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Bureau of Land Management

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A1 Lithium Incorporated Mineral Exploration Project

ENVIRONMENTAL ASSESSMENT

DOI-BLM-UT-Y010-2021-0068-EA

Grand County, Utah

Locations:

Mineral Canyon Federal #1-3

Sec. 03 T26S 19E, SE $\frac{1}{4}$ NE $\frac{1}{4}$

Sunburst #1

Sec. 14 T26S R19E, SW $\frac{1}{4}$ SW $\frac{1}{4}$

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CHAPTER 1 INTRODUCTION

Anson Resources Ltd, through its United States subsidiary A1 Lithium Inc. (A1 Lithium), proposes to conduct mineral exploration activities in accordance with the General Mining Law of 1872 and Surface Management Regulations of 43 C.F.R. Subpart 3809.

On March 4, 2021, A1 Lithium submitted a Plan of Operations for Exploration (Plan) to the Bureau of Land Management (BLM) Moab Field Office (MFO) to explore for locatable minerals on its unpatented placer claims located in Grand County, Utah. The BLM accepted this Plan as complete, and it is now being evaluated in this EA.

A1 Lithium is proposing to reopen two previously cored, plugged, and abandoned wells named the Mineral Canyon Federal #1–3 and the Sunburst #1 to test the fluids contained in sedimentary rock sequences located approximately 6,200 feet below the surface for economic quantities of lithium, bromine, and other locatable minerals. Table 1 provides the identifying details on each of the two wells.

Table 1: Identifying details of the existing wells proposed for re-entry.

Well Name	API #	Original Operator	UTM Z12, NAD 83		Public Land Survey System
Mineral Canyon Federal #1-3	430193111 9	Enserch Exploration	604073E	4269985N	Sec. 3 T26S R19E, SE1/4, NE1/4
Sunburst #1	430193035 7	Energy Reserves	604689E	4265978N	Sec14 T26S R19E, SW1/4, SW1/4

The proposed well locations are along State Route 313 in Utah, approximately nine air miles west of the town of Moab, three miles north of Canyonlands National Park, and two miles northwest of Dead Horse Point State Park (Map 1, Appendix B). A project area is defined as the area of land upon which the operator conducts operations, including the area required for construction or maintenance of access routes; this proposed project area would be the drill pad sites and access routes for the Mineral Canyon Federal #1-3 (3.17 acres) well and Sunburst #1 (3.43 acres) well.

The BLM MFO approved three Notice-level lithium exploration proposals in 2017 (UTU-92750), 2018 (UTU-93341), and 2019 (UTU-93817) from A1 Lithium to test for lithium at four well locations within a five-mile radius of the current proposed project area. Two of the exploration actions are completed and in the reclamation stage of their exploration permit to be completed in November 2023; and one exploration action is complete, and the surface is remediated. The current proposal is to determine the economic feasibility of the locatable resources determined to be present by the prior Notice-level exploration activities. The brine contained in one of the clastic intervals of the Paradox Formation appears to be the most viable resource target because it tested with economic amounts of lithium from rocks with higher formation pressures that promote natural flow. The assays for the minerals sampled from this clastic interval of interest are shown in Table 2.

Table 2: Assays for Clastic Interval 31 from A1 Lithium Notice-level exploration, Grand Co.

Hole ID	UTU	Lithium (ppm)	Bromine (ppm)	Boron (ppm)	I (ppm)
Gold Bar Unit 2	92750	21	680	8.3	NA
Skyline Unit 1	93817	193.5	4427	163.8	NA
Long Canyon Unit 2	93817	253	2282	189	NA

Currently, there are no other related mining operations proposed from A1 Lithium to the BLM MFO. If economic quantities of the proposed target locatable minerals are found present within the brines sampled from Mineral Canyon Federal #1-3 and Sunburst #1, A1 Lithium may submit a Plan of Operations to the BLM for development and production (mining) of the target locatable minerals. In the event of a Plan of Operations submission, a site-specific NEPA analyses on the mining operations in the proposal would occur.

On September 28, 2022, a Decision Record for the A1 Lithium Incorporated Mineral Exploration Project was signed and the MFO posted the EA and Decision Record for public review on September 28, 2022. On December 22, 2022, Southern Utah Wilderness Alliance (SUWA) submitted a request for State Director Review, stating that the decision to approve the project violated the National Environmental Policy Act (NEPA) because BLM failed to consider a range of reasonable alternatives and failed to take a hard look at cumulative impacts to water quantity. On April 12, 2023, the State Director remanded the EA back to the MFO to complete additional NEPA analysis and address SUWA's concerns. The EA is updated with additional analysis at Sections 2.2, 2.3, 3.2, 3.5, and 3.6.

1.1 Purpose and Need

The purpose is to respond to A1 Lithium's proposed action to explore for economically viable mineral deposits and to verify that the proposed action complies with the terms and conditions of 43 C.F.R. Part 3809.

The need is established by the BLM's responsibilities under the General Mining Act of 1872, 43 C.F.R. Part 3809, and the Federal Land Policy Management Act (FLPMA) as amended (1976). FLPMA recognizes mineral exploration and production of mineral resources as a "principal" land use within the BLM's multiple-use mandate 43 USC § 1702(I). Multiple use is defined as the "management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people . . ." 43 USC § 1702(c).

1.1.1 Decision to be Made

The BLM will decide whether to authorize the proposed action to reenter wellbores and explore for locatable minerals, including the conditions of approval specific to the proposal and to the Moab Field Office as defined in the EA at Section 2.2.7.

1.2 Conformance with BLM Land Use Plan

The Proposed Action and alternative(s) are in conformance with the 2008 Moab Field Office Record of Decision and Approved Resource Management Plan (RMP), as amended (BLM, 2008). Specifically, the Proposed Action is provided for in the following sections of the 2008 Moab RMP:

Minerals (MIN):

MIN-7. Locatable Minerals: Operations on BLM-administered lands open to mineral entry must be conducted in compliance with BLM's surface management regulations (43 C.F.R. 3715, 3802, 3809, and 3814). BLM surface management regulations do not apply to operations on other Federal lands but do apply to split-estate lands (page 74).

MIN-9. Locatable Minerals: To the extent possible, the stipulations developed for oil and gas leasing are applicable to all mineral activities (leasable, locatable, and salable). These stipulations are found in Appendix A [of the 2008 Moab RMP]. Leasable minerals include oil and gas, coal, and potash. Locatable minerals include gold, copper, and uranium. Salable minerals include sand and gravel, clay, and building stone (page 74).

MIN-17. Locatable Minerals: A no surface occupancy stipulation cannot be applied to locatable minerals with a withdrawal. All public lands overlaying Federal minerals are open to mining claim location unless specifically withdrawn from mineral entry by Secretarial order or by a public land law. Therefore, other than the existing withdrawals (Three Rivers, Westwater, and Black Ridge Wilderness), all public lands within the MPA remain open under the mining laws. Future withdrawals may be recommended in areas identified as closed or with a no surface occupancy stipulation if it becomes necessary to prevent unacceptable resource impacts (page 76).

1.3 Relationship to Statutes, Regulations, or other Plans

The following laws, regulations are directly related to the Proposed Action:

- Federal Lands Policy Management Act (FLPMA) (1976) – establishes the agency's multiple-use and sustained-yield mandate to manage the lands and various resource values, including minerals.
- General Mining Law of 1872 – authorizes the mining of mineral resources on public lands.
- Mining and Minerals Policy Act of 1970 – declares it is the continuing policy of the Federal Government to foster the development of domestic mineral resources.

1.4 Scoping and Issues

Identification of issues and alternatives were accomplished through internal BLM resource specialist review. On July 12, 2021, the Moab Field Office Interdisciplinary Team (IDT) met with the applicant onsite at the two proposed wellsite locations to discuss potential resource impacts. The conclusions from this meeting and subsequent discussions are presented in the IDT Checklist in Appendix A. The IDT Checklist provides a rationale for issues that were considered but not analyzed further.

The IDT developed issues for analysis based on resources determined to be present and potentially impacted by the alternatives. The issues carried forward for detailed analysis in Chapter 3 are presented in Table 3.

Table 3: Issues Analyzed in Detail.

Issue #	Resources	Issue Statement
Issue 1	Visual and Auditory Resources	<p>How would activities that are associated with well re-entry and brine fluid sampling (access route construction and drilling operations) impact visual resources?</p> <p>How would well re-entry and brine fluid sampling impact the sound scape of Horsethief Campground?</p> <p>How would well re-entry and brine fluid sampling impact the dark night skies?</p>
Issue 2	Recreation Resources	<p>How would activities that are associated with well re-entry and brine fluid sampling (access route construction and drilling operations) impact recreational activities, such as mountain biking, scenic driving, and camping, in and around the project area?</p>
Issue 3	Geology/Minerals/Energy Production	<p>How would activities that are associated with well re-entry and brine fluid sampling (access route construction and drilling operations) impact the geological, mineral and energy resources in the area?</p>
Issue 4	Water Quality and Quantity	<p>How would activities that are associated with well re-entry and brine fluid sampling (access route construction and drilling operations) impact the quality of the water resources, including aquifers, surface water and ground water?</p> <p>How would site construction impact the surface water runoff?</p>

CHAPTER 2 ALTERNATIVES

2.1 Alternative A – No Action Alternative

The No Action alternative is to reject the applicant’s application to re-enter abandoned wellbores to explore for lithium, bromine, and other locatable minerals. The IDT Checklist provides a rationale for issues that were considered but not analyzed further.

2.2 Alternative B – Proposed Action

Under the Proposed Action, the BLM would approve A1 Lithium’s Plan to conduct mineral exploration by re-entering two previously cored, plugged, and abandoned oil and gas wells to test brines for economic quantities of lithium, bromine, and other potential economic locatable minerals in its unpatented placer mining claims. The proposed wells for exploration are Mineral Canyon Federal #1-3 and Sunburst #1, located off State Route 313 in Grand County, Utah. The proposed timeline would not exceed 24 months for all phases of operation, including:

- Access route improvement and drill pad development – maximum ten days per site.
- Drilling operations – maximum twenty days per site.
- Brine sampling – immediately after drilling and up to 24 months.
- Hole abandonment and reclamation – maximum 42 days per site.

A1 Lithium would not test intervals where oil and gas or potash resources are previously leased without entering into an agreement with the existing lessee. The Multiple Mineral Development Act of 1954 provides, “Where the same lands are being utilized for mining operations and Leasing Act operations, each of such operations shall be conducted, so far as reasonably practicable, in a manner compatible with such multiple use...mining operations shall be so conducted as not to endanger or materially interfere with any existing surface or underground improvements, workings, or facilities which may have been made for the purpose of Leasing Act operations.” 30 USC Part 526.

2.2.1 Access

The proposed access routes to the Mineral Canyon Federal #1-3 and Sunburst #1 would follow previously used access routes built during the original well operations. These routes would be reconstructed in short sections and widened to a width of 14 feet to allow for the passage of equipment and vehicles. Improvements would include grading, contouring and minor cuts and fills. Access routes would remain dirt. Significant cuts/fills are not anticipated with the construction and improvements needed for either access route. Mineral Canyon Federal #1-3 would utilize a previously created and used access route that is approximately 1,040-foot-long that connects the drill pad to the maintained Mineral Canyon Road (BLM 129). Five turnouts would be constructed on the access route to Mineral Canyon Federal to allow for equipment to pass safely; each turnout would be approximately 0.1 acres in size. Sunburst #1 would utilize a previously created and used 520-foot-long access route that connects to an unmaintained designated road. These two routes were chosen because they were the original routes utilized in past drilling operations and would require the least amount of disturbance.

Two ephemeral drainages would be crossed by the proposed project features and both channels were dry at the time of the biological survey. If any construction occurs within a channel

demonstrating an ordinary high-water mark, consultation with the Army Corp of Engineers would take place.

Turnouts would be in areas of least visual and vegetative disturbance to mitigate potential impacts. Access route construction would not be conducted during wet conditions when soils are saturated. Dust abatement would be used along the access routes

Access route improvement equipment may include:

- Caterpillar® D8 with 14-foot blade or similar sized bulldozer.
- Caterpillar® 140G Road Grader or similar sized equipment.
- Backhoe or small excavator.
- Hydraulic rock breaker.
- Dump truck for hauling fill dirt.
- Water truck for periodic dust control.

Access routes would be signed as 'Open to Authorized Use Only' and would not be open to the public. Access routes would not be added to the Travel Plan.

2.2.2 Drill Pads

The re-entering of abandoned oil and gas wells would require the construction of a level ground surface drill pad and installation of equipment used in the operation, followed by the temporary occupancy of a drill rig for up to 20 days. The reclaimed original drill pads for the Mineral Canyon Federal #1-3 and Sunburst #1 wells would be re-constructed by grading and leveling the site to a size of 375 feet x 350 feet (3.0 acres), building berms along the edges of the pad for containment of operations and for storm water diversion around the site, and digging a reserve pit 20 feet x 80 feet in size (see Figure 1, below). If water is encountered during construction of a pit, construction would cease, and A1 Lithium would immediately contact the BLM.

The proposed well pad locations are previous disturbances from oil and gas wells where varying amounts of reclamation took place. Vegetation removal and/or ground disturbance would be limited to the minimum amount necessary to create a safe and effective surface for drilling and sampling activities. Biological soil crust development in the proposed drill pad sites is minimal because it has not established in these areas of reclamation. The Sunburst #1 location is on a Begay-Sazi complex soil that is very sandy in character. The Mineral Canyon Federal #1-3 site is located on a closed road and the surface is rocky and sandy with a Rizno-Rock outcrop complex soil type. While surface disturbance would occur, neither location would result in significant impacts to biological soil crust.

Drill Pad Construction

Drill pads would be constructed by contractors hired by A1 Lithium. Quality assurance for the construction phase would be the responsibility of the construction contractor completing pad development. Drill pad preparation activities would include clearing, earthwork, drainage, and other improvements necessary for safe operations. Each drill pad would be prepared to create a level pad for the drill rig and support equipment.

Clearing activities would include removal of topsoil, organic material, stumps, brush, and slash. Topsoil would be stored separately to avoid mixing with other organic materials during construction, storage, and reclamation. Stockpiles would be located so that wind and water erosion would be minimized, and reclamation potential maximized.

The drill pads are in areas that have very little topographic relief, with surfaces sloping to the west at a rate of 2.0-4.0 degrees per 1000 feet; therefore, surface run-on/run-off would not be anticipated to cause ruts or rills as a result of water flowing fast from high angles. If surface water does accumulate after a rainfall, small berms constructed on the uphill side of the drill pad would direct flow around the drill pad. A small sump at the downgradient end of the diversion ditch would collect any run-off and dissipate the velocity of flow prior to entering undisturbed ground.

A reserve pit would be constructed on each drill pad for the containment of materials extracted from the drill hole during operations. Reserve pits would be placed in an area of the drill pad that avoids shallow groundwater. Reserve pits would be fenced and lined with impermeable liners to prevent groundwater and soil contamination.

Equipment on-site the drill pad would be a valve tree, mud tanks and pumps, water tanks, drilling rig, doghouse/staging area, hydrogen sulfide (H₂S) monitors, pipe tubs/racks and solids control units.

Figure 1: Layout of A1 Lithium Drill Pad.



2.2.3 Exploration Operations

A1 Lithium would contract a petroleum drill rig to re-enter the two abandoned wells, one at a time. The drilling operations are anticipated to take a maximum of twenty days per site and A1 Lithium personnel would be onsite during at all times during drilling. Exploration operations would involve drilling out the cement plugs and any abandonment equipment in the hole down to the predicted depth of the targeted clastic brine zones. Surface casing would be cemented back to the surface and is subject to BLM inspection and verification. Five and one-half inch thick casing would be installed from the surface of the well to its total depth. If the primary cement job does not circulate back to surface, remedial cementing will be required. The integrity of the well bore would also be tested during these exploration operations.

The drilling rig would have a 10,000 pounds per square inch (psi) blow-out prevention, H₂S monitors and breathing apparatus rigged up and operational while re-entering the well bore. A pit volume totalizer system would be used to monitor mud for losses and/or gains.

It is anticipated that there will be little to no evaporation of volatile organic compounds (VOC) and hazardous air pollutants (HAPS) from waste in reserve pits. The Proposed Action is to re-enter a plugged and abandoned well that is cased, so the drill waste in the reserve pits will mostly be from the concrete plugs, debris in the hole, and drilling mud that contains water. Water and brine released from the formation during testing would be collected in containers, with any excess going to the reserve pit. These waters released from the rock formations could contain low levels of VOCs and HAPs, but the plan is to collect this fluid and test it for lithium and other minerals. No oil or gas would be produced during this operation as required by the Multiple Mineral Development Act of 1954.

Well Testing

The primary targets in the well re-entries are five clastic beds in the Paradox Formation that have been identified by A1 Lithium as containing lithium-rich brine fluids. Brine horizons would be perforated for sampling following hole cleanout and casing operations. Fluid samples would be collected at each well in IBC containers from these five clastic beds. Sample sizes collected would depend on the fluid flow rates from each of the target intervals. The proposed samples from this interval would range in size between 1,000 and 3,000 liters. Clastic Beds with lower formation pressures may have lower fluid flow rates and samples are predicted to range in size from 300-400 liters. From these bulk samples, smaller samples would be extracted (approximately 1-liter in size) and dispatched to a certified laboratory for analysis. While bulk samples are being collected, flow rates, temperatures and brine weight would also be tested.

Sampling of brine fluids would first occur when the drill rig is onsite. In the event further sampling is needed, a valve tree would be installed to allow for additional sampling and testing once the drill rig is off-site. The valve tree is an assembly that regulates the flow in the well and is constructed of valves, casing spools, and fittings. The valve tree, along with all other facilities on site, would be painted to match the natural landscape and to comply with the BLM Gold Book. The BLM MFO would be notified of any activities on site after the rig is released and if additional sampling is needed.

2.2.4 Water

A petroleum drill rig would be used to re-enter the abandoned wells and is therefore subject to the applicable Federal and State drilling and operating requirements to protect surface and subsurface waters in all stages of the project.

Drilling operations must protect potable and semi-saline subsurface waters by following federal and state regulations. The proposed drilling and casing methods are in accordance with BLM Onshore Oil and Gas Operations at 43 C.F.R. Part 3160 for well control and casing and cement, federal regulations at 43 C.F.R. § 3594.5(a) and (b) and 43 C.F.R. § 3593.1, and with the Utah Division of Oil Gas and Mining Rule R649-3: Drilling and Operating Practices, Section R649-3-8 - Casing Program. The required casing program is specifically designed to protect groundwaters.

Water associated with the drilling operations would be managed by using tanks and pits shown on the drill site layouts for each hole (see Figure 1 above in Section 2.2.2). Water used in the operations would be purchased from a contractor who purchases water from Grand Water and Sewer Service Agency. The contractor has a metered hydrant and metered water trucks and are charged monthly on water used based on the meter readings. The contractor would haul in two truckloads of water to the site for the re-entry of each abandoned oil well; approximately 200 barrels would be held in reserve tanks on the drill pad. Fluids generated during drilling would be contained in closed tanks on site and removed by truck transport for disposal off-site

The water stored in the tanks would be used for drilling operations and to control the consistency and weight of the drilling mud fluids used in the drill hole during these operations. The drilling muds are composed of water, bentonite clay and barite for viscosity and weight, and emulsifiers and detergents for lubricity; drilling muds are used to move rock cuttings and debris out of the bore hole and provide a physical and chemical barrier between the borehole and the rocks in the formation.

As part of the water management plan, temporary diversion structures and sumps at the drill locations would be used to control storm waters at each drill pad site by redirecting surface water flow around the drill pad site. Diversion structures like berms and trenches stop surface waters from running through the drill pad site and prevent soil erosion or operational fluids from leaving the site. A small sump would be placed at the downgradient end of the diversion ditch to reduce the velocity of flow prior to entering undisturbed ground downgradient of the drill pad site and to collect and detain any run-off for cleanup-up.

2.2.5 Reclamation

The objective of the reclamation plan is to create a stable configuration of soils in disturbed areas to minimize erosion potential and to provide an environment for the establishment of a self-sustaining vegetation community. When sampling and exploration is completed, A1 Lithium would contact the BLM in writing with the submittal of Form 3160-5 to plug and abandon the wells, following the recommendations and procedures set forward by the BLM. A workover rig would be brought on site to plug and abandoned the wells. Well abandonment would be done one well at a time.

Over the course of the project, interim reclamation would take place by reclaiming all portions of the well site not needed for testing operations. Sufficient level area would remain for setup of a workover rig and to park equipment. The portion of the cleared drill pad not needed for operational safety purposes would be recontoured to a final or intermediate contour that blends with the surrounding topography as much as possible.

Upon completion of the project, all structures would be removed from the drill pads. The fenced and lined reserve pits would have their liners folded inside the pit and backfilled.

Drill pads would be regraded to blend with the adjacent topography, and to prevent future erosion and foster revegetation of the native plant community. Access routes would be closed and regraded to establish a stable configuration and reclaimed back to pre-existing conditions. Berms and turnouts would be completely removed and reclaimed. Plant medium, including organic matter, brush, rocks, and shrub/tree debris, taken during grading activities would be used as windthrow on disturbed areas to promote regeneration and foster environments for successful seeding. Disturbed areas would be reseeded with an approved native seed mix to promote the growth of native vegetation.

Minimal pinyon and juniper trees would be impacted from the use of the proposed access roads and drill pad sites. The Sunburst #1 location is completely covered with grasses and does not have pinyon or juniper trees on site; and no trees would be removed for access routes. The Mineral Canyon Federal #1-3 has no pinyon trees in the proposed drill pad site and 12 juniper trees around the perimeter of the pad site and along the access that would be avoided as practicable and may be removed. The center of the proposed pad site is clear of all trees. A1 Lithium would commit to the least amount of disturbance necessary to reopen the roads.

Reclamation procedures imposed by the Moab Field Office use native and drought tolerant plant species. These seeds are often obtained from local sources, and include soil preparation methods for a hot, dry and windy environment. Seeding would be accomplished by hand or by drilling on the contour whenever practical or by other approved methods, such as dozer track walking to create microsites that promote establishment. Repeat seeding or planting may be required until revegetation is successful, as determined by the BLM authorizing officer. Regular monitoring of revegetated and reclaimed areas would be conducted with regular maintenance or reseeding as needed.

The BLM understands that climate change could impact reclamation of an exploration drill site due to aridification. According to NOAA's Climate Prediction Center, Eastern Utah, including Grand County, is in an extreme drought (US Drought Monitor Center, <https://droughtmonitor.unl.edu/>). During the drought period, A1 Lithium completed one exploration notice through successful reclamation and bond release, showing that reclamation for these types of exploration projects can be completed to BLM 3809 requirements (BLM, 2012b). A1 Lithium currently has one exploration notice at the end of the reclamation phase, and one exploration notice at the beginning of the reclamation phase. The reclamation for these projects is monitored by the BLM and Utah's Department of Natural Resources Division of Oil Gas and Mining (UDOGM). The BLM must approve the final state of reclamation before the operator is released from reclamation responsibilities.

2.2.6 Summary of Surface Disturbance

Total surface disturbance from the project would amount to approximately 6.6 acres for the Mineral Canyon Federal #1-3 and Sunburst #1. Table 4 shows the amount of surface disturbance area in detail. Surface disturbance activities would include clearing and leveling a 3-acre drill pad area for operations. Improvements to access routes would include approximately 0.6 acres of surface disturbance to recontour and widen the route for safe passage of vehicles and equipment.

Table 4: Proposed surface disturbance in project area.

Well Name	Route Length (feet)	Route Area (acres)	Number of Turnouts	Turnout Area (acres)	Pad area (acres)	Total Disturbance (acres)
Mineral Canyon Federal #1-3	524.7	0.17	0	0.0	3.0	3.17
Sunburst #1	1040.8	0.33	5	0.10	3.0	3.43
Total	1565.5	0.50	5	0.10	6.0	6.6

2.2.7 Design Features and Conditions of Approval

Design features apply to each well being proposed. Design features, which would become Conditions of Approval (COAs) on an approved permit, were discussed during internal scoping and taken from the A1 Lithium Revised Plan of Operations (Millcreek Mining Group, 2021), the 2016 Moab Field Office Record of Decision and Approved Master Leasing Plan (2016 MLP), 2008 Moab RMP, BLM Onshore Oil and Gas Operations 43 C.F.R. Part 3160, and The Gold Book (BLM, 2007).

The BLM responsibilities for the inspection and enforcement requirements for design features of exploration operations are outlined in 43 C.F.R. § 3809.600 through 3809.605. The BLM is required to inspect the exploration operations, including all equipment and workings located in the project area. During reclamation activities the operator is responsible for monitoring and, if necessary, protecting the reclaimed landscape to help ensure reclamation success until the liability and bond are released.

Noise levels would be kept to 120 decibels or lower. Dust abatement would be used along the access routes when appropriate to further protect the visual and recreational resources.

Should a need arise to change or modify the drilling or sampling plans submitted, A1 Lithium would contact the MFO to discuss and coordinate a plan for modifications.

A1 Lithium would avoid creating soil conditions that promote weed germination and establishment. All equipment, including on-road and off-road equipment, shall be cleaned to remove weed seed and soil (that may contain weed seed) prior to commencing operations on public lands within the project area. The operator and contractor shall monitor disturbed areas in the project area for project-related establishment and spread of noxious and invasive weeds.

Minimum Air Pollution Controls for Drilling Rig Operations:

- Tier II or better drilling engines.
- Stationary internal combustion engine standard of 2g NO_x/bhp-hr. for engines <300 HP and 1g NO_x/bhp-hr. for engines >300HP.
- Low bleed or no bleed pneumatic pump valves.
- Dehydrator Volatile Organic Compound (VOC) emission controls to >95 percent efficiency.
- Tank VOC emission controls to >95 percent efficiency.

The following Drilling Operation Best Management Practices (BMPs) would be COAs and applied to minimize long-term disruption of the surface resources and existing uses, and to promote successful reclamation.

- Proposed casing and cementing programs shall be conducted as approved to protect and/or isolate all usable water zones. All isolating medium other than cement shall receive approval prior to use.
- Casing setting depths shall be calculated to position the casing seat opposite a competent formation based on relevant factors, including the presence/absence of hydrocarbons; fracture gradients; usable water zones; formation pressures; lost circulation zones; other minerals; or unusual characteristics.
- All indications of usable water will be reported to the BLM MFO Authorized Officer.
- Surface casing would be set at a minimum depth of 50 feet below the deepest usable source drinking water.
- All formations bearing usable quality water would be protected by employing casing and cement.
- Run cement bond logs to verify the effectiveness of the casing cement job to ensure the protection of usable water bearing zones. When needed, or as directed by the Authorized Officer, the operator shall conduct reasonable tests and/or surveys, which would demonstrate the mechanical integrity of the down hole equipment.
- Any cement plug that is the only isolating medium for a usable water interval shall be tested by tagging with the drill string. Any plugs placed where the fluid level does not remain static would also be tested.
- At a minimum, the operator and the BLM would adhere to BLM Instruction Memorandum 2010-055 regarding the Protection of Groundwater in Association with Oil and Gas Leasing, Exploration, and Development. Areas identified with shallow unconfined aquifers and potential unconsolidated aquifers would require additional mitigation that may include closed loop drilling, no surface pits, offsite location of production storage facilities; a spill prevention, control and countermeasure plan (as specified by the Environmental Protection Agency [EPA]);

and a storm water management plan. A water monitoring plan may be required to ensure the effectiveness of mitigation to protect water resources.

- Disposal or use of water produced from Federal wells must be approved by the BLM before such operations begin, even if the operator has approval from the surface management agency. In cases of water disposal into pits or other impoundments, the structures must conform to approved construction requirements in accordance with BLM 43 C.F.R. Part 3160, BLM Onshore Order No. 7, BLM Manual 9172, and applicable State agency requirements.
- Pits, water impoundments, and surface discharges that present a potential hazard to humans, livestock, wildlife, and other resources should be subject to appropriate mitigation, such as fencing, netting, caging, or covers, as appropriate. Refer to the BLM Gold Book (BLM, 2007) for enclosure fence construction standards.
- Any materials removed from the drill holes during drilling operations would be collected in the reserve pit for each drill hole.
- Disposal or emergency pits would be in cut material rather than fill material.
- All chemicals and hydrocarbon products (including used oil) shall be contained and controlled in accordance with the Spill Prevention Control and Countermeasure Plan pursuant to 40 C.F.R. Part 112.
- A spill contingency plan includes appropriate containers and secondary containment for tanks and smaller containers, such as drums and barrels of fuels and lubricants required for drilling, in accordance with all applicable environmental and safety regulations.
- Spill response materials (absorbents, drums) would be used to contain spills at the source, prevent a release to the environment, and complete the required clean-up. All hazardous constituents would be stored in approved containers and volumes and all safety protocols would be followed. All fuels/lubricants would be properly disposed and/or recycled according to specific product direction.
- All operators shall comply with applicable Federal and state standards for the disposal and treatment of solid wastes, including regulations issued pursuant to the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act (42 USC Part 6901 et seq.).
- All garbage, refuse or waste shall either be removed from the affected lands or disposed of or treated to minimize, so far as is practicable, its impact on the lands. Any chemical/fluid/oil/grease accidental spills from equipment, should be cleaned up, collected, and taken to a proper disposal site or landfill. Waste from portable sanitation facilities shall be properly disposed of at an approved facility.

The following safety practices would be followed throughout the project:

- Hydrogen sulfide (H₂S) monitors and operational breathing apparatuses would be ready onsite while re-entering the old well.

- Signs would be posted at access points prohibiting unauthorized personnel from entering the well sites. Unauthorized personnel would not be allowed on the rig floor, and all information would be kept confidential.
- No smoking would be permitted on the pits or rig floor. Smoking areas would be provided at a predetermined location.
- Safety meetings would be held on a regular basis to discuss upcoming operations and procedures.
- Re-entry would utilize blowout prevention procedures.
- Quality assurance and control would be implemented by A1 Lithium personnel and reported to the MFO Authorized Officer.

Additional Required Design Features:

If fossil material is encountered in the area during operations, A1 Lithium would cease activity at that location and notify the MFO.

All phases of the Proposed Action would adhere to stipulations put in place by the 2008 Moab RMP to protect wildlife, including migratory birds. If drilling were to occur during owl breeding season, an owl survey would be done prior to commencing any activities.

Project construction that removes vegetation that supports nesting structure for migratory birds would be avoided from April 1 to July 31 to ensure nesting migratory birds with not be disturbed.

A temporary snow fence would be placed along the southern edge of Mineral Canyon Federal # 1-3 pad for cultural resource protection of resources just below the ledge. The snow fence would be removed at the end of the project period. All persons who are associated with mineral operations would be informed of the temporary fencing that they would be subject to prosecution for knowingly disturbing archaeological sites or collecting artifacts.

If any previously unidentified cultural resources or human remains are discovered as a result of mineral operations, activity in the vicinity of the discovery would cease and would be immediately reported to the BLM MFO Authorized Office. Work may not resume at that location until approved by the BLM Authorized Officer.

All vehicular traffic, personnel and equipment movement, and construction activities would be confined to the locations surveyed for cultural and paleontological resources, or to the existing roadways and/or inventoried access routes. Access routes would be signed as authorized use only and would not be open to the public.

2.3 Alternatives Considered but Eliminated

An EA is a site-specific analysis of potential impacts that could result with the implementation of a Proposed Action or alternatives to the Proposed Action. The operator's complete Plan of Operations for Exploration constitutes the Proposed Action. The "No Action" alternative (i.e., not approving the Plan) is fully analyzed as an alternative. This alternative does not mean no mining indefinitely, but that this particular Exploration Plan would not be approved. There are three

possible courses of action that the BLM may take when issuing its decision on a Plan of Operations for Exploration (see 43 C.F.R. § 3809.411(d)). The BLM may decide to:

- Approve the complete Plan as submitted.
- Approve the Plan subject to certain conditions (i.e., COAs) imposed to ensure the operation complies with the 43 C.F.R. § 3809.420 to meet the performance standards in 43 C.F.R. § 3809.415 and does not result in unnecessary or undue degradation (UUD).
- Disapprove or withhold approval of the Plan.

If the BLM determines that mitigation is necessary to prevent UUD, the proposed Plan of Operations for Exploration, with any BLM-added mitigation measures and/or COAs needed to prevent UUD, is usually analyzed as a separate alternative and normally constitutes the preferred alternative. For this EA, the applicant committed Design Features in the Proposed Action were analyzed as sufficient to prevent UUD along with the additional Conditions of Approval (COA) in Section 2.2.7. Mitigation in the form of COAs in the Decision Record (DR) or Record of Decision (ROD) can be applied to prevent UUD, thus making the Plan approvable.

In addition, the Moab MLP (BLM, 2016) analyzed the effects of an oil and gas drilling rig to the environment, for both exploration activities and production activities, and established a set of Best Management Practices (BMPs) that are state-of-the-art mitigation measures applied on a site-specific basis to reduce, prevent, or avoid adverse environmental or social impacts. BMPs are applied to management actions to aid in achieving desired outcomes for safe, environmentally sound, resource development by preventing, minimizing, or mitigating adverse impacts and reducing conflicts. To the extent possible, the BMPs developed for oil and gas leasing are applicable to all mineral activities (leasable, locatable, and salable) in the Moab RMP area (BLM, 2008). BMPs are applied in this EA as COAs in Chapter 2, Section 2.2.7.

The following alternatives were considered as mitigation measures but eliminated:

1. The alternative of building new access routes to the drill pads instead of improving the existing access routes was considered but eliminated because the access routes proposed for use already exist and would require less disturbance to refurbish into a working condition than to build new routes on previously undisturbed surfaces.
2. The Southern Utah Wilderness Alliance, National Parks Conservation Association, and Utah Chapter of the Sierra Club (collectively, SUWA) proposed two alternatives in their comments provided through the NEPA Register during the public comment period for this EA, as follows:
 - a. The alternative of limiting the exploration activities and allowing A1 Lithium to conduct the proposed well pad construction and minerals exploration activities at the Mineral Canyon Federal #1-3 site but not at the Sunburst #1 site.
 - b. The alternative of phased development starting with the Mineral Canyon Federal #1-3 well and only allowing exploration activities at the Sunburst #1 site if the lithium tested from the Mineral Canyon Federal #1-3 is in economic quantities.

The proposed alternatives from SUWA were evaluated but eliminated because they are ineffective as a response to the proposed Plan that would have COAs imposed to ensure the operation complies with the regulation at 43 C.F.R. § 3809.420 to meet the performance

standards in 43 C.F.R. § 3809.415; and the proposed alternatives would have substantially similar effects as the preferred alternative (i.e., Proposed Action) in fulfilling the BLM's statutory responsibilities outlined in the purpose and need in Section 1.1 (40 C.F.R. § 1504.14).

The Mining and Minerals Policy Act of 1970 declares it is the continuing policy of the federal government to foster and encourage private enterprise in the development of a stable domestic minerals industry and the orderly and economic development of domestic mineral resources. The law allows private parties free access to open public lands to prospect for minerals, as outlined in 30 USC Part 22. These laws that govern mineral exploration on federal lands allow for private parties to determine the prospecting locations needed to identify the presence of economically valuable mineral deposits because it is assumed that the private parties have proprietary data that guides their selection of locations in their exploration proposal. The operator, not the BLM, undertakes exploration to determine if the quality and quantity of a mineral is economically viable for their operations. The BLM cannot suggest locations for exploration. The purpose of exploration is to determine the existence of a valuable mineral or mineral deposit, and the finding of mineralization of sufficient value to encourage further exploration does not successfully conclude the exploratory process or constitute a discovery (*U.S. v. New Mexico Mines, Inc.*, 3 IBLA 101 (1971)). A validity examination, which examines the discovery of a valuable mineral to determine the validity of a mining claim, along with other validity requirements outlined in the Mining Law, is not required to process a Plan of Operations for Exploration unless the provisions of 43 C.F.R. § 3809.100 or 3809.101 apply.

CHAPTER 3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS

This chapter describes the existing conditions relevant to the issues presented in Table 1 in Section 1.3 and discusses the potential impacts of the Proposed Action and alternatives. The affected environment provides the baseline for comparison of impacts/effects described under environmental impacts. For a discussion of issues not described, see the IDT Checklist (Appendix A).

3.1 General Location

Situated within the Colorado Plateau physiographic province, in an area called Big Flat that is situated north of Canyonlands National Park and Dead Horse Point State Park on Highway 313 where the landscape is generally flat and marked by mesas and buttes (Stokes, 1986). The project's elevation ranges between 5,800-6,100 feet above mean sea level and lies within Blackbrush and Pinyon-Juniper vegetation biomes. The Mineral Canyon Federal #1-3 location is on the Kayenta Formation sandstone and the Sunburst #1 is located on the Navajo Formation sandstone, and each site is covered with 0-10 feet of mixed alluvial and aeolian deposits (Doelling, 2002).

The project area is in the Upper Sonoran life zone in the Intermountain Colorado Plateau region, and as such, the climate is predominately arid to semi-arid, but subject to seasonal monsoonal storms which deposit most of the annual rainfall of 9.0 inches and average total annual snowfall of 9.8 inches (See Table 5, below).

Table 5: Summary of Climate Data from 1893-2021: Moab, Utah.

Climate Component	Typical Value*
Temperature	Maximum: 98.2°F; Annual max average 71.4°F Minimum: 18.2 °F; Annual min average 40.5°F
Precipitation	Average total annual rainfall: 9.0 inches Average total annual snowfall: 10.0 inches

* Source: WRCC, 1889-2021: <https://wrcc.dri.edu/>; 1893-2016 totals; <https://wrcc.dri.edu/Climate>

3.2 Effects Analysis Methodology

3.2.1 General Effects Analysis

General effects analysis used the following methodologies to analyze the proposed alternatives' potential effects of issues identified:

- GIS data, resource data and use data collected over a series of years form the basis of analysis. Data provided by A1 Lithium from past notices was used to disclose potential effects on identified issues.
- Effects analysis is based on the best available data and resource staff knowledge. Quantitative data was used where available and supplemented with detailed qualitative data where no quantitative data was available.

3.2.2 Cumulative Effects Analysis

Cumulative effects analysis is based on the best available data and information; in cases where quantitative data is not available, analysis is primarily qualitative in nature. Projects, plans or actions relevant to all issues are described in the Table 6 and Table 7, below.

Table 6: Past and Present Projects, Plans and Actions that Make Up the Cumulative Impact Scenario.

Past and Present	Description of Project, Plan or Action
Recreation	Hiking, biking (road and mountain bike), motorized recreation (4x4 driving, scenic driving), camping. Camping, including developed campgrounds (Horsethief and Cowboy Campgrounds) as well as dispersed camping.
Livestock Grazing	Livestock grazing and associated range infrastructure.
2016 MLP Reasonably Foreseeable Development Scenario (RFDS) for Oil and Gas.	The Big Flat area averaged approximately 1.7 wells per year between 1982 and 2012 in the Moab Master Leasing Plan Area (MMLPA). An upward trend from 2007-2012 hints at a projected level of drilling above past activity in the past 30 years (BLM, 2012a); but actual counts are less than 1 well drilled per year, as of April 2023. Two wells were drilled between 2019 and March of 2023 in the Big Flat area, and there are five approved permits for drilling.

	<p>Water produced from oil and gas wells in the Big Flat Oil and Gas Field is approximately 10,584 barrels per month from twenty-two producing wells. These produced waters are removed from site in tankard trucks to be re-injected into designated and permitted disposal wells in Grand County.</p> <p>Approximate well pad and access disturbance associated with this oil and gas activity is 3.7 acres during operations and is reclaimed to approximately 1.0 acres during production. Water production during operations is expected to remain the same as the current levels of production.</p> <p>Actual drilling activity up to 2023 is recorded at the Utah Division of Oil, Gas, and Mining (UDOGM) website: www.oilgas.utah.gov.</p>
Mineral Activity	<p>Locatable Mineral Activity: There are no mining operations for lithium with active Plans of Operation in Grand County filed with the MFO. Three Notice-level exploration proposals to explore for lithium were accepted by the MFO between 2018 and 2021 from A1 Lithium Incorporated and were assigned case file numbers UTU- 92750, UTU-93341, UTU-93817. Exploration operations for these projects are similar to the proposed action being analyzed in this EA to reenter a plugged and abandoned wellbore to sample fluids from formations greater than 5,000 feet deep in the Paradox Basin.</p> <p>Design features and BMPs specific to this project were developed to eliminate or reduce the potential for groundwater contamination. See Chapter 2, Section 2.2 for the design features and BMPs for the Proposed Action.</p> <p>Drill pads designed for lithium exploration use the same equipment and have the same configurations as oil and gas drill pads. The BLM acknowledges that water would be used in drilling operations as part of lithium resource development in the Big Flat area and that the extraction of lithium would likely include the production of formation waters that would need to be handled in a manner that complies with Federal, State and local regulations. Additional site-specific NEPA would occur for any future development proposals.</p> <p>The total amount of water proposed for use in this Plan is approximately 24,190 gallons (92 cubic meters) for drilling operations and 1,136 gallons (4.3 cubic meters) collected for testing from the deeper Paleozoic formations. Water for drilling would come from local municipalities that have specifically allocated a certain amount of the waters for industrial sale and use.</p> <p>Non-Energy Leasable Mineral Activity: No Federal potash leases have been issued within the MLP planning area since 1985. No new potash exploration or new potash development occurred in the A1 Lithium</p>

	<p>proposed project area. Potash production can be used as examples of water usage during mineral extraction and production from brines, even though the mineral refining process is different. Lithium extraction may or may not require settling ponds for water evaporation.</p> <p>Intrepid Potash-Moab, LLC has operated the Cane Creek Potash and In-situ Solution Mining Facility since 1985, located approximately 7 miles south of the A1 Lithium proposed project area and 7 miles southwest of Moab, Utah.</p>
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Table 7: Reasonably Foreseeable Projects, Plans and Actions.

Reasonably Foreseeable	Description of Project, Plan or Action
Recreation	Recreation activities of all types are expected to continue and most likely increase
Livestock Grazing	Livestock grazing is expected to continue at current use levels
2016 MLP Reasonably Foreseeable Development Scenario	<p>Reasonably foreseeable leasable and locatable mineral development from areas within the Upper Colorado-Kane Springs Hydrologic Unit may result in cumulative impacts to water quantity. The quantity of water used in a temporary exploration proposal with a time frame of two years does not reflect the water usage required to operate a producing mine during the life of a mine (10 years or more).</p> <p>The RFDS projected oil and gas drilling in the Big Flat areas of the MMLPA to average four wells per year between 2012 and 2027 (15 years) (BLM, 2012a); and current drilling rates are 1-2 wells per year. As of August 2022, twelve wells have been drilled since 2012, and five permits to drill are reported active. Oil and gas development rates in the area are lower than what was analyzed in the MLP.</p> <p>The RFDS for Potash in the MMLPA estimates that 752,512 acres of land has a High Certainty of High Occurrence Potential for Potash (BLM, 2014). The RFDS for Potash in the MMLPA states in the Projections for Exploration Drilling on Prospecting Permits, page 13, there were 223 prospecting permit applications (PPAs) within the planning area in 2014. It was projected that one well would be drilled per 2.4 prospecting permits and the exploration drilling on prospecting permits was estimated at about 74 wells. These 74 wells would amount to a total of about 333 acres (4.5 acres per well) of surface disturbance that would be reclaimed during timing approved in the exploration plan .</p>

Reasonably Foreseeable	Description of Project, Plan or Action
A1 Lithium Plan of Operations	<p>In the event A1 Lithium finds the proposed wells to have economic quantities of locatable minerals, it is reasonably foreseeable for A1 Lithium to submit a Plan of Operations to the MFO.</p> <p>A1 Lithium presented a development and production scenario for Lithium Mining in Grand County to UDOGM in 2022. The proposed production facilities would be located on Utah School and Institutional Trust Lands Administration (SITLA) and private lands, and not on BLM managed lands. Approximately 2-8 production holes would be drilled on BLM, and the rest would be on SITLA or private. The production operation would include production holes drilled to approximately 9,000 feet below the surface and set (cement and cased) with 9-5/8-inch diameter production casing. The subsurface pressures are high enough for fluids to flow naturally from the subsurface to the surface, where the production lines would tie into a 12-inch gathering pipeline to carry the fluid to the processing facility. No additional waters would be used in the extraction process other than the initial drilling of the production wells. Waters would be used in the refining process at the processing facility and in the day-to-day operations of the mine facilities. A1 Lithium would propose to use the direct lithium extraction method to refine the lithium out of brine solution; a method that is reported to recycle up to 80% of the produced waters (see, https://www.a1lithium.com/projects/).</p>
Mineral Exploration and Development	<p>Exploration and development of minerals including oil and gas and locatable minerals including lithium, potash and uranium.</p> <p>Exploration and development of minerals are expected in the MMLPA that include oil and gas, potash and associated mineral salts, and locatable minerals including lithium and uranium. Locatable mineral exploration is active, with four active case files for lithium exploration: three notice-level and one plan-level as of April 2023. There are no active Plan of Operations for locatable or non-energy leasable mineral mining activities as of April 2023.</p> <p>The Intrepid Potash facility on SITLA and private lands is predicted to continue at the same level of operations for at least 10 more years.</p> <p>American Potash LLC submitted an exploration proposal to the MFO in January of 2022. The MFO is currently processing the exploration proposal to approve 11 Potash Prospecting Permits in the Green-River/Salt Wash/Big Flat area of Grand County.</p>

3.3 Issue 1 – Visual and Auditory Resources

- How would activities that are associated with well re-entry (route construction and drilling operations) and brine fluid sampling impact the visual resources?
- How would well re-entry and brine fluid sampling impact the sound scape of Horsethief Campground?
- How would well re-entry and brine fluid sampling impact the dark night skies?

3.3.1 Affected Environment

The BLM manages public lands for visual resources using the Visual Resources Management (VRM) system. The VRM system classifies land based on visual appeal, public concern for scenic quality, and visibility from travel routes or other Key Observation Points (KOPs). A visual resources inventory (VRI) class is used to place BLM-administered lands into one of four VRM classes. The VRI class is used as a baseline for the inventoried characteristics of the landscape and is not the indicator used for determining land management for a specific tract of land. VRM is used to guide the management decision throughout the BLM-administered lands as they are designated in the approved 2008 Moab RMP (Table 8, below). Both the Mineral Canyon Federal #1-3 and Sunburst #1 wells are within VRI Class II. VRI classes range from I to IV, with Class I being assigned to areas designated to preserve a natural landscape (Map 2, Appendix B). Class II, III, and IV are assigned based on a combination of characteristics present in overlays: scenic quality, sensitivity level, and distance zones. Both wells fit under all three overlays, thus possessing all three characteristics.

Using the VRI Class determinations, the area in which Mineral Canyon Federal #1-3 is located was designated as VRM Class III in the 2008 Moab RMP; the Sunburst #1 location is within designated VRM Class II. See Table 8 for objectives of visual resource classes.

Table 8: Objectives for Visual Resource Classes.

VRM Class	Objective
Class I	The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
Class II	The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
Class III	The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Class IV	The objective of this class is to provide for management activities which require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.
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State Route 313, designated as the Dead Horse Mesa Scenic Byway by the State of Utah in 2002, is managed for its scenic driving enjoyment. State Route 313 is a KOP in its entirety; over one million people per year travel on State Route 313 to enjoy the scenery. It is designated as a Focus Area – Scenic Driving Corridor in the 2008 Moab RMP. The corridor is defined as having a width of ½ mile from the centerline. State Route 313 is also managed according to the VRM Class II objectives, where levels of change to the landscape should be low and not attract the attention of the casual observer.

Drivers on State Route 313 often access Canyonlands National Park or Dead Horse Point State Park via the Scenic Byway, enjoying the vistas on the way to their destinations. Dead Horse Point State Park receives over one million visitors per year, all of whom arrive via State Route 313.

Many recreational activities can be found in the vicinity of State Route 313 including hiking, biking, and camping. Horsethief Campground, Cowboy Camp Campground and Rodeo Bike Trail are located adjacent to the project area and managed with VRM Class III objectives, where levels of change to the landscape should be moderate and activities may attract attention but should not dominate the view of the casual observer.

The Rodeo Bike Trail, also considered a KOP, is part of a larger system of popular mountain biking trails accessed from State Route 313. This bike trail receives a substantial, but unknown number of users. The Mineral Canyon Federal #1-3 access route would intersect a 14-foot section of this bike trail.

Horsethief Campground is a popular spot for campers, offering both individual and group campsites. This campground, the largest in the MFO, is located off State Route 313 and attracts campers year-round. Seasonal closures for portions of the campground occur during winter months when visitation rates dip. The Horsethief and Cowboy Camp Campgrounds are within one mile of the Mineral Canyon Federal location, making it within earshot of that location. Visitors using the Rodeo Bike Trail and/or State Route 313 may be temporarily impacted by noise production from the wells when in the vicinity. See Map 4 and 5 in Appendix B.

Both Canyonlands National Park and Dead Horse Point State Park are International Dark Sky Parks, representative of the largely undeveloped and unpopulated nature of the surrounding area in which the project area would be located.

3.3.2 Environmental Impacts

3.3.2.1 Impacts of Alternative A – No Action Alternative

Under the No Action Alternative, the BLM would not permit drilling, sampling, or reclamation. Impacts to visual resources would occur as previously permitted. Drivers on State Route 313

would have unimpeded views of the VRM Class II and III scenery, no temporary structures would be in place to impact the visual aesthetics of the area for any duration, and campers at Horsethief and Cowboy Camp Campgrounds would not hear sounds of operations. Any potential impact to night skies from exploration activities would not occur.

3.3.2.2 Impacts of Alternative B – Proposed Action

The Mineral Canyon Federal #1-3 well is approximately 0.5 miles from State Route 313 and the proposed access route would intersect with the Rodeo Bike Trail. The number of individuals frequenting the project area varies based on the season, with the highest visitation being in the spring (March-May) and fall (September-October) months. Over the two-year course of this project, an estimated one - two million individuals per year may be impacted concerning their enjoyment of the quality of visual resources in the area. Visitors come to the area to enjoy the generally undeveloped and scenic landscapes found in the vicinity of the project.

Visual resources would be potentially impacted during each phase of the project, including route work and drill pad development, drilling operations, sampling, and reclamation. Initial access route work and drill pad development, drilling operations, and reclamation activities are expected to cause the greatest impacts on visual resources because more equipment would be present to impede the viewshed. Although these activities would cause the most impact, they would only occur for less than $\frac{1}{4}$ of the project timeline (five months in total of the 24-month period) and thus result in fewer potential impacted visitors than if these activities were to last the entire 24 months. Those visitors who travel State Route 313, use the Rodeo Bike Trail, or camp at Horsethief or Cowboy Camp Campgrounds during these activities would be most impacted.

During the remainder of the project a valve tree that could be between 5 and 16 feet tall and a 12-foot by 20-foot storage tank would be left on the drill pad to facilitate sampling. Sampling of brine fluids would be expected to occur with the rig on-site, and additional sampling may occur within the 2-year exploration period. A1 Lithium would periodically return to the site for monitoring purposes, and there would likely be a few pick-up trucks on site.

Drill rigs, the valve tree and storage tank would temporarily intrude on the visual character of the project area, but no long-term increment in visual contrast would result. To reduce effects to visual resources, all semi-permanent infrastructure (i.e., valve tree) would be painted a pre-approved color from the BLM Gold Book to blend into the surrounding environment. The Proposed Action would be in previously disturbed areas (i.e., existing well pad), access would be limited to existing access roads, and no permanent structures would remain after the 24-month project period. Therefore, the level of change to the landscape would be low and would meet VRM Class II objectives. It is expected that all visual and auditory resources would return to pre-existing conditions once the elements of the Proposed Action were completed.

Auditory resources in the project area would also be impacted. Noise modeling undertaken as part of the 2016 MLP shows that areas located within 2.5 miles of a location are audible. The Horsethief Campground is less than one mile (4,230 feet) from the Mineral Canyon Federal #1-3 well. Horsethief Campground is the largest campground in the Moab Field Office, with 83 individual sites, and five group sites. Cowboy Campground is approximately one mile from Mineral Canyon Federal and two miles from Sunburst #1. Construction and drilling activities,

which would take a combined 60 days for each site, would generate noise up to 120 decibels during the day. Map 4 and 5 in Appendix B shows estimated noise pollution from the two proposed well locations based on a 120-decibel drill rig; the estimated noise pollution does not take topography or vegetation into account so it is assumed that noise levels would be less than estimated. Noise pollution would range from 40-50 decibels within Horsethief Campground, and 40-50 decibels at Cowboy Campground. BMPs in the 2016 MLP suggest noise levels not exceed 50 decibels above background noise where equipment is located within the proximity of sensitive receptors. Horsethief and Cowboy Campgrounds are considered sensitive receptors. Natural barriers such as vegetation and topography would help dissipate the noise heard at the campgrounds.

Elevated noise levels would be apparent for recreationists on portions of the Rodeo Bike Trail during the initial development and drilling operations, and reclamation. According to estimated noise pollution maps (Map 4 and 5 in Appendix B), estimated noise pollution would range from 40-80 decibels. The 70-80 decibel range would occur for approximately one-tenth of a mile. The 60-70 decibel range would occur for approximately two-tenths of a mile; 60-70 decibels is equivalent to the noise of street traffic. Noise estimates do not consider the topography and vegetation which would decrease the noise pollution.

Minimal auditory impacts are expected after drilling operations; the drill rig, which would produce the auditory intrusion would no longer be on site. As another design feature to reduce impacts, the BLM would hang signs at the campground warning visitors of potential disturbances. Information would also be made available on the BLM MFO webpage. Additionally, to protect night sky resources, any lights affixed to well infrastructure would be pointed downward.

3.3.2.3 Cumulative Impacts

The Cumulative Impact Analysis Area (CIAA) for visual resources is the Big Flat area on Highway 313 situated north of Canyonlands National Park and Dead Horse Point State Park and the lands within its viewshed.

The proposed project area is located in an area with a subsurface geologic structure called the Paradox Basin that is thought to contain economically viable quantities of locatable minerals, including lithium. Past exploration in the area by A1 Lithium has shown certain formations within the Paradox Basin to be a viable target for lithium due to subsurface pressures and high grades of lithium located within those brines. Oil and gas development also occurs in the area surrounding the proposed locations for exploration.

Past, present or reasonably foreseeable projects, plans and actions contributing to cumulative impacts of the visual resources within the CIAA include:

- Recreation use including use of roads, trails and campgrounds.
- Mineral exploration and development including oil and gas and locatable minerals such as lithium, potash and uranium.
- Master Leasing Plan and its associated Reasonably Foreseeable Development Scenario for oil and gas and potash.

- Possible A1 Lithium Plan of Operations for Mining Development and Production.
- Livestock grazing and associated range infrastructure.

Cumulative impacts to visual resources include changes in the form, line, color or texture of the existing character and natural features of the landscape. The CIAA includes areas of VRM Class I, II, III and IV, where objectives range from preserving the existing character (Class II) to allowing for major changes in the landscape (Class IV). Impacts to VRM Class objectives may result from mineral exploration activities and development of recreational, mineral or oil and gas and livestock facilities.

Under the No Action Alternative, there would be no changes to the character or natural features of the landscape. Impacts to the CIAA would be a continuation of the current activities in the area and exploration activities at the proposed well locations would not occur.

The Proposed Action would include surface disturbing activities and installation of facilities on drill pads that would directly impact the viewshed as seen from certain areas within the CIAA, such as State Route 313 and the Rodeo Bike Trail. Design features would be applied to the temporary development of the access routes and drill pads to reduce impacts on the visual resource. These design features would limit surface disturbance to the minimal amount necessary for safe operations, facilities would be painted an approved color that would blend in with the surrounding landscape, and reclamation activities would return the area to pre-existing conditions upon completion of exploration activities. While these changes to the landscape would be temporary, they would cumulatively change the lines, forms and color of the natural landscape, albeit in a low-moderate sense. Once the facilities are removed and reclamation is complete, the cumulative impacts to the natural landscape would over time return to pre-existing conditions.

Additional development to the area as presented in the RFDS and any potential Plan of Operations for development, would cumulatively add industrial infrastructure within the CIAA, potentially incrementally impeding the viewsheds within the various VRM Classes. Stipulations and BMPs were developed in the 2016 MLP which would apply regulations on new oil and gas development that would reduce impacts to visual resources and limit locations and levels of development in areas to further preserve the visual character. Additional stipulations would be imposed to a Plan of Operations for development compared to a Plan of Operations for exploration. Any of these scenarios would go through additional site specific NEPA and project specific terms and conditions would be applied.

3.4 Issue 2 – Recreation Resources

- How would well re-entry and sampling activities impact recreational activities such as mountain biking, scenic driving, and camping in and around the project area?

3.4.1 Affected Environment

The proposed Project Area is in the Labyrinth Rims/Gemini Bridges Special Recreation Management Area (SRMA) (Map 17 in the 2008 Moab RMP). The Labyrinth Rims/Gemini Bridges SRMA is 300,650 acres in size and is managed as a Destination SRMA (majority of visitation is from outside the area).

The analysis area is heavily used by those seeking recreation activities including scenic driving, biking, hiking, camping, and 4x4 driving. State Route 313 is a designated State Scenic Byway and Scenic Driving Corridor Focus Area for the MFO. Drivers on State Route 313 are often accessing Canyonlands National Park or Dead Horse Point State Park, enjoying the vistas on the way to their destinations. Drivers also access the many bike trails, four-wheel drive trails, campgrounds and other recreation facilities off State Route 313. Dead Horse Point State Park receives over one million visitors per year, all of whom arrive via State Route 313. The best estimate of the number of visitors to the project area is provided by the traffic counters on State Route 313. In 2021, over 625,000 vehicles utilized State Route 313 (one way). If one assumes three people per vehicle, then 1,875,000 people travelled State Route 313.

The Rodeo Bike Trail, also in the analysis area, is part of a larger system of popular mountain biking trails accessed from State Route 313. This bike trail receives a substantial, but unknown number of users. The original access route to Mineral Canyon Federal #1-3 wellsite was created before the Rodeo bike trail existed. The proposed access route would use the footprint of the previous access route, which would cross a 14-foot section of the now existing bike trail.

Horsethief Campground is a popular spot for campers, offering both individual and group campsites. This campground, the largest in the Moab Field Office, is located off State Route 313 and attracts campers year-round. Seasonal closures for portions of the campground occur during winter months when visitation rates dip. In 2019, the campground hosted approximately 58,000 people.

3.4.2 Environmental Impacts

3.4.2.1 Impacts of Alternative A – No Action Alternative

Labyrinth Rims/Gemini Bridges SRMA would not be impacted under the No Action Alternative. There would be no route maintenance and no disruption to any designated bicycle trail. Additional impacts to recreational experiences would not occur beyond baseline impacts already present in the project area as described in Section 3.3.1. The original access routes (undesigned routes) would be expected to continue to deteriorate in a consistent manner with unmaintained routes in the area and return to natural conditions.

3.4.2.2 Impacts of Alternative B – Proposed Action

State Route 313, which is immediately adjacent to the project area and would be used as the primary access route to the wells, is a popular driving destination and used to access many recreational activities, including access to Canyonlands National Park and Dead Horse Point State Park. Dead Horse Point State Park receives over one million visitors per year. Recreational visits vary by season, with spring and fall averaging the highest visitation rates. Based on the data from Dead Horse Point State Park and the State Route 313 traffic counters, between one million and two million visitors visit the general project area for recreational purposes within a year.

The greatest impacts to recreational resources would occur during the initial route work and drilling (approximately 30 days per site) and well abandonment and reclamation (approximately 42 days per site). These activities would create more impacts than those created during routine sampling of the well due to the associated noise, traffic, and dust created. Although these

activities are expected to cause the most impacts, they are of relatively short duration (five months total) in comparison to the 24-month period of the project. Impacts occurring over a five-month period versus a 24-month period would impact approximately 80% fewer visitors.

The Rodeo Bike Trail is located immediately adjacent to the Mineral Canyon Federal #1-3 well pad; the access route to the well pad would cross this designated bike trail. Currently, the reclaimed route crosses the bike trail and is visible as a road, although it is not evident where the route leads. Route improvement at the beginning of the project period would temporarily impact recreational resources on this section of bike trail but would not restrict access to the trail. Design features would include posting signs alerting users of operational activities where the bike path crosses the proposed access route. Additional impacts would be expected throughout the length of the project during intermittent monitoring and reclamation efforts from light truck traffic. These impacts would be temporary in nature and recreational resources on the Rodeo Bike Trail would be expected to return to pre-existing conditions once the project is completed.

Horsethief Campground is located 4,230 feet from Mineral Canyon Federal #1-3 drill site. The drill site would be visible from approximately six campsites on the south-western edge of the campground (out of 83 campsites total); The operation would be audible during initial drilling activities. See section 3.1.2.2 for auditory analysis. Recreational resources at Horsethief Campground are not expected to be heavily impacted by the Proposed Action.

A1 Lithium would implement BLM BMPs and additional Conditions of Approval (COA) set forth by the MFO as addressed in Section 2.2.6 to further reduce impacts to recreational resources. The MFO sees an influx of one to two million visitors per year, therefore approximately two to four million visitors' recreational experience may be impacted. Impacts to recreational resources including State Route 313, Rodeo Bike Trail, and Horsethief and Cowboy Camp Campgrounds would be temporary in nature and would not exceed the length of the project (24-months). Short-term impacts would include visible equipment, noise production (as analyzed in section 3.1.2.2), and a slight but nominal increase in daily traffic. Long-term impacts to recreation and access would not be expected.

3.4.2.3 Cumulative Impacts

The CIAA for recreation is the area that includes recreation facilities, including trailheads and associated trails, campgrounds and scenic pull-outs along State Route 313. These recreation facilities include but are not limited to the Horsethief Campground and Rodeo Bike Trail.

Past, present or reasonably foreseeable actions contributing to cumulative impacts to recreation within the CIAA include:

- Recreation use including use of roads, trails and campgrounds
- Mineral exploration and development including oil and gas and locatable minerals such as lithium, potash and uranium.
- Master Leasing Plan and its associated Reasonably Foreseeable Development Scenario for oil and gas and potash.
- Possible A1 Lithium Plan of Development

- Livestock grazing and associated range infrastructure

Cumulative impacts to recreation within the CIAA include accessibility and enjoyment of the recreation facilities, user conflicts between user groups and loss of solitude due to development.

The No Action Alternative would not limit accessibility or enjoyment of the recreation facilities. User groups would not encounter construction equipment or personnel associated with A1 Lithium mineral exploration and their solitude would not change from its current condition.

Recreation activities abound in the MFO-managed areas and visitors who are impacted by the activities associated with the Proposed Action, as discussed in Section 3.4.2.2, may choose to recreate or camp elsewhere. Because there are ample opportunities for hiking, mountain biking, 4x4 driving and camping, it is anticipated that the impacted users would be able to disperse to other areas and not bring high levels of increased visitation to any one area.

Additional development as presented in the RFDS and potential Plan of Development, would add industrial infrastructure within the CIAA that has the potential to impact recreational opportunities. Stipulations and BMPs were developed in the 2016 MLP which would apply regulations on new oil and gas development that would reduce impacts to recreationists and limit locations and levels of development in areas to further protect recreation opportunities. Additional stipulations would be able to be imposed on a Plan of Development compared to Plan of Explorations. Any of these scenarios would go through additional site specific NEPA and project specific terms and conditions would be applied.

The RFDS projected an average of 8.5 new wells per year in the master leasing area over the next 15 years, but this predicted rate of drilling has not occurred in Grand County. According to the Utah Division of Oil Gas and Mining, of the ten wells drilled in Grand County since 2015, five were drilled in the area of the Big Flat Oil and Gas Field where the proposed project is situated (Utah Division of Oil, Gas and Mining, 2022a).

3.5 Issue 3 – Geology/Minerals/Energy Production

- How would the re-opening of the two wells impact the geological, mineral and energy resources in the area?
- How would sampling brine fluids located within the subsurface sedimentary sequences impact the geological, mineral, and energy resources in the project area?

3.5.1 Affected Environment

The proposed project is in an area that is open to the location of mining claims and oil and gas mineral leasing subject to standard terms and conditions as outlined in 2008 Moab RMP.

The Proposed Action would explore for economic deposits of lithium-bearing and associated minerals in an area historically and currently active with mineral resource exploration and development called the Paradox Basin (Map 3, Appendix B). Exploration means creating surface disturbance greater than casual use that includes sampling, drilling, or developing surface or underground workings to evaluate the type, extent, quantity, or quality of mineral values present. Exploration does not include production activities where the mineral resource is extracted for commercial use or sale (43 C.F.R. § 3809.5).

Lithium is a locatable mineral under the general mining law; however, it is unlike locatable metals in that it may be entrained in a brine solution. A brine solution entrains constituents in the water, primarily metal salts, at such high concentrations making the water unsuitable for consumption and most municipal or agricultural uses. Lithium can potentially be extracted from a brine solution in high enough quantities to be economic for mining.

Lithium is listed on the 2022 DOI USGS Critical Minerals List that is issued every three years pursuant to Section 7002 of the Energy Act of 2020 (the Energy Act) (Pub. L. No. 116-260). Lithium, like all critical minerals on the list, are important to the United States economy and national security. The assured supply of critical minerals and materials and the resiliency of their supply chains are essential to the economic prosperity and national defense of the United States (White House Fact Sheet, February 2022. <https://www.whitehouse.gov/briefing-room/statements-releases/2022/02/22/fact-sheet-securing-a-made-in-america-supply-chain-for-critical-minerals/>)

To advance further action on mitigating the national critical minerals and materials challenge, the following Acts and Executive Orders have enacted policies to examine potential authorities and prepare agency-specific plans to improve the mining, processing, and manufacturing of critical minerals and materials:

- Defense Production Act, 2022. Provide authorities to the President to ensure the supply of materials and services necessary for national defense; and was invoked to “... secure reliable supply chains for minerals essential to a clean energy transition, including lithium, nickel, cobalt, graphite, and manganese.”
- Executive Order 13817, 2017. A Federal Strategy to Ensure Secure and Reliable Supplies of Critical Minerals “...identified actions to reduce our Nation’s reliance on imports, preserve our leadership in technological innovation, support job creation, and improve national security.”
- Executive Order 13953, 2020. Addresses the Threat to the Domestic Supply Chain From Reliance on Critical Minerals From Foreign Adversaries and Supporting the Domestic Mining and Processing Industries.
- Executive Order 14017, 2021. Ordered a review of vulnerabilities in the US critical mineral and material supply chains.

The lithium deposits are found in the geologic formations of the Paradox Basin, a subsurface structural depression with thick sequences of sedimentary rocks that extends over an area of approximately 33,000 square miles (85,470 km²) in southeast Utah and southwest Colorado. On the east it is bordered by the tectonically uplifted Uncompahgre Plateau, on the west by the Circle Cliffs Uplift, and on the northwest by the San Rafael Swell. The formation and burial history of the basin are the determining factors as to why locatable minerals such as lithium are likely to be present and the basin boundaries reflect the extent of potential mineral deposits. The sediments that make up the rock formations in the Paradox Basin were deposited in a marginal marine environment that underwent cycles of restricted marine circulation throughout Mid-Pennsylvanian time, resulting in thick sequences of interbedded evaporites, carbonates, and siliciclastic sediments. The basin contains approximately 29 depositional cycles and is over 3,500

feet thick. The lithology of these evaporite cycles contain halite and anhydrite facies with chemistries conducive to lithium mineral exploration (Nuccio and Condon, 1996).

Lithium has been produced in the Paradox Basin as a byproduct of potash and oil and gas production. The commodities reside within the interbedded sediments that also contain lithium and each can be brought to the surface as part of the extraction process. Lithium is typically entrained in the brine fluids that are disposed of as part of the resource extraction process. A1 Lithium has submitted three Notice-level Exploration proposals for lithium exploration in Grand County since 2018. The three Notice-level proposals were accepted by the MFO and are in various stages of reclamation as of May 2023. Mining operations specifically for lithium as a commodity have not occurred on federal-lands in Grand County.

Oil and gas exploration in the Paradox Basin has occurred since the 1950s primarily from the Mississippian Age Leadville Formation the Pennsylvanian Age Hermosa Group (Honaker Trail Formation and Cane Creek interval of the Paradox Formation), and the Permian Age Cutler Formation (Brown, Alan Lee, 2002). The Proposed Action would re-enter wells drilled in an area of oil and gas extraction defined as the Big Flat and Cane Creek Oil and Gas Fields. Production from the Big Flat and Cane Creek oil and gas fields is recorded in the Utah Division of Oil, Gas, and Mining (UDOGM) Summary Production Report from September 2021 (Table 9).

Table 9: UDOGM Summary Production Report by Field from September 2021.

Field	Total wells	Cumulative Oil Produced (BBL)*	Active wells	Monthly Oil (BBL)*	Monthly Gas (MCF)*	Monthly Water (BBL)*
Big Flat	170	6,584,772	22	10,212	7,209	10,584
Cane Creek	377	114,966	3	323	48	2

*Barrel (BBL) is 42 U.S. gallons; gas is volume measured in increments of a thousand cubic feet (MCF); UDOGM, 2021.

Wells in the Big Flat Field have produced over 6,584,772 barrels (BBLs) of oil since the discovery well Big Flat #1 was drilled in 1957 (Smith, 1978). The field is currently producing over 10,000 BBLs/month from 22 active wells. Both the Mineral Canyon Federal #1-3 and the Sunburst #1 locations are situated within 8,000 feet (~1.5miles) of an active horizontal well producing oil from the Honaker Trail or Cane Creek intervals (Utah Division of Oil, Gas, and Mining, 2022a).

The Proposed Action is not within a designated Potash Leasing Area as outlined in the 2016 Moab Master Leasing Plan, but potash has historically been mined in this area from deposits ranging in depths 3,000-6,000 feet below the surface. There is no active leasable mineral development or production that would be affected by the proposed action.

There are currently no active mineral mining operations in the proposed project area, and the Proposed Action does not intersect, nor would it interfere with the 16 existing active placer mineral claims in T26S R19E Sections 03 and 14.

3.5.2 Environmental Impacts

3.5.2.1 Impacts of Alternative A – No Action Alternative

Under the No Action Alternative, no well re-entry would occur, therefore there would be no impact on geological resources. Additionally, no interference of commingled resources would occur.

3.5.2.2 Impacts of Alternative B – Proposed Action

The Proposed Action would re-enter two wellbores to depths approximately 5200 – 6500 feet below the surface and perforate the formation with holes to extract brine fluids that would be tested for economic quantities of lithium and other locatable minerals. The proposed testing would target five specific clastic intervals predicted to contain the highest amounts of lithium out of the 35 total clastic intervals identified within the Paradox Formation of the Hermosa Group.

The original drilling reports, mudlogs, and electric logs collected from the two wells were used to determine the formation intervals that contain oil and gas and the formation intervals that contain the target brines. Clastic beds in the formations that are identified for testing could change based on the results of the geophysical data collected during the operation, and either more or fewer intervals could be tested. BMPs would be utilized throughout the life of the Proposed Action and during procedural and operational plans.

The clastic beds in the Paradox Formation proposed for testing are sandwiched between intervals with known and producing leasable commodities. The clastic beds proposed for testing are situated approximately 500 feet below recorded potash-containing intervals and 100-500 feet above oil & gas producing intervals in the Cane Creek Formation that are not the target. A packer and plug system would be used in the hole to isolate the target clastic intervals during testing to prevent any sampling of non-target intervals.

Because active leasable mineral exploration and development in the surrounding area is targeting formations above and below the target clastic intervals in the Proposed Action, the potential to encounter leasable minerals contained in the Paradox Formation while exploring for locatable minerals is not zero. The leasable minerals are subject to valid existing rights as outlined in the 2016 Moab MLP and cannot be produced during the extraction of locatable mineral resources during exploration operations.

The Proposed Action is not expected to result in any long-term environmental impacts because of the short-term duration of operations, the use of previous surface disturbances, and adherence to BLM BMPs during operations. The BLM recognizes the potential impacts to mineral resources upon the development of either mineral in the future due to the interbedded nature of the leasable and locatable deposits in the sedimentary Paradox Basin. Short term, temporary impacts may occur to the ground surface from the use of drill pads and access routes; however, the A1 Lithium would return them to the conditions that existed before the exploration operations in their reclamation of the project area.

3.5.2.3 Cumulative Impacts

The CIAA for geology, minerals and energy production is the Paradox Formation which includes the targeted intervals producing leasable commodities.

Past, present or reasonably foreseeable actions contributing to cumulative impacts to geology, minerals and energy production within the CIAA include:

- Mineral exploration and development including oil and gas and locatable minerals such as lithium, potash and uranium.
- Master Leasing Plan and its associated Reasonably Foreseeable Development Scenario for oil and gas and potash.
- Possible A1 Lithium Plan of Development

Cumulative impacts to geology, minerals and energy production would be considered if locatable minerals are found to be in economic quantities because any plans to mine and produce the resource would have to account for the potential to interfere with existing leasable resources. A plan of operations for the development of the locatable resource would be required to keep commodities separate during production in a manner compatible with multiple use, and which would avoid damage to any known deposit of any Leasing Act mineral as described in the Multiple Mineral Development Act of 1954 at 30 USC Part 526.

3.6 Issue 4 – Water Quality and Quantity

- How would re-opening and exploring abandoned wells and extracting brine fluids impact the water resources, including aquifers, surface water and ground water?
- How would building drill pads and re-opening and improving existing access routes impact surface water runoff?

3.6.1 Affected Environment

The proposed project area is situated in the Upper Colorado-Kane Springs Hydrologic Unit between the Green River and Colorado Rivers. Groundwater from aquifer systems can be found at shallow depths starting at approximately 75 feet below the surface and potable groundwaters can be found at approximately 75-500 feet below the surface (Rush, et. al., 1982). Groundwater is in shallow Mesozoic porous sandstone aquifers and in deep Upper Paleozoic aquifers that are sandwiched between low permeable confining beds and evaporite beds composed of mostly salt. The Mesozoic sandstone aquifer system is one of the most permeable hydrogeologic units of the area and the subsurface flow into the Green and Colorado Rivers and is measured by the US Geological Survey (USGS) to be about 100 million cubic meters per year. Mesozoic rocks in the area are most commonly recharged by direct infiltration of precipitation into outcrops and infiltration of runoff and estimated to be 3.3 million acre-ft (4 billion cubic meters) from precipitation and stream infiltration (Freethy and Cordy, 1991). All other components of outflow are relatively small. No brine water discharges have been identified at the surface and natural springs are fresh waters. The average annual recharge to the aquifer is about 130 million cubic meters, of which about 20 million cubic meters is from local precipitation. For the Paleozoic aquifer system, all recharge and discharge is most likely by subsurface flow that does not reach the surface (Rush, et. al., 1982).

The topography in the project area has little relief and is relatively flat. Accumulations of surface waters occur from seasonal or temporary precipitation events, such as in ephemeral streams or

shallow temporary pools. There are currently no springs, seeps, or perennial streams in, adjacent to or near the proposed project area, and it is not within a municipal watershed. No riparian or wetland vegetation exist in the proposed project area or along proposed access routes (2008 Moab RMP), and no river segments in the National System of Wild and Scenic Rivers, or river segments eligible for inclusion in the system (Map 22, 2008 Moab RMP). Access routes to the proposed project area cross ephemeral drainages. These drainages only flow during and after precipitation events for short periods of time.

The waters proposed to be sampled would be collected from Paleozoic rocks in the subsurface at depths greater than 5,000 feet below the surface where the chemical composition of the waters, including the Paleozoic aquifers, are brine, (i.e., salt saturated). The composition of deep subsurface waters are typically controlled by the initial composition of the water trapped during the deposition of the sediments (i.e., connate water) and by the mineral composition of the sediments themselves. In the Paradox Basin, the initial water composition was likely to be sea water because the sediments were deposited in a marine environment and the rocks that make up the basin were primarily formed by sea-water evaporation; and therefore, the connate waters are brines.

Brine waters produced from the Paradox Basin are encountered at depths thousands of feet below those waters used for households or agriculture. These brines have high concentrations of total dissolved solids (TDS) in water. TDS is made up of inorganic salts, as well as a small amount of organic matter. Utah classifies ground water uses according to the amount of Total Dissolved Solids (TDS) concentration and contaminant concentration. Class I and Class II Groundwaters have TDS levels that are less than 3,000 mg/l are used for public drinking water systems and municipal purposes and are therefore protected by the regulatory authority of the Utah Ground Water Quality Protection Program. Groundwaters exceed 10,000 mg/l TDS and cannot be used for most municipal purposes and most brine waters are classified as Class IV saline ground waters and the protection levels are established in Utah by the Executive Secretary for surface use or subsurface injection (see, <https://deg.utah.gov/water-quality>) to prevent interaction with Class I and II waters.

3.6.2 Environmental Impacts

3.6.2.1 Impacts of Alternative A – No Action Alternative

Under the No Action Alternative, no access route or drill pad improvements would take place and well re-entry would not occur. Thus, aquifers and ground water resources would remain in their current condition with no impacts from well re-entry associated with the Proposed Action. Surface water resources would remain unaltered.

3.6.2.2 Impacts of Alternative B – Proposed Action

The Proposed Action would re-enter existing well bores and potentially encounter the surrounding potable water resources. With potable ground water resources found at approximately 75-500 feet below ground level, there is potential for encountering groundwater during exploration operations.

The BLM consulted UDOGM to ensure the Plan and proposed exploration operations would be consistent with the state's water quality requirements. The operating procedures proposed in the Plan follow the UDOGM applicable well requirements, as outlined in Utah Admin. Code R649-3: Drilling and Operating Practices, to protect potential usable water-bearing formations from drilling and sampling procedures during exploration. These procedures protect the surrounding ground waters from drilling fluids in the exploration holes and prevents the mixing of ground water classes at any stage of the operation per Utah's Ground Water Quality Protection Rules (UAC R317-6).

A1 Lithium would sample the fluids from five clastic intervals in the target formation from depths greater than 5,000 feet below the surface. The produced waters that would be sampled from the target formation are expected to be a brine. Lithium is a locatable mineral under the general mining law; however, it is unlike locatable metals in that it may be entrained in a brine solution. The original drilling reports from the Mineral Canyon Federal #1-3 and the Sunburst #1 report fresh water intervals (Class I and II) between 75 and 250 feet below the surface and brine waters in the formations below 5,000 feet.

The brine fluid samples would be collected in 1,000-liter IBC containers and sent to a laboratory for chemical analysis of the constituents contained in the brine fluids. Clastic intervals with higher formation pressures would have artesian flow and produce more water therefore the sample size collected would be larger than those intervals with lower formation pressures and no artesian flow. The maximum amount of fluid collected for testing from each well would be 4,300 liters (1,136 gallons).

The total amount of water proposed to be used in this exploration project is approximately 24,190 gallons (92 cubic meters) for drilling operations and 1,136 gallons (4.3 cubic meters) collected from the formations for testing. The waters used for drilling would come from local Municipalities that have specifically allocated a certain amount of the waters for industrial sale and use. The primary aquifer systems that Municipalities collect water from for use and consumption in Grand County, Utah are located in the shallower Mesozoic aquifer systems found from surface down to depths of 3,000 below the surface. The average annual recharge to the Mesozoic aquifer is about 130 million cubic meters, of which about 20 million cubic meters is from local precipitation.

The preparation of drill pad surfaces and improvement of road surfaces for exploration operations would avoid any standing surface waters or ephemeral drainages present. Areas with standing surface waters would be avoided until the surface is dry. The topographic features of the area surrounding the drill pads are generally flat, with little topographic relief. In the event of heavy rains, surface runoff would be less likely to cause flooding or erosion issues compared to areas with more topography. The ephemeral drainages within the project area could cause flash flooding or damage to roads or access routes in the event of heavy storms. The preparation of drill pad surfaces would avoid ephemeral drainages to prevent any interference with surface water flow. Berms, diversion channels and sumps would be built to reduce any potential impacts that may arise from heavy monsoon events. These features would ensure surface water follows the least impactful path and would keep surface water out of areas of potential contamination, such as the reserve pit. The proposed routes that would be re-opened and improved would be reclaimed to the original surface topography and seeded, upon BLM request.

3.6.2.3 Cumulative Impacts

The CIAA for water quality and quantity is the Upper Colorado-Kane Springs Hydrologic Unit which includes the targeted formation depths for exploration of leasable commodities.

Past, present or reasonably foreseeable actions contributing to cumulative impacts to water quality and quantity within the CIAA include:

- Mineral exploration and development including leasable oil and gas and potash minerals and locatable lithium and uranium minerals.
- Moab Master Leasing Plan 2016 and its associated Reasonably Foreseeable Development Scenario for oil and gas and potash.
- Possible A1 Lithium Plan of Operations to mine locatable minerals.
- Livestock grazing and associated range infrastructure.

Reasonably foreseeable oil and gas and mineral development from areas within the Upper Colorado-Kane Springs Hydrologic Unit may result in cumulative impacts to water quantity. While potential mining by itself does not constitute a cumulative impact, the BLM acknowledges that water would be encountered in the drilling and extraction operations used for oil and gas, potash, and lithium mineral development. Mineral extraction could include the production of formation waters that would need to be handled in a manner that complies with Federal, State and local regulations.

Design features developed for this Plan would reduce the potential for groundwater contamination by adhering to Utah's Ground Water Quality Protection Rule. BMPs would also be applied to further reduce potential for contamination which would reduce cumulative impacts. See Sections 2.2.3.2 and 2.2.6 for a list of design features and BMPs for the Proposed Action.

Without a mine proposal, it is difficult to quantify the impacts to water resources from lithium mining and production based solely on the previous exploration operations. The quantity of water required for production in a mining operation over the life of the well (10 years or more) is more than the quantity of water needed for exploration activities in a two-year time period. In 2022, A1 Lithium provided UDOGM a development and production scenario for Lithium Mining in Grand County, making it possible for BLM to analyze reasonably foreseeable potential water usage of a lithium mining and processing operation.

A1 Lithium Incorporated proposed production facilities to UDOGM in 2023 that would be located on SITLA and private lands, and not on BLM-managed lands. Between two and eight production holes would be drilled on BLM, and the rest would be on SITLA or private lands. The production operation would include production holes drilled to approximately 9,000 feet below the surface and set (cement and cased) with 9-5/8-inch diameter production casing. The subsurface pressures are high enough for fluids to flow naturally from the subsurface to the surface, where the production lines would tie into a 12-inch gathering pipeline to carry the fluid to the processing facility. No additional waters would be used in the extraction process other than the initial drilling of the production wells. Waters would be used in the refining process at the processing facility and in the day-to-day operations of the mine facilities. A1 Lithium would propose to use the direct

lithium extraction method to refine the lithium out of brine solution; a method that is reported to recycle up to 80% of the produced waters (see, <https://www.a1lithium.com/projects/>).

Other mineral activity is potash exploration and development. The MFO is currently processing an exploration proposal for eleven Potash Prospecting Permits in the Green-River/Salt Wash/Big Flat area of Grand County, located eleven miles north of this proposed Plan project area.

The Intrepid Potash facility is a potash mining operations located seven miles east of this Plan project area on SITLA-managed and privately-held lands. The operation is predicted to continue at the same level of operations for at least ten more years. The BLM can estimate how much water is used in potash mining and processing operations from their current underground injection control wells at the Intrepid Potash site that are used to inject water into the salt sequences of the Paradox Formation and recover brine to produce potash via its solar evaporation ponds and processing plant. The facility has six evaporation ponds that hold up to 1,200,000 gallons each for the evaporation process of potash production. The Intrepid-Moab processing plant uses 350 million gallons per year of river water to produce 350 million gallons per year of NaCl-saturated (21% by weight) evaporation pond feed solution at 6.5–7.5% KCl [potassium chloride]. The majority of the water used for processing the potash at this operation comes from the Colorado River.

The cumulative impacts from water usage to the CIAA of the Upper Colorado-Kane Springs Hydrologic Unit resulting from the combination of past, present, and reasonably foreseeable future actions would potentially come from the quantity of water used for exploration and mining operations. Potential mineral mining operations that would use water would need to consider the geologic nature of the aquifer systems despite estimations of that natural aquifer recharge exceeds natural discharge. The proposed amount of water that would be used in this Plan is 96.3 cubic meters (25,326 gallons).

Water quality standards that are imposed by the federal government for mineral exploration are provided by the Moab RMP (BLM, 2008) to maintain and improve existing water quality by ensuring that all authorized uses on public lands comply with State water quality standards and the Federal Water Pollution Control Act (Clean Water Act) 33 U.S. Code § 1251. The operator commits to adhering to these regulations in their proposed action (Section 2.2). As outlined in the Moab RMP in the Soil and Water (SOL-WAT) goals and objectives, the BLM works with partners the Utah Divisions of Water Rights and Water Quality to implement Best Management Practices (BMPs) that are implemented in this EA as COAs in Section 2.27.

CHAPTER 4 PUBLIC INVOLVEMENT, CONSULTATION, AND COORDINATION

4.1 Public Involvement

The BLM hosted a public comment period for the A1 Lithium Mineral Exploration Project in accordance with 43 C.F.R. § 3809.411(c) from June 27 to July 27, 2022. Approximately 120 comments were received as a result of the comment period. A Public Comment Period Report has been prepared and is included in Appendix C.

4.2 Consultation and Coordination

Table 10: List of all Persons, Agencies, and Organizations Consulted for Purposes of this EA.

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Utah State Historic Preservation Office	National Historic Preservation Action Section 106	"No Historic Properties affected" – SHPO concurrence on 10/13/2020 (Case No. 20-3421)
Dead Horse Point State Park	Review Proposed Action for potential impacts to Dead Horse Point State Point	Minimal to no impacts expected to State Park.
Canyonlands National Park	Review Proposed Action for potential impacts to Canyonlands National Park	No Finding or conclusion from contact.

4.3 List of Preparers

Table 11: List of Preparers (BLM).

Name	Title	Responsible for the Following Section(s) of this Document
Jennifer Whittington	Geologist	Project Lead, Geology, Wastes, Water
Jill Stephenson	Planning and Environmental Specialist	NEPA coordination
Nate Huber	Air Quality Specialist	Air Quality, Green House Gas Emissions
Gabe Bissonette	Hydrologist	Wetlands, Floodplains
Aaron Vollmer	Rangeland Specialist	Soils, Grazing, Vegetation, Forestry
Katie Stevens	Outdoor Recreation Planner	Recreation, Visual Resources
Bill Stevens	Outdoor Recreation Planner	WSA, LWC, Wild and Scenic Rivers, Socioeconomics, Environmental Justice
Ami Schlosser	Archaeologist	Cultural Resources
Pam Riddle	Biologist	Wildlife (Sensitive Species, T&EC, General, Migratory Birds)
Charles Fischer	Natural Resource Specialist Fuels	Invasive Species/Noxious Weeds, Fire/Fuels
Lisa Wilkolak	Realty Specialist	Lands/Access
Bob Hartman	Petroleum Engineer	Petroleum Engineering

Table 12: Other Preparers.

Name	Title	Responsible for the Following Section(s) of this Document
Jared Bigler	Principle Ecologist	Project Manager
Rebecca Steely	NEPA Specialist	Primary Author
Caroline Brown	NEPA Specialist	Revisions, Secondary Author
Tyson Schreiner	GIS Specialist	GIS, Maps, Graphics
Heather Boekweg	NEPA Specialist	Review, Secondary Author
Chuck Easton MA, RPA	Senior Environmental Planner	Review, Quality Assurance

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Appendices

Appendix A: IDT Checklist

Appendix B: Maps

Appendix C: Comment Response Report

APPENDICES

APPENDIX A: INTERDISCIPLINARY TEAM CHECKLIST

Project Title: A-1 Lithium Incorporated Mineral Exploration Project

NEPA Log Number: DOI-BLM-UT-Y010-2021-0068-EA

Project Leader: Jennifer Whittington, Geologist, Moab Field Office

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

The following elements are not present in the Moab Field Office and have been removed from the checklist: Farmlands (Prime or Unique), Wild Horses and Burros.

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

Determination	Resource	Rationale for Determination*	Signature	Date
NI	Air Quality Greenhouse Gas Emissions	<p>The Proposed Action is located in an area that is currently meeting all ambient air quality standards. Emissions of air pollutants would occur during access road and drill pad improvements, drilling operations, and during reclamation. The Moab Master Leasing Plan (BLM 2016) evaluated the impacts to air quality from the development of up to 9 wells per year (3 oil, 5 potash, and 1 “other”); this EA tiers to the Moab MLP FEIS and decision. Since the Proposed Action is to re-enter previously plugged wells the air pollutant emissions would be similar to those identified in the Moab MLP for a workover rig, road/pad maintenance, and reclamation. These emissions calculated in the Moab MLP are:</p> <p style="padding-left: 40px;">PM₁₀ = 1.15 tons per year (tpy) PM_{2.5} = 0.13 tpy NO_x = 0.25 tpy SO₂ = 0.01 tpy CO = 0.17 tpy HAPs = 0.01 tpy</p> <p>These emissions rates are well below the rates identified in Utah State Administrative Code (R307-410-4) for when a detailed air quality analysis should be performed for new emissions sources. Values below the levels in R307-410-4 are considered to not have a substantial impact on air quality and would not change the attainment status of air quality standards.</p> <p>As of 9/8/2022, there have not been any wells developed this year in Grand and San Juan counties according to the Utah Division of Oil Gas and Mining. This is below the level of development evaluated in the Moab MLP which showed no exceedances of air quality standards in a year when up to nine wells are developed.</p> <p>A1 Lithium Inc has included air pollution control measures in the plan of development that are the same as analyzed and required by the Moab MLP. Inclusion of these measures ensure</p>	Nate Huber D. Pals	9/12/2022 7/17/2023

Determination	Resource	Rationale for Determination*	Signature	Date
		<p>that impacts would not exceed those identified in the Moab MLP. These measures include implementing drill rig pollution controls, dust abatement measures, minimizing surface disturbance to the smallest area possible, and the use of equipment to control volatile organics evaporating from tanks. Dust abatement measures include:</p> <ul style="list-style-type: none"> • the application of water on roads and during earth moving activities, • use of existing well pads and roads to minimize new surface disturbance to the smallest area possible • Soil stockpiles would be located so that wind erosion would be minimized <p>The de minimis level of emissions and inclusion of emissions control measures by A1 Lithium do not warrant additional analysis.</p> <p>Dusts Analysis: The BLM NEPA Handbook states that, "If the proposed action and alternatives would have no direct or indirect effects on a resource, you do not need a cumulative effects analysis on that resource." Dust has not been identified as a direct or indirect issue because the applicant plans to minimize new surface disturbance by using previously constructed well pads and roads. As a result, windblown dust will be nearly the same between the proposed action and No Action alternatives. Additionally, applicant committed measures to apply water to the roads and well pads, and to reduce wind erosion from soil stockpiles will minimize dust emissions. Estimated particulate matter emissions of 1.15 tons (PM10) are well below de minimis levels for new sources (Utah Administrative Code R307-410-4) and will have a negligible contribution to cumulative dust issues in the region. Reclamation requirements to restore the land to as close to natural conditions as possible will prevent long-term degradation from wind-blown fugitive dust.</p>		
NI	Greenhouse Gas Emissions	<p>Greenhouse gas emissions would occur during access route and drill pad improvements, drilling operations, and during reclamation. Total emissions from these activities would likely be in the range of tens to hundreds of metric tonnes. If the wells go into production additional emissions may occur during lithium processing and transport. However, there would be a long-term climate benefit from lithium production as it is a critical mineral used in batteries that are part of the energy transition away from fossil fuels towards renewable energy, especially in the transportation sector. The BLM is not able to quantify the potential emissions reductions from the energy transition as it depends on the quantity of lithium produced, and eventual end-use. Overall, the small amount of emissions from this project would be far outweighed by the long-term climate benefit of lithium in the transition from fossil fuel energy to renewable energy and the associated GHG emissions reduction.</p> <p>Based on this analysis, Greenhouse Gases emissions are not identified as an issue needing detailed analysis. Without quantification of GHG emissions it is not possible to quantify the social costs or benefits. The project would likely have a minor short-term social cost due to GHG emissions from the</p>	Nate Huber D. Pals	7/17/2023

Determination	Resource	Rationale for Determination*	Signature	Date
		drill rig and other fossil fuel consuming equipment identified in the plan of operations. However, if the exploration is economically feasible, then production of lithium would have long-term social benefits, as lithium is used in batteries that are part of the energy transition away from fossil fuels towards renewable energy, especially in the transportation sector.		
NP	Floodplains	No floodplains are present with the project area.	Gabe Bissonette Gabe Bissonette	4/1/2021 7/5/2023
NI	Soils	Well pad and access road disturbance would equal approximately 6.6 acres of soil disturbance. Reclamation activities described in Design Features would reduce impacts to soils by regrading and revegetating the area to reduce future runoff or continued soil disturbance	Aaron Vollmer A. Vollmer	3/30/2021 7/5/23
PI	Water Resource Quality and Quantity (drinking/surface/ground)	Drilling practices must protect surface and subsurface waters in all stages by adhering to Utah Division of Oil, Gas and Mining applicable well requirements outlined in Rule R649-3: Drilling and Operating Practices. The drilling procedures that would affect water resource quality are addressed in the proposed Plan for Exploration in Appendix II and in the Description of Operations Part II, pg. 6; and the procedures satisfy the regulation in 43 C.F.R. § 3594.5 (a) (b) and the regulation at 42 C.F.R. § 3593.1 (a) (b) (c) (d). The use of temporary diversion and sumps at the drill locations for surface water management as described in section 2.2.6 in the EA are sufficient to control surface water drainage until reclamation.	Jennifer Whittington Jennifer Whittington	7/26/2021 7/12/23
NP	Wetlands/Riparian Zones	No Riparian or Wetlands are present within the project area. This is determination is based on riparian datasets from the Properly Functioning Condition (PFC) geocortex, AIM geoportal, and through the inspection of aerial imagery.	Gabe Bissonette Gabe Bissonette	4/1/2021 7/5/2023
NP	Areas of Critical Environmental Concern	No Areas of Critical Environmental Concern are present within the project area. See Map 21 in 2008 Moab RMP.	Katie Stevens Katie Stevens	7/20/21 7/5/2023
PI	Recreation	Up to one million visitors utilize the area – on way to Dead Horse Point State Park as well as Island in the Sky District of Canyonlands National Park. Access to Mineral wellsite crosses Rodeo bike trail Sunrise well site is visible from Utah State Route 313, a State of Utah Scenic Byway.	Katie Stevens Katie Stevens	7/20/21 7/5/2023
NP	Wild and Scenic Rivers	No Wild and Scenic Rivers are present within the project area. See Map 22 in 2008 Moab RMP.	Bill Stevens Bill Stevens	4/1/21 7/5/23
PI	Visual Resources	Proposed Action is within VRM Class II. Sunburst wellsite is visible from the Utah State Scenic Byway (State Route 313) corridor. Mineral wellsite is visible from the Mineral Bottom Road (access to the White Rim and the Green River) as well as from the Horsethief and Cowboy Camp Campgrounds and the Rodeo bicycle trail. Auditory impacts may be incurred by campers, especially at night.	Katie Stevens Katie Stevens	7/20/21 7/5/2023

Determination	Resource	Rationale for Determination*	Signature	Date
NP	BLM Natural Areas	No BLM Natural Areas are present within the project area. See Map 16 in 2008 Moab RMP.	Bill Stevens Bill Stevens	4/1/21 7/5/23
NI	Socioeconomics	Minimal impact relative to overall economy of planning area. According to data from U.S. Department of Commerce (2021), Census Bureau and County Business Patterns, all mining in Grand County (including oil and gas) accounted for 0.3 percent of total county employment in 2019. The type of exploration proposed in this action is highly likely to involve spending on labor and services from outside the local economy, given the lack of mining infrastructure in Grand County.	Bill Stevens Bill Stevens	4/1/21 7/5/23
NP	Wilderness/WSA	No Wilderness or WSAs are present within project area. See Map 16 in 2008 Moab RMP.	Bill Stevens Bill Stevens	4/1/21 7/5/23
NP	Lands with Wilderness Characteristics	No lands with wilderness characteristics as identified by BLM are present within the project area. See Map 15 in 2008 Moab RMP.	Bill Stevens Bill Stevens	4/1/21 7/5/23
NI	Cultural Resources	Placement of temporary snow fence along southern edge of Mineral Canyon Fed 1-3 pad for cultural resource protection of resources just below the ledge. "No Historic Properties Affected" – SHPO concurrence 10/13/2020 - Case No. 20-3421	Ami Schlosser Ami Schlosser	AS 7/5/23
NP	Native American Religious Concerns	Tribal Consultation was initiated on 10/13/2020 with letters mailed to tribes. Tribal responses did not identify any concerns within project area.	Ami Schlosser Ami Schlosser	AS 7/5/23
NI	Environmental Justice	Low-income populations have been identified within Grand County. See https://ejscreen.epa.gov/mapper/ The Census, however, has determined that low-income data for Grand County is considered very unreliable, due to sampling error inherent with small populations, making a confident identification of this EJ population problematic. This finding could change based on information received from scoping, public comment, tribal consultation and/or local knowledge.	Bill Stevens Bill Stevens	4/1/21 7/5/23
NI	Wastes (Hazardous or solid)	Drilling fluids, produced water, and other wastes associated with the exploration for lithium/bromine minerals are excluded as a hazardous waste under 40 C.F.R. § 261.4(a)(17). The surface use and drilling procedures contained in the proposed plan include containment and disposal measures of hazardous solid wastes or spills (Description of Operations, pg. 14, part vii-ix; and pg. 31 section 8 General Performance Standards). Sumps and cuttings pits must be lined to prevent water seepage, monitored for wildlife and cleaned of trash and debris during the drill and testing phases of the proposed operations, and before final reclamation. All non-exempt waste generated during the proposed operations must be collected and disposed of in a landfill	Jennifer Whittington Jennifer Whittington	4/2/21 7/13/23
NP	Threatened, Endangered or	No Mexican spotted owl habitat in the vicinity of the Sunburst & Mineral 1-3 locations.	Pam Riddle Gabe Bissonette	3/29/21 7/5/2023

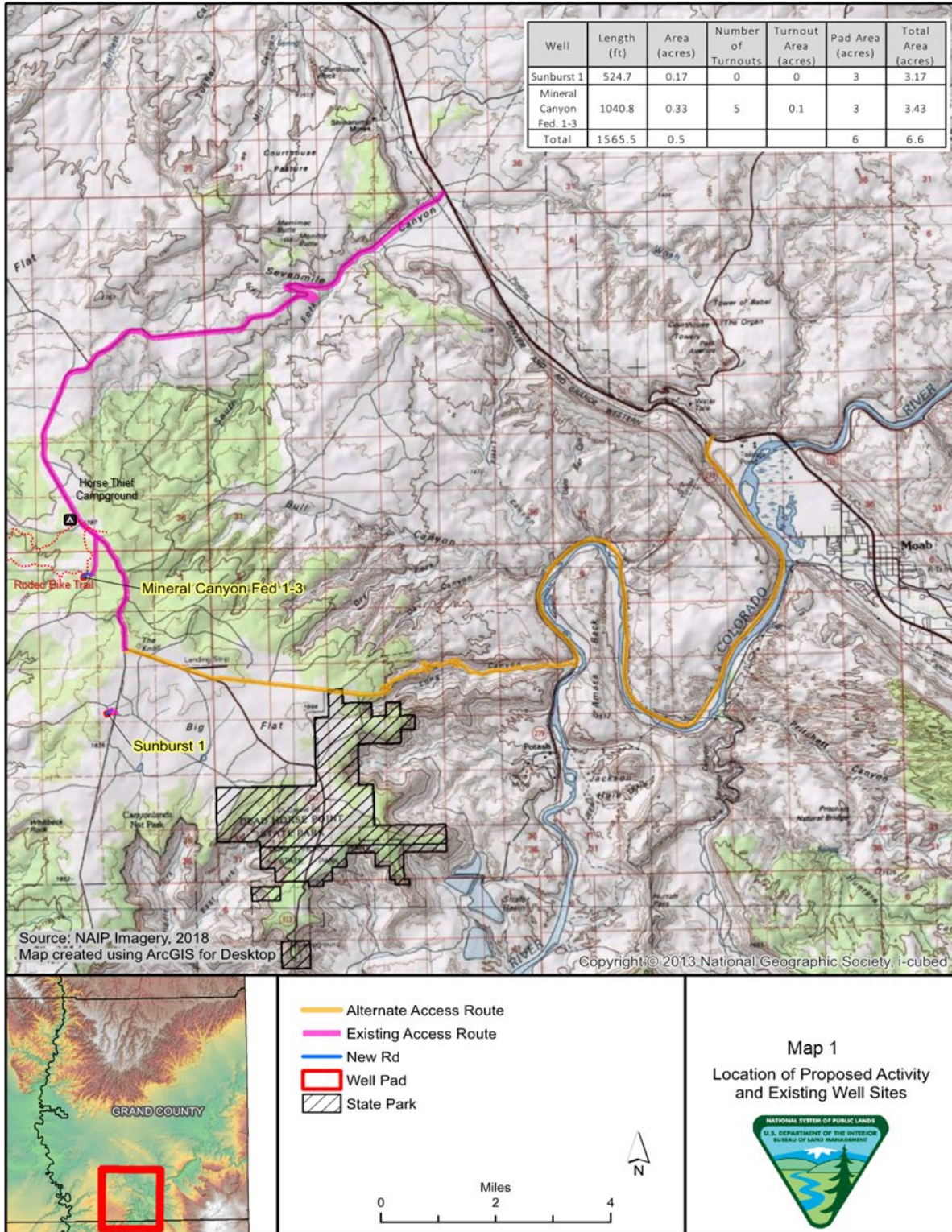
Determination	Resource	Rationale for Determination*	Signature	Date
	Candidate Animal Species	There are no fish bearing waters or water withdrawals proposed.		
NI	Migratory Birds	<p>Westwater Engineering conducted vegetation and wildlife surveys for the Mineral Canyon Federal and Sunburst well locations.</p> <p>WestWater Engineering Surveys June 2020: no raptor nests with 0.5 miles of Sunburst 1 & Mineral 1-3. Due to the absence of cliff structure and minimal vegetative structure, cliff and tree nesting raptors are not expected to nest in the vicinity of these two locations. If additional locations other than the Sunburst 1 & Mineral 1-3 are proposed for project construction, resurveying a during the active nesting season by a qualified biologist would be required. Project construction that removes vegetation that supports nesting structure for migratory birds would be avoided from April 1 to July 31 to ensure nesting migratory birds with not be disturbed.</p> <p>Non-nesting migratory birds & raptors are not tied to a nesting location with young and therefore can readily avoid away from disturbances that may occur as a result of this project.</p> <p>Due to lack of nesting habitats, seasonal avoidances, and mobility of non- nesting migratory birds & raptors. These species would not be affected to a degree that detailed analysis is required.</p>	Pam Riddle Y. Argov	7/05/21 7/6/23
NI	Utah BLM Sensitive Species	<p>WestWater Engineering Surveys June 2020: Minimal SSS animal habitats, no SSS animals were observed during surveys.</p> <p>BLM Sensitive Species animal habitat is minimal in the project areas; occupancy is not expected. No BLM Sensitive Species (plants or animal) were observed during surveys; therefore, BLM Sensitive Species would not be affected to a degree that detailed analysis is required.</p>	Pam Riddle Y. Argov	3/29/21 7/6/23
NI	Fish and Wildlife Excluding USFW Designated Species	Minimal, short-term impacts to general wildlife during surface disturbing activities. No bighorn lambing habitat in the vicinity of these two locations. General wildlife can readily move into nearby suitable habitats during surface disturbing activities, permanent displacement is not expected. Approximately 3 acres per pad adjacent to existing roads (less than 7 acres total) would be disturbed. Minimal, short-term impacts on less than 7 acres is not expected to affect wildlife and their habitats to a degree that detailed analysis is required.	Pam Riddle Y. Argov	3/29/21 7/6/23
NI	Invasive Species/Noxious Weeds	Design features including cleaning vehicles and equipment prior to entering site so as not to bring in invasive species and reclamation activities, reduce the potential for impact of invasive species spread and establishment. Native species would be seeded over all	Charles Fischer	7/26/21

Determination	Resource	Rationale for Determination*	Signature	Date
		disturbed areas upon completion of operations. Therefore, no additional analysis is required.		
NP	Threatened, Endangered or Candidate Plant Species	WestWater Engineering Surveys June 2020: Navajo Sedge - no seep-springs or hanging gardens present within 100 meters of the proposed project features Jones cycladenia, occurs on gypsiferous saline soils derived from the Chinle, Cutler, and Summerville Formations. The proposed project would be located on soils derived from the: Kayenta, Wingate sandstone, and mixed eolian alluvial deposits. No suitable habitat for Jones cycladenia was observed during surveys.	Pam Riddle Todd Murdock	3/29/21 7/6/2023
NI	Livestock Grazing	Livestock usage would not be impacted by the 6.6 acres of disturbance because the Big Flat Ten Mile allotment is 160,000 acres in size, allowing the cattle ample grazing area.	Aaron Vollmer A. Vollmer	3/25/21 7/5/23
NI	Rangeland Health Standards	There is a potential for 6.6 acres of rangeland to be impacted, but due to reclamation activities as outlined in Design Features to regrade soil and reseed area with approved native vegetation, rangeland health standards would not be impacted to a degree requiring further analysis.	Aaron Vollmer A. Vollmer	3/25/21 7/5/23
NI	Vegetation Excluding USFW Designated Species	The well pads and access routes would cause 6.6 acres of disturbance, potentially impacting 6.6 acres of vegetation. Reclamation activities outlined in Design Features require reseeding of native seed after the project is complete (24 months after start date).	Aaron Vollmer A. Vollmer	3/25/21 7/5/23
NI	Woodland / Forestry	Proposed disturbance would be within area of previous disturbance in a sparsely wooded area. Some individual trees may be impacted by road and drill pad construction but not to a degree requiring detailed analysis.	Aaron Vollmer A. Vollmer	3/25/21 7/5/23
NI	Fuels/Fire Management	Both proposed well locations fall within Fire Management Unit (FMU) 8 – Dead Horse Point. Fuels within this FMU are generally sparse and consist of a mixture of sagebrush, blackbrush, salt brush, native grasses and pinyon-juniper (PJ). When the proposed action is overlaid with the fire history layer and buffered ½ mile there have been a total of 4 fires over the past 30 years; all fires were 1/10th acre or less. Due to the sparse fuels and lack of historical fires within the area, the proposed action does not warrant further analysis, as no impacts are anticipated.	Josh Relph Josh Relph	5/11/22 7/5/23
PI	Geology / Mineral Resources/Energy Production	Oil and gas resource exploration and development is active in the proposed exploration area. The depths proposed for mineral exploration and testing (6200-6300ft) are stratigraphically above the historic oil and gas producing Cane Creek formation (>7400ft). Subject to valid existing rights. See 2016 MLP.	Jennifer Whittington Jennifer Whittington	4/2/21 7/13/23
NI	Lands/Access	Access routes to drill pads are subject to valid, existing rights-of-way (ROWs) in the area of proposed action. If any work is required on existing County road ROWs, the	Lisa Wilkolak Lisa Wilkolak	7/20/21 7/6/23

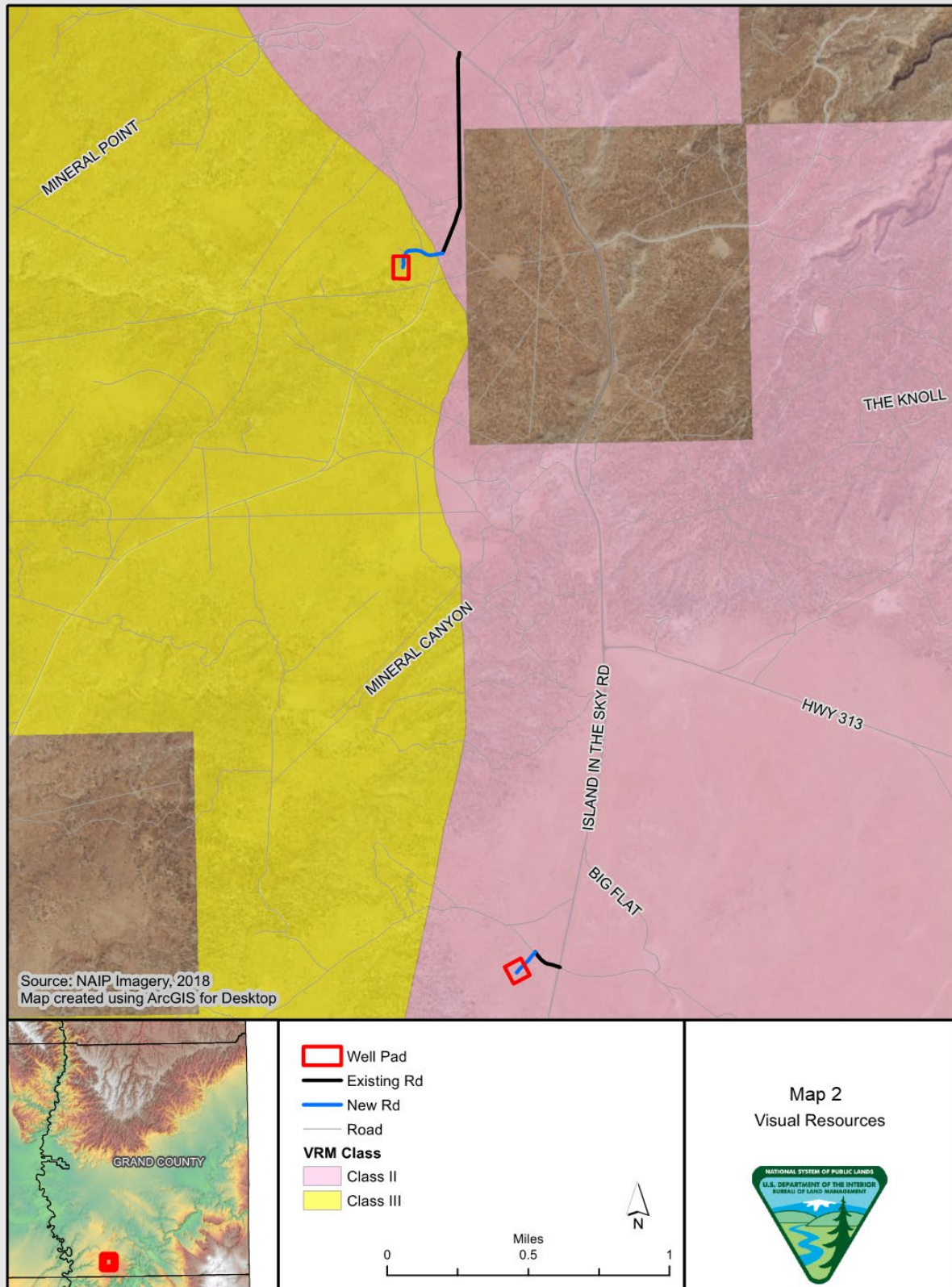
Determination	Resource	Rationale for Determination*	Signature	Date
		proponent would notify the County of needed work. If any work proposed is outside of the existing ROW, an amendment may be needed.		
NI	Paleontology	The geologic formations at the surface in the areas of the proposed locations have a potential fossil yield classification of PFYC3 (moderate). If fossil material is encountered in the area during operations, cease activity at that location and notify the Moab Field Office.	Jennifer Whittington Jennifer Whittington	4/2/21 7/13/23

APPENDIX B: MAPS

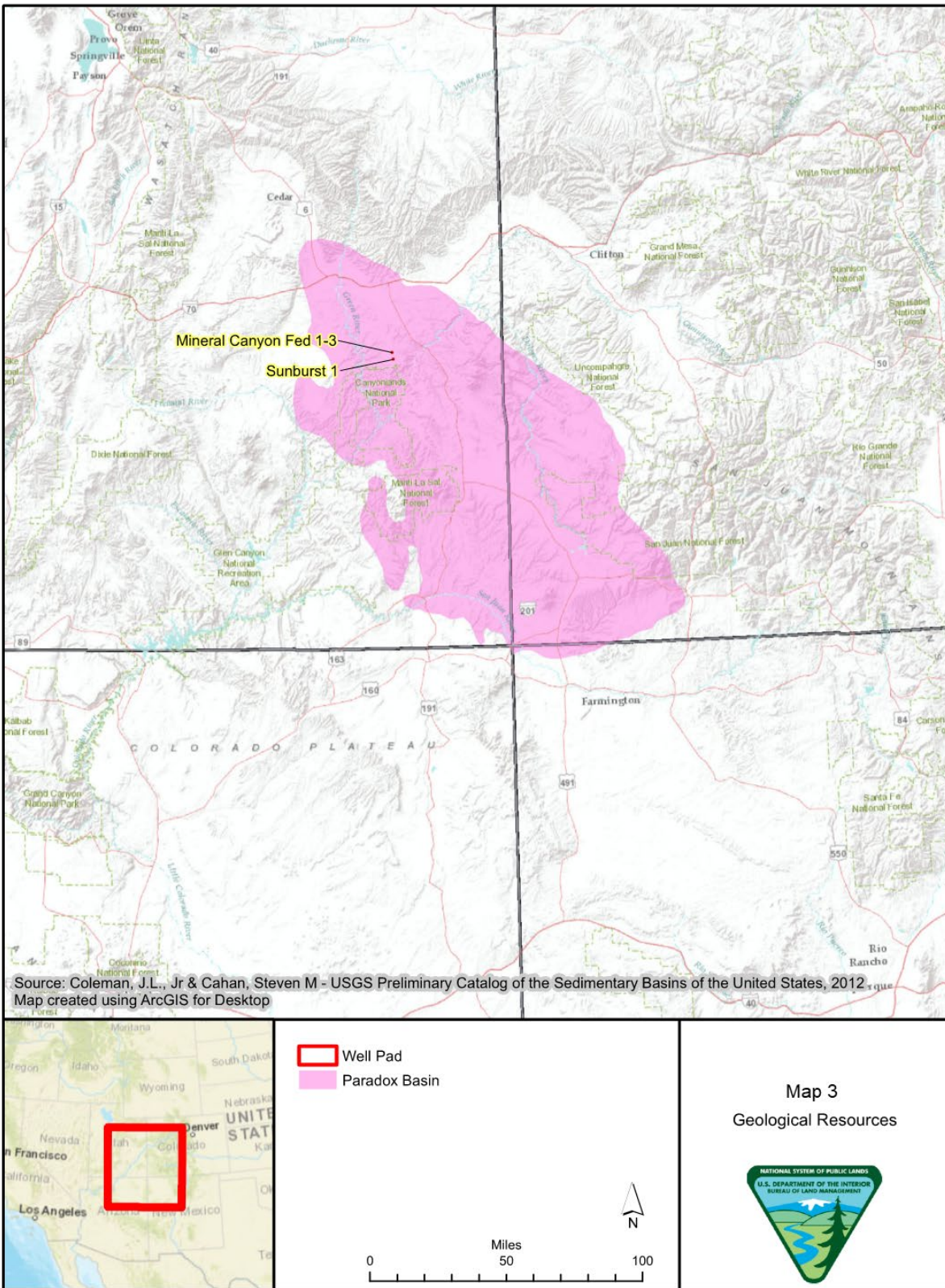
Map 1: Location of Proposed Action and Existing Well Sites.



Map 2: Visual Resources Management (VRM) Map.

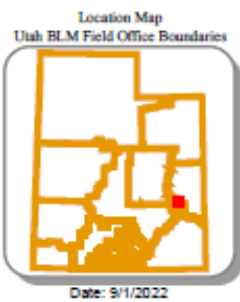
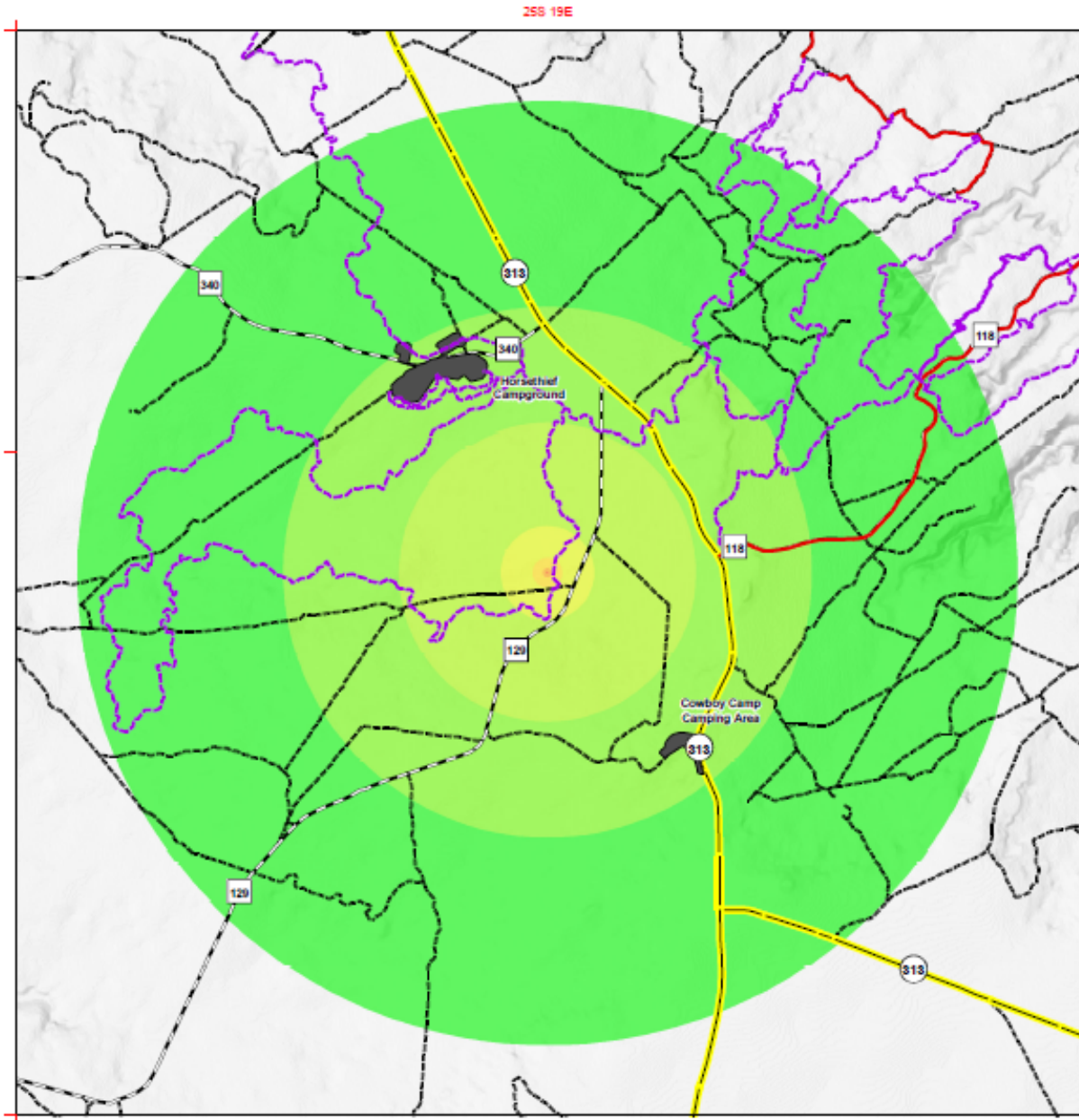


Map 3: Geological Resource Map.

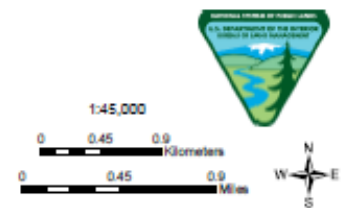


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Map 4: Mineral Canyon Federal #1-3 Estimated Noise Pollution Map.

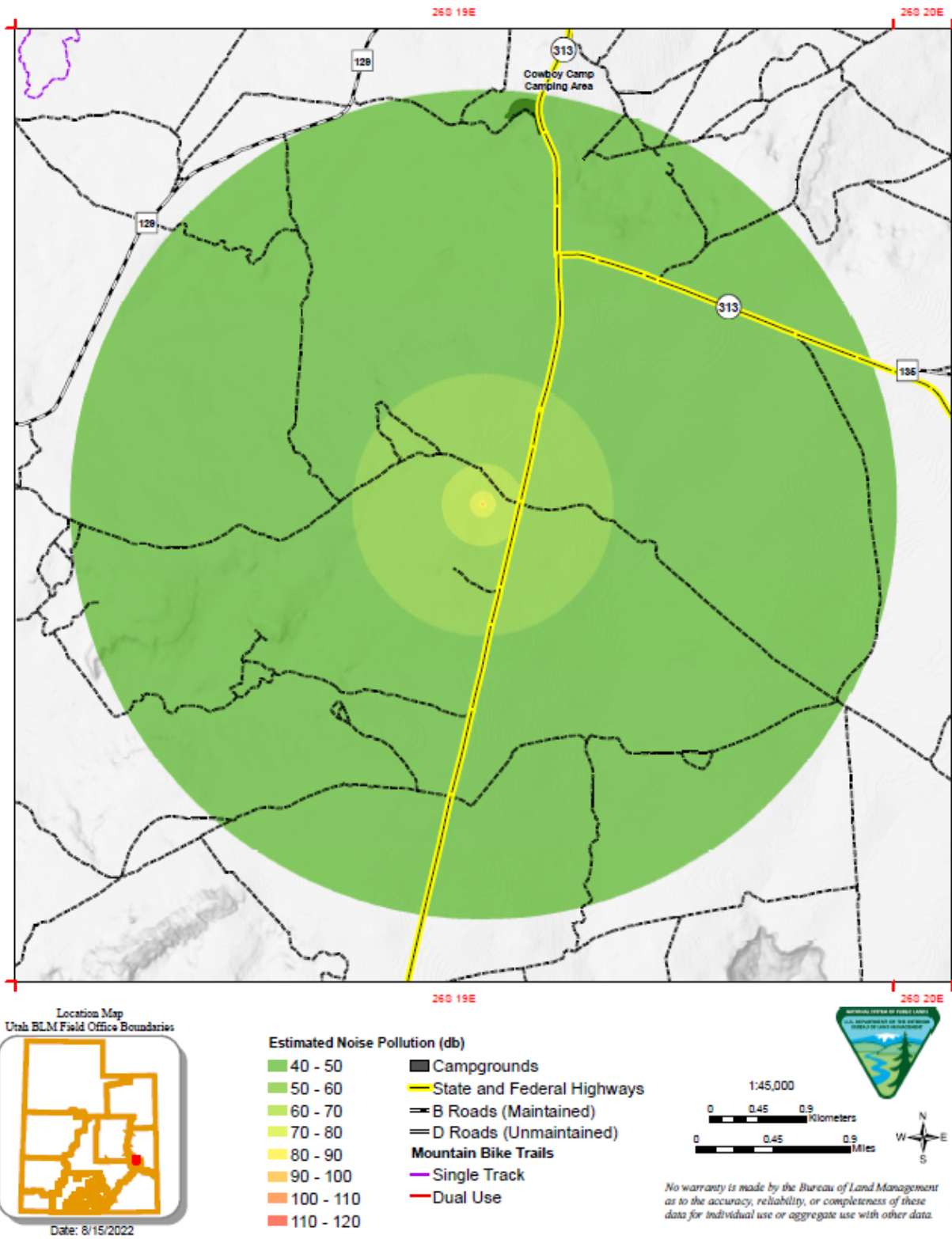


- Estimated Noise Pollution (db)
- 110 - 120 Campgrounds
 - 100 - 110 State and Federal Highways
 - 90 - 100 B Roads (Maintained)
 - 80 - 90 D Roads (Unmaintained)
 - 70 - 80 Mountain Bike Trails
 - 60 - 70 Single Track
 - 50 - 60 Dual Use
 - 40 - 50



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

Map 5: Sunburst #1 Estimated Noise Pollution Map.



APPENDIX C: COMMENT RESPONSE REPORT

The Bureau of Land Management (BLM) Moab Field Office (MFO) posted the A1 Lithium Mineral Exploration Project to the BLMs ePlanning site on July 1, 2021. The BLM hosted a public comment period from June 27 to July 27, 2022. The BLM received approximately 120 comments during the comment period.

The BLM notified interested parties and the public through email notifications and social media posts. Edits and clarifications have been made to the EA in response to comments. Substantive comments have been summarized by category with the BLMs responses provided.

Category: Coordination

Summary of Comments: The BLM should consult with the National Park Service and Deadhorse Point State Park on the A1 Lithium Mineral Exploration Project in order to evaluate the potential impacts of the Proposed Action and any reasonably foreseeable impacts on natural, cultural and historical resources protected within the parks.

BLM Response: The BLM contacted Dead Horse Point State Park and Canyonlands National Park on August 4, 2022 asking for input on the project regarding potential impacts to the parks' natural and cultural resources. Dead Horse Point concluded that they have no concerns with the project at this time. No input was received from Canyonlands National Park. The BLM will maintain communication with State and National Parks for this and future projects.

Category: Proposed Action

Summary of Comments: A1 Lithium should provide a full plan for the proposed exploration project.

BLM Response: A1 Lithium submitted a Plan for Exploration at the request of the Moab Field Office in accordance with 43 C.F.R. § 3809.21(b) because the MFO previously accepted three Notice-level exploration proposals from A1 Lithium. The MFO requested that all remaining plans for exploration by A1 Lithium be included in this Plan for Exploration for NEPA review.

Summary of Comments: The BLM must explain in the EA why the Mineral Canyon Federal and Sunburst wells are the environmentally preferred alternatives.

BLM Response: An EA is a site-specific analysis of potential impacts that could result with the implementation of a Proposed Action or alternatives to the Proposed Action. Please refer to Section 2.3 in this EA for a discussion of alternatives considered.

Summary of Comments: The BLM must ensure that the proposal be done in the most environmentally responsible manner possible. Lithium extraction should not stress fragile ecosystems or scenic nature of the Colorado Plateau; rigorous guidelines should be developed and enforced.

BLM Response: The BLM, by working with A1 Lithium, has developed design features and conditions of approval to reduce impacts to resources present in the proposed location. Design features and conditions of approval (Section 2.2.6 of the EA) were developed

utilizing the A1 Lithium Revised Plan of Operations, the 2016 Moab Field Office Record of Decision and Approved Master Leasing Plan, 2008 Moab Field Office Record of Decision and Approved Resource Management Plan, and The Gold Book.

Category: Alternatives

Summary of Comments: The BLM should analyze an alternative that would limit exploration to the Mineral Canyon Federal #1-3 well to reduce impacts to resources present in the project area.

BLM Response: Please refer to Section 2.3 in this EA for a discussion of alternatives considered.

Summary of Comments: The BLM should analyze a phased development alternative that would start with Mineral Canyon Federal #1-3 and authorize exploration at Sunburst #1 if economic quantities of lithium are produced at Mineral Canyon Federal #1-3.

BLM Response: Please refer to Section 2.3 in this EA for a discussion of alternatives considered.

Category: Effects Analysis/ General Effects

Summary of Comments: Environmental Impacts and Cumulative Impact Analysis needs to be analyzed quantitatively for all resources.

BLM Response: The BLM used quantitative analysis where available. The BLM NEPA Handbook describes a “hard look” as being a reasoned analysis containing quantitative or detailed qualitative information. Where quantitative information was not available, the BLM provided detailed qualitative information to the best of its knowledge. Please refer to Section 3.2.2.

Summary of Comments: How would the Proposed Action impact biological soil crust?

BLM Response: Please refer to Section 2.2.2 in the EA.

Summary of Comments: The EA fails to identify past, present and reasonably foreseeable actions including oil and gas drilling, potash mining, locatable mineral/lithium exploration that might affect the environment. The BLM must include the Reasonably Foreseeable Development Scenario.

BLM Response: The BLM added the RFDS into the cumulative impact analysis for the issued analyzed in the EA. See Sections 3.2.2 for a Cumulative Effects Analysis of the issues identified in the EA.

Summary of Comments: How would reopening abandoned roads and well pads in the midst of a multi-decade drought with widespread pinyon and juniper die-offs impact reclamation efforts?

BLM Response: The proposed access routes and well pads are existing disturbances that have been reclaimed. Please refer to Section 2.5.

Summary of Comments: What are the long-term effects of this project? Unknown long-term effects inherently make a project risky, especially in a treasured area. Effects need to be analyzed in a comprehensive manner.

BLM Response: Long term impacts of the proposed action on the resources present that are managed for by the BLM MFO are analyzed in Chapter 3 of the EA. Impacts and cumulative impacts are fully analyzed with the best available data and knowledge by the resource specialists.

Summary of Comments: Industrialization of the area would degrade the experience of thousands of people and cause impacts to vegetation, wildlife and natural resources. There is a need to protect and preserve the natural landscapes of the area for the high value tourism industry in Moab. Lithium exploration should be done in the most environmentally protective and responsible manner possible and have as minimal an impact as possible. The BLM must ensure that air, climate, water, viewsheds and soundscapes are protected.

BLM Response: The EA includes design features and conditions of approval in Section 2.2.6 would minimize any long-term disruption of the surface resources and to promote successful reclamation. These measures include conditions on air pollution, water quality, spill contingency, soundscapes, viewsheds, wildlife and cultural protections.

Summary of Comments: This proposal would impact recreation sites utilized by multitudes of recreationist in proximity to the proposed locations, which are known for beauty and serenity. The proposal would impact those sites with noise and disruption to the natural landscape.

BLM Response: The BLM acknowledges in the EA that there would be impacts to the many recreationists who visit the area primarily to enjoy the visual and auditory landscapes. See Sections 3.3 and 3.4 for the impacts of the project on Recreation and Visual Resources (includes auditory information). Information has been added to the EA as to the number of people travelling along State Route 313, nearly all of which do so to enjoy the natural landscapes along that Scenic Byway. A visual resource analysis was conducted and is available as part of the project record.

Category: Monitoring

Summary of Comments: The BLM must effectively monitor project operations to ensure A1 Lithium complies with proposed mitigations measures and reclamation requirements.

BLM Response: Section 2.2.7 covers the COAs for the proposed exploration operations; included in the COAs are the Best Management Practices from the Moab 2016 MLP Appendix A, operational standards from the BLM 43 C.F.R. Part 3160, BLM Gold Book (BLM, 2007), and monitoring and reclamation standards as outlined in the BLM Surface Management Handbook H-3809-1 and Solid Mineral Reclamation Handbook H-3042-1.

Summary of Comments: The BLM should develop a plan on how to consider mineral material proposals that provides oversight on future exploration and development and covers long-term impacts after initial exploration.

BLM Response: Development of a plan on how to consider mineral material proposals is out of the scope of this project. However, the 2008 Moab RMP provides opportunities for environmentally responsible exploration and development of mineral and energy resources subject to appropriate BLM policies, laws and regulations while establishing conditions of use through land-use planning to protect other resource values. The

proposed action is in conformance with the 2008 Moab RMP and the conditions of use, including surface disturbing stipulations, that would be applied to the proposed exploration activities are outlined in Chapter 2.2.7, Design Features and COAs.

The 2016 Moab Master Leasing Plan provides additional BMPs and a Reasonably Foreseeable Development Scenario which is analyzed in the EA. The A1 Lithium proposal is in conformance with FLPMA (1976), the General Mining Law of 1872, and the Mining and Minerals Policy Act (1970) which give the BLM authority to authorize proposals such as mineral exploration. See Sections 1.2 and 1.3 of the EA.

Category: Technical

Summary of Comments: The role of lithium for batteries will soon be replaced by graphene as breakthroughs in its technology show graphene batteries are far superior to lithium batteries.

BLM Response: Executive Order 13817 “A Federal Strategy to Ensure Secure and Reliable Supplies of Critical Minerals,” emphasizes the need for the United States to domestically source critical minerals. The Secretary of the Interior published a “Final List of Critical Minerals” on May 18, 2018. This list includes commodities that can be leased as non-energy minerals, such as potash and metals like lithium or rare earth on any unclaimed, undeveloped area of public domain and on acquired lands.

Category: Reclamation and Bonding

Summary of Comments: How is the BLM ensuring this project will not create degrading environmental effects, logistical/infrastructural disruption or decreased value of public lands? Sufficient bonding must be collected to ensure any accidents, environmental degradation and reclamation are covered.

BLM Response: The proposal was evaluated for undue and unnecessary degradation (UUD) of the lands in accordance with 43 C.F.R. § 3809.415 and determined that the proponent would be required to mitigate potential impacts associated with the project by implementing all regulatory requirements stated in the EA and the BLM COAs in Section 2.2.7. The BLM will hold a bond of sufficient value to fully cover the plugging of the holes and surface reclamation liability associated with this exploration project. A1 Lithium and BLM responsibilities for establishment, maintenance, termination, and forfeiture of financial guarantees are described in 43 C.F.R. § 3809.500 through 3809.599. If A1 Lithium’s proposal is approved, a bond estimate would be included in the decision letter sent to A1 Lithium (43 C.F.R. § 3809.312(c)); and the bond would be posted before exploration operations commence.

Summary of Comments: How would climate change and aridification impact reclamation? How successful would reclamation in the project area be?

BLM Response: Guidance for site-specific reclamation is outlined in the U.S. Department of the Interior Bureau of Land Management Solid Minerals Reclamation Handbook (H-3042-1) and Surface Management Handbook (H-3809-1). The proposed reclamation plan analyzed in Section 2.2.5 considers the effects of the local climate in the area of the proposed project.

Category: Water

Summary of Comments: The EA fails to take a hard look at water quantity and quality. Lithium mining and brine extraction require large amounts of water; how does the BLM plan to address the large quantities of water needed?

BLM Response: Design features outlined in Section 2.2.4 describe measures that would be taken to reduce the potential for impacts to water quality. Water quantity and quality is analyzed in Section 3.6 of the EA.

Summary of Comments: The EA fails to analyze impacts to groundwater resources. BLM must ensure that surface and groundwater resources are protected, as well as aquifers. Contamination from this proposal could harm the nearby State and National Parks.

BLM Response: Groundwater resources are analyzed in Section 3.6 of the EA. The design features in Section 2.2.4 and in 2.2.7 describe the measures that would be taken to reduce the potential for impacts to groundwater resources. .

Summary of Comments: The EA fails to analyze the cumulative impacts that reasonably foreseeable oil and gas, mineral, potash and lithium exploration will have on water quantity in the Upper Colorado River Basin.

BLM Response: See section 3.6. 3 for cumulative impact analysis for water quantity in the proposed project area.

Category: Air Quality

Summary of Comments: The EA fails to take a hard look at air quality, GHG emissions and climate change.

BLM Response: The Interdisciplinary Team checklist has been updated to provide more details on impact to air quality, GHG emissions and climate change.

Summary of Comments: How would waste evaporates impact air quality?

BLM Response: Please refer to Section 2.2.3.

Summary of Comments: The EA needs to analyze and disclose the social cost of GHG.

BLM Response: The Interdisciplinary Team checklist in Appendix A has been updated to provide more details on the social cost of GHG.

Summary of Comments: The BLM must analyze the cumulative impacts of dust production from exploration projects.

- **BLM Response:** The Interdisciplinary Team checklist in Appendix A has been updated to provide more details on the impacts of dust production from exploration projects.
Category: Minerals

Summary of Comments: Approval of this proposal could lead to a piecemeal extraction approach in lithium exploration. Past energy development in the area has been disruptive and has a major impact on public lands.

BLM Response: Prior to this proposal, A1 Lithium had submitted three Notice-level exploration proposals. Upon the fourth proposal, the Moab Field Office requested the submission of a Plan for Exploration in accordance with 43 C.F.R. § 3809.21(b). Exploration is not considered development of the resource, which would require the submission of a Plan of Operations.

To the extent possible, the stipulations developed for oil and gas leasing are applicable to all mineral activities (leasable, locatable, and salable) as outline in Section 1.2. The BLM applies these stipulations as Best Management Practices (BMPs) where appropriate to mitigate potential impacts on public lands. BMPs are incorporated as applicant committed Design Features and COAs in this EA.

Summary of Comments: The BLM needs to take a comprehensive look at what cumulative impacts Lithium and Boron production in the area would result in.

BLM Response: The RFDS and a potential future Plan of Operations for Development and Production are analyzed in the Effects Analysis in section 3.2 of this EA.

- Category: Wildlife

Summary of Comments: Numerous bird species particular to the area would be impacted from the physical disturbance of the project. A 2018 study of Western and Mountain Bluebirds and Ash-throated Flycatcher found that consistent noise generated by gas compressors created chronic stress in these bird species, resulting in nest failure and reducing odds of survival. A 2008 study showed reduced pairing success in Ovenbirds nesting near compressor pads. Greater sage-grouse occur in the area and are very sensitive to disturbance by oil and gas extraction. Drilling and mining would have a similar impact on sage-grouse.

BLM Response: The Interdisciplinary Team checklist in Appendix A has been updated to provide more details on the impacts to bird species and stipulations are found as applicant committed Design Features and COAs in Section 2.2.7.

- Category: Recreation

Summary of Comments: Reopening access roads may encourage OHV and dispersed camping use on those roads.

BLM Response: The access routes would be available only to the proponent for the purposes of the project. The routes would be signed as “No Access” for the public (see Section 2.2.6). If necessary, the access routes could be gated. The access routes would not be added to the Travel Plan as available for public use. The routes would be reclaimed and closed at the conclusion of the project (Section 2.2.4).

Summary of Comments: Noise, dust and environmental degradation of the trail system can do irreparable harm and should be considered in the conditions of approval.

BLM Response: Please refer to the analysis in Section 3.3 and 3.4.

Summary of Comments: The proposal is near world class destinations (Dead Horse Point State Park, Canyonlands National Park, scenic byways, campgrounds, bike trails) that draw millions of

visitors every year. How would the recreation experience for these visitors be impacted? How would an increase in truck traffic impact visitors?

BLM Response: The impacts to recreationists at the aforementioned sites have been disclosed in Section 3.4.

Summary of Comments: Well pads that will not be detectable to tourists and recreationists should be considered above all else.

BLM Response: The EA acknowledges that the Sunburst well pad would be visible to travelers on Utah State Route 313 as well as to drivers on the Canyonlands National Park Entrance Road. The Mineral Canyon Federal well pad would be visible from the Rodeo Bicycle Trail as well as from approximately six campsites at the Horsethief Campground. Please refer to Sections 3.3 and 3.4 for analysis.

Summary of Comments: Alerting campers of noise from the proposal by hanging signs at Horsethief Campground is not a sufficient mitigation to reduce impacts to visitors. Additional measures should be taken to alert campers prior to arriving at the campsite so alternative plans can be made.

BLM Response: The BLM will post information to the BLM MFO webpage and social media pages to alert the public of potential impacts to Horsethief and Cowboy Camp Campgrounds. This information was added to Section 3.3.2.2 of the EA.

Summary of Comments: The EA establishes arbitrary time frames and in so doing attempts to minimize the impacts of the proposed action.

BLM Response: The BLM acknowledges that impacts to recreationists may occur over a 24-month timeframe however, in much of that timeframe no activity is anticipated at either site. This is addressed in Section 3.4 of the EA.

Summary of Comments: The proposed drilling activities are inconsistent with the existing recreation and conservation values of the area.

BLM Response: The proposed action is consistent with the current Land Use Plan (2008 Moab RMP). This conformance is documented in Section 1.2 of the EA.

Category: Economics

Summary of Comments: The tourism industry and the recreation income it provides the community from the recreation opportunities in the Big Flat area through job opportunities will be negatively impacted from this project. The BLM needs to analyze the economic value of leaving the Big Flat area undeveloped.

BLM Response: Headwaters Economics report on tourism for Grand County estimates that 48.1 percent of Grand County jobs were in sectors related to travel and tourism. As stated in the IDT checklist, data from U.S. Department of Commerce Census Bureau, County Business Patterns (2021), indicates that minerals employment accounted for 1.45 percent of total employment in Grand County. BLM believes it unlikely that the small number of workers involved in this project will vault minerals-related employment anywhere close to tourism-related employment in the foreseeable future. Visitation to

the MFO has shown steady increases for decades, despite some level of minerals development in the State Route 313 area.

The Big Flat area is not currently “undeveloped”. State Route 313, a paved road with tens of thousands of vehicles annually, traverses the area. Three BLM campgrounds, four developed overlooks and several long-present oil wells lie on or close to the road. There are several developed mountain bike trailheads along the road. The road itself terminates at Dead Horse Point State Park, with a spur to Canyonlands National Park, both of which have relatively high levels of recreation infrastructure.

Refer to the Section 3.4 of the EA for additional analysis on the impacts of the proposed action on recreation.

Summary of Comments: The BLM needs to analyze the cumulative impacts from this proposal on the quality of lives and livelihoods of citizens of Moab.

BLM Response: Please see the above response addressing the relative strengths of the tourism and minerals sectors of the Grand County economy. The commentor does not provide BLM with data or arguments explaining how the proposed action would affect the quality of life in Moab. The area in which the proposed action is located has witnessed a coexistence between mineral activities and recreation for decades, which has been accompanied by ever increasing levels of recreation activity in the subject area.

Summary of Comments: How does the BLM plan to address the often-short-term cyclical economic benefits of mining projects that can negatively impact the tourism industry long-term?

BLM Response: The area in which the proposed action is located has witnessed a coexistence between mineral activities and recreation for decades, with significantly increasing levels of recreation activity in the subject area each year. There are several wells in the area which have been there for decades, with no apparent negative impact on recreation-oriented visitation to this area. Refer to the Recreation Section 3.4 in the EA for additional analysis on the impacts of the proposed action on recreation.