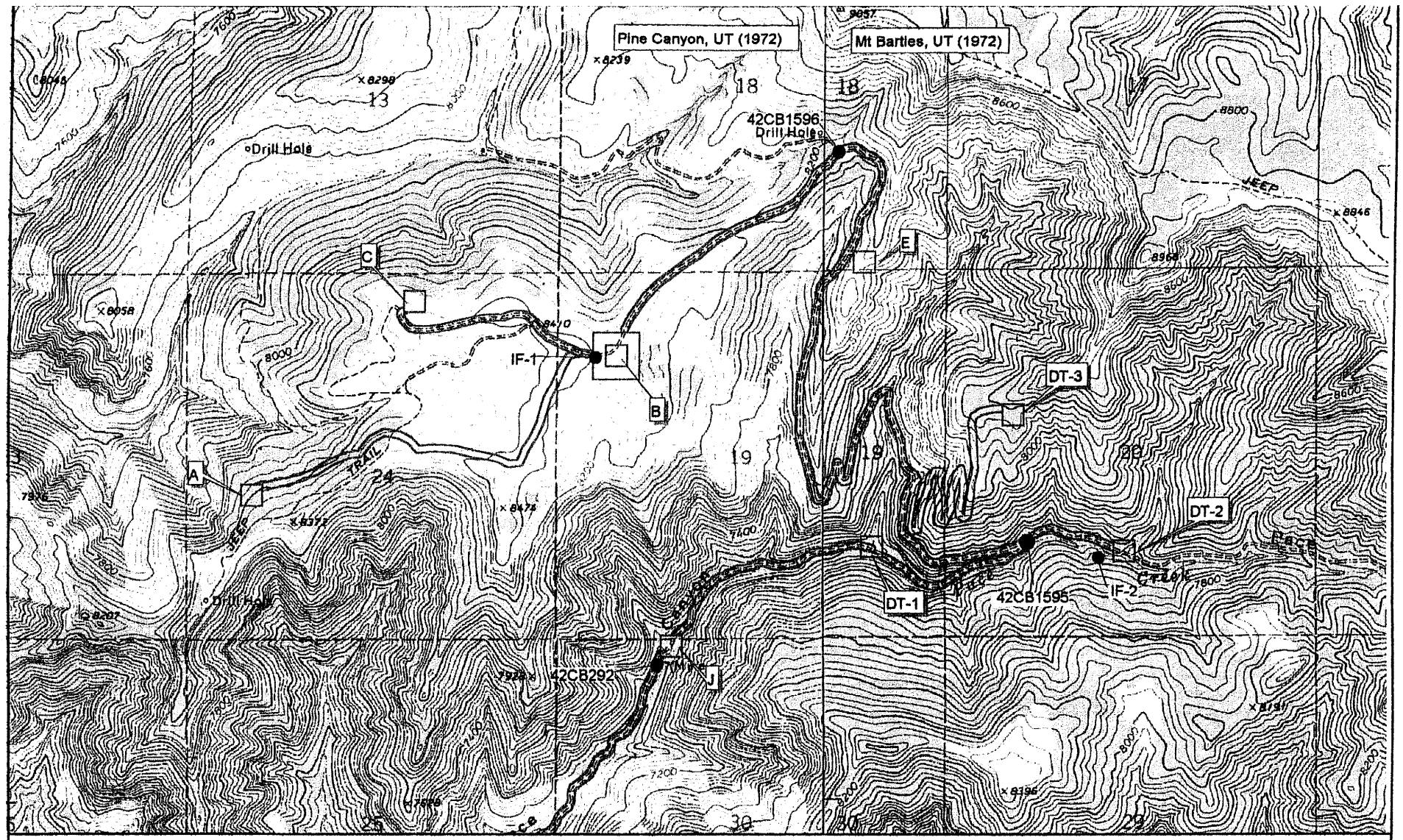
ed on 3/5/01 7:12:40 AM



SENCO-PHENIX

Aspen Carvings

1. "JB JB JB"
2. "May 14, Martin Davin, 1933"
3. "7-30-67 Jim Hanna"
4. "Don Pavd Vlton — hard to read
   July 12, 1938"
5. "Jim Hanna + Kayla Merrill"



SENCO-PHENIX

N

Scale 1:24000
1"=2,000'

- Previous Survey
- Current Survey
- Eligible Sites
- Ineligible Sites

Drill Holes and Access Roads
Dugout Mine of Canyon Fuel Company, LLC
Sections 18, 19, 20, 30, T13S, R13E
Section 24, T13S, R12E
June 2001
SPUT- 387

SURFACE USE AGREEMENT

THIS SURFACE USE AGREEMENT (this "Agreement"), dated as of November ___, 1999 ("Effective Date"), is by and between **Canyon Fuel Company, L.L.C.**, ("CFC"), whose mailing address is 6955 Union Park Center, Suite 540, Midvale, Utah 84047, and **Milton and Ardith Thayn Trust** ("Thayn"), whose mailing address is 7730 East Hwy 6, Price, Utah 84501.

Recitals

Thayn is the surface owner of lands located in Carbon County, Utah, which are described on **Exhibit "A"** attached hereto (the "Thayn Lands"). CFC is a coal mining company and owns and operates the Soldier Canyon Mine and Dugout Canyon Mine (the "Mines"). CFC holds rights under Federal coal leases and pursuant to mine permits granted or to be granted by the Utah Division of Oil, Gas and Mining (the "Mine Permits") to develop and mine underground coal. Thayn has agreed to grant to CFC the nonexclusive use by CFC of the surface of the Thayn Lands to facilitate its coal mining operations in exchange for rights and services from CFC.

Agreement

IN CONSIDERATION of the mutual covenants contained in this Agreement and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Grants and Services to Thayn.

   (a) CFC shall lease to Thayn for farming and grazing the following lands and grazing and water rights described in **Exhibit "B"** attached hereto : (1) lands owned by CFC located in the Clark Valley (the "Clark Valley Lease Lands"); (2) water rights owned by CFC appurtenant to the Clark Valley Lease Lands (the "Clark Valley Water Rights"); (3) state and federal grazing rights held by CFC related to the Clark Valley Lease Lands (the "Grazing Rights"); and (4) water rights represented by 50 shares of water stock in the Wellington Canal Company owned by CFC (the "Water Shares"). The Clark Valley Lease Lands, the Clark Valley Water Rights, the Grazing Rights and the Water Shares shall all be leased to Thayn under the "Lease Agreement" attached hereto as Exhibit "C."

(b) CFC hereby grants to Thayn, for the term of this Agreement and for so long thereafter as agreed in writing by the parties, the non-exclusive, limited use of the Dugout Canyon unimproved road lying north of the Dugout Canyon Mine as may be reasonable and necessary for Thayn's cattle ranching activities, provided that such use shall (i) not interfere with the regular activities of the Mines; (ii) comply with all CFC and applicable federal, state and local rules and regulations imposed on the use of the road; and (iii) not include use of the road by any third party including hunters, tourists or sight-seers.

(c) Upon written notice to CFC, Thayn may request that CFC monitor the flow of springs, streams and seeps located on the Thayn Lands that Thayn reasonably believes may be impacted by CFC's underground mining operations. Upon receiving the written request, CFC shall meet with Thayn to discuss the monitoring sites and to reach a mutually acceptable schedule for such monitoring, provided that CFC shall only be required to monitor such sites for flow. Nothing in this Agreement shall modify CFC's water monitoring program as required by the Mine Permits.

(d) Thayn shall have the non-exclusive right to submit bids as an independent contractor for earth-moving projects conducted on the Thayn Lands that CFC elects, in its sole discretion, to contract to a third party. Thayn shall have a preference for selection as the contractor for the project provided that Thayn can demonstrate to the reasonable satisfaction of CFC that (i) Thayn owns or has right to use the necessary equipment for the project, (ii) Thayn carries insurance coverage required by CFC's risk management procedures for the project, (iii) Thayn has the necessary licenses and permits to conduct the project, and (iv) Thayn's proposed bid is competitive with other bids solicited by CFC for the project. Notwithstanding the foregoing, nothing in this Agreement shall be construed to require CFC to use a third party contractor for any project on the Thayn Lands or to conduct a bid process to select a third party contractor for work conducted on the Thayn Lands or on behalf of Thayn.

2. Surface Use Grants to CFC. CFC shall have and is hereby granted an easement on, over, and through, and a right to use, the surface of the Thayn

Lands as may be necessary and appropriate for the following purposes in connection with mining coal by underground mining methods: (a) conduct subsidence and soil and water sampling, and carry out raptor, wildlife and other environmental studies; (b) conduct exploration drilling and analyses of subsurface conditions by all reasonable means; (c) place or install minor mechanical instruments such as geophones, geo-seismic lines and the like to monitor underground, mine-related activities and results; (d) drill production holes, place and relocate pipelines, and place surface facilities to develop, vent or remove coalbed methane gas, provided such use shall not interfere with regular activities of Thayn's ranching and hunting, and further provided, CFC shall coordinate such activities with Thayn to minimize disruption to Thayn's ranching and hunting activities; and (e) exclusively subside the surface of the Thayn Lands. Except as provided in Sections 3 and 5, CFC shall have no obligation to pay to Thayn any compensation for use of the Thayn Lands.

3. Compensation for Surface Facilities.

(a) In the event CFC is required to place temporary or semi-permanent structures on the Thayn Lands (such as methane venting, exhausting equipment, methane drainage pump stations, pipelines and utilities) in connection with exercising its rights hereunder, CFC shall reasonably compensate Thayn for the use of the Thayn Lands for such structures at rates comparable to other operations in the area. (By way of example, coalbed methane venting and degasification wells are currently compensated at rates in the range of $2,000 to $3,500 per year until the well is plugged and reclaimed.) The parties shall use their best good faith efforts to negotiate compensation for any permanent structure placed on the Thayn Lands.

(b) CFC shall pay Thayn $2,000 for each exploration drill hole placed on the Thayn Lands. Thayn acknowledges that $2,000 represents fair and reasonable compensation for each such drill hole, provided, however, if any such exploration drill hole is subsequently used for coalbed methane venting, Thayn shall be entitled to additional compensation in accordance with the provisions of Section 3(a).

4. Care of Thayn Lands.

(a) CFC shall use and maintain the Thayn Lands in a careful, safe, and lawful manner and shall conduct its operations in compliance with all applicable federal, state and local laws, rules and regulations. CFC shall only use the Thayn Lands for the purposes set forth herein and shall not permit the use or occupancy of the Thayn Lands by any person other than CFC, its employees, agents and contractors.

(b) CFC shall provide Thayn with written notice prior to undertaking any activities on the Thayn Lands. Thayn's concurrence shall be obtained regarding the location of any proposed material surface disturbance, including but not limited to drilling exploration boreholes. Thayn's permission shall not be unreasonably withheld.

(c) CFC shall give special siting consideration to potential borehole locations near springs and seeps on the Thayn Lands.

(d) CFC shall repair or replace any improvements upon the Thayn Lands damaged by CFC's operations. CFC shall reclaim all surface areas disturbed as a result of CFC's operations and shall implement a noxious weed control program for all such disturbed areas for a period of not less than four years from the date of reclamation reseeding.

(e) All drilling or other similar activities and all CFC-related facilities, such as "mud pits,"that could result in injury or death to livestock shall be fenced or otherwise isolated to protect livestock. CFC shall repair or reclaim to the extent techonogically and economically feasible subsidence damage to the Thayn Lands that could be harmful to livestock.

(f) CFC shall maintain insurance coverage for its activities conducted on the Thayn Lands consistent with coverages customary for the coal industry and in compliance with all applicable regulatory requirements and shall provide Thayn with a copy of all insurance certificates naming Thayn as an additional insured against CFC's operations conducted pursuant to this Agreement.

(g) As required by and in conformance with applicable law, CFC shall replace any water supply owned and beneficially used by Thayn for

domestic, agricultural, or other legitimate use from an underground or surface source where the water supply has been adversely impacted by contamination, diminution, or interruption proximately resulting from CFC's mining operations.

5. Term.

(a) This Agreement shall be for a term of years beginning on the Effective Date and continuing for a period for the life of the Mines plus two (2) years, but in no event longer than twenty (20) years. For purposes of this Agreement, the life of the Mines shall end upon permanent closure of the Mines and cessation of all operations for the production and sale of coal from the Mines.

(b) CFC shall have no obligation to make any rental or other payment to maintain this Agreement in full force and effect. The parties acknowledge and agree that the Lease Agreement shall constitute full and fair consideration for this Agreement. In the event the Lease Agreement terminates or expires as provided therein prior to a date twenty (20) years from the Effective Date, CFC shall pay to Thayn the sum of $5,000 annually on the anniversary date for the remaining term of this Agreement in lieu of the rights granted under the Lease Agreement ("Rental Payment").

(c) The monetary payment terms set forth in Sections 3 and 5(b) of this Agreement ("Payment Terms") shall be adjusted for inflation on the seventh (7^{th}) and fourteenth (14^{th}) annual anniversaries after the Effective Date based on the cumulative changes in the Consumer Price Index (CPI), or other generally-recognized economic pricing index, for the preceding seven-year period. The proposed adjustments shall be calculated by CFC and communicated to Thayn in writing within thirty (30) days after the seventh and fourteenth anniversaries. All adjustments to Payment Terms shall be effective as of the seventh and fourteenth anniversary dates and shall otherwise apply prospectively and shall not apply to payments previously made under this Agreement. All other claims for adjustment of non-monetary terms of this Agreement, including allegations of non-compliance with any express term, shall be subject to the provisions of Section 7.

(d) Nothing in this Section 5 shall, nor shall it be interpreted to, amend, modify or waive any term or provision of Section 2 that grants rights to CFC to the Thayn Lands. Thayn shall have no right to claim a default of or to terminate this Agreement based on the Payment Terms readjustment provisions of this Section 5.

6. Title. Thayn warrants generally the title to the surface of the Thayn Lands and represents that Thayn has all necessary right and authority to grant to CFC the property rights and privileges conveyed hereunder.

7. Breach of Obligations. If either party believes that the other party has not complied with any express term, obligation or covenant of this Agreement, then in such event such party shall notify the other party in writing setting out specifically the details regarding the alleged breach or default. The party in default shall have thirty (30) days after receipt of the notice within which to cure or commence to cure all or any part of the breach or default alleged by the other party. If the defaulting party fails to cure or commence to cure the alleged default or breach as required, then the non-defaulting party shall have the option, but not the obligation, to submit the matter to binding arbitration as provided in this Agreement.

8. Arbitration. Disputes arising under this Agreement between the parties based upon any alleged breach of any of the obligations hereunder, which the parties are unable to resolve, shall be finally settled in accordance with the provisions of the Utah Arbitration Act by a single arbitrator. The arbitrator shall have broad power to grant relief for any dispute submitted pursuant to this Section 8, including without limitation termination of this Agreement. The arbitration proceedings shall be conducted in Price, Utah. CFC shall be responsible for all costs incurred in arbitration, including all fees and expenses of the arbitrator. Either party may enforce any arbitration award by instituting an action in the appropriate state or federal district court.

9. Indemnification. CFC shall indemnify, defend and hold harmless Thayn from and against all claims, costs, losses and expenses of any and every kind or character (including without limitation, mechanic liens and additional taxes) that are caused by or arise out of CFC's operations conducted on the Thayn Lands pursuant to this Agreement, provided that Thayn shall not be indemnified for matters expressly covered by this

Agreement, including without limitation the grant to CFC to subside the surface as a result of its underground mining operations.

10. Assignment. CFC's rights under this Agreement may not be assigned or sublet without the prior written consent of Thayn, which consent shall not be unreasonably withheld, provided that CFC may assign or sublease its interest hereunder without consent if such assignment or sublease is to an affiliate, parent or subsidiary of CFC, or to a party which acquires all or substantially all of the assets of CFC or the Mines.

11. Notices. All notices shall be in writing and addressed as follows:

If to Canyon Fuel Company:

President
Ark Land Company
CityPlace One
Suite 300
St. Louis, MO 63141-7056
(314) 994-2700

With a copy to:

Canyon Fuel Company, L.L.C.
Soldier Canyon Mine
P.O. Box 1029
Wellington, UT 84542
Attn: David G. Spillman
(435) 636-2872

If to Thayn:

Milton and Ardith Thayn Trust
7730 East Hwy 6
Price, UT 84501
Attn: David Thayn
(435) 472-4251

Notices are sufficient if delivered by hand, sent by facsimile transmission or deposited in the United States mail, postage prepaid and addressed to the appropriate addresses.

12. CFC Permits. Thayn expressly agrees to not oppose CFC's application for or issuance of the Mine Permits or for such other permits or approvals necessary or required to conduct coal mining operations at the Mines that may relate to or involve the Thayn Lands. In the event that CFC's Mine Permits are materially revised to require access or use of the Thayn Lands not granted by this Agreement, the parties shall use their respective best good faith efforts to negotiate such required access or use.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the Effective Date.

CANYON FUEL COMPANY L.L.C.

By James E Hoyt

Its VP & Treasurer

Milton and Ardith Thayn Trust

By Milton Thayn

Its Trustee

Missouri
STATE OF ~~UTAH~~)
City)ss:
~~COUNTY~~ OF St Louis)

The foregoing instrument was acknowledged before me this 2nd day of November, by James E Hoyt who being by me duly sworn did say that he is the VP + Treasurer of Canyon Fuel Company, L.L.C.,

and that the foregoing Surface Use Agreement was signed on behalf of said limited liability company.

NOTARY PUBLIC

Mary C. Hamilton

Residing at: City of St. Louis

My Commission Expires:
9-14-2003

MARY C HAMILTON
Notary Public - Notary Seal
STATE OF MISSOURI
ST. LOUIS CITY
MY COMMISSION EXP. SEPT 14,2003

STATE OF UTAH)
)ss:
COUNTY OF CARBON)

DIONNE M. OMAN
NOTARY PUBLIC • STATE of UTAH
53 E. SMITH CIRCLE
PRICE UTAH 84501
COMM. EXP. 12-15-2002

The foregoing instrument was acknowledged before me this 15 day of November, by Milton Thayn, the signer of the foregoing Surface Use Agreement, who duly acknowledged to me that he executed the same as Trustee of and for the benefit of the Milton and Ardith Thayn Trust.

NOTARY PUBLIC

Dionne M Oman

Residing at: Price, UT

My Commission Expires:
12-15-2002

EXHIBIT "A"
to
Surface Use Agreement

Thavn Lands

T13S. R12 E. Salt Lake Meridian. Utah
Sec. 12: E/2 SE/4;
Sec. 13: E/2; SE/4 NW/4; E2 SW/4; NW/4 SW/4;
Sec. 24: All;
Sec. 25: NW/4.

T13S. R13 E. Salt Lake Meridian. Utah
Sec. 7: S/2SW/4, NW/4SW/4;
Sec. 18: S/2, NW/4, S/2NE/4, NW/4NE/4;
Sec. 17: SW/4, S/2SE/4, NW/4SE/4;
Sec. 19: All Except Lot 4;
Sec. 20: All;
Sec. 21: S/2, S/2N/2, NW/4NW/4;
Sec. 22: SW/4, S/2NW/4;
Sec. 27: W/2;
Sec. 28: All;
Sec. 29: All;
Sec. 30: All Except Lots 1 and 2;
Sec. 33: N/2N/2.

EXHIBIT "B"
to
Surface Use Agreement

CLARK VALLEY LEASE LANDS

(approximately 4,461 acres):

Township	Range	Section	Description
14 South	12 East	3	S½SE¼; S½SW¼
"	"	5	S½SE¼
"	"	8	NE¼NE¼;W½NE¼;SW¼;E½NW¼
"	"	9	SE¼
"	"	10	E½;SW¼;E½NW¼;SW¼NW¼
"	"	11	SE¼;NE¼;E½SE¼;SW¼SE¼;W½
"	"	13	W½;SW¼;S½NW¼;NE¼SW¼
"	"	14	All
"	"	15	E½;SW¼;E½NW¼
"	"	17	NW¼;SE¼;E½SW¼;NW¼SW¼
"	"	18	E½NE¼
"	"	20	N½NE¼
"	"	21	NE¼NW¼;W½NW¼;SE¼NE¼
"	"	22	NW¼

CLARK VALLEY WATER RIGHTS

Water Right No. (Irrigation & Stockwatering)
91-23
91-85
91-86
91-409

Water Right No. (Stockwatering)	
91-410	91-447
91-411	91-448
91-412	91-449
91-413	91-450

Exhibit B
to Surface Use Agreement

Water Right No. (Irrigation & Stockwatering)	Water Right No. (Stockwatering)	
91-457	91-414	91-451
91-491	91-415	91-452
91-492	91-416	91-453
91-493	91-417	91-456
91-494	91-418	91-458
91-495	91-419	91-459
91-604	91-420	91-460
91-605	91-421	91-461
91-606	91-422	91-465
91-607	91-426	91-466
	91-427	91-467
	91-428	91-468
	91-429	91-469
	91-430	91-470
	91-443	91-591
	91-444	91-3729
	91-445	91-3730
	91-446	

GRAZING RIGHTS

BLM Grazing Allotment #4079 (North Clark Valley) Approx. (Acreage 9,480)
Period of Use - March 20th-June 5th

State Grazing Permit #21722 (Approx. Acreage 680)

WATER SHARES

50 Shares of water stock in The Wellington Canal Company from Certificate No. 881

EXHIBIT "C"
to
Surface Use Agreement

LEASE AGREEMENT

THIS LEASE AGREEMENT (this "Lease") is made and entered into as of November ___, 1999 ("Effective Date"), by and between **CANYON FUEL COMPANY, L.L.C.** ("Lessor"), and **MILTON AND ARDITH THAYN TRUST** ("Lessee").

Recitals

A. Lessor is the owner of certain lands and water and grazing rights located in Carbon County, Utah, and more particularly described in **Exhibit "A"** attached hereto: (1) lands located in Clark Valley ("Clark Valley Lease Lands"); (2) water rights appurtenant to the Clark Valley Lease Lands ("Clark Valley Water Rights"); (3) state and federal grazing rights related to the Clark Valley Lease Lands ("Grazing Rights"); and (4) water rights represented by 50 shares of water stock in the Wellington Canal Company ("Water Shares"). The Clark Valley Lease Lands, the Clark Valley Water Rights, the Grazing Rights and the Water Shares are collectively referred to as the "Lease Interests."

B. The parties have entered into that certain Surface Use Agreement dated _____ ("Surface Use Agreement") whereby Lessee grants to Lessor rights to use the surface of Lessee's lands to facilitate Lessor's coal mining operations in exchange for this Lease, Lessee desires to lease from Lessor and Lessor and other consideration.

Agreement

NOW, THEREFORE, in consideration of the mutual promises and obligations herein contained, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Lessor hereby leases to Lessee the Lease Interests subject to and conditioned upon the following agreement between the parties:

ARTICLE I
AGREEMENT FOR WATER RIGHTS

1.1 Lessor's Right to Use Clark Valley Water Rights and Water Shares. Lessee shall have the right to use part or all of the Clark Valley Water Rights and the water represented by the Water Shares (collectively, the "Leased Water Rights") for the sole purposes of irrigation or stock watering on or for the benefit of the Clark Valley Lease Lands, or such additional uses

expressly allocated to the Leased Water Rights, upon the condition that Lessee notifies Lessor of its intention to use the Leased Water Rights at least one (1) month prior to the date of use by Lessee. Notwithstanding Lessee's exercise of its right granted hereunder, Lessee shall make beneficial use of the Leased Water Rights during the term of this Lease and shall take all necessary and reasonable actions so as to preserve the validity of the Leased Water Rights and prevent any reversion back to the State of Utah. Lessee's promise to make beneficial use of the Leased Water Rights provides an essential portion of the consideration given by Lessee to cause Lessor to enter into this Lease.

1.2 Interest in Clark Valley Water Rights. Lessor and Lessee expressly acknowledge that the interest of Lessee in the Leased Water Rights is that of a tenant, that Lessee shall acquire no ownership interest in the Leased Water Rights, and that Lessee shall have no right, title, or interest in the Leased Water Rights from and after the termination of this Lease. Lessee shall not in any way, intentionally or otherwise, directly or indirectly, take or encourage others to take any action which is inconsistent with or which will or may jeopardize the interests of Lessor in the Leased Water Rights.

1.3 Change of Diversion or Use. Without the prior written consent of Lessor, Lessee shall not file any change application or exchange application with the Utah State Engineer for purposes of changing the nature, point of diversion or use of the Leased Water Rights.

1.4 Voting Rights. Lessee shall have no right to vote the Water Shares and nothing contained in this Lease shall, nor shall it be interpreted to, grant to Lessee any rights to participate in meeting of the Wellington Canal Company or to act for or on behalf of Lessor as the record title owner of the Shares.

ARTICLE II
AGREEMENT FOR GRAZING RIGHTS

2.1 Conditions. Lessor shall have the right to use the Grazing Rights shall be subject to the following conditions:

(a) Lessee shall comply with all applicable statutes and regulations and the terms and conditions of the Grazing Rights and shall perform all other duties or tasks necessary to preserve the Grazing Rights in good standing and prevent any cancellation or other loss of the Grazing Rights. Lessee shall preserve and protect the interest of the Lessor therein and shall not take any action which is inconsistent with or will jeopardize the interest of Lessor in the Grazing Rights. Lessee shall promptly provide Lessor with a copy of any notice of violation, cancellation, inquiry or rental requirement received by Lessee relating to the Grazing Rights and shall undertake all necessary and reasonable actions to

remedy, cure or otherwise remove the basis for the notice. Lessee shall fully cooperate with Lessor to perform such actions as are necessary and advisable to preserve in full force and effect the Grazing Rights.

(b) Lessor shall remain responsible for and shall pay directly to the BLM and/or State, as appropriate, all fees, rents, costs, or other charges required by statute, regulation, or agreement to keep the Grazing Rights in good standing.

(c) Lessee hereby expressly waives any right or claim that it may have pursuant to 43 C.F.R. Part 4100 as now enacted or as hereinafter amended to receive compensation for any interests lessee may have in authorized range improvements on the Grazing Rights; and Lessee expressly acknowledges that the mutual promises and obligations of Lessor as specified in this Lease shall be deemed to be adequate compensation for any interests that Lessee may have in authorized range improvements on the Grazing Rights.

(d) The general terms and conditions of this Lease shall apply to Lessee's right to use the Grazing Rights and the lands governed thereby as though included within the Clark Valley Lease Lands. Any breach or failure by Lessee to satisfy the covenants or conditions relative to the Grazing Rights shall constitute a breach of this Lease.

2.2 Lessee's Cattle. At all times during the term of this Lease, Lessee shall own a minimum of forty percent (40%) of the cattle actively grazing on or using the Clark Valley Lease Lands. Lessee shall not permit grazing of third party livestock on the Clark Valley Lease Lands that would result in a breach of this provision.

ARTICLE III
GENERAL TERMS AND CONDITIONS

3.1 Term. The term of this Lease shall commence upon the Effective Date and continue for a primary term five (5) years or the equivalent of sixty (60) calendar months. Lessee at its option shall have the right to renew this Lease for three (3) additional extended terms of five (5) years each by giving Lessor written notice of Lessee's election to renew 60-days prior to the termination of the then effective term. Unless otherwise terminated, this Lease shall terminate at the end of the last extended term which termination in no event shall occur later than 20 years after the Effective Date.

3.2 Consideration.

(a) Lessee shall have no obligation to pay any rental to maintain this Lease in full force and effect for the term hereof, the consideration for this Lease being represented by the covenants and obligations set forth in the Surface Use Agreement.

(b) In the event that this Lease is terminated or expires prior to a date twenty (20) years from the Effective Date, Lessor shall pay to Lessee as continuing consideration for the Surface Use Agreement the sum of $5,000 annually ("Rental Payment") in lieu of this Agreement, payable on the anniversary date of the Effective Date each year for twenty (20) years from the Effective Date, or until the Surface Use Agreement terminates as provided therein.

3.3 Use and Occupancy by Lessee. Lessee shall use the Clark Valley Lease Lands, Leased Water Rights the Grazing Rights and the water attributable to the Water Shares exclusively for the grazing of cattle and for the raising of forage for the feeding of livestock. Lessee shall not authorize or conduct mining, drilling operations or hunting on the Clark Valley Lease Lands or remove sand, gravel, dirt, minerals, water, or associated substances from the Clark Valley Lease Lands; shall not commit any waste upon the Clark Valley Lease Lands; and shall not conduct or allow any business, activity, or thing on the Clark Valley Lease Lands which is or becomes unlawful, prohibited, or a nuisance, or which may cause damage to lessor, to occupants of the vicinity, or to other third parties. Lessee shall comply with and abide by all laws, ordinances, and regulations of all municipal, county, state and Federal authorities which are now in force or which may hereinafter become effective with respect to the use and occupancy of the Clark Valley Lease Lands, the Leased Water Rights and the Grazing Rights. Lessee shall conduct operations of the Clark Valley Lease Lands in accordance with good grazing and range or husbandry practices with reference to practices of others in the geographic vicinity of the Clark Valley Lease Lands and in compliance with applicable law. Lessee shall not overgraze the Clark Valley Lease Lands. Lessee shall ensure that all main entrance gates are kept locked with locks provided by Lessor.

3.4 Use by Lessor. Use of the Clark Valley Lease Lands by Lessee shall be nonexclusive. Lessor shall be entitled, without compensation to Lessee, to use the Clark Valley Lease Lands or grant other parties the right to use the Clark Valley Lease Lands, including but not limited to rights for easements, licenses, and leases, but Lessor shall not grant rights for grazing or agricultural use of the Clark Valley Lease Lands to third parties or make use of the Clark Valley Lease Lands itself for such purposes. However, Lessor shall reimburse Lessee for any damages done to Lessee's crops as a result of the use of the Clark Valley Lease Lands by Lessor.

3.5 Improvements. Lessee shall not construct any permanent building on the Clark Valley Lease Lands and shall not construct any temporary building or advertising sign on the Clark Valley Lease Lands without the prior written consent of Lessor. Lessee shall provide

and/or pay for the labor, material, and equipment for any fences, gates, cattle guards, ditches, ponds, reservoirs, or other improvements for Lessee to make use of the Clark Valley Lease Lands, the Grazing Rights, or to make beneficial use of the Leased Water Rights. Unless otherwise agreed in writing, any improvements which Lessee shall make to the Clark Valley Lease Lands shall be made at no expense to Lessor and shall not be removed and shall remain on the Clark Valley Lease Lands upon the termination of this Lease unless otherwise directed by Lessor. Lessee may use whatever fences, gates, cattle guards, ditches, ponds, reservoirs, and other improvements which now exist on the Clark Valley Lease Lands.

3.6 Representation of Lessee. Lessee represents as follows:

(a) Lessee is experienced in farming methods, farm equipment, and irrigation methods generally used in Carbon County Lessee shall cultivate grazing pastures and make beneficial use of the Clark Valley Water Rights and otherwise exercise Lessee's rights and privileges under this Lease.

(b) Lessee has sufficient farming and construction equipment available for its use and shall continue to have such equipment available for its use during the term of this Lease for the construction and maintenance of ditches, roads, ponds, fences, and the performance of other tasks which may be needed to satisfy Lessee's obligations under this Lease.

(c) Lessee has knowledge of the requirements necessary to preserve the Leased Water Rights in good standing and prevent any loss of nonuse or other reversion back to the State of Utah.

3.7 Right of Entry. At any time throughout the term of the Lease, Lessor shall have the right to enter upon the Clark Valley Lease Lands or any portion thereof for purposes of inspecting the same, determining whether Lessee is performing its obligations under the Lease, including but not limited to the obligation to make beneficial use of the Leased Water Rights, taking any action necessary or desirable to remedy any default by lessee in any of Lessee's obligations hereunder, showing or exhibiting the Clark Valley Lease Lands to existing or prospective mortgage lenders, purchasers, or lessees, placing "for sale" or "for lease" signs on the Clark Valley Lease Lands, performing environmental or analytical studies, or for any other purpose whatsoever.

3.8 Insurance. At all times during the term hereof, Lessee shall secure and maintain public liability insurance providing coverage against damage to persons or property resulting from acts or omissions of Lessor or Lessee respecting the Clark Valley Lease Lands, with limits of liability in such amounts as lessor may determine. All insurance required or permitted hereunder shall be written by reputable, responsible companies licensed in the State of Utah and shall name Lessor as insured. Lessor shall be furnished with copies of the insurance policies then

in force pursuant to this section, together with evidence that the premiums therefor have been paid.

3.9 Taxes. Throughout the term hereof Lessor shall pay all real property taxes, assessments, and special assessments, (all of which are hereinafter collectively referred to as "Taxes"), which are levied against or which apply with respect to the Clark Valley Lease Lands, the Grazing Rights or the Water Rights. Lessee shall pay all taxes, assessments, charges and fees which during the term hereof may be imposed, assessed, or levied by any governmental or public authority against or upon Lessee's use of the Clark Valley Lease Lands or any personal property, equipment, or fixtures kept or installed therein by Lessee.

3.10 Assignment and Subletting.

(a) Lessee shall have the right to assign or sublet a portion of this Lease with the prior written consent of Lessor, which consent shall not be unreasonably withheld, provided, however, that such assignment or sublease shall expressly provide and require that Lessee own and maintain a minimum of forty percent (40%) of the cattle actively grazing on or using the Clark Valley Lease Lands (as required under Section 2.2 of this Agreement) and that such assignment or sublease shall automatically terminate if at any time Lessee breaches the covenant under Section 2.2. In the event of any such assignment or sublease with the consent of the Lessor, Lessee shall remain liable on all of its covenants and obligations hereunder unless the instrument whereby Lessor consents to the assignment or subletting contains a provision in which Lessor specifically releases Lessee from such further liability. Any purported assignment without the written consent of the Lessor shall constitute a default hereunder and shall be void and of no effect.

(b) Lessor shall have the right to assign its interests under this Lease without the consent of Lessee. In the event Lessor assigns such interests, Lessor shall, from and after the Effective Date (irrespective of when the assignment occurs) , be relieved of any and all liability or obligation to Lessee hereunder, and all such liability and obligation shall, as of the time of such assignment or on the Effective Date, whichever is later, automatically pass to Lessor's assignee, whether or not specifically assumed by it.

3.11. Default and Remedies. In the event Lessee breaches or fails to perform any of its obligations hereunder and Lessee does not within sixty (60) days, unless a lesser time is required by applicable law for the Grazing Rights, after the giving of written notice by Lessor cure the default or begin action to cure the default and thereafter diligently prosecute such action to completion if the default cannot be reasonably cured withing sixty (60) days, or as required by applicable law, Lessor shall have the right, at its option, to exercise any of the following rights and remedies:

(a) Lessor may itself perform or cause to be performed the obligation with respect to which Lessee is in default. In the event Lessor does so, its cost of such performance, including reasonable attorneys' fees and all expenses incurred by Lessor, plus interest thereon at the rate of eighteen percent (18%) per annum from the date of expenditure, shall be deemed to be additional rent and shall be immediately paid by Lessee.

(b) Lessor may terminate this Lease, immediately enter the Clark Valley Lease Lands, and take possession of the Clark Valley Lease Lands, the Leased Valley Water Rights and the Grazing Rights with or without process of law, and remove all persons and property from the Clark Valley Lease Lands. No such action by Lessor shall be considered or construed to be a forcible entry. By taking such action, Lessor shall incur no liability to Lessee or to any other persons occupying or using the Clark Valley Lease Lands or using the Leased Water Rights or the Grazing Rights for any damage caused or sustained by reason of such entry and removal of persons and property, and Lessee hereby covenants and agrees to indemnify and save harmless Lessor from all costs, loss, or damage arising from or occasioned by such action. In the event Lessor terminates this Lease pursuant to this Subsection (b), it shall also have the right to recover from lessee all other amounts necessary to compensate Lessor for all damages caused by Lessee's default or which would be likely to result from such default.

(c) Lessor may continue this Lease in effect and enforce all of its rights hereunder. If Lessor does so, it shall have the right to relet or sublet the Clark Valley Lease Lands, the Leased Water Rights, and the Grazing Rights or portions thereof, and any such reletting or subletting may be for a term which extends beyond the term of this Lease. Notwithstanding any election by Lessor to proceed under Subsections (a) or (b) above, so long as Lessee remains in default under this Lease, Lessor shall have the right at any time to terminate this Lease pursuant to Subsection (b) above and to exercise the rights therin provided. The remedies specified in this Section 3.11 are cumulative and are not intended to exclude any other remedy or means of redress to which Lessor may be entited in the even of any defalut or threatened default by Lessee with respect to any of its obligations under this Lease.

3.12 Indemnification and Waiver. Lessee shall indemnify and shall hold harmless Lessor and all of Lessor's directors, partners, members, officers, agents, and employees, and each of them, from and against any and all obligations, debts, loss, damage, claims, demands, suits, controversies, costs, fees, liens, encumbrances, and liabilities whatsoever, including attorneys' fees, in any way resulting from or arising out of any failure by Lessee to abide by all of the terms of this Lease or any negligent or intentional act or omission by Lessee or any of its agents, employees, invitees, licensees, or contractors arising out of or in connection and occupancy of the

Clark Valley Lease Lands or use of the Leased Water Rights, or the Grazing Rights. Lessor shall not be responsible or liable for any loss or damage to Lessee or to Lessee's property or business that may be occasioned by or through the acts or omissions of persons occupying, using, or trespassing upon the Clark Valley Lease Lands. Lessee shall use the Clark Valley Lease Lands, the Leased Water Rights and the Grazing Rights at its own risk, and hereby releases Lessor, to the full extent permitted by law, from all claims of every kind or nature, including claims for loss of life, personal or bodily injury, or property damage.

3.13 Enforcement. If any action is brought to recover any rent under this Lease, or because of any breach of or to enforce or interpret any of the provisions of this Lease, or for recovery of possession of the Clark Valley Lease Lands, the party prevailing in such action shall be entitled to recover from the other party reasonable attorney's fees (including those incurred in connection with any appeal), the amount of which shall be fixed by the court and made a part of any judgment rendered.

3.14 Notices. Any notice required or permitted hereunder to be given or transmitted between the parties shall be either personally delivered or mailed, postage prepaid by certified or registered mail, addressed as follows:

TO LESSOR:
President
Ark Land Company
CityPlace One
Suite 300
St. Louis, MO 63141-7056

With a copy to:
Canyon Fuel Company, L.L.C.
Soldier Canyon Mine
P. O. Box 1029
Wellington, UT 84542
Attn: David G. Spillman
(435) 636-2872

TO LESSEE:
Milton and Ardith Thayn Trust
7730 East Highway 6
Price, Utah 84501
Attn: David Thayn
(435) 472-4751

Any notice which is mailed shall be effective on receipt as evidenced by the registration certificate. Either party may, by notice to the other given as prescribed in this Section 3.14, change the above address for any future notices which are mailed under this Lease.

3.15 Liens and Encumbrances. Lessor shall keep the Clark Valley Lease Lands, Leased Water Rights, and Grazing Rights, free of all liens and encumbrances of every nature and kind arising after the Effective Date and shall proceed with all diligence to contest or discharge any lien or encumbrance that is filed or claimed.

3.16 Miscellaneous.

(a) Neither this instrument nor any memorandum or notice concerning the same shall be recorded without the prior written consent of Lessor. Lessor may, at its option and at any time, file this Lease or a notice or short form concerning the same (which said notice or short form Lessee hereby agrees to execute upon Lessor's request) for record in Carbon County, Utah.

(b) The captions which precede the sections of this Lease are for convenience only and shall in no way affect the manner in which any provision hereof is construed.

(c) There are no representations or agreements between the parties except as set forth in this Lease, and this Lease supersedes any and all prior negotiations, agreements, or understandings between Lessor and Lessee in any way related to the subject matter hereof. None of the provisions of this Lease may be altered or modified except through an instrument in writing signed by both parties.

(d) The liability of each person executing and delivering this Lease shall be joint and several. Each provision of this Lease to be performed by Lessee shall be construed to be both a covenant and a condition. To the extent permitted by the provisions hereof, all reservations, terms, conditions, and covenants herein contained shall be binding upon and shall inure to the benefit of the respective heirs, personal representatives, successors, and assigns of the parties hereto.

(e) Time is of the essence to the provisions of this Lease. Any waiver, either express or implied, by Lessor or any breach by Lessee of any promise, condition or term hereof shall not be construed or claimed to be a waiver of any other breach of any condition, promise, or term of this Lease.

(f) Nothing in this Lease shall, nor shall it be interpreted to, amend, modify or waive any provision of the Surface Use Agreement. Except for the express provision to make the Rental Payments under Section 3.2(b), any default under or termination of this Lease shall not affect in any manner the terms, conditions or validity of the Surface Use Agreement, it being the intent and understanding of the parties that the Surface Use Agreement and this Lease shall constitute separate and independent legal agreements, enforceable in accordance with their respective terms.

IN WITNESS WHEREOF the parties hereto have executed this Lease as of the Effective Date.

LESSOR:

CANYON FUEL COMPANY, L.L.C.

By_____
Its_____

LESSEE:

MILTON AND ARDITH THAYN TRUST

By _____
Its Trustee

STATE OF UTAH)
)ss:
COUNTY OF _____)

The foregoing instrument was acknowledged before me this___ day of _____, by _____, who being by me duly sworn did say that he is the _____ of Canyon Fuel Company, L.L.C., and that the foregoing Lease was signed on behalf of said limited liability company.

NOTARY PUBLIC

_____
Residing at:_____

My Commission Expires:
_____

STATE OF UTAH)
)ss:
COUNTY OF CARBON)

The foregoing instrument was acknowledged before me this ___ day of _____, by

_____, the signer of the foregoing Lease, who duly acknowledged to me that he executed the same as Trustee of and for the benefit of the Milton and Ardith Thayn Trust.

NOTARY PUBLIC

_____

Residing at:_____

My Commission Expires:

_____

EXHIBIT "A"
to
Lease Agreement

CLARK VALLEY LEASE LANDS

(approximately 4,461 acres):

Township	Range	Section	Description
14 South	12 East	3	S½SE¼; S½SW¼
"	"	5	S½SE¼
"	"	8	NE¼NE¼;W½NE¼;SW¼;E½NW¼
"	"	9	SE¼
"	"	10	E½;SW¼;E½NW¼;SW¼NW¼
"	"	11	SE¼;NE¼;E½SE¼;SW¼SE¼;W½
"	"	13	W½;SW¼;S½NW¼;NE¼SW¼
"	"	14	All
"	"	15	E½;SW¼;E½NW¼
"	"	17	NW¼;SE¼;E½SW¼;NW¼SW¼
"	"	18	E½NE¼
"	"	20	N½NE¼
"	"	21	NE¼NW¼;W½NW¼;SE¼NE¼
"	"	22	NW¼

CLARK VALLEY WATER RIGHTS

Water Right No. (Irrigation & Stockwatering)	Water Right No. (Stockwatering)	
91-23	91-410	91-447
91-85	91-411	91-448
91-86	91-412	91-449
91-409	91-413	91-450
91-457	91-414	91-451

Exhibit A
to Lease Agreement

Water Right No. (Irrigation & Stockwatering)
91-491
91-492
91-493
91-494
91-495
91-604
91-605
91-606
91-607

Water Right No. (Stockwatering)	
91-415	91-452
91-416	91-453
91-417	91-456
91-418	91-458
91-419	91-459
91-420	91-460
91-421	91-461
91-422	91-465
91-426	91-466
91-427	91-467
91-428	91-468
91-429	91-469
91-430	91-470
91-443	91-591
91-444	91-3729
91-445	91-3730
91-446	

GRAZING RIGHTS

BLM Grazing Allotment #4079 (North Clark Valley) Approx. (Acreage 9,480)
Period of Use - March 20th-June 5th

State Grazing Permit #22966 (Replacing Permit #21722) (Approx. Acreage 680)

WATER SHARES

50 Shares of water stock in The Wellington Canal Company from Certificate No. 881

Canyon Fuel Company LLC
6955 Union Park Center, Suite 540
Midvale, Utah 84047

RE: Soldier Canyon Mine
Dugout Canyon Mine

Gentlemen:

The Milton and Ardith Thayn Trust ("Trust") is the record title owner of the surface to the lands described below that cover or otherwise relate to coal leases Canyon Fuel Company now or in the future intends to develop ("Lands"):

T13S, R12 E. Salt Lake Meridian, Utah
Sec. 12: E/2 SE/4;
Sec. 13: E/2; SE/4 NW/4; E2 SW/4; NW/4 SW/4;
Sec. 24: All;
Sec. 25: NW/4.

T13S, R13 E, Salt Lake Meridian, Utah
Sec. 7: S/2SW/4, NW/4SW/4;
Sec. 18: S/2, NW/4, S/2NE/4, NW/4NE/4;
Sec. 17: SW/4, S/2SE/4, NW/4SE/4;
Sec. 19: All Except Lot 4;
Sec. 20: All;
Sec. 21: S/2, S/2N/2, NW/4NW/4;
Sec. 22: SW/4, S/2NW/4;
Sec. 27: W/2;
Sec. 28: All;
Sec. 29: All;
Sec. 30: All Except Lots 1 and 2;
Sec. 33: N/2N/2.

Subject to the Surface Use Agreement dated effective November 22, 1999, between the parties, the Trust hereby consents to Canyon Fuel's underground mining activities below the Lands and access to the surface to repair subsidence.

Very truly yours,

Milton and Ardith Thayn Trust

By: Milton Thayn

FIGURE 1

TYPICAL STRAW BALE INSTALLATION

(Number of bales will vary depending upon location)

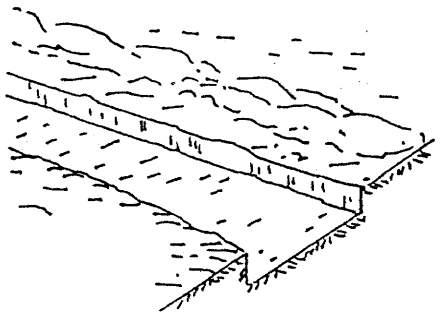


Figure 1
Excavate the trench.

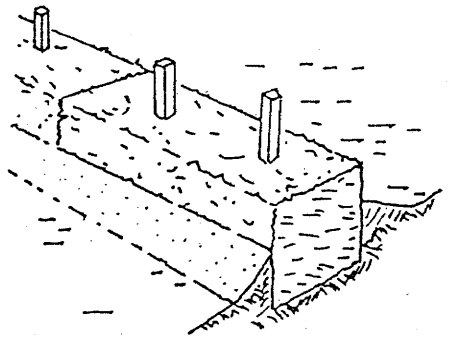


Figure 2
Backfill and compact soil.
(Metal or wooden stakes to be used when needed.)

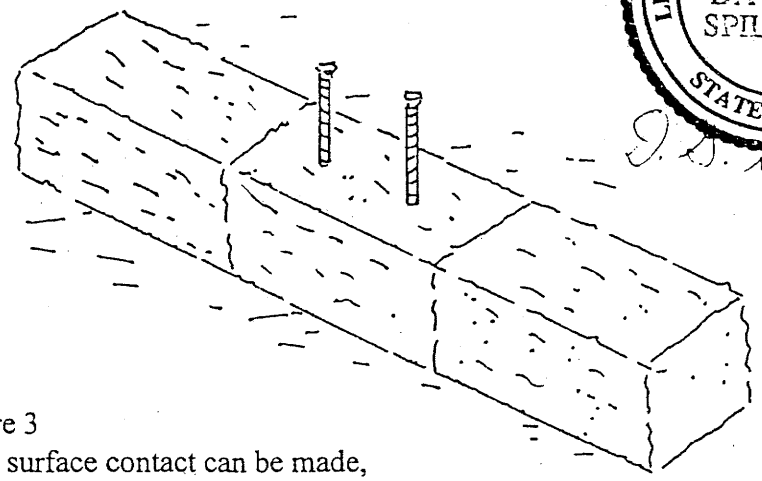


Figure 3
On area where good surface contact can be made, bales can be put directly on the surface making sure ends are butted up tight. Metal or wooden stakes to be used when needed.

FIGURE 2

TYPICAL SILT FENCE INSTALLATION

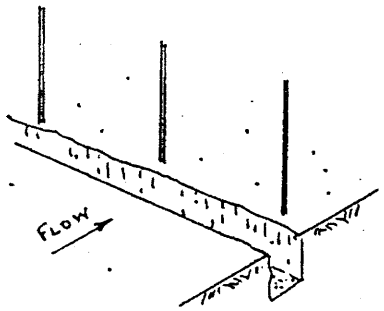


Figure 1
Set posts and excavate trench.

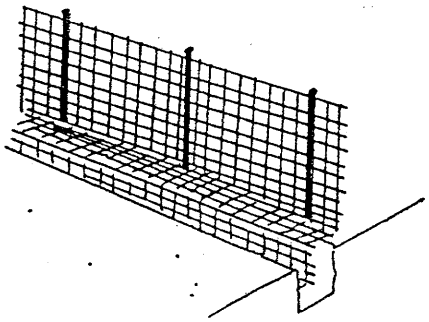


Figure 2
Attach filter fabric to posts with extension into trench as shown.

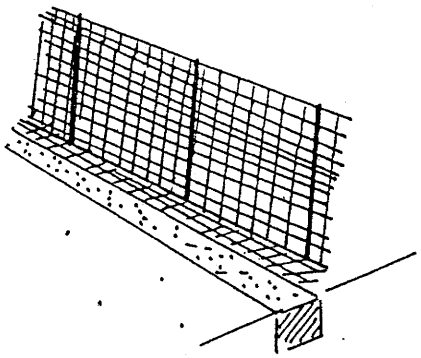


Figure 3
Backfill and compact excavated soil.

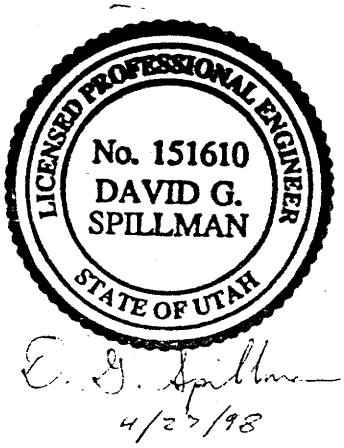
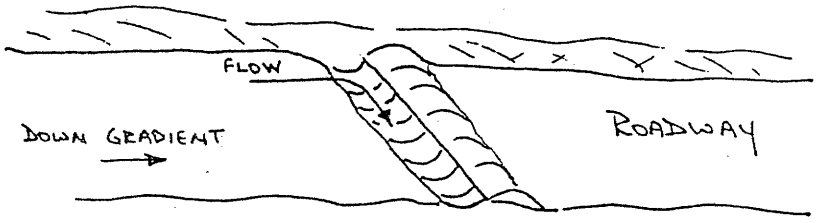
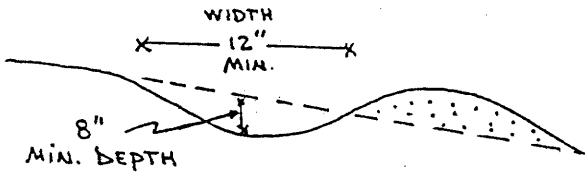


FIGURE 3

TYPICAL WATER-BAR INSTALLATION

(Where necessary)





LICENSED PROFESSIONAL ENGINEER
No. 151610
DAVID G.
SPILLMAN
STATE OF UTAH

D. G. Spillman
4/23/03

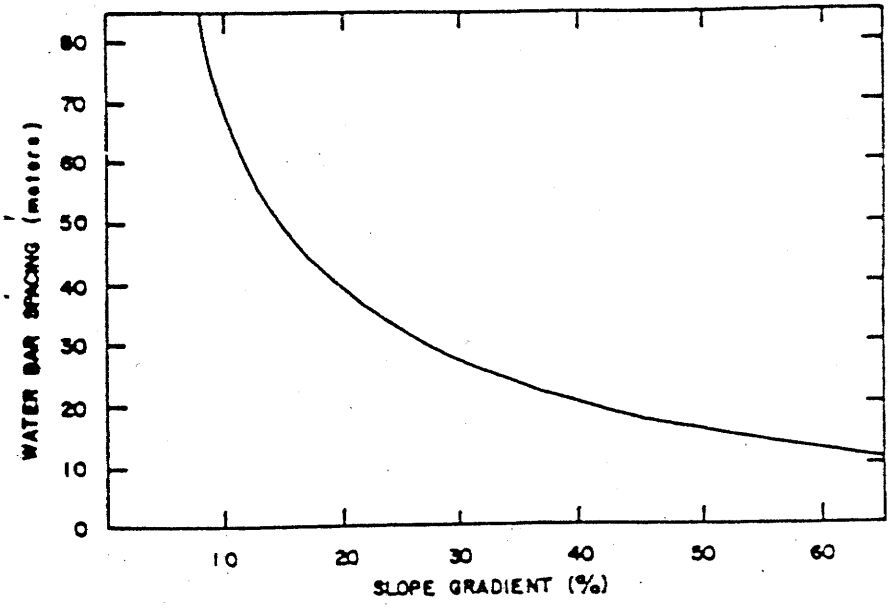
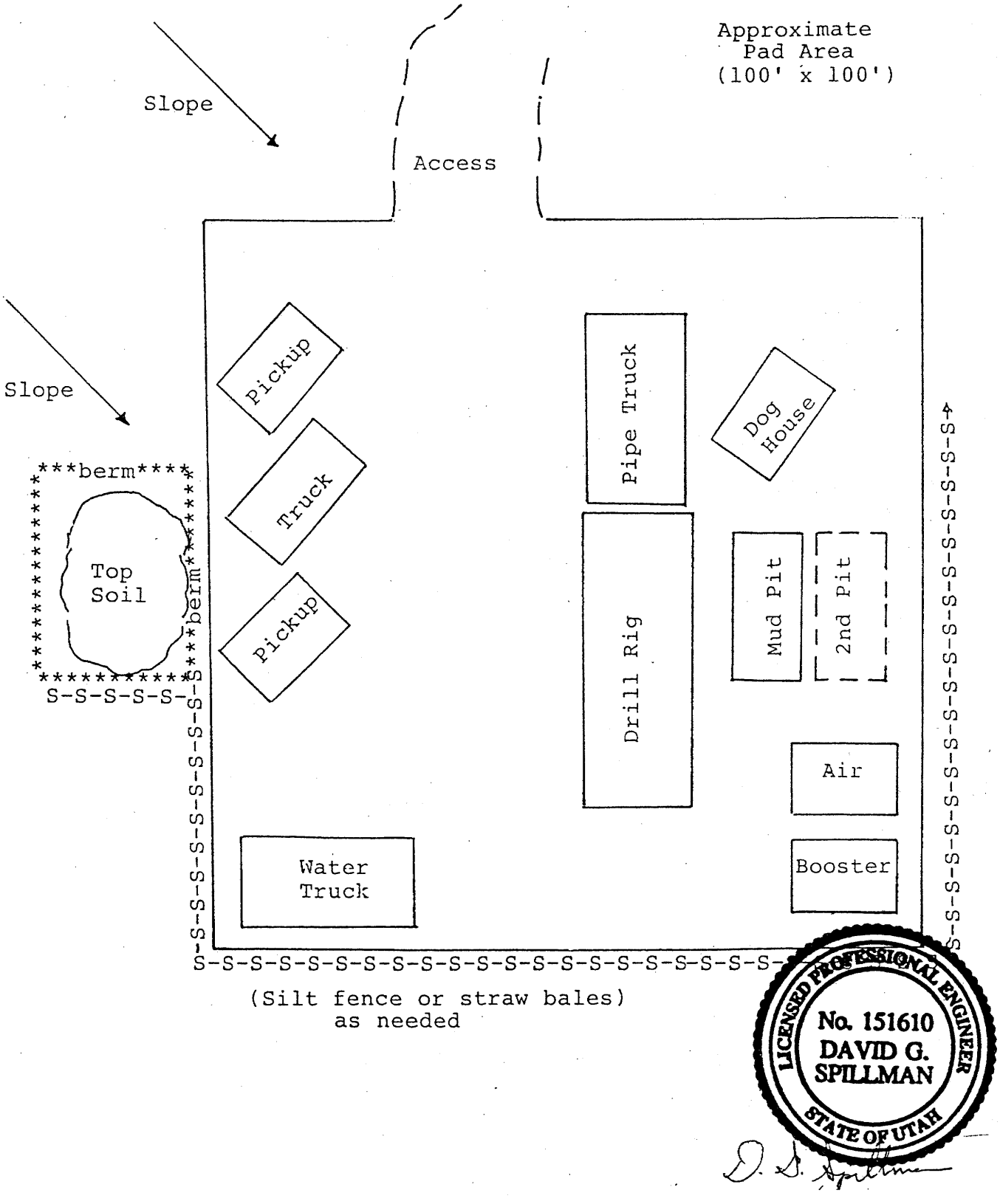


Figure 7.11. Maximum water bar spacing for various slope gradients. (adapted from White and Franks, 1978)

FIGURE 4

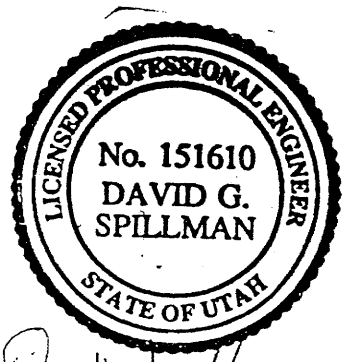
TYPICAL DRILL PAD CONSTRUCTION & LAYOUT



LICENSED PROFESSIONAL ENGINEER
No. 151610
DAVID G.
SPILLMAN
STATE OF UTAH

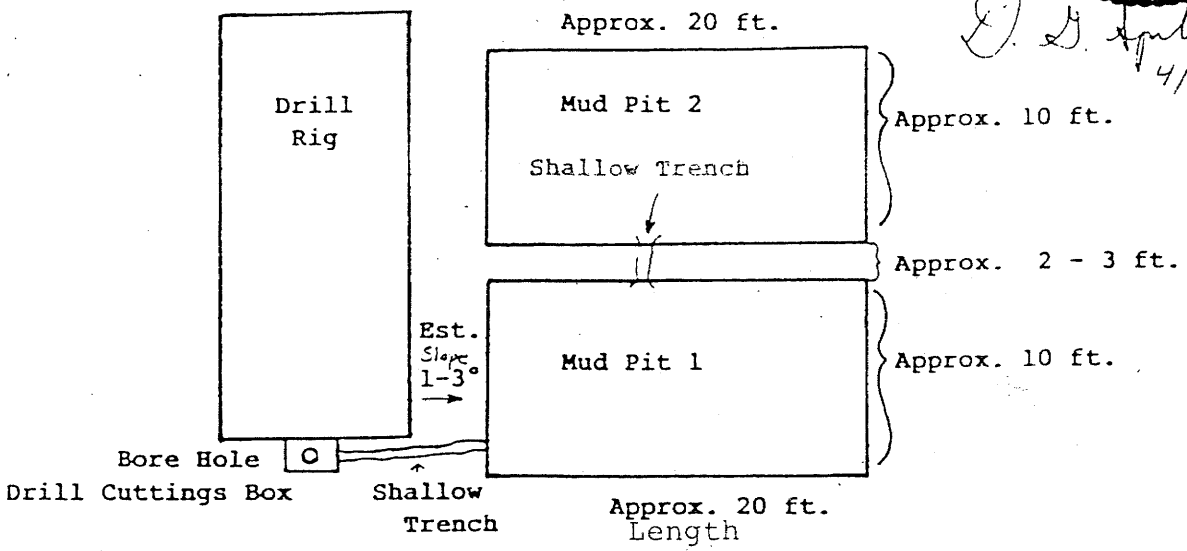
FIGURE 5

TYPICAL MUD PIT CONSTRUCTION



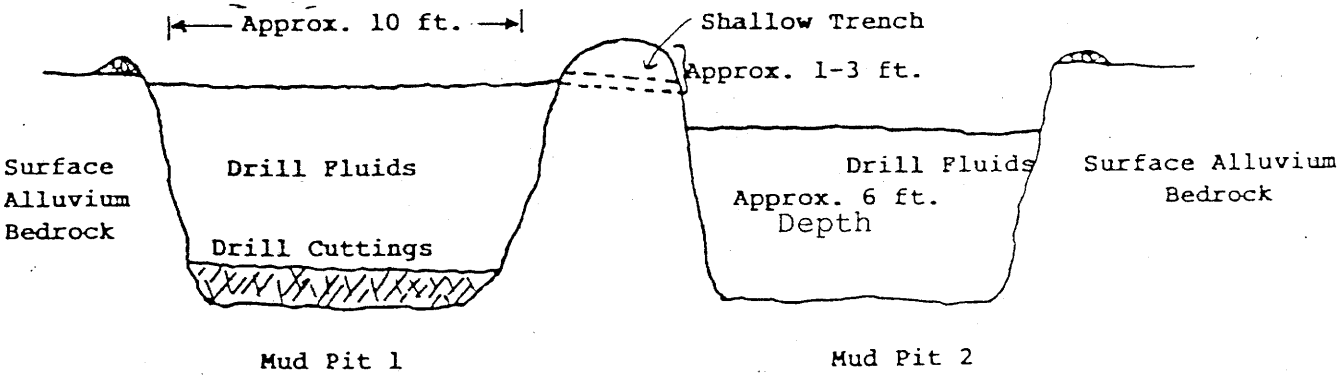
D. G. Spillman
4/27/98

FIG. 1 TYPICAL PLAN VIEW



Drill fluid and cuttings will enter Mud Pit 1 via a shallow trench excavated from the cuttings box to the pit. Approximated volume of each pit is 8900 gallons.

FIG. 1 TYPICAL CROSS SECTION



The drill fluids will enter Mudpit 2 via a shallow trench excavated between the pits

CANYON FUEL COMPANY
2001 COAL EXPLORATION PROGRAM

THREATENED, ENDANGERED, AND SENSITIVE SPECIES INVENTORY REPORT

CONDUCTED
JUNE 21, 2001

BY
EIS ENVIRONMENTAL
AND ENGINEERING
CONSULTING

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Introduction

Canyon Fuel Company has contracted EIS Environmental & Engineering Consulting to conduct inventories for their 2001 Coal Exploration Program. The proposed area is located north of Price, Utah. This area also consists of land administered by the State of Utah, private owners, and the Bureau of Land Management (BLM). Proposed activities include the drilling of up to eight coal exploration drill holes. These proposed drill holes and associated sites are required to be surveyed for a variety of threatened, endangered, and sensitive (TES) plant and animal species. Several TES species have been identified by the BLM through past studies as occurring, or potentially occurring within the Canyon Fuel program area. Using established protocols, qualified Field Biologists of EIS conducted inventories for four Proposed Threatened and Endangered Species, loggerhead shrike (*Lanius ludovicianus*), burrowing owl (*Athene cunicularia*), Creutzfeldt cryptantha (*Cryptantha creutzfeldtii*), canyon sweetvetch (*Hedysarum occedentale var. canone*) at all areas of concern within the project area. The inventory for this Development Program was conducted on June 21, 2001.

Methodology

Loggerhead shrike (*Lanius ludovicianus*)

Inventory work on all well sites and facilities was conducted from sunrise until 11:30 a.m. (period of highest bird activity) on June 21, 2001. Depending on the size of the area, a 15 to 30 minute walkover of each well site was conducted, using binoculars and spotting scopes to note shrike activity, as well as any other species activity. Habitat present on each drill hole site was noted, as was the general topography, weather conditions and general mitigation suggestions. Corridors to and between each drill hole site were inventoried in route to each site. For inventory purposes, a buffer area (approximately 100 yards) around each pad site and along every corridor was surveyed. Along with the report sheet, each drill hole and corridor surveyed were plotted on a map for further review and association with existing maps of potential shrike use and breeding habitat.

When filling out the inventory report sheets (Attachment 2), the criteria used for good, fair, and poor shrike habitat are as follows. Good habitat was considered to be a semi-open area of scattered, mature pinyon-juniper where shrike could nest in close proximity to a sparsely vegetated area in which they could hunt. Fair was considered to be an area of dense pinyon-juniper where food sources were less abundant. Poor was considered to be an area with no nesting habitat.

Burrowing owl (*Athene cunicularia*)

Inventory work on all drill hole sites and associated corridors was also conducted from sunrise until 11:30 a.m. (period of highest bird activity) on June 21, 2001. Areas determined to have a potential for owl use either contained or were within the vicinity of known white-tailed prairie dog (*Cynomys leucurus*) towns. An intensive 15 to 30 minute walkover/scoping of each site was conducted. Field data similar to that described for the shrike inventory was recorded for each site. Each site and associated corridor were plotted on a map for further review with existing data on owl use in the area. When filling out inventory report sheets (Attachment 2), criteria for burrowing owl habitat

suitability is as follows. Good habitat consisted of an open region in which white-tailed prairie dog towns, occupied or not, were present. Poor habitat was considered to be an area where no prairie dog holes or colonies were present.

Creutzfeldt cryptantha (*Cryptantha creutzfeldtii*)

Inventory work for all areas of concern was conducted in conjunction with the shrike and owl inventories between sunrise and 1:00 p.m. Areas suspected to contain potential habitat for Creutzfeldt cryptantha consist of mancos-shale openings in scattered pinyon-juniper woodlands, in association with black sagebrush, shadscale, mormon tea and buckwheat. It grows on surfaces that vary from flat to 35 degree slope with no specific aspect, and ranges in elevation from 5, 250-6,495 feet. The flowering period for the species is late April to June 15th. As with all TES species mentioned, if target species were located, field personnel would flag the location, collect voucher specimens, mark the location on a quad-map, and take a photograph of the species and habitat. Field data similar to that described for loggerhead shrike was also recorded for each site and corridor inventoried.

When filling out inventory report sheets (Attachment 2), the criteria for Creutzfeldt cryptantha habitat suitability was as follows. Good habitat was considered to be an area of opening in scattered pinyon-juniper woodlands where the substrate consisted of the Blue Gate member of Mancos-shale. Fair was considered to be areas consisting of small openings in denser pinyon-juniper woodlands where substrate consisted of Blue Gate member of Mancos-shale. Poor was considered to be area of dense, mature pinyon-juniper woodlands, or where the Blue Gate member of Mancos-shale was not present.

Canyon Sweetvetch (*Hedysarum occedentale var. conone*)

Inventory work for all the drill hole sites and associated corridors was conducted in conjunction with the shrike and owl inventories between sunrise and 1:00 p.m. during the period of June 21, 2001. Areas suspected to contain Canyon Sweetvetch consist of shaded areas in/near ephemeral and perennial streams in sagebrush, pinyon-juniper, mountain brush, and wash communities. Elevation ranges from 5,000-8,000 feet with a flowering period between late June through mid-August. If target species were located, field personnel would flag the location, collect voucher specimens, mark the location on a quad-map, and take a photograph of the species habitat. Field data similar to that described for shrike was also recorded for each site and corridor inventoried.

When completing inventory report sheets (Attachment 2), criteria for Canyon Sweetvetch habitat suitability was as follows. Good habitat was considered to be an area where shaded, ephemeral and/or perennial streams in sagebrush, pinyon-juniper and mountain brush communities were present. Fair habitat was considered to be an area where ephemeral and/or perennial streams were not shaded by pinyon-juniper or sagebrush. Poor was considered to be an area where ephemeral and/or perennial streams were not present.

Results

Loggerhead shrike (*Lanius ludovicianus*)

A thorough search of all the drill hole sites and associated corridors did not reveal the presence of loggerhead shrike. No suitable habitat was found within the proposed area.

Burrowing owl (*Athene cunicularia*)

A thorough search of all the drill hole sites and associated corridors did not reveal the presence of burrowing owl. No suitable habitat was found within the proposed area.

Creutzfeldt Cryptantha (*Cryptantha creutzfeldtii*)

A thorough search of all the drill hole sites and associated corridor areas did not reveal the presence of Creutzfeldt cryptantha. No suitable habitat was found within the proposed area.

Canyon Sweetvetch (*Hedysarum occedentale var. conone*)

A thorough search of all the drill hole sites and associated corridors did not reveal the presence of Canyon sweetvetch. However, suitable habitat was found within the proposed area.

The findings of all the TES inventories for the Canyon Fuel Coal Exploration Program have been summarized in a spread sheet format. They include the geographical area, the drill hole name and the legal location of the site. Also included is the substrate, community type and whether or not the species was present at the site (Attachment 1). Copies of the field data sheets are included in this report (Attachment 2).

ATTACHMENT 1

SUMMARY SPREADSHEET

Canyon Fuel Company 2001 Threatened and Endangered Species Inventory

Key: NI = None Indicated, ** = Good Habitat suitability, * = Poor Habitat Suitability, * = Fair habitat Suitability**

	Date	Geographical Ar	Well Pad/Rd Site	T., R., SLB&M	Habitat/Community	L. ludovician	S.cunicular	H. o. var. cano	C. creutzfeld	Comments/Recommendations
1	06/21/01	Carbon County	C	13S, 12E, 24 NE 1/4	Ponderosa Pine, sagebrush, aster sp., small coniferous bushes, pensiemon	NI (*)	NI (*)	NI (*)	NI (*)	
2	06/21/01	Carbon County	A	13S, 12E, 24 SW 1/4	Ponderosa Pine, sagebrush, aster sp., small coniferous bushes, pensiemon	NII (*)	NI (*)	NI (*)	NI (*)	
3	06/21/01	Carbon County	B	13S, 13E, 19 NW 1/4	Sagebrush flat, astragulas sp., bl.mt. mohagany, pensiemon, agropyron sp.	NI (*)	NI (*)	NI (*)	NI (*)	
4	06/21/01	Carbon County	E	13S, 13E, 18 SE 1/4	Conifer overstory, bl.mt.mohagany, serviceberry, astragulas sp., aster sp.	NI (*)	NI (*)	NI (*)	NI (*)	
5	06/21/01	Carbon County	DT-3	13S, 13E, 20 NW 1/4	Conifer overstory, bl.mt.mohagany, serviceberry, astragulas sp., aster sp.	NI (*)	NI (*)	NI (*)	NI (*)	
6	06/21/01	Carbon County	DT-2	13S, 13E, 20 SW 1/4	Conifer/diciduous riparian area, bl.mt.mohagany, scrub oak, sagebrush	NI (*)	NI (*)	NI (***)	NI (*)	
7	06/21/01	Carbon County	DT-1	13S, 13E, 19 SE 1/4	Conifer/diciduous riparian area, bl.mt.mohagany, houndstounge, sagebrush	NI (*)	NI (*)	NI (***)	NI (*)	
8	06/21/01	Carbon County	J	13S, 13E, 30 NW 1/4	Conifer/diciduous riparian area, bl.mt.mohagany, scrub oak, sagebrush	NI (*)	NI (*)	NI (***)	NI (*)	

ATTACHMENT 2

FIELD DATA SHEETS

EIS ENVIRONMENTAL CONSULTING
DATA FORM

AVIAN SPECIES L SHRIKE / B. OWL

Date 6/21/01 Observer DV / KW

Survey Start Time 1324 Survey End Time 1340

Weather Conditions Clear 83°

Site J USGS Quad _____

Township 13 S Range 13 E Section 30 NW 1/4

Proposed Activity (road/well; size of inventory area) 1 acre well pad.

General Habitat Description (vertical structure, dominant vegetative species, topography)
Conifer / Deciduous Riparian Area, mohagany, scrub oak, sagebrush, serviceberry, houndstounge dock

Habitat Suitability POOR / POOR

POPULATION IDENTIFICATION

Population size NI Male _____ Female _____

Nest (Y/N) _____ Birds I.D. (Song/visual/both) _____

Behavior Exhibited _____

Other Species Identified _____

RECOMMENDATIONS

Mitigation/Habitat Improvement

_____

_____

_____

EIS ENVIRONMENTAL CONSULTING
DATA FORM

FLORA SPECIES C. Cryp | C. Sweet.

Date 6/21/01 Observer DV | KN

Survey Start Time 1124 Survey End Time 1140

Weather Conditions Clear 83°

Site J. USGS Quad

Township 13 S Range 13 E Section 30 NW 1/4

Proposed Activity (road/well; size of inventory area) 1 acre well pad

General Habitat Description (vertical structure, dominant vegetative species, topography)

Conifer | Deciduous Riparian Area mohagany. Scrub oak, Sagebrush, Service berry, houndstounge dock,

Soil Characteristics Sandy loam

POOR | fair

POSITIVE IDENTIFICATION

Number of plants Located 101 Flowers Present (Y/N)

Key Characteristic

Other Species Identified

MANAGEMENT OPPORTUNITIES (Mitigation/Habitat Improvement)

EIS ENVIRONMENTAL CONSULTING
DATA FORM

AVIAN SPECIES L. SHRIKE / B. OWL

Date 6/21/01 Observer DV/KM

Survey Start Time 1142 Survey End Time 1155

Weather Conditions Clear 83°

Site DT-1 USGS Quad _____

Township 13S Range 13E Section 19 SE 1/4

Proposed Activity (road/well; size of inventory area) 1 acre well pad.

General Habitat Description (vertical structure, dominant vegetative species, topography) Conifer / Deciduous Riparian Area, serviceberry, Mohagany, houndstounge, sagebrush, dock.

Habitat Suitability POOR/POOR

POPULATION IDENTIFICATION

Population size N/I Male _____ Female _____

Nest (Y/N) _____ Birds I.D. (Song/visual/both) _____

Behavior Exhibited _____

Other Species Identified _____

RECOMMENDATIONS

Mitigation/Habitat Improvement

_____

_____

_____

EIS ENVIRONMENTAL CONSULTING
DATA FORM

FLORA SPECIES C. cryptantha / C. sweetretch

Date 6/21/01 Observer DU/KN

Survey Start Time 1642 Survey End Time 1655

Weather Conditions Clear 83°

Site DT-1 USGS Quad

Township 13S Range 13E Section 19 SE1/4

Proposed Activity (road/well; size of inventory area) 1 acre well pad.

General Habitat Description (vertical structure, dominant vegetative species, topography)

Conifer / Deciduous Riparian area, Mohagany, sagebrush, serviceberry, houndstounge, dock

Soil Characteristics Sandy loam

poor / fair

POSITIVE IDENTIFICATION

Number of plants Located 101 Flowers Present (Y/N)

Key Characteristic

Other Species Identified

MANAGEMENT OPPORTUNITIES (Mitigation/Habitat Improvement)

EIS ENVIRONMENTAL CONSULTING
DATA FORM

AVIAN SPECIES L. SHRIKE / B. OWL

Date 6/21/01 Observer DU/KN

Survey Start Time 1700 Survey End Time 1715

Weather Conditions Clear 83°

Site DT-2 USGS Quad _____

Township 13 S Range 13 E Section 20 SW 1/4

Proposed Activity (road/well; size of inventory area) 1 acre well pad

General Habitat Description (vertical structure, dominant vegetative species, topography)
Conifer / Diciduous Riparian area. sagebrush, mohagany, houndstounge, aster sp.

Habitat Suitability POOR / POOR

POPULATION IDENTIFICATION

Population size NI Male _____ Female _____

Nest (Y/N) _____ Birds I.D. (Song/visual/both) _____

Behavior Exhibited _____

Other Species Identified _____

RECOMMENDATIONS

Mitigation/Habitat Improvement

_____

_____

_____

EIS ENVIRONMENTAL CONSULTING
DATA FORM

FLORA SPECIES C. Crup | C. Sweet

Date 11/21/01 Observer DV/KN

Survey Start Time 17:00 Survey End Time 1715

Weather Conditions Clear, 83°

Site DT-2 USGS Quad

Township 13S Range 13E Section 20 SW 1/4

Proposed Activity (road/well; size of inventory area) 1 acre well pad

General Habitat Description (vertical structure, dominant vegetative species, topography)

Conifer | Deciduous Riparian Area

Sagebrush, Mohagany, houndstounge, Aster sp.

Soil Characteristics Sandy loam

POOR/FAIR

POSITIVE IDENTIFICATION

Number of plants Located N/ Flowers Present (Y/N)

Key Characteristic

Other Species Identified

MANAGEMENT OPPORTUNITIES (Mitigation/Habitat Improvement)

EIS ENVIRONMENTAL CONSULTING
DATA FORM

AVIAN SPECIES L Shrike / B. owl

Date 6/21/01 Observer DV/KN

Survey Start Time 1720 Survey End Time 1740

Weather Conditions Clear

Site DT-3 USGS Quad _____

Township _____ Range _____ Section _____

Proposed Activity (road/well; size of inventory area) 1 acre well pad

General Habitat Description (vertical structure, dominant vegetative species, topography)
Conifer Overstory, blk mt. mahogany, serviceberry, astragulus sp., aster sp. agropyron sp. sagebrush

Habitat Suitability POOR / POOR

POPULATION IDENTIFICATION

Population size NI Male _____ Female _____

Nest (Y/N) _____ Birds I.D. (Song/visual/both) _____

Behavior Exhibited _____

Other Species Identified _____

RECOMMENDATIONS

Mitigation/Habitat Improvement

_____

_____

_____

EIS ENVIRONMENTAL CONSULTING
DATA FORM

FLORA SPECIES C. Cryp | C. Sweet

Date 6/21/01 Observer DV/KN

Survey Start Time 1720 Survey End Time 1740

Weather Conditions Clear

Site DT-3 USGS Quad

Township Range Section

Proposed Activity (road/well; size of inventory area) 1 acre well pad

General Habitat Description (vertical structure, dominant vegetative species, topography)

Conifer Overstory Dint Mohagany, serviceberry, Astragulus sp. aster sp. Agropyron sp Sagebrush

Soil Characteristics Sandy loam

POOR/POOR

POSITIVE IDENTIFICATION

Number of plants Located N/ Flowers Present (Y/N)

Key Characteristic

Other Species Identified

MANAGEMENT OPPORTUNITIES (Mitigation/Habitat Improvement)

EIS ENVIRONMENTAL CONSULTING
DATA FORM

AVIAN SPECIES L. Shrike / B. owl

Date 6/21/01 Observer DV/KN

Survey Start Time 1745 Survey End Time 1800

Weather Conditions Clear

Site E USGS Quad

Township 13S. Range 13E Section 18 SE 1/4

Proposed Activity (road/well; size of inventory area) 1 acre well pad

General Habitat Description (vertical structure, dominant vegetative species, topography)
Conifer Overstory, mt. mohagany, serviceberry, aster sp., agropyron sp astragulas sp. sagebrush

Habitat Suitability ~~POOR~~ / ~~POOR~~

POPULATION IDENTIFICATION

Population size NI Male Female

Nest (Y/N) Birds I.D. (Song/visual/both)

Behavior Exhibited

Other Species Identified

RECOMMENDATIONS

Mitigation/Habitat Improvement

EIS ENVIRONMENTAL CONSULTING
DATA FORM

FLORA SPECIES C. Cryptantha / C. Sweet Vetch

Date 6/21/01 Observer DV/KM

Survey Start Time 1745 Survey End Time 1800

Weather Conditions Clear 80°

Site E USGS Quad

Township 13 S Range 13 E Section 18 SE 1/4

Proposed Activity (road/well; size of inventory area) 1 Acre well pad

General Habitat Description (vertical structure, dominant vegetative species, topography)
Conifer Overstory
Mt Mohagany. Serviceberry, aster sp.
Agropyron sp. astragulas sp. sagebrush

Soil Characteristics Sandy loam

POOR / POOR

POSITIVE IDENTIFICATION

Number of plants Located N/ Flowers Present (Y/N)

Key Characteristic

Other Species Identified

MANAGEMENT OPPORTUNITIES (Mitigation/Habitat Improvement)

EIS ENVIRONMENTAL CONSULTING
DATA FORM

AVIAN SPECIES Sharp-tailed Grouse

Date 10/21/01 Observer DU/KW

Survey Start Time 1805 Survey End Time 1820

Weather Conditions Clear

Site B USGS Quad _____

Township 13S Range 13E Section 19 NW 1/4

Proposed Activity (road/well; size of inventory area) 1 acre well pad

General Habitat Description (vertical structure, dominant vegetative species, topography)
Sagebrush flat, astragulas sp., mt mohagany penstemon, aster sp. agropyron sp.

Habitat Suitability POOR | POOR

POPULATION IDENTIFICATION

Population size NI Male _____ Female _____

Nest (Y/N) _____ Birds I.D. (Song/visual/both) _____

Behavior Exhibited _____

Other Species Identified _____

RECOMMENDATIONS

Mitigation/Habitat Improvement

EIS ENVIRONMENTAL CONSULTING
DATA FORM

FLORA SPECIES C. cryptantha / C. Sweetwetchi

Date 10/21/01 Observer DV/KW

Survey Start Time 1805 Survey End Time 1820

Weather Conditions

Site B USGS Quad

Township 13S Range 13E Section 19 NW 1/4

Proposed Activity (road/well; size of inventory area) 1 acre well pad

General Habitat Description (vertical structure, dominant vegetative species, topography)

Sagebrush flat, astragulas sp. Mt mohagany, penstemon, aster sp., agropyron sp.

Soil Characteristics Sandy loam

POOR / POOR

POSITIVE IDENTIFICATION

Number of plants Located N/ Flowers Present (Y/N)

Key Characteristic

Other Species Identified

MANAGEMENT OPPORTUNITIES (Mitigation/Habitat Improvement)

EIS ENVIRONMENTAL CONSULTING
DATA FORM

AVIAN SPECIES L. STRIKE / B OWL

Date 6/21/01 Observer DV/KN

Survey Start Time 1822 Survey End Time 1835

Weather Conditions Clear

Site A USGS Quad _____

Township 13 S Range 12 E Section 24 SW 1/4

Proposed Activity (road/well; size of inventory area) 1 acre well pad

General Habitat Description (vertical structure, dominant vegetative species, topography)
Ponderosa Pine, Sagebrush, aster sp. sm. Coniferous bushes, penstemon, astragulas

Habitat Suitability POOR / POOR

POPULATION IDENTIFICATION

Population size NI Male _____ Female _____

Nest (Y/N) _____ Birds I.D. (Song/visual/both) _____

Behavior Exhibited _____

Other Species Identified _____

RECOMMENDATIONS

Mitigation/Habitat Improvement

EIS ENVIRONMENTAL CONSULTING
DATA FORM

FLORA SPECIES C. cryptantha / C. sweetvetch

Date 6/21/01 Observer DV/KN

Survey Start Time 1822 Survey End Time 1835

Weather Conditions Clear

Site A USGS Quad

Township 13S Range 12E Section 24 SW 1/4

Proposed Activity (road/well; size of inventory area) 1 ACRE well pad

General Habitat Description (vertical structure, dominant vegetative species, topography)

Ponderosa Pine, sagebrush, aster sp
Sm. coniferous bushes, penstemon, astragulas,

Soil Characteristics Sandy loam

POOR / POOR

POSITIVE IDENTIFICATION

Number of plants Located N/I Flowers Present (Y/N)

Key Characteristic

Other Species Identified

MANAGEMENT OPPORTUNITIES (Mitigation/Habitat Improvement)

EIS ENVIRONMENTAL CONSULTING
DATA FORM

AVIAN SPECIES L.SHRIKE / B.OWL

Date 6/21/01 Observer DV / KN

Survey Start Time 1836 Survey End Time 1850

Weather Conditions Clear

Site C USGS Quad _____

Township 13 S Range 13 E Section 24 NE ¼

Proposed Activity (road/well; size of inventory area) 1 acre well pad

General Habitat Description (vertical structure, dominant vegetative species, ~~topography~~)
Ponderosa Pine, astragulas sp. aster sp., penstemon sagebrush, bl. mt. mohagany, small coneferous bushes.

Habitat Suitability POOR / POOR

POPULATION IDENTIFICATION

Population size NI Male _____ Female _____

Nest (Y/N) _____ Birds I.D. (Song/visual/both) _____

Behavior Exhibited _____

Other Species Identified _____

RECOMMENDATIONS

Mitigation/Habitat Improvement

_____

_____

_____

EIS ENVIRONMENTAL CONSULTING
DATA FORM

FLORA SPECIES C. cryptantha / C. sweetvetch

Date 6/21/01 Observer DV / KW

Survey Start Time 1836 Survey End Time 1850

Weather Conditions Clear

Site C USGS Quad

Township 13S Range 12E Section 24 NE 1/4

Proposed Activity (road/well; size of inventory area) 1 acre well pad

General Habitat Description (vertical structure, dominant vegetative species, topography)

Ponderosa Pine, astragulas, aster sp. penstemon, sagebrush, blue mohagany, sm conifer bush

Soil Characteristics Sandy loam

~~POOR~~ POOR

POSITIVE IDENTIFICATION

Number of plants Located N/ Flowers Present (Y/N)

Key Characteristic

Other Species Identified

MANAGEMENT OPPORTUNITIES (Mitigation/Habitat Improvement)