

September 4, 2018

C/007/0005
Received 9/12/18
Task #5737

Mr. Daron R. Haddock
Division of Oil, Gas, and Mining
1594 West North Temple
Salt Lake City, Utah 84114-5801

RE: Notice of Intent (NOI) –Installation of four (4) Surface Seismic Station, Canyon Fuel Company, LLC, Skyline Mine, C/007/0005,

Dear Daron:

Attached to this letter is pertinent information for a Notice of Intent (NOI) to install four (4) Surface Seismic Stations in the northern portion of the Flat Canyon lease area. The purpose of the seismic station as defined in R645-100, "Coal Exploration...(b) the gathering of environmental data to establish the conditions of an area before beginning coal mining..." The four (4) stations complete a series of monitoring stations that that form an array to monitor the Mine Induced Seismicity (MIS) prior to mining near Boulger Reservoir. The work is scheduled to be initiated on approximately September 10, 2018. The short notice for permitting occurred due to consultant restraints which prohibited them scheduling the work any other time this Fall. Skyline would like to have the stations operational in 2018 and this will be the only opportunity.

As the attached NOI illustrates, the project has minimal surface disturbance with the work being conducted primarily using hand-tools. The surface seismic stations, once installed, will be incorporated into the M&RP as part of the Boulger Reservoir monitoring program. The incorporation will include the specifics of the monitoring, the reclamation, the bonding for reclamation, etc.

Attached to this cover are completed C1 and C2 forms.

If you have any questions regarding this information, please call me at (435) 448-2636.

Sincerely:



Gregg A. Galecki
Canyon Fuel Company, LLC.
Environmental Engineer – Skyline Mines

APPLICATION FOR COAL PERMIT PROCESSING

Permit Change New Permit Renewal Exploration Bond Release Transfer

Permittee: Canyon Fuel Company, LLC

Mine: Skyline Mine

Permit Number: C/007/005

Title: NOI – Surface Seismic Stations

Description, Include reason for application and timing required to implement:

Installation of four (4) surface seismic stations

Instructions: If you answer yes to any of the first eight (gray) questions, this application may require Public Notice publication.

- | | |
|---|---|
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 1. Change in the size of the Permit Area? Acres: _____ Disturbed Area: _____ <input type="checkbox"/> increase <input type="checkbox"/> decrease. |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 2. Is the application submitted as a result of a Division Order? DO# _____ |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 4. Does the application include operations in hydrologic basins other than as currently approved? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 6. Does the application require or include public notice publication? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 7. Does the application require or include ownership, control, right-of-entry, or compliance information? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 9. Is the application submitted as a result of a Violation? NOV # _____ |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 10. Is the application submitted as a result of other laws or regulations or policies?
<i>Explain:</i> _____ |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11. Does the application affect the surface landowner or change the post mining land use? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2) |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | 13. Does the application require or include collection and reporting of any baseline information? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15. Does the application require or include soil removal, storage or placement? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 16. Does the application require or include vegetation monitoring, removal or revegetation activities? |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | 17. Does the application require or include construction, modification, or removal of surface facilities? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 18. Does the application require or include water monitoring, sediment or drainage control measures? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 19. Does the application require or include certified designs, maps or calculation? |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | 20. Does the application require or include subsidence control or monitoring? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 21. Have reclamation costs for bonding been provided? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 23. Does the application affect permits issued by other agencies or permits issued to other entities? |

Information submitted electronically in Adobe Acrobat .pdf format. (This number includes a copy for the Price Field Office.)

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

Craig Brown
Print Name

Craig Brown, Engineering Manager, 8-4-2018
Sign Name, Position, Date

Subscribed and sworn to before me this 3 day of Sept, 2018

Melissa S Willden
Notary Public
My commission Expires: 3-19, 2019
Attest: State of Utah } ss:
County of Carbon



For Office Use Only:	Assigned Tracking Number:	Received by Oil, Gas & Mining

**NOTICE OF INTENT TO CONDUCT
MINOR COAL EXPLORATION**

CANYON FUEL FLAT CANYON
UPPER HUNTINGTON CANYON
2018

Canyon Fuel Company
A Subsidiary of Bowie Resource Partners, LLC.

September 2018



Canyon Fuel Company LLC
Skyline Mines

INTRODUCTION

Canyon Fuel Company – Skyline Mine (a subsidiary of Bowie Resource Partners) is submitting this Notice of Intent to Conduct Minor Coal Exploration to the Utah Division of Oil, Gas, and Mining (UDOGM) to obtain approval for the installation of four (4) seismic monitoring stations surrounding the northern portion of the Flat Canyon lease area for the gathering of environmental information in advance of mining in the area. The work is scheduled to be conducted beginning on approximately September 10, 2018. In addition to the seismic station installed in 2017, this will complete a five (5) station array of the area. Federal contractor personnel are scheduled to install in the electronics at the end of September. The type of activity involves the intallation of two (2) small 30-inch by 24-inch diameter vaults, a solar / antenna mast and a shallow trench connecting all three (3) pieces of equipment. One exception is at the Seismic C location that will be a down-hole probe located in an exploration hole. The exploration hole was backfilled following the installation of the probe. This application is formatted to address the specific requirements of R645-201-200. Other related information is given in Appendix A and B. This application has been submitted electronically.

R645-201 Coal Exploration: Requirements for Exploration Approval

The proposed exploration plan qualifies as minor exploration as described in the State of Utah Coal Mining Rules R645 section R645-201-200.

R645-201-210

Not more than 250 tons of coal can be removed in a Notice of Intent:

No coal will be removed in the construction of the seismic vaults. Only near surface sediment will be disturbed during construction.

R645-201-221

The name, address and telephone number of the applicant are:

Canyon Fuel Company
C/o Skyline Mine
HC 35 Box 380
Helper, Utah 84526
435-448-2693

The applicant is the same as the operator of the proposed exploration plan. Correspondence regarding this exploration plan should be addressed to:

Gregg Galecki
Canyon Fuel Company
C/O Skyline Mine
HC 35 Box 380
Helper, Utah 84526
435-448-2636

R645-201-222

The name, address and telephone number of the representative of the applicant who will be present during and be responsible for conducting the exploration is:

Gregg Galecki
Canyon Fuel Company
C/O Skyline Mine
HC 35 Box 380
Helper, Utah 84526
435-448-2636

R645-201-223

The work area is generally located in central Utah in the Manti-LaSal National Forest along west of State highway SR-264, north of Electric Lake encompassing an area of approximately four (4) square miles. The four (4) additional seismic stations will be located in Sections 16, 20, 22, and 29 of Township 13 South, Range 6 East (See Plate 1).

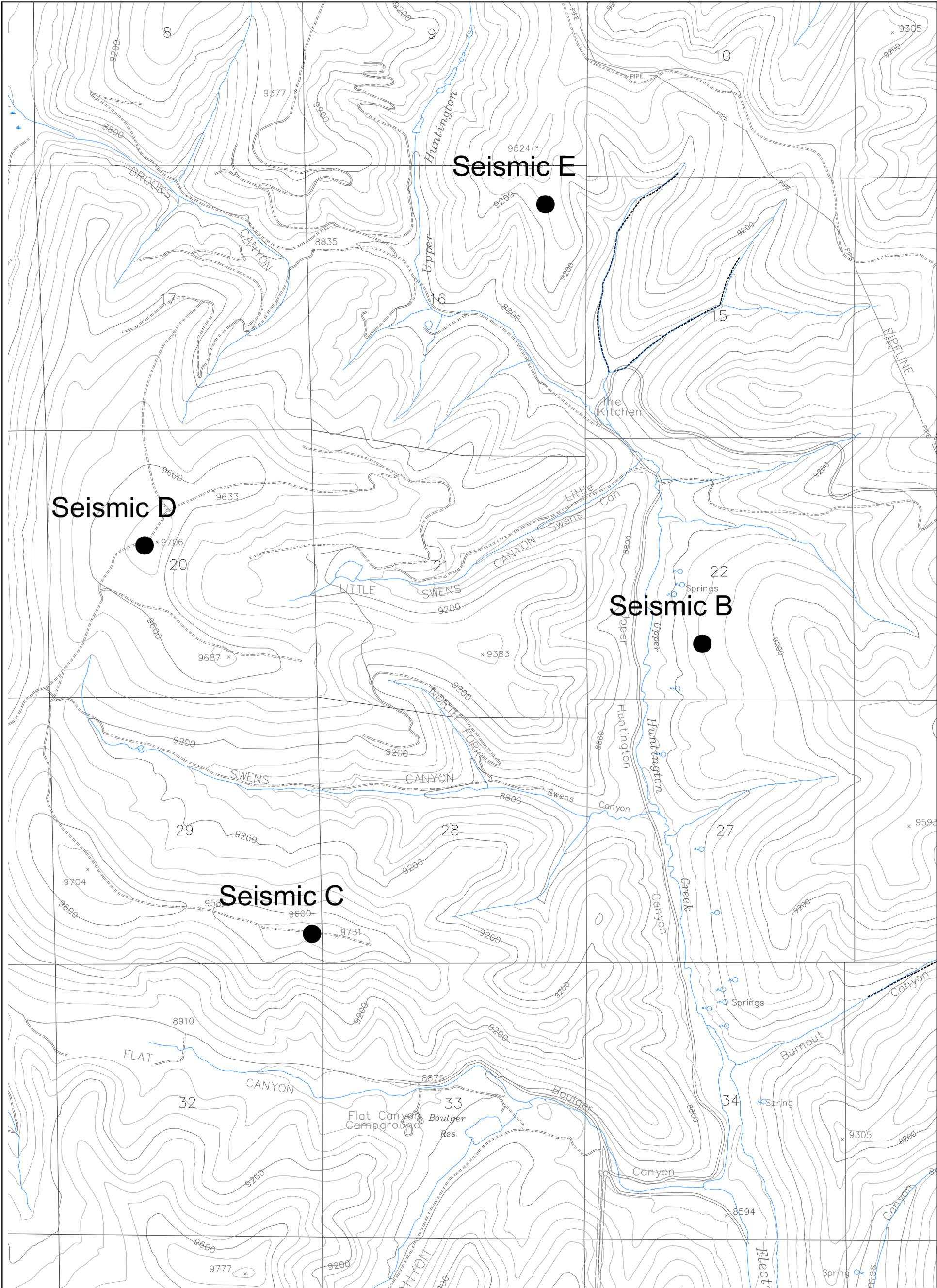
The US Forest Service (USFS) is the managing surface agency regulating the land for seismic sites B and E, while seismic sites C and D are located on private land owned by the Collard family. Both the USFS and the Collard family will be notified of the proposed activity.

R645-201-224

The timing of the project is very short term. Skyline personnel hopes to start installation by September 10, 2018, with contractor personnel providing technical assistance and oversight of the project in the September 17-28 timeframe. The project is being submitted on short notice due to the availability of the federal seismic contractors. Skyline only recently became aware of their scheduling.

R645-201-225

The method of work is low impact. The installation of two (2) small 30-inch by 24-inch diameter vaults, a solar / antenna mast and a shallow trench connecting all three (3) pieces of equipment will be constructed using hand-tools at sites B and E. Sites C and D will utilize a backhoe at the site since the sites are either disturbed with exploration drilling (C) or immediately adjacent to an existing road (D). See Figure 1 for illustrations of the equipment to be installed. Of the four (4) sites a total of approximately 0.02 acres will be disturbed (approximately 10 ft by 20 ft at each location).



Seismic D

Seismic E

Seismic B

Seismic C

Plate 1
Skyline Mine
Seismic Vault Locations



Canyon Fuel Company, LLC
Skyline Mines

MOR 35 BOX380, HELPER, UT, 84526 435-448-2632	DATE: 8/28/018	CK. BY: CBrown	REVISION:
CAD FILE:	SCALE: 1"=800'	DR. BY: Tearl	0
DWG. NO.:			

T135
T145

Figure 1 NIOSH Surface Seismic Station Infrastructure



30" diameter x 24" battery vault
30 gallon rain barrel
12' x 6" post (located 15 feet from vaults)
Two 2' x 3' Solar Panels



6" cement floor
Flexible conduit between vaults & Mast



Completed NIOSH Seismic Station "HSR"
currently operating in the North Fork Valley

Threatened, endangered, or special interest species in the exploration area include the northern goshawk, western boreal toad, and the three-toed woodpecker. Exploration and reclamation activities will not occur within one half mile of known breeding and nesting areas in addition to the breeding and nesting season being over for 2018. Appendix A (confidential file) contains Wildlife Resources report for the project area conducted by Mace Crane of Alpine Ecological. Additional biological surveys were completed in the area in 2014 through 2017 and are on file.

Tetra Tech, Inc. conducted cultural resource surveys of the proposed work areas in Appendix B (Confidential File). Sites B, D, and E are addressed in file UT18TD0497. Site C is identified in file UT18D0309 as drill site 1-18 as it is also permitted as an exploration drill hole. Nothing of cultural significance was discovered during the surveys.

Once installed and operational, the surface seismic station will be incorporated into the Utah Division of Oil, Gas, and Mining (DOG M) Mining and Reclamation Plan (M&RP). At time of reclamation, the equipment will be removed, backfilled, and reseeded using the appropriate seed mix.

The method of revegetation is intended to encourage prompt revegetation and recovery of a diverse, effective, and permanent vegetative cover. The following seed mix was prescribed by the U.S. Forest Service for the reclamation of 2015 Upper Huntington Canyon area drill holes and will be also used for this project unless otherwise modified by the regulatory agencies at the time of seeding (the seed mix as approved by UDOG M will be utilized):

Seed Mix		<u>Pounds PLS/acre</u>
Western Wheatgrass	Elymus smithii	2
Basin Wild Ryegrass	Elymus cinereus	1

Intermediate Wheatgrass	Elymus hispidus	2
Yellow Sweet Clover	Melilotus officinalis	1
Blue Leaf Aster	Aster glaucodes	0.25
Silvery Lupine	Lupinus argenteus	1
True Mahogany	Cercocarpus montanus	1
Lewis Flax	Linum lewisii	0.5
Small Burnet	Sanguisorbia minor	1
	TOTAL	9.75

The pure live seed (PLS) rating will be 99% containing a maximum of 1% weeds, none of which are toxic and only seed meeting the State Seed Act will be used. Certification tags will be retained by the permittee. The vegetative cover resulting from this seed mix is considered capable of stabilizing the soil surface from erosion.

R645-202.230

No adverse impacts to stream channels will occur during the installation of the proposed project. The minor amount of water needed to mix the cement will be either drawn from a local stream or hauled from the Mine.

R645-202-231

A cultural resource evaluation of the sites was conducted by Tetra Tech and is located in Appendix B. No items of cultural significance were identified.

R645-202-232

Temporary drilling access road construction is not planned for this project as previously described. Regulations cited in R645-202-232 relative to roads will be followed as they apply.

R645-202-233

No plan is being implemented to remove topsoil at sites other than Seismic C which is a separately permitted exploration hole. Replacement of topsoil will occur upon the completion of exploration drilling. As stated in R645-301-232.400, minimal disturbances as described are below the threshold for removal.

R645-203.234

No diversions of overland flows will take place during the proposed activity.

R645-202-235 (R645-301-624.210, R645-301-731.121, R645-301-731.215))

The project is being conducted in a manner to minimize disturbance to the prevailing hydrologic balance by: 1) minimizing surface disturbance with a minimal footprint; and 2) only using hand-tools or or minimal backhoe use.

APPENDIX A

**2017 WILDLIFE SURVEY
(CONFIDENTIAL FILES)**

APPENDIX B

**2017 CULTURAL RESOURCE EVALUATION
(CONFIDENTIAL FILES)**

PROJECT NAME: Skyline Mine Seismic Stations

DATE: 08/31/2018

PROPOSED ACTION:

Skyline Mine proposes to install up to 6 seismic monitoring stations in the areas near Huntington Creek, Flat Canyon and Swens Canyon in Sanpete County, Utah. Stations will be installed using primarily hand tools. The proposed locations are generally by roads or easily accessible from a nearby road.

PURPOSE AND NEED FOR ACTION:

The purpose of this project is to provide Skyline Mine with the ability to conduct seismic monitoring on a site specific scale which will provide more accurate data and result in more informed decisions.

LOCATION:

The project is located in both Sanpete and Emery County, Utah. The legal description is Sec. 16, 17, 20, 22, 29, 33 Township 13 S., Range 6 E., Salt Lake Meridian (see attached maps).

RANGER DISTRICT: FERRON/PRICE RANGER DISTRICT

COUNTIES: SANPETE and EMERY

EXISTING CONDITIONS:

The vegetation across the survey area is very diverse and yet somewhat consistent throughout the survey area. Vegetation is dependent on elevation, slope, and available water resources. Riparian areas are dominated by typical high elevation riparian species. The

bottoms of the valleys that are drier are dominated by mountain big sagebrush and silver sagebrush communities. South and East facing slopes, at higher elevations are dominated by quaking aspen communities. However, there are some areas that are open on South and East facing slopes. These open areas are typically grass and tall forb communities. However, a significant number of the open areas are dominated by false hellebore. The North and West facing slopes are dominated by conifer communities. The tree species within the conifer community are mostly dead or dying, and most areas have an abundance of deadfall due to beetle infestations. Because of the deadfall and dead trees the forbs and grasses within the conifer communities are very diverse and most areas have a solid understory. The tops of the ridges in the survey area vary with some being dominated by shrub communities such as mountain big sagebrush, elderberry or chokecherry while others are dominated by grass and tall forb communities. Some of the ridge tops are dominated by cluster tarweed.

Special status species which may occur within the project area were identified using the Fish and Wildlife Service's IPaC system, the INTERMOUNTAIN REGION (R4) THREATENED, ENDANGERED, PROPOSED, AND, SENSITIVE SPECIES dated June 2016, and GIS Special Status Species shapefiles. Installation of the seismic stations is scheduled for the Fall of 2018, outside of the nesting, breeding, or flowering season of any of the listed special status species. Surface disturbance is expected to be minimal at each site through the primary use of hand tools.

The following tables list the Endangered, Threatened and Sensitive species of fish, wildlife, and plants that are known to (or may) occur on the Manti-La Sal National Forest in Emery County, Utah. Depending on the specific project, the scope, magnitude and effects this checklist will be considered as documentation for assessment of these TE & S species. Determinations for each species are documented by an "X" in the appropriate block. There is also a table listing the Manti-La Sal National Forest Management Indicator Species and Migratory Birds that will serve as a Wildlife Resources Report.

Biologists and botanists have reviewed this project, used available information on species distributions and habitat (using one or more of the following: topo maps, aerial photos, field reconnaissance, previous surveys), and then assessed the potential for impacts for all federal listed and Region 4 sensitive species. If the project was determined to have **no effect** or **no impact**, this determination was based on one or more of these criteria:

1. Habitat for the species is not present in the project area.
2. Habitat for the species is present but the species does not occur in this area.
3. Habitat for the species is present, the species occurs or may occur in the project area, but the project would not have any direct, indirect or cumulative effects on this species.

Matrix Legend

Federally Listed Species

NE - No Effect

NLAA - May Affect, Not Likely to Adversely Affect

LAA - May Affect, Likely to Adversely Affect

Status

T - Federally Listed As Threatened

PT – Federally Listed As Proposed Threatened

E - Federally Listed As Endangered

C - Federal Candidate Species

S - Regional Sensitive Species

R – Recovery

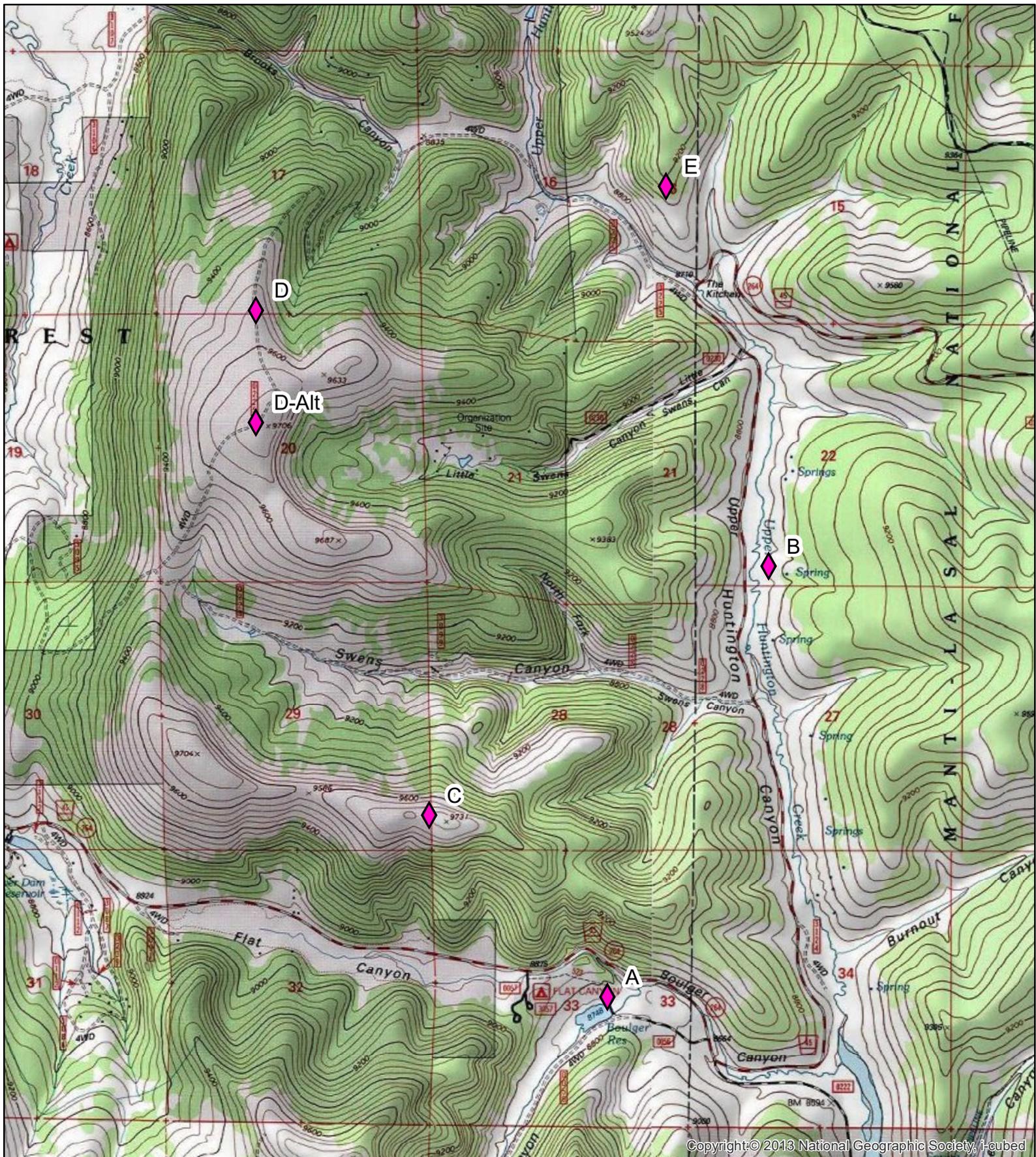
Forest Service Sensitive Species

NI - No Impact

MIIH - May Impact Individuals or their Habitat, But Will Not Likely Contribute To A Trend Towards Federal Listing or Loss of Population Viability

WIFV - Will Impact Individuals or Their Habitat That May Contribute To a Trend Towards Federal Listing or Cause A Loss of Population Viability

MAP



◆ Seismic Stations



2018
Seismic Stations
Skyline Mine

Table 1 Listed and candidate plant, wildlife, and fish species that could occur on National Forest System Land in the project area.

A. PLANT SPECIES				
SPECIES	STATUS	DETERMINATION	SPECIES DESCRIPTION AND EFFECTS	COUNTY LIST
Jones Cycladenia <i>Cycladenia humilis</i> <i>var. jonesii</i>	T	NE	<i>Cycladenia humilis var. jonesii</i> is restricted to the canyon-lands of the Colorado Plateau in Emery, Grand, Garfield and Kane counties, as well as in immediately adjacent Arizona, Coconino County. Occurs in eriogonum-ephedra, mixed desert shrub, and juniper communities at elevations ranging from 4400 ft. – 6000 ft. in Central Emery County, Utah (off-Forest) (Welsh et al. 2003). Often on steep slopes in gypsiferous soils derived from the Summerville, Cutler, and Chinle formations (Franklin 2005, Welsh et al. 2003). This species is not found on the Manti -La Sal N.F.; therefore, the Seismic Station Project will have No Effect on the Jones cycladenia or its habitat.	Emery
B. TERRESTRIAL WILDLIFE SPECIES				
SPECIES	STATUS	DETERMINATION	SPECIES DESCRIPTION AND EFFECTS	COUNTY
California Condor <i>Gymnogyps californianus</i>	E	NE	California condors are opportunistic scavengers, feeding only on carcasses. Typical foraging behavior includes long distance reconnaissance flights, lengthy circling flights over a carcass, and hours of waiting at a roost or on the ground near a carcass (USDI, U.S. Fish and Wildlife Service 1996). The Vermilion Cliffs release site is on the southwestern corner of the Paria Plateau Coconino County, Arizona. This project is not within foraging distance from the release site; therefore, the Seismic Station Project will have No Effect on the California condor or its habitat.	Sanpete, Emery

Mexican Spotted Owl <i>Strix occidentalis</i>	T	NE	In Utah, the Mexican spotted owl nests in steep-walled, complex rock canyons at relatively low elevations (USDI, U.S. Fish and Wildlife Service 2004). There is no suitable habitat within the project area; therefore, the Seismic Station Project will have No Effect on the Mexican spotted owl or its habitat.	Sanpete, Emery
Western Yellow-Billed Cuckoo <i>Coccyzus americanus</i>	PT	NE	In Utah, nesting habitats are found at elevations between 2,500 to 6,000 feet. They appear to require large tracts (100 to 200 acres) of contiguous riparian nesting habitat (Parrish et al. 2002). There is no suitable habitat within or near the project area; therefore the Seismic Station Project will have No Effect on the yellow-billed cuckoo or its habitat.	Sanpete, Emery

C. AQUATIC WILDLIFE SPECIES

SPECIES	STATUS	DETERMINATION	SPECIES DESCRIPTION AND EFFECTS	COUNTY LIST
Bonytail <i>Gila elegans</i>	E	NE	Historically, the bonytail existed in warm water reaches of larger rivers in the Colorado River Basin; it is considered to be adapted to pools and eddies of mainstream rivers. It has been extirpated from most of its historic range. Currently, a small number of wild adults exist in Lake Mohave in the Lower Colorado River Basin, and there are small numbers of wild individuals in the Green River and in sub basins of the Upper Colorado River Basin (USDI, U.S. Fish and Wildlife Service 2002). The project will not affect down stream flows; therefore, the Seismic Station Project will have No Effect on the bonytail or its habitat.	Emery
Colorado Pikeminnow <i>Ptychocheilus lucius</i>	E	NE	The Colorado pikeminnow is endemic to the Colorado River Basin, and it historically extended from the Green River in Wyoming, to the Gulf of California; it was widespread and abundant in warm-water rivers and tributaries. It is a long-distance migrator (hundreds of kilometers to and from spawning areas). Adults require deep pool and eddie habitats in streams that have high spring flows. Currently, in Utah this species occurs in the Green River from Lodore Canyon to the confluence of the Colorado River (USDI, U.S. Fish and Wildlife Service 2002a). The proposed project has not and will not affect down stream flows; therefore, the	Emery

			Seismic Station Project will have No Effect on the Colorado Pikeminnow or its habitat.	
Humpback Chub <i>Gila cypha</i>	E	NE	The humpback chub is restricted to deep, swift mainstream and large tributaries in relatively inaccessible canyons of the Colorado River Basin. Adults require eddies and sheltered shorelines in streams that maintain high spring flows that flush sediments from spawning areas and form gravel deposits used for spawning. Young require low-velocity shoreline habitats. Currently, there are six known extant populations, which are located in the Upper Colorado River, Yampa River and Little Colorado River (USDI, U.S. Fish and Wildlife Service 2002b). The project has not and will not affect down stream flows; therefore, the Seismic Station Project will have No Effect on the humpback chub or its habitat.	Emery
Razorback Sucker <i>Xyrauchen texanus</i>	E	NE	Historically the razorback sucker was widely distributed in warm-water reaches of the Colorado River and its tributaries from Wyoming to Mexico. Adults require deep pools, eddies and backwaters in spring; shallow water associated with sandbars in summer; and low velocity pools and eddies in winter. Young require quiet, warm, shallow water found at tributary mouths, and in coves or shorelines in reservoirs. Currently, within the Upper Colorado River Basin this species is only found in small numbers in the middle Green River, between the confluence of the Duchesne and Yampa rivers, and in the lower reaches of those two tributaries (USDI, U.S. Fish and Wildlife Service 2002c). The proposed project has not and will not affect down stream flows; therefore, the Seismic Station will have No Effect on the razorback sucker or its habitat.	Emery

Table 2 Intermountain Regional Forester’s list of sensitive plant, wildlife, and fish species that could occur on the Manti Division Of the Manti-La Sal National Forest (MLNF)

A. PLANT SPECIES			
SPECIES	STATUS	DETERMINATION	SPECIES DESCRIPTION AND EFFECTS
Arizona Willow <i>Salix arizonica</i>	S	NI	<i>Salix arizonica</i> occurs in wet meadows along perennial streams and occurs only in the Muddy Creek drainage on the MLNF (NatureServe 2015, UNPS 2015, and USDA, NRCS 2015). There are no known occurrences of this species in or near the project area; therefore, the Seismic Station Project will have No Impact on the Arizona willow or its habitat.
Canyon Sweet-vetch <i>Hedysarum occidentale var. canone</i>	S	NI	<i>Hedysarum occidentale var. canone</i> is found on sites with a high water table, near springs or stream beds within the pinyon/juniper vegetation type at 5,500 to 7,000 ft. elevations. River birch and squaw brush are associated species. It is endemic to Duchesne, Carbon and Emery Counties (NatureServe 2015, UNPS 2015, and USDA NRCS 2015). URP 2015 states it can be found in pinyon/juniper, service berry, maple, mountain mahogany, and sagebrush communities 6,400-8,300 feet. There are no known occurrences of this species in the proposed project area; therefore, the Seismic Station Project will have No Impact on the canyon sweet-vetch or its habitat.
Carrington Daisy <i>Erigeron carringtoniae</i>	S	NI	<i>Erigeron carringtoniae</i> occurs in limestone outcrops and escarpments in subalpine vegetation type on wind-blown ridge tops and snowdrift sites at high elevations of the Wasatch Plateau (9,000 to 11,000 feet) (UNPS 2015, USU 2015, USDA NRCS 2015). There are no known occurrences of this species in the proposed project area; therefore, the Seismic Station Project will have No Impact on the Carrington daisy or its habitat.
Creutzfeldt-flower <i>Cryptantha creutzfeldtii</i>	S	NI	<i>Cryptantha creutzfeldtii</i> occurs in shallow, rocky, heavy silty-clay soils; on Mancos shale slopes. It is endemic to central Utah in Carbon, Emery, and Sevier Counties (Franklin 2005) at 5,000 to 6,500 ft. elevations. It grows in scattered piñon-juniper communities with an understory of black sagebrush and/or <i>Atriplex</i> (NatureServe 2015, UNPS 2015, USDA NRCS 2015, and USU 2015). There are no known occurrences of this species in the proposed project area; therefore, the Seismic Station Project will have No Impact on the Creutzfeldt-flower or its habitat.

Link Trail Columbine <i>Aquilegia flavescens rubicunda</i>	S	NI	<i>Aquilegia flavescens</i> var. <i>rubicunda</i> occurs near spring seeps and perennial wetland sites within the Mesa Verde group of sandstones near coal seams on the east side of the Wasatch Plateau in Emery, Garfield, and Sevier Counties (NatureServe 2015, UNPS 2015, USDA NRCS 2015 URPG 2015). There are no known occurrences of this species in the proposed project area; therefore, the Seismic Station Project will have No Impact on the Link Trail columbine or its habitat.
Maguire Champion <i>Silene petersonii</i>	S	NI	<i>Silene petersonii</i> is endemic to Garfield, Iron and Sanpete counties in ponderosa pine, aspen, and spruce-fir communities on Flagstaff Limestone and Claron Formation, mainly at plateau margins from 7,000 - 11,300 ft. Occurs at high elevations on open calcareous and igneous soils (Welsh et al. 2003, NatureServe 2015, UNPS 2015, USU 2015, and USDA, Natural Resource Conservation Service 2015). There are no known occurrences of this species in the proposed project area; therefore, the Seismic Station will have No Impact on the Maguire champion or its habitat.
Musinea Groundsel <i>Senecio musiniensis</i>	S	NI	<i>Senecio musiniensis</i> is endemic to Sanpete county on ridge tops of Flagstaff Limestone, barrens and talus slopes at Musinea Peak and on the margins of the Wasatch Plateau from 9,700 -10,800 ft. (Welsh et al. 2003, NatureServe 2015, UNPS 2015, USDA, Natural Resource Conservation Service 2015). There are no limestone barrens or talus slopes in the project area. There are no known occurrences of this species in the proposed project area; therefore, the Seismic Station Project will have No Impact on the Musinea groundsel or its habitat.

B. TERRESTRIAL WILDLIFE SPECIES

SPECIES	STATUS	DETERMINATION	SPECIES DESCRIPTION AND EFFECTS
Bald Eagle <i>Haliaeetus leucocephalus</i>	S	NI	Bald eagle nests are typically located in multi-storied (uneven-aged) coniferous forest stands that contain elements of old growth structure, and are located near bodies of water that support prey species. Nest trees are generally one of the largest trees in the stand, which provides a good view of the surrounding area (Spahr et al. 1991). There is suitable fall/winter habitat near the project area but this project will not remove or disturb large roost trees which may be used by individual wintering eagles; therefore, the Seismic Station Project will have No Impact on the bald eagle or its habitat.

<p>Bighorn Sheep <i>Ovis Canadensis</i> – Includes Rocky Mountain bighorn (<i>O. c. canadensis</i>), California bighorn (<i>O. c. californiana</i>), and desert bighorn sheep (<i>O. c. nelsoni</i>).</p>	S	NI	<p><i>Ovis Canadensis nelsoni</i> occurs in open rocky areas of desert mountain ranges in the southwestern United States and northern Mexico. A native Utah species, the desert bighorn sheep can be found in the southern (especially southeastern) area of the state (UDNR, 2015). The closest populations are within the San Rafael Swell, approximately 30 miles from the project area. <i>Ovis canadensis canadensis</i> is native to rugged mountainous areas of western North America. The species has been eliminated from much of its former range due to over-hunting, habitat alterations, and diseases introduced by domestic livestock (UDNR, 2015). In Utah, Rocky Mountain bighorn sheep can now be found in a number of mountain ranges. Rocky Mountain bighorn sheep prefer steep rocky slopes, and may migrate from higher elevations to lower valleys in the winter. The closest populations are located in the Book Cliff Mountains, more than 40 miles from the project area. <i>Ovis canadensis californiana</i> historically inhabited portions of the Great Basin in Nevada and Idaho. Although it is not known conclusively whether or not California bighorns inhabited Utah, recent studies indicate there is no genetic or taxonomic distinction between Rocky Mountain and California bighorns (UDWR 2015). There is some evidence to suggest that it was once native to Utah. In recent times, a population of California bighorn sheep has been established by the UDWR and the Utah Division of Parks and Recreation (UDPR) on Antelope Island, in the Great Salt Lake (UDWR 2013). This population is located more than 60 miles from the gravel pit. This species is not near the project area therefore, the Seismic Station Project will have No Impact on bighorn sheep.</p>
<p>Flammulated owl <i>Otis flammeollus</i></p>	S	NI	<p>Flammulated owls are associated with mature pine or mixed conifer forests with a ponderosa pine and/or Douglas-fir component. No suitable habitat would be removed as a result of this project; therefore, the Seismic Station Project will have No Impact on the flammulated owl or its habitat.</p>
<p>Greater Sage Grouse <i>Centrocercus urophasianus</i></p>	S	NI	<p>Sage grouse are generally found where there are large tracts of sagebrush habitat with a diverse and substantial understory of native grasses and forbs or in areas where there is a mosaic of sage brush, grasslands, and aspen. Wet meadows, springs, seeps, or other green areas within sagebrush shrublands are generally needed for the early brood-rearing period (Connelly et al. 2004). There is no suitable habitat affected by the proposed project. Although portions near the project area are currently mapped as priority habitat, that delineation was conducted at a very broad-scale. In this case; field visits, research, and knowledge of this area has indicated that it is not suitable habitat and is not occupied by sage grouse. Therefore, the Seismic Station Project will have No Impact on the greater sage</p>

			grouse or its habitat.
Northern goshawk <i>Accipiter gentilis</i>	S	NI	In Utah, most nests can be found in mid-elevation sites occupied by quaking aspen or coniferous forest (Graham et al. 1999). Northern goshawks migrate to lower elevations during the winter months. There is suitable habitat near the proposed project area, however this project will not impact nesting or foraging habitat; therefore, the Seismic Station Project will have No Impact on the northern goshawk or its habitat.
Peregrine Falcon <i>Falco peregrinus</i>	S	NI	Peregrine falcons most commonly occupy habitats which contain cliffs for nesting and more open country for foraging. There is no preference to certain vegetation types (White et al. 2002). There is suitable foraging habitat near the project; however, the quality of the habitat is low based on the proximity to a high use, well-traveled FSR. Therefore, the Seismic Station Project will have No Impact on the peregrine falcon or its habitat.
Spotted Bat <i>Euderma maculatum</i>	S	NI	In Utah, the spotted bat is likely found throughout the state. It is known to use a variety of vegetation types from approximately 2,500 to 9,500 feet, including riparian, desert shrub, spruce-fir, ponderosa pine, montane forests and meadows (Oliver 2000). Spotted bats roost alone in rock crevices high up on steep cliff faces. There is suitable roosting habitat near the gravel pit. This project may impact foraging habitat; however, the impact would be minimal based on the size of the project, the availability of foraging habitat throughout the forest, and limited use of the project area. Therefore the Seismic Station Project will have No Impact on Spotted Bat
Three-toed Woodpecker <i>Picoides tridactylus</i>	S	NI	Three-toed woodpeckers use forests containing spruce, grand fir, ponderosa pine, tamarack, and lodge-pole pine. There is no suitable habitat for three-toed woodpeckers within the project area; therefore, the Seismic Station Project will have No Impact on the three-toed woodpecker or its habitat.
Townsend's Big-eared Bat <i>Plecotus townsendii pallescens</i>	S	NI	Townsend's big-eared bats use buildings, caves, and mines as day roosts, night roosts, and maternity roosts. In Utah, wintering habitats of this species is better known than any other bat species, where it is well known as a hibernator in Utah utilizing caves and mines as hibernaculum (Oliver 2000). This species uses a variety of habitat in Utah including: desert scrub, pinyon/juniper, sagebrush, mountain brush, mixed forest, and ponderosa pine. No habitat will be affected by the proposal. Therefore, will have No Impact on Townsend's Big-eared Bat.

C. AQUATIC WILDLIFE SPECIES

SPECIES	STATUS	DETERMINATION	SPECIES DESCRIPTION AND EFFECTS
Bonneville Cutthroat Trout <i>Oncorhynchus clarki utah</i>	S	NI	Bonneville cutthroat trout (BVCT) range from high-elevation streams with coniferous and deciduous riparian trees to low-elevation streams in sage-steppe grasslands containing herbaceous riparian zones to lakes. BVCT primarily occur in small headwater streams and slow, deep water with vegetated stream banks which provide shade, and bank stability (NatureServe 2015). There are no streams on or near the land occupied by the gravel pit and the proposed project will not affect BCT; therefore, the Seismic Station Project will have No Impact on the Bonneville cutthroat trout or its habitat.
Colorado River Cutthroat Trout <i>Oncorhynchus clarki pleuriticus</i>	S	NI	Colorado River cutthroat trout (CRCT) require cool, clear water with well vegetated stream banks which provide cover, shade, and bank stability. CRCT tend to occupy headwater stream areas, especially when other trout species are present (NatureServe 2015). There are no streams on or near the land occupied by the gravel pit; therefore, the Seismic Station Project will have No Impact on the Colorado River cutthroat trout or its habitat.
Columbia Spotted Frog <i>Rana luteiventris</i>	S	NI	Spotted frogs are most commonly found in cold, still, permanent water in such habitats as marshy edges of ponds or lakes, in algae-grown overflow pools of streams, and near flat-water springs with emergent vegetation. The Columbian spotted frog may move considerable distances from water after breeding, often frequenting mixed conifer and sub alpine forests, grasslands, and brush lands of sage and rabbit brush. There is no suitable habitat in or near the project area; therefore, the Seismic Station Project will have No Impact on the Columbian spotted frog or its habitat.
Southern Leatherside Chub <i>Leidomeda aliciae</i>	S	NI	Southern leatherside chubs inhabit desert streams of the Bonneville Basin. Southern leatherside chubs require flowing water and do not persist in lakes or reservoirs. Southern leatherside chub have been documented in three 4 th level HUCs (Hydrologic Unit Code) in the Utah Lake drainage and six 4 th level HUCs in the Sevier River Drainage (UDWR 2009). There are no streams near the project area containing leatherside chub; therefore, the Seismic Station Project will have No Impact on the Southern Leatherside Chub or its habitat.
Western Boreal Toad <i>Bufo boreas boreas</i>	S	NI	The western boreal toad inhabits western Canada and much of the western (especially northwestern) United States. It occurs throughout most of Utah, and can be found in a variety of habitats, including slow moving streams, wetlands, desert

			springs, ponds, lakes, meadows, and woodlands (UDNR 2015). There is no suitable habitat in or near the project area; therefore, the Seismic Station Project will have No Impact on the western boreal toad or its habitat.
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Table 3 Manti-La Sal National Forest Management Indicator Species (MIS)

SPECIES	STATUS	DETERMINATION	COMMENTS
Golden Eagle <i>Aquila chrysaetos</i>	MIS	NI	Golden eagles generally inhabit mountainous or hilly terrain, but can also be found in valleys and western plains, especially during migration and winter. They generally nest on cliffs, but they also nest in trees. Golden eagles hunt over open country for small mammals, snakes, birds and carrion. Surveys for nesting raptors have been conducted in and around the project area for multiple years. There were no documented golden eagle nest sites near the project area.
Macro-invertebrates Aquatic Insects	MIS	NI	Macro-invertebrates (aquatic insects) are ecological indicator species in aquatic habitats. Habitat requirements for aquatic macroinvertebrates vary with species; habitat requirements for any one species are very specific. Many macro-invertebrates are the larval form of flying insects such as mayflies, stoneflies, and caddisflies. There is no suitable aquatic habitat affected by the Seismic Station Project.
Mule Deer <i>Odocoileus hemionus</i>	MIS	NI	Mule deer use a wide array of habitat types and exhibit seasonal movement (elevation migration) in response to snow cover. There is no identified key or general winter range within the gravel pit. This area does seem to serve as transition range for big game, moving from higher elevations in the late fall to lower winter ranges in the winter with a return in the early spring. Movements depend on snowfall amounts. There will be no impacts to big game as installation will be conducted during the Fall 2018 outside of crucial fawning season.
Rocky Mountain Elk <i>Cervus canadensis</i>	MIS	NI	Elk tend to occupy the higher elevation aspen and mixed conifer habitats from spring through early fall, and move to lower elevation mixed shrub, pinyon/juniper, and sagebrush habitats for winter. There is no identified key or general winter range within the gravel pit. This area does seem to serve as transition range for big game, moving from higher elevations in the late fall to lower winter ranges in the winter with a return in the early spring. Movements depend on snowfall amounts. There will be no impacts to big game as installation

COVER PAGE

Must Accompany All Project Reports Submitted to the Utah SHPO



Report Title: A Class III Cultural Resource Inventory for Canyon Fuel Company, LLC's Skyline Mine 2018 Exploration Drill Locations, Emery and Sanpete Counties, Utah

UDSH Project Number: U18TD0309

Org. Project Number: 117-8051005

Report Date: July 2018

County(ies): Emery and Sanpete

Report Author(s): Mark Karpinski and Garrett Webb

Principal Investigator: Mark Karpinski

Record Search Date(s): May 29, 2017

Field Supervisor(s): Mark Karpinski

Intensive Acres Surveyed (<15m intervals): 10.26

Recon/Intuitive Acres Surveyed (<15m intervals): 0

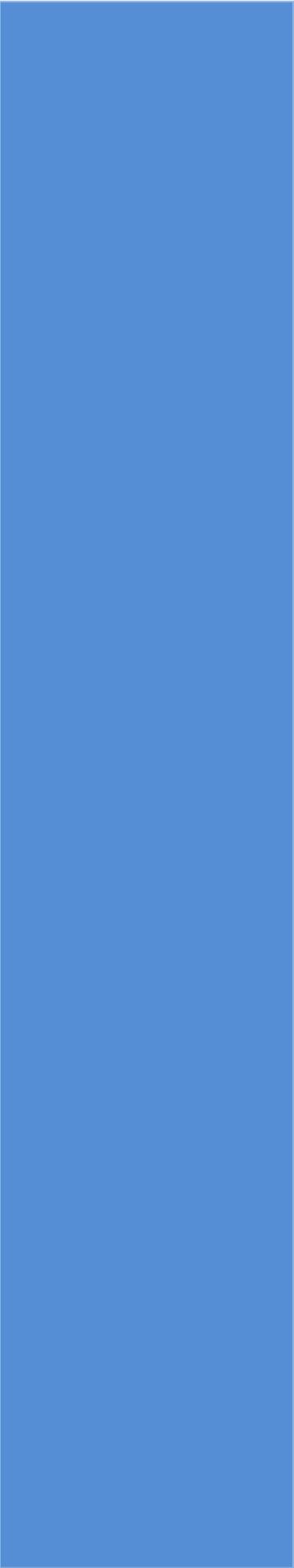
USGS 7.5' Series Map Reference(s): Candland Mountain, Utah (2004) and Fairview Lakes, Utah (2004)

Sites Reported	Count	Smithsonian Trinomials
Revisits (no updated site forms)	0	
Updates (updated site forms provided)	1	42SP393
New recordings (site forms provided)	1	42EM5173
Total Count of Archaeological Sites in APE	2	42EM5173; 42SP393
Historic Structures (structures forms provided)	0	
Total National Register Eligible Sites	1	42EM5173

*Please list all site numbers per category. Number strings are acceptable (e.g. "42TO1-13; 42TO15"). Cells should expand to accommodate extensive lists.

Checklist of Required Items for Submittal to SHPO

- "Born Digital" Report in a PDF/A format
 - SHPO Cover Sheet
 - File Name is the UDSH Project Number with no hyphens or landowner suffixes
- "Born Digital" Site forms in PDF/A format
 - UASF with embedded maps and photos
 - File name is Smithsonian Trinomial without leading zeros (e.g. 42TO13 not 42TO00013)
 - Photo requirements (including size and quality)
- Archaeological Site Tabular Data
 - Single spreadsheet for each project
 - Follows UTSHPO template (info here: <https://goo.gl/7SLMqi>)
- GIS data
 - Zipped polygon shapefile or geodatabase of survey (if different from APE) or other activity area with required field names and variable intensity denoted
 - Zipped polygon shapefile or geodatabase of site boundaries with a the required field name



A Cultural Resource Inventory for Canyon Fuel Company, LLC's Skyline Mine 2018 Exploration Drill Locations, Emery and Sanpete Counties, Utah

Utah State SHPO Project Number: U18TD0309

Prepared for:

Canyon Fuel Company, LLC

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Tetra Tech Project No. 117-8051005

July 2018

Project Title:	A Class III Cultural Resource Inventory for Canyon Fuel Company, LLC's Skyline Mine 2018 Exploration Drill Locations, Emery and Sanpete Counties, Utah		
Agency(-ies):	United States Forest Service (USFS); Manti-La Sal National Forest; Utah Department of Oil, Gas, and Mines (UDOGM)		
Utah State Number:	U18TD0309	Tetra Tech No.:	117-8051005
Description:	<p>Canyon Fuel Company, LLC is planning to conduct core drilling at six locations in support of its current underground Skyline Mine operations located in Emery and Sanpete Counties, Utah (Table 1). Access to the drill locations will mostly be on existing two-track and bladed dirt roads. Temporary overland access routes have been proposed for four drill locations. Two drill locations are on land administered by the United States Forest Service (USFS), Manti-La Sal National Forest. As part of the federal permitting process, agencies must assess the potential impacts of an action on cultural resources in conformance with Section 106 of the National Historic Preservation Act. Four drill locations are on privately held lands and fall under the jurisdiction of the State of Utah Department of Oil, Gas, and Mines (UDOGM). The state-level permitting process must assess the potential impacts of an action on cultural resources in conformance with Section 404 of the Utah Annotated Code.</p> <p>Tetra Tech conducted a Class III cultural resource inventory for all six locations. At each drill we cleared a 30 m (100 foot) diameter area centered on the proposed disturbance boundary. A 30 m (100 foot) corridor was inventoried for all proposed new access routes at four proposed drill locations. The cultural resource inventory was completed in conformation with all USFS requirements outlined in the project field work authorization (signed by Manti-La Sal on June 7, 2018) and Utah State Historic Preservation Office (SHPO) guidelines and standards.</p>		
Location:	The project is located within portions of Sections 28, 29, and 32 of T13S, R6E and Sections 5 and 10 of T14S, R6E; Salt Lake City Meridian, (7.5' USGS quadrangle Candland Mountain, Utah (2004) and Fairview Lakes, Utah (2004)).		
Acreage:	10.26 total acres inventoried at 15 meter (50 feet) transect intervals. Linear: 8.25 acres Block: 2.01 acres		
Landownership:	USFS and privately held		
Results	Identified Sites	2	Isolated Occurrences 0
Eligible Sites	42EM5173		
Not Eligible Sites	42SP393		

ABSTRACT

Tetra Tech argues that Site 42SP393 recordation is in the wrong location. The actual 1894 GLO is a bladed and improved dirt road still in use within the bottom of Swens Canyon. Canyon Fuels plans to use the road to access drill locations 1-18 and 2-18. The use will require no modifications or changes to the GLO road, therefore the project should have **no effect** on the site.

Tetra Tech argues that Site 42EM5173 is **eligible** for inclusion on the NRHP under Criterion A and C. The recommendation is based on the mid-20th century cabin still in good condition on the site. The remainder of the site is in poor condition. Drill locality 7-18 is proposed to be in the southwestern part of the site approximately 152 ft (47 m) from the cabin. The drill locality will have no adverse impact on cabin. An alternative drill locality has been proposed outside the site boundary 100 ft (30 m) to the west. The alternative drill locality will have no effect on the site.

The potential for the planned drilling activities to encounter unanticipated cultural resources is low. However, if any undocumented sites are discovered during project activities, all work within a 30 m (100 feet) vicinity of the discovery should be stopped. If the discovery is on Manti-La Sal National Forest lands, the forest archaeologist ((435) 637-2817) should be contacted immediately. For discoveries on privately held lands, the UDOGM archaeologist should be contacted ((801)538-5340).

TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1	Project Location	1
1.2	Physical Setting	1
2.0	BACKGROUND	6
2.1	Summary and Expectations	7
3.0	METHODOLOGY	7
4.0	INVENTORY RESULTS AND MANAGEMENT RECOMMENDATIONS	9
4.1	Previously Recorded Site.....	9
	42SP393 – Historic GLO Road, Not Eligible.....	9
4.2	Newly Recorded Sites.....	10
	42EM5173 – Historic Line Camp with Cabin, Eligible under A and C	10
4.3	Management Recommendations	13
5.0	REFERENCES	14

LIST OF TABLES

Table 1.	Proposed Drill Locations.....	1
Table 2.	Previously Completed Inventories.....	6
Table 3.	Previously Recorded Sites.....	6

LIST OF FIGURES

Figure 1.	Skyline 2018 Exploration Drill and Access Route Locations (Page 1 of 2).	3
Figure 2.	Skyline 2018 Exploration Drill and Access Route Locations (Page 2 of 2).	4
Figure 3.	Drill Location 2-18; Overview Photograph, Facing Northeast.	5
Figure 4.	Drill Location 3-18; Overview Photograph, Facing North.....	5
Figure 5.	Site 42EM5173; Feature 1: Cabin, Facing Northwest.	10
Figure 6.	Site 42EM5173; Feature 2, Facing Southwest.	11
Figure 7.	Site 42EM5173; Feature 3, Facing Southeast.....	12
Figure 8.	Site 42EM5173; Vehicle, Facing Southeast.	12

APPENDICES

Appendix A: Utah Archaeological Site Forms

1.0 INTRODUCTION

Canyon Fuel Company, LLC is planning to conduct core drilling at six locations in support of its current underground Skyline Mine operations located in Emery and Sanpete Counties, Utah (Table 1). Access to the drill locations will mostly be on existing two-track and bladed dirt roads. Temporary overland access routes have been proposed for four drill locations. Two drill locations are on land administered by the United States Forest Service (USFS), Manti-La Sal National Forest. As part of the federal permitting process, agencies must assess the potential impacts of an action on cultural resources in conformance with Section 106 of the National Historic Preservation Act. Four drill locations are on privately held lands and fall under the jurisdiction of the State of Utah Department of Oil, Gas, and Mines (UDOGM). The state-level permitting process must assess the potential impacts of an action on cultural resources in conformance with Section 404 of the Utah Annotated Code.

Table 1. Proposed Drill Locations

Drill Location Number	UTM Location ^a	Access Route	Landownership
1-18	477631 mE 4389955 mN	None	Private
2-18	477123 mE 4389604 mN	2800 ft	USFS, Manti-La Sal Nation Forest
3-18	477014 mE 4388963 mN	400 ft	Private
4-18	477084 mE 4388377 mN	200 ft	Private
5-18S&B	476381 mE 4386338 mN	None	USFS, Manti-La Sal Nation Forest
7-18	478896 mE 4384870 mN	150 ft	Private

^a Datum NAD83; Zone 12N

Tetra Tech conducted a Class III cultural resource inventory for all six locations. At each drill well we cleared a 30 m (100 foot) diameter area centered on the proposed disturbance boundary. A 30 m (100 foot) corridor was inventoried for all proposed new access routes at four proposed drill locations. The cultural resource inventory was completed in conformance with all USFS requirements outlined in the project field work authorization (signed by Manti-La Sal on June 7, 2018) and Utah State Historic Preservation Office (SHPO) guidelines and standards.

1.1 Project Location

The proposed drill areas are on Manti-La Sal National Forest administered and privately held lands. The areas are located within portions of Sections 28, 29, and 32 of T13S, R6E and Sections 5 and 10 of T14S, R6E; Salt Lake City Meridian, (7.5' USGS quadrangle Candland Mountain, Utah (2004) and Fairview Lakes, Utah (2004)). (Figures 1 and 2).

1.2 Physical Setting

The project is located southwest of the community of Scofield, Utah within the northern part of the Wasatch Plateau region of the Basin and Range-Colorado Plateau Transition physiographic province. The Wasatch Plateau region is an erosional remnant of the Cretaceous and Tertiary-

aged sedimentary deposits making up the ragged edge of the Colorado Plateau. The mountains are steep sided and divided by glacially modified narrow valley bottoms with perennial snow melt fed streams (Stokes 1986). Three drill locations are located on unnamed ridge tops east of Upper Huntington Creek (Figure 3). Two locations are within Flat Canyon and one is within Little Eccles Canyon (Figure 4). Sediments are residual/colluvium mix sand loam with dense moderately well sorted, pebble to boulder size, gravels

Climatically, the project occurs within both the subalpine and alpine climatic areas with average temperatures ranging from -10 to 75 degrees Fahrenheit with an annual average yearly precipitation of 48 inches (Harper 1986). Vegetation in the project is a varying dense Aspen and Lodge Pole Pine community. Various species of shrubs, grasses, and forbs are also present. One drill location is above tree line on an Alpine shrub vegetation community. The area is habitat for a wide variety of animal species; including large through small sized mammals. A wide variety of birds also inhabit the area. Perennial drainages near the drill locations are Boulger Canyon, Little Eccles Canyon, Swens Canyon, and Upper Huntington Creek is the nearest perennial stream in the valley bottoms.

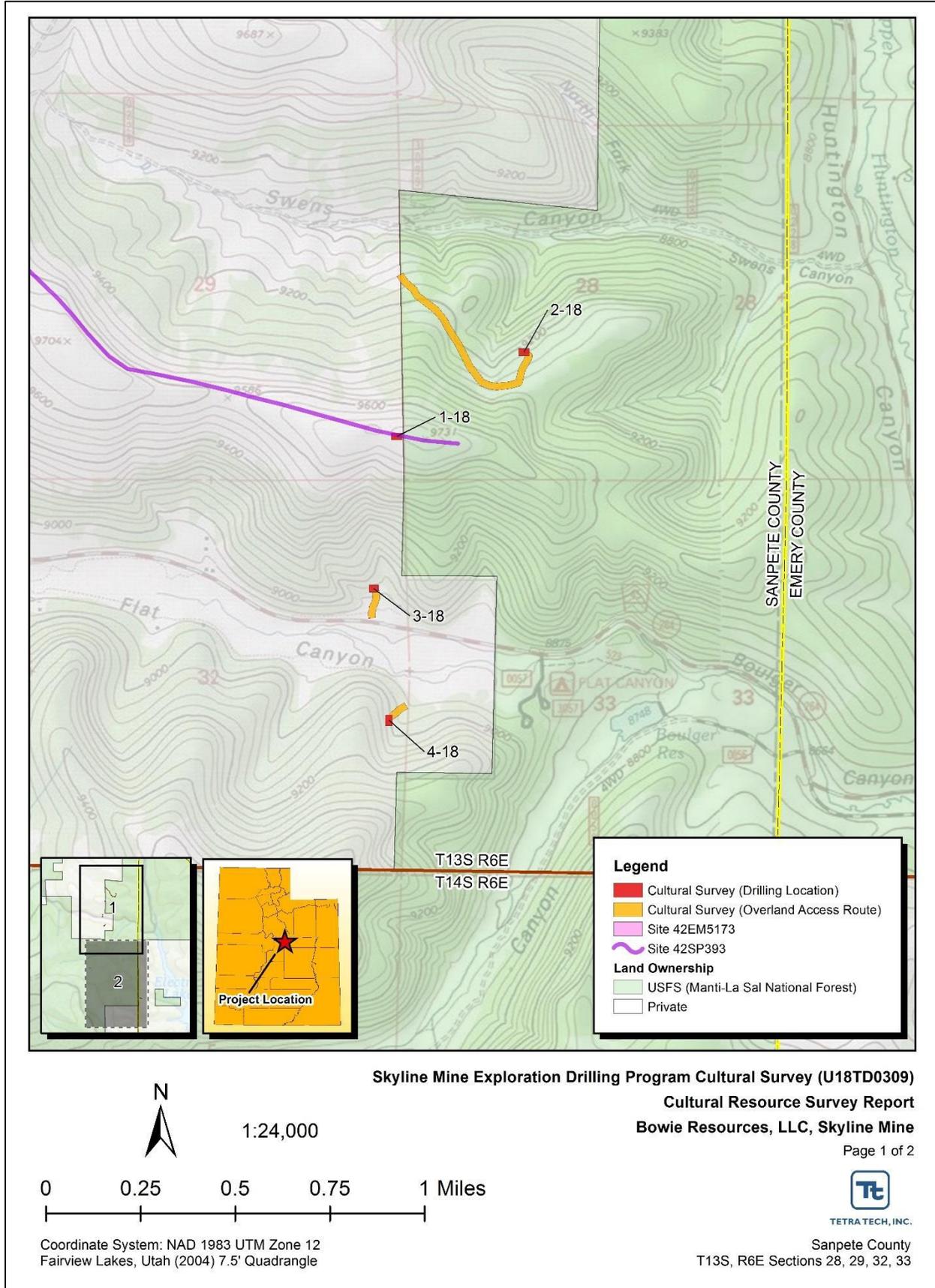


Figure 1. Skyline 2018 Exploration Drill and Access Route Locations (Page 1 of 2).

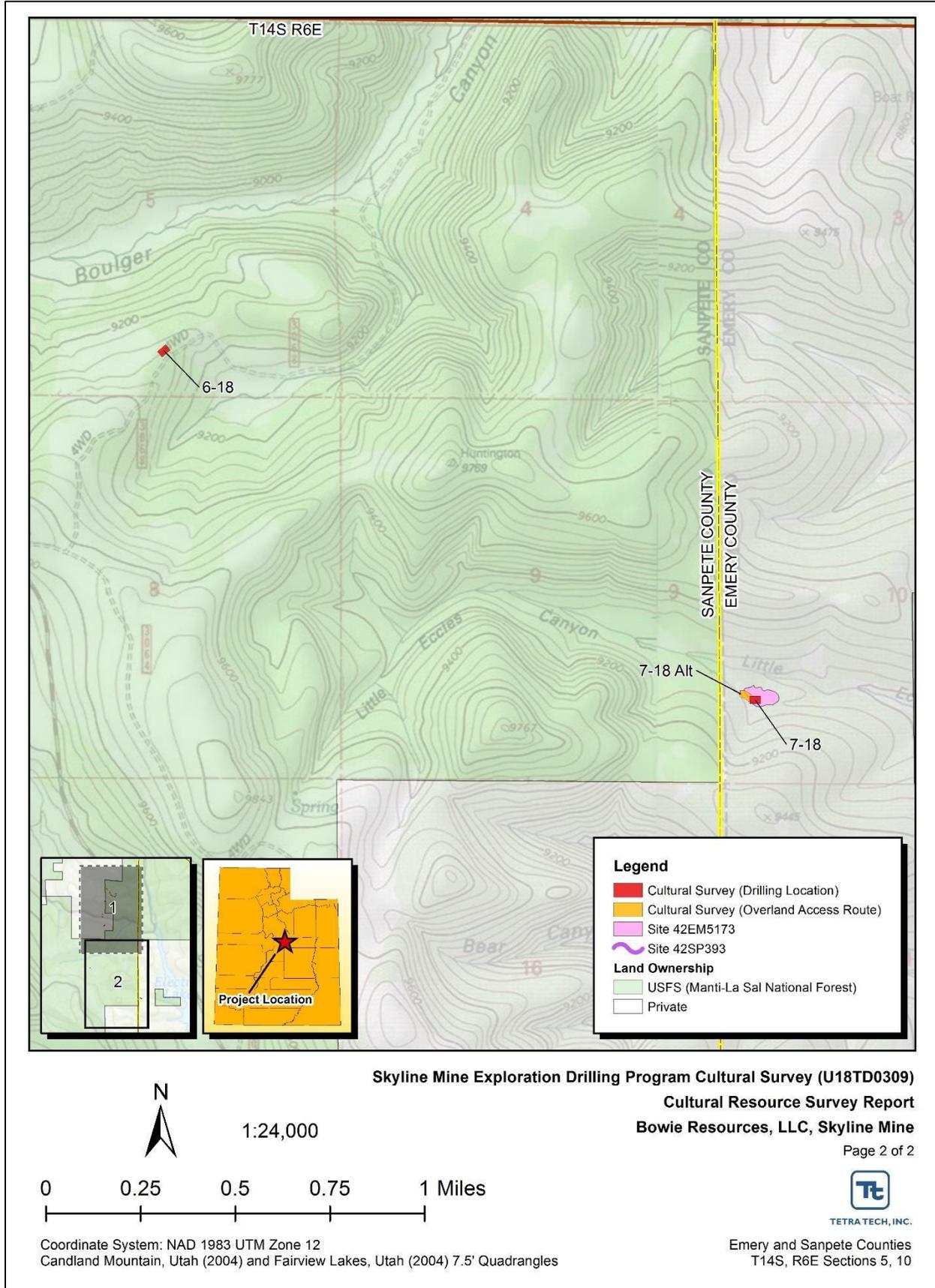


Figure 2. Skyline 2018 Exploration Drill and Access Route Locations (Page 2 of 2).



Figure 3. Drill Location 2-18; Overview Photograph, Facing Northeast.



Figure 4. Drill Location 3-18; Overview Photograph, Facing North.

2.0 BACKGROUND

Prior to field work, a literature search was conducted for each drill locations, the access routes, and a surrounding half mile radius of each. The cultural records were reviewed online through the Utah State Historic Preservation Office (SHPO) Preservation Pro database on May 29, 2018. Ten cultural resource inventories have been previously completed within the literature search area (Table 2). The inventories were completed as part of coal mining, oil and gas transmission development, range management and timber sales. Two inventories cross into portions of two proposed drill areas; however, the previous inventories cover a small portion of each and avoidance during field work was not practicable. The remaining portions of the project have not been previously subjected to cultural resource inventory.

Table 2. Previously Completed Inventories

Utah State Project Number	Project Name	Year	Within/Outside Inventory Area
U89FS0064	Boulger Canyon Timber Sale	1989	Outside
U91FS0596	Coyote Timber Salvage	1991	Outside
U91FS0686	Boulger/Spring Canyon Watershed Treatmnt Proj	1991	Outside
U93FS0441	Boulger Timber Sale & Reservoir Improvement Proj.	1993	Outside
U95AF0252	Drill/Seis-Upper Huntington & Winterqrtrs CB/EM/SP	1995	Outside
U97AF0586	Maxon Technologies Skyline Mine Drill Holes	1997	Within/Outside
U99MM0366	Ruby Pipeline	1999	Within/Outside
U01FS0672	Flat Canyon Campground Tree Thinning Project	2001	Outside
U01MQ0459	Canyon Fuels Flat Canyon Coal Inventory	2001	Outside
U16EO0163	A CRI For The Skyline Mine - 2016 Exploratory Drilling Project Emery And Sanpete Counties Utah	2016	Outside

Seven sites have been recorded within the search area (Table 3). The previously recorded sites are all historic-era cultural resources associated with numerous activities. Three are listed as eligible for the NRHP and the remaining are not eligible for inclusion on the NRHP. Metcalf Archaeological Consultants recorded an old two-track as an unnamed historic road (Site 42SP393) trending east to west along the top of an east to west trending ridge. The Preservation Pro GIS and site form location depicts it passing through proposed drill location 1-18. The road is also proposed to be used as access to drill location 1-18. The site is discussed further in Section 4.1. The remaining previously recorded sites are located outside the cultural resource inventory areas for the drill sites and access routes.

Table 3. Previously Recorded Sites

Smithsonian Number	Site Type	NRHP Determination	Within/Outside Inventory
42SP393	Historic Road	Eligible	Within
42SP399	Historic Artifact Scatter/Tree Carvings	Not Eligible	Outside

42SP400	Historic Tree Carvings	Not Eligible	Outside
42SP444	Historic Log Fence	Not Eligible	Outside
42SP445	Historic Homestead	Eligible under Criterion C	Outside
42SP447	Historic Sawmill	Not Eligible	Outside
42SP454	Historic Flat Canyon Campground	Eligible under Criterion A and C	Outside

The historic General Land Office (GLO) maps were reviewed through the Utah BLM cadastral survey online database (http://www.ut.blm.gov/LandRecords/Land_Records.html). The records were checked to determine if any unrecorded cultural resources are potentially present within or near the inventory areas. The GLO map for T14S, R6E (filed January 31, 1876) and the GLO map filed November 30, 1949 do not map the project search areas. The GLO map for T13S, R6E (filed June 9, 1883) does not map the project search areas. The T13S, R6E GLO map filed March 23, 1894 depicts an east to west trending road, a drag road, and a “Old Saw Mill” in the central and north central portions of Sections 28 and 29. The road is likely the one recorded as Site 42SP393 and is discussed in Section 4.1. An unnamed road along with buildings labeled “Dairy” and “Saw Mill” are depicted in the Flat Canyon bottom in Section 32. None of the features occur within the current project inventory areas. The GLO map filed September 20, 1938 depicts no man-made features near the project areas.

Historic United States Geological Survey (USGS) Topographic Map online database was also reviewed (<https://ngmdb.usgs.gov/topoview/viewer/>) for historical 7.5’ and 15’ maps potentially covering the project area. The USGS 7.5’ Fairview Lakes, Utah (1968) depicts an unnamed two-track on an east to west trending ridgetop in the bottom of Section 28 and 29 of T13S, R6E. The road passes through drill location 1-18 and is likely been recorded as site 42SP393. The road is discussed in Section 4.1. The USGS 15’ Scofield, Utah (1925) does not depict any man-made features in the project area. The USGS 15’ Scofield, Utah (1923) depicts a road in Section 10 of T14S, R6E. The road is outside the project’s inventory areas in that section.

2.1 Summary and Expectations

The literature search area has been previously subjected to a moderate number of cultural resource inventories. Many of those inventories focused on exploration drilling, infrastructure projects, and timber sales. The seven previously recorded historical-era sites are located within the canyon bottom near perennial water sources. As such, the expectation was that the current inventory has a potential to encounter additional historic era cultural resources at drill locations in similar canyon bottom settings.

3.0 METHODOLOGY

A field work authorization with a 1:24,000 topographic map of the drill location areas was submitted to USFS. USFS signed the field work authorization by Manti-La Sal on June 7, 2018. Tetra Tech conducted the cultural resource inventory for the drill locations on June 19, 2018. Mark Karpinski, M.A. served as Principal Investigator and field director conducting all work and handled NRHP evaluations for all encountered cultural resources. The inventory was conducted in mild weather conditions with no snow coverage present.

The inventory was accomplished using pedestrian transects spaced no further than 15 meters (50 feet) apart. For each drill location a 30 m (100 foot) diameter area was inventoried to encompass all potential ground disturbance with an appropriate buffer to prevent inadvertent impact to possible adjacent resources. A 30 m (100 foot) corridor was inventoried for proposed access routes at four proposed drill locations. Trimble GPS units with real time differential correction had the inventory areas uploaded into it prior to field work to allow for accurate field location. Positional accuracy was within 3 meters and the Position Dilution of Precision (PDOP) was less than or equal to six. UTM coordinates were recorded in NAD83, Zone 12 North. Photographs were taken using a digital camera with at least a seven megapixel resolution. Photographic logs were maintained and recorded the date, camera, exposure number, subject, orientation, and GPS derived UTM coordinates (when applicable) for each photograph.

If encountered, cultural resources were to be documented per Utah SHPO standards and evaluated for inclusion on the NRHP. Sites were defined as a minimum of ten artifacts within a 10 m (32 feet) diameter area and/or one or more archaeological features with a sufficient potential to yield additional information. All non-linear cultural resources not meeting this definition were recorded as isolated occurrences (IOs). IOs were recorded with, at minimal, a written description and GPS location. Diagnostic and/or unique IOs were photographed. Linear cultural resources were handled according to the Utah Professional Archaeological Councils (UPAC) Linear Guidelines (Utah Professional Archaeological Council 2008).

Site recording protocol included, at minimum, a written description, overview photographs, diagnostic/unique artifact photographs, and GPS planview mapping. Three site overview photographs were taken and attempts were made to include reference points and major landscape features in the overview photographs to assist in site relocation. Artifact and feature photographs included a photographic scale and larger feature photographs utilized a scaled north arrow oriented to magnetic north. GPS-based planview maps for the sites included the datum, diagnostic artifacts, formal tools, features, photographic overview points, significant topographic features, and a site boundary. Site boundaries were based off the distribution of the surface cultural material, high probability depositional areas, and/or features with a 15 m (50 feet) buffer from last observed cultural evidence.

Each recorded site was evaluated for its potential inclusion on the NRHP. IOs are considered to be cultural manifestations of limited information potential and are not eligible for the NRHP. IOs do not require further research or management beyond recordation. Each site will be assessed for the elements of cultural integrity of location, design, setting, materials, workmanship, feeling, association. In addition to assessing the elements of integrity, each locality was evaluated for eligibility based one or more of the following criteria:

- A)** associated with events that have made a significant contribution to the broad patterns of national, state, or local history;
- B)** associated with the lives of persons who have made a significant contribution to national, state, or local history;
- C)** embodies the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or represents a significant and distinguishable entity whose components may lack individual distinction; and/or
- D)** may be likely to yield information important in the prehistory or history of the nation, state or region.

4.0 INVENTORY RESULTS AND MANAGEMENT RECOMMENDATIONS

The cultural resource inventory for the project encountered one previously recorded site (Site 42SP393) and one newly recorded site (Site 42EM5173). Site 42SP393 has been determined eligible for inclusion on the NRHP; however, Tetra Tech recommends the determination be changed to **not eligible** for inclusion under any potential criteria. Site 42EM5173 is recommended **eligible** for inclusion on the NRHP under criteria A and C.

4.1 Previously Recorded Site

42SP393 – Historic GLO Road, Not Eligible

Site 42SP393 is a historic GLO road originally recorded by the Metcalf Archaeological Consultants (Metcalf) in 1999 for the Ruby Pipeline Southern Route Survey (U99MM0366). In 2018, Tetra Tech revisited the two-track road recorded as the site and found two problems with the original recordation. First, the original recordation cited the road's depiction on the 1891 GLO map for T13S, R6E. However, such a map does not exist. Tetra Tech believes the reported date is a typo and Metcalf meant the 1894 GLO map for T13S, R6E which depicts feature that best matches Metcalf's recordation.

Second, the Metcalf recorded the wrong road. The road and "Old Saw Mill" cited on the 1894 GLO are depicted in the middle and upper middle of Sections 28 and 29. The area is within the bottom of Swens Canyon, not on the unnamed east to west trending ridgetop. The current road in Swens Canyon is an improved, bladed dirt road both publicly and privately-owned. The ridge along the bottom of Sections 28 and 29 has no roads or other man-made features depicted on the GLO map. The two-track road trending east to west on the ridge top only appears mapped by the 1965 USGS quadrangle Fairview Lakes, Utah. Tetra Tech updated the recordation to the correct road.

NRHP Recommendation

In 1999 the Metcalf recommended site 42SP393 as unevaluated for inclusion on the NRHP pending additional research. Utah SHPO determined the site was eligible inclusion on the NRHP. No justification or criterion listed in support of the eligibility determination. Tetra Tech disagrees and recommends the site as **not eligible** for inclusion on the NRHP under any potential criteria based on the above corrected historic road depicted on the 1894 GLO map. It is one of many that appear on the 1894 GLO map trending throughout the area. It is unnamed and does not connect any historically significant areas or entities. The road cannot be associated with an important event or person in history. Therefore, it is recommended not eligible under Criteria A or B. The original design and construction of the road is unknown. The current road in Swens Canyon is a bladed and improved dirty road managed both privately and by the USFS. The potential for any architecture or unique features being present is low; therefore, the site is recommended not eligible under Criterion C. The road continues to be used and maintained to access privately residences and for logging and recreation on public lands. Linear features, such as roads, do not physically retain elements that further study would provide additional information. Any additional information regarding the road is likely to come from archival research. The site is recommended to be not eligible for inclusion under Criterion D.

4.2 Newly Recorded Sites

42EM5173 – Historic Line Camp with Cabin, Eligible under A and C

Site 42EM5173 is a historic line camp with cabin located east of a bladed logging road in the bottom of Little Eccles Canyon. An ephemeral creek runs through the southern portion of the site. Sediments are a gray/brown, alluvial, sand loam with moderate dense subangular to rounded pebble to cobble size gravels. Vegetation is a subalpine conifer community with lodge pole pine, aspen, and various forbs and grasses. Ground coverage is between 25 and 40 percent. The site condition is imminently threatened. The locality is still recreationally used as evidenced by a modern fire ring and trash throughout the site. The area has also been recently logged. Impacts include destruction of several features and the dispersal and deterioration of associated artifacts.

The site measures 502 feet (153 m) by 265 feet (81 m) covering an area of 104,481 square feet (9,707 sq. m). The site consists of three features (F1 through F3) and a disperse, deteriorated artifact scatter. F1 is a roughly “Salt Box” style, single story, stick built, framed cabin measuring 19.7 feet (6 m) long by 15.4 (4.7 m) wide by 9.8 feet (3 m) height (Figure 5). The walls are thinly split log planks nailed to a lumbered wood frame. The roof and raised floor are lumbered planks. The roof appears to have once been covered with tar paper and since covered in black plastic. Interior walls show evidence of same tar paper/black plastic coverings. One framed doorway and two framed windows are present. No evidence of any type of paned window is present and no door remains were observed. The interior of the cabin has a framed bed, table, and a mid-20th century refrigerator. The cabin is similar in design, construction, and setting to other line cabins constructed in the area to support historic-era livestock grazing operations.



Figure 5. Site 42EM5173; Feature 1: Cabin, Facing Northwest.

Feature 2 is a roughly rectangular leveled earthen foundation with an excavation depression (Figure 6). The feature measures 22.6 feet (6.9 m) long by 14.7 feet (4.5 m) wide. The basin shaped depression is 4.9 feet (1.5 m) deep at its deepest point. The depression is surrounded by highly degraded lumber fragments, an oil drip lid, and various pieces of amorphous metal. The material may reflect some form a structure that spanned the depression.

Feature 3 is a roughly rectangular rock walled depression set in a south facing slope (Figure 7). The feature measures 18.1 feet (5.5 m) long by 14.4 feet (4.4 m) wide. The rock walls are dry fit, unmodified rounded and subrounded cobble size gravels. No mortar or other cement appears used in the wall construction. The depression is 3.2 feet (1.0 m) deep at its deepest point. The feature has highly degraded lumber fragments on its south end and a wood pallet to its immediate northwest.

The artifact scatter throughout the site is very sparse and largely consisting of amorphous metal fragments of varying size, trailer/wagon parts, various lumbar pieces, and engine parts. A refrigerator and a stove are deteriorating near Feature 3. An early to mid-20th century four door sedan is in the southern part of the site (Figure 8). Two pieces of colorless bottle body fragments were noted along with two crushed oil cans.



Figure 6. Site 42EM5173; Feature 2, Facing Southwest.



Figure 7. Site 42EM5173; Feature 3, Facing Southeast.



Figure 8. Site 42EM5173; Vehicle, Facing Southeast.

NRHP Recommendation

Site 42EM5173 is recommended **eligible** for inclusion on the NRHP under criteria A and C. Based on the cultural material, the line camp was used during the early through middle 20th century. The line camps supporting significant historic era livestock operations in the northern Wasatch Plateau. Therefore, the site is eligible for inclusion under Criterion A. The site cannot be associated with an important person in history; therefore, it is recommended not eligible under Criterion B. The cabin of vernacular utilitarian design indicative of mid-20th Century line cabins in this part of Utah. Though currently abandoned, it retains design, construction, and material elements; therefore, the site is recommended eligible under Criterion C. While the cabin is in good condition, the remaining site condition is poor with the other features in ruins and the few artifacts significantly displaced and deteriorated. Logging impacts are present throughout the site. Sediments are residual and thin; therefore, unlikely to retain significant subsurface cultural components. The site is recommended to be not eligible for inclusion under Criterion D.

4.3 Management Recommendations

Tetra Tech argues that Site 42SP393 recordation is in the wrong location. The actual 1894 GLO is a bladed and improved dirt road still in use within the bottom of Swens Canyon. Canyon Fuels plans to use the road to access drill locations 1-18 and 2-18. The use will require no modifications or changes to the GLO road, therefore the project should have **no effect** on the site.

Tetra Tech argues that Site 42EM5173 is **eligible** for inclusion on the NRHP under Criterion A and C. The recommendation is based on the mid-20th century cabin still in good condition on the site. The remainder of the site is in poor condition. Drill locality 7-18 is proposed to be in the southwestern part of the site approximately 152 ft (47 m) from the cabin. The drill locality will have no adverse impact on cabin. An alternative drill locality has been proposed outside the site boundary 100 ft (30 m) to the west. The alternative drill locality will have no effect on the site.

The potential for the planned drilling activities to encounter unanticipated cultural resources is low. However, if any undocumented sites are discovered during project activities, all work within a 30 m (100 feet) vicinity of the discovery should be stopped. If the discovery is on Manti-La Sal National Forest lands, the forest archaeologist ((435) 637-2817) should be contacted immediately. For discoveries on privately held lands, the UDOGM archaeologist should be contacted ((801)538-5340).

5.0 REFERENCES

Harper, Kimball T.

1986 Historical Environments. In *Handbook of North American Indians*, Volume 11: Great Basin, edited by Warren d'Azevedo, pp. 51-63. Smithsonian Institution, Washington, D.C.

Stokes, William Lee

1986 *Geology of Utah*. Occasional Paper No. 6, Utah Museum of Natural History. Salt Lake City, Utah.

Utah Professional Archaeological Council

2008 *Linear Sites: Guidance for Identifying and Recording under Section 106 of the National Historic Preservation Act*. Copies available through the Utah Professional Archaeological Council.

APPENDIX A: UTAH ARCHAEOLOGY SITE FORMS

UTAH ARCHAEOLOGY SITE FORM

PART A – Administrative Data

- 1. **Smithsonian Trinomial:** 42EM5173
- 2. **Temporary Site No. :**
- 3. **Site Name:**
- 4. **Date Recorded:** 6/19/18
- 5. **Type of Recording:** First Recording Full Re-record Update
- 6. **Project Name:** Canyon Fuel Company, LLC’s Skyline Mine 2018 Exploration Drilling
- 7. **State Project Number:** U18TD0309
- 8. **Land Status:** Privately owned
- 9. **USGS 7.5’ Quad Map Name and Date:** Candland Mountain, Utah (2004)
- 10. **Township:** 14S **Range:** 6E **Section:** 10 (1/4): SW **County:** Sanpete
- 11. **Meridian:** Salt Lake Uintah
- 12. **UTMs:** Zone 12N; UTMS: E 478900 m N 4384865 m; NAD 83
- 13. **Site Dimensions:** Length: 502 feet (153 m) by Width: 265 feet (81 m) Area: 104,481 ft² (9,707 m²) GIS Estimate
- 14. **Site Class^a:** Prehistoric Protohistoric Historic
- 15. **Site Type:**

<input type="checkbox"/> Prehistoric/Protohistoric <input type="checkbox"/> Long-Term Residential <input type="checkbox"/> Task Specific <input type="checkbox"/> Temporary Camp <input type="checkbox"/> Specialty Site <input type="checkbox"/> Unknown	<input type="checkbox"/> Historic <input checked="" type="checkbox"/> Domestic <input type="checkbox"/> Transportation/Communication <input type="checkbox"/> Agriculture/Subsistence <input type="checkbox"/> Defense <input type="checkbox"/> Industry/Processing/Extraction <input type="checkbox"/> Unknown
--	--
- 16. **Site Characteristics^a:** Artifact Scatter Rock Art/Inscription Lithic Source/Quarry Rock Shelter/Cave Architectural Feature(s)
 Non-Architectural Feature(s) Linear
- 17. **Impacting Agents:** None Erosion Livestock Concentration Recreation Road/Trail Vandalism/Looting
 Other: Logging
- 18. **Site Condition:** Stable Deteriorating Imminently Threatened Destroyed
- 19. **Description** (as needed):

The site condition is imminently threatened. The locality is still recreationally used as evidenced by a modern fire ring and trash throughout the site. The area has also been recently logged. Impacts include destruction of several features and the dispersal and deterioration of associated artifacts.
- 20. **Recorded By:** Mark Karpinski
- 21. **Organization:** Tetra Tech
- 22. **Material Collected:** No ___ Yes (describe in Site Description) **Repository:** None

NRHP Evaluation

- 23. **Is the Site Significant:** No Yes, under criterion^a:
 A (event) B (person) C (design/construction) D (important information)
- 24. **Does it Retain Integrity:** No Yes, aspects present^a:
 Location Design Setting Materials Workmanship Feeling Association
- 25. **NRHP Status:** Not eligible Eligible Listed
- 26. **Justification** (include discussion of historic context, significance, and integrity):

Site 42EM5173 is recommended **eligible** for inclusion on the NRHP under criteria A and C. Based on the cultural material, the line camp was used during the early through middle 20th century. The line camps supporting significant historic era livestock operations in the northern Wasatch Plateau. Therefore, the site is eligible for inclusion under Criterion A. The site cannot be associated with an important person in history; therefore, it is recommended not eligible under Criterion B. The cabin of vernacular utilitarian design indicative of mid-20th Century line cabins in this part of Utah. Though currently abandoned, it retains design, construction, and material elements; therefore, the site is recommended eligible under Criterion C. While the cabin is in good condition, the remaining site condition is poor with the other features in ruins and the few artifacts significantly displaced and deteriorated. Logging impacts are present throughout the site. Sediments are residual and thin; therefore, unlikely to retain significant subsurface cultural components. The site is recommended to be not eligible for inclusion under Criterion D.

Smithsonian Trinomial: 42EM5173

Temporary Site No. :

27. Site Description (interpretation, context, size, artifact and feature assemblage, dating, previous work and curation, etc.):

Site 42EM5173 is a historic line camp with cabin located east of a bladed logging road in the bottom of Little Eccles Canyon. An ephemeral creek runs through the southern portion of the site. Sediments are a gray/brown, alluvial, sand loam with moderate dense subangular to rounded pebble to cobble size gravels. Vegetation is a subalpine conifer community with lodge pole pine, aspen, and various forbs and grasses. Ground coverage is between 25 and 40 percent. The site condition is imminently threatened. The locality is still recreationally used as evidenced by a modern fire ring and trash throughout the site. The area has also been recently logged. Impacts include destruction of several features and the dispersal and deterioration of associated artifacts.

The site measures 502 feet (153 m) by 265 feet (81 m) covering an area of 104,481 square feet (9,707 sq. m). The site consists of three features (F1 through F3) and a disperse, deteriorated artifact scatter. F1 is a roughly "Salt Box" style, single story, stick built, framed cabin measuring 19.7 feet (6 m) long by 15.4 (4.7 m) wide by 9.8 feet (3 m) height. The walls are thinly split log planks nailed to a lumbered wood frame. The roof and raised floor are lumbered planks. The roof appears to have once been covered with tar paper and since covered in black plastic. Interior walls show evidence of same tar paper/black plastic coverings. One framed doorway and two framed windows are present. No evidence of any type of paned window is present and no door remains were observed. The interior of the cabin has a framed bed, table, and a mid-20th century refrigerator. The cabin is similar in design, construction, and setting to other line cabins constructed in the area to support historic-era livestock grazing operations.

Feature 2 is a roughly rectangular leveled earthen foundation with an excavation depression. The feature measures 22.6 feet (6.9 m) long by 14.7 feet (4.5 m) wide. The basin shaped depression is 4.9 feet (1.5 m) deep at its deepest point. The depression is surrounded by highly degraded lumber fragments, an oil drip lid, and various pieces of amorphous metal. The material may reflect some form a structure that spanned the depression.

Feature 3 is a roughly rectangular rock walled depression set in a south facing slope. The feature measures 18.1 feet (5.5 m) long by 14.4 feet (4.4 m) wide. The rock walls are dry fit, unmodified rounded and subrounded cobble size gravels. No mortar or other cement appears used in the wall construction. The depression is 3.2 feet (1.0 m) deep at its deepest point. The feature has highly degraded lumber fragments on its south end and a wood pallet to its immediate northwest.

The artifact scatter throughout the site is very sparse and largely consisting of amorphous metal fragments of varying size, trailer/wagon parts, various lumbar pieces, and engine parts. A refrigerator and a stove are deteriorating near Feature 3. An early to mid-20th century four door sedan is in the southern part of the site. Two pieces of colorless bottle body fragments were noted along with two crushed oil cans.

28. Environmental Context (topography, vegetation, ground visibility, depositional context):

Site 42SP1035 is a historic Camp and Cabin located east of a bladed logging road in the bottom of Little Eccles Canyon. An ephemeral creek runs through the southern portion of the site. Sediments are a gray/brown, alluvial, sand loam with moderate dense subangular to rounded pebble to cobble size gravels. Vegetation is a subalpine conifer community with lodge pole pine, aspen, and various forbs and grasses. Ground coverage is between 25 and 40 percent.

29. Notes Regarding Access (as needed):

The site is on privately held land. Obtain permission before accessing.

30. Additional Part A Comments:

^a Check all that apply

^b See manual for additional categories

Smithsonian Trinomial: 42EM5173

Temporary Site No. : __

1. Primary dates of site use: 1900 to present

2. Secondary dates of site use: 1900 to present

3. Architectural Features

Type	Description
F1	Feature 1 is a roughly “Salt Box” style, single story, stick built, framed cabin measuring 19.7 feet (6 m) long by 15.4 (4.7 m) wide by 9.8 feet (3 m) height. The walls are thinly split log planks nailed to a lumbered wood frame. The roof and raised floor are lumbered planks. The roof appears to have once been covered with tar paper and since covered in black plastic. Interior walls show evidence of same tar paper/black plastic coverings. One framed doorway and two framed windows are present. No evidence of any type of paned window is present and no door remains were observed. The interior of the cabin has a framed bed, table, and a mid-20 th century refrigerator. The cabin is similar in design, construction, and setting to other line cabins constructed in the area to support historic-era livestock grazing operations.

4. Non-Architectural Features

Type	Description
F2	Feature 2 is a roughly rectangular leveled earthen foundation with an excavation depression. The feature measures 22.6 feet (6.9 m) long by 14.7 feet (4.5 m) wide. The basin shaped depression is 4.9 feet (1.5 m) deep at its deepest point. The depression is surrounded by highly degraded lumber fragments, an oil drip lid, and various pieces of amorphous metal. The material may reflect some form a structure that spanned the depression.
F3	Feature 3 is a roughly rectangular rock walled depression set in a south facing slope. The feature measures 18.1 feet (5.5 m) long by 14.4 feet (4.4 m) wide. The rock walls are dry fit, unmodified rounded and subrounded cobble size gravels. No mortar or other cement appears used in the wall construction. The depression is 3.2 feet (1.0 m) deep at its deepest point. The feature has highly degraded lumber fragments on its south end and a wood pallet to its immediate northwest.

5. Feature Comments:

6. Cans - Total Quantity: 3

Quantity	Type	Description
3	Sanitary	Crushed Oil Cans
1	Sanitary	Oil Drum lid

7. Can Comments: None

Smithsonian Trinomial: 42EM5173

Temporary Site No. :__

8. Glass Bottles - Total ENV: 1

ENV	Manufacturing Method	Description
2	Machine Made	Two colorless glass bottle body fragments

9. Glass Bottle Comments: None

10. Ceramics - Total ENV:

ENV	Ware	Description
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11. Ceramic Comments: None

12. Additional Artifacts/Debris:

- Ammunition/Firearms Car/Car parts Glass (non-bottle) Nails (wire) Toys
- Bone Ceramics (non-tableware) Hardware Plastic Other
- Building Materials Clothing Nails (cut) Stove Parts

13. Additional Artifact/Debris Description:

The artifact scatter throughout the site is very sparse and largely consisting of amorphous metal fragments of varying size, trailer/wagon parts, various lumbar pieces, and engine parts. A refrigerator and a stove are deteriorating near Feature 3. An early to mid-20th century four door sedan is in the southern part of the site. Two pieces of colorless bottle body fragments were noted along with two crushed oil cans.

14. Additional Part C Comments:



State Project No.: U18TD0309
Site No: 42EM5173
Photo No: 117-8051005:1867
Description: Feature 1, Cabin
Facing: Northwest



State Project No.: U18TD0309
Site No: 42EM5173
Photo No: 117-8051005:1868
Description: Feature 1, Cabin
Facing: Northwest



State Project No.: U18TD0309
Site No: 42EM5173
Photo No: 117-8051005:1870
Description: Feature 3, Depression
Facing: Southeast



State Project No.: U18TD0309
Site No: 42EM5173
Photo No: 117-8051005:1872
Description: Site Overview
Facing: West



State Project No.: U18TD0309
Site No: 42EM5173
Photo No: 117-8051005:1873
Description: Feature 2; Depression
Facing: Southwest



State Project No.: U18TD0309
Site No: 42EM5173
Photo No: 117-8051005:1874
Description: Feature 2; Depression
Facing: Northeast



State Project No.: U18TD0309

Site No: 42EM5173

Photo No: 117-8051005:1875

Description: Site Overview

Facing: Southeast



State Project No.: U18TD0309

Site No: 42EM5173

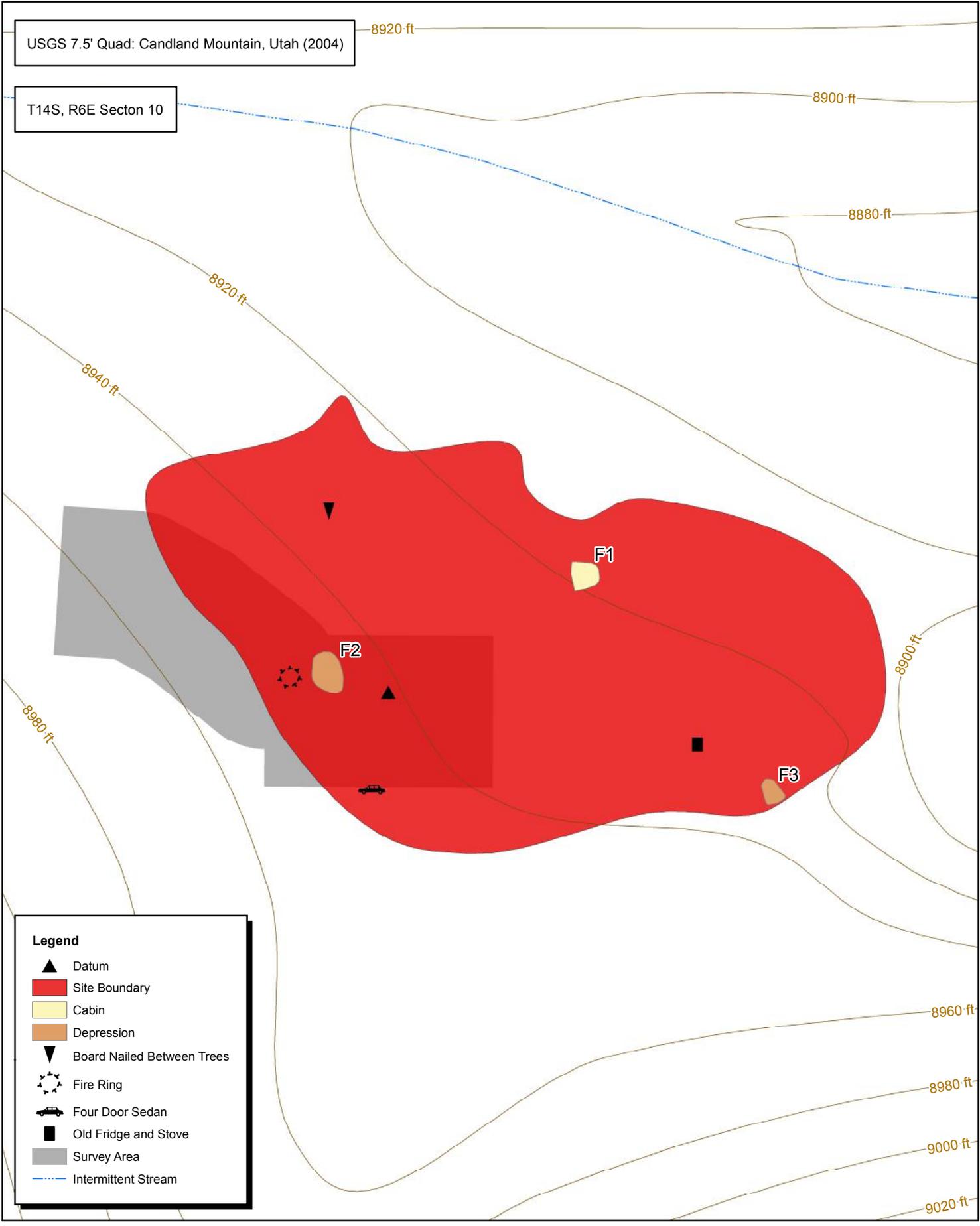
Photo No: 117-8051005:1877

Description: Site Overview

Facing: Northeast

USGS 7.5' Quad: Candland Mountain, Utah (2004)

T14S, R6E Section 10



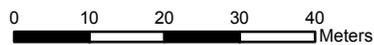
Legend

- ▲ Datum
- Site Boundary
- Cabin
- Depression
- ▼ Board Nailed Between Trees
- ⊛ Fire Ring
- 🚗 Four Door Sedan
- Old Fridge and Stove
- Survey Area
- Intermittent Stream

Project: Skyline Mine Exploration Drilling Program Cultural Survey (U18TD0309)

Site: 42EM5173

Author: G. Webb
Date: 7/6/2018
Principal Meridian: Salt Lake
Datum: NAD 1983, Zone 12N
Contour Interval = 20 ft



1:1,000

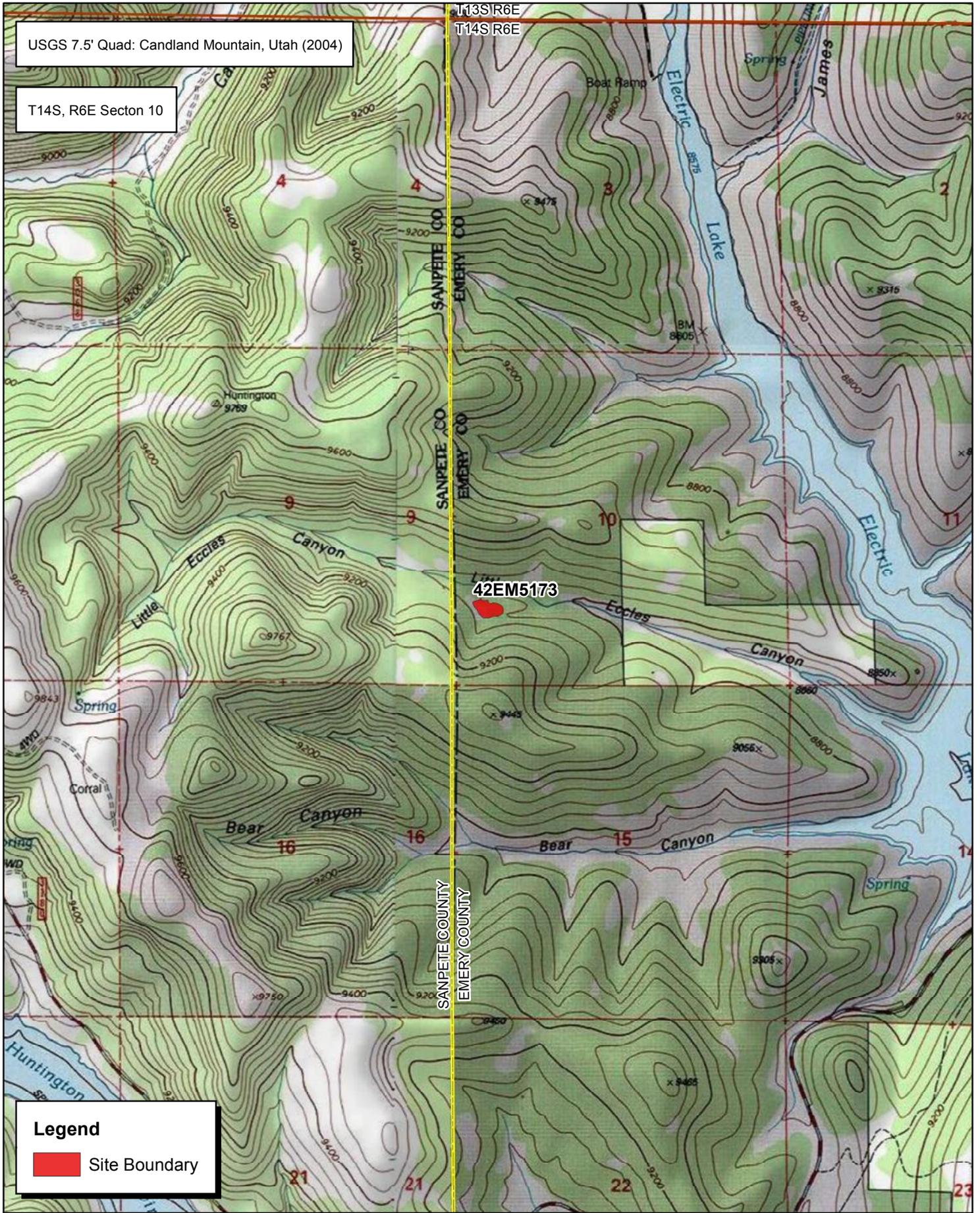


TETRA TECH, INC.

USGS 7.5' Quad: Candland Mountain, Utah (2004)

T14S, R6E Section 10

T13S R6E
T14S R6E

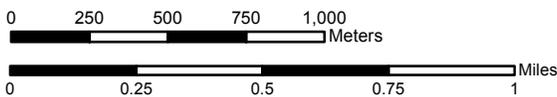


Legend

 Site Boundary

Project: Skyline Mine Exploration Drilling Program Cultural Survey (U18TD0309)
Site: 42EM5173

Author: G. Webb
Date: 7/6/2018
Principal Meridian: Salt Lake
Datum: NAD 1983, Zone 12N
Basemap Source: 2013 Nat. Geo. Soc., I-cubed



1:24,000



TETRA TECH, INC.

UTAH ARCHAEOLOGY SITE FORM

PART A – Administrative Data

- 1. **Smithsonian Trinomial:** 42SP393
- 2. **Temporary Site No. :**
- 3. **Site Name:**
- 4. **Date Recorded:** 6/21/18
- 5. **Type of Recording:** First Recording Full Re-record Update
- 6. **Project Name:** Canyon Fuel Company, LLC’s Skyline Mine 2018 Exploration Drilling
- 7. **State Project Number:** U18TD0309
- 8. **Land Status:** Private and United States Forest Service, Manti-La Sal National Forest
- 9. **USGS 7.5’ Quad Map Name and Date:** Fairview Lakes, Utah (2004)
- 10. **Township:** 13S **Range:** 6E **Section:** 28 (1/4): NE, NW **County:** Sanpete
Township: 13S **Range:** 6E **Section:** 29 (1/4): NE, NW
- 11. **Meridian:** Salt Lake Uintah
- 12. **UTMs:** Zone 12N; UTMS: E 475889 m N 4390838 m; NAD 83
Zone 12N; UTMS: E 477959 m N 4390455 m; NAD 83
- 13. **Site Dimensions:** Length: 3,295 feet by Width: 10 feet Area: 32,950 m² GIS Estimate
- 14. **Site Class^a:** Prehistoric Protohistoric Historic
- 15. **Site Type:** Prehistoric/Protohistoric Historic
 Long-Term Residential Task Specific Domestic Transportation/Communication
 Temporary Camp Specialty Site Agriculture/Subsistence Defense
 Unknown Industry/Processing/Extraction Unknown
- 16. **Site Characteristics^a:** Artifact Scatter Rock Art/Inscription Lithic Source/Quarry Rock Shelter/Cave Architectural Feature(s)
Non-Architectural Feature(s) Linear
- 17. **Impacting Agents:** None Erosion Livestock Concentration Recreation Road/Trail Vandalism/Looting
 Other _____
- 18. **Site Condition:** Stable Deteriorating Imminently Threatened Destroyed
- 19. **Description** (as needed):
The site condition is stable; however, it is a still in use bladed and improved dirt road and likely lacks any characteristics from its original construction.
- 20. **Recorded By:** Mark Karpinski
- 21. **Organization:** Tetra Tech
- 22. **Material Collected:** No ___ Yes (describe in Site Description) **Repository:** None

NRHP Evaluation

- 23. **Is the Site Significant:** No Yes, under criterion^a:
 A (event) B (person) C (design/construction) D (important information)
- 24. **Does it Retain Integrity:** No Yes, aspects present^a:
 Location Design Setting Materials Workmanship Feeling Association
- 25. **NRHP Status:** Not eligible Eligible Listed
- 26. **Justification** (include discussion of historic context, significance, and integrity):

In 1999 the Metcalf recommended site 42SP393 as unevaluated for inclusion on the NRHP pending additional research. Utah SHPO determined the site was eligible inclusion on the NRHP. No justification or criterion listed in support of the eligibility determination. Tetra Tech disagrees and recommends the site as **not eligible** for inclusion on the NRHP under any potential criteria based on the above corrected historic road depicted on the 1894 GLO map. It is one of many that appear on the 1894 GLO map trending throughout the area. It is unnamed and does not connect any historically significant areas or entities. The road cannot be associated with an important event or person in history. Therefore, it is recommended not eligible under Criteria A or B. The original design and construction of the road is unknown. The current road in Swens Canyon is a bladed and improved dirty road managed both privately and by the USFS. The potential for any architecture or unique features being present is low; therefore, the site is recommended not eligible under Criterion C. The road continues to be used and maintained to access privately residences and for logging and recreation on public lands. Linear features, such as roads, do not physically retain elements that further study would provide additional information. Any additional information regarding the road is likely to come from archival research. The site is recommended to be not eligible for inclusion under Criterion D.

Smithsonian Trinomial: 42SP393**Temporary Site No. :****27. Site Description** (interpretation, context, size, artifact and feature assemblage, dating, previous work and curation, etc.):

Site 42SP393 is a historic GLO road originally recorded by the Metcalf Archaeological Consultants (Metcalf) in 1999 for the Ruby Pipeline Southern Route Survey (U99MM0366). In 2018, Tetra Tech revisited the two-track road recorded as the site and found two problems with the original recordation. First, the original recordation cited the road's depiction on the 1891 GLO map for T13S, R6E. However, such a map does not exist. Tetra Tech believes the reported date is a typo and Metcalf meant the 1894 GLO map for T13S, R6E which depicts feature that best matches Metcalf's recordation.

Second, the Metcalf recorded the wrong road. The road and "Old Saw Mill" cited on the 1894 GLO are depicted in the middle and upper middle of Sections 28 and 29. The area is within the bottom of Swens Canyon, not on the unnamed east to west trending ridgetop. The current road in Swens Canyon is an improved, bladed dirt road both publicly and privately-owned. The ridge along the bottom of Sections 28 and 29 has no roads or other man-made features depicted on the GLO map. The two-track road trending east to west on the ridge top only appears mapped by the 1965 USGS quadrangle Fairview Lakes, Utah. Tetra Tech updated the recordation to the correct road.

28. Environmental Context (topography, vegetation, ground visibility, depositional context):

The GLO road is in the bottom of Swens Canyon. Sediments consist of an alluvial grayish brown sandy loam with subrounded and rounded, pebble to cobble size gravels. Vegetation is a subalpine conifer community with lodge pole pine, aspen, various forbs and grasses. Ground coverage outside of the road is highly variable. Overall, it average 30 percent.

29. Notes Regarding Access (as needed):

Road is still in use. Segment within Section 28 of T13S, R6E is a public road administered by the USFS. Segment within Section 29 of T13S, R6E is a privately held road.

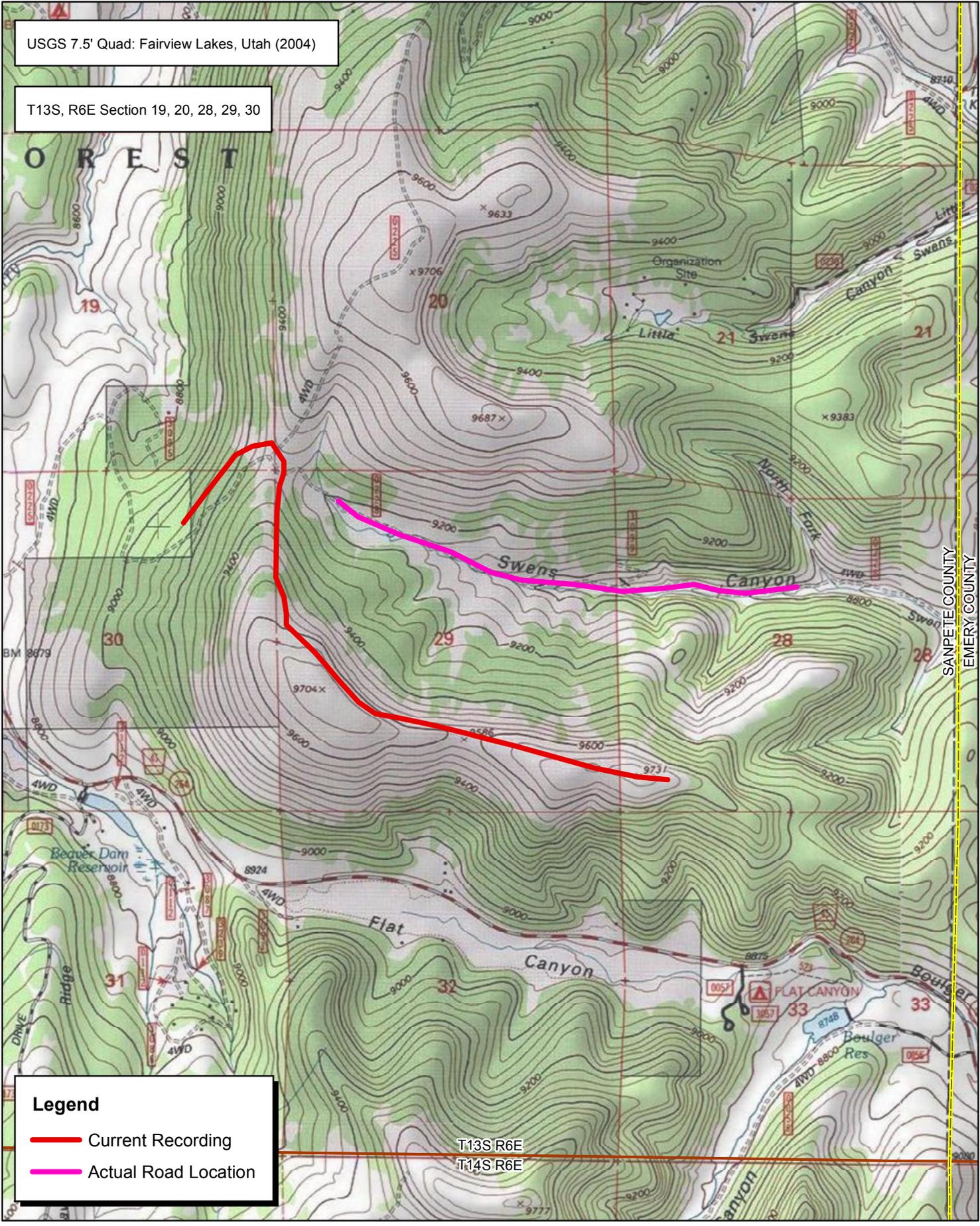
30. Additional Part A Comments:

^a Check all that apply

^b See manual for additional categories

USGS 7.5' Quad: Fairview Lakes, Utah (2004)

T13S, R6E Section 19, 20, 28, 29, 30



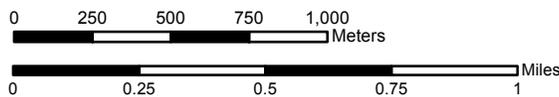
Legend

- Current Recording
- Actual Road Location

T13S R6E
T14S R6E

Project: Skyline Mine Exploration Drilling Program Cultural Survey (U18TD0309)
Site: 42SP393

Author: G. Webb
Date: 7/9/2018
Principal Meridian: Salt Lake
Datum: NAD 1983, Zone 12N
Basemap Source: 2013 Nat. Geo. Soc., i-cubed



1:24,000



TETRA TECH, INC.

			will be conducted during the Fall 2018 outside of crucial calving season.
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COVER PAGE

Must Accompany All Project Reports Submitted to the Utah SHPO



Report Title: A Class III Cultural Resource Inventory for Canyon Fuel Company, LLC's Skyline Mine 2018 Seismic Locations and Drill Relocation, Emery and Sanpete Counties, Utah

UDSH Project Number: U18TD0497
Report Date: August 2018
Report Author(s): Mark Karpinski

Org. Project Number: 117-8051005
County(ies): Emery and Sanpete
Principal Investigator: Mark Karpinski

Record Search Date(s): July 19, 2018
Intensive Acres Surveyed (<15m intervals): 1.44

Field Supervisor(s): Mark Karpinski and Marcel Corbeil
Recon/Intuitive Acres Surveyed (<15m intervals): 0

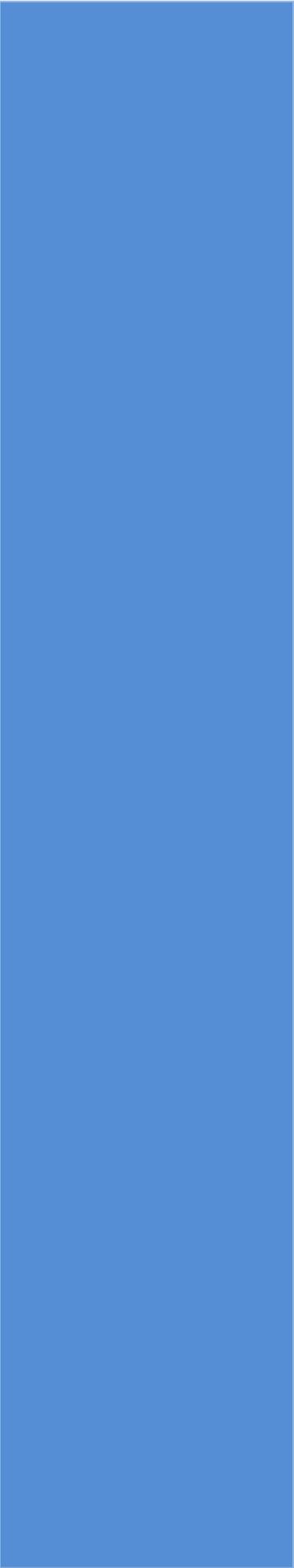
USGS 7.5' Series Map Reference(s): Fairview Lakes, Utah (2004) and Scofield, Utah (2004)

Sites Reported	Count	Smithsonian Trinomials
Revisits (no updated site forms)	0	
Updates (updated site forms provided)	0	
New recordings (site forms provided)	0	
Total Count of Archaeological Sites in APE	0	
Historic Structures (structures forms provided)	0	
Total National Register Eligible Sites	0	

*Please list all site numbers per category. Number strings are acceptable (e.g. "42TO1-13; 42TO15"). Cells should expand to accommodate extensive lists.

Checklist of Required Items for Submittal to SHPO

- "Born Digital" Report in a PDF/A format
 - SHPO Cover Sheet
 - File Name is the UDSH Project Number with no hyphens or landowner suffixes
- "Born Digital" Site forms in PDF/A format
 - UASF with embedded maps and photos
 - File name is Smithsonian Trinomial without leading zeros (e.g. 42TO13 not 42TO00013)
 - Photo requirements (including size and quality)
- Archaeological Site Tabular Data
 - Single spreadsheet for each project
 - Follows UTSHPO template (info here: <https://goo.gl/7SLMqi>)
- GIS data
 - Zipped polygon shapefile or geodatabase of survey (if different from APE) or other activity area with required field names and variable intensity denoted
 - Zipped polygon shapefile or geodatabase of site boundaries with the required field name



A Cultural Resource Inventory for Canyon Fuel Company, LLC's Skyline Mine 2018 Seismic Locations and Drill Relocation, Emery and Sanpete Counties, Utah

Utah State SHPO Project Number: U18TD0497

Prepared for:

Canyon Fuel Company, LLC

*Skyline Mine
HC 35 Box 380
Helper, UT 84526*

Prepared by:
Mark Karpinski

Tetra Tech

*4750 West 2100 South, Suite 400
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(801) 364-1064
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Tetra Tech Project No. 117-8051005

August 2018

Project Title:	A Class III Cultural Resource Inventory for Canyon Fuel Company, LLC's Skyline Mine 2018 Seismic Locations and Drill Relocation, Emery and Sanpete Counties, Utah		
Agency(-ies):	United States Forest Service (USFS); Manti-La Sal National Forest; Utah Department of Oil, Gas, and Mines (UDOGM)		
Utah State Number:	U18TD0497	Tetra Tech No.:	117-8051005
Description:	<p>Canyon Fuel Company, LLC is planning to install three seismic monitoring stations and conduct core drilling at one location in support of its current underground Skyline Mine operations located in Emery and Sanpete Counties, Utah. Access to the seismic locations will be overland and not require a vehicle. The drill location will require a short temporary access route to be developed. Two seismic and the drill location are on land administered by the United States Forest Service (USFS), Manti-La Sal National Forest. As part of the federal permitting process, agencies must assess the potential impacts of an action on cultural resources in conformance with Section 106 of the National Historic Preservation Act. One seismic location is on privately held lands and falls under the jurisdiction of the State of Utah Department of Oil, Gas, and Mines (UDOGM). The state-level permitting process must assess the potential impacts of an action on cultural resources in conformance with Section 404 of the Utah Annotated Code.</p> <p>Tetra Tech conducted a cultural resource inventory for each location. A 30 m (100 foot) diameter area centered on the proposed disturbance boundary was cleared at each location. The seismic locations do not require vehicle access; therefore, no access routes were inventoried. A 30 m (100 foot) access corridor was inventoried for the drill location. The route connected the drill site to an access route inventoried in June of 2018 under Utah State Project no. U18TD0309. The cultural resource inventory was completed in conformance with all USFS requirements outlined in the project field work authorization (signed by Manti-La Sal on June 7, 2018) and Utah State Historic Preservation Office (SHPO) guidelines and standards.</p>		
Location:	The project is located within portions of Sections 16, 20, 22, and 28 of T13S, R6E; Salt Lake City Meridian, (7.5' USGS quadrangle Fairview Lakes, Utah (2004) and Scofield, Utah (2004)).		
Acreage:	1.44 total acres inventoried at 15 meter (50 feet) transect intervals. Linear: 0.89 acres Block: 0.55 acres		
Landownership:	USFS and privately held		
Results	Identified Sites	0	Isolated Occurrences 0
Eligible Sites	None		

Not Eligible Sites	None
---------------------------	------

ABSTRACT

The cultural resource inventory for the project did not identify any cultural resources at the seismic or drilling location. The inventory results conform to expectations developed during the literature search. The inventory areas are small and located in areas that tend to have a low potential for the occurrence of cultural resources.

The potential for the planned activities to encounter unanticipated cultural resources is significantly low. However, if any undocumented cultural resources are discovered during project activities, all work within a 30 m (100 feet) vicinity of the discovery should be stopped. If the discovery is on Manti-La Sal National Forest lands, the forest archaeologist ((435) 637-2817) should be contacted immediately. For discoveries on privately held lands, the UDOGM archaeologist should be contacted ((801)538-5340).

TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1	Project Location	1
1.2	Physical Setting	1
2.0	BACKGROUND	5
2.1	Summary and Expectations	6
3.0	METHODOLOGY	6
4.0	INVENTORY RESULTS AND MANAGEMENT RECOMMENDATIONS	7
5.0	REFERENCES	8

LIST OF TABLES

Table 1.	Proposed Seismic/Drill Locations.....	1
Table 2.	Previously Completed Inventories.....	5

LIST OF FIGURES

Figure 1.	Skyline 2018 Seismic Locations and Drill Alternate Locations.	3
Figure 2.	Seismic B Location; Overview Photograph, Facing Southwest.	4
Figure 3.	Seismic E Location; Overview Photograph, Facing Northeast.	4

APPENDICES

Appendix A: Utah Archaeological Site Forms

1.0 INTRODUCTION

Canyon Fuel Company, LLC is planning to install three seismic monitoring stations and conduct core drilling at one location in support of its current underground Skyline Mine operations located in Emery and Sanpete Counties, Utah (Table 1). Access to the seismic locations will be overland and not require a vehicle. The drill location will require a short temporary access route to be developed. Two seismic and the drill location are on land administered by the United States Forest Service (USFS), Manti-La Sal National Forest. As part of the federal permitting process, agencies must assess the potential impacts of an action on cultural resources in conformance with Section 106 of the National Historic Preservation Act. One seismic location is on privately held lands and falls under the jurisdiction of the State of Utah Department of Oil, Gas, and Mines (UDOGM). The state-level permitting process must assess the potential impacts of an action on cultural resources in conformance with Section 404 of the Utah Annotated Code.

Table 1. Proposed Seismic/Drill Locations

Seismic/Drill Location Number	UTM Location ^a	Landownership
Seismic B	479209 mE 4391154 mN	USFS, Manti-La Sal Nation Forest
Seismic D Alt	476071 mE 4392037 mN	Private
Seismic E	478581 mE 4393482 mN	USFS, Manti-La Sal Nation Forest
2-18a	477385 mE 4390174 mN	USFS, Manti-La Sal Nation Forest

^a Datum NAD83; Zone 12N

Tetra Tech conducted a Class III cultural resource inventory for each location. A 30 m (100 foot) diameter area centered on the proposed disturbance boundary was cleared at each location. The seismic locations do not require vehicle access; therefore, no access routes were inventoried. A 30 m (100 foot) access corridor was inventoried for the drill location. The route connected the drill locations to an access route inventoried in June of 2018 under Utah State Project no. U18TD0309. The cultural resource inventory was completed in conformance with all USFS requirements outlined in the project field work authorization (signed by Manti-La Sal on June 7, 2018) and Utah State Historic Preservation Office (SHPO) guidelines and standards.

1.1 Project Location

The Project areas are on Manti-La Sal National Forest administered and privately held lands. The areas are located within portions of Sections 16, 20, 22, and 28 of T13S, R6E; Salt Lake City Meridian, (7.5' USGS quadrangle Fairview Lakes, Utah (2004) and Scofield, Utah (2004)). (Figure 1).

1.2 Physical Setting

The project is located southwest of the community of Scofield, Utah within the northern part of the Wasatch Plateau region of the Basin and Range-Colorado Plateau Transition physiographic province. The Wasatch Plateau region is an erosional remnant of the Cretaceous and Tertiary-aged sedimentary deposits making up the ragged edge of the Colorado Plateau. The mountains are steep sided and divided by glacially modified narrow valley bottoms with perennial snow melt

fed streams (Stokes 1986). Two seismic locations and the drill relocation are located on unnamed ridge tops adjacent to Upper Huntington Creek (Figures 2 and 3). One seismic location is on a large north to south trending ridgeline to the west of Upper Huntington Creek.

Climatically, the project occurs within both the subalpine and alpine climatic areas with average temperatures ranging from -10 to 75 degrees Fahrenheit with an annual average yearly precipitation of 48 inches (Harper 1986). Overall, sediments are residual/colluvium mix sand loam with dense moderately well sorted, pebble to boulder size, gravels. Vegetation in the project areas varies from Alpine shrub to dense Aspen and Lodge Pole Pine to Sagebrush communities. The area is habitat for a wide variety of animal species; including large through small sized mammals. A wide variety of birds also inhabit the area. Upper Huntington Creek is the nearest perennial drainage near the project.

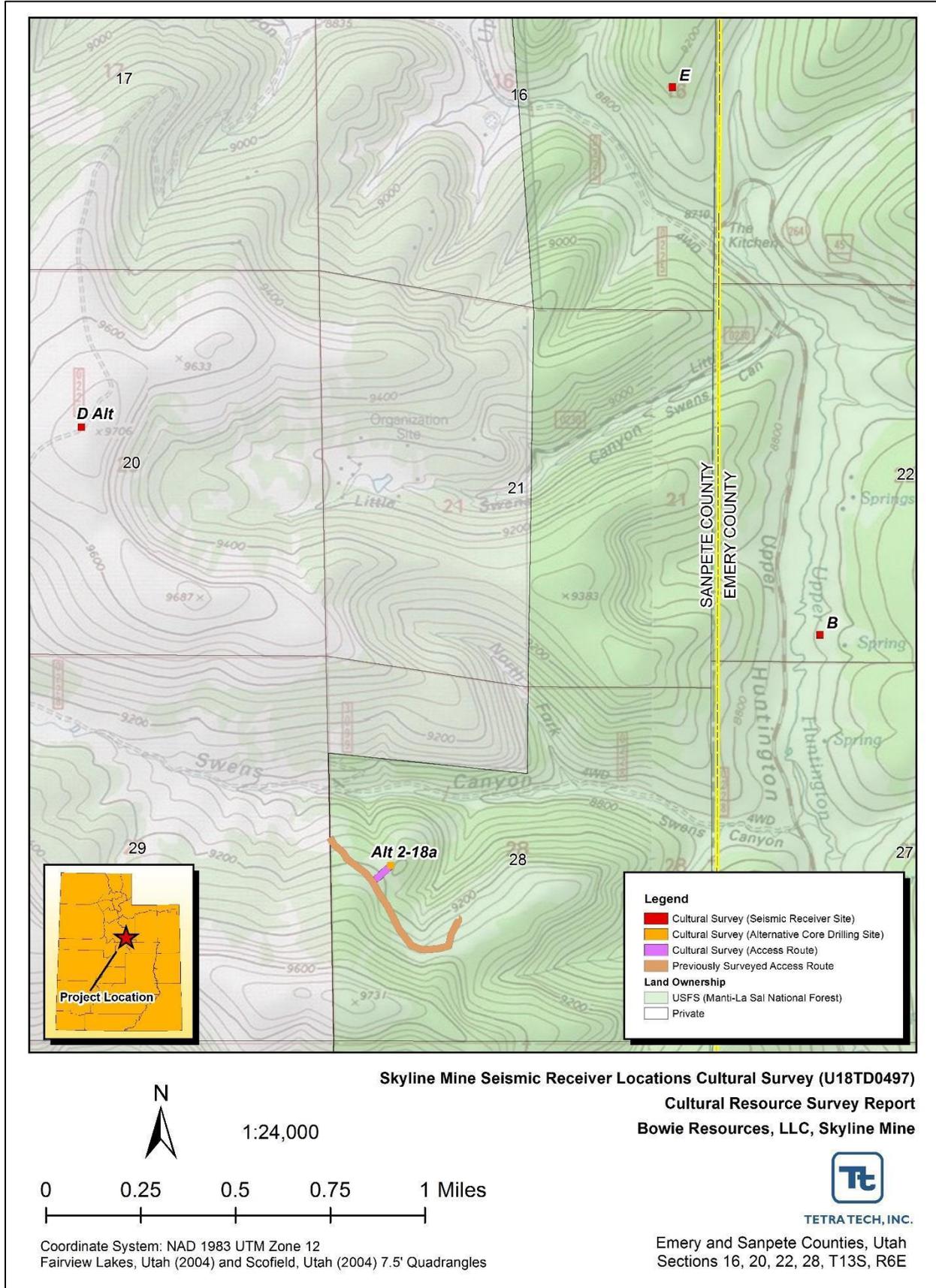


Figure 1. Skyline 2018 Seismic Locations and Drill Alternate Locations.



Figure 2. Seismic B Location; Overview Photograph, Facing Southwest.



Figure 3. Seismic E Location; Overview Photograph, Facing Northeast.

2.0 BACKGROUND

Prior to field work, a literature search was conducted for each seismic and drill location and a surrounding half mile radius for each. The cultural records were reviewed online through the Utah State Historic Preservation Office (SHPO) Preservation Pro database on July 19, 2018. Eighteen cultural resource inventories have been previously completed within the literature search area (Table 2). The inventories were completed as part of coal mining, oil and gas transmission development, range management and timber sales. None of the previous inventories cross into portions of the current Project.

Table 2. Previously Completed Inventories

Utah State Project Number	Project Name	Year	Within/Outside Inventory Area
U75AF0067	Archaeological Reconnaissance During 1975 Scofield Locality	1975	Outside
U79AF0477	Archaeological Reconnaissance in the Vicinity of Eccles Canyon, Carbon County, Utah	1979	Outside
U80AF0711	Archaeological Surface Evaluation in the Skyline Project	1980	Outside
U81AF0983	Six Seismic Lines in Vicinity of Upper Eccles Canyon	1981	Outside
U89FS0064	Boulger Canyon Timber Sale	1989	Outside
U89DH0594	Mainline #41 Reroute Questar Skyline Mine	1989	Outside
U90FS0452	Addendum Questar Pipeline Main	1990	Outside
U91FS0596	Coyote Timber Salvage	1991	Outside
U91FS0686	Boulger/Spring Canyon Watershed Treatmnt Proj	1991	Outside
U93FS0441	Boulger Timber Sale & Reservoir Improvement Project.	1993	Outside
U95AF0252	Drill/Seis-Upper Huntington & Winter Quarters CB/EM/SP	1995	Outside
U97AF0422	Two Drill Holes and Access in Upper Huntington Canyon	1997	Outside
U97AF0586	Maxon Technologies Skyline Mine Drill Holes	1997	Outside
U99MM0366	Ruby Pipeline	1999	Outside
U01FS0672	Flat Canyon Campground Tree Thinning Project	2001	Outside
U01MQ0459	Canyon Fuels Flat Canyon Coal Inventory	2001	Outside
U14EO0753	A CRI for the Skyline Mine Expansion and Transmission Line Construction Project in Carbon and Emery Counties, Utah	2014	Outside
U16EO0163	A CRI For The Skyline Mine - 2016 Exploratory Drilling Project Emery And Sanpete Counties Utah	2016	Outside

One site (Site 42EM1306) has been recorded within the search area. Site 42EM1306 is a prehistoric lithic scatter recorded in 1980 by AERC. The site is unevaluated for inclusion on the NRHP. The site is located within the search area, but outside the inventory areas and was not encountered during field work.

The historic General Land Office (GLO) maps were reviewed through the Utah BLM cadastral survey online database (http://www.ut.blm.gov/LandRecords/Land_Records.html). The records were checked to determine if any unrecorded cultural resources are potentially present within or near the inventory areas. The GLO maps for T13S, R6E (filed June 9, 1883; March 23, 1894; and September 20, 1938) do not depict any potential man-made features within the search area.

Historic United States Geological Survey (USGS) Topographic Map online database was also reviewed (<https://ngmdb.usgs.gov/topoview/viewer/>) for historical 7.5' and 15' maps potentially covering the project area. The USGS 15' Manti, Utah (1910) depicts no man-made features within the project vicinity. The USGS 7.5' Fairview Lakes, Utah (1965) does not depict any man-made features in the project vicinity. The USGS 15' Scofield, Utah (1923) depicts the "Fairview Road" trending in the Upper Huntington Creek valley bottom near Seismic B; however, the road is outside the project's inventory area.

2.1 Summary and Expectations

The literature search area has been previously subjected to a moderate number of cultural resource inventories. Many of those inventories focused on exploration drilling, infrastructure projects, and timber sales. The inventories only recorded one prehistoric lithic scatter within the search area. As such, the current inventory has a low potential to encounter additional cultural resources.

3.0 METHODOLOGY

A field work authorization was signed by Manti-La Sal on June 7, 2018. Tetra Tech conducted the cultural resource inventory field work on July 20 and 30, 2018. Mark Karpinski, M.A. served as Principal Investigator. Marcel Corbeil served as field director conducting field work and responsible for NRHP evaluations for any encountered cultural resources. The inventory was conducted in mild weather conditions with no snow coverage present.

The inventory was accomplished using pedestrian transects spaced no further than 15 meters (50 feet) apart. For each seismic and drill location a 30 m (100 foot) diameter area and a 30 m (100 foot) access corridor was inventoried for the drill location. The inventory areas encompassed all potential ground disturbance with an appropriate buffer to prevent inadvertent impact to potentially adjacent resources. Trimble GPS units with real time differential correction had the inventory areas uploaded into it prior to field work to allow for accurate field location. GPS positional accuracy was within 3 meters and the Position Dilution of Precision (PDOP) was less than or equal to six. UTM coordinates were recorded in NAD83, Zone 12 North. Photographs were taken using a digital camera with at least a seven megapixel resolution. Photographic logs were maintained and recorded the date, camera, exposure number, subject, orientation, and GPS derived UTM coordinates (when applicable) for each photograph.

Sites were defined as a minimum of ten artifacts within a 10 m (32 feet) diameter area and/or one or more archaeological features with a sufficient potential to yield additional information. All non-linear cultural resources not meeting this definition were to be treated as isolated occurrences (IOs). Linear cultural resources were to be handled according to the Utah Professional Archaeological Councils (UPAC) Linear Guidelines (Utah Professional Archaeological Council 2008). Site recording protocol included, at minimum, a written description, overview photographs, diagnostic/unique artifact photographs, and GPS planview mapping. Three site overview photographs were to be taken and attempts were made to include reference points and major landscape features in the overview photographs to assist in site relocation. Artifact and feature

photographs were to include a photographic scale and larger feature photographs utilized a scaled north arrow oriented to magnetic north. Site GPS-based planview maps included the datum, diagnostic artifacts, formal tools, features, photographic overview points, significant topographic features, and a site boundary. Site boundaries were to be based off the distribution of the surface cultural material, high probability depositional areas, and/or features with a 15 m (50 feet) buffer from last observed cultural evidence.

Each encountered site was to be evaluated for its potential inclusion on the NRHP. IOs were considered cultural manifestations of limited information potential and not eligible for the NRHP. Each site was to be assessed for the elements of cultural integrity of location, design, setting, materials, workmanship, feeling, association. In addition to assessing the elements of integrity, each locality was evaluated for potential NRHP eligibility based one or more of the following criteria:

- A)** associated with events that have made a significant contribution to the broad patterns of national, state, or local history;
- B)** associated with the lives of persons who have made a significant contribution to national, state, or local history;
- C)** embodied the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or represents a significant and distinguishable entity whose components may lack individual distinction; and/or
- D)** may be likely to yield information important in the prehistory or history of the nation, state or region.

4.0 INVENTORY RESULTS AND MANAGEMENT RECOMMENDATIONS

The cultural resource inventory for the project did not identify any cultural resources at the seismic or core drilling location. The inventory results conform to expectations developed during the literature search. The inventory areas are small and located in locations that tend to have a low potential for the occurrence of cultural resources.

The potential for the planned activities to encounter unanticipated cultural resources is significantly low. However, if any undocumented sites are discovered during project activities, all work within a 30 m (100 feet) vicinity of the discovery should be stopped. If the discovery is on Manti-La Sal National Forest lands, the forest archaeologist ((435) 637-2817) should be contacted immediately. For discoveries on privately held lands, the UDOGM archaeologist should be contacted ((801) 538-5340).

5.0 REFERENCES

Harper, Kimball T.

1986 Historical Environments. In *Handbook of North American Indians*, Volume 11: Great Basin, edited by Warren d'Azevedo, pp. 51-63. Smithsonian Institution, Washington, D.C.

Stokes, William Lee

1986 *Geology of Utah*. Occasional Paper No. 6, Utah Museum of Natural History. Salt Lake City, Utah.

Utah Professional Archaeological Council

2008 *Linear Sites: Guidance for Identifying and Recording under Section 106 of the National Historic Preservation Act*. Copies available through the Utah Professional Archaeological Council.