

**Homer Deep Unit 7-23AH
1835 FSL 2399 FWL (NESW)
Sect. 7 T8S R98W
Garfield County, Colorado**

Surface Use Plan of Operations

1. Existing Roads

- A. Existing roads in the Project Area are shown on Exhibit III-A.
- B. The well can be accessed from Debeque, Colorado.
- C. Existing roads will be maintained in conditions equal to or better than those existing prior to the commencement of operations. Maintenance of the roads used to access the drill site locations will continue until abandonment and reclamation of the wells. Two-track roads will not be flat bladed. Excessive rutting or other surface disturbance will be avoided. Operations will be suspended temporarily during adverse weather conditions if excessive rutting begins to occur.
- D. The existing two-track road connecting the proposed location to Garfield County Road X.2 requires upgrading prior to drilling equipment being moved in. WWC Engineering has prepared a design for a low-water crossing to safely traverse South Dry Fork. Please see the attached Crossing Design Report.
 - a. The proposed overpass will consist of a single lane earth embankment that will act as a low water crossing over South Dry Fork.
 - b. The structure will consist of an armored embankment and aluminum box culvert system that can pass a 25-year, 24-hour storm event and should withstand with minimal damage a 100-year, 24-hour storm event.

2. Proposed Access Routes

- A. 284 feet of resource road will be constructed to access the pad from the existing Maralex well pad, the South Shale Ridge 10-7.
- B. The proposed access road is shown on Exhibit VI-A.
- C. Width maximum – 40 feet overall right-of-way with a 20-foot road running surface.
- D. The road will be constructed to meet the standards of the anticipated traffic flow and all weather requirements.
- E. Maximum grades will not exceed BLM standards.
- F. In an effort to minimize disturbance, equipment and vehicles will be confined to travel these corridors.
- G. The proposed access route has been sited to avoid areas of steep terrain and soils susceptible to increased erosion from the proposed action.
- H. Flagging material, pin flags, painted wooden survey lath, or other directional markers specified by the BLM will be temporarily placed along the proposed access routes to serve as guides to the locations. Directional markers will be removed as soon as they are no longer needed.
- I. Dust will be controlled on the roads and locations during construction and drilling by approved periodic dust mitigation measures.

3. Location of Existing Wells

Please refer to Map 1.

Well name	API #	Operator	Location	Formation	Status
South Shale Ridge 10-7	05-045-06743	Maralex Resources, Inc.	NWSE Sect. 7 T8S R98W	Cameo Coal	PR

4. Location of Existing and/or Proposed Facilities

- A. See Exhibit IX for a production facilities layout diagram. Proposed locations of gas gathering lines, water disposal lines, are also shown on the topographic map.
- B. Production facilities shall be located and arranged to facilitate safety and maximize interim reclamation opportunities, e.g. located at the access road end of the pad, with tanks in cut.
- C. Surface equipment will be painted a flat, non-reflective color as determined by the BLM.
- D. Approximately 565 feet of pipeline trench will be dug to connect the well site with the existing Red Rock Gathering Company pipeline. 3 pipelines will be installed: an 8" steel line for gas gathering, a 10" pipeline which will either be steel or HDPE for freshwater delivery, and a 4" poly line for produced water gathering.
- E. All buried pipelines will be buried to a depth of 4 feet. See Map 2 - Pipeline Exhibit.
- F. Construction width of the pipeline route shall be restricted to 50 feet of disturbance.
- G. Pipeline location warning signs will be installed within 90 days after construction is complete.
- H. All pipelines constructed for this well will be within the Homer Deep Unit boundary; therefore, no Right-of-Way is necessary.
- I. The area used to contain the proposed production facilities will be built using native materials. If these materials are not acceptable, arrangements will be made to acquire appropriate materials from private sources. Approval from BLM will be sought before using non-native materials.
- J. A berm will be constructed completely around any production facilities which contain fluids (i.e. production tanks, produced water tanks, etc.) These dikes will be constructed of: either compacted subsoil or metal panels, be impervious, hold 110% of the capacity of the largest tank and be independent of the back cut.
- K. Three tanks will be installed on the producing location. All three will be 20 feet tall with a 400-bbl capacity. Two will be for produced water; one will contain hydrocarbon liquids.

5. Location and Types of Water Supply

- A. Water to be used for the drilling will be trucked to location.

- B. Water for completion operations of these wells will be piped to location via a buried pipeline that will be installed in accordance with the Black Hills Debeque Exploratory Proposal.
- C. Supplemental water may be hauled by truck over existing county roads from the nearest water supply. Water volume used in drilling operation is dependent on the depth of the well and any losses that might occur during drilling.
- D. Water sources will include:
 - 1. Latham Ponds
 - 2. Dry Fork
 - 3. Roan Creek
 - 4. Colorado River

6. Construction Materials

- A. All construction material for these location sites and access roads shall be borrowed material accumulated during the construction of the location sites and access roads. No additional construction material from other sources is anticipated at this time. If in the future it is required, the appropriate actions will be taken to acquire it from private sources.
- B. All trees on the locations, access roads, and proposed pipeline routes shall be disposed of by one of the following methods:
 - 1. Trees shall be cut with a maximum stump height of six inches (6") and cut to 4-foot lengths and stacked off location. Trees will not be dozed off the location or access road, except on private surface where trees may be dozed. Trees may also be dozed on pipeline routes and then pulled back onto right-of-way as part of final reclamation.
 - 2. Limbs may be scattered off location, access road, or along the pipeline, but not dozed off.
 - 3. Rootballs shall be buried or placed off location, access road, or pipeline route to be scattered back over the disturbed area as part of the final reclamation.

7. Methods of Handling Waste

- A. Produced water will be disposed by either:
 - Piped or trucked to the Black Hills's operated Hancock Gulch #1 disposal well.
 - Trucked to Danish Flats, an approved commercial disposal facility located near Cisco, UT.
- B. Garbage – garbage, trash, and other waste materials will be collected in a portable, self-contained and fully-enclosed trash cage during drilling and completion operations. Upon completion of operations (or as needed) the accumulated trash will be disposed of at an authorized sanitary landfill. No trash will be burned on location or placed in the reserve pit.
- C. Sewage – self-contained, chemical toilets will be provided for human waste disposal. Upon completion of operations, or as needed, the toilet holding tanks will be pumped and the contents thereof disposed of in the nearest, approved sewage disposal facility.

- D. Cuttings – drill cuttings will be processed on location and buried in the cuttings disposal pit.
- E. Immediately after the removal of the drilling rig, all debris and other waste materials not contained in the trash cage will be cleaned up and removed from the well location. No adverse materials will be left on the location. Any open pits will be maintained until such time as the pits are backfilled.
- F. Hazardous Materials Management
 - 1. Project-related activities involving hazardous materials will be conducted in a manner that minimizes potential environmental impacts. A file will be maintained containing current Material Safety Data Sheets (MSDA) for all chemicals, compounds, and/or substances that are used in the course of construction, drilling, completion, production and reclamation operations.
 - 2. Hazardous substance, as defined by Comprehensive Environmental Response Compensation Liability Act (CERCLA), will not be used in the construction or drilling operations associated with these wells. Commercial preparations, which may contain hazardous substances, may be used in production operations and will be transported within the Project Area. Any materials containing hazardous substances will be handled in an appropriate manner to minimize the potential for leaks and spills to the environment. Resource Conservation and Recycling Act (RCRA) hazardous wastes will not be generated by well-drilling operations. Only RCRA exempt working pit contents will be buried onsite.
 - 3. Spills of oil, gas, or any other potentially hazardous substance will be reported immediately to the BLM, and other responsible parties. Spills will be mitigated immediately; appropriate measures for cleanup implemented and spilled material removed to an approved disposal site.

8. Ancillary Facilities

No ancillary facilities are currently anticipated for the development of this area. If facilities are deemed necessary to drilling operations at a later date, they will be submitted to the Authorized Officer via a sundry notice (Form 3160-5) for approval prior to commencing operations for that location.

9. Well Site Layout

- A. Exhibit VIII specifies the drill site layout as staked. Exhibits VII-A, VII-B, and VII-C show cross sections to visualize the planned cuts and fills across the location. An average minimum of six (6) inches of topsoil will be stripped from the location (including the areas of cut, fill, and/or subsoil storage) and stockpiled for future reclamation of the well site.
- B. Operator will notify the Authorized Officer at least forty-eight (48) hours prior to construction of the well pad and/or related facilities.
- C. A pit will be constructed to store freshwater on location for drilling and completion operations. After completions operations, the pit will be used to store flowback waters for up to three (3) years.

- D. The water storage pit shall be constructed in a manner which minimizes the accumulation of surface precipitation runoff into the pit and maintains a 2-foot freeboard between the maximum fluid level and the lowest point of containment. In the event that water storage pit fluids threaten to rise higher than the required 2-foot freeboard, immediate notification shall be provided to the BLM and concurrent steps taken to remove or minimize the further introduction of additional fluids until alternative containment methods can be approved.
- E. Escape ramps designed to allow all animals to escape the lined pit shall be installed every 50 feet along the pit slope and at each corner.
- F. The water storage pit will be lined with a minimum of a 16 mil liner.
- G. Once completion operations have concluded and flowback water is introduced to the pit, bird netting will be installed over the pit.
- H. Prior to the commencement of drilling operations, the water storage pit will be fenced on three (3) sides according to the following minimum standards:
 - a. Corner posts shall be cemented and/or braced in such a manner to keep the fence tight at all times.
 - b. Standard steel, wood, or pipe posts shall be used between the corner braces. The maximum distance between any two (2) posts shall be no greater than sixteen (16) feet.
 - c. All wire shall be stretched using a stretching device before it is attached to the corner posts.
 - d. The fourth side of the reserve pit will be fenced immediately upon removal of the drilling rig and the fencing will be maintained until the pit is backfilled.
- I. Exhibit IX shows the proposed production facility layout.

10. Plans for Reclamation of the Surface

- A. BLM will be contacted at least twenty-four (24) hours prior to commencement of any reclamation operations.
- B. Producing Locations
 - 1. Immediately upon well completion, the well location and surrounding area(s) will be cleared of all debris, materials, trash, and junk not required for production.
 - 2. Immediately upon well completion, any hydrocarbons in the pit shall be removed in accordance with 43CFR 3162.7-1.
 - 3. Before any dirt work to restore the location takes place, the reserve pit will be completely dry and all cans, barrels, pipe, etc., will be removed.
 - 4. Other waste and spoil materials will be disposed of immediately upon completion of drilling and workover activities.
 - 5. The reserve pit and that portion of the location and access road not needed for production facility/operations will be reclaimed within ninety (90) days from the date of well completion, weather permitting.
 - 6. If the well is a producer, Black Hills will upgrade and maintain access roads as necessary to prevent soil erosion, and accommodate year-round traffic. Areas unnecessary to operations will have areas reshaped. Topsoil will be redistributed and disked. All areas outside the work area will be reseeded according to the Bureau of Land Management recommendations for seed mixture.

C. Interim Reclamation work would include:

1. Removing all debris, materials, and trash unnecessary to production operations
2. Reshaping of all areas unnecessary to operation to blend with natural topography to the extent possible
3. Reseeding with seed mixes and techniques specified by the BLM

D. Dry Hole/Abandoned and Plugged Locations

1. On lands administered by the BLM, abandoned well sites, roads or other disturbed areas will be restored to near their original condition. This procedure will include ensuring revegetation of the disturbed areas to the specification of the BLM at the time of abandonment.
2. All disturbed surfaces will be recontoured to the approximate natural contours and reseeded according to BLM specifications. Reclamation of the well pad and access road will be performed as soon as practical after final abandonment and reseeded operations will be performed in the fall or spring following completion of reclamation operations.
3. During reclamation of the site, fill material will be pushed into cuts and up over the backslope. No depressions will be left that will trap water or form ponds. Topsoil will be distributed evenly over the location and seeded according to the recommended seed mixture. The access road and location shall be ripped or disked prior to seeding. Perennial vegetation must be established. Additional work shall be required in case of seeding failures, etc.
4. Seedbed will be prepared by disking then roller packing following the natural contours. Seed will be drilled on contours at a depth no greater than one-half (1/2) inch. In areas that cannot be drilled, seed will be broadcast at double the seeding rate and harrowed into soil. Certified seed will be used whenever available.
5. Fall seeding will be completed after September 1, and prior to prolonged ground frost. Spring seeding will be completed after the frost has left the ground and prior to May 15th.
6. Upon completion of backfilling, leveling, and recontouring the stockpiled topsoil will be evenly spread over the reclaimed area(s). Prior to reseeding, all disturbed surfaces will be scarified and left with a rough surface. No depressions will be left that would trap water and form ponds. All disturbed surfaces will be reseeded with a seed mixture to be recommended by the BLM.

11. Surface Ownership

Surface ownership is held by the Bureau of Land Management.

12. Other Information

- A. A Class III Cultural Resource Inventory of the proposed drill sites, access roads, and other facilities on Federal lands will be conducted and a report filed with the Bureau of Land Management - Grand Junction Field Office.
- B. Black Hills will be responsible for informing all persons in the area who are associated with the Project that they will be subject to prosecution for knowingly disturbing historic or archaeological sites or for collection of artifacts. If archaeological, historical or

vertebrate fossil materials are discovered during the course of any construction activities, Black Hills will suspend all operations that further disturb such materials and immediately contact the appropriate BLM office. Operations in the area of discovery will not resume until written authorization to proceed has been issued by the BLM Authorized Officer.

- C. An Environmental Assessment has been prepared by a third party contractor to analyze the full effects of the proposed development. It is DOI-BLM-CO-130-2012-0021-EA.
- D. Black Hills shall regularly monitor and promptly control noxious weeds or other undesirable plant species as set forth in the joint BLM/Forest Service Noxious and Invasive Weed Management Plan for Oil and Gas Operator, dated March 2007. A Pesticide Use Proposal (PUP) must be approved by the BLM prior to the use of herbicides. Annual weed monitoring reports shall be submitted by December 1.
- E. This location will be covered under the CDPHE stormwater permit COR03D439. Site specific BMPs will be designed on location during the preconstruction onsite once the APD has been approved. A 10-foot buffer has been calculated around the entire disturbance for the addition of potential surface disturbance caused by BMPs. This entire 10' buffer is 0.50 acre. The entirety of this 0.50 acre will not be used; it is a maximum estimation.
- F. A water sample has been drawn from the nearby Dry Fork and submitted to a lab to be analyzed for compliance with COGCC Table 910-1.