

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

ENVIRONMENTAL ASSESSMENT
LILA CANYON COAL FIRE EMERGENCY
RESPONSE

DOI-BLM-UT-G020-2023-0001-EA

October 2022

Location:
Emery County, Lila Canyon Mine
Section 23, Township 16 South, Range 14 East

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BLM



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1.0 INTRODUCTION

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of Emery County Coal Resources, Inc.'s (ECCR) application for a temporary Title V right-of-way (ROW) to construct drill pads, drill boreholes, make road improvements, construct roads, and install a temporary above ground pipeline to extinguish an underground coal fire inside the Lila Canyon Mine.

The BLM considers the Lila Canyon fire to be an emergency that necessitates an emergency response. This is because there is an immediate risk to ECCR's property (lease interests, mining equipment and infrastructure), and the coal, which BLM manages on behalf of the American people; should the fire not be contained shortly, there is a high risk that the mine would have to be shut down permanently. Lila Canyon Mine's coal supply is an important resource in Utah because the Hunter and Huntington Plants have 2,272 MW of capacity, which is 24% of the total generation capacity in the State of Utah (9,438 MW). In 2021, these plants generated 15,513 GWh, which is 37% of the total power generated in the state of Utah (42,113 GWh) ([Utah Geologic Survey, "Utah Mining 2021", page 32](#); [Energy Information Administration](#), see Coal Production By State; ECCR (10/14/2022) and Pacificorp (10/18/2022) personal communication). Though these plants do not rely solely on Lila Canyon Mine coal, Lila Canyon is an important volume to these local power generators.

ECCR contracts with Wolverine Fuels to haul the coal it produces directly to the Hunter Power Plant and the Huntington Power Plant. ECCR has informed the BLM that if the Lila Canyon mine stopped producing coal, these plants would see a 20% reduction of coal used for fuel generation. ECCR has represented to the BLM that these plants would not be able to readily replace this coal from the domestic market (Pacificorp personal communication 10/18/2022).

1.1 BACKGROUND

A coal pillar caught fire by spontaneous combustion on or around September 20, 2022, in Lila Canyon Mine (see Appendix B. Map 1.). Because of the underground mine fire, the federal Mine Safety and Health Administration (MSHA) issued an order (with subsequent modification) under Section 103(k) of the Federal Mine Safety & Health Act of 1977 (30 U.S.C. 813) (Mine Act) requiring all persons to be removed from the underground areas of the mine and prohibiting access to or recovery of the mine without MSHA's prior approval. As a result, the employees were evacuated, and mining operations suspended. Under MSHA's approval, ECCR sealed the mine to eliminate oxygen and slow the fire. On September 26, 2022, ECCR submitted a request to drill four (4) emergency boreholes to evaluate the mine atmosphere and develop a plan to extinguish the fire. BLM completed a Determination of NEPA Adequacy (DOI-BLM-UT-G020-2022-0029-DNA) and signed a decision record on September 28, 2022. ECCR has completed two boreholes based on this approval. The air sampling and visual data ECCR has collected indicates that the

elimination of oxygen in the mine has prevented the fire from spreading but that it continues to smolder. Using this information ECCR submitted an emergency request on October 13, 2022, for authorization to drill additional boreholes to seal the burn area from the surface, dewater one section of the mine to flood the burn area, and conduct atmospheric monitoring.

ECCR holds 5,549.01 acres of federal coal contained in six federal leases and 1,280 acres of coal from a Utah School and Institutional Trust Lands Administration (SITLA) lease. In 2021, Lila Canyon Lease Modifications (DOI-BLM-UT-G020-2018-0039-EA) was approved but is currently under litigation. None of the Proposed Action is within the lease modifications area and are not included in the 5,549.01 acres of federal coal ECCR leases. The Lila Canyon Mine and Lila Canyon portals are in Township. 16 S., Range. 14 E., secs. 10 thru 15 and secs. 22 thru 26, and Township. 16 S., Range. 15 E., secs. 19 and 30. The Lila Canyon Mine development was approved by the Utah Division of Oil, Gas and Mining (UDOGM) in 2007 as an extension to the Horse Canyon Mine. The current UDOGM permit area (UDOGM Permit # C/007/0013) encompasses 4,663.6 acres. The mining and reclamation plan (MRP) is known as the Horse Canyon MRP in UDOGM files. Since 2007, all coal reserves have been accessed through the Lila Canyon portals. The proposed project site is 10 acres and sits at an approximate elevation of 6,900 feet.

1.2 PURPOSE AND NEED

The BLM's purpose for action is to respond to ECCR's emergency application for a three-year temporary right-of-way¹ for temporary road construction and improvements, temporary drill pads, temporary boreholes, and a temporary water pipeline to extinguish the underground coal fire on ECCR's granted coal lease. The BLM's need for action is to prevent further property and resource damage to maintain the balance of managing public land uses, including authorized development of coal resources, that was attained when the lease was originally granted.

1.3 DECISION TO BE MADE

The BLM authorized officer (AO) will decide whether to approve ECCR's emergency right-of-way application for the Proposed Action described in section 2.2 and if so under what terms and conditions.

Under Title V of FLPMA, and the ROW regulations at 43 CFR Part 2800, the BLM may grant ECCR a ROW to take the actions described in section 2.2 for up to three years, to extinguish the coal fire and later remove and reclaim the pipeline and any other supporting infrastructure and surface disturbance.

¹ The right-of-way would be issued under the Federal Land Policy and Management Act (FLPMA) Title V, Section 501(a)(7).

1.4 CONFORMANCE WITH BLM LAND USE PLAN(S)

Land Use Plan Name: Price Field Office Record of Decision and Approved Resource Management Plan (RMP) Date Approved/Amended: October 2008

The Proposed Action is in conformance with the applicable Land Use Plan (LUP) because it is specifically provided for in the following LUP decision(s):

“To maintain coal leasing, exploration, and development within the planning area while minimizing impact to other resource values” (BLM, 2008, p. 123) and with all relevant management prescriptions assigned to the land use plan.

“Additional ROWs will be granted consistent with RMP goals and objectives.” (p.120)

“Make public lands available through ROWs or leases for such purposes as transportation routes, utilities, transmission lines, and communication sites, or coordinate with other resource goals.” (p. 115)

“Make public lands available to meet the needs for small ROWs.” (p.115)

1.5 RELATIONSHIP TO STATUTES, REGULATIONS, OR OTHER PLANS

The area is zoned M&C-1, mining and grazing, by the Emery County Zoning and Planning Office, and is consistent with the Emery County General Plan of 1996 (Emery County, 1996).

The Proposed Action is consistent with the State of Utah Resource Management Plan that encourages responsible reclamation and development, prevents waste, and protects human health and safety, the environment, and the interests of the state and its citizens. (State of Utah Resource Management Plan, 2018, Mining and Mineral Resources, p. 163).

The Proposed Action is also consistent with the following federal authorities:

- Multiple-Use Sustained Yield Act of 1960
- FLPMA of 1976 (BLM’s multiple-use mandate)
- The Mineral Leasing Act of 1920 (30 USC 193)
- Surface Mining Control and Reclamation Act (SMCRA) of 1977

1.6 IDENTIFICATION OF ISSUES

For BLM NEPA analyses, an “issue” is a point of disagreement, debate, or dispute with a Proposed Action based on some anticipated environmental effect (2008a BLM, p. 40). The 2008 BLM NEPA Handbook (p.41) details that issues that are to be analyzed in detail meet one of the two criteria:

1. Analysis of the issue is necessary to make a reasoned choice between alternatives.
2. The issue is significant (an issue associated with a significant direct, indirect, or cumulative impact, or where analysis is necessary to determine the significance of impacts).

The BLM interdisciplinary team (IDT) performed an initial screening using the IDT checklist (Appendix A) of resources for potentially significant effects. The IDT checklist (Appendix A) provides the rationale for issues that were considered and not analyzed in detail. Issues that were identified by the IDT that are analyzed in detail are the following:

1. How would air pollutant emissions from the Proposed Action affect air quality in Carbon and Emery counties?
2. How would the Proposed Action contribute to greenhouse gas (GHG) emissions and climate change?
3. How would the Proposed Action affect the existing/identified wilderness characteristics within the Turtle Canyon inventory unit?
4. How would the Proposed Action affect socioeconomic conditions in Carbon and Emery counties and in portions of Utah influenced by coal produced from the Lila Canyon Mine?
5. How would the Proposed Action affect Visual Resource Management (VRM) Class II management objectives within the permit area?

2.0 DESCRIPTION OF ALTERNATIVES

This EA analyzes the potential effects of implementing Alternative A - No Action and Alternative B - Proposed Action. The No Action Alternative is considered and analyzed to provide a baseline against which to compare the impacts of the Proposed Action. No other alternatives were brought forward for detailed analysis. Alternatives considered but not carried forward for detailed analysis are discussed in section 2.3.

2.1 ALTERNATIVE A – NO ACTION

Under the No Action alternative, the BLM would deny ECCR's emergency application for a temporary right-of-way grant and none of the activities described in section 2.2 would be implemented.

2.2 ALTERNATIVE B – PROPOSED ACTION

Under the Proposed Action, the BLM would grant ECCR a temporary, three-year right-of-way to access BLM surface lands and to drill a total of 35 boreholes from 6 drill pads, road improvements and construction, a temporary above ground pipeline, and to seal the mine with phenolic foam, in an urgent effort to extinguish the fire inside the Lila Canyon mine (see Appendix B. Map 2). Proposed construction and drilling activities are expected to occur 24 hours a day because of the emergency nature of the action. All the drill pads would be constructed in the same manner, which would entail clearing the area of vegetation and topsoil and storing it for later use in reclamation, then leveling the pad in preparation of drilling. It would take approximately two days/per drill pad for construction for the 100 by 100-foot pads and approximately 7 days for the sealing and injection pad (100 by 700 ft). Pad construction work would be completed with bulldozers; there would also be water trucks on site to control dust from construction operations when needed. Drilling activities on each site would be essentially the same and would consist of a track mounted or rubber tire drill rig manned by at least four people. There would typically be two work trucks, going and back and

forth with mining personnel to monitor activities. Once drilling activity is complete, monitoring may be reduced to once a day.

First, ECCR would utilize an existing access road to expand the existing sealing and injection drill pad from 100 by 100 feet to 100 by 700 feet and drill a total of 28 boreholes to seal off the portion of the mine where the fire is actively burning. ECCR would use a track mounted drill to drill these boreholes. The 28 holes are required because each of the 7 entries (or corridors) would need 4 boreholes to properly inject and monitor the phenolic foam² (rapid expanding foam) to seal off this burn section. Foam injection would require two of four boreholes. ECCR would mix the foam in small batches, then inject the foam with a special hose so the two components would mix at the nozzle. The equipment needed to inject the foam is a compressor and a small hydraulic pump. Drilling and foam injecting activities are planned to be completed around mid-December 2022. There would be one monitoring hole on the outby side of the foam seal and one monitoring hole on the inby side.

ECCR would also construct the dewater location drill pad (100 by 100 feet) located in the northern portion of the project area and drill three (3) boreholes. These holes would be completed as dewatering wells. There would be three subsurface 250 HP pumps, and one 2,000 kW fully sound attenuated diesel generator on this site for six months to one year. Mine water from the Blackhawk formation (considered inactive, or not connected with the surface, UDOGM 2007 and BLM 2011) would be pumped to the surface from one location in the mine, relocated via pipeline, and injected back underground into the same formation to the burn area for fire extinguishment. Any residual water would be left on site and any drainage would comply with the mine's water discharge permit (UPDES Permit Number UTG040024). The water pipeline would run along the road then cut overland for injection in the burn area. Water could continue to be pumped for up to 12 months from the dewatering wells to the injection sites.

ECCR would use a motor vehicle to lay the pipeline on the road portions of the route and a utility terrain vehicle (UTV) to lay the pipeline on the overland portion. The overland portion of the pipeline would be approximately 1,022 feet long, minimal disturbance would be associated with this length of pipeline because UTV travel would be limited to laying pipe and any needed maintenance. A wheel mounted drill would be used at this site. Access to this drill pad would include upgrading an existing 8-foot road to 16 feet and constructing a stretch of 16-foot road.

ECCR would also construct the Horse Canyon Mine dewatering drill pad (100 by 100 feet) and drill a dewatering well into the old Horse Canyon mine workings for additional water that would be needed in fire suppression efforts. This borehole would be drilled 35 feet from the Turtle Canyon Road. There would be one subsurface 250 HP pump, and one diesel generator on this site for six months to one year. Mine water from the Blackhawk formation (considered inactive, or not connected with the surface, DOGM 2007 and BLM 2011) would be pumped to the surface from one location in the mine, relocated via pipeline, and injected back underground into the same formation to the burn area for fire extinguishment. Any residual water would be left on site and any drainage would occur in compliance with the mine's water discharge permit (UPDES Permit

² Based on BLM's initial review of the MSDS, it does not present any immediate or additional long term environmental impacts when coupled with water used to extinguish the fire (Weber Mining, 2009a, b.).

Number UTG040024). The water pipeline would run a short distance along the Turtle Canyon Road then connect with the northern dewater pipeline to cut overland for injection in the burn area.

ECCR would place monitoring holes (M-1, M-2, M-3) at three strategically placed drill sites to gather crucial atmospheric monitoring data within the mine workings in preparation for restarting the ventilation and safely entering Lila Canyon mine. Each drill pad (100 by 100 feet) would have one borehole, a short length of pipe would remain, so mine personnel can drop monitoring equipment into the hole to collect atmospheric data. The pipe would have a locked cap to prevent the public from opening the holes. A short spur road would be constructed for access to each of the three sites. The methods for drilling and abandonment shall be in accordance with 43 CFR §3484.1(a) *Performance Standards*.

TABLE 1. SUMMARY DESCRIPTION OF PROPOSED ACTION

Drill Site	Number of Boreholes	Appx. Borehole Depth (feet)	Acreages		
			Drill Site	Access Road (miles)	Total
Sealing and Injection	28	1,100	1.61	0.37 (0.19)	1.95
Monitoring (M-1)	1	1,500	0.23	0.87 (0.45)	1.10
Monitoring (M-2)	1	1,500	0.23	0.14 (0.07)	0.37
Monitoring (M-3)	1	1,500	0.23	0.03 (0.014) (75ft)	0.26
Horse Canyon Dewater Hole	1	1,100	0.23	0.01 (0.0066) (35ft)	0.24
Dewater Location	3	2,000	0.23	3.14 (1.62)	3.37
Totals	35		2.76	4.56 (2.35)	7.3

The BLM has been notified that UDOGM would approve and monitor reclamation of surface facilities and reclamation bond release after the emergency has ceased. All bond updates would be posted with UDOGM to secure reclamation costs for fire suppression activities at the Lila Canyon Mine. Complete reclamation would include removing all surface facilities that are installed as part of the Proposed Action, re-grading the surface to achieve approximate original contour, and restoring the area to the approved natural state. Revegetation would be done with a BLM approved mixture of compatible grasses, forbs, shrubs, and trees (see Appendix A). Seed mixes would contain an approved, diverse mixture of species to control erosion and to provide forage for wildlife species. UDOGM does not simply observe reclamation and move on. Under UDOGM's authorities, a company's reclamation bond cannot be released without achieving reclamation success, and it is then only released in phases for certain accomplishments. For instance, after achieving approximate original contour, Phase I can be released. For achieving good sediment

control, Phase II can be released, but the final release (Phase III) would not occur until a minimum of 10 years has passed to ensure successful revegetation.

Under the Proposed Action, BLM would approve the ROW to allow ECCR drilling and reclamation activities. Drilling operations and reclamation (as defined 43 CFR 3802.0-5(a)) of the drill sites would be completed within two years after the completion of fire extinguishment activities. The total area of disturbance that would be granted under the Proposed Action is 10 acres consistent with the disturbance area authorized by UDOGM, although ECCR estimates that only 7.3 acres would be disturbed. For this reason, the total project area for the Proposed Action is 10 acres.

2.2.1 DESIGN FEATURES

Construction equipment used to create access roads and pads would be washed prior to arriving at the project area to prevent the introduction of noxious weeds into the area.

A Pesticide Use Proposal (PUP) and Pesticide Applicator Record (PAR) would be required prior to any treatments of infestations that stem from the results of implementing the project.

All disturbed areas would be reseeded with an appropriate seed mix using native species.

Fill materials would be free of waste, pollutants, and noxious weeds/seeds.

Pumps and generators would be in colors of brown or green to match the landscape.

A cultural resource and a paleontological resource monitor would be on-site for all ground disturbing activities.

All potentially hazardous chemicals associated with the foam barrier would be transported in small volumes to the site for immediate use. The two foam components would have separate secondary containment during transportation and on site.

All drilling fluids, muds and cuttings shall be contained and properly disposed of prior to reclamation.

Fueling of machinery would occur in a confined, designated area to prevent spillage. All fueling areas would have spill cleanup kit available.

Fire extinguishers are required when welding, cutting, and using heavy equipment.

The overland pipeline would use heat tape and continuous pumping check valves to prevent freezing.

The permittee/licensee shall clean up and remove all drilling equipment, trash, garbage, flagging vehicles and other such materials.

Drilling and plugging and reclamation activities would occur only during October 1 through February 28 to ensure that heavy equipment is outside Mexican Spotted Owl (MSO) nesting periods. The nesting period is March 1 through August 31(USFWS, n.d.).

To minimize effects to the landscape:

- Existing roads would be used for the majority of the access required by the Proposed Action;
- Native surface of roads would be retained;
- Drill pad size would be limited to 100 by 100 feet or clustering drill pads (100 by 700 feet pad); and
- Natural topography would be utilized to minimize the amount of cut and fill required for construction.

2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED

The following alternatives were considered but dismissed from detailed analysis for the reasons described below.

2.3.1 DISMISSED ALTERNATIVE 1: WATER SOURCES

Two alternatives for providing water to extinguish the fire were considered: 1) trucking water from Green River or some other source, and 2) drilling water wells in closer locations.

1. The amount of water needed to fill the sealed area is immense, likely hundreds of acre feet. A semi can haul up to 11,000 gal per trip but could not travel the Turtle Canyon Road. A smaller truck hauling up to 5,000 gal could travel the Turtle Canyon Road in good weather and with good road conditions (no snow or rain). One acre-foot contains 325,851 gallons of water; thus, to haul just one acre-foot would require 65-round trips using the smaller capacity truck. Just 100-acre feet of water would require 650-round trips. This would be slow, expensive, and unreliable because of the weather patterns at this elevation. Collectively, the process would be inefficient and ineffective and therefore eliminated from further review because it would not satisfy the purpose and need for the project.
2. Drilling at locations closer to the water entries to reduce the length and amount of spur disturbance was considered, but upon further review, these locations are in steep terrain and would be challenging to drill, do not contain enough water in the stratigraphy below, and wells would not produce water at consistently sufficient rates. This alternative would not satisfy the purpose and need for the project.

2.3.2 DISMISSED ALTERNATIVE 2: ADD TO OR REDUCE THE NUMBER OF BOREHOLES AND NO SPUR ROADS

BLM considered expanding the total number of boreholes. The fire is burning in an area supplied with seven entries (or corridors) where fire, oxygen, and water can travel. All seven entries and cross-cuts would need to be flooded to ensure the fire does not follow one or more of those pathways. At each of these 7 connected drill pads, four holes would be drilled on each pad totaling 28. Each pad would have 4-borings. For each pad one boring would be used to lower a camera to observe the foam placement, a second boring to inject the foam mixture, and the third and fourth boring to monitor gas in front of and behind the foam barrier. Both atmospheric monitoring borings would be needed to assess the conditions in the subsurface. These 28 boreholes are essential. Of the other seven proposed boreholes, four would extract water, three of which would be on one pad to support three submersible pumps, and the fourth water borehole would extract water from old mine workings. The three remaining borings would facilitate monitoring of mine atmosphere levels.

Additional holes would facilitate additional assessment of the mine's air status; however, they would not provide better access to water resources or deliver water and foam inhabitants to better locations. Therefore, 35 is the minimum number of borings-required to access water, monitor gas emissions, seal the entries with foam, and add enough water to contain or eliminate the fire hazard. Additional borings were therefore eliminated from consideration.

The BLM considered eliminating one of the water wells to minimize the number of spur roads and overall disturbance; however, the amount of water available in each area can only be estimated, and one well may not provide enough on its own. Ensuring a second water source would be prudent under these conditions. Therefore, reducing the number of wells would not satisfy the purpose and need and was eliminated.

2.3.3 DISMISSED ALTERNATIVE 3: BURY PIPELINE

A buried pipeline was considered because of the extreme cold temperatures experienced at the relevant elevation, and any permanent pipeline would be buried; however, because the pipeline is temporary, and because it would create more disturbance and take more time to install, it was eliminated from consideration.

3.0 AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

This chapter presents the potentially affected existing environment (i.e., the physical, biological, social, and economic values and resources) for each issue identified for detailed analysis in the Interdisciplinary Team Checklist (Appendix A). The affected environment is the baseline for comparison between the direct, indirect, and cumulative impacts/consequences of alternatives, which this chapter also discloses.

3.1. CUMULATIVE EFFECTS SCENARIO

This section outlines past, present, and reasonably foreseeable future actions within the permit area that have a relationship to potential resource effects associated with the Lila Canyon coal fire emergency response under the Proposed Action. Cumulative effects are discussed on an issue-by-issue basis in sections 3.2 through 3.6. In recent decades, the most prominent influences on the landscape encompassed by the permit area include mining activities, fuels or vegetation treatments, livestock grazing, range improvements, and wildlife enhancement water catchments. The aerial extent, as well as the % of the permit area, of these influences on the landscape are provided in Table 2. All these influences on the landscape in this area are anticipated to continue based on information available to BLM at this time. Outside the permit area other influences on the landscape include past and ongoing livestock grazing and range improvements; recent (2019) wilderness designations under the Dingell Act; reasonably foreseeable land exchanges under the Dingell Act; and future coal exploration, leasing, and mining.

TABLE 2. SUMMARY OF CUMULATIVE ACTIONS (4,663.6 ACRES OF UDOGM PERMIT AREA).³

Action	Acres of Disturbance	Approximated % of Total Permit Area
Drilling of up to 4 boreholes and road improvements (2011).	5.18	0.001
Turtle Canyon Road	19.5	0.0007
Drill 4 boreholes, drill pads, and improvement of existing roads to facilitate early coal fire emergency response (2022).	1	0.001
Lila Canyon Mine coal mining surface facilities (e.g., powerline, coal haul access road, bath house, warehouse, offices, mine access, mine ventilation, coal storage)	93.11	0.02
Wildlife enhancement projects (two water catchments to benefit big horn sheep)	Acres of disturbance are included in the mine facilities calculation	
Prescribed burn within the sagebrush portion of Williams Draw. Burn scar is currently near imperceptible due to regrowth of vegetation.	463	0.1
Grazing and range improvements in the Little Park grazing allotment. The permit area is in the northern half of the allotment and falls 92% within the allotment (the remaining area falls within the Cove Creek allotment to the west). Within the permit area there are two reservoirs, two developed springs, two study locations, and one fence line (approximately 0.35 miles). The Little Park allotment is permitted to 2 permittees for 56 Cattle from 5/25 to 10/31 for 242 AUMs	The total allotment is approximately 26,156 acres.	100

³ Lila Canyon Mine Lease Modifications (DOI-BLM-UT-G020-2018-0039-EA) was approved but is currently under litigation. These Modifications would collectively add 1,272.64 acres to the current lease.

3.2. HOW WOULD AIR POLLUTANT EMISSIONS FROM THE PROPOSED ACTION AFFECT AIR QUALITY IN CARBON AND EMERY COUNTIES?

The impact analysis area for air quality is the airshed in which the Proposed Action is located, which includes Carbon and Emery Counties. The BLM Utah 2021 Air Monitoring Report (AMR) (BLM 2021b) discusses past, present, and foreseeable emissions and air quality data for counties in Utah. Information from the AMR is incorporated by reference to help describe the air quality in the impact analysis area.

3.2.1 AFFECTED ENVIRONMENT

The Environmental Protection Agency (EPA) has primary responsibility for regulating air quality, including six nationally regulated ambient air pollutants: carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O₃), particulate matter⁸ (PM₁₀ & PM_{2.5}), sulfur dioxide (SO₂) and lead (Pb). NO_x and volatile organic compounds (VOC) emissions also contribute to secondarily formed pollutants of O₃ and PM_{2.5} through a complex series of atmospheric chemical interactions. Every three years the Utah Division of Air Quality (UDAQ) compiles statewide emission inventories to assess the level of pollutants released into the air from different sources. Statewide and County 2017 emissions inventories are provided in Section 3.1 of the AMR (BLM 2021b) and listed below for Carbon and Emery counties, at Table 3. Emissions for Hunter and Huntington power plants is also listed since they combust some of the coal from the Lila Canyon mine and contribute a substantial amount to the emissions of some pollutants in Carbon and Emery counties.

TABLE 3. 2017 CRITERIA AIR POLLUTANT EMISSIONS (TPY) FOR THE IMPACT ANALYSIS AREA

Area	CO	NO _x	PM ₁₀	PM _{2.5}	SO _x	VOC
Carbon	9,254	2,612	4,392	824	501	17,545
Emery	20,210	17,950	6,895	1,457	5,803	36,766
Analysis Area Total	29,469	20,562	11,287	2,281	6,304	54,311
Hunter and Huntington Power Plants	8,266	15,711	978	604	5,793	195

The EPA has established National Ambient Air Quality Standards (NAAQS) for CAPs (incorporated by reference from Section 2.2.1 of the AMR (BLM 2021b)). The NAAQS are protective of human health and the environment. Compliance with the NAAQS is typically demonstrated through monitoring of ground-level concentrations of atmospheric air pollutants. Areas where pollutant concentrations are below the NAAQS are designated as attainment or unclassifiable. Locations where monitored pollutant concentrations are higher than the NAAQS are designated nonattainment, and air quality is considered unhealthy (BLM 2021b).

Air pollutant concentrations are reported using design values. A design value is a statistic that describes the air quality status of a given location relative to the level of the NAAQS (EPA 2022). Design values are used to designate and classify nonattainment areas, as well as to assess progress

towards meeting the NAAQS. Design values that are representative for the impact analysis area are provided in Table 4. It is assumed that counties without reported design values have good air quality and pollutant concentrations are below the NAAQS. The main pollutants of concern are O₃ and PM_{2.5} as these are the pollutants with reported design values nearest the NAAQS. It should be noted that the EPA is currently reviewing the NAAQS for O₃ and PM_{2.5} which could result in stricter standards. A stricter standard for PM_{2.5} is unlikely to change the county attainment status for that pollutant, but a lower standard for O₃ could because the most recent design values are close to the current NAAQS.

TABLE 4. 2019 TO 2021 CRITERIA POLLUTANT DESIGN VALUES

Pollutant	Location	Averaging Time	Concentration ²	NAAQS
O ₃	Carbon County	8-hour	0.068 ppm	0.070 ppm
NO ₂	Carbon County	1-hour	17 ppb	100 ppb
NO ₂	Carbon County	Annual	2 ppb	53 ppb
PM _{2.5}	Mesa County, CO ¹	Annual	5.8 µg/m ³	12.0 µg/m ³
PM _{2.5}	Mesa County, CO ¹	24-hour	18 µg/m ³	35 µg/m ³

¹ Nearest monitoring site that is representative of the impact analysis are.

² Concentrations in parts per million (ppm), parts per billion (ppb), microgram per cubic meter (µg/m³)

³ Source: EPA Air Quality Design Values (EPA 2022) <https://www.epa.gov/air-trends/air-quality-design-values>

Hazardous Air Pollutants

Hazardous air pollutants (HAPs) are known or suspected to cause cancer or other serious health effects, or adverse environmental effects, and are also regulated by the EPA. Examples of listed HAPs emitted by the oil and gas industry include benzene, toluene, ethyl benzene, mixed xylenes, formaldehyde, normal-hexane, acetaldehyde, and methanol. A list of HAP point source emissions by County is published by the UDAQ. The 2017 emissions for common oil and gas related HAPs are listed for each field office in Section 3.1 of the AMR (BLM 2021b).

The EPA National Toxics Assessment tool is used to evaluate impacts from existing HAP emissions in Utah. The EPA has determined that, for Utah counties with BLM managed lands, the total cancer risk is 12.1 to 26.7 in 1 million, incorporated by reference from Section 3.1 of the AMR (BLM 2021b). This cancer risk is within the acceptable range of risk published by the EPA of 100 in 1 million as discussed in the National Contingency Plan, 40 CFR § 300.430. The noncancer respiratory hazard index for Utah counties with BLM managed lands is between 0.14 and 0.54. Hazard index values less than one mean it is unlikely that air toxics will cause adverse noncancer health effects over a lifetime of exposure.

Air Quality Related Values All areas managed by the BLM in Utah are located within Prevention of Significant Deterioration (PSD) Class II areas. However, many BLM managed lands are near Class I National Parks in Utah.

The Clean Air Act (CAA) PSD requirements give more stringent air quality and visibility protection to national parks and wilderness areas that are designated as Class I areas, but a PSD designation does not prevent emission increases. Federal land managers are responsible

for defining specific Air Quality Related Values (AQRVs), including visual air quality (haze), and acid (nitrogen and sulfur) deposition, for an area and for establishing the criteria to determine an adverse impact on the AQRVs. Each of the parcels in this leased area is located within Prevention of Significant Deterioration (PSD) Class II areas. Arches National Park is the closest Class I area at just over 50 miles to the southeast.

Visibility trends based on air monitoring data from four Utah monitoring sites for the clearest, haziest, and most impaired categories is incorporated by reference from the AMR (Section 3.3.1 and Figures 3 through 6 of the AMR). Visibility in all three categories at Canyonlands and Arches National Parks have improved over the respective period of record (1990 to 2020).

The National Park Service monitors and evaluates deposition to determine which parks are most at risk from air pollution and where conditions are declining or improving. Nitrogen deposition conditions in Utah National Parks are fair to poor with no trend for improving or worsening conditions, while sulfur deposition conditions are good and generally improving (See Section 3.3.2 of the AMR).

3.2.2 ALTERNATIVE A - NO ACTION ENVIRONMENTAL CONSEQUENCES

Under the No Action alternative, the drilling of 35 boreholes and associated activities would not occur and there would be no direct emissions of criteria or hazardous air pollutants. The coal fire would continue burning until an unknown time in the future. Indirect emissions may also occur but there is substantial uncertainty in the quantity and duration of emissions including the source of emissions. The paragraphs that follow discuss the possible ways that indirect emissions may occur under the No Action alternative.

The fire at the mine would continue to produce uncontrolled emissions of criteria and hazardous air pollutants and until it is extinguished. Emission hazards to humans and the environment posed by coal fires include emission of pollutants, such as CO, NO_x, PM₁₀ and PM_{2.5}, SO_x, HAPs, and potentially toxic trace elements, such as arsenic, mercury, and selenium (USGS 2009). It's unknown how long it may take to extinguish the fire, but other coal fires have burned from a few days to decades. It is also difficult to quantify the impact of coal fires on regional air quality because it is not possible to determine how much coal is being combusted and little is known about criteria and hazardous pollutant emissions from other coal fires to use as a reference (USGS 2009). If the fire continues and the mine closes there would be additional emissions associated with equipment used to seal the mine and reclamation of surface facilities. These emissions would be much less than the emissions from the fire over the long-term (more than a year). If this outcome comes to fruition, the coal burned in the fire annually would likely be much less than the amount of coal extracted from the mine and burned at Hunter and Huntington power plants and likewise overall emissions and impacts to air quality would be less in the impact analysis area. However, the power plants operate under Title V Clean Air Act permits which have requirements to control and limit emissions to help ensure no adverse impacts to air quality.

If the fire is extinguished another way and the mine resumes coal production, then emissions from mining operations, transportation and processing of coal, and combustion of coal at an industrial facility or power plant would resume at rates consistent with the mine’s history. The quantity of these emissions is discussed as part of the Proposed Action environmental consequences. Emissions and air quality impacts were evaluated in the Lila Canyon Mine Lease Modifications Environmental Assessment (BLM 2021a), which is incorporated by reference and evaluated as part of the Proposed Action, see section 3.2.3. Additional emissions may occur from the coal fire until it is extinguished. If this outcome occurs, the indirect criteria and hazardous air pollutant emissions would be slightly higher than the Proposed Action in the short-term because the end goal is the same (i.e., resume coal mine production), and the coal fire would burn for a longer period than under the Proposed Action.

3.2.3 ALTERNATIVE B - PROPOSED ACTION ENVIRONMENTAL CONSEQUENCES

Direct emissions associated with the Proposed Action would occur from equipment used to construct drill pads and access roads and to drill the bore holes. Emissions for equipment are calculated using emissions factors from EPA’s Motor Vehicle Emissions Simulator (MOVES) model. Fugitive dust (PM₁₀ and PM_{2.5}) emission calculations are based on the methodologies outlined in EPA AP-42, Volume I, Chapter 13.2.2 and 13.2.3 (EPA 1995). The emissions calculations contained in Table 5 are calculated for the following:

- Fugitive dust from access road and drill pad construction
- Fugitive dust from wind erosion
- Two Camacchio MC30 drill rigs
- A single Schramm T130XD drill rig
- Generic 250 horsepower bulldozer
- Passenger vehicles for workers
- Equipment haul trucks
- Water truck
- Exhaust from water pumps

Additional emissions would occur from the coal fire until it can be extinguished. It is not possible to quantify emissions from the fire because of uncertainties about the size of the fire and how much coal it is consuming, but it likely produces some emissions of CO, NO_x, PM, SO_x, and HAPs (including mercury and other metals). The Proposed Action would have a benefit on these emissions since the goal is to extinguish the fire and stop the uncontrolled emissions from the fire.

TABLE 5. ESTIMATED EMISSIONS FROM SURFACE DISTURBANCE, DRILLING BOREHOLES, AND PUMPING WATER.

Activity	PM ₁₀	PM ₂₅	NO _x	CO	SO ₂	VOC	HAPs
Fugitive Dust	2.25	0.34	0.00	0.00	0.00	0.00	0.00
Equipment	0.49	0.47	8.70	5.24	0.22	0.64	0.15
Grand Total	2.74	0.82	8.70	5.24	0.22	0.64	0.15

Estimated direct emissions from equipment and fugitive dust are below threshold levels contained in Utah Administrative Code R-307-410-4. These thresholds are levels for which air quality modeling is required for new or modified emissions sources. Emissions below these threshold levels are considered de minimis and would have no substantial impact on air quality. All emissions displayed in Table 5 represent less than 0.33% of the individual and combined emissions of Emery and Carbon County (displayed in Table 3).

The goal of the Proposed Action is to extinguish the coal fire to facilitate resumption of coal production at the mine. Emissions and air quality impacts from mining were evaluated in the Lila Canyon Mine Lease Modifications Environmental Assessment (BLM 2021a) and is incorporated by reference. Estimated emissions from coal mining, coal hauling and handling, and from coal combustion are provided in Table 6. A substantial portion of the coal hauling and combustion emissions occur outside the impact analysis area but are included in the emissions estimates in Table 6. Health effects associated with criteria and hazardous air pollutants associated with coal combustion, are incorporated by reference from the ARM (BLM 2021b). These health effects include respiratory issues (asthma, lung damage, reduced oxygen delivery to the body, difficulty breathing), cardiovascular and nervous system issues, reproductive issues, and can cause cancer or other serious health effects. People most at risk include people with asthma, children, older adults, and people who are active outdoors, especially outdoor workers. These pollutants can also affect human safety and the environment by reducing visibility and causing damage to plants and ecosystems. Coal combustion facilities outside the analysis area are subject to local, state, and federal air quality regulations and emissions restriction required in air quality permits, which are intended to prevent adverse impacts. Air quality modeling of emissions from mining, coal handling, and coal hauling, inside the analysis area, showed potential localized, on leased area, exceedances of NO_x and PM_{2.5} air quality standards near mine vents and dirt haul roads. Since these exceedances occurred on leased area, limiting public access to the emissions sources prevents adverse impacts to human health and safety. As mentioned in the affected environment (section 3.2.1), Carbon and Emery counties are currently meeting all ambient air quality standards, and these indirect emissions are part of the existing environment and would result in the status quo for air quality.

TABLE 6. ESTIMATED EMISSIONS FROM SURFACE DISTURBANCE AND DIRLLING BOREHOLES.

Activity	PM₁₀	PM₂₅	NO_x	CO	SO₂	VOC	HAPs
Coal Mining	35.49	11.01	103.29	74.39	0.15	7.73	0.45
Handling & Hauling	117.82	79.37	3,256.02	877.51	3.38	131.59	1.916
Coal Combustion	58,219	15,188	33,750	1,125	85,500	21	0.84

3.2.4 CUMULATIVE IMPACTS

This document incorporates by reference the projected changes to air quality and AQRVs that are evaluated in the BLM’s Air Resource Modeling Study (ARMS) (USU 2020). This modeling study provides a reference for potential changes to the affected

environment occurring from existing and foreseeable emissions producing activities, including oil and gas development and coal combustion in Utah.

Emissions trends

Past and present actions that have affected and would likely continue to affect air quality in the analysis area include those listed in section 3.1, the continued operation of power plants, oil and gas development, geophysical exploration, ranching and livestock grazing, range improvements, recreation (including off-highway vehicle use), authorization of ROWs for utilities and other uses, road development, residential and commercial sources, and transportation sources. These types of actions and activities can reduce air quality through emissions of criteria pollutants (including fugitive dust), VOCs, and HAPs, as well as contribute to deposition impacts and a reduction in visibility.

Modeled Air Quality Projections

In 2017, the BLM initiated the ARMS regional modeling study to evaluate foreseeable changes to air quality and AQRVs and results of the modeling study (USU 2020) are incorporated by reference into this EA. The ARMS 2017 modeling study uses the best available information on emissions and future development plans and incorporates the latest photochemical model improvements.

ARMS 2017 presents the air quality and air quality related values (AQRVs) impact assessment of emissions for the year 2025. The year 2025 modeling results are compared with National Ambient Air Quality Standards (NAAQS) for AQ pollutants (O₃, PM_{2.5}, PM₁₀, NO₂ and SO₂) throughout the modeling domain for the State of Utah in comparison with the 2011 Base Year modeling results. AQRVs at Utah areas of interest are compared against Prevention of Significant Deterioration (PSD) increment concentrations, and visibility and deposition thresholds of concern.

The ARMS 2017 model shows no exceedances of the NAAQS for any of the criteria air pollutants (O₃, PM_{2.5}, PM₁₀, SO₂ or NO₂) in the impact analysis area. For O₃, the model showed a slight improvement in concentrations from the base year to future year scenarios, decreasing by 3.7 parts per billion in Carbon County. There are no Class I area in the analysis area, but the model results show an improvement to visibility at these areas, and deposition of NO₂ and SO₂ is below critical loads at all assessed locations. The ARMS 2017 model results do not reveal any adverse air quality impacts in the analysis area.

The Proposed Action would affect criteria air pollutant emissions that would contribute 0.33% or less to the impacts detailed above. Under the No Action Alternative, the BLM would not authorize the Lila Canyon Coal Fire Emergency Response, and the actions described in the Proposed Action would not occur. Criteria air pollutant emissions under the No Action Alternative would continue as the coal would continue to burn. Federal and non-federal production levels are expected to continue to decrease in the short-term, regardless of the effects of the Lila Canyon Coal Fire Emergency Response project.

3.3. HOW WOULD THE PROPOSED ACTION CONTRIBUTE TO GREENHOUSE GAS (GHG) EMISSIONS AND CLIMATE CHANGE?

The Proposed Action could lead to emissions of carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O), the three most common greenhouse gases from anthropogenic sources. Compared to other criteria air pollutants, GHGs have a much longer atmospheric lifetime, remaining in the atmosphere for several decades or centuries. As a result, GHGs spread across the world and have a global climate effect (EPA, 2022). For the purposes of this analysis, the BLM has evaluated the potential effects of the Proposed Action on climate change by analyzing GHG emissions estimates for the different alternatives and potential emissions that may occur based on the outcome of each alternative.

Additional discussion of climate change science and predicted impacts as well as the reasonably foreseeable and cumulative GHG emissions are included in the BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends (BLM, 2022) (hereinafter referred to as the Annual GHG Report). This report presents the estimated emissions of GHGs attributable to fossil fuels produced on lands and the mineral estate managed by the BLM. The Annual GHG Report is incorporated by reference as an integral part of the analysis and is publicly available at <https://www.blm.gov/content/ghg/2021> (BLM 2022).

3.3.1 AFFECTED ENVIRONMENT

Climate change is a global process that is affected by the concentration of GHGs in the Earth's atmosphere. The incremental contribution to global GHGs from a single proposed land management action cannot be accurately translated into its potential effect on global climate change or any localized effects in the area specific to the action. Currently, global climate models are unable to forecast local or regional effects on resources from specific emissions. However, there are general projections regarding potential impacts on natural resources and plant and animal species that may be attributed to climate change resulting from the accumulation of GHG emissions over time. GHGs influence the global climate by increasing the amount of solar energy retained by land, water bodies, and the atmosphere. GHGs can have long atmospheric lifetimes, which allows them to become well mixed and uniformly distributed over the entirety of the Earth's surface no matter their point of origin (EPA, 2022). Therefore, potential emissions resulting from the Proposed Action are put into context by comparing to emissions from other Federal and national sources, emissions reduction goals, and by expressing emissions in terms of equivalent sources and climate costs to understand their potential contribution to climate change impacts.

Table 7 shows the total estimated GHG emissions from fossil fuels at the global, national, and state scales over the last five years. Emissions are shown in megatonnes (Mt) per year of carbon dioxide equivalent (CO₂e). The Annual GHG Report contains additional information on GHGs and an explanation of CO₂e, see Chapter 3 of the Report, and contains the methodology and parameters for estimating emissions from cumulative BLM fossil fuel authorizations. State and national energy-related CO₂ emissions include emissions from fossil fuel use across all sectors (residential, commercial, industrial, transportation, and electricity generation) and are released at the location where the fossil fuels are consumed.

TABLE 7. GLOBAL AND U.S. GHG EMISSIONS 2015 - 2020 (MT CO₂E/YR)

Scale	2016	2017	2018	2019	2020
Global	36,465.6	36,935.6	37,716.2	37,911.4	35,962.9
U.S.	5,077.0	5,005.5	5,159.3	5,036.0	4,535.3
State	72.0	72.0	73.8	74.6	NA
Carbon & Emery Counties ¹	13.7	14.1	13.8	14.1	13.0

Source: Annual GHG Report, Chap. 6, Table 6-1 (Global and U.S.) and Table 6-3 (State) (BLM 2022).

Mt (megatonne) = 1 million metric tonnes

NA = Not Available

1 – County level data only includes major industrial sources that emit over 25,000 Mt CO₂e/yr as reported in EPA’s Facility Level Information on Greenhouse Gases Tool (EPA 2021). <https://ghgdata.epa.gov/ghgp/>

The global climate continues to change rapidly compared to the pace of the natural variations in climate that have occurred throughout the Earth’s history. Trends in globally averaged temperature, sea level rise, upper-ocean heat content, land-based ice melt, Arctic Sea ice, depth of seasonal permafrost thaw, and other climate variables provide consistent evidence of a warming planet. These observed trends are robust and have been confirmed by multiple independent research groups around the world (very high confidence). Many lines of evidence demonstrate that it is extremely likely that human influence has been the dominant cause of the observed warming since the mid-20th century (BLM, 2022, NCA, 2018). Since 1895, temperatures have been increasing 0.2°F to 0.3°F per decade in each of Utah’s seven climate divisions. Utah frequently experiences droughts, and dry conditions since 2000 have resulted in record-low water levels in the Great Salt Lake and Lake Powell. Further discussion of past, current, and projected future climate change impacts is described in Chapters 8 and 9 of the Annual GHG Report. These chapters describe currently observed climate impacts globally, nationally, and in each state, and present a range of projected impact scenarios depending on future GHG emission levels.

3.3.2 ALTERNATIVE A - NO ACTION ENVIRONMENTAL CONSEQUENCES

Under the No Action alternative, the drilling of 35 boreholes and associated activities would not occur and there would be no direct GHG emissions. The coal fire would continue burning until an unknown time in the future. Indirect emissions of GHGs may also occur but there is substantial uncertainty in the quantity and duration of emissions including the source of emissions. The paragraphs that follow discuss the possible ways that indirect GHG emissions may occur under the No Action alternative.

The fire at the mine would continue to produce uncontrolled GHG emissions until it is extinguished. It’s unknown how long it may take to extinguish the fire, but other coal fires have burned from a few days to decades. It is also difficult to quantify the impact of coal fires on global emissions because it is not possible to determine how much coal is being combusted. One study looked at emissions from coal mine fires in Wyoming and found a range of emissions from 2 to

80 metric tonnes (t) CO₂ per day (730 to 29,200 t per year) but also found that emissions can vary spatially and temporally at a given fire (USGS 2012). The BLM is assuming a coal fire emissions rate of 80 t CO₂ per day to allow for a comparison between alternatives but recognizes that there is substantial variability in coal fire emissions. If the fire continues and the mine closes there would be additional GHG emissions associated with sealing the mine and reclamation of surface facilities. These emissions would be much less than the emissions from the fire over the long-term (more than a year). For context purposes, Table 8 lists the estimated coal fire emissions over ten years (at 29,200 t per year if this outcome occurs). The social cost of GHG (SC-GHG) associated with these emissions is provided in Table 9. Local power plants could have lower emissions due to the loss of coal from Lila Canyon that supplies them. However, energy demand is not anticipated to change substantially and there is substantial uncertainty on what type of energy source (renewable or fossil fuel) could compensate for the loss of the Lila Canyon coal.

TABLE 8. ESTIMATED EMISSIONS ASSOCIATED WITH A COAL FIRE BURNING FOR TEN YEARS

Activity	CO ₂	CH ₄ ¹	N ₂ O ¹	20-yr CO ₂ e	100-yr CO ₂ e
Coal fire	270,880	0.00	0.00	270,880	270,880

1 – Study did not quantify CH₄ or N₂O emissions from the Wyoming coal fires (USGS 2012).

TABLE 9. SC-GHGS ASSOCIATED WITH COAL FIRE BURNING FOR TEN YEARS

	Social Cost of GHGs (2020 \$)			
	Average Value, 5% discount rate	Average Value, 3% discount rate	Average Value, 2.5% discount rate	95 th Percentile Value, 3% discount rate
Coal Fire	\$3,627,000	\$13,299,000	\$20,005,000	\$39,987,000

Note: Values rounded to the nearest \$1,000

If the fire is extinguished another way and the mine resumes coal production then there would be GHG emissions from mining operations, transportation and processing of coal, and combustion of coal at an industrial facility or power plant. The quantity of these emissions is discussed as part of the Proposed Action environmental consequences as these levels of emissions would ensue regardless of how the fire is extinguished and the coal production resumes. Emissions and air quality impacts were evaluated in the Lila Canyon Mine Lease Modifications Environmental Assessment (BLM 2021a), which is incorporated by reference and evaluated as part of the Proposed Action, see section 3.3.3. Additional emissions may occur from the coal fire until it is extinguished and associated fire suppression measures. If this outcome comes to fruition, the indirect GHG emissions and corresponding climate costs would be slightly higher than the Proposed Action in the short-term because the coal fire would burn for a longer than under the Proposed Action and the end goal is the same (i.e., resume coal mine production).

3.3.3 ALTERNATIVE B - PROPOSED ACTION ENVIRONMENTAL CONSEQUENCES

Direct emissions of GHG's are calculated for the same equipment and using the same methodology as described in section 3.2.3. Table 10 lists the estimated GHG emissions from construction, drilling, and water pumping equipment, and from the coal fire until it is extinguished. The coal fire is estimated to produce more GHG emissions than the equipment used to drill the boreholes and extinguish the fire. Total direct GHG emissions are equivalent to 6,706 homes' electricity use for one year or 9.4 wind turbines running for a year.

TABLE 10. ESTIMATED EMISSIONS FROM SURFACE DISTURBANCE, DRILLING BOREHOLES, AND PUMPING WATER

Activity	CO ₂	CH ₄	N ₂ O	20-yr CO ₂ e	100-yr CO ₂ e
Equipment	1,317	0	0	1,326	1,324
Coal Fire	8,080	0	0	8,080	8,080
Total	9,397	0.05	0.02	9,406	9,404

Air quality impacts from indirect emissions, assuming the fire is extinguished and the mine resumes coal production, were evaluated in the Lila Canyon Mine Lease Modifications Environmental Assessment (BLM 2021a) and are incorporated by reference here. All emissions displayed in Table 10 represent 0.07% of the combined emissions of Emery and Carbon County (displayed in Table 7).

Table 11 provides the estimated emissions from coal mining, handling and hauling the coal, and from coal combustion. A substantial portion of the GHG emissions associated with coal hauling and combustion may occur outside the impact analysis area but contribute to cumulative national and global emissions. The total indirect emissions are equivalent to 8,204,069 homes' electricity use for one year or 11,461 wind turbines running for a year.

TABLE 11. ESTIMATED EMISSIONS FROM COAL MINING, HANDLING AND HAULING, AND FROM COAL COMBUSTION

Activity	CO ₂	CH ₄	N ₂ O	20-yr CO ₂ e	100-yr CO ₂ e
Mining	117,618	1,625	3	252,500	166,862
Hauling & Handling	343,334	26	9	347,936	346,566
Combustion	10,822,685	1,276	186	10,978,733	10,911,488
Total	11,283,637	2,927	198	11,579,169	11,424,916

Source: Table 3-12, Lila Canyon Mine Lease Modifications Environmental Assessment (BLM 2021a)

Over a ten-year period, the total direct and indirect emissions would be 102.8 Mt CO₂ equivalent (CO₂e) using the 100-year global warming potential (GWP). This is equivalent to 104.2 Mt CO₂e using the 20-year GWP.

3.3.3.1 MONETIZED IMPACTS FROM GHG EMISSIONS

The “social cost of carbon”, “social cost of nitrous oxide”, and “social cost of methane” – together, the “social cost of greenhouse gases” (SC-GHG) are estimates of the monetized damages associated with incremental increases in GHG emissions in a given year.

On January 20, 2021, President Biden issued E.O. 13990, *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis*.⁴ Section 1 of E.O. 13990 directs agencies to, among other things, listen to the science; improve public health and protect our environment; ensure access to clean air and water; reduce greenhouse gas emissions; and bolster resilience to the impacts of climate change.⁵ Section 2 of the E.O. calls for Federal agencies to review existing regulations and policies issued between January 20, 2017, and January 20, 2021, for consistency with the policy articulated in the E.O. and to take appropriate action.

Consistent with E.O. 13990, the Council on Environmental Quality (CEQ) rescinded its 2019 “Draft National Environmental Policy Act Guidance on Considering Greenhouse Gas Emissions” and has begun to review for update its “Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews” issued on August 5, 2016 (2016 GHG Guidance).⁶ While CEQ works on updated guidance, it has instructed agencies to consider and use all tools and resources available to them in assessing GHG emissions and climate change effects including the 2016 GHG Guidance.⁷

Regarding the use of Social Cost of Carbon or other monetized costs and benefits of GHGs, the 2016 GHG Guidance noted that NEPA does not require monetizing costs and benefits.⁸ It also noted that “the weighing of the merits and drawbacks of the various alternatives need not be displayed using a monetary cost-benefit analysis and should not be when there are important qualitative considerations.”⁹

Section 5 of E.O. 13990 emphasized how important it is for federal agencies to “capture the full costs of greenhouse gas emissions as accurately as possible, including by taking global damages into account” and established an Interagency Working Group on the Social Cost of Greenhouse Gases (the “IWG”).¹⁰ In February of 2021, the IWG published *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide: Interim Estimates under Executive Order 13990* (IWG, 2021).¹¹ This is an interim report that updated previous guidance from 2016. The final report is expected in January 2022.

⁴ 86 FR 7037 (Jan. 25, 2021).

⁵ *Id.*, sec. 1.

⁶ 86 FR 10252 (February 19, 2021).

⁷ *Id.*

⁸ 2016 GHG Guidance, p. 32, available at: https://ceq.doe.gov/docs/ceq-regulations-and-guidance/nepa_final_ghg_guidance.pdf

⁹ *Id.*

¹⁰ E.O. 13990, Sec. 5.

¹¹ https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf

In accordance with this direction, this subsection provides estimates of the monetary value of changes in GHG emissions that could result from selecting each alternative. Such analysis should not be construed to mean a cost determination is necessary to address potential impacts of GHGs associated with specific alternatives. These numbers were monetized; however, they do not constitute a complete cost-benefit analysis, nor do the SC-GHG numbers present a direct comparison with other impacts analyzed in this document. For instance, the BLM's overall economic analysis for this project does not monetize most of the major costs or benefits and does not include all revenue streams from the Proposed Action but seeks to quantify certain impacts related to employment numbers and labor income. SC-GHG is provided only as a useful measure of the benefits of GHG emissions reductions to inform agency decision-making.

For Federal agencies, the best currently available estimates of the SC-GHG are the interim estimates of the social cost of carbon dioxide (SC-CO₂), methane (SC-CH₄), and nitrous oxide (SC-N₂O) developed by the IWG on the SC-GHG. Select estimates are published in the Technical Support Document (IWG 2021)¹² and the complete set of annual estimates are available on the Office of Management and Budget's website¹³.

The IWG's SC-GHG estimates are based on complex models describing how GHG emissions affect global temperatures, sea level rise, and other biophysical processes; how these changes affect society through, for example, agricultural, health, or other effects; and monetary estimates of the market and nonmarket values of these effects. One key parameter in the models is the discount rate, which is used to estimate the present value of the stream of future damages associated with emissions in a particular year. A higher discount rate assumes that future benefits or costs are more heavily discounted than benefits or costs occurring in the present (i.e., future benefits or costs are a less significant factor in present-day decisions). The current set of interim estimates of SC-GHG have been developed using three different annual discount rates: 2.5 %, 3%, and 5% (IWG 2021).

As expected with such a complex model, there are multiple sources of uncertainty inherent in the SC-GHG estimates. Some sources of uncertainty relate to physical effects of GHG emissions, human behavior, future population growth and economic changes, and potential adaptation (IWG 2021). To better understand and communicate the quantifiable uncertainty, the IWG method generates several thousand estimates of the social cost for a specific gas, emitted in a specific year, with a specific discount rate. These estimates create a frequency distribution based on different values for key uncertain climate model parameters. The shape and characteristics of that frequency distribution demonstrate the magnitude of uncertainty relative to the average or expected outcome.

To further address uncertainty, the IWG recommends reporting four SC-GHG estimates in any analysis. Three of the SC-GHG estimates reflect the average damages from the multiple simulations at each of the three discount rates. The fourth value represents higher-than-expected economic impacts from climate change. Specifically, it represents the 95th percentile of damages

¹² IWG 2021. *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide, Interim Estimates under Executive Order 13990*. Interagency Working Group on Social Cost of Greenhouse Gasses, February 2021.

¹³ <https://www.whitehouse.gov/omb/information-regulatory-affairs/regulatory-matters/#scghgs>

estimated, applying a 3% annual discount rate for future economic effects. This is a low probability, but high damage scenario, that represents an upper bound of damages within the 3% discount rate model. The estimates below follow the IWG recommendations.

The SC-GHGs associated with estimated emissions from the Proposed Action and coal fire until it is extinguished are reported in Table 12. These estimates represent the present value (from the perspective of 2021) of future market and nonmarket costs associated with CO₂, CH₄, and N₂O emissions from the Proposed Action. Estimates are calculated based on IWG estimates of social cost per metric ton of emissions for a given emissions year and BLM’s estimates of emissions in each year. They are rounded to the nearest \$1,000. The SC-GHGs associated with estimated emissions from coal mining, coal handling and hauling, and coal combustion, if the mine resumes production, are reported in Table 13.

TABLE 12. DIRECT SC-GHGS ASSOCIATED WITH CONSTRUCTION AND BOREHOLE DRILLING, AND COAL FIRE.

	Social Cost of GHGs (2020 \$)			
	Average Value, 5% discount rate	Average Value, 3% discount rate	Average Value, 2.5% discount rate	95 th Percentile Value, 3% discount rate
Proposed Action and Coal Fire	\$138,442	\$485,959	\$725,173	\$1,448,337

TABLE 13. INDIRECT SC-GHGS ASSOCIATED WITH THE RESUMPTION OF COAL MINING, COAL HANDLING AND HAULING, AND THE COMBUSTION OF COAL AT A POWER PLANT.

	Social Cost of GHGs (2020 \$)			
	Average Value, 5% discount rate	Average Value, 3% discount rate	Average Value, 2.5% discount rate	95 th Percentile Value, 3% discount rate
Coal Mining, Hauling & Handling, and Combustion	\$1,381,935,000	\$5,049,593,000	\$7,590,269,000	\$15,161,693,000

3.3.4 CUMULATIVE IMPACTS

Past, present, and reasonably foreseeable future actions that have produced and would likely continue to produce GHG emissions within the geographic scope of this analysis are identified in sections 3.1 and 3.3.1 and would add to GHG emissions from all global sources. The AMR (BLM 2021B) reports the projected Utah wide foreseeable GHG emissions out to 2050 and shows that planned emissions reductions could decrease 53% below 2018 levels but could vary from a 75% reduction to a 58% increase in emissions depending on different state level policy choices that could be enacted.

An assessment of GHG emissions from BLM’s fossil fuel authorizations, including coal leasing and oil and gas leasing and development, is included in the BLM Specialist Report on Annual GHG Emissions (referred to as Annual Report, see Chapter 5 (BLM 2022)). The Annual Report includes estimates of reasonably foreseeable GHG emissions related to BLM leasing actions, as well as the best estimate of emissions from ongoing production and development of lands and minerals that have previously been leased. It provides an estimate of cumulative GHG emissions from the BLM fossil fuel leasing program based on actual production and statistical trends. Over the next 12 months, the life-cycle emissions from Federal coal extraction, including from Lila Canyon, are estimated to be 26.66 MT CO₂e /yr in Utah, and 446.64 Mt CO₂e /year nationally. For all Federal fossil fuel (oil, gas, and coal), lifecycle emissions are estimated to be 50.73 MT CO₂e /yr in Utah and 1,260.2 MT CO₂e /yr nationally. Over the long-term, production forecasts from the Energy Information Administration (EIA) are used to estimate GHG emissions out to 2050 that could occur from past, present, and future development of Federal minerals. At the national level, these long-term projections estimate that there will be emissions of 10,755.71 Mt CO₂e from Federal coal, and 24,296.97 MT CO₂e from all Federal fossil fuel minerals (oil, gas, and coal.) The Proposed Action’s direct emissions are 0.04% of the estimated foreseeable Federal life-cycle coal emissions in Utah over the next 12 months, and the No Action’s direct emissions are 0.10%. Indirect emissions for the Proposed Action would be 42.85% while the No Action indirect would range from 0.00% to 42.85%.

The U.S. has established an economy-wide target of reducing its net GHG emissions by 50% to 52% below 2005 levels in 2030 in its national determined contribution (NDC) under the Paris Agreement (UNFCCC 2021). Net GHG emissions include both anthropogenic and natural emissions of GHGs as well as removals by sinks (e.g., carbon uptake by forests). To develop the NDC, the National Climate Task Force performed an analysis of potential and measured impacts of various policies and measures (both potential and existing) at all levels of government and in all relevant sectors. This analysis was conducted using input from all federal government agencies as well as other stakeholders, such as scientists, activists, local and state governments, and various local institutions. For the industrial sector, the NDC outlines that the U.S. government will support research and implementation of very low- and zero-carbon industrial processes and products, including introducing these products to market. The U.S. government will also incentivize carbon capture and the use of new sources of hydrogen for powering industrial facilities. The net emissions (including sinks) in 2005 were 6,635 million metric tons (MMT) CO₂e (UNFCCC 2021); therefore, the 2030 net emissions are estimated to be between approximately 3,185 and 3,318 MMT CO₂e. So far, the U.S. is anticipated to have met and surpassed the 2020 target of 17% reduction in net economy-wide emissions below 2005 levels and is broadly on-track to meet the 2025 goal of 26% to 28% emissions reductions below 2005 levels (UNFCCC 2021).

The climate change indicators, impacts, trends and projections specific to states where the BLM conducts most of its fossil fuel authorizations are described in the Annual GHG Report (BLM 2022), which is incorporated by reference. By 2050, the magnitude of the projected climate change is substantially affected by the overall emissions path along which the world is tracking. The projected increase of global mean surface temperature by the end of the 21st century (2081–2100) relative to 1986–2005 is likely to range from 0.3°C to 4.8°C warmer depending on different

plausible global emissions scenarios. Changes in precipitation patterns will not be uniform, but in general, scientists expect arid regions to become drier and wetter areas to experience frequent exceptional precipitation events. In Utah, increases in average temperatures are expected to be accompanied by increases in heat wave intensity and decreases in cold wave intensity. Droughts, a natural part of Utah's climate, are expected to become more intense. Continuing recent trends, there is potential that precipitation will more frequently fall as rain instead of snow, reducing water storage in the snowpack, particularly at lower elevations that are currently on the margins of reliable snowpack accumulation.

The Proposed Action would result in greenhouse gas emissions that would contribute 0.07% or less to the impacts detailed above. Under the No Action Alternative, the BLM would not approve the Lila Canyon Coal Fire Emergency Response, and the actions described in the Proposed Action would not occur. Greenhouse gas emissions under the No Action Alternative would continue as the coal would continue to burn. Federal and non-federal production levels are expected to continue to decrease in the short-term, regardless of the effects of the Lila Canyon Coal Fire Emergency Response project.

3.4. HOW WOULD THE PROPOSED ACTION AFFECT THE EXISTING/IDENTIFIED WILDERNESS CHARACTERISTICS WITHIN TURTLE CANYON INVENTORY UNIT?

The Turtle Canyon Unit of Non-Wilderness Study Area (WSA) lands with wilderness characteristics is within the permit area (see Appendix B. Map 3.). Because all the proposed activities are within the Turtle Canyon Unit of Non-WSA lands with wilderness characteristics, that is the geographic scope for the effects analysis.

3.4.1 AFFECTED ENVIRONMENT

Non-WSA lands with wilderness characteristics (LWC) are defined as areas having at least 5,000 acres in a natural or undisturbed condition and provide outstanding opportunities for solitude or primitive forms of recreation. Many of these areas are adjacent or contiguous with WSAs or wilderness areas. Detailed information about non-WSA LWC is part of the administrative record for the 2008 Price ROD RMP/EIS (BLM 2008b). The following records are incorporated by reference: (1) 1999 Utah Wilderness Inventory; and (2) 1999 Utah Wilderness Inventory Revision Document for the Price Field Office. The Price ROD RMP/EIS identified that the Turtle Canyon LWC inventory unit would not be managed for the protection, preservation, or maintenance of wilderness characteristics.

All features of the Proposed Action are located within the Turtle Canyon unit of Non-WSA LWC. The 1999 Utah Wilderness Inventory and the 1999 Utah Wilderness Inventory Revision Document for the Price Field Office identified the Turtle Canyon Unit as containing 4,861 acres. The unit was determined to meet the size requirement for LWC because at the time it was contiguous with the Turtle Canyon WSA. Following enactment of the Dingell Act in 2019, the Turtle Canyon Wilderness was designated and the portions of the Turtle Canyon WSA that were contiguous with

the Turtle Canyon LWC unit were released from further consideration under Section 603 of FLPMA. The last update or review of LWC inventory was completed as part of preparing the 2008 during the PFO RMP planning effort.

The inventory unit was considered to possess naturalness because the intrusions, related to ranching and coal exploration, were considered widely scattered. The intrusions have been reclaimed or are in various stages of natural rehabilitation and are well screened by vegetation and topography making them substantially unnoticeable. The 1999 report determined the area generally appears to have been affected primarily by the forces of nature, with the imprint of people's work substantially unnoticeable. Parts of the permit area were burned in 1996 through a prescribed burn to improve wildlife habitat and reduce wildfire risk and site visits show that the area supports sagebrush and native vegetation and appears natural. There is no noticeable effect to wilderness characteristics. Livestock have been and will continue to graze within the Turtle Canyon Unit. Livestock grazing and associated facilities may impact naturalness due to presence on the landscape and range improvement developments like fencing and water troughs. Roads within the Turtle Canyon Unit were created to access springs and reservoirs used for livestock water and for monitoring conditions for the mine.

The unit was considered to possess outstanding opportunities for solitude because it was contiguous to the now released Turtle Canyon WSA that provided outstanding opportunities for solitude. The 1999 report noted that steep, rugged terrain, numerous side canyons, and pinyon and juniper woodlands provide ample screening.

The unit was considered to possess outstanding opportunities for primitive and unconfined recreation because it was contiguous with the Turtle Canyon WSA. The 1999 report noted the WSA provides for opportunities for hiking, climbing, camping, hunting and sightseeing.

3.4.2 ALTERNATIVE A - NO ACTION ENVIRONMENTAL CONSEQUENCES

If the Proposed Action is denied, there would be no additional surface disturbance within the Turtle Canyon Unit of Non-WSA LWC and no short term or temporary impacts to naturalness and solitude and opportunities for primitive and unconfined recreation.

3.4.3 ALTERNATIVE B - PROPOSED ACTION ENVIRONMENTAL CONSEQUENCES

Implementation of the Proposed Action would disturb approximately 10 acres or 0.15% of the Turtle Canyon Unit. The disturbance would include the creation of temporary roads and drill pads. The surface disturbance could lead to a loss of opportunities for solitude and naturalness and the construction and drilling activities could lead to a loss of outstanding opportunities for primitive and unconfined recreation in the short term. Construction and drilling activities would be completed within 2 months, and reclamation activities are expected to be complete within 2 years. Therefore, only a temporary loss of wilderness characteristics would occur.

The presence of approximately 10 acres of new disturbance within the sagebrush flats could impact the area's natural appearance until reclaimed due to a loss of natural vegetation and increase in

bare ground. In addition, the construction and the drilling activities would increase the activity on the roads and visitors may have a temporary loss of outstanding opportunities for solitude or for primitive and unconfined recreation during the project activities.

Design features would be implemented to minimize effects to the landscape by using existing roads for the majority of the access, retaining the native surface for the roads, limiting drill pad size to 100 by 100 feet or clustering drill pads (100 by 700 feet pad), and using the natural topography to minimize the amount of cut and fill required for construction.

Although there may be impacts to the wilderness characteristics, the impacts are expected to be temporary and limited in scope. The surface disturbance would be approximately 10 acres or 0.15% of the unit, and there would still be vast expanses of undisturbed area within the Turtle Canyon Unit as well as many opportunities within the nearby wilderness area. In addition, while the Turtle Canyon unit was found to have wilderness characteristics in the 1999 inventory effort, during the evaluation for the Price Office Resource Management Plan signed in 2008, several units including the Turtle Canyon Unit were not selected for management of those characteristics. In most cases this non-selection was because those lands were found to have other important resources or resource uses that would conflict with the protection, preservation, or maintenance of wilderness characteristics.

3.4.4 CUMULATIVE IMPACTS

As described in section 3.4.1, past and present actions that have resulted in impacts to the Turtle Canyon Unit's wilderness character include prescribed burning and fuels management, livestock grazing and associated facilities, construction and operation of the Lila Canyon Mine and associated facilities, and the creation of several roads. Past and present actions are expected to continue. The proposed action would add up to 10 acres of disturbance, 0.15% of the unit. This surface disturbance is the incremental contribution of the proposed action in addition to the effect of past, present, and reasonably foreseeable actions. These additional incremental effects would persist until reclamation is complete (anticipated for up to 3 years).

3.5. HOW WOULD THE PROPOSED ACTION AFFECT SOCIOECONOMIC CONDITIONS IN CARBON AND EMERY COUNTIES AND IN PORTIONS OF UTAH INFLUENCED BY COAL PRODUCED FROM THE LILA CANYON MINE?

The socioeconomic analysis area for potential direct, indirect, and cumulative socioeconomic and environmental justice effects includes Emery and Carbon counties, Utah. The State of Utah was used as a comparative reference area. This analysis area was selected because Emery and Carbon counties are proximal to the project area and contain communities and populations (including East Carbon, Sunnyside, Price, and Huntington) that the Proposed Action and/or alternatives may directly and/or indirectly impact. The project area is located in Emery County, Utah.

3.5.1 AFFECTED ENVIRONMENT

Land Use, Management, and Federal Contributions

Public lands and public land management decisions have considerable influence on the social and economic stability of the western United States (Headwaters 2015; BLM 2021c). Public land management decisions may have greater regional impact in areas with larger federal footprints. There are 3,812,589 total acres within the Lila Canyon Mine socioeconomic analysis area. Of those, 71.6% are federally owned lands. The Bureau of Land Management manages 2,485,592 acres (65.2%) of the study area’s total land (USGS 2018). The BLM’s Price Field Office manages the study area.

The study area’s public lands support a variety of socioeconomic uses that include mining, grazing, and recreation. In Fiscal Year 2021, resource uses on BLM lands managed by the Price Field Office contributed nearly 2,000 direct and indirect jobs to Utah’s economy. Table 14 shows these contributions. The metrics reported include jobs (an annual average of the number of full-time, part-time, and seasonal employees), labor income (includes employee wages, salaries, and benefits; includes income earned by sole proprietors), output (the market value of production of a good or service). For all metrics the table reports direct effects (the economic activity directly attributable to the resource use in question) and indirect effects (the direct economic activity plus their ‘ripple effects’ throughout the economy).

TABLE 14. FY2021 PRICE FIELD OFFICE ECONOMIC CONTRIBUTIONS.

Resource Group	Direct Jobs	Total Jobs	Direct Labor Income	Total Labor Income	Direct Output	Total Output
Oil and Gas	135	486	\$7.9 M	\$29.9 M	\$71.9 M	\$135.1 M
Coal	363	802	\$22.8 M	\$47.6 M	\$179.5 M	\$272.9 M
Non-Energy Minerals	1	1	\$28.5 K	\$66.5 K	\$200.4 K	\$341.4 K
Recreation	402	587	\$11.9 M	\$21.0 M	\$38.3 M	\$69.8 M
Grazing	76	113	\$396.5 K	\$1.5 M	\$2.4 M	\$5.8 M
Timber	0	0	\$7.4 K	\$16.1 K	\$38.3 K	\$66.3 K
Total Contributions to UT State Economy	997	2.0 K	\$43.1 M	\$100.1 M	\$292.3 M	\$484.0 M

Source: BLM 2022.

In 2020, Emery County was the largest coal producing county in the State of Utah. The Lila Canyon Mine, which lies in the Book Cliffs coalfield, is one of four coal mines currently producing in Emery County and in 2020 was the largest producer in the county. Geologically, the Book Cliffs coalfield is a part of the Blackhawk Formation. At the Lila Canyon Mine, the Blackhawk Formation contains two major coal seams – the Upper and Lower Sunnyside. The Upper Sunnyside seam averages 12.4 feet thick and ranges from 900 to 3,000 feet below the ground surface. It was estimated in 2020 that 1,279.3 million short tons of recoverable coal remain in the Book Cliffs coalfield (UGS 2021). Operators of the Lila Canyon Mine currently lease 7.2 million short tons of recoverable federal coal. At the current rate of \$37.22 (2020 real dollars per short ton) that represents the potential for approximately \$268 M in revenue and \$22.9M in federal royalties (50% of those royalties are transferred to the State of Utah. 50% of transferred royalties are then allotted to Emery County, 30 U.S.C. § 191; 42 U.S.C. § 6506a(l)).

In 2020 74.4% of all Utah coal was used in- state for electricity generation (UGS 2022). Most of the coal produced at the Lila Canyon Mine is currently shipped to the Hunter Power Plant in Castle Dale, Utah and Huntington Power Plant in Huntington, Utah. A portion of the coal produced at the Lila Canyon Mine is also shipped to the Intermountain Power Plant in Delta, Utah. As the coal produced at Lila Canyon is high quality, additional Lila Canyon Mine coal is sent to other mines in the area for blending purposes to support their coal supply contracts with the power plants. The Hunter and Huntington powerplants have a 2,272 MW capacity, which is 24% of the total generation capacity of the State of Utah (9438 MW). In 2021, these plants generated 15,513 GWh, which is 37% of the total power generated in Utah (as plants don't always generate to full capacity). In 2021, the Hunter and Huntington powerplants purchased 6.1 mm tons and burned 7.0 mm tons of Utah coal (personal communication with ECCR, 10/14/2022). Though these plants do not rely solely on Lila Canyon Mine coal, Lila Canyon Mine coal contributes important volume and quality to these plants.

Jobs and Wages by Industry, Employment, and Poverty

Increase or decline in analysis area employment is a basic indicator used to describe a region's socioeconomic status. Analysis areas with growing employment are more likely areas that attract and/or retain populations for a variety of reasons including 1) increased and/or diverse employment opportunities; 2) higher earning potential; 3) unique and/or improved quality of life. The total number of full- and part-time analysis area jobs declined by 5.2% from 2000 to 2020. Though both Carbon and Emery counties saw employment declines, by percentage the majority of job loss occurred in Emery County (USDC 2021).

It is estimated that in 2020, 3,610 analysis area jobs (22.3%) were in non-service-related sectors. This is considerably higher than the State of Utah reference area (15.7 %) and neighboring Grand County (11.0 %) and further demonstrates the regional reliance on public land-supported economic sectors. By percentage, Emery County is the largest contributor to this statistic (28.6% of in-county jobs). Within the non-service sector, mining (1,124 jobs, 7% of total jobs) and construction (919, 6.1% of total jobs) were the largest employers (USDC 2021).

Mining and mining support activities accounted for 9.3% of total jobs in the analysis area. Nearly all of these jobs (74.2% of mining and support jobs) involved coal mining. Mining's share of study area employment is shrinking; in 2008, mining represented 16.6% of total employment. Moreover, from 2001 to 2020, coal mining shrank in the study area from 1,230 to 813 jobs – a 34% decrease. Miners (not involved in oil and gas) averaged \$85,861 in 2020; that is considerably higher than the \$38,226 earned by non-mining employees. The Lila Canyon Mine directly employs 238 workers. Finally, Carbon and Emery counties have a combined coal mining location quotient of 69.2 – a substantial number. The location quotient compares an industry's share of employment in a region to the comparison area. It is a ratio that measures specialization using the comparison area for comparison. A location quotient above 2.0 indicates a strong industry concentration (and that an area is likely exporting goods or services and is more reliant on that sector). Large location quotients are often found in resource extraction communities and can be subject to boom-and-bust cycles as well as other economic challenges such as slower long-term economic growth and reduced socioeconomic resilience (USDL 2021).

An analysis of labor earnings across the analysis area further highlights the area’s reliance on resource extractive industries. Within the analysis area, labor income decreased by 5.5% from 2010 to 2020 (USDC 2021). The highest paying industries in the study area, on average, were mining – including fossil fuels (\$104,075 per year, accounting for 9.3 % of total employment) and the federal government (\$65,930 per year, accounting for 1.8 % of total employment). The lowest paying industries in the study area, on average, were leisure and hospitality (\$14,526 per year, accounting for 8.6% of total employment) and agriculture (\$26,592 per year, accounting for 0.3% of total employment) (USDL 2021).

Environmental Justice

Inclusion of environmental justice in NEPA documents is mandated by Executive Order 12898 and reinforced by BLM IM 2022-059. Environmental justice is the fair treatment and meaningful involvement of all potentially affected people, regardless of race, color, national origin, or income, when the federal government develops, implements, and enforces environmental laws, regulations, and policies (BLM 2022a). The Council on Environmental Quality (CEQ) defines a community with potential environmental justice populations as one that has a greater percentage of low-income, minority, and/or tribal populations than does an identified reference population (CEQ 1997). The BLM further defines a low-income environmental justice community as present if 1) the population experiencing poverty in one or more study area geographies are near, at, or below 200% of the federal poverty threshold of the reference area OR 2) if the population of the community experiencing poverty is at or above 50%. Minority environmental justice populations are present if the percentage of the population identified as belonging to a minority group in a study area is 1) equal to or greater than 50% of the population OR 2) meets the “meaningfully greater” threshold. Meaningfully greater is calculated by comparing the minority group population percentage with 110% of the reference area minority population. The meaningfully greater threshold for this study area/project is 24.2%. Tribal communities of concern are present if the percentage of the population identified as belonging to an indigenous community is equal to or greater than the reference population.

For this project the study area has been identified as census block groups (BG) in Carbon and Emery counties, Utah. This study area was selected because they are proximal to the project area and contain populations that the project may directly and/or indirectly impact. The reference area is the State of Utah. The project is located in BG 490159765003. Table 15 presents environmental justice demographic data for the analysis area.

TABLE 15. ANALYSIS AREA ENVIRONMENTAL JUSTICE DATA.

Geography	Low Income %*	Minority % *	Tribal # %
BG 490070006001 (UT, E. Carbon Co., East Carbon, Sunnyside, just north of mine)	51.5	23.8	3.1
BG 490070006002 (UT, N. Carbon Co.)	14.4	6.0	0.0
BG 490070005001 (UT, NW. Carbon Co.)	13.8	15.0	0.0
BG 490070005002 (UT, Carbon Co., N. HWY 6, Martin)	42.4	15.3	1.2
BG 490070005003 (UT, Carbon Co., N. HWY 6, Helper)	23.4	7.4	2.6

BG 490070002003 (UT, Carbon Co., Carbonville, Price)	32.0	19.2	4.3
BG 490070002003 (UT, Carbon Co., Wood Hill, Price)	12.5	6.1	0.5
BG 490070002001 (UT, Carbon Co., W. Price)	37.3	21.8	2.6
BG 490070003001 (UT, Carbon Co., Price, C. of E. Utah)	54.9	17.6	0.0
BG 490070001001 (UT, Carbon Co., Price, Castle Heights Elem.)	38.3	18.9	0.0
BG 490070001002 (UT, Carbon Co., Price, Carbon Co. Airport)	40.3	11.3	4.0
BG 490070003004 (UT, Carbon Co., Price)	46.1	13.1	0.0
BG 490070003003 (UT, Carbon Co., SE Price)	82.1	36.4	2.4
BG 490070003002 (UT, Carbon Co., S. Price)	51.5	16.4	3.8
BG 490070006003 (UT, S. Carbon Co.)	31.2	23.7	0.0
BG 490159765003 (UT, E. Emery Co., Project Area)	49.3	31.7	0.0
BG 490159762002 (UT, N. Emery Co.)	23.7	3.5	0.0
BG 490159762001 (UT, NW. Emery Co.)	18.8	14.0	0.0
BG 490159762004 (UT, Emery Co., W. Huntington)	36.5	5.3	0.0
BG 490159762003 (UT, Emery Co., E Huntington)	37.1	21.0	5.5
BG 490159763002 (UT, W. Emery Co., Orangeville, Hunter Power Plant))	14.5	4.0	0.0
BG 490159763001 (UT, Emery Co., Castle Dale)	30.0	1.4	0.0
BG 490159765002 (UT, Emery Co., Ferron Mill)	26.5	0.9	0.0
BG 490159765001 (UT, SW Emery Co.)	30.9	5.6	0.0
BG Totals	34.1	14.5	1.3
Reference area ^# (State of Utah)	25.4	22.1	1.0

Sources: *Bureau of Land Management EJ Mapping Tool (accessed 10/16/2022); ^ Headwaters Economics BLM EPS and SEP Reports (accessed 10/16/2022); # U.S. Census American Community Survey (accessed 10/16/2022).

Low-income environmental justice communities of concern are identified in the analysis area. The screening identified 17 census block groups within the analysis area as low-income. It is estimated that 34.1% of the analysis area is identified as low-income. This is substantially greater than the State of Utah reference area low-income percentage (25.4%). Moreover, high percentage low-income populations are found in communities directly connected to the Lila Canyon Mine including East Carbon, Sunnyside, Price, Huntington, and communities near the Hunter Power facility. In 2020 14.6% of the study area population were living below the federal poverty line. Carbon County was the largest contributor to this category (15.9% of the population). This is considerably higher than the State of Utah reference area (9. % of the population). 18.1% of the study area population living with poverty were under 18 years of age (compared to 9.9% in the State of Utah. 11.3% of study area families live under the poverty level. Moreover, an overwhelming 44.4% of those families were single parent, female headed households. In the study area, 5.7% of the population in 2020 was in “deep poverty.” Deep poverty is defined as earning less than half of the federal poverty level. 4.1% of the State of Utah is in deep poverty (USDC 2022).

Minority environmental justice communities of concern are identified in the study area. While it is estimated that only 14.5% of the analysis area population is identified as belonging to a minority population, the screening identified two census block groups as clear minority environmental justice populations, including block groups in Price, Utah and containing the project area. Two block groups were above the reference area but did not meet the meaningfully greater threshold. It is worth noting that these communities are in Price, East Carbon, and Sunnyside, Utah.

Tribal communities of concern are identified in the study area. It is estimated that 1.3% of the study area population is identified as belonging to a tribal population group. This is greater than the reference area tribal population percentage. This screening identified that 9 census block groups within the study area.

3.5.2 ALTERNATIVE A - NO ACTION ENVIRONMENTAL CONSEQUENCES

Under the No Action alternative, the BLM would not grant ECCR a temporary right-of-way to access BLM surface lands, drill a total of 35 boreholes from 6 drill pads, and pursue actions detailed in the Proposed Action to extinguish the fire inside the Lila Canyon Mine. If the fire were to continue to burn, there would be requirements for reintroduction of operations. Under UDOGM regulations, ECCR would continue to try and stop the fire through other methods and mine operations would be paused at least until such actions could be accomplished. A continued pause in mining activity would impact the socioeconomic condition of Emery and Carbon counties. The paragraphs that follow discuss this impact.

Should the fire continue to burn, federal and SITLA coal resources would be lost – consumed by fire and/or left inaccessible to development. ECCR would not be able to generate revenue from coal sales and the federal government would not collect royalties. Substantial tax revenues diverted from those royalties to the State of Utah and Emery County would not be collected and both the State of Utah and Emery County would be forced to cover budgetary shortfalls and operate under diminished budgets for the near future.

An extended pause or cessation of mining activity at the Lila Canyon Mine would substantially impact electricity generation at the Hunter Power Plant in Castle Dale, Utah and Huntington Power Plant in Huntington, Utah. Contracts with those plants, the Intermountain Power Plant in Delta, Utah, other mines that mix Lila Canyon coal with their own product to increase quality, and distribution and transportation support services would not be honored. Power plants would be required to source coal elsewhere – likely at higher cost and/or reduced quality – or reduce electrical outputs. It is reasonable to assume that energy costs borne by consumers in Utah generally and Emery and Carbon counties specifically would rise, should coal production at the Lila Canyon Mine cease.

Though coal mining and coal mining support services offer some of the highest annual labor income in the analysis area, both Emery and Carbon counties are witnessing economic stagnation and income declines. As detailed in 3.5.1, Emery and Carbon counties are deeply connected to non-service sector extractive industries and struggle with economic diversification. An extended pause or cessation of mining activity at the Lila Canyon Mine would accelerate regional economic

decline. BLM economic contribution data presented in 3.5.1 details that coal mining in the Price Field Office (which manages Emery and Carbon counties) contributed 363 direct jobs and \$22.8 M in direct labor income to the region. There are approximately 235 workers directly employed in the Lila Canyon Mine (64.7% of analysis area direct jobs). Should mining operations cease, direct labor income from coal production in the analysis area would decrease by \$14.76 M. This does not account for further indirect effects as those losses ripple through the community.

Considering the above analysis, the indirect effects of the No Action alternative would constitute a disproportionate and adverse impact on analysis area environmental justice communities. There are multiple low-income environmental justice communities present in the analysis area. These communities would likely face a reduction in social services and safety nets as taxable revenue and labor income declines. Rising energy prices would further burden these communities – especially during the winter months. The lack of economic diversity in the analysis area would limit future employment opportunities for these communities and many, due to financial constraints, would be unable to relocate or seek alternative job training.

3.5.3 ALTERNATIVE B - PROPOSED ACTION ENVIRONMENTAL CONSEQUENCES

Direct socioeconomic impacts associated with the Proposed Action would be temporary or short-term. As this is an emergency action, ECCR plans to purchase as many materials for pad construction, dewatering, and road construction from analysis area sources as possible. The drilling crew would likely be brought in from outside of the area and would be housed in nearby communities. The barrier foam would be purchased from outside of the analysis area. ECCR plans to use as many of their current employees as possible until underground opportunities can continue. These short-term impacts would conclude with cessation of drilling, dewatering, road construction, and reclamation activities at the end of the temporary ROW.

Indirect impacts associated with the Proposed Action have the potential to be long-term and positive. The goal of the Proposed Action is to extinguish the fire inside the Lila Canyon Mine and safely resume coal production. Should production return, it is reasonable to assume that the Lila Canyon Mine would continue production through the life of the mine and as social and economic conditions warrant coal production for electrical use. Should actions associated with this alternative succeed in extinguishing the fire and the mine be deemed safe for production, employees would be able to resume work and their labor income would ripple through the local communities. ECCR would receive revenues from coal sales and the State of Utah and Emery County would benefit from royalties derived from those sales. Contracts with power plants and other mines would likely be met. There are no disproportionate and adverse impacts from the proposed action to environmental justice communities.

3.5.4 CUMULATIVE IMPACTS

Past, present, and reasonably foreseeable future actions that have resulted in impacts to the analysis area's socioeconomic conditions are described in sections 3.1 and 3.5.1. Coal mining would remain a socioeconomic influence on the analysis area and should the fire in the Lila Canyon Mine be extinguished as described in the Proposed Action, the Mine would continue to contribute to those

conditions. While coal mining provides substantial economic inputs to the analysis area, the region would likely continue to lack economic diversity. Resource extraction communities are vulnerable to “boom and bust” economic cycles, national regulations, and global economic conditions. As such, the analysis area may remain reliant on coal revenues. It is reasonable to assume that this may result in further coal production in the analysis area.

The cumulative contribution of the proposed action to socioeconomic conditions in the analysis area is a continuation of the conditions and trends described in the affected environment. This is because extinguishment of the fire and restart to mining would result in a return to the baseline described in section 3.5.1. On the other hand, the cumulative contribution of the No Action Alternative to socioeconomic conditions in the analysis area would be a net loss as describe in 3.5.2.

3.6 HOW WOULD THE PROPOSED ACTION AFFECT VISUAL RESOURCE MANAGEMENT (VRM) CLASS II MANAGEMENT OBJECTIVES WITHIN THE PERMIT AREA?

The analysis area for potential direct, indirect, and cumulative effects to visual resource management includes VRM Class II within the permit area (3,661 acres of the 4,664 acres).

3.6.1 AFFECTED ENVIRONMENT

The permit area is comprised of VRM Class I (502 acres), VRM Class II (3,661 acres), and VRM Class III (1 acre) (see Appendix B. Map 4.). The project area doesn't fall within the VRM Class I and III acreage and therefore no landscape change would occur in this area. As a result, impacts to VRM Class I and III are not discussed. VRM Class II objectives state that contrasts may be seen but should not attract the attention of the casual observer. This means that VRM Class II allows for the level of change to the characteristic of the landscape to be low. There are existing pads from past exploration within the area with drill stems exposed as well as several existing roads used for recreation, grazing and mining related activities.

3.6.2 ALTERNATIVE A - NO ACTION ENVIRONMENTAL CONSEQUENCES

Absent occurrence of the activities approved under the Proposed Action, there would be no additional surface disturbance within VRM Class II. The conditions described in the affected environment would continue.

3.6.3 ALTERNATIVE B - PROPOSED ACTION ENVIRONMENTAL CONSEQUENCES

Implementation of the Proposed Action would create approximately 10 acres of surface disturbance in VRM Class II (0.3% of VRM Class II acreage in permit area). The activities that would be granted under the Proposed Action include design features to minimize the effects on the landscape by using existing roads for most of the access routes, retaining the native surface of roads, limiting drill pad size to 100 by 100 feet or clustering drill pads (100 by 700 feet pad), and using the natural topography to minimize the amount of cut and fill required for construction.

There is potential for moderate effects to contrast up to 2 months because of the presence of drill rigs and newly created drill pads. Small pumps, that would be screened by the existing vegetation, would be used for the life of the project. After 2 years, the reclamation efforts are expected to be complete, thus there would be only weak effects to contrast, and that area would retain the existing character of the landscape. Based on this analysis, the effects that would be approved under the Proposed Action would comply with VRM Class II objectives and would not exceed the acceptable level of change.

3.6.4 CUMULATIVE IMPACTS

Past and present action that have resulted in impacts to Visual Resource Management class objectives include prescribed burning and fuels management, livestock grazing and associated activities, construction and operation of the Lila Canyon Mine and associated facilities, and the creation of several roads. The incremental addition to these impacts represented by the Proposed Action is in the discussion of direct and indirect impacts above.

4.0 CONSULTATION AND COORDINATION

4.1 PERSONS, GROUPS, AND AGENCIES CONSULTED

Table 16 lists the persons, groups, and agencies that were coordinated with or consulted during the preparation of this EA. The table also summarizes the conclusions of those processes. In addition to the entities enumerated in Table 16, the BLM coordinated with the State of Utah Public Lands Policy Coordinating Office for purposes of information exchange.

TABLE 16. COORDINATION AND CONSULTATION

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Utah State Historic Preservation Office	National Historic Preservation Act Section 106	State Historic Preservation Office concurrence on the BLM’s approach to reaching a Section 106 determination of No Historic Properties Affected was received on October 15, 2022 (see Appendix A, the IDT Checklist)
U.S. Fish and Wildlife Service	Endangered Species Act Section 7	Initiated technical assistance on 10/14/2022. Concluded assistance on 10/20/2022.
Native American Nations and Tribal Organizations	Executive Order 13175, Executive Order 13007	On October 16, 2022, an urgent tribal consultation letter was emailed to the 16 Tribes that claim cultural affiliation with the Price Field Office for an emergency two-day comment period. Details of any responses can be found in the IDT checklist.

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Utah Division of Oil, Gas, and Mining (UDOGM)	Coal Mine Rules UAC R645	Coordination was conducted through Teams meetings and emails. Letter to ECCR authorizing the action received October 17, 2022.
Mine, Safety, and Health Administration	MSHA direction to operator per Mine Act 103(k)	Coordination was conducted via phone call and email on October 14, 2022.

4.2 SUMMARY OF PUBLIC PARTICIPATION

The CEQ regulations require that agencies “make diligent efforts to involve the public in preparing and implementing their NEPA procedures” (40 CFR 1506.6(a)) DOI NEPA regulations at [43 CFR 46.305\(a\)](#) state that, "The bureau must, to the extent practicable, provide for public notification and public involvement when an environmental assessment is being prepared. However, the methods for providing public notification and opportunities for public involvement are at the discretion of the Responsible Official." Due to the limited time available to the BLM to review ECCR’s proposed response to this ongoing emergency, public participation such as a scoping period, public meeting, or public comment period was not feasible. As described in the Background section at 1.1, the need to timely extinguish the fire and protect property interests, equipment, infrastructure, and the coal resources made it impracticable to involve the public. Notwithstanding the constraints of this emerging situation, the BLM was able to accomplish detailed and essential interagency coordination described in section 4.2.

4.3 LIST OF PREPARERS

The BLM personnel listed in the following table participated in the preparation of this EA.

TABLE 17. BLM PREPARERS

Name	Title
Lance Porter	Green River District Manager
Christopher Conrad	Supervisory Geologist
Erika Tobin	Lead Mining Engineer
Kyle Beagley	Acting Field Manager
Dana Truman	Wildlife Biologist
Natalie Fewings	Archaeologist
Erik Vernon	Air Resources Program Lead
Matt Fockler	Socioeconomic Specialist, Great Basin Zone
Michael Tweddell	Rangeland Management Specialist
David Baker	Outdoor Recreation Planner
Kyle Smith	GIS Specialist
Jaydon Mead	Outdoor Recreation Planner
Rebecca Anderson	Geologist

Name	Title
Ben Gaddis	Branch Chief for Planning
Tye Morgan	Planner and Environmental Specialist
Molly Hocanson	Planner and Environmental Specialist

5.0 REFERENCES AND ACRONYMS

5.1 REFERENCES CITED

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5.2 LIST OF ACRONYMS

The below table contains a list of acronyms and their meanings that are frequently used by the BLM and which may have been used in the writing of this document.

TABLE 18. ACRONYMS

Acronym	Meaning
ACEC	Area of Critical Environmental Concern
ACEPM	Applicant-Committed Environmental Protection Measure
AO	Authorized Officer
APE	Area of Potential Effect
AUM	Animal Unit Month
BCC	Birds of Conservation Concern
BLM	Bureau of Land Management
BMP	Best Management Practice
CEQ	Council of Environmental Quality
CFR	Code of Federal Regulations
IAA	Impact Area of Analysis
CO	Carbon Monoxide
COA	Condition of Approval
CWA	Clean Water Act
DAQ	Division of Air Quality
DR	Decision Record
EA	Environmental Assessment

Acronym	Meaning
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FLPMA	Federal Land Policy and Management Act
FO	Field Office
FONSI	Finding of No Significant Impact
GHMA	General Habitat Management Area
GIS	Geographic Information System
HAP	Hazardous Air Pollutants
IDT	Interdisciplinary Team
IPaC	Information for Planning and Consultation
LMA	Lease Modification Application
MBTA	Migratory Bird Treaty Act
NAAQS	National and Utah Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
NI	Not Impacted
NP	Not Present
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NSO	No Surface Occupancy
OHV	Off-highway Vehicle
Onsite	Onsite Inspections per Onshore Order #1
OSHA	Occupational Safety and Health Act
PAC	Protected Activity Center
PAR	Pesticide Applicator Record
PIF	Partners in Flight
PUP	Pesticide Use Proposal
RFD	Reasonably Foreseeable Development
RMP	Resource Management Plan
ROD	Record of Decision
ROW	Right-of-way

Acronym	Meaning
SARA	Superfund Amendments and Reauthorization Act
SDR	State Director Review
SHPO	State Historic Preservation Office
SITLA	School and Institutional Trust Lands Administration
SMA	Surface Management Agency
SPCC	Spill Prevention, Control and Countermeasure
SRMA	Special Recreation Management Area
SUPO	Surface Use Plan of Operations
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UDOGM	Utah Division of Oil, Gas and Mining
UDWaR	Utah Division of Water Rights
UDWR	Utah Division of Wildlife Resources
USACE	United States Army Corps of Engineers
USDI	U.S. Department of the Interior
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VRM	Visual Resource Management
WSA	Wilderness Study Area

APPENDIX A: INTERDISCIPLINARY TEAM CHECKLIST

INTERDISCIPLINARY TEAM CHECKLIST

RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)

Project Title: Lila Canyon Coal Fire Emergency Response

NEPA Log Number: DOI-BLM-G020-2023-0001-EA

File/Serial Number:

Project Leader: Erika Tobin

DETERMINATION OF STAFF: *(Choose one of the following abbreviated options for the left column)*

NP = not present in the area impacted by the proposed or alternative actions

NI = present, but not affected to a degree that detailed analysis is required

PI = present with potential for relevant impact that need to be analyzed in detail in the EA

NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.

INTERDISCIPLINARY TEAM CHECKLIST

Determination	Resource/Issue	Rationale for Determination	Signature	Date
PI	Air Quality	Emissions of air pollutants can have a local and regional effect on air quality and air quality related values. Equipment used to drill the bore holes and prepare access roads and drill pads would produce short term emissions criteria and toxic air pollutants. Emissions of air pollutants from the uncontrolled combustion of coal from the fire at the mine or from the controlled combustion of coal at industrial or power generating units, if the mine resumes coal production, are foreseeable air quality effects that may occur under the different alternatives.	Erik Vernon	10/19/22
PI	Greenhouse Gas Emissions	Greenhouse gases absorb and emit radiant energy within the infrared spectrum range that have the potential to cause trapping of heat in the atmosphere and produce global and regional climate effects. Equipment used to drill the bore holes and prepare access roads and drill pads would produce short term emissions greenhouse gases. Long-term emissions of greenhouse gases are a foreseeable result under the different alternatives if the uncontrolled combustion of coal from the fire at the mine continues or from the controlled combustion of coal at industrial or power generating units, if the mine resumes coal production.	Erik Vernon	10/19/22
NP	BLM natural areas	After review of GIS and BLM records, there are no BLM natural areas present in the project area. The closest natural area is Mexican	Dana Truman	10/14/22

Determination	Resource/Issue	Rationale for Determination	Signature	Date
		Mountain. It is over 20 miles away to the southwest.		
NI	Cultural Resources	<p>Pursuant to the National Historic Preservation Act (NHPA) Section 106 process and its implementing regulations at 36 CFR 800, this project is a federal undertaking with the potential to effect historic properties (36 CFR 800.16(y); 36 CFR 800.3([a])). Therefore, following the <i>State Protocol Agreement Between the Bureau of Land Management Utah and the Utah State Historic Preservation Office Regarding the Manner in which the Bureau of Land Management will meet its Responsibilities Under the NHPA as Provided for in the National Programmatic Agreement</i>, a standard, 31-acre Class III Intensive Field Survey covering the 7.3-acre Area of Potential Effects with sufficient buffers was conducted between October 17–18. Beginning October 20, archaeologists will monitor all ground disturbance until the drill pads, dewater pads, and access roads are constructed. The BLM PFO archaeologist will be on-call during monitoring to respond to inadvertent discoveries (if any) and/or provide field assistance when requested. The BLM received Utah State Historic Preservation Office concurrence on the APE and for using this approach to reach a Section 106 determination of No Historic Properties Affected, on October 15, 2022. Standard inadvertent discovery protocols apply to this undertaking:</p> <p><u>Cultural Resources:</u> <i>In the event that cultural resource sites are discovered during project activities that cannot be avoided, work in the immediate vicinity (50') of the discovery will be paused for immediate contact to the BLM PFO archaeologist and NRHP-evaluation by the cultural monitor. If warranted, the BLM archaeologist will respond to the field immediately. They will ensure that significant cultural resources will be protected, and any necessary mitigation has been completed. Within 72 hours of the discovery, the BLM will consult with the SHPO and interested Indian tribes.</i></p> <p><u>Human Remains:</u> <i>In the event that any human remains, funerary objects, sacred objects, or objects of cultural patrimony as defined in 43 CFR § 10.2(d) are encountered, all work at that location will cease immediately. The BLM PFO archaeologist and agency official will be immediately notified by phone and the BLM will initiate Native American Graves Protection and Repatriation Act (NAGPRA) and its implementing regulations (43 CFR part 10). No further work may occur in</i></p>	Natalie Fewings	10/19/22

Determination	Resource/Issue	Rationale for Determination	Signature	Date
NP	Native American Religious Concerns	<p><i>the area and all crew members will be restricted from the discovery. The cultural monitor will stay with the human remains until they are evaluated by the BLM and temporary protective measures are in place.</i></p> <p>Through the NEPA and NHPA Section 106 consultation processes, BLM has sought input on this undertaking from 16 tribal nations and organizations self-identified as culturally affiliated with the PFO jurisdiction. The consultation took place so that all interested tribal parties may evaluate for themselves the potential impact of the proposal and any specific concerns or unique needs of tribal communities may be addressed (Presidential Memorandum of January 26, 2021, furthering Executive Order 13175). On October 16, 2022, an urgent tribal consultation letter was emailed for an emergency two-day comment period. Three responses were received on October 18, 2022: a response from the Paiute Indian Tribe of Utah stated they are not aware of any cultural resource sites, practices, or locations of importance in the tribe's traditional religions or culture in the area; the Southern Ute Indian Tribe contributed a finding of No Effect and requested a Class III report copy when available; and the Shoshone-Bannock Tribes requested a copy of the EA, cultural monitoring of all ground disturbance, notification upon any inadvertent discoveries, and a copy of the cultural report. The Shoshone-Bannock Tribes also stated the purpose of their letter is to provide technical input and is not intended as formal government to government consultation. Standard inadvertent discovery protocols are required, refer to the Cultural Resources rationale above for details. The BLM will ensure this undertaking will accommodate access to and ceremonial use of Indian sacred sites and avoid adversely affecting the physical integrity of such sacred sites, should any be identified (Executive Order 13007.1-2; 36 CFR 800). The closest previously identified area of religious tribal concern known to the BLM is the Green River corridor, 16 miles to the east.</p>	Natalie Fewings	10/19/22
NP	Designated Areas: Areas of Critical Environmental Concern	After review of GIS files and BLM records, there are no ACECs present in the project area. The closest ACEC to the project area is approximately 8 miles to the southwest, and is part of the Rock Art Sites ACEC (RMP, 2008).	Dana Truman	10/14/22
NP	Designated Areas: Wild and Scenic Rivers	After review of GIS files and BLM records, there are no Wild and Scenic Rivers present in the project area. The closest designated wild and scenic river segment is approximately 16 miles to the southeast (Green River wild and scenic river).	Dana Truman	10/14/22
NP	Wilderness	After review of GIS files, BLM records, and a site visit on 10/15/22, the Turtle Canyon	Dana Truman	10/18/22

Determination	Resource/Issue	Rationale for Determination	Signature	Date
NP	Jurassic National Monument	Wilderness area boundary is approximately 0.3 miles from the project area and approximately 1.5 miles from some of the proposed well pads. The proposed new access roads are approximately 1.5 miles from the boundary of the wilderness area. The natural topography and vegetation in the area create a natural and effective barrier to potential unauthorized travel into the wilderness.	Dana Truman	10/14/22
NP	San Rafael Swell Recreation Area	After review of GIS files and BLM records, the proposed project area is not in the San Rafael Swell Recreation Area. This area is over 25 miles to the southwest of the project area.	Dana Truman	10/14/22
NP	Designated Areas: Wilderness Study Areas	There are no Wilderness Study Areas in the project area per review of the RMP and GIS. The former Turtle Canyon WSA extended into the project area. With enactment on March 12, 2019, of the John D. Dingell, Jr. Conservation, Management, and Recreation Act (P.L. 116-9) (the Act) (see Section 1.6), several acres of Turtle Canyon WSA were released, including approximately 500 acres which encompass the project area.	Dana Truman	10/18/22
PI	Environmental Justice	Environmental justice communities are present and potentially impacted by implementation of the proposed action. This is addressed in section 3.5.	Matt Fockler	10/17/22
NI	Farmlands (prime/unique)	According to NRCS web soil survey , soil 089-Lilapoint fine sandy loam is classified as prime farmland if irrigated, However, there is no water in the area to irrigate with and therefore no irrigation is occurring.	Michael Tweddell	10/16/22
NI	Fuels/Fire Management	The project area is within a previously treated area for fuels reduction. The area was burned in 1992 with the intent to improve wildlife habitat and reduce wildfire risk. Implementation of this action would remove some vegetation, thus reducing the fuel loading on approximately 10 acres. The implementation of the action is not expected to affect the future management of the fuels or fire. Fuels are naturally sparse on the exposed cliff faces where the coal seams are exposed and would not contribute to a surface fire. The coal fire is 1100 feet below ground therefore the risk is low for the fire to come out any holes drilled from the project area. Due to the proximity of the heavy fuels in the area, fire extinguishers are required when welding, cutting, and using heavy equipment. In case any fire is observed on the surface contact Moab Fire Center at 435-259-1850	Stu Bedke Dana Truman	10/18/22

Determination	Resource/Issue	Rationale for Determination	Signature	Date
PI	Geology / Minerals / Energy Production	<p>According to BLM 's GIS layers, there are no mining claims, no saleable mineral sites, or oil and gas leases in the project area. This project will not impede future extraction of coal. Emery County Coal Resources holds leases on the project area.</p> <p>At the Lila Canyon mine, there are two major coal seams in the Blackhawk Formation, the Upper and Lower Sunnyside. The Upper Sunnyside seam averages 12.4 feet thick according to estimates and is the coal seam that caught fire. The coal seam dips to the northeast and ranges from 900 to 3000 feet below ground surface. Above the Blackhawk lies the Castlegate Sandstone, Price River Formation, and North Horn Formation. See the Figure 1. Cross-section, Figure 2. Stratigraphy, and Figure 3. Diagram of Mine Mains in the Appendix B.</p> <p>Coal resources will continue to be lost if the fire is not extinguished.</p> <p>Issues associate with the geology section are analyzed in detail in Socioeconomics section 3.5.1</p>	Chris Conrad Rebecca Anderson	10/14/22
NI	Lands/Access	<p>A review of LR2000, the Master Title Plats, and 2008 Price Field Office RMP showed that the proposed action is compatible with the existing land use and authorized rights-of-way. There are no conflicts with other land use authorizations. The road to the dewater well pad is an approved 8-foot wide RMP road. It would be increased to a width of 16 feet. It is also an Emery County D Road. Access to boreholes M-1, M-2, and M-3 would be new construction.</p>	Veronica Kratman	10/14/22
PI	Lands with Wilderness Characteristics	<p>The project area lies within the Turtle Canyon Unit of Lands with Wilderness Characteristics. Potential Impacts to LWC associated with the proposed action are analyzed in detail in chapter 3.</p>	Blake Baker	10/18/22
NI	Livestock Grazing & Rangeland Health Standards	<p>The project area is within the Little Park allotment. This allotment is a total of 26,156 acres. A total of 10 acres of disturbance are anticipated from the proposed action. This is 0.0004% of the total allotment. Due to the small area of disturbance, the loss of vegetation and associated AUMs would be minimal and temporary.</p> <p>The Little Park allotment is presently meeting Rangeland Health Standards. Implementation of the proposed action is not expected to change this because the proponent has proposed to reclaim the project area as soon as work is complete, following Green River District Reclamation Guidelines utilizing a seed list that is described in DOI-BLM_UT-G023-2011-0052-EA.</p>	Michael Tweddell	10/14/22
NI	Paleontology	<p>Based on GIS data, the project area lies within Class 3 and 4 areas of the Potential Fossil Yield Classification System (PFYC). Class 3 has a</p>	Chris Conrad Rebecca Anderson	10/14/22

Determination	Resource/Issue	Rationale for Determination	Signature	Date
		<p>moderate likelihood of containing paleontological resources, but these occurrences are widely scattered and potential for an authorized land use to impact a significant paleontological resource is known to be low-to-moderate. Class 4 has a high occurrence of paleontological resources. Surface disturbing activities may adversely affect paleontological resources. Rare or uncommon fossils may be present. Operations could uncover vertebrate fossils and if this happens, work would immediately halt in that location and the Price Field Office should be notified. A paleontology monitor will be present to avoid any impacts to paleontological resources.</p>		
NI	Plants: Invasive and Noxious Weeds	<p>The Proposed Action would result in up to 10 acres of surface disturbance. However, the potential for introduction and spread of invasive and noxious weed species does exist. Cheatgrass is likely to establish on disturbed soils and tamarisk is present and may spread to disturbed areas along the drainages. Noxious weeds are currently found along the Little Park Wash Road. Hounds tongue is found in the area as well. The general operations and construction of the drill sites carry a potential risk of spreading noxious weeds and invasive species from one site to the other with the transfer of equipment. Equipment used for the construction of the access roads and pads would be sprayed prior to arrival at the project area to prevent the introduction of noxious weeds into the area. The proponent would be responsible for noxious weed control within the project area until reclamation is deemed successful. A PUP and PAR would be required prior to any treatments of infestations that stem from the results of implementing the project. With BMPs and reclamation described in the Proposed Action, the spread of invasive species and noxious weeds would be limited and expected to have minimal impacts. Current weed eradication and control measures are conducted by the BLM.</p>	Michael Tweddell	10/14/22
NI	Plants: Native Communities	<p>Under the proposed action, project implementation would result in 10 acres of surface disturbance, the majority of which is within the Loamy Bottom (Basin Big Sagebrush) vegetation type which covers in excess of 430 acres surrounding the project area. Due to the small area of disturbance (10 acres), the potential loss of vegetation would be minimal (2.3%). The proponent has proposed to reclaim the project area as soon as work is complete, following Green River District Reclamation Guidelines utilizing a seed list that is described in DOI-BLM-UT-G023-2011-0052-EA.</p>	Michael Tweddell	10/14/22
NI	Plants: BLM Sensitive	<p>Suitable or occupied habitat for the following UT BLM Sensitive plant species has been</p>	Dana Truman	10/18/22

Determination	Resource/Issue	Rationale for Determination	Signature	Date
		<p>previously documented or is expected to occur within Emery County, UT.</p> <p><i>Alicella tenuis, Astragalus pubentissimus peabodianus, Camissonia bolanderi, Cryptantha creutzfeldtii, Eriogonum corybosum smithii, Erigeron maguirei, Lygodesmia grandiflora entrada, Mentzelia multicaulis var librina, Oreoxis trotteri, Psorothamnus polydenius jonesii, Sphaeralcea psoraloides, Talinum thompsonii.</i></p> <p>Analysis of soils, geology, elevation, and ecological systems within the project areas indicates that suitable habitat for <i>Mentzelia multicaulis var librina</i> may occur within the project area. There are possible exposures of suitable geology, Price River Formations, and it is close to the typical elevation. The surface disturbance associated with this project is outside the suitable habitat, therefore there are no impacts expected to this species. For the other species, there is not suitable geology or elevation within the project area, and there are no records of occurrences. Because suitable habitat is not present, these species are unlikely to be present. For these reasons a detailed analysis of BLM sensitive plants is not required.</p>		
NI	Plants: Threatened, Endangered, Proposed, or Candidate	<p>Several Federally listed plant species occur within Emery County.</p> <ul style="list-style-type: none"> • <i>Cycladenia humilis var jonesii</i> • <i>Pediocactus despainii</i> • <i>Pediocactus winkleri</i> • <i>Schoenocrambe barnebyi</i> • <i>Sclerocactus glaucus</i> • <i>Sclerocactus wrightiae</i> • <i>Spiranthes diluvialis</i> • <i>Townsendia aprica</i> <p>According to IPac accessed on 10/14/22 only <i>Cycladenia humilis var jonesii</i> and <i>Spiranthes diluvialis</i> have the potential to occur</p> <p>Analysis of soils, geology, elevation, and ecological systems, within the project area indicates that suitable habitat for the identified species is not present. Because suitable habitat is not present, these species are unlikely to be present and therefore not impacted. Due to the lack of suitable habitat, BLM made a no effect determination for the species.</p>	Dana Truman	10/18/22
NI	Public Health and Safety	<p>The IDT identified that there are potential issues associated with public health and safety. The topics relate to health and safety identified are air quality (e.g., emissions, pollutants, particulate matter, dust), socioeconomics (e.g., supply to power plants and power generation), and on-site safety standards (e.g., heavy equipment, personal protection equipment). Air quality (see section 3.2), Greenhouse Gases (see</p>		

Determination	Resource/Issue	Rationale for Determination	Signature	Date
NI	Recreation	<p>section 3.3), and socioeconomics (see section 3.5) have been analyzed in detail in chapter 3. In analysis, public health and safety included in analysis. On site safety standards are the responsibility of ECCR. ECCT Company policy is to do specific task training using MSHA guidelines and issue a 500023. Due to the analysis already being disclosed in chapter 3, this issue was dismissed from detailed analysis.</p> <p>The Proposed Action is in an Extensive Recreation Management Area (ERMA) where recreation opportunities are limited, and explicit recreation management is not required. The ERMA receives only custodial management for recreation opportunities. This area receives low visitation and at this time of year, the main recreation use is hunting. The presence of heavy equipment and drill rigs may cause temporary disturbance. However due to the low visitation and the temporary nature, recreation is not expected to be impacted to the extent detailed analysis is required.</p>	Dana Truman	10/18/22
PI	Socioeconomics	Socioeconomic issues are analyzed in detail in section 3.5.	Matt Fockler	10/14/22
NI	Soils: Physical / Biological	<p>Up to 10-acres are to be temporarily disturbed by this proposal. Consistent with conditions approved in the 2011 exploration EA, topsoil will be removed and stored separately from subsoil horizons. The soil will be readily available when reclamation occurs. The road grade will be below 20% (5:1); therefore, an erosion control plan is not required.</p> <p>The Price RMP analyzed Mineral and energy development, such as Lila Canyon, for areas open to leasing, subject to minor constraints (Timing Limitations; Controlled Surface Use, Lease Notices) (574,335 Acres). And 10-acres is less than .002% of the acreage and is not considered significant.</p> <p>Soil types include Lilapoint fine sandy loam 1-5% slopes up to 60-inches deep. Sandy loam, sand, and gravel.</p> <p>Podo-Rock outcrop complex. 40-70% slope. Bouldery, fine sandy loam, gravelly fine sandy loam, and bedrock.</p> <p>Rangecreek-Skein-Rabbitex complex 6-45% slope. Gravelly loam, clay loam, paragravelly loam, bedrock</p> <p>The sandy and gravelly soils are resistant to erosion even after being disturbed. Clay loams are less resistant to erosion after being disturbed, but the disturbance is to be temporary and reclaimed. Therefore, no significant impacts are expected.</p>	Chris Conrad	10/17/22

Determination	Resource/Issue	Rationale for Determination	Signature	Date
PI	Visual Resources	<p>According to the PFO 2008 RMP, the proposed action lies within VRM II.</p> <p>There are existing well pads from past exploration within the area with drill stems exposed as well as several existing roads used for recreation, grazing and mining related activities. VRM Class II allows for the level of change to the characteristic of the landscape to be low. VRM Class II objectives state that contrasts may be seen but must not attract the attention of the casual observer.</p> <p>Following a site visit conducted 10/15/22 and the consideration of several factors typical of visual contrast rating analysis, including key observation points, vegetation type, topography, and scale of development, it was determined that implementation of this proposed action would retain the existing character of the landscape, and the level of change would be low.</p>	Blake Baker	10/18/22
NI	Wastes (hazardous/solid)	<p>Phenolic foam, a SARA Title III chemical will be used to create the foam barrier. Product will be stored on the valley floor in refrigerated trucks. Small batches will be transported to the injection site. Workers will utilize appropriate PPE to mitigate any safety concerns to workers. Waste material will be stored in Hazmat containers and taken to a licensed landfill at the end of construction.</p> <p>Trash would be confined in covered containers and disposed of in an approved landfill. No burning of any waste will occur due to this project. Human waste will be disposed of in an appropriate manner, in an approved sewage treatment center.</p>	Chris Conrad	10/16/22
NI	Water: Groundwater Quality	<p>This proposal would extract groundwater in the Blackhawk Formation accumulating in previously mined-out locations and inject it a few thousand feet away into the same geologic formation and within the same hydrologic basin. Therefore, the groundwater quality and quantity will not be affected.</p> <p>Water wells will be cased to protect ground water and will be properly decommissioned at the end of the project.</p>	Chris Conrad	10/17/22
NI	Water: Hydrologic Conditions (stormwater)	<p>The project area's surface includes exposed bedrock with no soil, shallow soils consisting of coarse sand and gravel in dry washes, and sandy loam (see soils). This type of material is resistant to increased erosion and fluid discharge after disturbances of this magnitude. Annual precipitation rates for Emery County are less than 10-inches. Therefore, little to no change in surface hydrologic conditions is expected.</p> <p>Stormwater from the mine and mine complex is contained on-site and is regulated by UDOGM (NPDS—UTG040024) This amount of</p>	Chris Conrad	10/16/22

Determination	Resource/Issue	Rationale for Determination	Signature	Date
		additional disturbance will have little effect on stormwater discharges.		
NP	Water: Municipal Watershed / Drinking Water Source Protection	The project area is in the Green River basin surface drinking water source protection zone 4 for Green River City's drinking water source protection plan. The project does not fall under one of the four greatest threats to drinking water quality identified in the plan (1. Animal feeding, 2. Fertilizer and pesticide runoff, 3. Septic systems, 4. Paved areas in Zone 1). No impacts to this resource are expected since the drainage is intermittent, the drilling is air-based, and any fluid releases would come from natural groundwater sources already part of the Green River hydrologic system or culinary water trucked-in.	Chris Conrad/ Rebecca Anderson	10/16/22
NP	Water: Streams, Riparian Wetlands, Floodplains	The project is in the Price River Basin, a tributary of the Green River, which eventually joins the Colorado River. GIS layers indicate the project area is on lease, and there are no perennial water resources in the project area—no streams and no wetlands. There is small riparian zone at UEI 11-03. Areas with wetlands or riparian zones would be avoided. Map review indicates there are no flood plains as defined by EO 11988. (https://www.archives.gov/federal-register/codification/executive-order/11988.html) Therefore, no impacts to these resources can be inferred.	Chris Conrad Rebecca A.	10/17/22
NI	Water: Surface Water Quality	There are 2 spring systems in the area: L-8-G and L-9-G (Pine Spring). There will be no interaction of drilling activities with the springs and intermittent stream channels. There will be no negative impacts to surface water quality.	Chris Conrad	10/16/22
NI	Water: Water Rights	Water rights located near the Project area are 91-2539 (owned by the BLM), 91-808, and 91-2538 (a water right used for stock watering owned by the State of Utah). The water withdrawn from this proposed action withing the dewater wells and reinjected into the same formation would not affect any water rights or the ability to use any water rights because of the depth of drilling and lack of surface disturbance.	Chris Conrad	10/16/22
NP	Water: Waters of the U.S.	GIS review indicates no navigable waters or waters of the U.S. are within the project area or could be affected by the proposal. Detailed analysis is not required.	Chris Conrad	10/16/22
NP	Wild Horses	Review of GIS and BLM records shows that the proposed project is not within a Wild Horse or Burro Herd Management Area.	Michael Tweddell	10/14/22
NI	Wildlife: Migratory Birds (including raptors)	Migratory birds could use the project area for foraging and nesting. There is GIS mapped nesting habitat ~2miles away from the permit area. The projects work will be taken place outside of the seasonal closures. There are two	Jason Kaitechuck	10/18/22

Determination	Resource/Issue	Rationale for Determination	Signature	Date
NI	Wildlife: Fish (designated or non-designated)	<p>known golden eagle nests within 1.7 miles of the proposed disturbance, The proposed action would occur outside the nesting periods and there are vast areas adjacent to the project for foraging and nesting therefore surface disturbance up to 10 acres are not expected limit foraging areas or nesting habitat.</p> <p>The project area is within the Price River Basin; this river is a tributary to the Green River, which joins the Colorado River.</p> <p>The Colorado River system is home to several non-designated fish species and four listed under the Endangered Species Act: Bonytail (<i>Gila elegans</i>) - endangered; Colorado pikeminnow (<i>Ptychocheilus lucius</i>) - endangered; humpback chub (<i>Gila cypha</i>) - threatened; and razorback sucker (<i>Xyrauchen texanus</i>) - endangered.</p> <p>Colorado River depletions are monitored under the Colorado River Endangered Fish Recovery Program. As part of their DOGM annual permit report, the Lila Canyon Mine is required to submit a depletion estimate under the Colorado River Endangered Fish Recovery Program.</p> <p>Drilling activities are expected to take up to 10,000 gallons per well. Along with Dust suppression activities on the road, it is estimated that up to 2 ac/ft would be used for the project.</p> <p>Water used for this project will be from a water right, one that was put into use prior to 1988 from the Price Water Improvement District. In 1988 the Upper Colorado River Endangered Fish Recovery Program (UCRRP) was created. In 1993 the UCRRP participants implemented a section 7 agreement, this agreement established the UCRRP and its activities as the reasonable and prudent alternative to avoid jeopardy for the endangered fishes from impacts caused by depletions from the Upper Colorado River Basin. No impacts beyond what was analyzed in the 1993 Section 7 agreement is expected, therefore detailed analysis is not required.</p> <p>All Fish Species: No fish are within or near the project area. Due to the limited surface disturbance and following best management practices outlined in the proposed plan of development the project is not expected to substantially impact downstream populations, therefore detailed analysis is not required. Per GIS mapping of streams and sensitive fish species occurrences, therefore impacts to designated and non-designated fish species is not expected.</p>	Dana Truman	10/19/22
NI	Wildlife: Non-USFWS Designated	<p>There are no UDWR designated crucial habitats for big game within the project area. As shown by DWR monitoring efforts, the wildlife guzzlers and habitat treatments for the big horn sheep have been effective mitigation for the past mining activities. The disturbance will be approximately 10 acres, and the new roads and</p>	Dana Truman	10/18/22

Determination	Resource/Issue	Rationale for Determination	Signature	Date
NI	Wildlife: Threatened, Endangered, Proposed or Candidate	<p>well pads will be reclaimed to BLM Green River Districts Guidelines after suppression of the fire.</p> <p>Suitable or occupied habitat for the following Federally listed species has been previously documented or is expected to occur within Emery County and the project area (IPaC 10/14/2022).</p> <p>(T) Mexican spotted owl (<i>Strix occidentalis lucida</i>) [MSO]– The modeled habitat from 1997, 2000 and Lewis models is present within the project area. Designated critical occurs approximately 1 mile from the closest drill pad. Due to the presence of model habitat and the proximity to critical habitat, BLM completed technical assistance conversations with the USFWS regarding the design features and timing of the action for potential effects to the MSO. After completion of a site visit and a determination of no suitable habitat within 0.5 miles or greater from the proposed disturbance, BLM made a no effect determination. Please see biologist report for more details of the analysis.</p> <p>(E) Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>) [SWFL]– Designated critical habitat greater than 30 miles away. Analysis of elevation and habitat requirements, within the project areas indicates that suitable habitat for the SWFL is not present. Since suitable habitat is not present, this species is unlikely to be present a no effect determination was made, and detailed analysis is not required.</p> <p>(C) Monarch Butterfly – The action will be limited to 10 acres of disturbance and the construction activities will be outside critical times for the Monarch Butterfly reclamation actives are expected to be successful, therefore impacts are not expected, and detailed analysis is not required.</p>	Dana Truman Jason Kaitchuck	10/18/22
	Wildlife: BLM Sensitive Species	Several BLM sensitive species could use the project area for foraging, resting, or nesting. Use of the existing roads has occurring without measurable impacts to wildlife. The springs have been and will be consistently monitored for change in quantity and quality. According to the Approved Resource Management Plan Amendments (BLM 2015) , designated sage-grouse GHMA habitat is approximately 7 miles away. Due to the existing monitoring and response plan and the expected rehab impacts to sensitive wildlife populations or their habitat would not require detailed analysis.	Dana Truman	10/18/22
NI	Woodlands/Forestry	There are merchantable woodland /forestry products within the project area, however due to the size of the proposed sites (approximately 10	Michael Tweddell	10/17/22

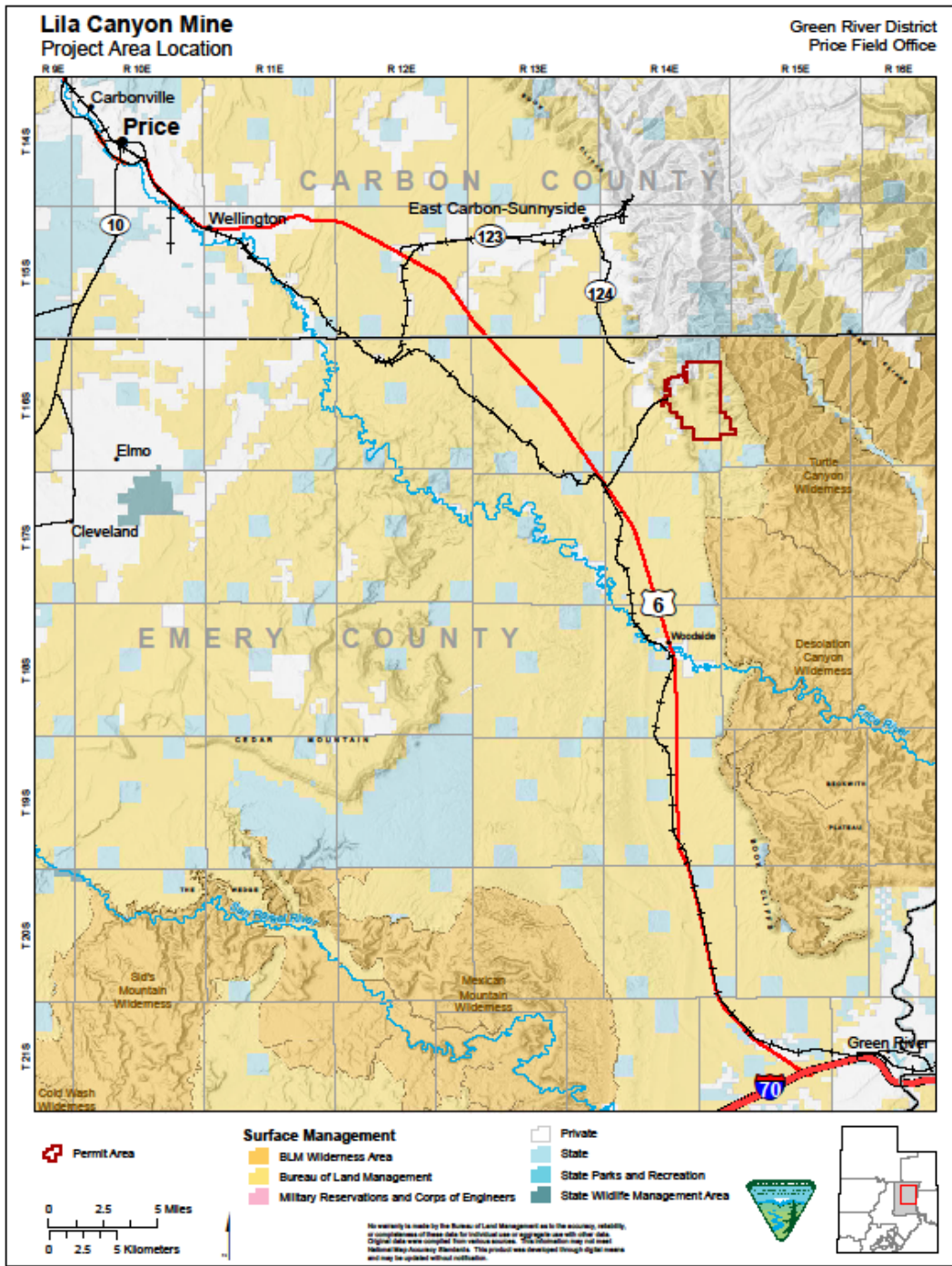
Determination	Resource/Issue	Rationale for Determination	Signature	Date
		acres) there would be negligible impacts to merchantable woodland/forestry products.		

Table Appendix A-2. Final Review

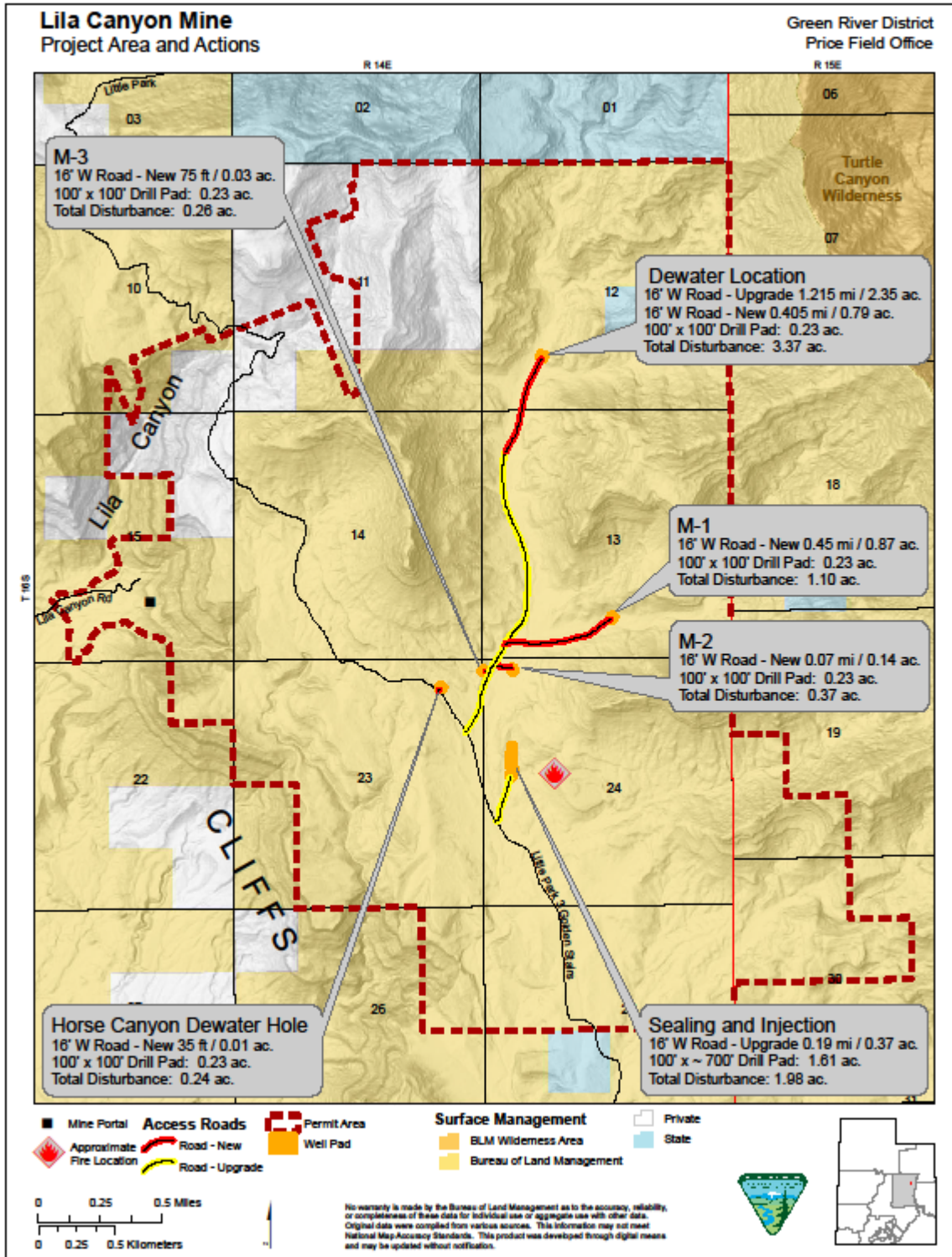
Reviewer Title	Signature
Environmental Coordinator	
Environmental Coordinator	
Authorized Officer	

APPENDIX B. MAPS

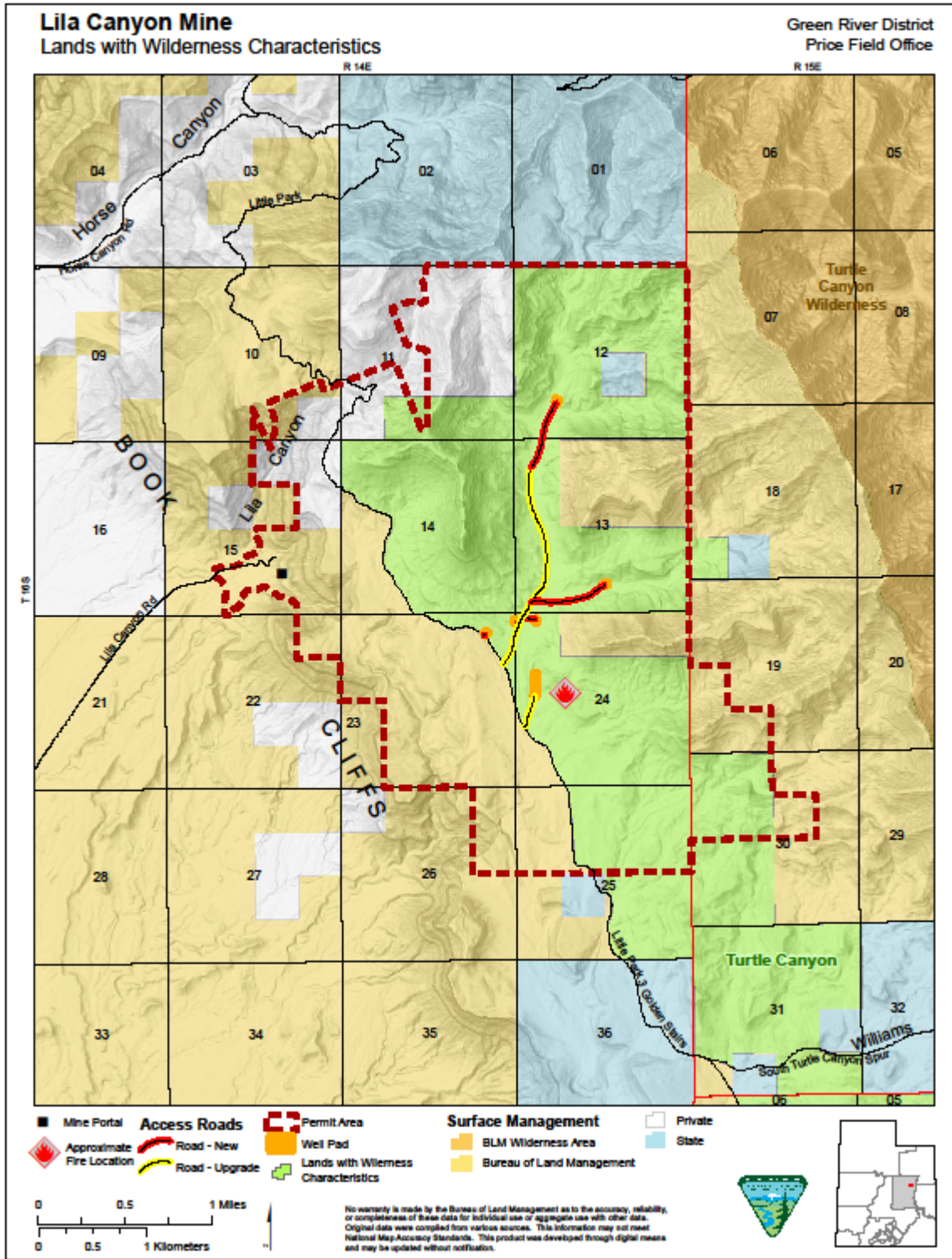
MAP 1. PROJECT AREA LOCATION



MAP 2. PROPOSED ACTIONS



MAP 3. LAND WITH WILDERNESS CHARACTERISTICS



MAP 4. VISUAL RESOURCE MANAGEMENT CLASS

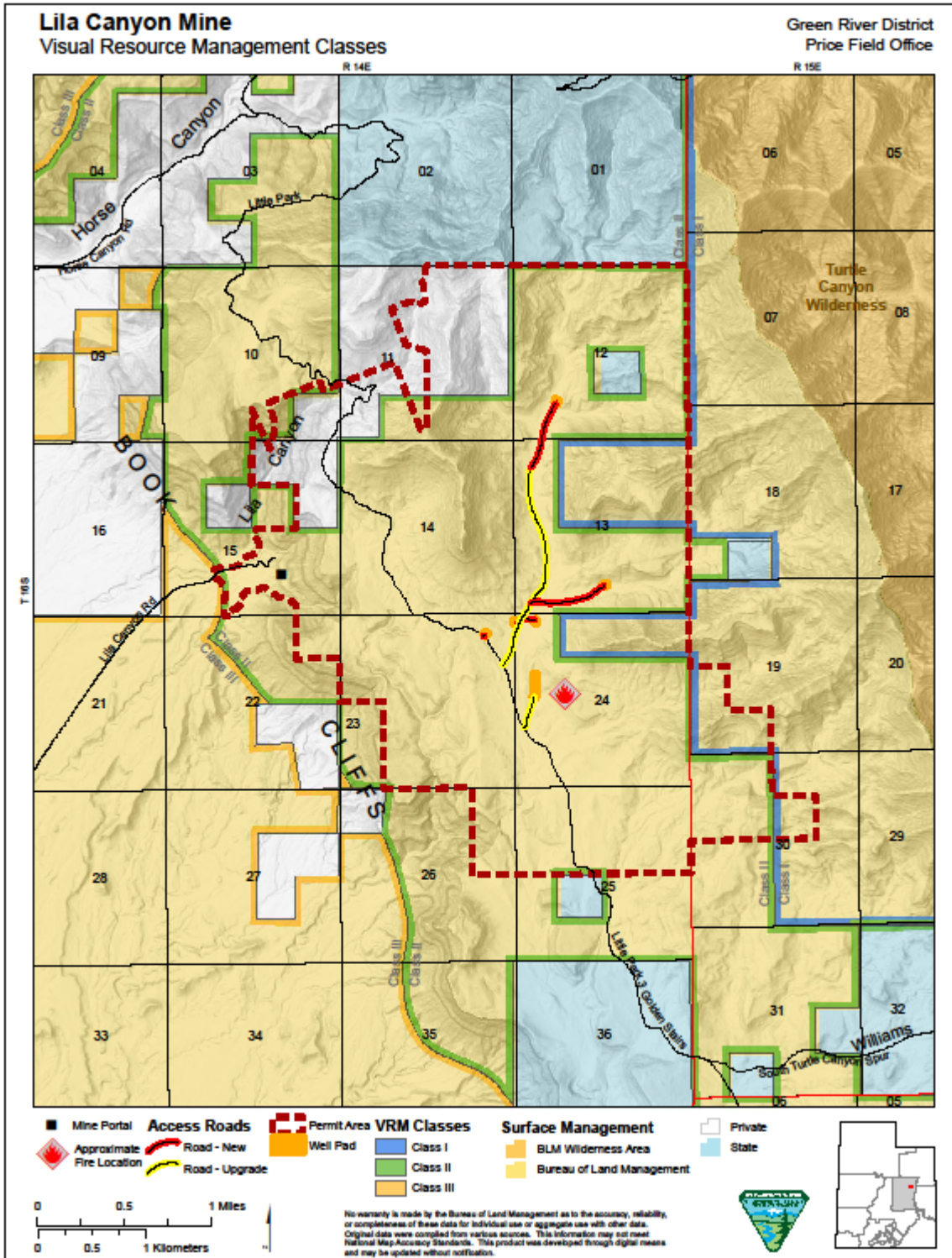


FIGURE 1. CROSS-SECTION

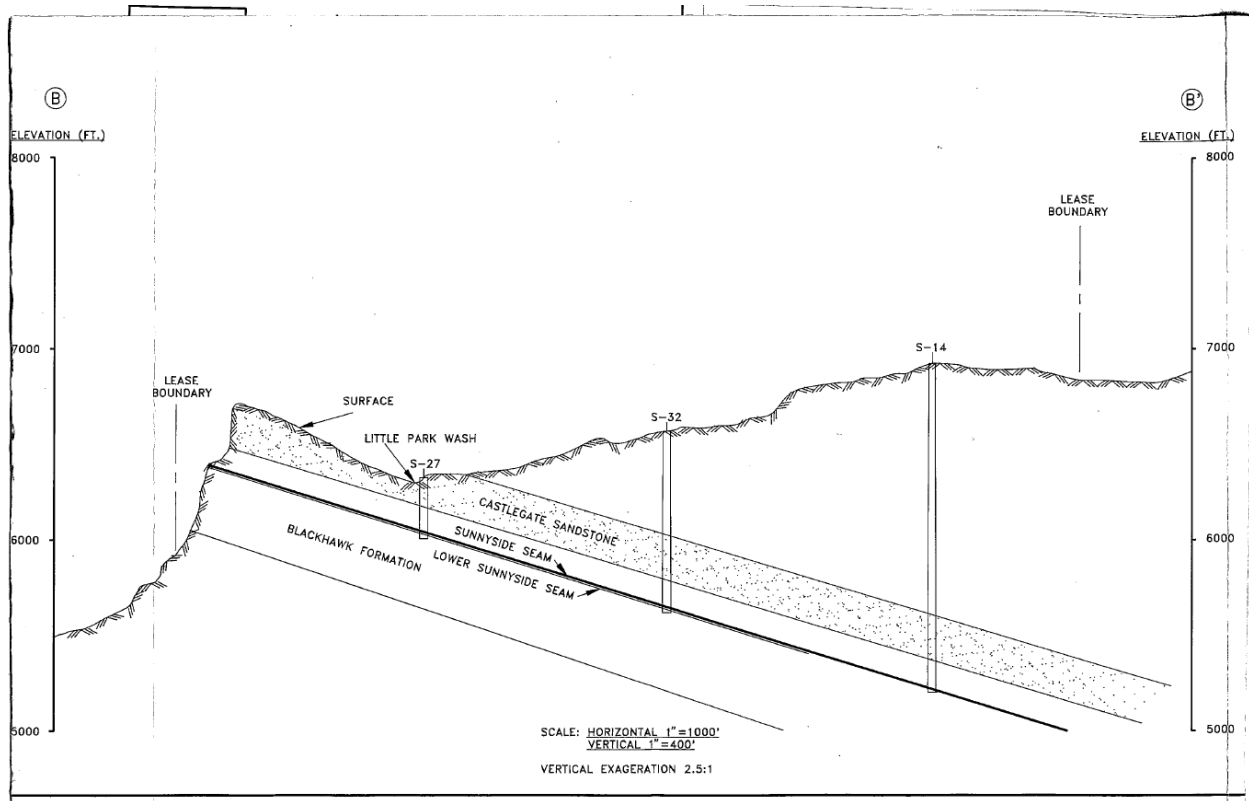


FIGURE 2. GEOLOGY CROSS-SECTION

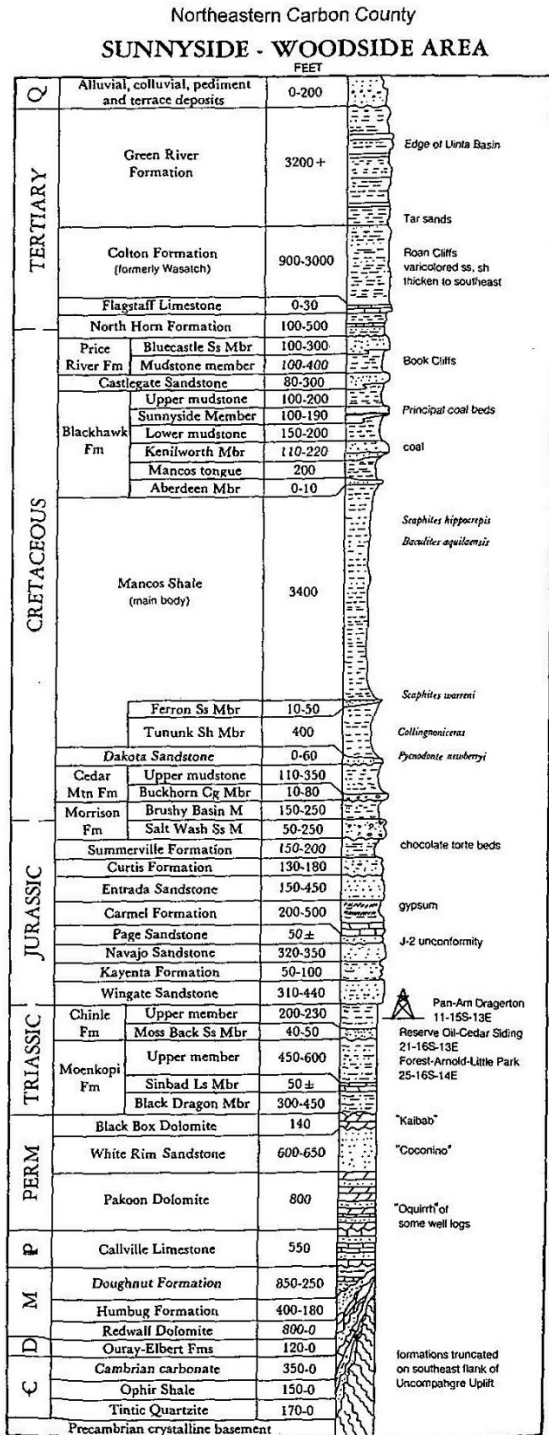


FIGURE 3 1. DIAGRAM OF MINE MAINS

