

August 27, 2020

Steve Christensen
Permit Supervisor
Utah Coal Regulatory Program
Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
PO Box 145801
Salt Lake City, Utah 84114-5801

Re: Intent to Conduct Minor Coal Exploration, Canyon Fuel Fee Coal Bear Canyon, 2020

Dear Steve:

Attached is an application for an Intent to Conduct Minor Coal Exploration for one exploration borehole (designated 16-1) in Bear Canyon, west of Electric Lake. Also included are the DOGM application forms C-1 and C-2. The type of exploration proposed is conventional truck-mounted core drilling.

If possible, we would like to initiate drilling operations as early as September 21, 2020. Sections of the application dealing with wildlife/vegetation/soils and cultural history sites are enclosed in separate folders for inclusion in Skyline's confidential files as needed. Also included in the document is the Temporary Water Change approval for use of Skyline Mine water for drilling, the surface landowner agreements, and the fee coal lease documents. I appreciate your consideration of this application.

If you have any questions, please contact me at (435-448-2693).

Sincerely,



Paul Jensen
Geologist
Canyon Fuel Company, Skyline Mine

Encl.
PHJ:phj

APPLICATION FOR COAL PERMIT PROCESSING

Permit Change New Permit Renewal Exploration Bond Release Transfer

Permittee: Canyon Fuel Company, LLC

Mine: SKYLINE

Permit Number:

C/007/005

Title: NOTICE OF INTENT TO CONDUCT MINOR COAL EXPLORATION -- ZION'S CAMP, LCC, BEAR CANYON, 2020

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

ONE CONVENTIONAL-DRILL COAL EXPLORATION BOREHOLE TO BE DRILLED IN FALL, 2020

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

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

Please attach four (4) review copies of the application. If the mine is on or adjacent to Forest Service land please submit five (5) copies, thank you. (These numbers include 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.

Jason Layton
Print Name

Jason Layton 8/25/20
Sign Name, Position, Date

Subscribed and sworn to before me this 25 day of August, 2020

Melissa S. Willden
Notary Public

My commission Expires: Utah 03-19, 2023
Attest: State of Utah } ss:
County of Carbon



For Office Use Only:	Assigned Tracking Number:	Received by Oil, Gas & Mining
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Form DOGM- CI (Revised March 12, 2002)

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

**CANYON FUEL FEE COAL LEASE
BEAR CANYON AREA
2020**

Canyon Fuel Company
A Subsidiary of Wolverine Fuels Company, LLC.

August 2020



Canyon Fuel Company LLC
Skyline Mines

INTRODUCTION

Canyon Fuel Company – Skyline Mine (a subsidiary of Wolverine Fuels, LLC) is submitting this Notice of Intent to Conduct Minor Coal Exploration to the Utah Division of Oil, Gas, and Mining (UDOGM) in order to obtain approval to conduct coal exploration and reclamation activities in the Fall of 2020. The type of exploration proposed is conventional core drilling. A total of one hole will be drilled on fee land owned by Zion’s Camp, LLC. The surface owner also owns the mineral rights where the exploration hole will be drilled. This exploration work is being conducted in conjunction with a Federal on-lease exploration plan submitted to the Bureau of Land Management. This application is formatted to address the specific requirements of R645-201-200. Other related information is given in Appendix A through E. Five copies of this notice are submitted.

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.

R645-201-221

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:

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

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:

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

At times a consulting geologist may act as representative of the applicant. The UDOGM and USFS will be notified of the consulting geologist's name and address if one is used.

R645-201-223

The exploration area is generally located in central Utah east-central Utah, approximately 5.5 miles southwest of the town Scofield, near Little Eccles Canyon and Electric Lake (Map 1). The legal descriptions of the mineral ownership are as follows:

Zion's Camp Fee

Section 16, Township 14 South, Range 6 East, S.L.P.M.

SW, NE, Section 16, Township 14 South, Range 6 East, Salt Lake Base Meridian.

Acreage: 640.00

The private mineral ownership is in Sanpete County, Utah. The documents allowing minor coal exploration within the boundaries of the private mineral ownership is included in Appendix D. Map 2 shows the location of the proposed borehole. The proposed drill site is located on private surface land belonging to Zion's Camp, LLC. The surface access and use agreements are included in Appendix C.

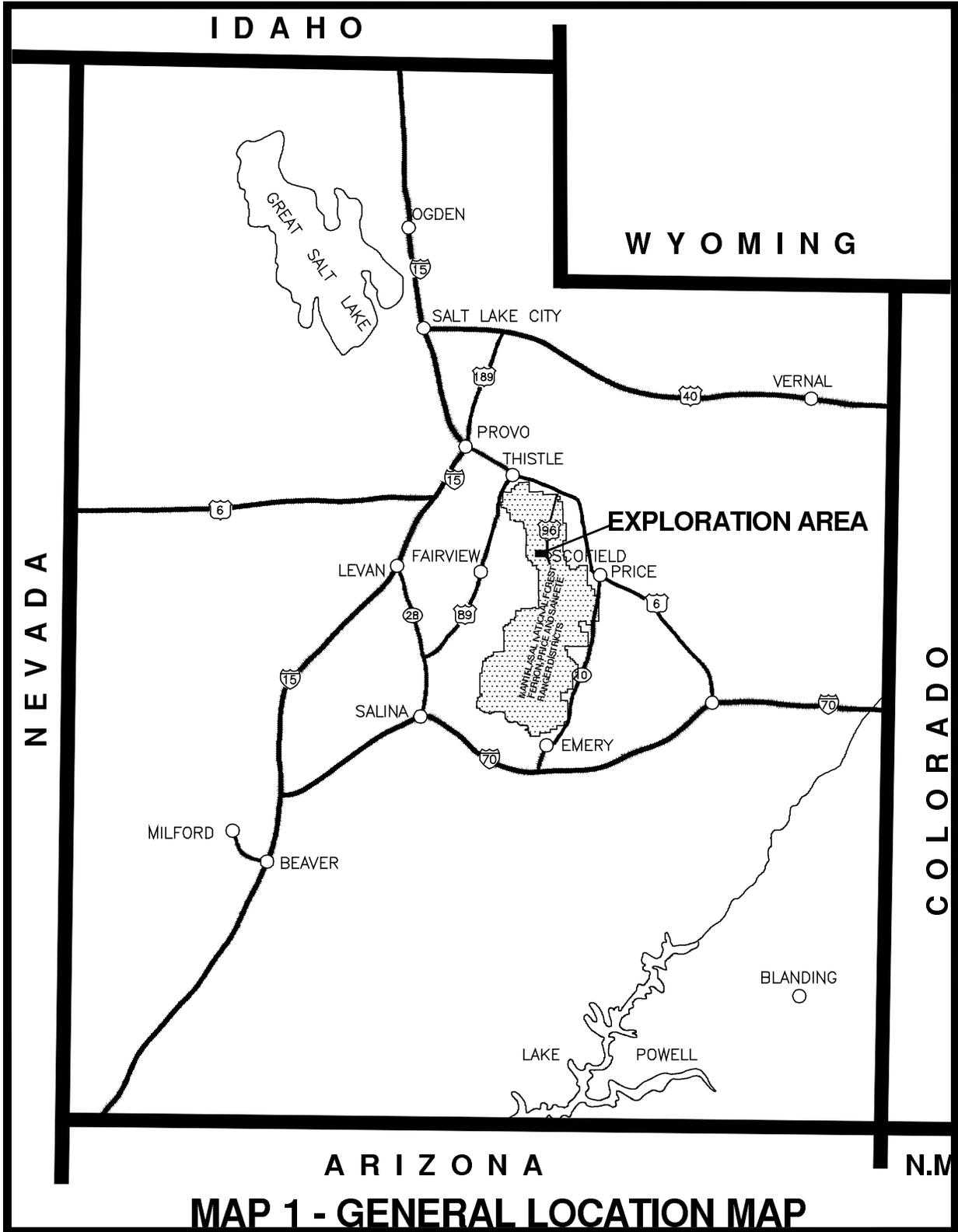
The proposed exploration area is in Bear Canyon (Map 2). The area lies within the Wasatch Plateau physiographic province. Bear Canyon drains eastward into Electric Lake, 6 miles southwest of the town of Scofield. Topography in the area is mountainous with narrow east-west trending ridges and deep canyons. Elevation ranges from approximately 8000 ft. to 9500 ft.

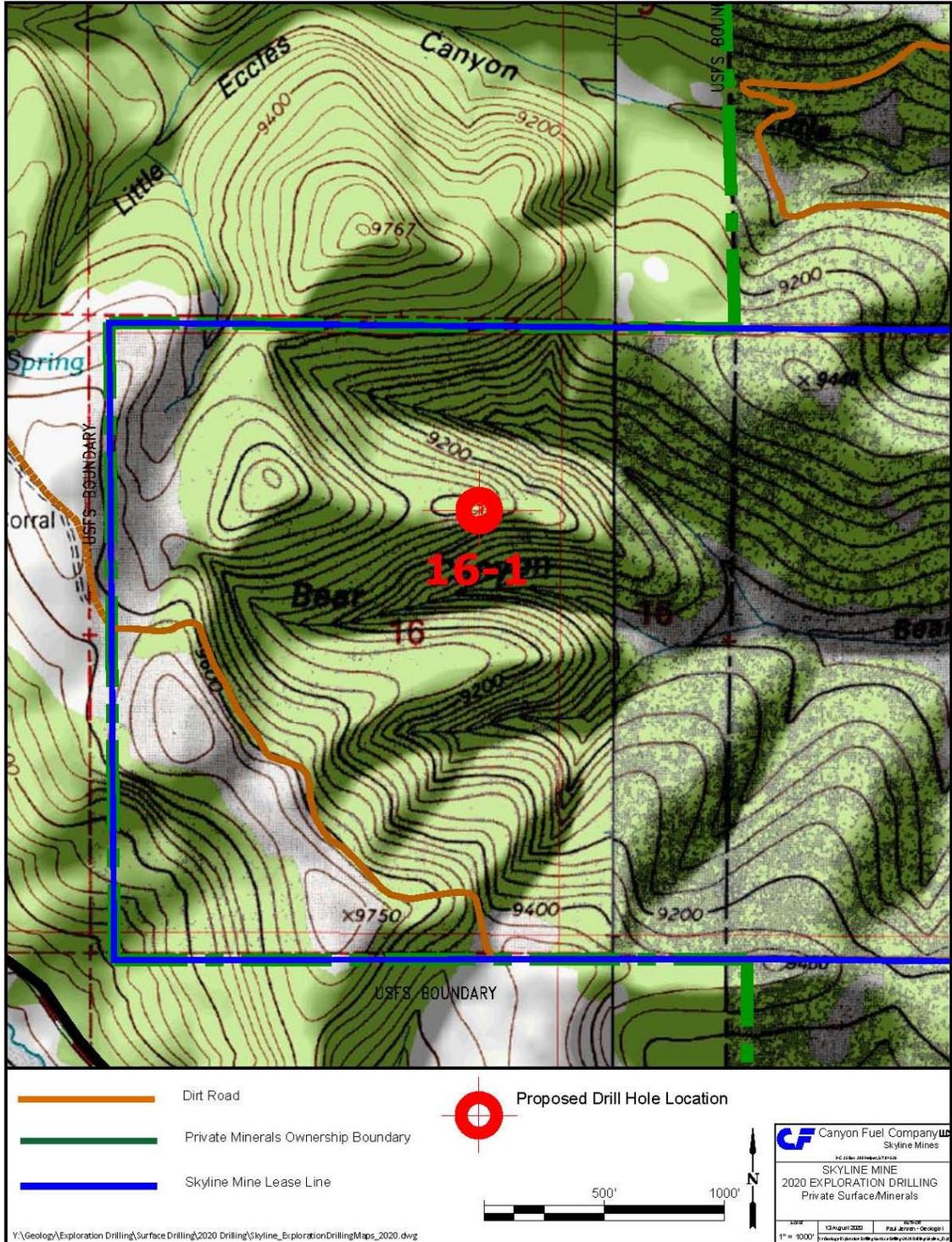
The exploration area is underlain by sedimentary rocks of late Cretaceous age. Two formations crop out in the area including the coal-bearing Blackhawk Formation and the overlying Price River Formation. At least three potentially mineable coal seams occur in the area including the Lower O'Connor A and B seams and the Flat Canyon seam.

Strata in the area dip uniformly from 2 to 8 degrees west-northwest. Several faults have been identified in the area. A number of igneous dike zones also exist in the exploration area.

Rock types are predominantly sandstone, siltstone, shale and coal.

Vegetation in the exploration area occurs in the Mountain Brush and White Fur/Spruce plant communities. Electric Lake and Huntington Creek drainages support game fish. The exploration area is important habitat for raptors, elk, mule deer, cougar, bobcat, black bear, and small mammals.





Map 2 – Exploration drilling locations, equipment/helicopter staging area, and water tank/pump.

R645-201-225

Threatened, endangered, or special interest species in the exploration area include the goshawk, sage grouse, bald eagle and peregrine falcon. Exploration and reclamation activities will not occur within one half mile of known breeding and nesting areas during breeding or nesting periods. Appendix A (confidential file) contains the 2005 BEBA and Wildlife Resources reports for the area. Additional biological surveys were completed in the area in 2006 and 2008, and copies are included in Appendix A. A site-specific biological survey was conducted in July 2020 by Alpine Ecological in the area of the proposed drill holes; this is also included in Appendix A. No Mexican Spotted owls are known to occur in the area.

Tetra Tech has completed a cultural resource evaluation on and near the proposed drill site which is attached in Appendix B (Confidential File). Alpine Ecological has completed site specific biological surveys of the site (Appendix A Confidential File).

R645-201-224

Timetables for exploration related activities by drill type is given below. Table 1 is an approximate timetable for conventional drill holes located on Zion's Camp property. It is anticipated that exploration activities will start on approx. September 2020. This schedule is estimated only and may have to be altered depending on such factors as contractor availability, drilling conditions, weather, water availability, etc.

TABLE 1:

EVENT	WK 1	WK 2	WK 3
Prepare access roads and drill pads as needed			
Move drill equipment to site and drilling			
Remove equipment			
Reclaim drill pads			

R645-201-225

The general method to be followed during conventional rotary drill hole exploration, reclamation, and abandonment procedure is: 1) repair the existing roads where needed and prepare the drill sites, 2) rotary drill, core, log and abandon the borehole, 3) reclaim the drill sites and access routes. No blasting will be done for

road building or repair.

Conventional drilling will be accomplished utilizing rotary and continuous core drilling techniques. Drilling will involve one rotary/core rig capable of drilling 3,000 ft.; with necessary support equipment such as supply trailers, portable water tanks, mud tanks, compressors, fuel tanks, etc. The drilling procedure will be to rotary or plug drill to core point and then continuously core through the coal zone. Drilling fluid will mainly be water with some foam, polymer, and/or mud as drilling medium.

Water for drilling and dust suppression will be transported from the Skyline Mine site hydrant and/or other permitted areas via 1,500 gal. water trucks. An approved Temporary Water Change from the Division of Water Rights is in place and included in Appendix E.

The only coal to be removed during exploration activities will be cores. Cores will nominally be 2.5 inches (HQ) in diameter. Given an approximate average projected thickness of 9 ft. for each seam, Lower O'Connor B seam, Lower O'Connor A seam, and Flat Canyon seam, approximately 80 lbs. of coal will be removed (80 lbs./hole, 25 lbs./seam) from the one conventional hole.

No road construction is planned for this project.

Drill sites will be approximately 150 ft x 150 ft in size. A track mounted backhoe and/or a rubber-tired backhoe may be used at times for construction of mud pits which will measure approximately 20 ft x 40 ft x 10 ft deep. Excavation will include grubbing, removal and separate storage of the soil A horizon and, if needed, removal and separate storage of material below the soil A horizon to make a level drill site. One to four mud pits will be excavated in the material below the soil A horizon if there is sufficient soil depth. No hazardous material or trash will be disposed of at the drill site. The only material disposed of at the drill site will be cuttings and any drilling foam and/or mud which will be placed in the mud pits. Figure 1 shows the typical layout of a truck-mounted drill rig site. Small leaks of petroleum products will be cleaned-up with absorbent pads and any contaminated subsoil will be removed and contaminated pads and rags will be hauled off the site and disposed of in an approved waste site. No blasting will be done when constructing the drill site. Drill sites have been selected such that no trees will be removed during construction of the drill sites.

Disturbance to wildlife will be minimized by utilizing the existing roads and trails and eliminating the need to build roads with heavy equipment. No wetlands or riparian areas are known along the proposed routes. No utility or support facilities are present in the area.

Reclamation is an integral part of the exploration activities and will progress as contemporaneously as practical with the other exploration activities.

Reclamation of the drill site will occur as soon as possible upon completion of drilling operations. The topsoil will be redistributed and replaced. The topsoil surface will be roughened, pitted, and/or deep gouged prior to seeding to help

alleviate soil compaction, increase soil stability, and to increase water harvesting. It is possible the surface owner may not allow deep gouging and will require the site be recontoured and roughened to a lesser extent. If such is the case, the desires of the surface owner will be provided to DOGM in writing. Reclamation will include reseeding the disturbed surface utilizing the approved seed mix. No damage to public or private property will occur.

There will be no diversion of overland flows.

It is not anticipated that acid- or toxic- forming materials will be encountered during exploration because none have been encountered previously. Samples of drill core will be analyzed for acid- and toxic-forming materials. These samples will be taken from the 10 ft. interval above and below each seam of mineable thickness if core recovery has occurred.

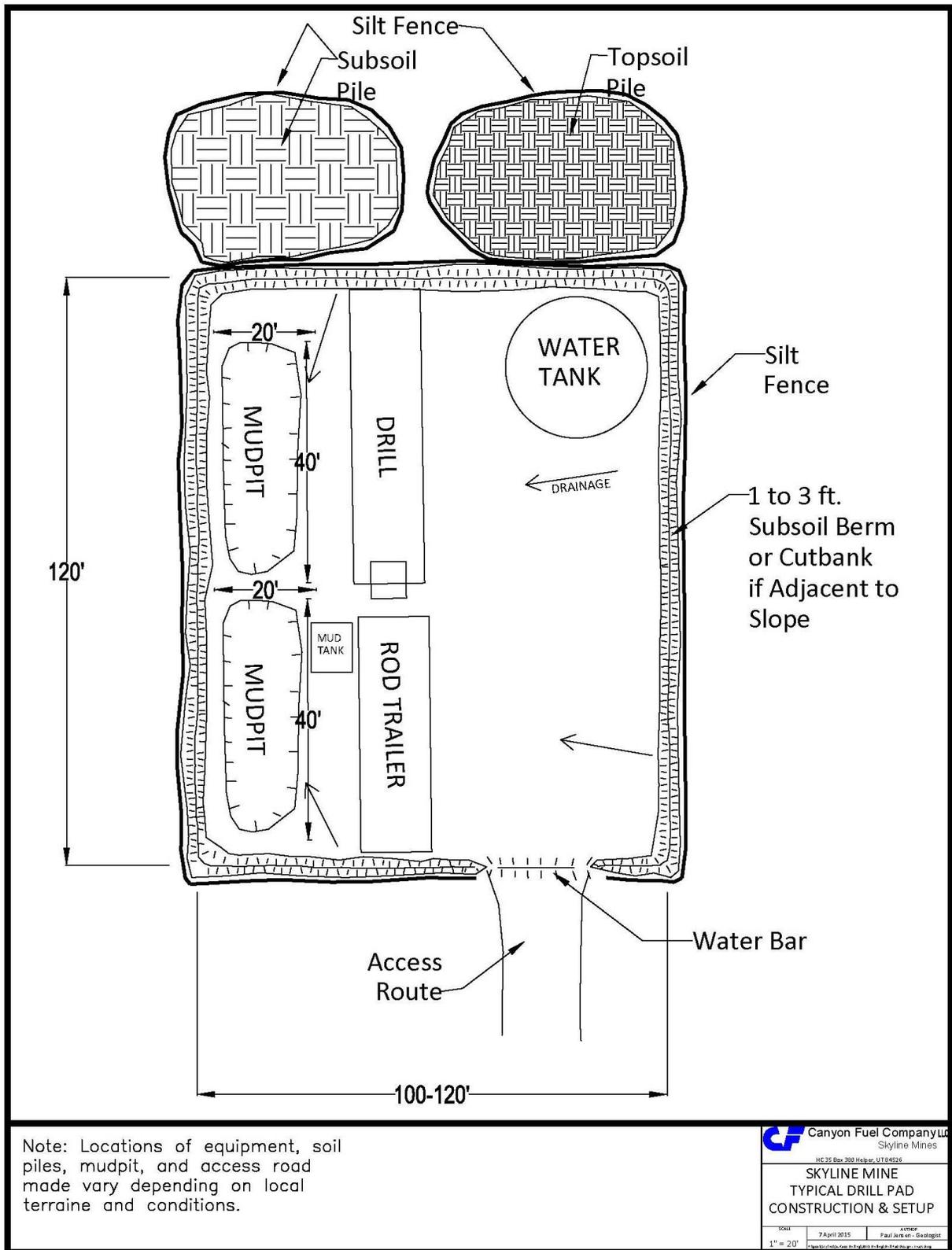


Figure 1. Typical conventional drill site setup. Note: The berm will be constructed of excavated mud pit material or imported material.

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 2018 Upper Huntington Canyon area drill holes and will be also used in 2020 (the seed mix as approved by UDOGM 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.

Upon completion of drilling, hole 16-1 will be plugged and abandoned with a cement, bentonite, or cement/bentonite slurry to full depth. A brass tag will be placed at the top of the drill hole stating the operator's name, drill hole number, and legal description. The tag will be placed in cement at ground level.

Estimated depth and other drill hole information is given in Table 1. Disturbed area will include a drill pad. No temporary access roads will be built. Total disturbed area acreage is estimated at 0.3 acres as shown on Table 1.

Drill Site	Location	Total Depth (ft)	Disturbed Area (acres)
16-1	SW, NE, Sec 16, T14S, R6E	2,345	0.331
		TOTAL	0.331

There are no occupied dwellings or pipelines located in the exploration area. No trenches will be dug, and no structures will be constructed nor will debris be disposed of in the exploration area. The permittee or his representative will have a copy of this Notice of Intention to Conduct Minor Coal Exploration while in the

exploration area available for review by an authorized representative of the Division by request.

R645-203-200

Canyon Fuel Company requests that the Division not make any drilling information available for public inspection relative to coal seam thickness or quality. This information is considered crucial to Canyon Fuel Company's competitive rights.

R645-202.230

No adverse impacts to stream channels will occur during water pumping or drilling activities. An approved "Temporary Change of Water" is in place with the Division of Water Rights (Appendix E). It is projected that approx. 0.3 acre/ft. of water will be utilized during the project.

R645-202-231

A cultural resource survey has been conducted for the area on and near the drill hole site. A copy of the cultural resource survey is included in Appendix B (confidential). Threatened, endangered, and sensitive plant and animal survey information has been developed by the U.S.F.S. and Maxim Technologies during their work relative to Canyon Fuel/Canyon Fuel Company's 2005 Exploration License and Plan approvals (Appendix A, confidential). Alpine Ecological conducted a site-specific biological survey on the proposed drill site (Appendix A). No nests were observed during those surveys.

R645-202-232

No temporary drilling access road construction is planned for this project as previously described. Regulations cited in R645-202-232 relative to roads will be followed as they apply.

R645-202-235 (R645-301-624.210, R645-301-731.121, R645-301-731.218))

Geologic logs of drilling will be kept. Any appreciable water encountered during drilling will be logged, noting depth, geology, and estimated flow. Any such zones will be evaluated for potential water monitoring.

Figure 1 shows a drawing of the approximate drillsite setup.

If the drill hole begins to make excess water, such water will be pumped into the constructed mud pits at the drill site. From there it will be hauled to an approved waste water disposal site. At no time will excess drill water generated in the drill hole be allowed to run on topsoil on the surface.

Fresh water pumped to the drill site to be utilized for the drilling process will be allowed to run off the site over topsoil if it contains no drilling additives. This is necessary to allow cooling of the engine during rod tripping or when water tanks overflow at the drill site. Measures will be taken to disperse the water flow over the topsoil such that no erosion occurs.

R645-301-525-200

No major utilities pass over, under, or through the exploration area. Use of roads and development of the exploration site will not disrupt or damage any utility service.

R645-301-527.230

Roads utilized as part of this minor coal exploration plan will be maintained in a safe condition, including proper control of fugitive dust to minimize effects to fish, wildlife, and related environmental values.

R645-301-731.100

An approved Temporary Change of Water for water to be used in the drilling process is in place (Appendix E).

R645-301-742.410 thru 742.420

Surface disturbance will be limited to the drill site. No changes will occur to drainage patterns. No perennial or intermittent stream drainages will be crossed by temporary access roads or drill sites. Excess water will be placed in the mud pits and then hauled to an approved waste water disposal site. Contributions of suspended solids will not occur.

The potential for water pollution will be minimized by keeping pollutants away from the drill hole and in their containers. Materials used during drilling operations will be selected to be as non-polluting as possible. All spills of polluting materials will be removed from the area and properly disposed of.

No mixing of surface and ground waters is possible because all drill sites will be above perennial and ephemeral stream drainages.

Drill fluids and/or cuttings will be contained within mud pits. If necessary, excess fluids will be pumped out and excess drill cuttings and core will be hauled off and disposed of properly.

Canyon Fuel Company will retain all drill and geophysical logs.

APPENDIX A

**2020 SOILS SURVEY
2020 VEGETATION SURVEY**

**(CONFIDENTIAL FILES)
WILDLIFE SURVEYS**

2020 BIOLOGICAL SURVEYS

**APPENDIX B
(CONFIDENTIAL FILES)**

CULTURAL RESOURCE INVENTORY

**EPG
(U-20-TD-0657)**

APPENDIX C

SURFACE ACCESS AND USE AGREEMENTS

ZION'S CAMP

APPENDIX D

APPROVAL FOR MINOR COAL EXPLORATION ON FEE MINERALS

APPENDIX E

TEMPORARY WATER CHANGE UTAH STATE ENGINEER

July 18, 2020

Gregg Galecki
Skyline Mine
HC 35 Box 380
Helper, Utah 84526

Dear Gregg

Alpine Ecological has conducted a soil survey on the proposed drill site 16-1 on behalf of Skyline Mine. The survey was conducted in order to comply with requirements of Utah Division of Oil, Gas and Mining (DOG M).

NRCS Soil Data

There has been no soil survey conducted in the area of the proposed drill site 16-1. The United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) have conducted soil surveys approximately 9 miles Northeast of the proposed drill site. The USDA-NRCS Web Soil Survey (WSS) utility and associated soil reports were used in determining the soil types in the proposed disturbance area (Appendices A & B).

According to the information provided by the NRCS, soils in the vicinity of the proposed drill site is comprised of the Trag-Croydon Complex as well as 7 others. The Trag-Croydon Complex soils were identified on the south-facing and east-facing slopes of the soil survey areas.

The proposed drill site 16-1 is located on a east facing, back slope, nose slope, mountain flank upper 1/3. This soil most closely resembles the Trag-Croydon Complex.

Site Reconnaissance

Site reconnaissance was conducted by Dr. Stevens. The proposed drill site location was identified the soil survey was conducted at the proposed site. This was done to ensure that the same soils were being surveyed that would be disturbed with the proposed drill project. (Appendix C).

Since there were no soil surveys previously conducted in the proposed drill site area by the NRCS Dr. Stevens investigated road cuts and other exposed soils within the NRCS soil survey area east of the affected areas to familiarize himself with the previously classified soils.

Soil Profiles

Soil investigations were conducted at the proposed 16-1 drill location on June 30, 2020. A soil profile (Sp16-1) was excavated near the proposed drill location to gather representative soils data for the proposed drill site. The soil pit was excavated by hand to a depth of approximately 1 meter. The pit was logged and photographed (Appendices D and E). The soils in the pits correlated with Trag-Croydon Complex soils identified by the NRCS in nearby areas. The site was excavated on a east facing, back slope, nose slope, mountain flank upper 1/3.

Please feel free to contact me if you have any questions.

Sincerely,
Alpine Ecological

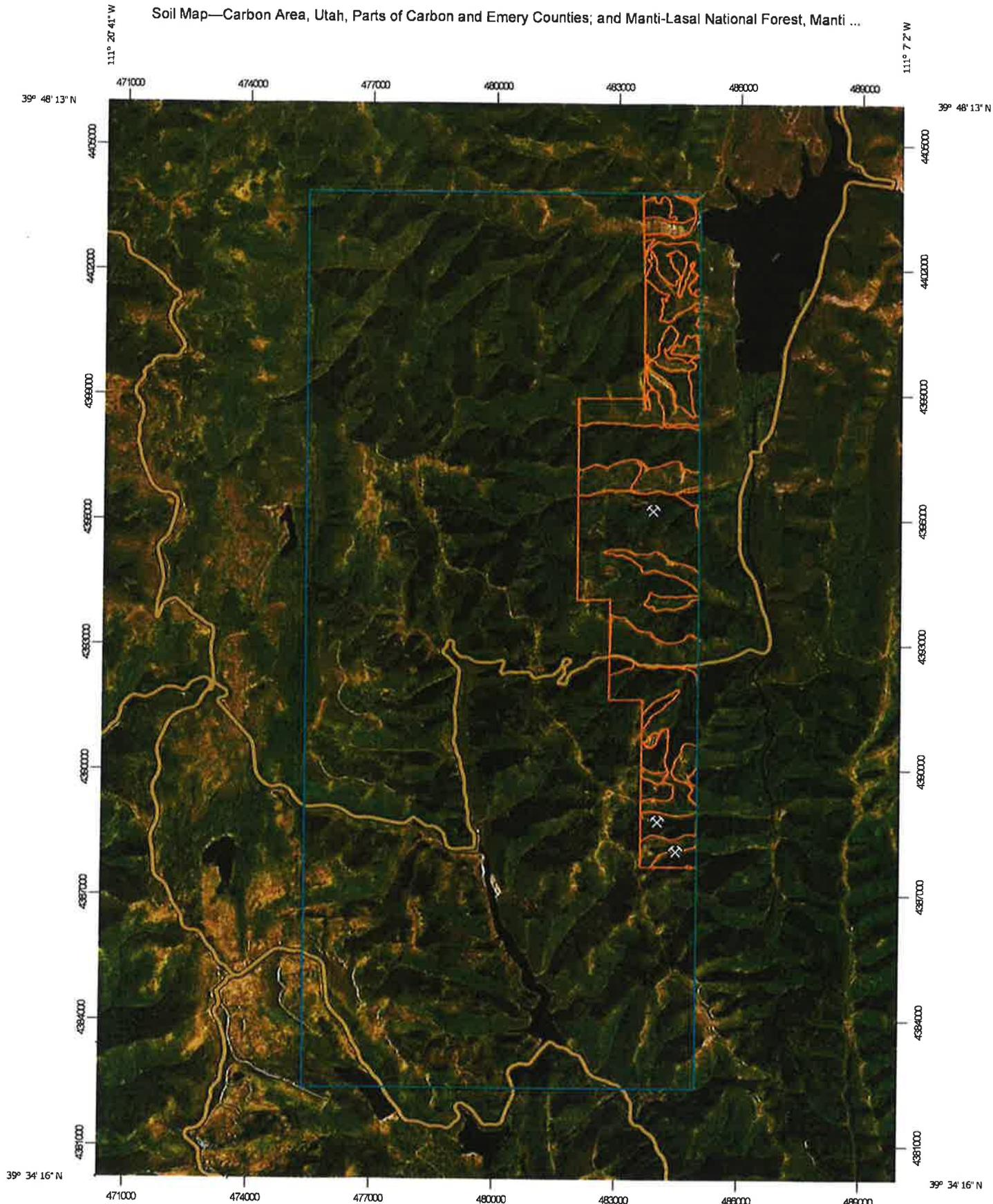
A handwritten signature in black ink, appearing to read 'Allan Stevens', with a long horizontal flourish extending to the right.

Allan Stevens PhD

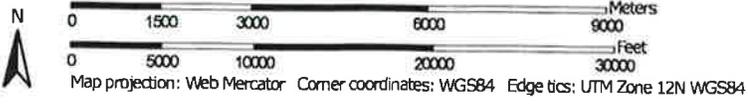
Appendix A

Map and Legends of NRCS Soil Survey
(obtained from WSS)

Soil Map—Carbon Area, Utah, Parts of Carbon and Emery Counties; and Manti-Lasal National Forest, Manti ...



Map Scale: 1:126,000 if printed on A portrait (8.5" x 11") sheet.



MAP LEGEND

 Area of Interest (AOI)	 Spoil Area
 Area of Interest (AOI)	 Stony Spot
 Soils	 Very Stony Spot
 Soil Map Unit Polygons	 Wet Spot
 Soil Map Unit Lines	 Other
 Soil Map Unit Points	 Special Line Features
 Special Point Features	 Streams and Canals
 Blowout	 Transportation
 Borrow Pit	 Rails
 Clay Spot	 Interstate Highways
 Closed Depression	 US Routes
 Gravel Pit	 Major Roads
 Gravelly Spot	 Local Roads
 Landfill	 Background
 Lava Flow	 Aerial Photography
 Marsh or swamp	
 Mine or Quarry	
 Miscellaneous Water	
 Perennial Water	
 Rock Outcrop	
 Saline Spot	
 Sandy Spot	
 Severely Eroded Spot	
 Sinkhole	
 Slide or Slip	
 Sodic Spot	

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Carbon Area, Utah, Parts of Carbon and Emery Counties
 Survey Area Data: Version 10, Sep 11, 2018

Soil Survey Area: Manti-Lasal National Forest, Manti Division - Parts of Sanpete and Emery Counties
 Survey Area Data: Version 1, Dec 27, 2013

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 10, 2009—Nov 8, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
22	Croydon loam, 30 to 50 percent slopes	136.7	0.3%
23	Curecanti family-Pathead complex	4,376.0	8.5%
29	Dumps, mine	20.1	0.0%
30	Falcon-Rock outcrop complex	5.4	0.0%
105	Senchert family-Senchert complex	188.4	0.4%
109	Silas-Brycan loams	144.1	0.3%
115	Trag stony loam, 30 to 60 percent slopes	1,094.0	2.1%
117	Trag-Beje-Senchert complex	2.6	0.0%
118	Trag-Croydon complex	1,272.7	2.5%
125	Uinta-Toze families complex	607.1	1.2%
Subtotals for Soil Survey Area		7,847.0	15.3%
Totals for Area of Interest		51,197.1	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
NOTCOM	No Digital Data Available	43,350.1	84.7%
Subtotals for Soil Survey Area		43,350.1	84.7%
Totals for Area of Interest		51,197.1	100.0%

Appendix B

Soil Series Descriptions for Trag-Croydon Complex as Developed by the
NRCS
(obtained from WWS)

118-Trag-Croydon Complex

Map Unit Setting

- Elevation: 7,580 to 9,470 feet
- Mean annual precipitation: 16 to 25 inches
- Mean annual air temperature: 34 to 40 degrees F
- Frost-free period: 40 to 80 days

Map Unit Composition

- Trag and similar soils: 50 percent
- Croydon and similar soils 30 percent

Description of Trag

Setting

- Landform: Mountain slopes
- Landform position (three-dimensional): Mountainflank
- Down-slope shape: Convex
- Across-slope shape: Convex
- Parent Material: Alluvium and/or colluvium derived from sandstone and shale

Properties and qualities

- Slope: 30 to 60 percent
- Surface area covered with cobbles, stones or boulders: 13.0 percent
- Depth to restrictive feature: More than 80 inches
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Calcium carbonate, maximum content: 10 percent
- Available water capacity: High (about 10.2 inches)

Interpretive groups

- Land capability (nonirrigated): 7e
- Ecological site: Mountain Loam (Salina Wildrye) (R048AY409UT)

Typical profile

- 0 to 10 inches: Stony loam
- 10 to 36 inches: Clay loam
- 36 to 60 inches: Clay loam

Description of Croydon

Setting

- Landform: Mountain slopes
- Landform position: (three-dimensional): Mountainflak
- Down-slope shape: Convex
- Across-slope shape: Convex
- Parent material: Colluvium and/or slope alluvium over residuum weathered from sandstone and shale

Properties and qualities

- Slope: 30 to 50 percent
- Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
- Natural drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat): Moderatey low to moderately high (0.06 to 0.20 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None

Interpretive groups

- Land capability (nonirrigated): 7e
- Ecological site: High Mountain Loam (Aspen) (R047XA508UT)

Typical profile

- 0 to 16 inches: Loam
- 16 to 23 inches: loam
- 23-48 inches: Clay loam
- 48-52 inches: weathered bedrock

Appendix C

Google Earth Image of the Proposed Drill Site and Soil Pit Location



drill2020

Appendix D

Soil Profile Log

Soil Profile Log

Sp 16-1

Name	Allan Stevens		Drainage Pattern	Dendritic					
Date	June 30, 2020		Drainage	WD Well Drained					
Weather	Partly Cloudy (60° F)		Flooding	NO None					
Location	39°36'20.81"N 111°15'20.23"W		Ponding	None					
Slope Aspect	East		Depth to Water	Unknown					
Slope Gradient	0%		Plant Cover	VIAM, Carex, BRMA, ACNE					
Slope Complexity	Complex		Parent Material	COL Coluvium					
Slope Shape	CL Convex Linear		Erosion	W1 0-25% erosion from water					
Hillslope Profile	BS Back Slope		Surface Fragment	Stony or Bouldery					
Geomorphic	NS Nose Slope MFUT Mountain Flank Upper 1/3								
Diagnostic Horizons	Observation Method	Depth (cm)	Boundary	Color	Texture	Structure	Reaction (HCl)	% Rock Fragment and Size	% Roots Size and Location
A	SP	0-18	Abrupt	Very Dark Grayish Brown	S	VF, gr	ST	FG 5%	VF 70%
B	SP	18-33	Gradual	Yellowish Brown	S	VF, gr	ST	CG 60%	F 5%
C	SP	33-		Brownish Yellow	SC	F, sb	ST	C 70%	None
Depth	Description								
0-18	Sandy with very fine root material, very fine granular, fine gravel, moist								
18-33	Sandy with fine root material, fine granular, coarse gravel, moist								
33-	Sandy Clay with no root material, fine granular subangular blocky, cobby, moist								

Appendix E

Soil Profile Photo



**Skyline Mine
Vegetative Analysis of
Proposed Drill Site 16-1
and Reference Site 16-1**

Report Prepared By

Alpine Ecological
HC 80 Box 570
Greenwich, UT 84732

By Allan R. Stevens Ph.D

For
Canyon Fuel Company, LLC.
Skyline Mine
HC 35 Box 380
Helper, Utah 84526

July 2020

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Introduction

The purpose of the proposed drill site 16-1 is part of a conventional rotary/core drilling program. Heavy equipment to be utilized will access the exploration area via existing roads.

Total estimated disturbance area for drill site 16-1 in 2020 is 0.275 acres. Reclamation of the disturb area will occur in the fall of 2020 after completion of the drilling and capping of the well.

Skyline Mine is a coal mine with its surface facilities located about 4 miles southwest of the town of Scofield in Carbon County, Utah. The proposed drill site 16-1 is located approximately 6 miles southwest of the surface facilities of the mine. The drill site is located on an east facing slope on the upper 1/3 of a ridge in Sanpete County. The vegetation on the drill site has been logged in the past and consists mostly of grasses, forbs and a few shrubs. The elevations of the drill sites is 9,147 feet above sea level.

Methods

Sampling Standards

Methodologies used for this analysis were performed in accordance with vegetation guidelines supplied by the State of Utah, Division of Oil, Gas and Mining (DOG M). In June of 2020, quantitative and qualitative data were collected in the plant communities proposed for drilling activities as well as reference areas that were chosen for future revegetation success standards.

Sampling Methodology for Cover, Frequency and Composition

The areas that is proposed to be disturbed is centered on the proposed drill site. Therefore, the vegetation around the drill site needed to be analyzed. It was determined that the best method to determine vegetative cover frequency and composition on this area would be nested frequency belt lines as described in the U.S. Forest Service Rangeland Ecosystem Analysis and Monitoring Handbook (FSH 2209.21). Five 100 ft. beltlines were established in five different compass directions radiating from the proposed drill site and reference site point. With this methodology the vegetation composition around the proposed drill site and reference site would be determined. The five compass directions used were the following from magnetic North: Belt 1 at 23 degrees, Belt 2 at 121 degrees, Belt 3 at 173 degrees, Belt 4 at 269 degrees and Belt 5 at

296 degrees. Every 5 ft. along each transect line a ½ m² nested frequency frame was placed on alternating sides of the transect line. Species composition and frequency were recorded using the frame. Ground cover was also determined using the frame. The percent cover of each species was then estimated within each frame. A total of 100 nested frequency data points were therefore taken at each proposed drill site and each reference site. Plant nomenclature follows the USDA-ARS Plant Database (plants.usda.gov).

Placement of Reference Sites

The reference site was chosen to represent future revegetation success standards. The reference site was chosen by walking far enough away from the proposed drill site so it would not be disturbed during the drilling activity. Locations for the reference site was chosen by visually looking at the site and trying to choose a site that looked similar in vegetative composition to the proposed drill site.

Sampling Methodology for Density

Density estimates for the woody plant species on the proposed drill site and reference areas were made using a distance method called the point-quarter technique. In this method, random points were placed on the sample sites and measured into four quarters. The distance to the nearest woody plant species were then recorded in each quarter. The average point to individual distance was equal to the square root of the mean area per individual.

Photographs and Map

A map was created with the proposed drill site and reference site (Appendix 5). In addition, photographs were taken of each belt line from the center point (Appendix 3-4).

Threatened, Endangered, Candidate and Sensitive Species

The inventory of federally listed threatened, endangered and candidate plant species for Emery and Sanpete Counties was consulted prior to field work. Both Emery and Sanpete County lists were consulted because the proposed drill site is close to the Sanpete/Emery County line. In addition, the State of Utah, Department of Natural Resource's biodiversity database and the USDA Forest Service Intermountain Region's list of proposed, endangered, threatened and sensitive species for the Manti portion of the Manti-La Sal National Forest was consulted for possible impacts by the proposed project.

If applicable, this information would be used to drive species of concern field surveys if any of the species or habitats were found on or near the proposed project.

Results

Drill Site 16-1

The proposed drill site 16-1 is located on an east facing slope on the upper 1/3 of a ridge in Sanpete County. The vegetation on the drill site has been logged in the past and consists mostly of grasses, forbs and a few shrubs.

There were no overstory species near the proposed drill site. The most common understory species were Mountain Brome (*Bromus marginatus*), Kentucky Bluegrass (*Poa pratensis*), Columbia Needlegrass (*Achnatherum nelsonii*), Bedstraw spp. (*Galium*) and American Vetch (*Vicia Americana*). A list of all species encountered in the sample quadrats is listed in Appendix 1.

Total living cover for this area was estimated at 35%, of which 35% was from understory cover and 0% was from overstory cover (Appendix 1). The composition of the understory cover was 17.8% grasses, 16.8% forbs and 0.4% shrubs.

Reference Site 16-1

The proposed reference site 16-1 is located on a northeast facing slope on the upper 1/3 of a ridge in Sanpete County. The vegetation on the drill site has been logged in the past and consists mostly of grasses, forbs and a few shrubs.

There were no overstory species near the proposed drill site. The most common understory species were American Vetch (*Vicia Americana*), Mountain Brome (*Bromus marginatus*), Columbia Needlegrass (*Achnatherum nelsonii*), Carex spp. (*Carex*) and Bedstraw spp. (*Galium*). A list of all species encountered in the sample quadrats is listed in Appendix 2.

Total living cover for this area was estimated at 38%, of which 38% was from understory cover and 0% was from overstory cover (Appendix 2). The composition of the understory cover was 20.5% grasses, 17.1% forbs and 0.4% shrubs.

Analysis of Similarities Between Drill Site and Reference Site

Specific parameters for those plant communities that would be disturbed by the proposed drilling activities were compared statistically using an unpaired t test with the correlating reference area that could be used for revegetation success standard following final reclamation of the site. When total living cover values of the proposed drill site were compared to the corresponding reference site there were no significant differences found between the sites.

Threatened, Endangered, Candidate and Sensitive Species

The following is a table of potential endangered, threatened, candidate and sensitive plant species know to occur in Sanpete and Emery Counties. Next to each species name information is provided about the likelihood of occurrence for each species in the proposed drill site areas.

Federally listed endangered, threatened, candidate and sensitive species for Emery and Sanpete County.	
Endangered	
<i>Pediocactus despainii</i> (San Rafael cactus)	<p>This species is found in open pinyon-juniper communities at 6,000-6,200 ft. elevation.</p> <p>The study areas are above the elevation range for this species. The vegetative types are very different.</p> <p>The proposed project will not impact this plant species.</p>
<i>Schoenocrambe barnebyi</i> (Barnaby reed-mustard)	<p>This species is found in mixed shadscale, eriogonum and ephedra communities at 5,600-5,700 ft. elevation.</p> <p>The study areas are above the elevation range for this species. The vegetative types are very different.</p>

	The proposed project will not impact this plant species
<i>Sclerocactus wrightiae</i> (Wright fishhook cactus)	<p>This plant is found on the Mancos Shale Formation in salt desert shrub to juniper communities at 4,790-6,120 ft. elevation.</p> <p>The study area is above the elevation range for this species. The vegetative types are very different and there is no Mancos Shale in the study area.</p> <p>The proposed project will not impact this plant species.</p>
Threatened	
<i>Astragalus montii</i> (Heliotrope milk-vetch)	<p>This species is found in alpine on windblown ridges and snowdrift sites at 10,500-11,000 ft. elevation.</p> <p>The study areas are below the elevation range for this species. The habitat is different. The known locations of this species are well South of the study area.</p> <p>The proposed project will not impact this plant species</p>
<i>Cycladenia humilis var jonesii</i> (Jones Cycladenia)	<p>This species is found in cool desert shrub and juniper communities at 4,400-6,000 ft. elevation.</p> <p>The study areas are above the elevation range for this species. The vegetative types are very different.</p> <p>The proposed project will not impact this plant species.</p>
<i>Pediocactus despainii</i> (Despain Footcactus)	This species is found in open piyon-juniper communities at 6,000-6,200 ft. elevation.

	<p>The study areas are above the elevation range for this species. The vegetative types are very different.</p> <p>The proposed project will not impact this plant species.</p>
<i>Townsendia aprica</i> (Last Chance townsendia)	<p>This species is found in salt desert shrub and pinyon-juniper communities in the Arapien and Mancos Shale formations at 6,100-8,000 ft. elevation.</p> <p>The study areas are not found in the Arapien or Mancos Shale formation. The vegetative types are very different.</p> <p>The proposed project will not impact this plant species.</p>
Candidate/Sensitive	
<i>Aster kingie var barnebyana</i> (Barneby woody aster)	<p>This species is found in mountain mahogany-oak communities in rock outcrops composed of Precambrian quartzite at 7,345-7,610 ft. elevation.</p> <p>There are not outcrops of Precambrian quartzite in the study areas. The vegetative types are very different.</p> <p>The proposed project will not impact this plant species.</p>
<i>Astragalus consobrinus</i> (Bicknell milkvetch)	<p>This species is found in sagebrush-grassland and pinyon-juniper communities on the Mancos Shale formation at 5,200-9,000 ft. elevation.</p> <p>The study areas are not found in the Mancos Shale formation. The vegetative types are very different.</p>

	<p>The proposed project will not impact this plant species.</p>
<p><i>Astragalus subcinereus</i> var. <i>basalticus</i> (Basalt milkvetch or Silver milkvetch)</p>	<p>This species is found in pinyon-juniper and ponderosa communities at 4,520-7,970 ft. elevation.</p> <p>The vegetative types of the study areas are very different and the know population of this plant are found in southern Emery County.</p> <p>The proposed project will not impact this plant species.</p>
<p><i>Cryptantha compacta</i> (Mound cryptanth)</p>	<p>This species is found in salt desert shrub and mixed desert shrub communities at 4,950-9,250 ft. elevation.</p> <p>The vegetative types of the study areas are very different.</p> <p>The proposed project will not impact this plant species.</p>
<p><i>Cryptantha creutzfeldtii</i> (Creutzfeldt-flower)</p>	<p>This species is found in mat atriplex communities on the Mancos Shale formation at 5,250-6,495 ft. elevation.</p> <p>The study areas are above the elevation range for this species. The vegetative types are very different.</p> <p>The proposed project will not impact this plant species.</p>
<p><i>Cymopterus coulteri</i> (Coulter biscuitroot)</p>	<p>This species is found in black sagebrush, shadscale, desert shrub and juniper communities at 4,955-6,000 ft. elevation.</p>

	<p>The study areas are above the elevation range for this species. The vegetative types are very different.</p> <p>The proposed project will not impact this plant species.</p>
<i>Erigeron carringtonae</i> (Carrington daisy)	<p>This species is found in meadows and escarpment margins at 10,000-11,000 ft. elevation.</p> <p>The study areas are below the elevation range.</p> <p>The proposed project will not impact this plant species.</p>
<i>Erigonoum corymbosum</i> var. <i>smithii</i> (Big Flattop buckwheat or Smith wild buckwheat)	<p>This species is found in purple-sage matchweed, ephedra-Indian ricegrass and rabbitbrush communities at 5,200-5,610 ft. elevation.</p> <p>The study areas are above the elevation range for this species. The vegetative types are very different.</p> <p>The proposed project will not impact this plant species.</p>
<i>Festuca dasyclada</i> (Sedge fescue)	<p>This species is found on open slopes and ridges in sagebrush, mountain brush, and juniper communities on the Green River Shale Formation and limestone gravels at 6,990-10,000 ft. elevation.</p> <p>The study areas are in a different formation.</p> <p>The proposed project will not impact this plant species.</p>

<p><i>Gilia tenuis</i> (Mussentuchit Gilia)</p>	<p>This species is found in pinyon-juniper woodlands.</p> <p>The study sites have a very different vegetative type.</p> <p>The proposed project will not impact this plant species.</p>
<p><i>Hedysarum occidentale var. canone</i> (Canyon sweetvetch or Coal sweetvetch)</p>	<p>This species is found in pinyon-juniper, sagebrush and wash communities at 5,000-8,000 ft. elevation.</p> <p>The study sites have a very different vegetative type.</p> <p>The proposed project will not impact this plant species.</p>
<p><i>Hymenoxys depressa</i> (Low hymenoxys or Depressed bitterweed)</p>	<p>This species is found in ephedra, sagebrush, shadscale and pinyon-juniper communities at 4,400-7,100 ft. elevation.</p> <p>The study sites have a very different vegetative type.</p> <p>The proposed project will not impact this plant species.</p>
<p><i>Hymenoxys helenioides</i> (Helenium hymenoxys or Intermountain bitterweed)</p>	<p>This species is found in mountain brush, sagebrush, aspen and meadow communities at 8,800-10,700 ft. elevation.</p> <p>Known populations of this species are found at quite a distance south and north of the study site.</p> <p>The proposed project will not impact this plant species.</p>

<p><i>Lygodesmia entrada</i> (Entrada rushpink)</p>	<p>This species is found in mixed desert shrub and juniper communities at 4,400-4,800 ft. elevation.</p> <p>The study areas are above the elevation range for this species. The vegetative types are very different.</p> <p>The proposed project will not impact this plant species.</p>
<p><i>Mentzelia argillosa</i> (Arapien stickleaf)</p>	<p>This species is found in salt desert shrub and pinyon-juniper communities on the Arapien Shale formation at 5,000-6,200 ft. elevation.</p> <p>The study areas are above the elevation range for this species. The vegetative types are very different. The Arapien Shale formation is not found in the study areas.</p> <p>The proposed project will not impact this plant species.</p>
<p><i>Mentzelia multicaulis</i> var. <i>librina</i> (Book Cliffs blazing star)</p>	<p>This species is found in sagebrush, rabbitbrush, and pinyon-juniper communities at 6,200 ft. elevation.</p> <p>The study areas are above the elevation range for this species. The vegetative types are very different.</p> <p>The proposed project will not impact this plant species.</p>
<p><i>Penstemon tidestromii</i> (Tidestrom beardtongue)</p>	<p>This species is found in desert shrub, sagebrush, and pinyon-juniper communities at 5,300-8,200 ft elevation.</p>

	<p>The study sites have a very different vegetative type.</p> <p>The proposed project will not impact this plant species.</p>
<i>Penstemon wardii</i> (Ward beardtongue)	<p>This species is found in desert shrub, pinyon-juniper, sagebrush, shadescale and greasewood communities on the Arapien Shale formation at 5,495-6,810 ft. elevation.</p> <p>The study areas are above the elevation range for this species. The vegetative types are very different.</p> <p>The proposed project will not impact this plant species.</p>
<i>Phacelia utahensis</i> (Utah phacelia)	<p>This species is found in salt desert shrub communities on the Arapien Shale Formation at 5,500-5,700 ft. elevation.</p> <p>The study areas are above the elevation range for this species. The vegetative types are very different.</p> <p>The proposed project will not impact this plant species.</p>
<i>Psoralea polydenius</i> var. <i>jonesii</i> (Jones indigo-bush or glandular indigo-bush)	<p>This species is found in salt desert shrub communities on Mancos Shale formations at 4,820 ft. elevation.</p> <p>The study areas are above the elevation range for this species. The vegetative types are very different.</p> <p>The proposed project will not impact this plant species.</p>

<p><i>Silene petersonii</i> (Maguire campion, Wasatch limestone catchfly or Peterson catchfly)</p>	<p>This species is found in ponderosa pine, rocky mountain juniper, bristlecone pine, spruce-fier, and aspen-sagebrush communities on open calcareous and igneous gravels at 6,955-11,200 ft. elevation.</p> <p>The study sites have no open calcareous and igneous gravels.</p> <p>The proposed project will not impact this plant species.</p>
<p><i>Sphaeralcea psoraloides</i> (Psoralea globemallow)</p>	<p>This species is found in zuckia ephedra communities at 4,000-6,000 ft. elevation.</p> <p>The study areas are above the elevation range for this species. The vegetative types are very different.</p> <p>The proposed project will not impact this plant species.</p>
<p><i>Talinum thompsonii</i> (Thompson talinum)</p>	<p>This species is found on silicious conglomeratic gravels in pinyon-juniper and ponderosa pine communities at 7,500 ft. elevation.</p> <p>The study sites do not contain any silicious conglomeratic gravels.</p> <p>The proposed project will not impact this plant species.</p>

Summary

Total estimated disturbance area for drill site 16-1 in 2020 is 0.275 acres. Reclamation of the disturb area will occur in the fall of 2020 after completion of the drilling and capping of the well.

Drilling activities will necessitate disturbance to the vegetation in this area. The plant community at the proposed drill site 16-1 has been disturbed before from a logging operation, while reference 16-1 has been disturbed before from a logging operation. The plant community where drilling is proposed was quantitatively sampled, along with a reference area chosen to be used for final revegetation success standards. Additionally, endangered, threatened, candidate and sensitive plant species know to occur in Sanpete and Emery counties will not be impacted by the proposed drilling action.

Appendix 1- Data Summary Tables for Drill Site 16-1

Drill Site 16-1		2020
Percent Cover and Percent Frequency by Species		
Species Name (Common Name)	Mean Percent Cover	Percent Frequency
UNDERSTORY		
GRASSES		
<i>Achnatherum nelsonii</i> (Columbia Needlegrass)	5	13
<i>Bromus marginatus</i> (Mountain Brome)	5	15
<i>Carex</i> (<i>Carex</i> spp.)	3	9
<i>Dactylis glomerata</i> (Orchardgrass)	0.1	0.3
<i>Poa fendleriana</i> (Muttongrass)	0.04	0.1
<i>Poa pratensis</i> (Kentucky Bluegrass)	5	14
FORBS		
<i>Achillea millefolium</i> (Common Yarrow)	1	3
<i>Galium</i> (Bedstraw spp.)	5	13
<i>Hackelia floribunda</i> (Mayflower Stickseed)	0.1	0.3
<i>Hymenoxys hoopesii</i> (Orange Sneezeweed)	0.1	0.3
<i>Madia glomerata</i>	3	9
<i>Rudbeckia occidentalis</i> (Western Coneflower)	0.3	0.9
<i>Taraxacum officinale</i> (Common Dandelion)	3	8
<i>Vicia americana</i> (American Vetch)	5	13
TREES/SHRUBS		
<i>Ribes montigenum</i> (Gooseberry Currant)	0.1	0.3
<i>Symphoricarpos occidentalis</i> (Western Snowberry)	0.07	0.2

Drill Site 16-1		2020
Total Cover and Composition		
	Mean Percent cover	
TOTAL COVER		
Overstory Cover	0	
Understory Cover	35	
Litter	27	
Bareground	37	
Rock		
Total Living Cover	35	
% Composition		
Grasses	17.8	
Forbs	16.8	
Shrubs	0.4	

Drill Site 16-1		2020
Woody Species Density		
	Number/Acre	
SPECIES (COMMON NAME)		
<i>Ribes montigenum</i> (Gooseberry Currant)	61	
<i>Symphoricarpos occidentalis</i> (Western Snowberry)	47	
TOTAL	108	

Appendix 2- Data Summary Tables for Drill Site 16-1 Reference Site

Drill Site 16-1 Reference Site		2020
Percent Cover and Percent Frequency by Species		
Species Name (Common Name)	Mean Percent Cover	Percent Frequency
UNDERSTORY		
GRASSES		
<i>Achnatherum nelsonii</i> (Columbia Needlegrass)	5	14
<i>Bromus marginatus</i> (Mountain Brome)	7	19
<i>Carex</i> (<i>Carex</i> spp.)	5	13
<i>Poa pratensis</i> (Kentucky Bluegrass)	3	8
FORBS		
<i>Achillea millefolium</i> (Common Yarrow)	0.4	1
<i>Galium</i> (Bedstraw spp.)	5	12
<i>Hackelia floribunda</i> (Mayflower Stickseed)	0.1	0.3
<i>Hymenoxys hoopesii</i> (Orange Sneezeweed)	0.4	1
<i>Madia glomerata</i>	2	5
<i>Rudbeckia occidentalis</i> (Western Coneflower)	0.8	2
<i>Taraxacum officinale</i> (Common Dandelion)	2	5
<i>Vicia americana</i> (American Vetch)	7	18
TREES/SHRUBS		
<i>Ribes montigenum</i> (Gooseberry Currant)	0.3	0.7
<i>Sambucus racemosa</i> (Red Elderberry)	0.1	0.2

Drill Site 16-1 Reference Site		2020
Total Cover and Composition		
	Mean Percent cover	
TOTAL COVER		
Overstory Cover	0	
Understory Cover	38	
Litter	27	
Bareground	34	
Rock	0.2	
Total Living Cover	38	
% Composition		
Grasses	20.5	
Forbs	17.1	
Shrubs	0.4	

Drill Site 16-1 Reference Site		2019
Woody Species Density		
	Number/Acre	
SPECIES (COMMON NAME)		
<i>Ribes montigenum</i> (Gooseberry Currant)	72	
<i>Sambucus racemosa</i> (Red Elderberry)	39	
TOTAL	111	

Appendix 3- Photos Drill Site 16-1



Drill Site 16-1 Belt 1



Drill Site 16-1 Belt 2



Drill Site 16-1 Belt 3



Drill Site 16-1 Belt 4



Drill Site 16-1 Belt 5

Appendix 4- Photos of Drill Site 16-1 Reference



Drill Site 16-1 Reference Belt 1



Drill Site 16-1 Reference Belt 2



Drill Site 16-1 Reference Belt 3



Drill Site 16-1 Reference Belt 4



Drill Site 16-1 Reference Belt 5

Appendix 5- Study Area Map



16-1 Drill Site and Reference Site

Appendix 6 - UTM Coordinates of 16-1 Reference Site

Drill 16-1 Reference 12 S 0478014 E 4384046 N

When Recorded return to:
Canyon Fuel Company, LLC
1401 N 1st St, Suite A
Grand Junction, CO 81501

Sanpete County Parcel 22526
Emery County Parcels 2-8-3, 2-9-1, 2-10-1

This space reserved for recording

MEMORANDUM OF UNDERGROUND COAL LEASE

THIS MEMORANDUM OF UNDERGROUND COAL LEASE made and entered into as of December 5, 2019 ("Effective Date"), is by and between **Zions Camp, LLC**, a Utah limited liability company, ("Lessor") with an address of P.O. Box 520965, Salt Lake City, UT 84152, and **Canyon Fuel Company, LLC**, a Delaware limited liability company, having an address of 1401 N 1st St, Suite A, Grand Junction, CO 81501 ("Lessee").

Witnesseth:

The parties hereto agree:

1. Upon the terms and conditions set forth in that certain Underground Coal Lease ("Lease"), dated as of the Effective Date, all of which are hereby incorporated herein as if set forth in full, Lessor does hereby grant and lease unto Lessee for the purposes described in paragraph 2 of this Memorandum of Underground Coal Lease and in the Lease those certain lands situated in Sanpete and Emery Counties, State of Utah, more particularly described as follows ("Leased Premises"):

Township 14 South, Range 6 East, SLB&M.

Section 14: S $\frac{1}{2}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ SW $\frac{1}{4}$;

Section 15: S $\frac{1}{2}$ N $\frac{1}{2}$ SE $\frac{1}{4}$, S $\frac{1}{2}$ SE $\frac{1}{4}$, N $\frac{1}{2}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$ NW $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$, S $\frac{1}{2}$ SW $\frac{1}{4}$, NW $\frac{1}{4}$ SW $\frac{1}{4}$, S $\frac{1}{2}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$, NW $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$; Except a tract described as beginning at a point 520 feet East from the W $\frac{1}{4}$ corner of Section 15, then North 220 feet, then East 1,420 feet, then South 660 feet, then west 1,420 feet, then North 400 feet to the place of beginning.

Section 16: All

Section 22: All

Containing 1,741.09 acres more or less

2. The Leased Premises are hereby leased unto Lessee subject to the terms and conditions of the Lease for the purposes of prospecting, exploring, developing, testing, mining and operating for and producing by underground mining methods, whether now or hereafter existing or known, all

Coal lying and situated in, on or under the Leased Premises, with the right to store, save, remove, transport, own and market, treat, process or otherwise utilize said Coal, together with all of the mining rights and privileges appurtenant to the said Coal and incident to the ownership thereof.

3. This Lease shall remain in effect for a primary term of ten (10) years from the Effective Date, and for a ten (10) year secondary term according to satisfaction of certain requirements in the lease, and for so long after the primary and secondary terms as Coal is being mined, produced, processed or marketed from the Leased Premises.

4. All notices and other communications to either party shall be delivered as follows:

If to Lessee:

Canyon Fuel Company, LLC
Attn: Land Manager
1401 North 1st Street, Suite A
Grand Junction, CO 81501

If to Lessor:

Zions Camp, LLC
c/o Richard Pratt
P.O. Box 520965
Salt Lake City, UT 84152

With a Copy to:

Zions Camp, LLC
c/o Lawrence E. Uhl
1370 Old Mill Rd
San Marino, CA 91108

5. This Lease shall be binding upon and inure to the benefit of the parties hereto and their respective permitted successors and assigns. Neither party shall assign this Lease, or any rights or obligations herein, without the prior written consent of the other party, which consent shall not be unreasonably withheld; provided, however, that CFC may assign this Lease without consent to an affiliate or in connection with the sale of all or substantially all of its assets constituting the Skyline Mine.

6. This Memorandum is executed for the purpose of placing of record notice of the Lease and the terms and provisions thereof. Nothing herein shall, nor shall it be interpreted to, amend, modify or waive any of the terms and conditions of the Lease. If any terms or provisions of this Memorandum shall differ from the Lease, the Lease shall be the controlling document. All capitalized terms used in this Memorandum, not otherwise defined, shall have the meanings assigned to them in the Lease.

Signatures on Following Page

IN WITNESS WHEREOF, the parties hereto have caused this Memorandum of Underground Coal Lease and the Underground Coal Lease to be signed by their proper officer's thereunto duly authorized effective as of the Effective Date.

ZIONS CAMP, LLC

By: 
Richard T. Pratt

Its: Manager

By: _____
Lawrence E. Uhl

Its: Manager

CANYON FUEL COMPANY, LLC

By: 
Brian S. Settles

Its: Chief Administrative Officer

IN WITNESS WHEREOF, the parties hereto have caused this Memorandum of Underground Coal Lease and the Underground Coal Lease to be signed by their proper officer's thereunto duly authorized effective as of the Effective Date.

ZIONS CAMP, LLC

CANYON FUEL COMPANY, LLC

By: _____
Richard T. Pratt

By: _____
Brian S. Settles

Its: Manager

Its: Chief Administrative Officer

By: Lawrence E. Uhl
Lawrence E. Uhl

Its: Manager

STATE OF Utah)
) ss.
COUNTY OF Salt Lake)

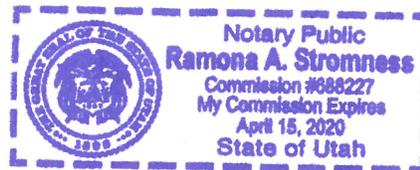
On this 4th day of December 2019, personally appeared before me **Richard T. Pratt**, as **Manager** of **Zions Camp, LLC**, and signer of the above Memorandum of Underground Coal Lease, who duly acknowledged to me that he executed the same on behalf of the corporation.

WITNESS my hand and official seal.

Ramona A Stromness
Notary Public

My Commission expires: April 15, 2020

STATE OF _____)
) ss.
COUNTY OF _____)



On this ____ day of December 2019, personally appeared before me **Lawrence E. Uhl**, as **Manager** of **Zions Camp, LLC**, and signer of the above Memorandum of Underground Coal Lease, who duly acknowledged to me that he executed the same on behalf of the company.

WITNESS my hand and official seal.

See Attached
Notary Public

My Commission expires: _____

STATE OF Kentucky)
) ss.
COUNTY OF Jefferson)

On this 12th day of December 2019, personally appeared before me **Brian S. Settles**, as **Chief Administrative Officer** of **Canyon Fuel Company, LLC**, and signer of the above Memorandum of Underground Coal Lease, who duly acknowledged to me that he executed the same on behalf of the company.

WITNESS my hand and official seal.

Angela Fowler
Notary Public

My Commission expires: October 15, 2022



California All-Purpose Certificate of Acknowledgment

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California

County of Los Angeles

} s.s

On December 5, 2014 before me, G. J. Bristow, NOTARY PUBLIC,
personally appeared Lawrence E Uhl -11-

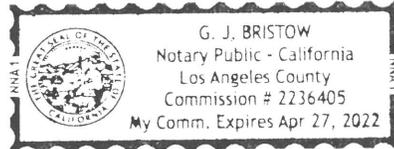
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Signature of Notary Public



Seal

OPTIONAL INFORMATION

Although the information in this section is not required by law, it could prevent fraudulent removal and reattachment of this acknowledgment to an unauthorized document and may prove useful to persons on the attached document.

Description of Attached Document

The preceding Certificate of Acknowledgment is attached to a

document titled/for the purpose of Memorandum
of underground Coal lease

Containing 4 pages, and dated December 5, 2014



GARY R. HERBERT
Governor
SPENCER J. COX
Lieutenant Governor

State of Utah

DEPARTMENT OF NATURAL RESOURCES

Division of Water Rights

BRIAN C. STEED
Executive Director

TERESA WILHELMSSEN
State Engineer/Division Director

ORDER OF THE STATE ENGINEER

For Temporary Change Application Number 93-228 (t45781)

Temporary Change Application Number 93-228 (t45781) in the names of Canyon Fuel Company and Huntington Cleveland Irrigation Company was filed on May 15, 2020, to change the point of diversion, places of use, and uses of 4.00 acre-feet (af) of water as evidenced by Water Right Number 93-228. Heretofore, the water has been diverted from a surface source located North 960 feet and West 440 feet from the E $\frac{1}{4}$ Corner of Section 15, T17S, R8E, SLB&M. The water has been used for . The water has been used in all or portion(s) of Sections 12, 13, 14, 25, & 26, T17S, R8E, SLB&M; Sections 7, 8, 9, 10, 12, 16, 17, 18, 19, 20, 22, 27, 28, 29, 33, & 34, T17S, R9E, SLB&M; and Sections 2, 3, 4, 8, 9, 10, 11, 15, 16, & 17, T18S, R9E, SLB&M.

Hereafter, it is proposed to divert 4.00 acre-feet of water from points of diversion changed to: (1) Surface - North 2042 feet and East 1657 feet from the SW Corner of Section 21, T14S, R6E, SLB&M; (2) Surface - South 955 feet and East 693 feet from the N $\frac{1}{4}$ Corner of Section 3, T14S, R6E, SLB&M. The water is to be used for year-round industrial purposes (Exploratory drilling incidental to coal mining). The place of use of the water is being changed to all or portion(s) of Section 33, T13S, R6E, SLB&M; and Sections 4, 8, 9, & 16, T14S, R6E, SLB&M.

Notice of this temporary change application was not published in a newspaper. It is the opinion of the State Engineer that it meets the criteria of Section 73-3-3 and 73-3-8 of the Utah Code for the approval of temporary change applications.

It is the opinion of the State Engineer that this temporary change application can be approved without adversely affecting existing rights.

It is, therefore, **ORDERED** and Temporary Change Application Number 93-228 (t45781) is hereby **APPROVED** subject to prior rights and the following condition(s):

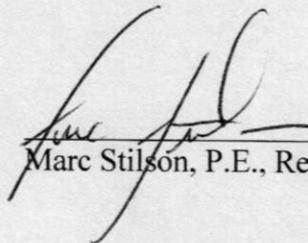
- 1) **This application shall automatically expire one year from the date of this approval.**

It is the applicants' responsibility to maintain a current address with this office and to update ownership of their water right. Please notify this office immediately of any change of address or for assistance in updating ownership. Additionally, if ownership of this water right or the property with which it is associated changes, the records of the Division of Water Rights should be updated. For assistance in updating title to the water right please contact the Division at the phone number below.

Your contact with this office, should you need it, is with the Southeastern Regional Office. The telephone number is 435-613-3750.

This Order is subject to the provisions of Administrative Rule R655-6-17 of the Division of Water Rights and to Sections 63G-4-302, 63G-4-402, and 73-3-14 of the Utah Code which provide for filing either a Request for Reconsideration with the State Engineer or for judicial review with the appropriate District Court. A Request for Reconsideration must be filed in writing with the State Engineer within 20 days of the date of this Order. The written request shall be filed in-person, by mail, or electronically. If the request is filed electronically it shall be submitted to: waterrights@utah.gov, which is the authorized general email for the Division. However, a Request for Reconsideration is not a prerequisite to filing for judicial review. A petition for judicial review must be filed within 30 days after the date of this Order or, if a Request for Reconsideration has been filed, within 30 days after the date the Request for Reconsideration is denied. A Request for Reconsideration is considered denied when no action is taken 20 days after the Request is filed.

Dated this 3 day of JUNE, 2020.



Marc Stilson, P.E., Regional Engineer

Mailed a copy of the foregoing Order this 3 day of June, 2020 to:

Canyon Fuel Company
Attn: Land Department
225 North 5th Street, Suite 900
Grand Junction CO 81501

Huntington Cleveland Irrigation Company
P.O. Box 327
Huntington UT 84528

Brett Leamaster, River Commissioner
320 West 100 South
PO Box 1478
Huntington, UT 84528

Division of Water Rights
Distribution Section
c/o Dave Horsley
HUNTINGTON CREEK

ORDER OF THE STATE ENGINEER
Temporary Change Application Number
93-228 (t45781)
Page 3

BY: M Gabb
Michele Gabb, Regional Secretary