

CHAPTER 4

**LAND USE
(R645-301-400)**

07/98 Revised 04/99

INCORPORATED
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UTAH DIVISION OIL, GAS AND MINING

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CRANDALL CANYON MINE, MINE AND RECLAMATION PLAN
CHAPTER 4
LAND USE

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Note: Bold number plates and appendices are included with this submittal.

INCORPORATED
FEB 23 2005
DIV OF OIL GAS & MINING

CHAPTER 4

LAND USE

4.10 Regional Land Use

The majority of the land use in the Wasatch Plateau is administered by the United States Forest Service and is managed as a multiple use forest area.

4.10.1 Land Use In Mine Plan Area

Prior to 1939, the permit area was used for non-developed recreation, grazing by native big game species and habitat for small game and non-game animals. From 1939 until 1955, the area was mined by traditional room and pillar methods. Approximately 35,000 tons were removed from the Hiawatha Seam. When mining operations were terminated in 1955, the land reverted to its original uses. In 1983, mining activities were resumed. At present, cattle are moved through the canyon to grazing areas at higher elevations. Riparian areas are grazed during the movement through the canyon. A land use map has been prepared and is included as Plate 4-2.

Mining in the South Crandall lease and the U-68082 lease mod area will not affect the present land use of the area. The area is classified as rangeland. The existing land use will continue during, as well as following, mining in this area. Refer to Plate 4-2.

After mining operations cease, the mine site surface area will be restored to its approximate original contours. The access road will be left in place, pursuant to the wishes of the U.S. Forest Service (USFS) the surface landowner.

4.11 Premining

The premining use of the land was for dispersed non-developed recreation, native wildlife habitats and dispersed cattle grazing. The wildlife habitats within the mine area are described in Appendix 3.2 and 3.3.

The area was used for a previous mining operation. The previous operation prepared level areas to allow access to the coal seam and for coal loading operations. This made the area more accessible to the general public and to the present mining operation.

The previous operation left lumber, deteriorating buildings, fuel and oil cans, and various other trash in the area. A portion of the existing vegetation was also disturbed with no evidence of revegetation.

After reclamation, the area will be restored to support premining land uses. Vegetation will be restored to provide habitat and a food source for wildlife. It is expected that the cattle grazing will continue after reclamation. The access road will remain pursuant to the wishes of the USFS and to support underdeveloped recreation.

4.11.1 Historic Land Use

The Manti-La Sal Division of the United States Forest Service has this area shown on their land use map as suitable for dispersed, non-developed recreation, and limited grazing as the slopes are steep. There is not enough of the necessary vegetation for extensive grazing. It is also classified as unsuitable for logging operations as conifer is only a marginal component of the area.

Crandall Canyon is not actually being used as summer range for cattle, but cattle are moved through the canyon to grazing areas at higher elevations. Because the cattle are moved through the canyon, although undesirable, grazing does occur without noticeable depletion of vegetation in the riparian zone. It is expected that sporadic cattle grazing will continue after mine life.

By returning the disturbed area to its original contour, the canyon outside the riparian zone will be too steep for grazing by other than native wildlife. Wildlife grazing and habitat will be part of the postmining land use.

Plate 4-1 shows the grazing allotment boundaries of the existing permit area and the South Crandall lease area and the U-68082 lease mod area. Plate 4-3 presents the oil and gas analysis areas as well as the existing gas wells.

4.11.110 Surface Land Status/Mine Plan Area

Ownership of the surface rights within and contiguous to the mine plan and permit area is shown on Plates 1-1, 5-3 and 4-1. The surface within the lease areas and the contiguous lands are administered by the USFS. Also as shown on Plate 1-1 there are no structures within 1000' of the mine permit area.

4.11.112 Ownership

The United States Government under the supervision of the Manti-La Sal National Forest owns most of the surface rights in the immediate area of the permit and mine plan area as shown on Plates 1-1 and 4-4.

4.11.113 Surface Managing Authorities

The United States Department of Agriculture, Forest Service, Intermountain Region is the surface managing authority.

4.11.114 Utility Corridors and Other Right-Of-Ways

No utility corridors or other rights-of-way exist on the surface within the existing permit area nor the U-68082 lease mod area. A utility corridor exists within the permit area in the South Crandall lease area. See Plate 4-2. There are no surface or subsurface man-made features within or passing over the permit or Incidental Boundary Change areas.

There has been no change in the premining use of the land within the last five years.

4.11.115 Affect Of Operation On Land Use

GENWAL feels that greater portion of permit area will not be affected by mining operations and that premining land use will be applicable except for the disturbed area surrounding the portals and the access road.

The maximum area of possible subsidence is shown on Plate 5-2 as the area contained within the zero subsidence contours. As explained in Chapters 5 and 7 no adverse effects are expected to occur as a result of the subsidence mechanisms and no mitigation measures are proposed. In the event subsidence damages or alters streams, roads, etc. GENWAL will repair or replace such structures in conjunction with prudent and reasonable environmental designs and in compliance and agreement with USFS lease stipulations.

4.11.12 Land Capability

In the Manti-La Sal National Forest Land and Resource Management Plan (LRMP), 1986, the Forest Service has developed certain management objectives for the area. The permit area includes four separate management units.

The bottom of Crandall Canyon is included in the MMA (Leasable Minerals Area) Management Unit where management emphasis is on leasable minerals development. This unit includes the surface facilities for the mine.

The eastern portion of the permit area lies within the GWR (General Big Game Winter Range) Management Unit where management emphasis is on providing general big game winter range.

The north and west areas of the permit area lies within the RNG (Range Forage Production) Management Unit. Management emphasis is on production of forage and cover for domestic livestock and wildlife. The Incidental Boundary Change area lies within the RNG use classification. Surface land uses and resources will not be affected by underground mining operations. The South Crandall lease area lies within the RNG and MWS use classifications (see Plate 4-2). The U-68082 lease mod area lies within the RNG use classification.

The riparian area along Crandall Creek is included in the RPN (Riparian) Management Unit. RPN areas include the aquatic (including fish) ecosystem, the riparian (characterized by distinct vegetation), and adjacent ecosystems that remain within approximately 100 feet measured horizontally from the edge of all perennial streams and springs, and the shores of lakes and other still water bodies, i.e., from seeps, bogs, and wet meadows. Emphasis is on preservation of the riparian areas and component ecosystem.

The historic use of the land has been for recreation, forestry, wildlife habitat, and mining as indicated by previous zoning, historic documentation and visual examination.

4.11.13 Land Use/Zoning

Emery County had previously zoned this area as a recreation forestry and mining area. However, as of November 12, 1979, this area has been rezoned to CE-1 which is a critical environment zone. A county zoning of CE-1 does not prohibit mining. Therefore, the area did not have to be rezoned.

4.11.14 Cultural and Historic Resource Information

A Cultural, Historic and Archeological inventory conducted on June 19 and 20, 1980 on all areas to be disturbed in the proposed permit area. No recorded or unrecorded archeological sites were found in the project area. A copy of the report on the archeological inventory is included as a supplement to this chapter as Appendix 4-1.

All of the areas potentially affected by surface disturbing activities in Genwal's Crandall Canyon Mine Plan were investigated for cultural resources. No prehistoric remains were located in the mine plan area. A single site, however, near a haul road from the mine was recorded in 1975, by the Forest Service. This site (42EM722), a rock shelter, is some 50 meters in length and contains at least one meter of cultural deposits. Remains include stone tools, pottery, lithic debris, abundant charcoal, bone and pictographs on the cliff face above. Extensive vandalism has taken place; however, undisturbed areas in the shelter still remain. The site is eligible for inclusion to the National Register of Historic Places. Therefore, it needs to be protected. The major threats to the site appear to be a direct impact from possible road improvement and present ensuing impacts caused by increased vandalism brought about by the improvement of the road. The site was fenced to be a solution to the vandalism problem.

The archeological site at the mouth of Crandall Creek is not threatened by road improvements and the area is fenced as stated in the plan. The initial road development has progressed along Crandall Canyon past site (42EM722) and Genwal has fenced off the designated site accordingly. A detailed report on the Sherman Shelter was completed by the USFS and is included within this chapter as Appendix 4-4. An additional archeological survey was conducted for LBA #9 in 1992. Data associated with this report are contained in Appendix 4-1A. Additional survey information for the surface facility expansion area is also contained in Attachment 3 in the Addendum to Appendix 3-2.

Since there will be nor surface disturbance within the South Crandall lease area nor the U-68082 lease mod area, no impact to cultural or historic resources will occur. In June, 2004 Senco-Phenix performed an intensive archeological survey of the U-68082 lease mod area and submitted its report to the Forest Service and SHPO. This report is included in Appendix 4-10.

4.11.141 Cultural and Historic Resource Maps

Cultural and Historic Resource maps are included in Appendix 4-5 and 4-6.

4.11.141.1 Boundaries of Listed Historic Resources

There are no public parks in the permit area. The only site of historical significance is a archeological site listed as "The Sherman Shelter 42EM722".

4.11.141.2 Location of Cemeteries

No cemeteries exist within the permit or IBC area or within any adjacent area subject to potential impacts.

4.11.141.3 National Trails/Scenic Rivers

No trails or the wild and scenic rivers or study area rivers exist within the permit area or areas of potential impact.

4.11.142 State Historic Preservation Officer

The State Historic Preservation Office in a letter dated August 8, 1980, (see Appendix 4-2) granted cultural resource clearance for the GENWAL Crandall Canyon Mine. Conditional clearance from OSM was provided by a letter dated April 17, 1981 (see Appendix 4-3). GENWAL has followed the recommendations contained in Appendix 4-1, the Archeological Reconnaissance Report, and fenced site 42EM722. With the acquisition of lease UTU-68082, an additional Paleo-Arch inventory was conducted in 1992. That report is attached as Appendix 4-1A. A subsidence monitoring plan is included as part of Chapter 5. According to the SHPO there are no significant cultural resources within the South Crandall lease area nor the U-68082 lease mod area. (See Appendix 4-9)

4.11.142.1 - 4.11.142.2 Prevention of Adverse Archaeological Impacts

No adverse impacts are anticipated and GENWAL has taken all action outlined and recommended by OSM and the USFS to safeguard the Sherman Shelter.

4.11.143 Historical Resources Eligible for Listing

GENWAL intends to protect any known historical and cultural resources. Should additional information be required, GENWAL and the requesting regulatory agency will determine the appropriate action.

4.11.143.2 Field Investigations

Field investigations have been conducted in conjunction with the archeological survey. A map showing the survey area investigated for archeological importance is included as Appendix 4-5.

Although the archeological report mentions a scattering of historic mining remains, they are remains of habitation and human use rather than mining. The remains consist of a rusty automobile body, either a 1939-1940 Ford or Mercury, numerous tin cans and bottles, bedsprings, and piles of wood from old cabins which have been destroyed by vandals. These habitation remains (1939-1955) are of no historic value and no study will be undertaken to document the remains. Maps of the areas investigated are included in Appendix 4-1 and Appendix 4-1A.

4.11.200 Previous Mining

The mine plan area has been previously mined and the following information is provided.

4.11.210 Mining Method

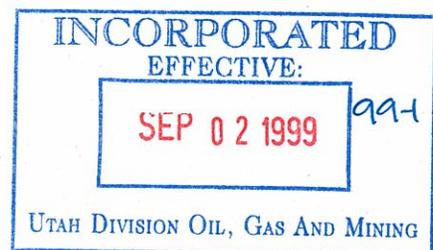
Type of mining method used: room and pillar method of mining.

4.11.220 Coal Seam Mined

Coal seams mined: Hiawatha seam was the only seam mined.

4.11.230 Extent of Coal Removed

Extent of coal removed: Approximately 35,000 tons as per USGS calculations.



4.11.240 Dates of Past Mining

Approximate dates of past mining: November, 1939, to September, 1955, as per USGS records.

4.11.250 Land Use Preceding Mining

The land was historically used for wildlife and domestic grazing.

4.12 Reclamation Plan

4.12.1 Postmining Land Use Plan

In areas where surface disturbances resulted from mining operations, soil reclamation and revegetation will restore the areas to their premining usefulness as range land, wildlife habitat and recreational use. The reclamation plans are presented in Chapters 2, 3, 5, and 7.

Land uses are solely at the discretion of the USFS. No alternative land uses have been proposed.

4.12.2 Landowner Or Surface Manager Comments

The citations from the Manti La Sal National Forest Land and Resource Management Plan can be considered as comments from the Forest Service for most of the disturbed area. The plan states that the road will be left in place pursuant to the wishes of the Forest Service and the surface landowner. Correspondence from the Forest Service indicating the above and outlining attendant reclamation requirements is included in Appendix 1-2.

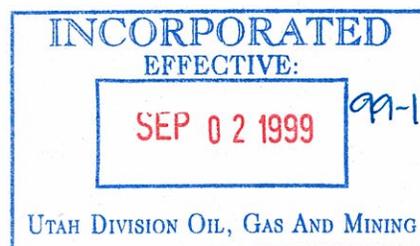
4.13 Performance Standards

4.13.1 Postmining Land Use

All disturbed areas will be restored in a timely manner to conditions that are capable of supporting the uses they were capable of supporting prior to mining.

4.13.3 Criteria for Alternative Postmining Land Use

No alternative postmining land use is planned or proposed.



4.20 Air Quality

4.21 Operation in Compliance with State/Federal Air Quality Laws

Coal mining and reclamation operations will be conducted in compliance with the requirements of the Clean Air Act and any other applicable Utah or Federal statutes and regulations pertaining to air quality standards.

4.22 Compliance with Utah Bureau of Air Quality

GENWAL has an approved air quality permit covering all planned facilities for the Crandall Canyon Mine with the Utah Bureau of Air Quality. A copy of the Air Quality Approval Order Modification is presented in Appendix 4-8.

The air quality permit was revised in August 1997 to incorporate the new surface facilities and mine yard expansion area. The air quality permit was amended and approved prior to operation of the new facilities.

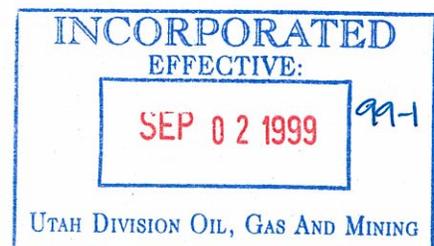
4.23 Fugitive Dust Control Plan

The Air Quality Approval Order contains the air pollution control plan which includes an air quality monitoring program. The monitoring program will provide sufficient data to evaluating the effectiveness of the fugitive dust control practices and compliance with federal and Utah air quality standards.

A description of the controls and design features associated with the yard expansion can be found in Chapter 5 under section 5.26.

4.24 Fugitive Dust Control Plan for Reclamation Activities

A fugitive dust control plan is included in Appendix 4-7.



APPENDIX 4-9

LETTER FROM SHPO (SOUTH CRANDALL LEASE)

INCORPORATED
APR 15 2005
DIV OF OIL GAS & MINING

1/23/95 revised 4/97

SEP 16 2003



P.O. BOX 1077
PRICE, UTAH 84501
PHONE: (435) 564-4000
FAX: (435) 564-4002

September 9, 2003

Mr. Jim Dykman
State Historic Preservation Officer
300 Rio Grande
Salt Lake City, UT 84181

Re: Genwal South Crandall Tract

Dear Mr. Dykman:

GENWAL RESOURCES INC. has applied for a mining permit on a tract of land adjacent to its Crandall Canyon Mine. I talked to you in late June about a survey of the area, the South Crandall Tract. The Division of Oil, Gas and Mining has said that they will be in contact with you about a cultural resources survey of the area. In order to help expedite your review for DOGM, I am enclosing the outline of the tract (Federal Lease UTU-78953) on the Rilda Canyon USGS quadrangle topographical map.

Call me at 435-564-4015 if you have any questions.

Sincerely

A handwritten signature in blue ink, appearing to read "G. E. Gray", written over a white background.

Gary E. Gray
Engineer

INCORPORATED
APR 15 2005
DIV OF OIL GAS & MINING

APPENDIX 4-10

**ARCHEOLOGY REPORT, U-68082 LEASE MOD AREA
SENCO-PHINIX, 2004**

INCORPORATED
FEB 23 2005
DIV OF OIL GAS & MINING



SENCO-PHENIX

AN INTENSIVE AND INTUITIVE CULTURAL RESOURCE SURVEY AND INVENTORY OF THE CRANDALL CANYON MINE SUBSIDENCE AREA

Price Ranger District
Manti - La Sal National Forest

Emery County, Utah

PERFORMED FOR
Genwal Resources, Inc.

In Accordance with Forest Service and
Utah State Guidelines
Antiquities Permit #U04SC0360f

SPUT-471
June 22, 2004

John A. Senulis

Direct Charge of Fieldwork

CULTURAL RESOURCE SUMMARY FORM USFS# ML-00
MANTI-LA SAL NATIONAL FOREST USHPO# U02SC0286f
(Attach Narrative Report Form)

FS PROJECT NO.: ML- - - Name: AN INTENSIVE AND INTUITIVE CULTURAL RESOURCE SURVEY AND INVENTORY OF THE CRANDALL CANYON MINE SUBSIDENCE AREA

Manti-La Sal Price T.15S, R. 7E Sec. 32
Forest Name District T/R/Sec(s)

June 21, 2004 SENCO-PHENIX/John Senulis
Report Date Organization/PI

Benefitting Function: Heritage Project 106 Compliance Project Assessment or Resource Assistance (Not a 106 undertaking)

Project Cost: Vehicle/Gas NA USFS Amt. \$ 0
Supplies Proponent Amt. \$
Salary 0 Contributed Amt. \$

(2xvol) Per Diem/Vol _____ TOTAL \$ 0
Other _____
Overhead _____

Nature of Work (Check all that apply):

- Survey MOU/Clearance (No new surv)
 Monitoring /Docum. Assessment/Plan
 Evaluation or Mitigation: Excavation or Documentation
 Test Excavation Discovery
 Interpretation Damage Assessment/
 Site Protection/ Vandalism
 Stabilization
 Other (Explained below)

Total Project Acres: 75

Acres Surveyed: 45
New Sites Recorded: 0
Sites Monitored W/ Documentation: 0

Project Photographs Catalog #s:
Artifacts (isolates) Collection #s: None
Location of Curation:

Tracking Dates (N/A if not required):

To SHPO _____
Concurrence Rec'd _____
Mylar Updated _____
GIS Digitized _____
Proj. Database Entry _____

Not a 106 Undertaking/No ground disturbance
 No Effect; No Sites
 No Effect Through Design or Mitigation Rec's
 Other Effect (See Detail Report)

Accomplishment Report : FY00

0 sites located

Determination of Effects on Sites

Certification:

Reporter's Signature Date 06/21/2004 Reviewer Signature Date

COMMENTS:

UTAH SHPO

COVER SHEET

Project Name: AN INTENSIVE CULTURAL RESOURCE SURVEY AND INVENTORY OF SEVEN DRILL LOCATIONS FOR THE 2001 MILL FORK HELICOPTER ASSISTED DRILLING PROGRAM

Energy West Mining Company

State #U00SC0724f

Report Date: June 21, 2001

County (ies): Emery

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

Records Search/Location/Dates: January 26, 2001, Manti-LaSal National Forest, Price

Acreage Surveyed: 7 acres

Intensive Acres: 7

Recon/Intuitive Acres: 0

U.S.G.S. 7.5 Quad: Rilda Canyon, Utah (1976)

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

Checklist of Required Items:

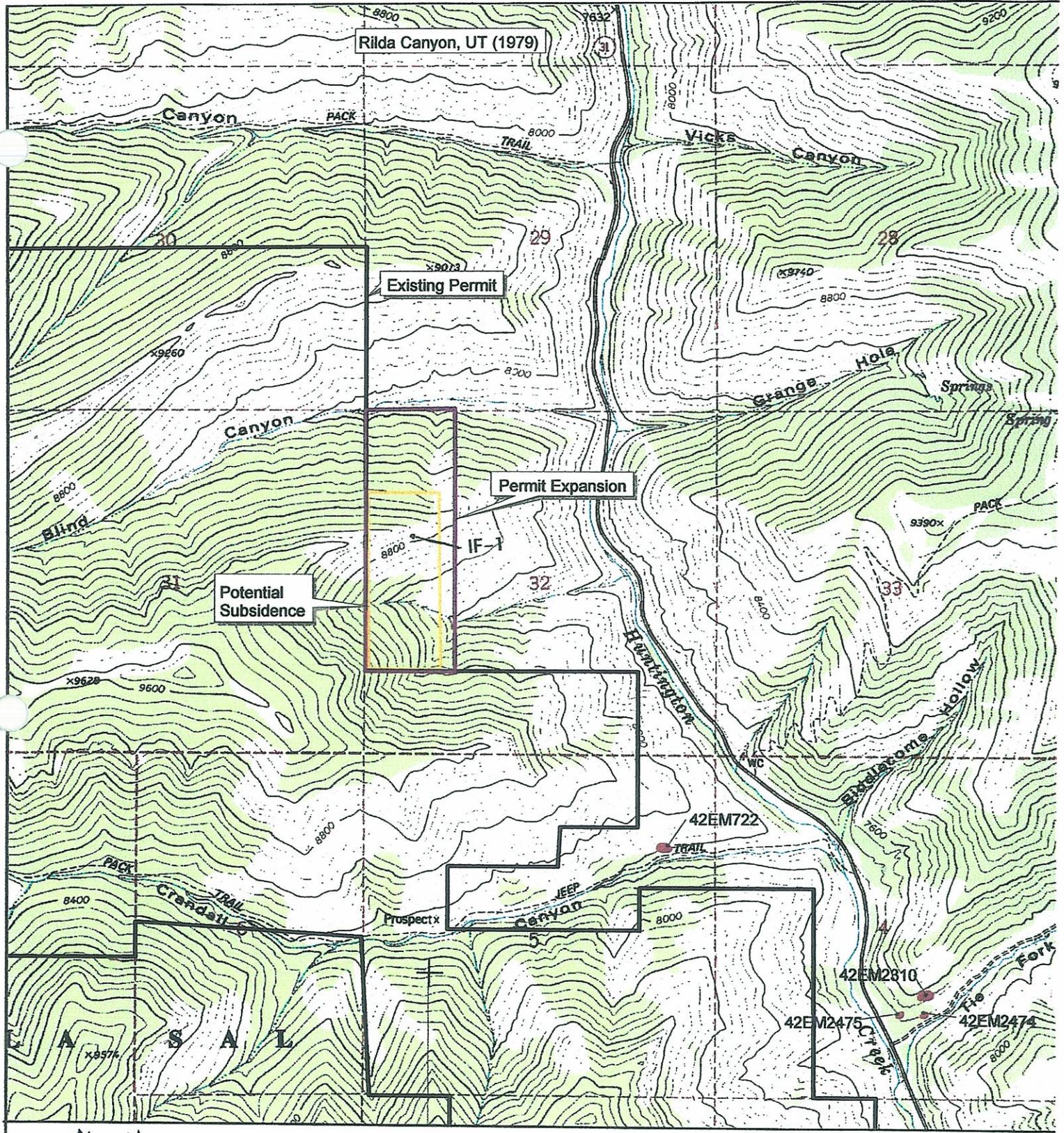
1. X 1 Copy of Final Report
2. X Copy of U.S.G.S. 7.5' map showing surveyed/excavated area
3. Completed IMACS Site Inventory Forms Including
 - _____ Parts A and B or C
 - _____ IMACS Encoding Form
 - _____ Site Sketch Map
 - _____ Photographs
 - _____ Copy of USGS 7.5' Quad with Smithsonian site Number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

Abstract

SENCO-PHENIX performed a combination intensive and intuitive cultural resource survey of the potential subsidence area within the proposed Crandall Canyon Mine permit extension area for Genwal Resources, Inc. The project area included the sandstone cliff faces that may subside when the pillars for the underlying Crandall Canyon mine are removed. The focus was on cliff faces because during subsidence, cliff faces tend to shear off and collapse while there is a minimal effect on other ground. The survey was undertaken at the request of Forest Archeologist, Bruce Ellis, who wanted the areas of the cliff faces examined for possible archeological remains such as rock art, rock shelters, burials or other cliff face type sites. The project area is in the Price Ranger District of the Manti-La Sal National Forest. The purpose of the survey was to identify and evaluate cultural resources that may exist within the project area.

One isolated cultural resource was located. IF-1 is a gray chalcedony biface with inclusions. It measures 51 x 36 x 8 mms. and has only minor edge retouch. It was located at an elevation of 8830 feet, in the SW/SW/NE/SW/NW $\frac{1}{4}$ of Section 32, T15S, R7E, Emery County, Utah (12-485570-4369471). No other artifacts or features were located and the single artifact is not recommended for nomination to the National Register of Historic Places.

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.



SENCO-PHENIX

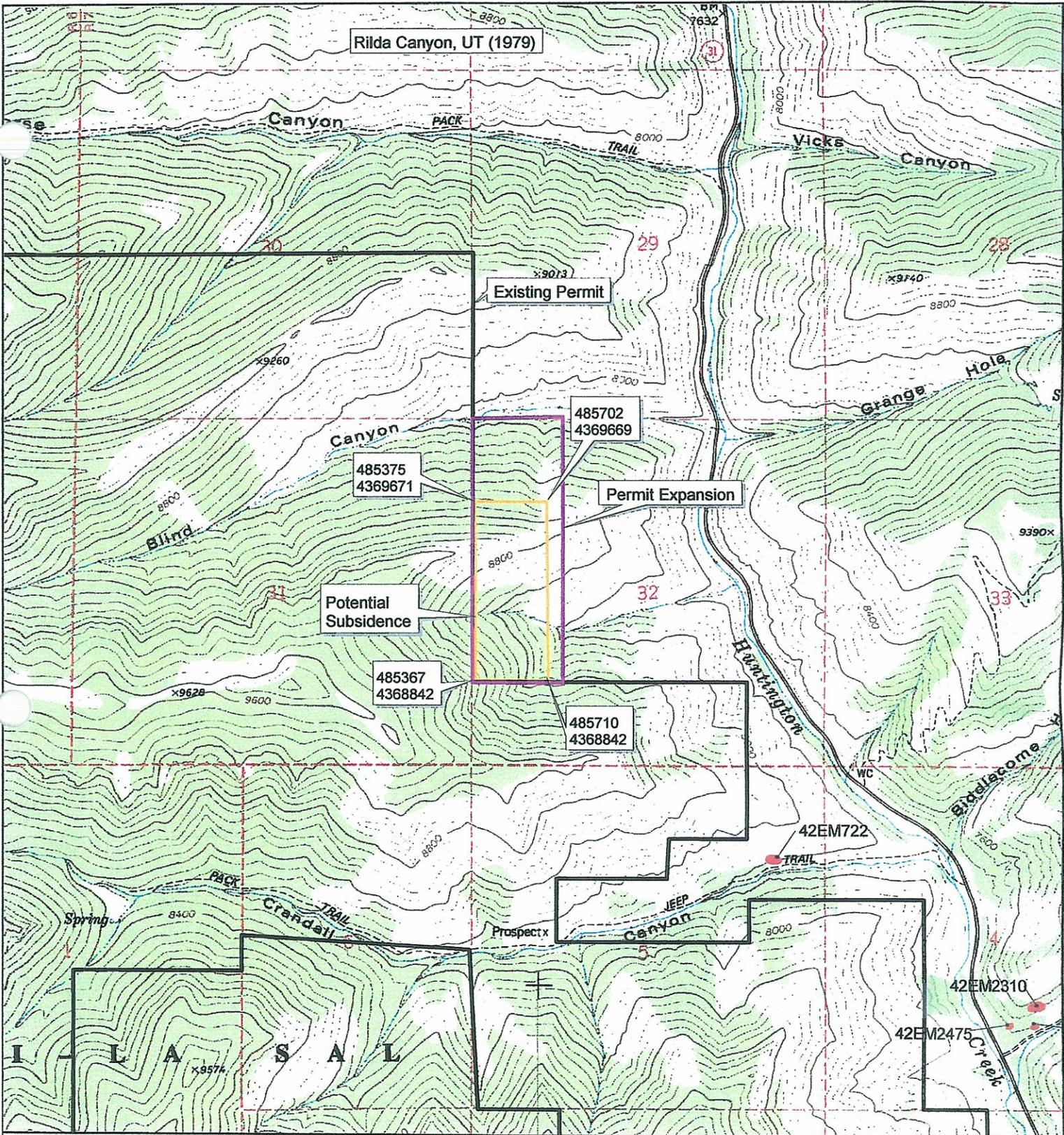


Scale 1:24,000
1" = 2,000'

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

Subsidence Survey
Crandall Canyon Mine
Genwal Resources, Inc.
Emery County, Utah
Section 32, T15S, R7E
June, 2004
SPUT-471

Rilda Canyon, UT (1979)



SENCO-PHENIX

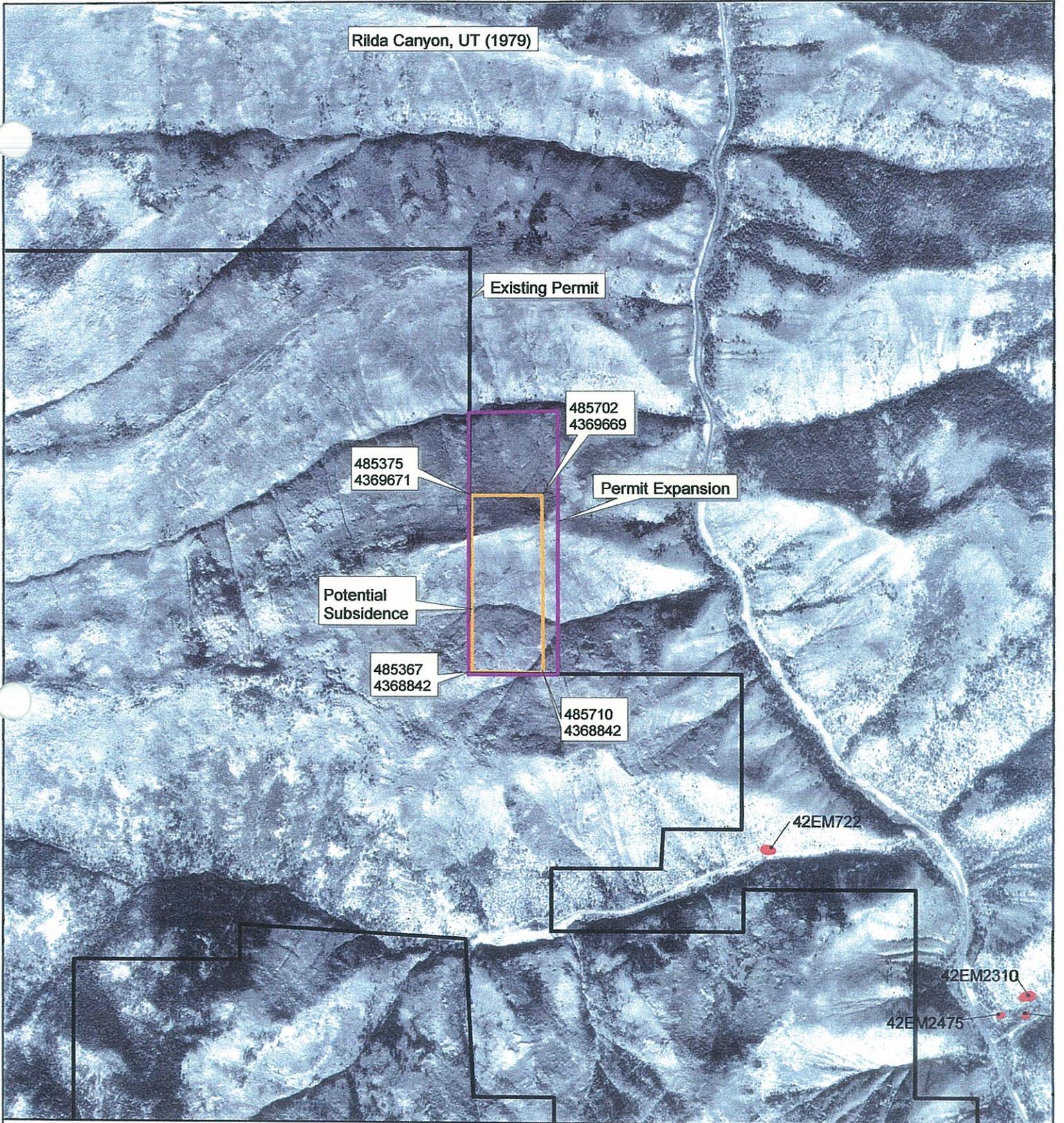


Scale 1:24,000
1" = 2,000'

- Current Survey
- Previous Survey
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Subsidence Survey
 Crandall Canyon Mine
 Genwal Resources, Inc.
 Emery County, Utah
 Section 32, T15S, R7E
 June, 2004
 SPUT-471

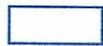
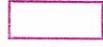
Rilda Canyon, UT (1979)



SENCO-PHENIX



Scale 1:24,000
1"= 2,000'

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

Subsidence Survey
Crandall Canyon Mine
Genwal Resources, Inc.
Emery County, Utah
Section 32, T15S, R7E
June, 2004
SPUT-471

Project Location

The survey area is the steep side slopes on either side of an un-named west to east flowing perennial tributary of Huntington Creek. The project area was located using GIS data on the maps and GPS units in the field. The project area is in the Price Ranger District of the Manti-LaSal National Forest. The potential subsidence area is in Section 32, T15S, R7E, Emery County, Utah. The project area is shown on the enclosed copy of U.S.G.S. 7.5' Quad: Rilda Canyon, Utah (1979).

Environment

The project area is within the Wasatch Plateau, which is part of the Colorado Plateau Province. The Wasatch Plateau is a north to south trending highland that overlooks the Castle Valley to the east and the Sanpete Valley to the west. The project area is a very steep sided valley and ridge at elevations of 8,000 to 9,100 feet. An un-named perennial creek, in the southern portion of the project area, drains the project area.

The diversified vegetation consists of grassy sagebrush meadows interspersed with aspen groves and conifer forests, including White and Ponderosa Pine. Some of the understory species included wheat grass, bluegrass, common juniper, shrubby cinquefoil, strawberry, penstemon, mules-ear, needle grass, lupine, manzanita, sagebrush, sedge, currant, and gooseberry.

Previous Research

John Senulis of SENCO-PHENIX performed a file search in the Forest Service Office on April 30, 2004. The following are the previous studies within or near to the project area which meet professional standards:

- 1975, The archeologist for the Manti La-Sal National Forest surveyed the road through Crandall Canyon for mine development. One cultural resource was located:
 - 42EM722 is the "Sherman" rockshelter, which has apparent depth and was recommended for the National Register of Historic Places. The shelter was beyond the projects impact area.
- 1977, AERC surveyed several sample blocks in the general area. No cultural resources were located. (ML 77-138)
- 1980, UTARC surveyed a 200-foot road corridor and the mine site. No new cultural resource sites were located. (ML 80-228)
- 1981, The Forest Service tested 42EM722 and found it had good depth potential and was eligible for the NRHP. (ML 81-1)
- 1984, SENCO-PHENIX conducted a sample survey just south of the current project area. No cultural resources were located. (ML 84-392)
- 1988, The Forest Service conducted a sample survey, which includes the south 40 acres of the current project area. No cultural resources were located. (ML 88-491)
- 1989, AERC conducted sample surveys west of the current project area. No cultural resources were located. (ML 89-622)
- 1992, AERC surveyed sample units south and west of the current project area. No cultural resources were located.

- 1995, AERC surveyed sample units south of the project area. No cultural resources were located. (ML 95-753)
- 2002, SENCO-PHENIX surveyed drill hole locations south of the current project area. No cultural resources were located. (ML 02-1027)

There are several additional archeological sites ca. 1½ mile south of the project area. All are at the mouth of Tie Fork Canyon and all have been recommended for nomination to the NRHP. They also confirm the model that significant cultural resources within the Huntington Creek drainage tend to be at or near the mouths of the sub-drainages of Huntington Creek.

- 42EM2310 is a rockshelter located ca. ½ mile up the canyon. It has a polychrome pictograph within.
- 42EM2311 is an historic dugout and trail that may have been associated with early logging operations.
- 42EM 2474 is a rockshelter with lithics and groundstone.
- 42EM2475 is a small cave with a possible Ute rock art panel

Methodology

John and Jeanne Senulis and Robert Evans of SENCO-PHENIX performed a combination Class III intensive walkover and intuitive survey on June 19, 2004 of the sandstone cliff faces in the potential subsidence area. The project area was located using GIS data on the maps and GPS units in the field. The policy of the Manti-La Sal National Forest is to survey sandstone cliff faces in areas of potential subsidence, because the cliff faces often collapse when the pillars are removed from the underlying mine. The sandstone cliff faces were examined for the presence of rockshelters, rock art, burials, or other site types that could occur in these outcroppings. Because of the sheer steepness of the outcrop facings, walkover was limited to the areas where foot travel was possible. Some of the rock faces were examined utilizing both binoculars and a camera with a telephoto lens. There were rock outcrops both along the drainage and on the ridge north of the drainage. These were examined thoroughly as was the intervening steep sloping side hills. All field notes and photographs are on file at the offices of SENCO-PHENIX in Price, Utah.

Findings and Recommendations

One isolated cultural resource was located. IF-1 is a gray chalcedony biface with inclusions. It measures 51 x 36 x 8 mms. and has only minor edge retouch. It was located at an elevation of 8830 feet, in the SW/SW/NE/SW/NW ¼ of Section 32, T15S, R7E, Emery County, Utah (12-485570-4369471). No other artifacts or features were located and the single artifact is not recommended for nomination to the National Register of Historic Places.

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 Manti La Sal Forest Ranger and the Utah SHPO.



View of the Upper Face looking Northeast



An Example of the Upper Slope Steepness

Genwal Subsidence Project Area



IF-1 Biface *in situ*