

**U.S. Department of the Interior  
Bureau of Land Management**

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**Final Environmental Assessment**

**DOI-BLM-NV-L030-2015-0003-EA  
Murphy's Gap APD Well No. 14-23**

**February 2016**

*Applicant: Makoil, Inc.*

**NVN 087038, NVN 093470**

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**DOI-BLM-NV-L030-2015-0003-EA**  
**Murphy's Gap APD Well No. 14-23**

**Prepared by**  
**U.S. Department of the Interior**  
**Bureau of Land Management**  
**Basin and Range National Monument**

**February 2016**  
**Type of Project: Oil and Gas Application for Permit to Drill**

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# Table of Contents

<b>1. Introduction .....</b>	<b>1</b>
1.1. Background: .....	1
1.2. Purpose of the Proposed Action: .....	5
1.3. Decision to be Made: .....	6
1.4. Preliminary Issues: .....	6
1.4.1. Summary of Public Participation .....	6
<b>2. Description of Alternatives, Including Proposed Action .....</b>	<b>9</b>
2.1. Introduction: .....	11
2.2. Alternative A – Proposed Action: .....	11
2.2.1. Introduction and Well Location .....	11
2.2.2. Access Roads .....	12
2.2.2.1. Existing Roads .....	12
2.2.2.2. Constructed Roads .....	13
2.2.3. Well Site Layout .....	13
2.2.4. Ancillary Facilities .....	16
2.2.5. Location of Existing and/or Proposed Facilities if Well is Productive .....	16
2.2.5.1. Existing Facilities .....	16
2.2.5.2. Proposed Facilities .....	16
2.2.6. Water Source .....	17
2.2.7. Waste Materials .....	17
2.2.8. Reclamation .....	18
2.2.9. Monitoring .....	18
2.2.10. Source of Construction Materials .....	19
2.3. Alternative B: .....	19
2.3.1. Introduction and Oil Well Location .....	19
2.3.2. Access Roads .....	19
2.3.2.1. Existing Roads .....	19
2.3.2.2. Constructed Roads .....	20
2.3.3. Oil Well Site Layout .....	20
2.3.4. Ancillary Facilities .....	22
2.3.5. Location of Existing and/or Proposed Facilities if Well is Productive .....	22
2.3.5.1. Existing Facilities .....	22
2.3.5.2. Proposed Facilities .....	22
2.3.6. Water Source .....	22
2.3.7. Waste Materials .....	22
2.3.8. Reclamation .....	23
2.3.9. Monitoring .....	23
2.3.10. Source of Construction Materials .....	23
2.4. Alternative A and B in Relation to Project Components .....	23
2.5. Alternative C – No Action: .....	23
2.6. Alternatives Considered, but Eliminated from Further Analysis .....	23
2.6.1. Description of Alternatives .....	23
2.6.2. Rationale for Elimination from Further Analysis .....	24

2.7. Relationship to Planning .....	24
2.7.1. Conformance with BLM Land Use Plan(s): .....	25
2.7.2. Relationship to Statutes, Regulations, or other Plans: .....	25
<b>3. Affected Environment/Environmental Impacts .....</b>	<b>27</b>
3.1. Introduction: .....	29
3.2. General Setting: .....	32
3.3. Resources/Concerns Analyzed .....	32
3.3.1. Water Resources .....	32
3.3.1.1. Affected Environment .....	32
3.3.1.2. Impact Analysis .....	34
3.3.2. Soils/Watershed .....	35
3.3.2.1. Affected Environment .....	35
3.3.2.2. Impact Analysis .....	35
3.3.3. Vegetation, Forest/Woodland and other vegetative products (Native seeds, yuca and cactus plants) .....	36
3.3.3.1. Affected Environment .....	36
3.3.3.2. Impact Analysis .....	36
3.3.4. Fish and Wildlife .....	37
3.3.4.1. Affected Environment .....	37
3.3.4.2. Impact Analysis .....	37
3.3.5. Migratory Birds .....	39
3.3.5.1. Affected Environment .....	39
3.3.5.2. Impact Analysis .....	39
3.3.6. Special Status Animal Species, other than those listed or proposed by the USFWS as Threatened or Endangered .....	40
3.3.6.1. Affected Environment .....	40
3.3.6.2. Impact Analysis .....	41
3.3.7. Visual Resources Management .....	42
3.3.7.1. VRM Classification Objectives .....	42
3.3.7.2. Affected Environment .....	42
3.3.7.3. Impact Analysis .....	43
3.3.8. Land Uses .....	45
3.3.8.1. Affected Environment .....	45
3.3.8.2. Impact Analysis .....	45
3.3.9. Recreation Uses including Back country Byways, Caves, Rockhounding Areas .....	46
3.3.9.1. Affected Environment .....	46
3.3.9.2. Impact Analysis .....	46
<b>4. Cumulative Impacts .....</b>	<b>49</b>
4.1. Introduction: .....	51
4.2. Past, Present, and Reasonably Foreseeable Future Actions (RFFAs) .....	51
4.3. Cumulative Impact Analysis .....	51
<b>5. Consultation and Coordination: .....</b>	<b>53</b>
5.1. Introduction .....	55

5.2. Persons, Groups, and Agencies Consulted .....	55
5.3. List of Preparers .....	56
<b>Bibliography .....</b>	<b>59</b>
<b>Glossary .....</b>	<b>61</b>
<b>Acronyms .....</b>	<b>63</b>
<b>Appendix A. The Standard Operating Procedures (SOPs) for Oil and Gas Operations in the Ely District, BLM .....</b>	<b>67</b>
<b>Appendix B. Washington Office Instruction Memorandum WO–2013–033: Fluid Minerals Operations — Reducing Preventable Causes of Direct Wildlife Mortality .....</b>	<b>69</b>
<b>Appendix C. Nevada Ely District Instruction Memorandum NVL0000–2011–010: Cacti and Yucca Salvage Stipulations for External Projects .....</b>	<b>71</b>
<b>Appendix D. The Burrowing Owl Protocol at Construction Sites .....</b>	<b>73</b>
<b>Appendix E. Weed Risk Assessment .....</b>	<b>75</b>
<b>Appendix F. Proclamation for the Basin and Range National Monument .....</b>	<b>77</b>
<b>Appendix G. Viewshed Analysis for the Basin and Range National Monument .....</b>	<b>79</b>
<b>Appendix H. Nevada Division of Water Resources Coal Valley Hydrographic Area Summary .....</b>	<b>81</b>

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**List of Figures**

Figure 2.1. Alternative A: Well Site Layout ..... 15  
Figure 2.2. Well Site Layout for Alternative B ..... 21

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**List of Maps**

Map 1.1. General Project Location Map (both alternatives) ..... 3  
Map 1.2. Project Map — Oil Well Pad and Water Well Location ..... 4  
Map 1.3. Project Map — Hiko Community Pit Location ..... 5  
Map 3.1. VRM Classes, relative to the proposed project ..... 44

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**List of Tables**

Table 2.1. Differences Between Alternative A and B .....	23
Table 3.1. Issues Dismissed from Analysis .....	29
Table 3.2. Bird Species in Survey Block 9312 (approximately three miles south of project area) .....	39
Table 3.3. Bird Species in Survey Block 9235 (approximately three miles southwest of project area) .....	39
Table 3.4. BLM Sensitive Animal Species .....	41
Table 3.5. VRM Classification Objectives .....	42
Table 5.1. Persons, Groups, and Agencies Consulted .....	55
Table 5.2. List of BLM Preparers .....	56

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# **Chapter 1. Introduction**

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This Environmental Assessment (EA) has been prepared to analyze the proposal by Makoil, Inc. to drill a wildcat exploration oil well on their lease (NVN 087038) located within the Basin and Range National Monument in Coal Valley, Lincoln County, Nevada. The 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 EA assists the Bureau of Land Management (BLM) in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any “significant” impacts could result from the analyzed actions. “Significance” is defined by NEPA and is found in Chapter 40 of the Code of Federal Regulations (CFR) §§1508.27. “Significance” is determined by the consideration of context and intensity of the impacts. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of “Finding of No Significant Impact” (FONSI). If there is a Finding of No Significant Impact (FONSI), the context and intensity criteria are listed with rationale for the determination in the FONSI document.

This document is tiered to, and incorporates by reference, the *Ely Proposed Resource Management Plan/Final Environmental Impact Statement* (RMP/FEIS) released in November 2007 (BLM 2007) and the *Ely Proposed Resource Management Plan/Record of Decision and Approved Resource Management Plan* (Ely RMP) as amended (September 2015). The Proposed Action is not within any designated habitat for Greater Sage-Grouse.

Should a determination be made that implementation of the proposed or alternative actions would not result in “significant environmental impacts” or “significant environmental impacts beyond those already disclosed in the RMP/FEIS”, a FONSI would be prepared to document that determination, and a Decision Record issued providing the rationale for approving the chosen alternative.

## **1.1. Background:**

The Caliente Field Office received a Notice of Staking (NOS) from Makoil Inc. on July 7, 2014 for the intent of drilling a wildcat oil well (Murphy Gap 14-23) in Coal Valley, approximately 17 miles northwest of Hiko, on BLM Lease No. N-87038. The proposed well is located in Section 14, Township 1 South, Range 59 East, Mount Diablo Baseline Meridian, Lincoln County, Nevada. Access would be from Highway 318 near mile post 17 along approximately 16.4 miles of gravel county-maintained roads (Seaman Wash Road to Lower Hole Road) — see Map 1.1 and Map 1.2. Total project disturbance would be approximately 5.7 acres. An Application for Permit to Drill (APD) was submitted to BLM in July 2014.

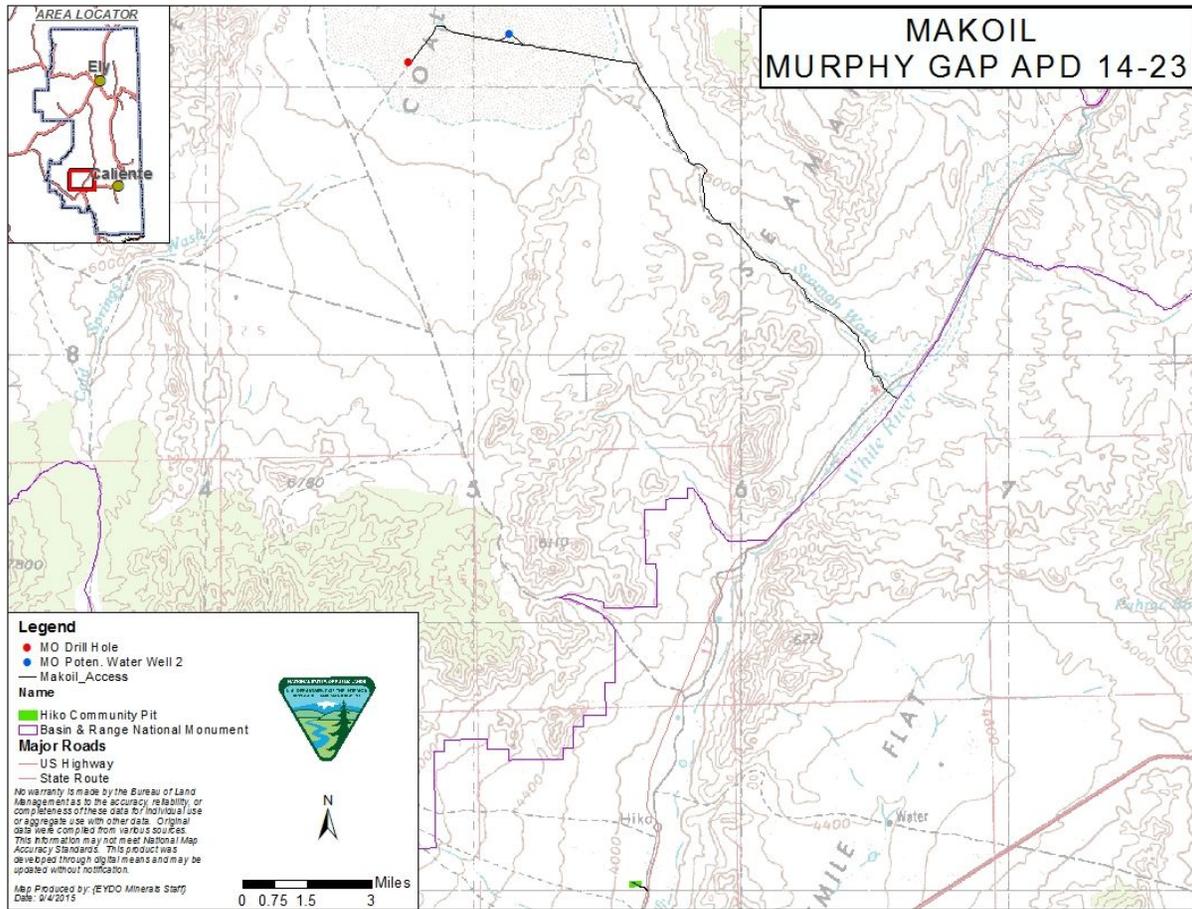
President Barack Obama designated and established the Basin and Range National Monument (BARNM) via his Proclamation dated July 10, 2015. BARNM encompasses approximately 704,000 acres of BLM-administered public lands in Nye and Lincoln Counties in southeastern Nevada which include portions of the project area. Project components, except for the previously authorized existing gravel source, occur within the Basin and Range National Monument.

As the Proclamation indicates, the President established BARNM to “preserve its cultural, prehistoric, and historic legacy and maintain its diverse array of natural and scientific resources, ensuring that the prehistoric, historic and scientific values of this area remain for the benefit of all Americans.” The Antiquities Act of 1906 gives the President authority to create National Monuments and discretion on the objects to be protected. The Proclamation identifies objects and values of primarily cultural and ecological importance.

There are more than 100 objects (including archaeological and historic sites, districts, and areas as well as natural resources) identified in the Proclamation. The term “objects” originates in the Antiquities Act as noted in the Proclamation (Appendix F). Implementation of the Best Management Practices, Standard Operating Procedures, measures committed to by the proponent, and other measures identified in this document will avoid and minimize potential impacts to Monument objects and values. The location of the well pad was chosen to minimize resource damage and utilize existing road access infrastructure. This project is consistent with Washington Office Instruction Memorandum 2013-142 regarding regional mitigation, and no substantial residual impacts have been identified.

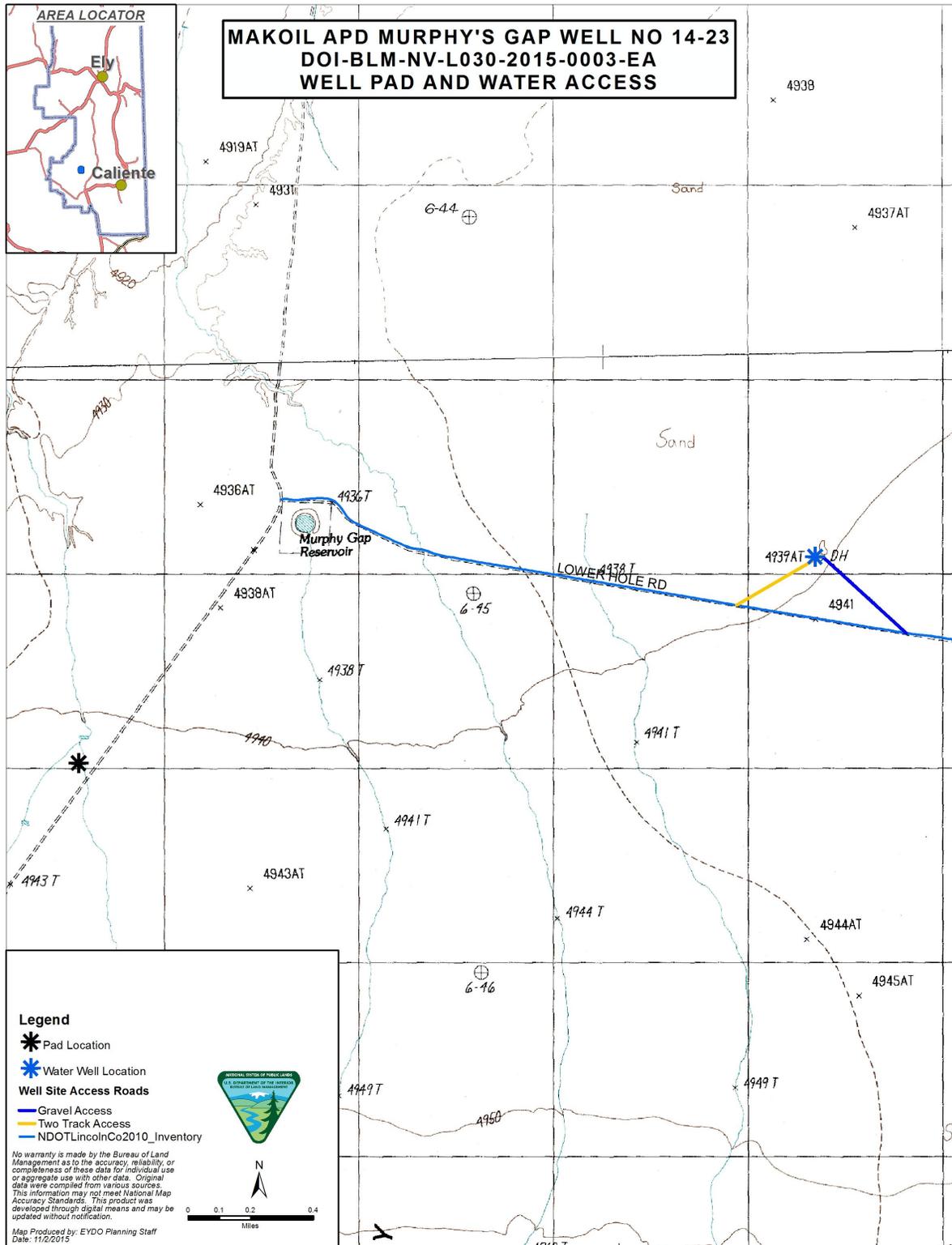
This document analyzes (as needed) potential impacts to Monument objects and values in Chapters 3 and 4. For example, cultural inventories were conducted on all project areas by archaeologists according to BLM standards. No cultural resources were identified. Some of the BLM special status animal species analyzed in this document are listed in the Proclamation as Monument objects.

Four oil wells have been drilled in Coal Valley over the past 50 years, with the most recent drilling in 1996. An oil show was observed on one well, but the well was not developed. Makoil, Inc. leased a 1,920-acre parcel (NVN 087038) for oil and gas exploration and development in 2010 for a period of ten years. As stated in the Proclamation, “The establishment of the monument is subject to valid existing rights.” The Proclamation also affirms, “Nothing in this proclamation shall be deemed to revoke any existing withdrawal, reservation, or appropriation; however, the monument shall be the dominant reservation.” Because this area was leased for fluid minerals prior to designation of the Monument, the proposed project is considered a valid existing right.



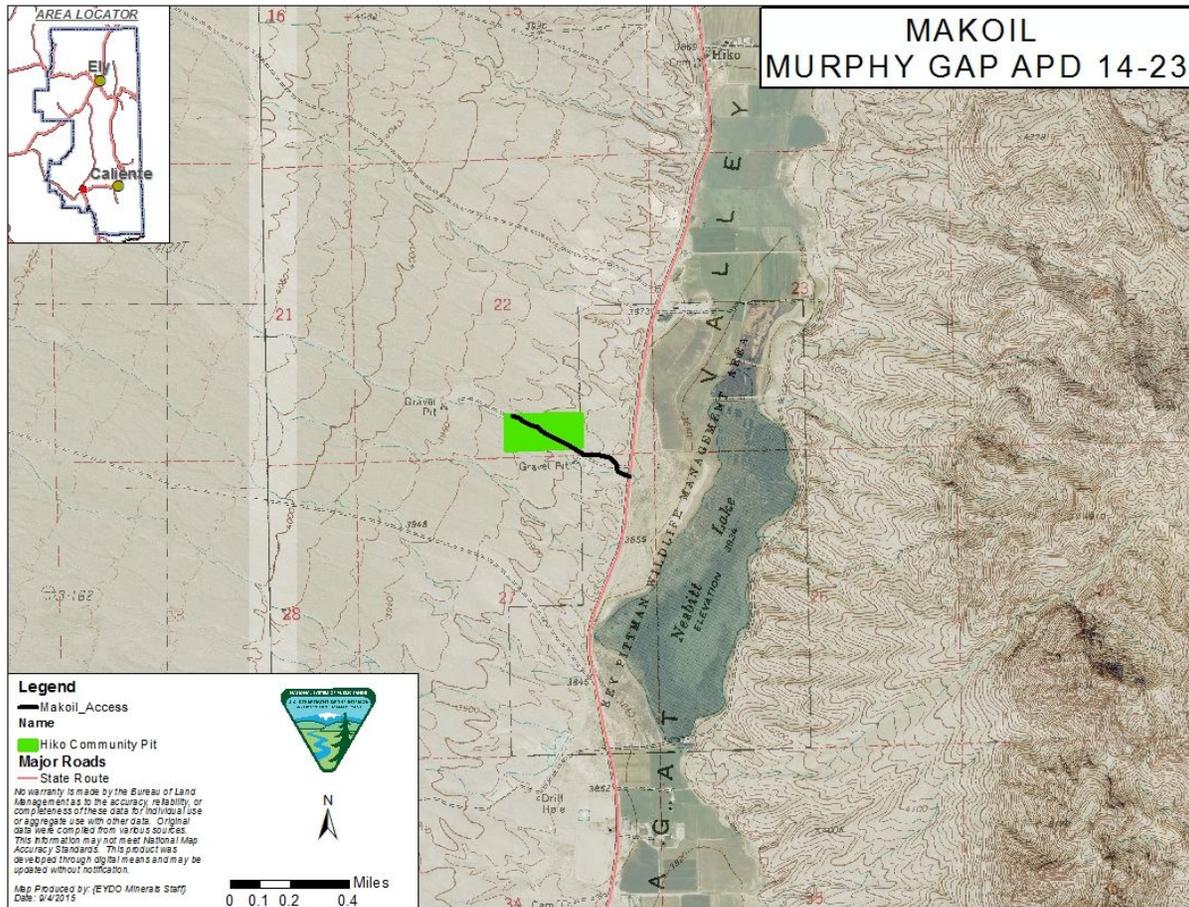
Map showing the project area within Coal Valley and access routes.

Map 1.1. General Project Location Map (both alternatives)



This map shows the various project areas in Coal Valley and near Hiko, Nevada.

### Map 1.2. Project Map — Oil Well Pad and Water Well Location



This map shows the existing community pit (previously authorized) and access road in relation to Hiko and Key Pittman Wildlife Refuge.

Map 1.3. Project Map — Hiko Community Pit Location

## 1.2. Purpose of the Proposed Action:

The BLM’s purpose in considering approval of the application for permit to drill an oil well is to provide legitimate use of the public lands to the proponent. Legitimate uses are those that are authorized under the Federal Lands Management Policy (FLPMA) of 1976 or other public land acts that meet the proponent’s objective while preventing undue and unnecessary degradation. The purpose of this project is to explore and develop oil and gas resources while ensuring compliance with the Presidential proclamation that established the Monument, the National Environmental Policy Act, and the Ely District Resource Management Plan as amended (2015).

The proponent’s objective is to drill an exploratory well to test for oil, and if successful, develop an oil well. If oil or gas is discovered, the well may be put into production. This EA will evaluate both exploratory drilling and potential production of the well. A new discovery may lead to additional drilling and well field development on existing leases which would require additional NEPA analysis.

The justification for the project is provided as a right to develop an oil and gas lease under the Mineral Leasing Act of 1920, as amended, Onshore Order No. 1, and the right to obtain mineral materials under the Materials Act of 1947, as amended.

### **1.3. Decision to be Made:**

After reviewing this analysis, BLM would decide whether to approve the Makoil's application to drill a wildcat exploration oil well on their lease (NVN87038) and maintain existing roads. BLM may choose to approve a subset of the requested activities. The BLM needs to consider approval of the application for drilling an oil well to respond to its mandate under FLPMA to manage the public lands for multiple use as well as compliance with the Presidential proclamation that created the area as a National Monument.

### **1.4. Preliminary Issues:**

Internal scoping was conducted by an interdisciplinary team that analyzed the potential consequences of the proposed action. The interdisciplinary team attended the NOS on-site inspection on July 9, 2014 and the APD on-site inspection on August 11, 2014. Internal scoping was also conducted during a meeting in the Caliente Office on August 12, 2014.

The following issues were identified for analysis.

1. Water Resources
2. Wildlife
3. Visual Resources
4. Soil Resources
5. Vegetation
6. Land Uses
7. Recreation Uses
8. Non-native Invasive and Noxious Species

#### **1.4.1. Summary of Public Participation**

The Notice of Staking (NOS) was distributed to agencies, tribes, and posted in the Caliente Field Office Public Room in July 2014. BLM received the APD on July 31, 2014 which was later determined complete in November 2014. The APD was made available in the public room on July 31, 2014 and remains available to the public.

Letters were sent to the tribes (listed in Table 5.1) on June 23, 2015 notifying them of the project and requesting consultation on any potential issues. The only response from a tribal government received regarding this proposed action was from the Duckwater Shoshone Tribe of the Duckwater Reservation who requested a visit to the site. The Ely District Tribal Coordinator and Caliente Field Office Archaeologist led a field trip for the Duckwater Shoshone Tribe of the

Duckwater Reservation on August 14, 2014. No Tribal issues were identified during the field trip. No additional responses were received.

During preparation of the EA, the public was notified of the proposed action by posting the project on the NEPA register. A public comment period was offered between *September 14, 2015* and *September 25, 2015*. Based on public input, the comment period was extended to *October 20, 2015*. The Public comment period was announced on the Ely District website, the project website, a press release was sent out, and the press release was posted in the public room at the Caliente Field Office.

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## **Chapter 2. Description of Alternatives, Including Proposed Action**

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## 2.1. Introduction:

The previous chapter presented the purpose and need for the proposed project, as well as the relevant issues, i.e., those elements that could be affected by the implementation of the proposed project. In order to meet the purpose and need of the proposed project in a way that resolves the issues, the BLM has developed a range of action alternatives. These alternatives, as well as a no action alternative, are presented below. The potential environmental impacts or consequences resulting from the implementation of each alternative are then analyzed in Chapter 3 for each of the identified issues.

## 2.2. Alternative A – Proposed Action:

This section describes the proponent's proposal as submitted in the APD and amendments and also incorporates Best Management Practices, Standard Operating Procedures, and measures from The Gold Book.

### 2.2.1. Introduction and Well Location

Makoil Inc. proposes to drill a wildcat well in the southeast quarter of the southeast quarter of Section 14, Township 1 South, Range 59 East, Mount Diablo Baseline Meridian, Lincoln County, Nevada on Lease No. 87038. Map 1.1 shows the well location and associated drilling access routes. The NOS was distributed to agencies, tribes, and posted in the Caliente Field Office Public Room in July 2014. BLM received the APD on July 31, 2014 which was later determined complete in November 2014. The APD was made available in the public room on July 31, 2014 and remains available to the public. Makoil, Inc. in coordination with BLM, developed project-specific design features to achieve the project purpose and need while providing project-specific environmental protection measures.

Drilling operations would commence after a decision is issued, depending on weather and rig availability, and are expected to be completed within approximately 21 days but may last longer. If the hole is dry, it would be immediately plugged and abandoned. Should the well be placed into production, operations may last for several years. Production operations are generally handled through Sundry Notices and associated permitting, unless they involve additional disturbance for which additional analysis is required under the National Environmental Policy Act (NEPA). Typical activities include well development, pumping and storage facility installation, oil hauling (up to several tanker truckloads a day to a process facility), well servicing, and routine maintenance.

No hydraulic fracturing is proposed in the APD and amendments. Additional NEPA would be required if hydraulic fracturing is proposed later in time.

In accordance with BLM Policy the appropriate practices from the following resources will be used to ensure resource protection. These resources include:

- Resource Program Best management Practices (BMPs) contained in Appendix A, Section 1 of the Ely District Record of Decision and Approved Resource Management Plan (BLM 2008b);
- The Standard Operating Procedures (SOPs) for Oil and Gas Operations in the Ely District, BLM (Appendix A);

- The BMPs as discussed in the Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (“The Gold Book”) (BLM and USDA 2007);
- A Sundry Notice and Report on Wells (form 3160-5) would be filed for approval for all changes of plans and other operations in accordance with 43 Code of Federal Regulations (CFR) 3162; and
- Bonding is required under 43 CFR 3104.

## 2.2.2. Access Roads

This section describes access to the project areas.

### 2.2.2.1. Existing Roads

The well site can be reached from Hiko, Nevada by traveling north on Nevada State Highway 318 approximately 14 miles to mile post 17 and then turning west onto Seaman Wash Road. Continue traveling approximately 10.6 miles northwest and then turn west onto Lower Hole Road (unmarked). Travel approximately 5.7 miles and the well site would be located on the north side of the road. A loop two-track access to an existing water well is located between the Murphy Gap Reservoir (along Lower Hole Road east of the well site) and the intersection of Lower Hole Road and Seaman Wash Road. This two-track would be utilized as a haul road for water needed at the well site and dust control on the roads, well pad, and gravel pit.

The gravel source, the existing previously authorized Hiko Community Pit (See Map 1.1 and 1.3), is located approximately 1.5 miles south of Hiko. To access the Hiko Community Pit, travel south from the town of Hiko on Highway 318 about 1.5 miles. Turn west onto a dirt/gravel county road towards the transfer station. The community pit is approximately a quarter mile from the highway. This pit location is different than was proposed in the APD as the original proposed pit was located within the Basin and Range National Monument (Monument). In accordance with the Proclamation for the Monument, which has withdrawn this area from “location, entry, and patent under the mining laws, and from disposition under all laws relating to mineral and geothermal leasing, other than by exchange that furthers the protective purposes of the monument” the location of the pit has been moved outside the monument boundary. This location was agreed upon in full coordination with Makoil representatives.

Existing roads would be maintained in same or better condition as existed prior to the commencement of operations, and maintenance would continue until final abandonment and reclamation of the well. A minimum amount of gravel would be used to surface existing roads to support mobilizing and demobilizing equipment.

Lower Hole Road currently measures 15-16 feet wide. Makoil does not plan to widen this road and would lay gravel down to 16 feet wide as needed. A buffer of 30 feet (15 feet from center line) is requested to avoid any inadvertent unauthorized disturbance outside of the roadway.

Maintenance includes the preserving and keeping of each roadway as nearly as possible in its existing condition as constructed, or mutually agreed upon, to provide satisfactory and safe service to all vehicles using such roadways. The dimensions would not change from their current form. A minimum amount of gravel would be used on the roadways to support mobile equipment, in the dry powdered-out areas of the road. The gravel would come from the proposed gravel

source (see section 2.2.10). Flattening, grading would occur in order to remove potholes and smooth the surface. Watering of the roads would occur as needed to keep dust to a minimum. The water source is identified in Section 2.2.6. Maintenance of existing roads outside of the existing disturbance or significantly changing the road condition or surface material would be closely coordinated with BLM and may require additional NEPA analysis.

Seaman Wash Road and Lower Hole Road are included in the Lincoln County Road Department-BLM Road Maintenance Agreement (RMA) (BLM and Lincoln County 2012). Lincoln County Road Department (LCRD) has an existing right-of-way on Seaman Wash Road and is responsible for maintenance. Roads will continue to be maintained by the county under the Road Maintenance Agreement (BLM 2012). Maintenance of the roads and any improvements would be closely coordinated with LCRD to ensure maintenance is appropriate, timely, and to BLM standards. These roads would be maintained in a safe condition for all users. No new right-of-way is proposed for this project.

### **2.2.2.2. Constructed Roads**

Less than 100 feet of new access road is proposed to be constructed north of Lower Hole Road. The access road is proposed so that the well pad is not directly adjacent to Lower Hole Road to address any human health and safety concerns as well as decrease visibility of the site to the public. The width would be 16 feet and flat-bladed for drilling and completion of operations. Surface disturbance on/along the travel way would be kept to an absolute minimum. In the event that commercial production is established, the access road would be constructed in accordance with road guidelines established for the oil and gas exploration and activities.

No cattle guards, culverts, or fencing are needed on the roads for drilling purposes. No major cuts or fills are anticipated along the proposed access road. Road maintenance during the drilling and production phase of operations would include surface and shoulders to be kept in a safe and usable condition. The proposed new access road has been staked down the center line. This new road occurs on lease, so a right-of-way would not be required as it would be considered part of the well pad disturbance.

### **2.2.3. Well Site Layout**

The well pad proposes a disturbance of 310 feet by 360 feet (see Figure 2.1 for layout design), though a total potential disturbance of 500 feet by 500 feet may be needed. The additional acreage builds a buffer zone that may be utilized for safety or other issues and approved with a sundry notice.

The pad is sited on nearly level ground so no cut and fill would be needed on the pad or access road. The pad would be scraped to salvage all topsoil and/or growth medium. This material would be stored along the edges of the pad in a stockpile berm as indicated in the well site layout (see Figure 2.1). The topsoil would be wetted as necessary to prevent fly-away and keep the soil viable for reclamation activities. All topsoil would be used in reclamation.

The well pad itself would measure 225 feet by 300 feet with additional acreage around the perimeter for a reserve pit to contain drilling fluids, topsoil stockpiles and a storage area. The material dug out to create the reserve pit would be stored along the side of the pit where the dirt contractor deems appropriate. This material would be used to refill the reserve pit after drilling operations. The proposed reserve pit would be fenced on three sides (in accordance with the Gold

Book (BLM and USDA 2007), page 17) while drilling and the fourth side would be fenced while the pit dries. The reserve pit would not be lined. If birds are seen drinking from the pit during drilling operations, mitigation (such as netting) would be utilized to protect the animals.

All oil, diesel, or hydraulic fluid spills would be cleaned up immediately and removed, including any contaminated soils. All spill-related materials would be hauled to an approved disposal site.

Drilling would be conducted in compliance with all Federal Oil and Gas Onshore Orders, as well as all other federal, state (including Nevada Administrative Code), and local rules and regulations. The Nevada Division of Minerals (NDOM) oversees permitting and regulation of the oil and gas industry in the state per Nevada Administrative Code 522. NDOM oversees wells drilled on state and private lands, and the BLM permits wells on federal lands. The BLM and NDOM coordinate efforts.

Any usable water zones encountered during drilling would be adequately protected in accordance with the Federal Onshore Oil and Gas Orders and the 43 CFR 3100 regulations by installing surface or intermediate casing as approved by the BLM Authorized Officer (AO) and reported. All usable water zones, potentially productive hydrocarbon zones, and valuable mineral zones would be isolated by cementing the open space between the casing and the bedrock.

Two steel casings would be installed in every borehole, and three steel casings in boreholes which are fully completed and tested. The surface hole would be cased with steel casing and cemented in place entirely from ground level to a depth to isolate upper aquifers. The surface casing would be set in bedrock and cemented with sufficient cement to fill the outer casing (annular) space, and set to a minimum depth below the deepest permitted well in the Project Area (based on NDOM requirements) to protect freshwater aquifers. Prior to drilling below the surface casing, Blowout Preventer Equipment (BOPE) would be installed and bolted to the well head to contain unexpected fluid blowouts. Both the BOPE and the surface casing would be tested for pressure integrity. The BOPE and related equipment would meet the minimum requirements of Federal Onshore Oil and Gas Order No. 2, and the BLM AO would be notified in advance to witness all pressure tests.

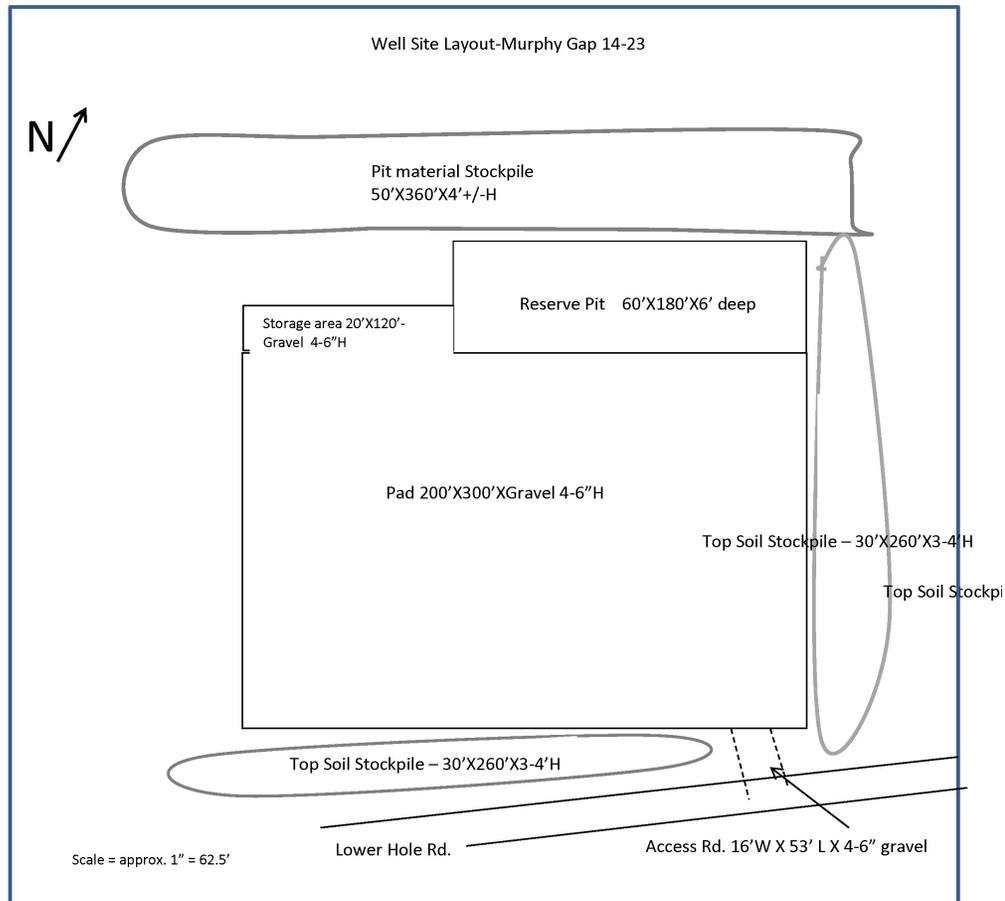
During continued drilling, intermediate casing would be set to protect oil, gas, usable quality water zones (if encountered) and prospectively valuable minerals deposits; to provide protection against abnormal pressure zones and lost circulation zones; or when otherwise required by anticipated well conditions. The casing string would be cemented with a sufficient volume of cement to cover and/or isolate all hydrocarbon zones or other mineral deposits, isolate abnormal pressure intervals from normal pressure intervals, and contain any fluids with the potential to migrate and/or isolate formation fluids.

After drilling the hole to its final depth, logging tools would be run into the well to evaluate the potential hydrocarbon resource. If the evaluation indicated that adequate hydrocarbon resources were present and recoverable, steel production casing would be run and cemented into place in accordance with the well design, as approved by the BLM. The proposed casing and cementing program would be designed to protect and/or isolate all usable water zones, potentially productive zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals. BLM approval would be required prior to the use of any isolating medium other than cement.

A migratory bird survey would be conducted by an approved biologist at a maximum of two weeks prior to construction of the access road and well pad during the breeding season (March 1st through July 31st). The survey would include a 300 feet buffer around the project area. The report

would be sent to the Authorized Officer in the Caliente Field Office. The Ely RMP stipulation requiring timing limitations for Big Game Calving/Fawning/Kidding/Lambing Grounds would be honored. No surface activity would be allowed within big game calving/fawning/kidding/lambing grounds from April 15 through June 30.

Construction of the well pad and road would occur during daylight hours. Drilling operations may be 24/7 and require lighting for operating at night. The operator's lighting would comply with "Dark Skies" by shielding lights to minimize disturbance to nocturnal animals and the occasional traveler passing by.



500X500' outer surface disturbance boundary

**Option 1 - well site layout**

Amended

**Figure 2.1. Alternative A: Well Site Layout**

## 2.2.4. Ancillary Facilities

There are no identified ancillary facilities.

## 2.2.5. Location of Existing and/or Proposed Facilities if Well is Productive

This section describes the existing facilities near the project and any facilities proposed by the project if the well is productive. No permanent facilities are needed during exploratory drilling.

### 2.2.5.1. Existing Facilities

Several wells have been drilled in Coal Valley including both wildcat oil wells and water wells. Municipal water wells, permitted by Lincoln County Water District and Vidler Water Company, Inc., are located in southern Coal Valley; one in sections 2 and 11 and another in section 23, Township 2 South, Range 59 East, of the Mount Diablo Baseline Meridian. Three other water wells currently used for stock water also occur in Coal Valley and are located in section 12, Township 2 South, Range 58 East; section 16, Township 1 South, Range 60 East; and Section 21, Township 1 North, Range 59 East, of the Mount Diablo Baseline Meridian. Descriptions of the four oil wells located in Coal Valley are described individually below.

An oil well was drilled approximately one mile from the proposed well by Gulf Oil Corp. (Nevada – Federal CM No. 1), located in the northwest quarter of the northwest quarter of Section 17, Township 1 South, Range 60 East, of the Mount Diablo Baseline Meridian, on March 7, 1966 to a total depth of 2,434 feet. Water was encountered at 660-800 feet. Oil shows were not observed.

Eagle Exploration, Inc. drilled an oil well (Baseline Canyon Unit Federal No. 2 and 2A) approximately 5.4 miles from the proposed well, located in the southeast quarter of the southeast quarter of the southwest quarter of Section 21, Township 1 North, Range 59 East, of the Mount Diablo Baseline Meridian, on November 12, 1996 to a total depth of 10,736 feet. An oil show was observed, but the well was not developed.

Another oil well was drilled by Tide Petroleum Company (Baseline Canyon Federal No. 1) approximately 8.5 miles from the proposed well, located in the northwest quarter of Section 3, Township 1 North, Range 59 East, of the Mount Diablo Baseline Meridian, on July 16, 1995 to a total depth of 2,010 feet. Oil shows were not observed.

American Quasar Petroleum Co. of New Mexico also drilled an oil well (Adobe Federal No. 19-1) approximately 13.5 miles from the proposed well, located in the northeast quarter of the southwest quarter of Section 19, Township 2 North, Range 60 East, of the Mount Diablo Baseline Meridian, on October 14, 1979 to a total depth of 7,706 feet. Water was encountered at 4605-4767 feet. No show of oil was observed and the well was converted to a water well.

### 2.2.5.2. Proposed Facilities

If production is obtained, new facilities are proposed to be developed. The on-site production facilities would be constructed on the gravel fill of the well pad and are not expected to exceed the 500 feet by 500 feet proposed maximum disturbance area. A sundry notice would be submitted to the Authorized Officer prior to commencement of construction and installation of the production

facilities (i.e. multiple storage tanks, generated power unit, pumping unit, small building for supplies, etc). Any required upgrades would be in accordance with BLM specification. Construction materials would be obtained from a BLM approved source. If production is obtained, the product would be transported by truck from the site. It is not feasible at this time to determine exactly how many loads, how often trucks would run, or where specifically the trucks would transport to. If production is obtained and assuming a production rate of 1,000 barrels per month and a truck tank capacity of 210 barrels (industry standard), it could take approximately 5 transports a month to haul out the oil produced.

In accordance with the Proclamation for the Basin and Range National Monument "...no new rights-of-way for electric transmission or transportation shall be authorized within the monument." Alternatives to transmission lines, such as on-site power production (i.e. a generator or solar) would be considered under additional NEPA analysis. If production facilities are needed, Makoil would construct facilities with the local landscape characteristics in mind. This would include painting the equipment a color (approved by the BLM) to blend in with the surrounding environment, using low profile facilities, staining soils, etc. The footprint would be the minimum necessary for production purposes (e.g. production facilities near the entrance of the pad). Facilities (e.g. tanks and stacks) with open tops would be screened or otherwise closed to prevent birds, bats and other wildlife from entering per the guidance in Washington Office Instruction Memorandum 2013-033 (see Appendix B).

## **2.2.6. Water Source**

The existing water supply is located approximately 3.4 miles east of the well site in the northwest quarter of Section 17, Township 1 South, Range 60 East, Mount Diablo Baseline Meridian, Lincoln County, Nevada. The water well is held by grazing permittee, Varlin Higbee, with certificate number 15954. An estimated 210,000 gallons or 5,000 barrels of water is required to construct and drill the proposed oil well. The water source would be permitted through Nevada Water Resources by Jamie Drayton on behalf of Makoil, Inc. Ms. Drayton would present a copy of the permit as a Condition of Approval for the APD.

## **2.2.7. Waste Materials**

A trash dumpster would be placed on site, and would require a closing lid or a netted cover to keep trash contained and not allowed to leave the site. After drilling is completed, the waste materials would be hauled to a BLM approved landfill for disposal. A portable chemical toilet would be installed onsite for handling of human waste. Sewage would be hauled away and disposed of according to BLM specifications. All oil, diesel, or hydraulic fluid spills would be cleaned up immediately and removed, including any contaminated soils. All spill-related materials would be hauled to an approved disposal site.

Drilling fluids would be handled in the reserve pit. The reserve pit would be fenced in accordance with BLM specifications: three sides would be fenced during drilling; the fourth side would be fenced immediately after drilling is complete. Fluids produced during a drilling test or a production test would be collected in a test tank. Any spills, oil, gas, salt water, or noxious fluids would be cleaned up and disposed of in a location approved by the BLM. If the well is productive and produces waste water, a determination would be made through sundry notice about water disposal. Spills of 25 gallons or greater must be reported to NDEP and the BLM within one

working day of the incident. If hydrocarbons or toxic chemical enter the reserve pit, the operator must test the pit's soil before closing the pit to determine if a removal action is required.

Hazardous Chemicals will be contained in structures sufficiently impervious to prevent a discharge and should be consistent with the Environmental Protection Agency's Spill Prevention, Control, and Countermeasures (SPCC) regulation (40 CFR 112). Containment structures and strategies should be routinely monitored and maintained to ensure satisfactory containment.

All spills or leakages of oil, gas, salt water, toxic liquids or waste materials, blowouts, fires, personal injuries, and fatalities would be reported by the operator to the BLM in accordance with the requirements of Notice to Lessees NTL -3A and in accordance with any applicable federal, state, or local requirements (The Gold Book page 39).

## **2.2.8. Reclamation**

The well would be plugged in accordance with the sundry notice and Reports on Wells, Form 3160-5, Onshore Order 7, and other pertinent federal and state regulations. All equipment, temporary facilities, trash and debris, pit fencing, etc. will be removed from the site. The reserve pit, when dry, would be buried in accordance with guidance on page 44 of the Gold Book (BLM and USDA 2007). Gravel would be removed from the portions of the pad not needed for production operation (this may include roads if deemed appropriate) in accordance with the guidance on pages 46-47 of the Gold Book (BLM and USDA 2007). The pad area would be ripped to a minimum of one foot, recontoured with the natural topography in mind, and covered with topsoil. The site would then be seeded if needed. Timing of reclamation should be coordinated with the seasons to affect the best vegetative success within the reclamation time frame. The perimeter of the disturbance would be fenced to exclude cattle until the vegetation is sustained to a level approved by the BLM. Fencing would be installed consistent with the guidance provided in Washington Office Instruction Memorandum 2013-033 (see Appendix B).

## **2.2.9. Monitoring**

The operator would be responsible for monitoring the site post drilling to check on and/or maintain any of the following: fencing or other safety measures, the reserve pit, interim or final reclamation success, and production facilities. This task is usually conducted by physically visiting the site. The timing of when and how often these visits may occur could vary due to the nature of what is to be monitored and weather conditions. Remote telemetry monitoring stations can also be used to eliminate the need for, or reduce the regularity of physical site visits. Either of these options may be utilized by the operator for monitoring this site.

Additionally, BLM would be monitoring the site as well to assess reclamation success and continuing environmental stewardship. This monitoring would consist of checks on initial location of facilities, conformance to the APD and Conditions of Approval, and the status of any reclamation. Post-drilling compliance inspections would document, among other things, conformance with the proposed action, completion of earthworks of the reclamation plan, and monitoring for vegetative success and any new noxious weed infestations.

## **2.2.10. Source of Construction Materials**

Approximately 2,500 cubic yards of gravel will be needed for the well pad construction. Gravel for well pad construction and any necessary road maintenance will be obtained from the Hiko Community Pit (See Map 1.1 and 1.3). A contract for the gravel operations will be obtained by the contractor prior to commencing work in the community pit. This pit location is different than was proposed in the APD as the original proposed pit was located within the Basin and Range National Monument (Monument). In accordance with the Proclamation for the Monument, which has withdrawn this area from “location, entry, and patent under the mining laws, and from disposition under all laws relating to mineral and geothermal leasing, other than by exchange that furthers the protective purposes of the monument” the location of the pit has been moved outside the monument boundary. This location was agreed upon in full coordination with Makoil representatives.

The mining of material from, and the reclamation of the Hiko Community Pit would be in accordance with the Hiko Community Pit Mining Plan. The Hiko Community Pit Mining Plan was analyzed under NEPA Project DOI-BLM-NV-L030-2015-0032-CX and can be found online at <http://1.usa.gov/1RCRUUpY>.

## **2.3. Alternative B:**

### **2.3.1. Introduction and Oil Well Location**

Alternative B includes proposed modifications to the APD and amendments. These modifications are proposed to address issues raised during scoping and the public comment period. This alternative includes: different access to the water well, an additional method of handling drilling fluids and waste, location of the well pad closer to Lower Hole Road, biological monitoring and minimization measure differences, and differences in reclamation.

Drilling operations and production, should it occur, would be as described in Alternative A.

### **2.3.2. Access Roads**

This section describes access to the project areas.

#### **2.3.2.1. Existing Roads**

Seaman Wash Road and Lower Hole Road would be utilized as access roads as described in Alternative A.

Under this Alternative, access to the water well will be limited to the road oriented NW-SE that is currently graveled. The other segment of the loop road is a dirt two-track (oriented NE-SW) and would not be permitted for use.

The gravel source, Hiko Community Pit, would be accessed as described in Alternative A.

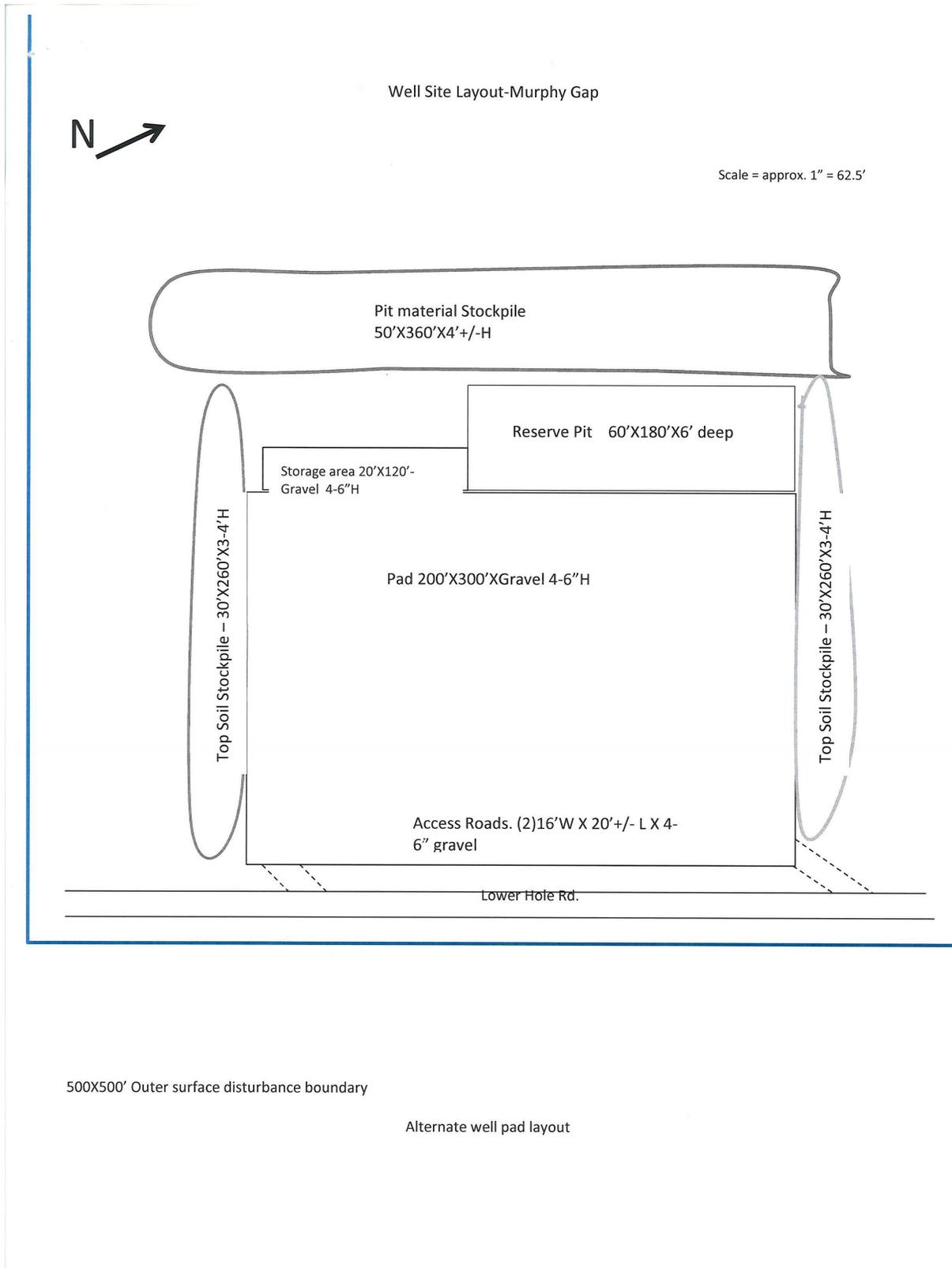
### **2.3.2.2. Constructed Roads**

No new roads would be constructed under this alternative as the well pad would be adjacent to Lower Hole Road.

### **2.3.3. Oil Well Site Layout**

Unless noted below, this alternative would be as described in Alternative A.

Contrary to Alternative A, the pad would be shifted south and located immediately alongside Lower Hole Road under this alternative (see Figure below). The location of the facilities and drill hole would shift but the footprint (size and shape) should not.



Well site layout for Alternative B provided by the proponent, which describes the location reserve pit, roads, and topsoil storage areas.

Figure 2.2. Well Site Layout for Alternative B

Topsoil stockpiles(to be used in reclamation) would be wetted and seeded under this alternative.

A migratory bird survey would be conducted by an approved biologist at a maximum of seven days prior to any surface clearing activities under this alternative.

Under this alternative, a lined reserve pit is proposed to be 6 feet deep by 180 feet long by 60 feet wide, and the material dug out of the pit would be stored along the side of the pit where the dirt contractor deems appropriate. This material would be used to refill the reserve pit after drilling operations. The pit would be constructed in accordance with the Gold Book (pages 16-17) and lined. The proposed reserve pit would be fenced on three sides (in accordance with the Gold Book, page 17) while drilling and the fourth side would be fenced while the pit dries. The reserve pit would be netted immediately after drilling ceases and in accordance with the standards in Washington Office Instruction Memorandum 2013-033 (see Appendix B). Fencing and netting will be maintained until the pit is dry and ready to be reclaimed. The reserve pit may be allowed to dry on its own following drilling, or additives such as cement, fly ash, or lime kiln dust may be used to solidify the pit quickly.

### **2.3.4. Ancillary Facilities**

There are no identified ancillary facilities.

### **2.3.5. Location of Existing and/or Proposed Facilities if Well is Productive**

This section describes the existing facilities near the project and any facilities proposed by the project if the well is productive. No permanent facilities are needed during exploratory drilling.

#### **2.3.5.1. Existing Facilities**

The location of existing facilities would not vary from those identified in Alternative A.

#### **2.3.5.2. Proposed Facilities**

If production is obtained, new facilities would not vary from those identified in Alternative A.

### **2.3.6. Water Source**

Under this Alternative, the water source would remain the same as proposed in Alternative A. A copy of the permit from the State of Nevada would be required as a Condition of Approval (COA).

### **2.3.7. Waste Materials**

Waste materials would be handled as described in Alternative A.

### 2.3.8. Reclamation

Reclamation would be as described in Alternative A except topsoil stockpiles (to be used in reclamation) would be wetted and seeded under this alternative. If the well is productive, then interim reclamation will be completed within six months of well completion. The project area would be reclaimed immediately if the well does not go into production.

### 2.3.9. Monitoring

Monitoring would be as described in Alternative A.

### 2.3.10. Source of Construction Materials

These details would not vary from those described in Alternative A.

## 2.4. Alternative A and B in Relation to Project Components

Table 1, below outlines the differences between Alternative A and B in relation to project components.

**Table 2.1. Differences Between Alternative A and B**

Project Component	Alternative A	Alternative B
Methods of handling drilling fluids and waste	Unlined reserve pit	Lined reserve pit
Well pad location	Approx. 100' from main road	Adjacent to main road
Biological monitoring and minimization measures	Migratory bird surveys at least 14 days prior to construction. Monitoring to determine if measures needed for reserve pit.	Migratory bird surveys at least 7 days prior to construction. Netting on reserve pit immediately after drilling ceases.
Reclamation	Topsoil wetted and seeded (if needed). No interim reclamation proposed.	Topsoil wetted and seeded. Interim and final reclamation proposed.
Access to water well	Use of a 2-track and a gravel road (to make a loop road).	Use of gravel road only, not 2-track.

### 2.5. Alternative C – No Action:

The no action alternative, to not construct the well pad, maintain the existing roads, or drill the wildcat well, is carried forward in this EA.

## 2.6. Alternatives Considered, but Eliminated from Further Analysis

### 2.6.1. Description of Alternatives

Alternative 1:

Under this alternative, the BLM would purchase the proponent's Oil and Gas lease (NVN-087038) at fair market value.

Alternative 2:

Another alternative would handle drilling fluids in three potential ways, which could be to require a closed loop system, solidify wastes, or treat and re-use drilling fluids for the reserve pit.

Alternative 3:

The original proposal requested development of turnouts along Lower Hole Road, a new gravel pit in Coal Valley, and potentially transmission lines and pipelines if the development phase is reached.

## **2.6.2. Rationale for Elimination from Further Analysis**

Alternative 1:

This alternative was not analyzed because it was not within the scope of the purpose and need identified for the project, which is to consider approval of the APD and to provide for legitimate use of lands which are currently leased by Makoil for oil and gas development.

Alternative 2:

This alternative is not feasible economically. Closed loop systems are currently not in use in Nevada, therefore, rental and transportation of a closed loop system is cost prohibitive. A closed loop system would also require a drying pad, which could lead to a larger footprint, additional impacts, and visual impacts.

Solidifying wastes (well bore cuttings) is cost prohibitive. Trucking, hauling, and land farming of solids can cost thousands of dollars per load.

Recycling of drill fluids is also cost prohibitive. This approach may be feasible in areas where drilling contractors move from one drill project to the next using oil-based fluids. Makoil, Inc., on the other hand, uses water-based drilling fluids that are typically not reusable and does not have other projects in the area from which to re-use fluids.

Alternative 3:

Project elements that were not in conformance with the Presidential Proclamation that created the Basin and Range National Monument were eliminated from further analysis. BLM worked with the proponent to adjust the project components accordingly.

## **2.7. Relationship to Planning**

This section discussed the relationship of the proposed action and alternatives with existing planning documents.

*Chapter 2 Description of Alternatives, Including  
Proposed Action  
Rationale for Elimination from Further Analysis*

*February 2016*

### **2.7.1. Conformance with BLM Land Use Plan(s):**

The Mineral Leasing Act of 1920, as amended, and the Mineral Leasing Act for Acquired Lands of 1947, as amended, gives the BLM responsibility for oil and gas leasing on approximately 570 million acres of BLM, National Forest, and other Federal lands, as well as private lands where the Federal Government has retained mineral rights. Leasing areas are developed through BLM's planning process. The lessee has a right to access, explore for, drill, produce, and dispose of oil and gas resources within the lease. Drilling and associated operations must be reasonable and not cause unnecessary or undue degradation to the environment.

The proposed action is in conformance with the Goals and Objectives of the Ely District Record of Decision and Approved Resource Management Plan as amended (Ely RMP) (BLM 2015), which are: "To provide for the responsible development of mineral resources to meet local, regional, and national needs, while providing for the protection of other resources and uses", (BLM 2008; page 92), and "To respond to public, local, state, and federal agency needs for land for community development, utility and other associated rights-of-way, communication sties, and other allowed uses of BLM-administered lands." (BLM 2008, page 66). In addition, "Timing limitations indicate that a leased area generally is open to development activities except during a specified period of time to protect identified resource values such as "wildlife" (BLM 2008; page 92).".

The proposed action is also in conformance with the following program-specific management decisions:

- MIN-2: Open to Leasing — Allow leasing on approximately 6.0 million acres open to leasing subject to existing laws, regulations, and formal orders and the terms and conditions of the standard lease form. A lease notice would be attached, where applicable, to inform potential lessees of important resource issues under existing laws and regulations that may result in delays associated with subsequent permitting and appropriate mitigation of those resource concerns.
- MIN-17: Open to mineral materials — Allow disposal of mineral materials on approximately 9.9 million acres of federal mineral estate, subject to best management practices
- MIN-18: Space mineral material sites appropriately to accommodate public and private needs while preserving environmental qualities.
- LR-43: Coordinate, as appropriate, with appropriate local, state, and federal agencies on siting and construction for rights-of-way proposals. (BLM 2008; page 71).

In addition, review of management decisions for other resources and concerns that would possibly be impacted by the project was conducted, and it was determined that approval of the proposed action is in conformance with the Ely RMP as amended.

### **2.7.2. Relationship to Statutes, Regulations, or other Plans:**

This action is consistent with federal, state and local regulations, policies, and programs to the maximum extent possible. This includes but is not limited to federal policies for the Energy Act of 2005, Federal Land Policy and Management Act, National Historic Preservation Act, Endangered Species Act, the Antiquities Act, and Clean Water Act, and state plans and policies for the management of mineral and water resources, conservation of sensitive wildlife species

and management of game, Lincoln County Public Lands Policy Plan, and the Road Maintenance Agreement (RMA) between BLM and Lincoln County.

The proposed action falls within the Basin and Range National Monument. The Proposed Action is in conformance with the Presidential proclamation that established the Basin and Range National Monument. The Proclamation withdrew this region from all forms of mineral entry except for valid existing rights. Makoil held an oil and gas lease on this parcel prior to the Monument designation, and therefore have a valid existing right to access and develop their lease. The original proposal requested development of turnouts along Lower Hole Road, a new gravel pit in Coal Valley, and potentially transmission lines and pipelines if the development phase is reached. These actions have been eliminated from the Proposed Action in order to comply with the Proclamation. Measures have been added to several affected resources to mitigate impacts to the Monument. Implementation of the Best Management Practices, Standard Operating Procedures, measures committed to by the proponent, and other measures identified in this document will avoid and minimize potential impacts to Monument objects and values.

The Proposed Action is in conformance with BLM Manual 6220 – National Monuments, National Conservation Areas, and Similar Designations. As stated in the Manual, “To the greatest extent possible, and in accordance with applicable law, valid existing rights and other non-discretionary uses will be managed to mitigate impacts to the objects and values for which the Monuments and NCAs were designated.”

This project is consistent with Washington Office Instruction Memorandum 2013-142 regarding regional mitigation, and no substantial residual impacts have been identified.

# **Chapter 3. Affected Environment/Environmental Impacts**

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### 3.1. Introduction:

This chapter presents the existing environment (i.e., the physical, biological, social, and economic values and resources) of the impact area, the issues analyzed, the impacts to the analyzed resources, and mitigation that could be applied that would reduce those impacts. Mitigation proposed in this section could be included in the Finding of No Significant Impact to prevent potentially significant impacts. Application of the mitigation measures to the proposed action would then be carried forward into the Decision Record as a condition of approval of the proposal.

While many potential issues may arise during scoping, not all of them warrant analysis. Issues raised through scoping are analyzed if:

- Analysis of the issue is necessary to make a reasoned choice between alternatives.
- The issue is significant (an issue associated with a significant impact, such as a potential violation of a law imposed to protect the environment).
- Analysis of the issue is necessary to determine if the direct or indirect impacts are themselves significant, or if it would add a measurable incremental impact to past, present and reasonably foreseeable actions that could have a cumulatively significant impact.

Potential impacts to the following resources/concerns were evaluated in accordance with criteria listed above to determine if detailed analysis was required. Consideration of some of these items is to ensure compliance with laws, statutes or Executive Orders that impose certain requirements upon all Federal actions. Other items are relevant to the management of public lands in general, and to the Ely District BLM in particular.

In response to the preliminary issues identified, further surveys/studies were conducted and reports prepared. Cultural surveys were prepared and used to determine the scope of this document.

Many times a project would have some degree of effect upon a resource or concern, but that effect doesn't approach any threshold of significance, nor does it increase cumulative impacts by a measurable increment. Such effects are described as "negligible" in the rationale for dismissal from analysis.

The following table documents the issues evaluation or rationale for dismissal from analysis:

**Table 3.1. Issues Dismissed from Analysis**

Resource/ Concern	Issue(s) Analyzed? (Y/N)	Rationale for Dismissal from Detailed Analysis or Issue(s) Requiring Detailed Analysis (Grouped in accordance with the format of the Ely RMP)
Air Quality*	N	The proposed project is not expected to produce emissions at levels that would require analysis per the standards set forth by the Environmental Protection Agency. Impacts from Geology and Mineral Extraction on Air Resources are analyzed in Section 4.2 of the Ely Proposed Resource Management Plan/Environmental Impact Statement (November 2007).
Water Resources including (Quality, Drinking/Ground*, and Water Rights)	Y	Resource analyzed in detail below.

<b>Resource/ Concern</b>	<b>Issue(s) Analyzed? (Y/N)</b>	<b>Rationale for Dismissal from Detailed Analysis or Issue(s) Requiring Detailed Analysis (Grouped in accordance with the format of the Ely RMP)</b>
Farmlands, Prime and Unique*	N	Not Present
Soils/Watershed	Y	Resource analyzed in detail below.
Forest Health*	N	Project does not meet HFRA criteria.
Vegetation, Forest/ Woodland and other vegetative products (Native seeds, yucca and cactus plants)	Y	Resource analyzed in detail below.
Wetlands/Riparian Zones*	N	The closest spring (Seaman Spring) is approximately six miles from the proposed gravel pit, and therefore does not require analysis.
Fish and Wildlife	Y	Resource analyzed in detail below.
Migratory Birds*	Y	Resource analyzed in detail below.
USFWS Listed (or proposed for listing) Threatened or Endangered Species or critical habitat.	N	No habitat for federally listed or proposed species is present within the action area.
Special Status Animal Species, other than those listed or proposed by the USFWS as Threatened or Endangered.	Y	Resource analyzed in detail below.
Special Status Plant Species, other than those listed or proposed by the USFWS as Threatened or Endangered.	N	Resource not present in project areas.
Wild Horses	N	The access road falls within the Seaman Range Herd Area (HA). This area is not managed for wild horses. Detailed analysis is not required.
Cultural Resources	N	Cultural Resource Inventories were conducted on all project areas by qualified archaeologists according to BLM standards. No cultural resources were identified.
Special Designations	N	No ACECs are present in the project area. The project area is within the Basin and Range National Monument.  Monument objects and values are analyzed (as needed) under the following resource sections: Cultural Resources, Vegetation, Fish and Wildlife, Migratory Birds, Special Status Animal Species, Visual Resources, and Native American Religious and Other Concerns. In summary, these analyses, in combination with the language in the Monument proclamation regarding valid existing rights, conclude that there would be no significant impacts to Monument objects or values.  The proposed project is consistent with the Monument proclamation. There would be no significant impacts to Monument objects or values identified in the proclamation from the project as proposed.
Paleontological Resources	N	No Paleontological resources are present.
Visual Resources	Y	Resource analyzed in detail below.
Land Uses	Y	Resource analyzed in detail below.

<b>Resource/ Concern</b>	<b>Issue(s) Analyzed?  (Y/N)</b>	<b>Rationale for Dismissal from Detailed Analysis or Issue(s) Requiring Detailed Analysis (Grouped in accordance with the format of the Ely RMP)</b>
Transportation/ Access	N	The proposed action and alternatives would maintain or improve existing roads that access the project area. These roads would remain open throughout the operation and after the project is complete and therefore, have no effect on transportation or access. The proposed access routes associated with the proposed action and alternatives can accommodate travel by the general public as well as industrial sized vehicles with no impacts on transportation or access.
Recreation Uses including Back country Byways, Caves, Rockhounding Areas	Y	Resource analyzed in detail below.
Grazing Uses/Forage	N	<p>The South Coal Valley allotment encompasses over 40,000 acres of which less than 0.1 percent would be impacted by the activities associated with any alternative. Surface disturbance is proposed salt desert shrub vegetation type; however, the loss of these vegetative communities as a result of the proposed action or alternatives would have a negligible effect on the grazing capacity of the allotment. Design features or conditions of approval may be implemented to avoid impacts to cattle grazing such as exclusionary fences around drilling fluids.</p> <p>The gravel source occurs in the South Hiko/Six Mile allotment which covers more than 21,000 acres. The gravel pit occurs in a blackbrush community. The limited disturbance (less than 5 acres) would have negligible effects to grazing in this allotment.</p>
Mineral Resources	N	Mineral Resources are present but not affected by this project.
Floodplains*	N	The FEMA floodplains map designates this area as Zone D. This designation is used for areas where there are possible but undetermined flood hazards, as no analysis of flood hazards has been conducted.
Fuels	N	The limited vegetation and minimal surface disturbance (less than 10 acres) is not expected to affect fuels in Coal Valley.
Emergency Stabilization and Rehabilitation (ES&R)	N	The project is not within or near a recent burn and therefore is not expected to affect any ES&R projects.
Non-Native Invasive and Noxious Species *	N	No Noxious weeds were found within or immediately adjacent to the project area. For more specific information see the Weed Risk Assessment located in Appendix E. The Weed Risk Assessment also contains a list of best management practices and measures for reducing the risk of impacts from weeds.
Wilderness/ Wilderness Study Area (WSA)*	N	Not present: there are no Wilderness or WSAs within or immediately adjacent to the project area; the nearest is Weepah Spring Wilderness, which is nine miles to the northeast of the project area.
Lands with Wilderness Characteristics	N	Not present: both the original 1979/1980 inventory and the updated 2014 inventory for the area found wilderness characteristics lacking throughout the project area.
Wild and Scenic Rivers	N	Not Present
Human Health and Safety*	N	Resource would not be affected by proposed action.
Native American Religious and other Concerns*	N	No cultural sites occur within the project area, and tribes have not raised any concerns at this time. Tribal consultation was conducted.

<b>Resource/ Concern</b>	<b>Issue(s) Analyzed? (Y/N)</b>	<b>Rationale for Dismissal from Detailed Analysis or Issue(s) Requiring Detailed Analysis (Grouped in accordance with the format of the Ely RMP)</b>
Wastes, Hazardous or Solid*	N	A review of the current geospatial data did not reveal any known concerns or issues with Solid or Hazardous wastes. Any potential waste issues are covered by the waste management as covered in section 2.2.7 and 2.3.7.
Environmental Justice*	N	No minority or low-income groups would be disproportionately affected by health or environmental effects.
Socioeconomics	N	The proposed project would not result in substantial impacts to social or economic values and no further analysis is required.

\*Supplemental Authority

## 3.2. General Setting:

The project site is located on Bureau of Land Management land in Coal Valley in central Lincoln County, Nevada within the Basin and Range National Monument. The site is located approximately 17 miles northwest of Hiko, Nevada. The proposed project site is located in a remote area used mostly for ranching operations and recreational activities. The proposed well pad site is on the Murphy Gap SE USGS topographic map quadrangle, the access road from Nevada highway 318 is located in the Seaman Range on the Seaman Wash quadrangle, and the gravel pit is located in the Hiko quadrangle.

The proposed well pad location is at an elevation of approximately 4,940 feet above mean sea level. The area receives approximately seven inches of precipitation a year, mostly in the form of snow. Map 1.2 depicts the general location of the proposed activities. Well pad designs and gravel pit designs can be found in Figures 2.1–2.3.

Upon leaving U.S. Highway 318, the project would utilize existing maintained unpaved roads to the site (Maps 1.1 and 1.2). The well pad site (Figures 2.1 and 2.3) is located adjacent to the existing road (less than 100 feet). The surface composition of the Seaman Wash Road is defined as both dirt and gravel. The surface composition of the Lower Hole Road is defined as dirt. The Lower Hole Road is considered a narrow road and does have several areas where the surface has degraded to fine silt.

The project area contains intermountain basins mixed salt desert scrub and microphytic playa sparse vegetation, according to SWReGAP vegetation data (NatureServe 2004; SWReGAP 2004). The proposed site is located in salt flats dominated by saltbrush. The roadsides and Coal Valley in general has been invaded by the non-native invasive plant, halogeton.

## 3.3. Resources/Concerns Analyzed

### 3.3.1. Water Resources

#### 3.3.1.1. Affected Environment

Hydraulic Fracturing was not proposed for this APD and therefore will not be analyzed for in this document.

*Chapter 3 Affected Environment/Environmental Impacts  
General Setting:*

*February 2016*

The proposed water source (existing well, water right #15954) is dedicated as stock use for one of the permittees. Makoil is requesting a new water right for use developing the well and will provide a copy of the permit as a condition of approval. Therefore, no further analysis is required.

The hydrographic basin is the basic management unit used by the Nevada Division of Water Resources (NDWR). The proposed project is located within the Coal Valley hydrographic basin (No. 171). The estimated perennial yield for this hydrographic area is 6,000 acre-feet per year and at this time, 63.85 acre-feet per year of underground water rights have been permitted in the basin (NDWR 2015). The NDWR hydrographic area summary is attached in the Appendices. The committed resources are included in this summary. The project area is not located within a Municipal Wellhead Zone or Drinking Water Protection Area.

Objectives for Water Resources and Water Quality are listed in the Ely RMP. The Ely RMP requires that authorized activities on public lands do not degrade water quality. This includes compliance with the Clean Water Act and Nevada Water Pollution Control Regulations (Nevada Revised Statute 445A) and compliance with the Memorandum of Understanding between the BLM and Nevada Division of Environmental Protection, dated September 2004. RMP objective WR-2 also requires the integration of land health standards, best management practices, and appropriate mitigation measures into authorized activities to ensure water quality meets state requirements and BLM resource management objectives in BLM Manual 7240. Additionally, any water used for exploration or production of oil and gas resources would need to be in compliance with BLM Manual 7250 and Nevada Water Law to ensure that the use does not impact other water right holders.

Groundwater conditions are described in Section 3.3 of the RMP/FEIS. Precipitation moves from areas of recharge to surface waters via alluvial aquifers and on the surface during spring melt and rain storms. A portion of annual precipitation infiltrates to deeper bedrock aquifers that may contribute to springs. Springs and groundwater inputs generally occur in both bedrock and alluvial aquifers along valley bottoms. Many of the drainages have interrupted flow characteristics (i.e., some reaches are ephemeral with water moving in the alluvium and other reaches there is surface expression) as a result of groundwater recharge characteristics. There is groundwater stored in both the Carbonate Rock Aquifer Province and Basin-Fill (alluvial) Aquifers within the District. The Carbonate Aquifer Systems are not extensively utilized. In many places, groundwater flows between the deeper carbonate bedrock aquifers and the overlying unconsolidated basin-fill aquifers; therefore pumping in one aquifer can impact water levels in an adjacent connected aquifer. Depths of these aquifer systems can vary. Based on past activity in this area, water was encountered at 660–800 feet at an oil well drilled approximately one mile from the proposed project (see Existing Facilities section for more information). The combined thickness of the carbonate-rock aquifer system typically is greater than 20,000 feet, however, there is uncertainty regarding the depth of the groundwater flow within the carbonate-rock aquifer system (Plume 1996; BLM 2012). The thickness of the basin-fill deposits ranges from zero at the valley margin to several thousands of feet along the axis of the valley. In some valleys the thickness of the basin-fill locally exceeds 10,000 feet (BLM 2012).

### **3.3.1.2. Impact Analysis**

#### **3.3.1.2.1. Alternative A**

The methods outlined in the proposed action (ie unlined reserve pit) for handling drilling fluids and waste may result in potential impacts to water resources. The use of an unlined pit could result in waste leaching into groundwater.

Clearing, grading, and soil stockpiling activities could alter short term overland flow and natural groundwater recharge patterns resulting in *de minimis* risk. In risk assessment, it refers to a level of risk that is too small to be concerned with. The proximity of the project area to a drainage channel could increase the magnitude of impacts to surface water resources.

Runoff associated with storm events could increase sediment/salt loads in surface waters down gradient of the disturbed areas. Sediment may be deposited and stored in minor drainages where it could be readily moved downstream during heavy storms. Sediment from future development activity may be carried into contained basins and sloughs where water quality classifications could be exceeded. The land-locked nature of the project area and distance to potentially impacted surface waters would restrict effects on the amount of sediment and salt contributed by project activities. Surface erosion may be greatest during the construction and would be controlled through SOPs, BMPs, and appropriate mitigation measures.

Impacts could likely be greatest shortly after the start of construction activities and would likely decrease in time due to stabilization, reclamation, and revegetation efforts. Potential minor long-term impacts to the watershed and hydrology could continue for the life of surface disturbance from water discharge from roads, road ditches, and well pad, but would decrease once the well pad has been removed and reclamation of the well pad has taken place.

#### **3.3.1.2.2. Alternative B**

The requirement for a lined reserve pit to address methods of handling drilling fluids and waste would prevent potential impacts to water resources, therefore, this alternative would have little to no effect on water resources.

This alternative includes interim reclamation, which could decrease impacts to water resources described under alternative A.

This alternative involves moving the pad and reserve pit away from a natural drainage, as recommended in The Gold Book (pg. 16).

#### **3.3.1.2.3. Alternative C**

Under this alternative no well would be drilled, therefore there would be no impacts to water resources.

## 3.3.2. Soils/Watershed

### 3.3.2.1. Affected Environment

The drill pad, potential water well, and approximately 3.25 miles of the access route are located in a silty plain with an annual precipitation rate of 5-8". The United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS), Major Land Resource Area (MLRA) 29, Ecological Site Description is defined as 029XY117NV, and is typically dominated by Bonneville saltbush (*Atriplex bonnevillensis*), ricegrass (*Achnatherum hymenoides*), and shadscale (*Atriplex confertifolia*). The soils of this site are very deep, well drained soils formed in alluvium and lacustrine deposits from mixed limestone and welded tuff. Surface textures are usually silt loams. They are moderately to strongly alkaline, have slow intake rates, available water capacity is moderate, and runoff is negligible or very low. Potential for sheet and rill erosion is slight. This soil is well drained and has a k-factor of .55 and is rated as highly erodible. Approximate ground cover (basal and crown) is 15 to 20 percent.

### 3.3.2.2. Impact Analysis

#### 3.3.2.2.1. Alternative A

Under the proposed action, the drill pad would be located approximately 50 feet from the existing road and disturb approximately 5.7 acres of the surface. The spur road to the pad would disturb less than .05 acres. Top soil will be removed, stockpiled during drilling operations, and re-spread during reclamation. The sub-soils are likely to become compacted, which will hinder plant recovery. De-compaction will be required during reclamation. Soil loss from wind and water erosion is likely to occur, but will be greatly reduced by hardening of the disturbed areas with gravel, berms, and application of water.

The construction and use of an unlined reserve pit could have potential impacts to soils, and subsequently vegetation, if contaminants are mobilized in the soil through hydrologic action (McFarland et al 1994). However, the mobilization of contaminants depends largely on the chemical composition of contaminants and the soil properties such as clay content and moisture regime.

Recommended Mitigation Measures:

- Compacted soils must be ripped during reclamation.
- Berms and stockpiles should be seeded with an appropriate seed mix upon completion of the well pad.

#### 3.3.2.2.2. Alternative B

Under Alternative B, the well pad would be relocated to immediately adjacent to the road and eliminate the need for an access road from the existing road. This would reduce the amount of disturbance at the drill pad by less than .05 acres.

The use of a lined reserve pit would reduce the likelihood of contaminants becoming mobilized in the soil.

### 3.3.2.2.3. Alternative C

No disturbance would occur under the No Action Alternative.

## 3.3.3. Vegetation, Forest/Woodland and other vegetative products (Native seeds, yucca and cactus plants)

### 3.3.3.1. Affected Environment

The drill pad, potential water well, and approximately 3.25 miles of the access route are located within ecological site RO29XY117NV. This ecological site is typically dominated by Bonneville saltbush (*Atriplex bonnevillensis*), ricegrass (*Achnatherum hymenoides*), and shadscale (*Atriplex confertifolia*). Potential vegetative composition is about 20% grasses, 5% forbs and 75% shrubs. Approximate ground cover (basal and crown) is 15-20%. Species likely to invade this site are cheatgrass, annual mustards, halogeton, and Russian thistle.

### 3.3.3.2. Impact Analysis

#### 3.3.3.2.1. Alternative A

Under the proposed action, all vegetation within the surface disturbance would be removed. Any cactus or yucca would be salvaged in accordance in IM 2011–10 (Appendix C) and put back during reclamation.

The drill pad would be located approximately 50 feet from the existing road and disturb approximately 5.7 acres of the surface. Vegetation outside the area of surface disturbance could be impacted by the migration of drilling fluid contaminants from the reserve pit (McFarland et al 1994). The spur road to the pad would disturb less than .05 acres. The total amount of disturbance is not likely to have a significant impact on the vegetation community overall. Weed species likely to invade disturbed sites are cheatgrass (*Bromus tectorum*), annual mustards (*Brassicaceae spp.*), halogeton (*Halogeton glomeratus*), and Russian thistle (*Salsola kali*).

The recovery of native species during reclamation may be hindered if invasive weeds invade disturbed sites or if soils become compacted. Invasion is not likely to occur while disturbed sites are being used. However, the margins of disturbed areas, as well as soil stockpiles, are likely to become invaded by weed species. The stipulations identified in the Weed Risk Assessment will greatly reduce the ability for weed species to develop a seed bank which would be released during reclamation and hinder successful establishment of desired species. Compaction would be remedied by ripping of the affected soils. The magnitude and scale of impacts does not warrant compensatory mitigation for this type of project.

Recommended Mitigation Measures:

- Margins of disturbed areas and soil stockpiles should be seeded with an appropriate seed mix
- Compacted soils must be ripped during reclamation.

### **3.3.3.2.2. Alternative B**

Under Alternative B, the well pad would be relocated to immediately adjacent to the road and eliminate the need for an access road from the existing road. This would reduce the amount of disturbance at the drill pad by less than .05 acres.

The use of a lined reserve pit would reduce the likelihood of contaminants becoming mobilized in the soil and uptake by plants.

The seeding of the margins of disturbed areas and soil stockpiles with an appropriate seed mix will reduce the likelihood and ability of weeds species to become established.

### **3.3.3.2.3. Alternative C**

There would be no effects to vegetation under alternative C

## **3.3.4. Fish and Wildlife**

### **3.3.4.1. Affected Environment**

No fish species are present within the project area. The project area may provide habitat for a variety of mammal, bird, and reptile species. BLM sensitive species and migratory birds are discussed in later sections of this document. According to data from the Ely District Resource Management Plan, Nevada Natural Heritage Program, and Nevada Department of Wildlife (NDOW) data, the following species may inhabit the project and surrounding areas: desert horned lizard (*Phrynosoma platyrhinos*), longnose leopard lizard (*Gambelia wislizenii*), American badger (*Taxidea taxus*), and pronghorn antelope (*Antilocapra americana*). These data are not comprehensive, and additional species not listed here may be present within the project area.

The project area occurs within NDOW hunt unit 133. Several small volume wildlife water developments (Seaman Wash Series 1 through 8) occur approximately five to eight miles southeast of the project area. Two large volume wildlife water developments (Coal Valley #1 and #2) are located on the east side of the valley. Coal Valley #2 is approximately 6 miles east of the proposed drill pad. Coal Valley #1 is approximately 11 miles northeast of the proposed drill pad.

### **3.3.4.2. Impact Analysis**

#### **3.3.4.2.1. Alternative A**

Some disturbance and displacement to wildlife species is anticipated in and around the project area. Wildlife disturbance and displacement is also expected due to ancillary facilities and activities (water well, gravel pit, and access roads). If the well is not placed into production, the majority of effects leading to disturbance and/or displacement would be limited temporally to approximately 21 days. If the well is placed into production, effects would be greater and could last for several years.

Impacts to wildlife and associated habitat would likely be greatest from this alternative due to indirect impacts to a small island of vegetation between the roadway and project area. Wildlife

would likely be displaced from this small area of vegetation, and the vegetation may be degraded due to dust and noise associated with the project.

This alternative includes use of an unlined open reserve pit. The presence of oil and other substances, such as surfactants, could pose a hazard to wildlife species. Loss of insulation due to fur coated with oil can pose a risk of hypothermia to mammal species that may enter the pit. The reserve pit could pose an entrapment hazard to small and large wildlife species if the sides are steep and/or lined with a slippery material. Wildlife entrapment and mortality is anticipated due to an open unlined reserve pit under this alternative.

Noise and other elements of human presence in wildlife habitats could impact various wildlife species by causing disturbance and/or displacement. Energy expenditure from displacement could be detrimental to some species. Movement from displacement could bring animals into occupied habitat, increasing competition for available resources. For example, a study by Easterly et al. (1991) of mule deer and pronghorn antelope in relation to oil and gas drilling and well maintenance activities found: “Displacement of animals may result in use of sub-optimal winter habitat, overcrowding, increase intraspecific competition, deterioration of habitat, and decreased physical condition of the population.” Initial results from a 5-year study of pronghorn antelope found reduced usage, avoidance, and even abandonment of some habitat areas in proximity to oil and gas facilities (Berger et al. 2006).

Ground disturbance has the potential to injure or kill individual ground-dwelling animals. Reduction or degradation of habitat quantity and/or quality (including food resources and cover) could result from this alternative. Ground disturbance and activities associated with oil and gas have the potential to introduce invasive plant species to communities that currently lack invasive plants (Blumenthal 2005). Noxious weeds could become established and spread, which also diminishes habitat quality. Dust from ground disturbance could alter photosynthesis and /or reproduction of vegetation that provides wildlife forage and cover in the surrounding areas.

Recommended Mitigation Measures:

- The reserve pit would be fenced and netted in accordance with Washington Office Instruction Memorandum 2013–033; see Appendix B.
- Any facilities will be closed with screens or otherwise to prevent birds, bats and other wildlife from entering in accordance with Washington Office Instruction Memorandum 2013–033; see Appendix B.

### **3.3.4.2.2. Alternative B**

A natural drainage and dirt reservoir located near the project area, which may serve as a temporary water source for wildlife, would be impacted less by this alternative. A lined reserve pit may pose less long-term effects to wildlife than an unlined pit. The environmental consequences described under Alternative A would be similar under this alternative.

### **3.3.4.2.3. Alternative C**

No impacts to wildlife would occur from the no action alternative.

### 3.3.5. Migratory Birds

#### 3.3.5.1. Affected Environment

The following data reflect survey blocks and/or incidental sightings of bird species within the project boundaries from the Atlas of the Breeding Birds of Nevada (Floyd et al. 2007). These data represent birds that were confirmed, probably, or possibly breeding within or near the project area as well as non-breeders. These data are not comprehensive, and additional species not listed here may be present within the project area. After each species, the breeding status within that survey block is listed. BLM sensitive bird species are included in a later section of this document.

**Table 3.2. Bird Species in Survey Block 9312 (approximately three miles south of project area)**

Common Name	Scientific Name	Breeding Status
barn swallow	<i>Hirundo rustica</i>	presumed non-breeder
black-throated sparrow	<i>Amphispiza bilineata</i>	confirmed
cliff swallow	<i>Petrochelidon pyrrhonota</i>	presumed non-breeder
common raven	<i>Corvus corax</i>	possible
horned lark	<i>Eremophila alpestris</i>	probable
Northern mockingbird	<i>Mimus polyglottos</i>	possible
sage sparrow	<i>Amphispiza belli</i>	confirmed

**Table 3.3. Bird Species in Survey Block 9235 (approximately three miles southwest of project area)**

Common Name	Scientific Name	Breeding Status
blue-gray gnatcatcher	<i>Poliopitila caerulea</i>	probable
black-headed grosbeak	<i>Pheucticus melanocephalus</i>	possible
black-throated sparrow	<i>Amphispiza bilineata</i>	confirmed
Bullock's oriole	<i>Icterus bullockii</i>	presumed non-breeder
common raven	<i>Corvus corax</i>	confirmed
house finch	<i>Carpodacus mexicanus</i>	probable
horned lark	<i>Eremophila alpestris</i>	confirmed
mourning dove	<i>Zenaida macroura</i>	possible
Northern mockingbird	<i>Mimus polyglottos</i>	confirmed
sage sparrow	<i>Amphispiza belli</i>	confirmed
turkey vulture	<i>Cathartes aura</i>	possible
Western meadowlark	<i>Sturnella neglecta</i>	confirmed
white-crowned sparrow	<i>Zonotrichia leucophrys</i>	presumed non-breeder
Wilson's warbler	<i>Wilsonia pusilla</i>	presumed non-breeder

#### 3.3.5.2. Impact Analysis

##### 3.3.5.2.1. Alternative A

Some disturbance and displacement to migratory bird species is anticipated in and around the project area. Additional disturbance and displacement is expected due to ancillary facilities and activities (water well, gravel pit, and access roads). If the well is not placed into production, the majority of effects leading to disturbance and/or displacement would be limited temporally to approximately 21 days. These impacts could be less if the project is implemented during the

non-breeding season for migratory birds (generally September to February). A potentially longer time period (maximum of 14 days) between migratory bird surveys and start of construction could lead to impacts to migratory birds.

If the well is placed into production, effects would be greater and could last for several years.

The use of an open unlined reserve pit could result in entrapment and mortality of migratory birds.

This alternative includes use of an unlined open reserve pit. This reserve pit in addition to the well and impacts from ancillary facilities (i.e. roads and gravel pit) could affect migratory birds. The presence of oil and other substances, such as surfactants, could pose a hazard to migratory bird species. Loss of insulation due to feathers coated with oil can pose a risk of hypothermia to bird species that may enter the pit. The reserve pit could pose an entrapment hazard to birds if the sides are steep and/or lined with a slippery material. Extreme pH levels, if present in the reserve pit, could be detrimental to waterfowl (USFWS 2009). A study of grassland birds found lower bird abundance in close proximity to active well pads and recommended 1) noise reduction at well pads, 2) limiting vegetation disturbance near roads and pads, 3) maintaining existing perch sites, and 4) limiting road construction (Lawson et al. 2011).

Recommended Mitigation Measures:

- The reserve pit would be netted in accordance with Washington Office Instruction Memorandum 2013–033; see Appendix B.

While there may be some limited impacts to individual birds, impacts to regional populations of these species are expected to be low.

### **3.3.5.2.2. Alternative B**

A natural drainage and dirt reservoir located near the project area, which may serve as a temporary water source for migratory birds, would be impacted less by this alternative. A measure incorporated into this alternative that requires netting over the reserve pit may minimize impacts to migratory birds by preventing entrapment. A potentially shorter time period (maximum of 7 days) between migratory bird surveys and start of construction could lessen impacts to migratory birds.

The environmental consequences described under Alternative A would be similar under this alternative.

### **3.3.5.2.3. Alternative C**

No impacts to migratory birds would occur from the no action alternative.

## **3.3.6. Special Status Animal Species, other than those listed or proposed by the USFWS as Threatened or Endangered**

### **3.3.6.1. Affected Environment**

According to data from the Ely RMP, Nevada Natural Heritage Program, NDOW data, and the Atlas of the Breeding Birds of Nevada (Floyd et al. 2007), the following BLM sensitive species

*Chapter 3 Affected Environment/Environmental Impacts*

*Special Status Animal Species, other than those listed or proposed by the USFWS as Threatened or Endangered*

may inhabit the project and surrounding areas. These data are not comprehensive, and additional species not listed here may be present within the project area.

**Table 3.4. BLM Sensitive Animal Species**

Common Name	Scientific Name	Breeding Status
ferruginous hawk	<i>Buteo regalis</i>	confirmed
golden eagle	<i>Aquila chrysaetos</i>	possible
Brewer's sparrow	<i>Spizella breweri</i>	confirmed
loggerhead shrike	<i>Lanius ludovicianus</i>	probable
sage thrasher	<i>Oreoscoptes montanus</i>	confirmed
burrowing owl	<i>Athene cunicularia</i>	unknown
dark kangaroo mouse	<i>Microdipodops megacephalus</i>	not applicable

### 3.3.6.2. Impact Analysis

#### 3.3.6.2.1. Alternative A

Some disturbance and displacement to BLM sensitive species is anticipated in and around the project area. Additional disturbance and displacement is expected due to ancillary facilities and activities (water well, gravel pit, and access roads). If the well is not placed into production, the majority of effects leading to disturbance and/or displacement would be limited temporally to approximately 21 days. These impacts could be less if the project is implemented during the non-breeding season for birds (generally September to February).

If the well is placed into production, effects would be greater and could last for several years.

Impacts to Special Status Animal Species would be similar to those described under the Fish and Wildlife and Migratory Birds sections of this EA.

Decreased recruitment can result from oil and gas development disturbance. For example, a study on ferruginous hawk nests in proximity to disturbance fledged less young than non-disturbed areas (White and Thurow 1985).

Recommended Mitigation Measures:

- The project will adhere to “Protecting Burrowing Owls at Construction Sites in Nevada’s Mojave Desert Region.”
- Due to the potential for dark kangaroo mouse within the project area and ancillary facility areas, a small mammal survey will be required prior to ground disturbing activity. If surveys determine presence of this BLM sensitive species, BLM and NDOW will work with the project proponent to determine the best course of action to avoid population-level effects to this species.

#### 3.3.6.2.2. Alternative B

A natural drainage and dirt reservoir located near the project area, which may serve as a temporary water source for sensitive species, would be impacted less by this alternative. The same Mitigation Measures would be required under this alternative, and the environmental consequences described under Alternative A would be similar under this alternative.

*Chapter 3 Affected Environment/Environmental Impacts  
Special Status Animal Species, other than  
those listed or proposed by the USFWS as  
Threatened or Endangered*

### 3.3.6.2.3. Alternative C

No impacts to BLM sensitive species would occur from the no action alternative.

## 3.3.7. Visual Resources Management

Visual resources are identified through the Visual Resource Management (VRM) inventory. This inventory consists of a scenic quality evaluation, sensitivity level analysis and delineation of distance zones. Based on these factors, BLM administered lands are placed into four visual resource inventory classes: VRM Class I, II, III, and IV. Class I and II are the most sensitive, Class III represents a moderate sensitivity and Class IV is of the least sensitivity (see table below). VRM classes serve two purposes: (1) as an inventory tool that portray the relative value of visual resources in the area, and (2) as a management tool that provides an objective for managing visual resources.

### 3.3.7.1. VRM Classification Objectives

**Table 3.5. VRM Classification Objectives**

Class	Visual Resource Objective	Change Allowed (Relative Level)	Relationship to the Observer
Class I	Preserve the existing character of the landscape. Provide for natural ecological changes; however it does not preclude very limited management activity.	Very Low	Activities must not attract attention.
Class II	Retain the existing character of the landscape. The level of change to the characteristic landscape should be low.	Low	Activities may be seen, but should not dominate view.
Class III	Partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate.	Moderate	Activities may attract attention, but should not dominate the view.
Class IV	Provide for management activities, which require major modification of the existing character of the landscape. the level of change to the characteristic landscape can be high.	High	Activities may attract attention, may dominate the view.

### 3.3.7.2. Affected Environment

The proposed project area falls within VRM Classes III and IV. The objective of Class III 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. The objective of Class IV is to provide for management activities, which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. Management activities may attract attention, and may dominate the view.

Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape. Landscape colors in the area consist mainly of the shale green and shadow gray. Vegetation is present throughout the project area. The horizontal lines of the existing roads are a moderate to weak contrast to the landscape of the valley.

Access to the proposed well pad, is approximately 17 miles northwest of Hiko and would not be visible from Highway 318. Access to the gravel source is approximately 1.5 miles south of Hiko and approximately a quarter mile west of Highway 318. Gravel operations may be visible from Highway 318 and Hiko.

### **3.3.7.3. Impact Analysis**

Residual impacts on visual resources could remain for ten, twenty or more years following cessation of operations and reclamation until native vegetation is completely reestablished. Areas where reclamation is not complete or successful would continue to contrast with visual resources. Any evidence of reclaimed roads may invite continued use by the general public, perpetuating linear intrusions in the characteristic landscape. A viewshed analysis map within the Basin and Range National Monument can be found in Appendix G.

#### **3.3.7.3.1. Alternative A**

The proposed action would be in conformance with the VRM Class III and Class IV objectives when field manager approved mitigation measures (listed below) are incorporated by the proponent into the project proposed action and with reclamation. The proposed project may attract attention of the casual observer travelling on the Mail Summit road. The landscape has minimal capability to absorb visual impacts, so a good color selection would be important.

The proposed project would result in short-term and long-term visual impacts, affecting the elements of line and color. Short-term visual impacts would primarily be related to construction and drilling activities. Horizontal and shallow diagonal lines from the drill roads and the exploration process would create moderate to strong line contrasts with the characteristic landscape. The visual contrasts would increase within the area as the removal of vegetation associated with road and drill pad construction would expose the lighter soils creating a moderate to strong visual contrast with the surrounding vegetation for many years to come. This contrast would remain until vegetation is sufficiently established to blend in with the surrounding undisturbed vegetation. In addition, drilling activity would typically occur 24 hours per day and lighting associated with nighttime drilling activities may be visible from long viewing distances.

Once construction activities are completed, long-term landscape contrasts would result from the presence of well pads, pipelines, roads, and production facilities. These landscape modifications would yield a more industrialized visual setting. Short-term and long-term visual disturbances would be mitigated thru the proposed actions design features, reclamation, and re-seeding activities to minimize both short-term and long-term visual impacts.

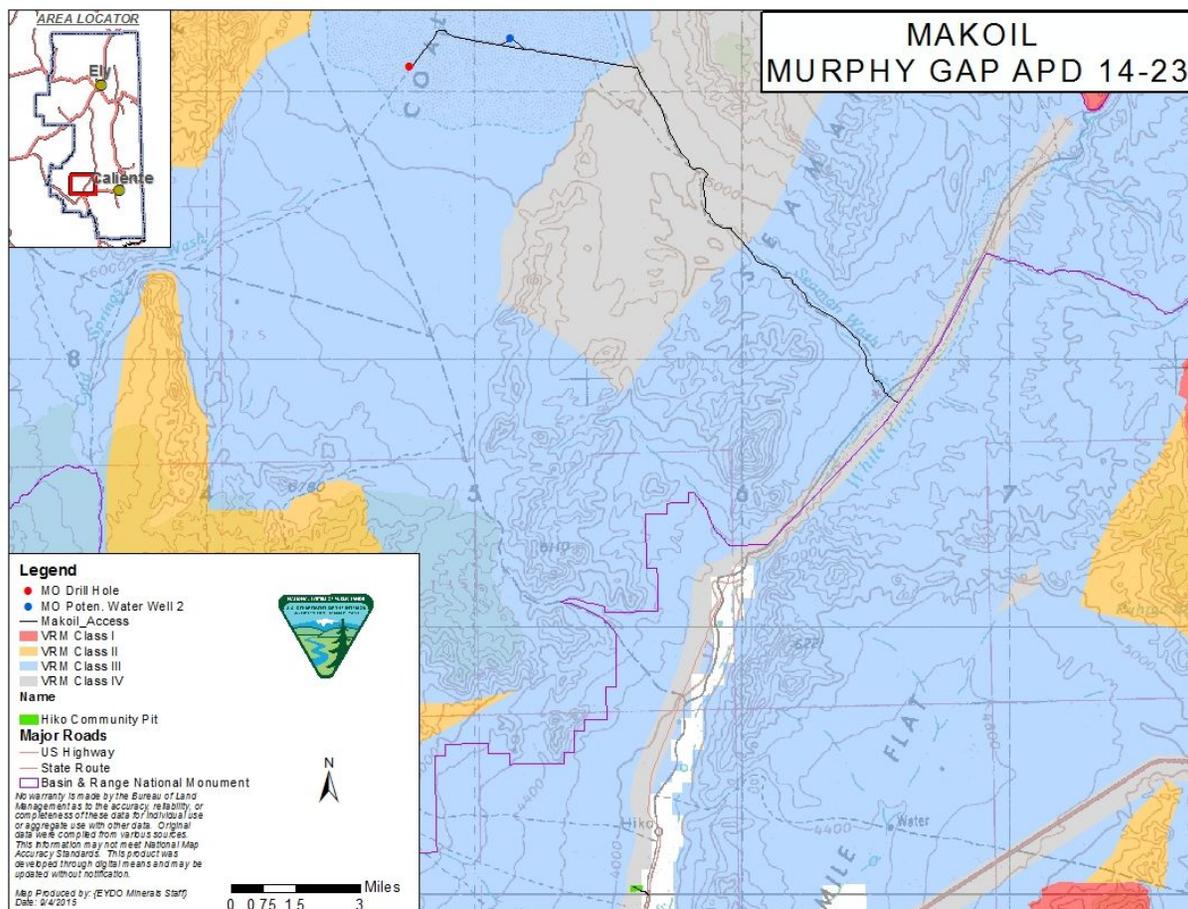
Recommended Mitigation Measures:

- Paint facilities to blend with the landscape (BLM can help with recommended colors)
- Minimize the area to be cleared of vegetation as much as possible (e.g. constructing a pad that is not necessarily rectangular in shape)
- Use low profile construction for facilities
- Stain the soils to reduce the long term visual impacts

- Use filtered lights that point toward the ground at night to reduce the visual impact to night skies.
- Site facilities close together, when possible, and in a way that minimizes the visual impacts (e.g. grouping buildings blocks a smaller portion of the natural landscape than spreading buildings apart.
- Site production facilities close together and near the entrance to minimize the footprint for production and allow more interim reclamation that will reduce the visual impacts.

### 3.3.7.3.2. Alternative B

The disturbance would occur on the same level and in the same area as Alternative A. The same Mitigation Measures would be required, and impacts to VRM under this alternative would be the same as Alternative A



The Map above provides the VRM Classes, relative to the proposed project.

### Map 3.1. VRM Classes, relative to the proposed project

Chapter 3 Affected Environment/Environmental  
Impacts  
Visual Resources Management

February 2016

### 3.3.8. Land Uses

This section describes authorized rights-of-way (ROW) and other realty actions within the vicinity of the project.

#### 3.3.8.1. Affected Environment

There are five authorized ROW's within a half mile of the unpaved access route and the lease area:

- N-74959 Lincoln County Telephone System (buried fiber optic line near Highway 318)
- N-11748 Nevada Department of Transportation (Highway 318)
- N-84133 US Air Force/Nellis Air Force Base (training communication site)
- N-57490 Lincoln County (Seaman Wash Road)
- N-88977 Lincoln County Water District (rain monitoring/sampling)

There are two authorized ROW's within a half mile of the gravel source, Hiko Community Pit.

- N-05985-01 Lincoln County (landfill) (Recreation & Public Purposes Lease expired 2003, pending further action)
- N-89731 – Lincoln County (transfer station)

The RMA (BLM and Lincoln County 2012) allows Lincoln County to maintain the Lower Hole Road.

#### 3.3.8.2. Impact Analysis

##### 3.3.8.2.1. Alternative A

ROW's N-74959 and N-84133 would not be impacted by the proposed activity. Makoil would travel on N-11748 (Highway 318) to access the Seaman Wash Road and the lease area, however this travel would have minimal impact to the paved ROW used by the public, including large truck traffic. ROW N-88977 may potentially be impacted by dust from the proposed activity.

The most direct impact would be to N-57490, Seaman Wash Road. The surface composition of the Seaman Wash Road is defined as both dirt and gravel. Although maintenance responsibility for this road belongs to Lincoln County, Makoil and Lincoln County would have a maintenance agreement to remedy impacts to the road caused by Makoil permitted activity. Maintenance of existing roads outside of the existing ROW or significantly changing the road condition or surface composition would be closely coordinated with BLM and may require additional NEPA analysis.

The Lower Hole Road is not currently authorized under a ROW, however the RMA (BLM and Lincoln County 2012) allows for maintenance of the existing road in the interim. Graveling the western access to the water well would not be allowed as these requests would be considered additional disturbance and outside of the scope of the RMA (BLM and Lincoln County 2012). Makoil and Lincoln County would have a maintenance agreement to remedy impacts to the Lower Hole Road caused by Makoil activities. Maintenance of existing roads outside of the

existing disturbance or significantly changing the road condition or surface material would be closely coordinated with BLM and may require additional NEPA analysis.

### **3.3.8.2.2. Alternative B**

The access route and lease area are essentially the same under Alternative A and Alternative B. Impacts to the five ROW's would be the same as described above in 3.3.7.2.1

Gravel maintenance of the easterly access road to the water well and the western end of the road as it meets the lease area would be allowed in order to maintain the integrity of these roads that are not identified in the RMA. Maintenance outside the existing disturbance or significantly changing the road condition or surface material would be closely coordinated with BLM and may require additional NEPA analysis.

The gravel source, Hiko Community Pit, is located in the vicinity of Lincoln County's Recreation & Public Purposes (R&PP) Act Lease for a landfill (N-005985-01). Acceptance of waste in this landfill was halted in 1998. The lease expired in 2003 and is being reviewed for future needs under the R&PP Act authority. In lieu of the landfill, the BLM authorized a transfer station (N-89731) at the same location, to Lincoln County in 2012. The public use the access road, which passes through the R&PP lease and transfer station ROW area to access the Mount Irish area. Given the short term needs for obtaining the gravel for well pad construction and intermittent road maintenance as well as the general public use of Hiko Community Pit, impacts to the two authorized ROW's are not expected.

### **3.3.8.2.3. Alternative C**

Under this Alternative, there would be no impacts to the seven ROWs.

## **3.3.9. Recreation Uses including Back country Byways, Caves, Rockhounding Areas**

### **3.3.9.1. Affected Environment**

Recreation within the area is dispersed and low. There are no developed recreation facilities or sites in the area. The area is used primarily by ranchers and hunters. There is one yearly competitive motorcycle race Special Recreation Permit event that occurs approximately 12 miles to the southwest (Murphy Gap) area, so there would be no conflicts between organized recreation events and drilling activities.

### **3.3.9.2. Impact Analysis**

#### **3.3.9.2.1. Alternative A**

Drilling activities would create disturbances that may interfere with recreational pursuits in this area. The sight and sound of exploration activities would potentially diminish the solitude, naturalness and primitive and unconfined recreation opportunities desired by many outdoor enthusiasts. There is one competitive Special Recreation Permit (SRP) event that occurs approximately 12 miles to the southwest (Murphy Gap) area. The type of event (race) and

the distance from the project would eliminate any potential conflicts between this organized recreation event and drilling activities.

### **3.3.9.2.2. Alternative B**

The disturbance would occur on the same level and in the same area as Alternative A.

### **3.3.9.2.3. Alternative C**

The disturbance would not occur under this alternative and therefore, there would be no effect to recreation.

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# **Chapter 4. Cumulative Impacts**

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## **4.1. Introduction:**

As required under the National Environmental Policy Act (NEPA) and the regulations implementing NEPA, this section analyzes potential cumulative impacts from past, present, and reasonably foreseeable future actions combined with the Proposed Action within the area analyzed for impacts in Chapter 3 specific to the resources for which cumulative impacts may be anticipated. A cumulative impact is defined as “the impact which results from the incremental impact of the action, decision, or project when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 Code of Federal Regulations 1508.7).

The Cumulative Effects Study Area (CESA) for this project is defined by the South Coal Valley Allotment and a five mile buffer around the community pit.

## **4.2. Past, Present, and Reasonably Foreseeable Future Actions (RFFAs)**

Past, present, and reasonably foreseeable future action would contribute to cumulative impacts in the project area. Past actions include grazing and range improvements; hunting, trapping, wildlife viewing; off road and all terrain vehicles use; rights-of-way grants, leases and land use permits; other forms of recreation; municipal water well development; and oil and gas exploratory drilling. Present actions include all of the past actions except for new water well development and oil and gas exploration. All past actions are also reasonably foreseeable future actions. The disturbances related to these individual activities are minor, mostly temporary, and tend to occur randomly in time.

## **4.3. Cumulative Impact Analysis**

A comprehensive analysis of cumulative impacts are analyzed in the Ely Proposed Resource Management Plan/Final Environmental Impact Statement (November 2007) on pages 4.28–1 to 4.28–88. Typical oil and gas activities, including exploration, wildcat drilling, production and field development, and abandonment, are described in the reasonable foreseeable development scenario (RFD) of that document and are incorporated by reference into this environmental analysis. The reasonable foreseeable development scenarios anticipate 8,400 acres of disturbance and as many as 448 wells drilled for oil and gas exploration and development, (p. 4.36–1). Since approval of the Ely District RMP in August 2008, 18 APDs have been approved, of which, two or less have been permitted but not drilled. The proposed action is approximately 5.7 acres of disturbance, well within the scope of the document.

Cumulative effects of the Proposed Action in combination with the past, present, and RFFAs may involve direct short-term effects to wildlife through habitat loss and reduction of vegetation cover. Successful revegetation as proposed should offset the direct effect of short-term displacement to wildlife, and special status species in the long term. The magnitude and scale of impacts does not warrant compensatory mitigation for this type of project.

Any new impacts from expanded activities would be addressed through additional site-specific NEPA analysis that includes the cumulative impacts associated with exploration and development of potential oil and gas resources.

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# **Chapter 5. Consultation and Coordination:**

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## 5.1. Introduction

The issue identification section of Chapter 3 provides the rationale for issues that were considered but not analyzed further and identifies those issues analyzed in detail in Chapter 3. The issues were identified through the public and agency involvement process described in sections 5.2 and 5.3 below.

## 5.2. Persons, Groups, and Agencies Consulted

**Table 5.1. Persons, Groups, and Agencies Consulted**

Name	Purpose & Authority for Consultation or Coordination	Findings and Conclusions
Nevada State Historic Preservation Office (SHPO)	Consultation for undertakings as required by the National Historic Preservation Act (16 USC 1531)	The cultural survey report was sent to SHPO with a determination of no adverse effect. A concurring response was received on June 1, 2015. Consultation is therefore considered to be closed.
Confederated Tribes of the Goshute Reservation, NV-UT, Duckwater Shoshone Tribe of the Duckwater Reservation, NV, Ely Shoshone Tribe of Nevada, Te-Moak Tribe of the Western Shoshone Indians of Nevada; Elko Band Council; South Fork Band Council; Battle Mountain Band Council, Paiute Indian Tribe of Utah; Indian Peaks Band of Paiutes; Shivwits Band of Paiutes, Moapa Band of Paiute Indians of the Moapa River Indian Reservation, Las Vegas Paiutes Tribe of the Las Vegas Indian Colony, and the Yomba Shoshone Tribe of the Yomba Indian Reservation, NV	Consultation for undertakings as required by Section 106 of the National Historic Preservation Act (16 USC 470f)	Consultation was conducted. Tribal consultation thus far is described in sections 1.4 and 5.3.
Nevada Department of Wildlife	Programs carried out for conservation and rehabilitation involve	Coordination between BLM and NDOW is ongoing.

Name	Purpose & Authority for Consultation or Coordination	Findings and Conclusions
	cooperation between the Department of Interior and the States under the Sikes Act of 1974, as amended (16 USC 670 et seq.).	

Official letters containing invitations to consult on this project were sent on June 23, 2015 by way of certified return receipt mail to the following tribes: Confederated Tribes of the Goshute Reservation NV-UT, Duckwater Shoshone Tribe of the Duckwater Reservation, NV, Ely Shoshone Tribe of Nevada, Te-Moak Tribe of the Western Shoshone Indians of Nevada; Elko Band Council; South Fork Band Council; Battle Mountain Band Council, Paiute Indian Tribe of Utah; Indian Peaks Band of Paiutes; Shivwits Band of Paiutes, Moapa Band of Paiute Indians of the Moapa River Indian Reservation, Las Vegas Paiutes Tribe of the Las Vegas Indian Colony, and the Yomba Shoshone Tribe of the Yomba Indian Reservation, NV. The Caliente Field Office has received all of the return receipts showing that each of these tribes received this invitation.

In person visits were made by the Caliente Field Office Manager and the Ely District Tribal Coordinator were made to the Duckwater Shoshone Tribe on July 2, 2015 and to the Confederated Tribes of the Goshute Reservation on August 14, 2015 in part to discuss this proposed action. The only response from a tribal government received regarding this proposed action was from the Duckwater Shoshone Tribe of the Duckwater Reservation who requested a visit to the site. The Ely District Tribal Coordinator and Caliente Field Office Archaeologist led a field trip for the Duckwater Shoshone Tribe of the Duckwater Reservation on August 14, 2014. No Tribal issues were identified.

### 5.3. List of Preparers

This section discloses the BLM staff who were involved in preparing this analysis. There was no assistance preparing this document from non-BLM personnel.

**Table 5.2. List of BLM Preparers**

Name	Title	Responsible for the Following Section(s) of this Document
Carissa Shilling	Geologist	Minerals
Emily Simpson	Wilderness Planner	Wilderness/WSA, Lands with Wilderness Characteristics
Alicia Styles	Wildlife Biologist	Fish and Wildlife, Migratory Birds, Threatened and Endangered Species, BLM Special Status Plant and Animal Species
Daniel Condie	Range Specialist	Grazing Uses/Forage
Elizabeth Domina	Outdoor Recreation Planner	Visual Resources, Transportation, and Recreation Uses
Cameron Boyce	Natural Resource Specialist	Farmlands (Prime and Unique), Soils/Watershed, Wetlands/Riparian Zones, Floodplains, and Non-native Invasive and Noxious Species.
Ruth Thompson	Wild Horse and Burro Specialist	Wild Horses
Erica Husse	ES&R Specialist	ES&R
Kyle Teel	Fuels Specialist	Fuels
Elvis Wall	Native American Coordinator	Native American Religious and other Concerns, Tribal Consultation
Randall Johnson	District HAZMAT Lead	Wastes (Hazardous and Solid)

<b>Name</b>	<b>Title</b>	<b>Responsible for the Following Section(s) of this Document</b>
Tom Olsen	Hydrologist	Water Quality, Water Resources
Nick Pay	Planning and Environmental Coordinator	Land Use Plan Conformance, Air Quality, Environmental Justice, Human Health and Safety, Socioeconomics
Alicia Hankins	Realty Specialist	Land Uses

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# Glossary

**Glossary:**

A glossary is an alphabetical list of terms in a particular domain of knowledge with the definitions for those terms. Traditionally, a glossary appears at the end of a book and includes terms within that book which are either newly introduced or at least uncommon.

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# Acronyms

**ACECs:**

Areas of Critical Environmental Concern

**APD:**

Application for Permit to Drill

**BLM:**

Bureau of Land Management

**BMPs:**

Best Management Practices

**CESA:**

Cumulative Effects Study Area

**CFR:**

Code of Federal Regulations

**DR:**

Decision Record

**EA:**

Environmental Assessment

**EIS:**

Environmental Impact Statement

**Ely RMP:**

Ely Record of Decision and Approved Resource Management Plan

**ES&R:**

Emergency Stabilization and Rehabilitation

**FLPMA:**

Federal Land Policy and Management Act

**FONSI:**

Finding of No Significant Impact

**HA:**

Herd Area

**IM:**

Instructional Memorandum

**LCRD:**

Lincoln County Road Department

**NDOW:**

Nevada Department of Wildlife

**NEPA:**

National Environmental Policy Act

**NOS:**

Notice of Staking

**NRCS:**

Natural Resources Conservation Service

**RFD:**

Reasonably Foreseeable Development scenario

**RFFAs:**

Reasonably Foreseeable Future Action

**RMA:**

Road Maintenance Agreement

**RMP:**

Resource Management Plan

**RMP/FEIS:**

Ely Proposed Resource Management Plan/Final Environmental Impact Statement

**ROW:**

Right-of-Way

**SHPO:**

State Historic Preservation Office

**SOPs:**

Standard Operating Procedures

**SPCC:**

Spill Prevention, Control, and Countermeasures

**SRP:**

Special Recreation Permit

**USC:**

United States Code

**USDA:**

United States Department of Agriculture

**USFWS:**

United States Fish and Wildlife Service

**USGS:**

United States Geological Survey

**VRM:**

Visual Resources Management

**WSA:**  
Wilderness Study Area

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# **Appendix A. The Standard Operating Procedures (SOPs) for Oil and Gas Operations in the Ely District, BLM**

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# **Appendix B. Washington Office Instruction Memorandum WO–2013–033: Fluid Minerals Operations — Reducing Preventable Causes of Direct Wildlife Mortality**

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# **Appendix C. Nevada Ely District Instruction Memorandum NVL0000–2011–010: Cacti and Yucca Salvage Stipulations for External Projects**

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# **Appendix D. The Burrowing Owl Protocol at Construction Sites**

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# **Appendix E. Weed Risk Assessment**

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# **Appendix F. Proclamation for the Basin and Range National Monument**

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# **Appendix G. Viewshed Analysis for the Basin and Range National Monument**

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# **Appendix H. Nevada Division of Water Resources Coal Valley Hydrographic Area Summary**

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