PROPOSED ACTION

Homer Deep Master Development Plan
for
Oil and Gas Exploration and Development
Mesa County, Colorado

DOI-BLM-CO-N040-2015-0025-EA

Prepared by

Black Hills Plateau Production, LLC
1515 Wynkoop Street, Suite 500
Denver, Colorado 80202
Phone: 720-210-1300
Fax: 303-566-3344

Prepared for

Bureau of Land Management
Colorado River Valley Field Office
2300 River Frontage Road
Silt, Colorado 81652
Phone: 970-876-9000
Fax: 970-876-9090

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1.0 INTRODUCTION

The Homer Deep Unit Master Development Plan (HDMDP) is an oil and gas exploration and development program proposed by Black Hills Plateau Production, LLC, (Black Hills) over a 5-year period. The HDMDP Project Area is located near the Town of De Beque, Colorado. The majority of the collective area is within the boundaries of Mesa County with a few sections of the Homer Deep Unit extending into Garfield County.

The Project Area is the Homer Deep Unit (HDU), which encompasses roughly 33,000 acres of Federal, private, and split-estate (private surface/Federal minerals) lands described as follows:

> Homer Deep Unit and Non-Unitized Area (access) – Northwest of De Beque via Roan Creek Road (Mesa County 45 Road) to South Dry Fork (Mesa County X.5 Road). Includes all or portions of Sections 7-10 and 13-24, T8S R98W; Sections 11-15, and 24, T8S R99W, and Section 6, T8S R98W, Sixth Principal Meridian.

Black Hills proposes adding four wells to an existing well pad (HDU 7-23), constructing four new well pads with associated access roads and gathering lines, and drilling, completing, and operating up to 36 wells (up to eight wells per well pad) on both Federal and private oil and gas leases. All of the proposed wells would be horizontal wells.

Map 1 shows locations of the proposed new well pads as well as existing and approved well pads, roads, gathering lines, pipelines, and other infrastructure. Locations would not be finalized until site-specific resource surveys and onsite visits have been conducted to minimize impacts as much as reasonably possible.

Although the HDMPD area lies within the administrative boundaries of BLM's GJFO and contains existing oil and gas infrastructure approved by that field office, the HDMDP is being managed by BLM's Colorado River Valley Field Office (CRVFO) in Silt, Colorado. This change in BLM management of the project is part of a consolidation of the GJFO oil and gas program into the CRVFO, which became effective on October 1, 2014.

2.0 EXISTING DEVELOPMENT AND INFRASTRUCTURE

Black Hills currently operates approximately five wells in the HDU. Some wells were drilled as early as 1978 by Maralex and others. Black Hills perceives this area as an exploratory prospect due to recent advances in drilling technology and new geologic information that has provided Black Hills with access to additional formations. Construction and operation of the HDMDP would allow for additional production of up to 306 billion cubic feet (bcf) of natural gas over the life-of-the-project which is estimated to be 20 years.

Existing roads would be used to access HDMDP components. From Interstate-70, the access route to the Project Area follows Mesa County 45 Road (Roan Creek Road) approximately 1.5 miles through De Beque, and another 3 miles to the Mesa-Garfield county line. Near the county line, the access route turns left on Mesa County X.5 Road and proceeds approximately 0.7 mile to Garfield County Road (CR) 200. The route follows Garfield CR 200 for approximately 3 miles to the Homer Deep Unit.

Table 1 lists existing well pad development in the HDMDP area, the associated wells, and the NEPA authorizations under which each was constructed. In addition to the 12 existing wells on five wells pads are a disposal well, pipelines constructed under the DeBeque Exploratory Proposal (DEP), and the DeBeque Pipeline constructed late in 2014 under a separate EA.

Table 1. Existing Development – Homer Deep Unit

Project Component	*Status*	*NEPA Approval*
HDU 9-41 Pad	Constructed 2013 - 3 Wells Drilled	CO-130-2012-0021-EA
HDU 9-11 Pad	Constructed 2013 - 3 Wells In Process	
HDU 7-23 Pad	Constructed 2015 - 4 Wells Pending	
HDU 17-43 Pad [1]	Not Constructed	
HDU 24-11 Pad [1]	Not Constructed	
HDU Pipelines	Constructed	
HDU 21-41 Well Pad	Constructed 2011 - 1 Well Drilled	CO-130-2008-0002-EA
HDU 15-23 Well Pad	Constructed 2008 - 1 Well Drilled	
Hancock Gulch Disposal Well #1	Converted to Disposal Well - 2010	CO-130-2010-0039-EA
DeBeque Pipeline and DeBeque Pumping Station	Constructed 2014	CO-130-2013-0030-EA 2014
[1] Well pad was approved under CO-130-2012-0021-EA but APDs have not been submitted.		

3.0 PROPOSED DEVELOPMENT

The following project components would be designed, constructed, and operated as described in this project proposal. Additional BLM, U.S. Fish and Wildlife Service (USFWS), or State agency mitigation specific to individual wells/pads would also be applied and adhered to by Black Hills.

3.1 WELL PADS AND WELLS

Four new well pads are proposed (see Table 2), each of which would disturb approximately 7 acres, for a total of 28 acres of initial disturbance. Each pad would accommodate up to eight wells, for a total of 36 wells (including four additional wells on the existing HDU 7-23 pad).

Well pads would be stabilized using Best Management Practices (BMPs) until it is determined that no more wells would be drilled on the pad. When all drilling is complete, the pad would undergo interim reclamation to approximately 3 acres of working surface per pad (12 acres total) during long-term production and maintenance.

3.2 ACCESS ROADS AND GATHERING LINES

It is estimated that less than 1 mile of new road would be required to access the new pads and that approximately 2 miles of existing two-track roads would be upgraded as necessary. Two access routes to the proposed HDU 13-43 pad are shown on Map 1. The final route would depend on agreements with the private landowner. Both routes may be requested by the proponent to provide a loop for truck traffic. Natural gas and water gathering lines would be installed at the same time as road construction and would

Table 2. Proposed Well Pads by Lease and Surface and Mineral Ownership

Well Pad	*Surface Location*	*Surface/Mineral Ownership*	*Federal Lease*	*Specific Stipulations*
HDU 13-43	T8S R97W Sec. 13 NESE	Federal/Federal	COC12737	None
			COC69072	TL Deer and Elk Winter Range (December 1 – April 30) CSU for Cultural Resources
HDU 23-12	T8S R98W Sec. 23 NENW	Federal/Federal	COC12737	None
HDU 5-24	T8S R98W Sec. 5 SESW	Federal/Federal	COC67560	TL Deer and Elk Winter Range (December 1 – April 30)
HDU 13-12	T8S R99W Sec. 13 NWNE	Private/Federal	COC52686	None

[1] TL = timing limitation (seasonal restriction on construction, drilling, and completion activities).
[2] CSU = controlled surface use (gives BLM the authority to impose a 60-day TL, require a project component to be relocated by more than 200 meters, and/or require special design and mitigation measures to avoid or minimized adverse impacts

be collocated in the same trench. The gathering lines (up to 12-inch steel for gas gathering and 12-inch steel for fresh water delivery and for produced water gathering) would be installed adjacent to the road. Disturbance widths are proposed as follows:

- New roads with gathering lines: 75 feet wide x 1 mile of length = 9.1 acres
- Upgrade of two-tracks with gathering lines: 75 feet wide x 2 miles of length = 18.2 acres

Note that no roads or gathering lines are planned except in collocated alignments.

The proposed 5-24 pad is outside the boundaries of the Homer Deep Unit, and therefore individual rights-of-way from the BLM would be required for construction of the pad, road, and gathering lines. Dust would be controlled on the roads and pads during construction and drilling by use of approved dust suppression methods and enforcement of speed limits.

3.3 WATER SUPPLY, USE, AND DISPOSAL

Fresh water for drilling and completion would be piped from the DeBeque Pumping Station via the DeBeque Pipeline and the HDU Pipeline directly to the well pads (see Map 1). Water transport by trucking may be used to supplement pipeline delivery, on a limited basis.

Produced water would be stored and treated at the DeBeque Pumping Station to supplement fresh water volumes for drilling and completions. Black Hills would treat and recycle produced water recovered from drilling and completions. The extent of treatment and reuse would be based on volumes and quality of water received from producing wells and compatibility with hydraulic fracturing stimulation (frac)

designs of future wells. Actual treatment methods and the required holding capacity have not yet been determined.

Water usage would be determined by the length of the horizontal section and frac stages required for economic recovery of resources. Water volume for drilling and completion is estimated to be 350,000 barrels per well, depending on depth of the well and losses during drilling. Fresh water would be used for the initial drilling, and fresh water or recycled produced water would be used for the remainder of drilling and completion.

All new gathering lines would be hydrostatically tested for leaks using fresh water. It is estimated that approximately 0.14 barrel of water per foot of 12-inch pipe would be required for hydrostatically testing the pipelines. Fresh water would also be applied for dust abatement, estimated at 4,200 gallons per well pad and applied as necessary to avoid or minimize visible plumes of dust.

Most of the produced water would be piped from the well pad via the HDU Pipeline and DeBeque Pipeline to the DeBeque Pumping Station for storage (see Map 1). Produced water not deemed acceptable for recycling would be disposed of either by injection or trucked to a permitted disposal facility (Deer Creek Facility owned by Alanco Energy Services located southwest of Grand Junction along US Highway 50). Black Hills currently operates one disposal well in the Homer Deep Unit and another south of the Town of De Beque in the Horseshoe Canyon development area.

3.4 SCHEDULE

Black Hills anticipates starting construction in the summer of 2016, once all approvals are obtained. After a well pad is constructed, at least four wells would be drilled on the pad. This would typically occur in a continuous operation, but some pads may be drilled in multiple visits, with BLM approval. It is anticipated that it 45 days would be needed to drill a single well, with an additional 30 days for completion. For the initial four wells on a pad, all four wells would be drilled and then all four wells would be completed. The rate of drilling would depend largely on factors such as advances in technology and economic factors such as the productivity of the wells, price of natural gas, and cost of services.

Three of the proposed well pads and access to all four well pads would are within mule deer severe winter range and mule deer winter concentration area. With mitigation, Black Hills would be requesting exceptions to timing limitations so that drilling can occur year-round.

3.5 WORKFORCE AND TRAFFIC

The construction workforce is estimated to include up to 30 workers for access road and gathering line construction, 36 workers during drilling, and up to 50 workers during well completion. Once the wells are drilled and completed, the operational workforce required to service the well pad would include one pumper and one maintenance worker. A single pumper can typically visit up to 20 wells per day, and an individual well typically requires one 5-day maintenance period per year. Therefore, following completion of the last well on the final pad, the operational workforce during long-term production and maintenance is not expected to exceed two workers. Black Hills expects that approximately 50% of the construction workforce would be local and all of the operational workforce would be local.

During construction of the access road and gathering lines, project-related traffic is estimated to be up to 10 vehicles per day, 15 vehicles per day during drilling, and 18 vehicles per day during well completion. Traffic during long-term production and maintenance would include one light-duty truck per day for pumper visits to the well pads and one light-duty truck for an additional maintenance worker.

3.6 SITE-SPECIFIC SURVEYS AND PROJECT DESIGN FEATURES

Notifications and Agreements. Black Hills would notify the BLM at least 48 hours prior to initiation of construction. Black Hills would comply with BLM Standard Conditions regarding agreements with existing right-of-way holders.

Permits, Authorizations, and Plans. Black Hills would obtain all appropriate Federal, state, county, municipal, and local permits, including all necessary environmental clearances and permits required by the U.S. Army Corps of Engineers (USACE), USFWS, Colorado Oil and Gas Conservation Commission (COGCC), Colorado Department of Transportation (CDOT), Colorado Department of Public Health and Environment (CDPHE), County Health and Road Departments, and Town of De Beque before commencing any work.

All construction would be covered by a General Construction Permit for stormwater discharges from CDPHE. The HDU is covered under permit number COR-03D439. A Stormwater Management Plan is currently in place and would be updated as necessary to include all new construction. BMPs, as required by the permits and plans, would be in place before, during, and after construction until the location has reached final stabilization. All other requirements of the permits would be followed, such as the bi-weekly inspections and post-precipitation event inspections.

Black Hills has a Spill Prevention, Control, and Countermeasure Plan (SPCC Plan) currently in place for the existing well locations in the area. The SPCC Plan would be updated to include the HDMDP.

Black Hills has prepared a Fire Management Plan for the HDU, which would apply to this proposal.

Land Surveys. Professional land surveyors would survey and stake selected proposed well pads, resource roads, and gathering lines. The land surveyors would consider sensitive resources identified during pre-disturbance survey efforts. Black Hills would conduct onsite inspections with BLM resource staff for proposed well pads after they have been staked and surveyed to verify that sensitive resources have been avoided and to identify changes or mitigation measures required for BLM approval. Black Hills would receive final approval by the BLM prior to initiating surface-disturbing activities.

Cultural Resources. A Class III (intensive) cultural resources inventory is ongoing by Grand River Institute under BLM Antiquities Permit No. C-52775. Surveys are being conducted for blocks of 40 acres around pads and within 100 feet of both sides of access roads and gathering pipelines. Literature reviews of known cultural resources in the Project Area were made through the BLM Grand Junction Field Office and the Colorado Historical Society's Office of Archaeology and Historic Preservation (OAHP).

Biological Resources. Where survey permission is granted, WestWater Engineering is conducting surveys for the following biological resources within the Project Area: 1) Federally listed, proposed, or candidate threatened or endangered plant species and their habitat and BLM sensitive plant species and their habitat; 2) nesting raptors; 3) BLM sensitive animal species; 4) Birds of Conservation Concern (BCC) occurrences, nest sites, and habitat; 5) noxious and invasive weed species; and 6) wetlands and other potential Waters of the U.S. as defined and administered by the USACE. Surveys are being conducted in accordance with current BLM protocols.

Paleontological Resources. Black Hills would conduct onsite inspections for fossils prior to initiating activities associated with each year of development. Onsite inspections would occur where surface-disturbing activities are proposed on or within 200 feet of an outcrop of the Wasatch Formation. This

formation is designated by the BLM as Potential Fossil Yield Class 4 (High) or 5 (Very High) based on the potential presence of vertebrate and noteworthy invertebrate or plant fossils.

3.7 CONSTRUCTION

Proposed Well Pads. The proposed well pads would be constructed from native soil and rock materials present using a bulldozer, grader, front-end loader, and/or backhoe. The pads would be constructed by clearing vegetation, stripping and stockpiling topsoil, and leveling the pad area using cut-and-fill techniques. The tops of the cut banks and pad corners may be rounded to improve their appearance.

The working surface of newly constructed pads would average 450 feet by 500 feet. With cut-and-fill slopes, initial disturbance per pad would be approximately 7 acres. The target zone for the wells is for true vertical depths of approximately 1,500 to 9,000 feet in the Mesaverde, Rollins, Cozzette, Corcoran, Frontier, Sego, Mancos, Dakota, and Cedar Mountain units. Well pad sizes of up to 7 acres are necessary to accommodate advanced completion techniques, which require additional surface equipment and water storage for maximizing fracture complexity (completing multiple wells simultaneously). The relative large pad size also provides increased safety for personnel by providing additional area for equipment to operate and maneuver.

Proposed Access Roads and Gathering Lines. All proposed gathering lines would be constructed adjacent to existing, upgraded, or proposed roads, generally along the uphill side. Excavated topsoil would be windrowed separately from the underlying subsoil and stored along the road until the trench is backfilled. A disturbance width of 75 feet would be needed where new roads or upgraded two-track roads and adjacent gathering lines would be constructed. All disturbance except the road travel surface and ditches would be promptly reclaimed following construction.

Roads would be constructed to meet the standards of the anticipated traffic flow and accommodate all-weather use. Maximum grades would not exceed BLM standards. Equipment and vehicles would be confined to permitted roads.

Black Hills would provide timely maintenance and cleanup of roads. A regular schedule for maintenance would include, but not be limited to dust abatement, reconstruction of the crown, slope, or water bars; blading or resurfacing; clean out of ditches, culverts, catchments and other BMPs. When rutting of the travel way becomes greater than 4 inches, maintenance or upgrade would be conducted as approved by the BLM.

Existing roads would be maintained in conditions equal to or better than those existing prior to construction. Maintenance of the road used to access the drill site location would continue until abandonment and reclamation of the wells. Two-track roads would not be flat bladed. Upgraded roads would be constructed in accordance with BLM Gold Book standards.

All new gathering lines would be hydrostatically tested with fresh water for leaks. After hydrostatic testing, the fresh water would be allowed to drain onto the surrounding surface as approved by the BLM.

All gathering lines would be buried to a minimum depth of 4 feet from surface to top of pipe. The trench would be excavated mechanically; pipe segments would then be welded together and tested, lowered into the trench, and covered with excavated material.

3.8 DRILLING AND COMPLETION

Production results from the initial wells would be used to plan future drilling programs. Fewer wells may be drilled than are proposed because of geologic and market uncertainties.

Black Hills drilling operations would be conducted in compliance with all Federal Oil and Gas Onshore Orders, as well as all other applicable rules and regulations. Drilling would target gas production zones at true vertical depths of approximately 1,500 to 9,000 feet.

All drilling rig engines would be Tier 2 compliant to minimize nitrogen oxide (NO_x) emissions from drilling rigs. Tier 2 engines have a 68% reduction in NO_x over Tier 0 engines. Black Hills would use a closed loop drilling system. One drilling rig or one completion rig would be operating at any one time on any one location. Simultaneous operations of drilling and completion on the same pad is not currently anticipated.

A fluids pit (100 feet x 250 feet) with an approximate capacity of 32,500 barrels would be constructed to store fresh water on the well pad for drilling and completion. Well pad and fluids pits could be left in place for up to 3 years after drilling and completion, to allow evaporation and to evaluate the results of the wells in case additional wells were proposed in the near future.

The fluids pit would be constructed in a manner which minimizes the accumulation of surface precipitation runoff into the fluids pit and maintains a 2-foot freeboard between the maximum fluid level and the lowest point of containment. In the event that fluids threaten to rise higher than the required 2-foot freeboard, immediate notification would 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. The fluids pit would be double lined with two 24 mil liners as per COGCC Rule 904.c.(1).

Once completion operations have concluded and flowback water is introduced to the fluids pit, bird deterrent would be placed over the pit to prevent birds from landing on the surface. Prior to commencement of drilling operations, all four sides of the fluids pit would be fenced as soon as the fluids pit is constructed. The fencing would be 8-foot woven wire fence with adequate bracing. The bottom 2 feet of mesh would be sized adequately to preclude small animals from entering the fluids pit. All corners would be braced and fence construction would be on cut or undisturbed ground. The fence would be maintained in good condition to exclude wildlife and livestock.

If the fluids pit is constructed with a slope steeper than 3:1, anchored escape ramps would be installed every 50 feet along the pit slope and at each corner. Black Hills would immediately report any wildlife or birds found dead or apparently ill in or near the fluids pit to the BLM.

To minimize light pollution, all drill rig and well test facility lights would be limited to those required to safely conduct operations taking place at the time. Where safety is not compromised, lighting would be down-directed and focused on work areas only. Permanent lights would be shielded and/or down-directed, and/or directed in a manner that targets light specifically to the work area.

Construction would occur during daytime hours when there is less sensitivity to sound. All equipment would have sound control devices no less effective than those provided by the manufacturer. All equipment would have muffled exhausts. Engine braking by trucks would not occur on BLM lands. Generator(s) serving drilling rigs would be installed and operated at the site in a manner that, at a

minimum, meets the COGCC's Noise Abatement regulation (No 802) for Residential/Agricultural/Rural Zone. This regulation requires that the noise level not exceed 50 dBA.

Consistent with COGCC rules for noise abatement, oil and gas operations at any well site, production facility, or gas facility would comply with the COGCC maximum permissible noise levels. Where noise reduction is shown to be necessary, moveable paneled noise shields, barriers, or enclosures would be installed adjacent to or around noisy equipment where required to meet the project noise limits.

3.9 PRODUCTION – OPERATION AND MAINTENANCE

Surface Facilities. The area used to contain the proposed production facilities would be built using native materials. If these materials are not acceptable, arrangements would be made to acquire appropriate materials from private sources. Approval from the BLM would be sought before using non-native materials.

Surface facilities at each well pad location would typically consist of wellheads, separator/dehydrator units, gas metering units, radio communications towers, and above-ground condensate and produced water tanks. Up to three 400-barrel tanks per well would be installed on the producing location—two for produced water and one for hydrocarbon liquids. Multi-well locations would share production equipment, whenever feasible, to minimize surface occupancy and disturbance. All production equipment with a chimney, vent, or stack would be fitted with a device to prevent birds from entering the chimney, such as an excluder cone or equivalent. Site-specific equipment would be submitted with the individual APD.

All installed production facilities (storage tanks, load outs, separators, treating units, etc.) with the potential to leak or spill oil, condensate, produced water, glycol, or other fluid which might be a hazard to public health or safety would be placed within an appropriate impervious secondary containment structure that would hold 110% of the capacity of the largest single container within it for 72 hours. Secondary containment would consist of corrugated steel containment berms. All loading lines would be placed inside containment berms.

Chemical containers would be clearly labeled, maintained in good condition and placed within secondary containment. They would not be stored on bare ground, nor exposed to sun and moisture.

Production facilities would 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.

All production equipment would be painted to match the surrounding terrain and located to reasonably minimize long-term surface disturbance and visual impact. BLM would select the colors for all facilities, including any metal containment berms placed around the tanks, at sites associated with Federal surface. In cases of split estates associated with Federal minerals the surface equipment would be painted in accordance with BLM requirements unless the private surface owner requests differently.

Telemetry equipment would be used to remotely monitor wells wherever topographically feasible. The use of telemetry would minimize traffic to and from the well locations in order to minimize impacts on wildlife and plants. A pumper truck would be required to periodically visit the pads. The frequency of these visits would be based upon information gathered from the telemetry equipment.

Waste Handling. Flowback water would be evaporated in the fluids pit. If the amount of flowback water exceeds the capacity of the fluids pit, the excess water would be trucked to one of the disposal wells

operated by Black Hills (the Hancock Gulch #1 or the Horseshoe Canyon Federal 15-3) or transported to a centralized water storage facility for recycle. In accordance with Onshore Order No. 7, Black Hills would obtain approval from the BLM prior to disposal. Once the fluids pit is emptied, both liners would be removed and disposed at an approved disposal facility in accordance with COGCC regulation 905.b.(3).A.

Produced water would be trucked or piped to one of the disposal wells or transported to the storage ponds at the DeBeque Pumping Station for recycling.

Garbage, trash, and other waste materials would be collected in a portable, self-contained and fully enclosed, bear-resistant trash cage during drilling and completion. Upon completion of operations (or as needed), the accumulated trash would be disposed at an authorized sanitary landfill. No trash would be burned on location.

Self-contained, chemical toilets would be provided for human waste disposal. Upon completion of operations, or as needed, the toilet holding tanks would be pumped and the contents thereof disposed of in the nearest, approved sewage disposal facility.

If testing confirms that cuttings are within safe limits compared to COGCC Table 910-1 concentration levels, drill cuttings would be processed on location and buried in a cuttings disposal pit.

Drilling fluid would be collected in the tanks associated with the closed loop system and hauled offsite for disposal at an approved facility. In accordance with Onshore Order No. 7, Black Hills would obtain approval from the BLM prior to disposal.

Immediately after removal of the drilling rig, all debris and other waste materials not contained in the trash cage would be cleaned up and removed from the well location. No adverse materials would be left on the location. Any open pits would be maintained until such time as the pits are backfilled.

Hazardous Materials Management. Project-related activities involving hazardous materials would be conducted in a manner that minimizes potential environmental impacts. A file would be maintained onsite to contain current Safety Data Sheets (SDS) for all chemicals, compounds, and/or substances that are used in the course of construction, drilling, completion, production, and reclamation.

Hazardous substance, as defined by Comprehensive Environmental Response Compensation Liability Act (CERCLA), would 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 would be transported within the Project Area. Any materials containing hazardous substances would 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 would not be generated by well-drilling operations. Only RCRA exempt working pit contents would be buried onsite.

Reportable spills of oil, gas, or any other potentially hazardous substance would be reported immediately to the BLM, and other responsible parties. Spills would be mitigated immediately; appropriate measures for cleanup implemented and spilled material removed to an approved disposal site.

Workovers or Recompletions. Periodically, the workover or recompletion of a well may be required to ensure that efficient production is maintained. Workovers can include repairs to the well bore equipment (casing, tubing, rods, or pump), the wellhead, or the production facilities. These repairs would usually be

completed during daylight hours. The frequency of this type of work cannot be accurately projected because workovers vary from well to well.

3.10 RECLAMATION

The BLM would be contacted at least 48 hours prior to planning and pre-construction onsites and commencement of any reclamation.

Producing Locations. Immediately upon well completion, the pad and surrounding area(s) would be cleared of all debris, materials, trash, and junk not required for production. Other waste and spoil materials would be disposed of immediately upon completion of drilling and work-over activities.

Topsoil storage piles, storm water control features, temporarily disturbed areas along roads and pipelines, and cut-and-fill slopes would be seeded at the time of construction or within 30 days to stabilize materials, maintain soil microbial activities, and minimize weeds. Seedbed prep would be required unless seeding occurs immediately after construction.

Fluids pits may be in place for up to 36 months. While the pit and pad remain open, interim reclamation would not occur within the general 1-year timeframe. Instead, temporary reclamation would take place as described below. When the fluids pit is closed, the pad would be down-sized to the minimum size needed for long-term well production (3 acres) and interim reclamation, including recontouring and seeding, would take place.

If at least one well on the pad proves to be a producer, Black Hills would upgrade and maintain access roads as necessary to prevent soil erosion and accommodate year-round traffic. Areas unnecessary for operations would have areas reshaped. Topsoil would be redistributed and disked. All areas outside the work area would be reseeded using a mix of native grasses, forbs, and shrubs approved by the BLM.

Temporary Reclamation. Stabilization measures would begin at the time of construction, or at least within 72 hours after initial surface disturbing activities, to stabilize materials, maintain biotic soil activities and minimize weed infestations.

Seeding of topsoil berms/windrows, cut/fill slopes, and temporarily disturbed areas along roads/ and pipelines would be done at the time of disturbance/ construction. Seedbed prep may not be required for topsoil storage piles or other areas of temporary seeding, if seeding is immediate. BLM pre-approval of seed mix is required.

Other stabilization measures implemented at the time of initial construction may include pre- and post-construction BMPs, contouring, texturing, mulching, slash/brush berming/storage, and weed monitoring/ control.

Interim Reclamation. Prior to interim reclamation, Black Hills would meet with the BLM to inspect the disturbed area, review the existing reclamation plan, and agree upon any revisions to the plan.

Seed tags would be submitted for BLM approval at least 14 days before proposed seeding date.

The BLM would be notified at least 48 hours prior to beginning any reclamation work.

Weed-free certification, seed tags, and a Subsequent Report Sundry Notice describing the reclamation would be submitted to the BLM within 30 days of seeding.

Only areas needed for production would be left in place. Fill slope soils would be pulled up and returned to cut areas by pushing up and over the edges of the cut. Compacted areas would be ripped in two passes at opposite directions before being reshaped.

Salvaged topsoil would be redistributed evenly. Soil amendments would be used as permitted or required. The seed bed would be prepared by scarifying (roughening) spread topsoil prior to seeding, unless seeding takes place immediately or is drilled. Seedbed preparation may include pocking, ripping, disking, or other soil roughening techniques.

Disturbed areas would be seeded with a seed mixture approved by the BLM. Seed mixes would contain no noxious, prohibited, or restricted weed seeds and contain no more than 0.5% by weight of other weed seeds. Only viability-tested, certified seed for the current year, with a minimum germination rate of 80% and a minimum purity of 90%, would be used. Seed that does not meet these criteria would not be applied to public lands.

Seeding would be conducted no more than 24 hours following final seedbed preparation. If interim revegetation is unsuccessful, Black Hills would implement subsequent reseedings until interim reclamation standards are met.

Cut-and-fill slopes would be protected against erosion with the use of pocking/pitting, lateral furrows, hydromulch or other measures approved by the BLM. Additional vegetation, BMPs or methods may be required near drainages or in areas with high erosion potential.

Well pads would be fenced to BLM standards to exclude grazing livestock for the first two growing seasons or until seeded species are firmly established, whichever comes later. Fencing would be approved by the BLM.

In deer and elk habitat, fences for livestock exclusion would not exceed 40 inches. The four-strand fence would have smooth top and bottom wires. The distance from the ground to the bottom smooth wire would be no less than 16 inches. The distance from the top wire to the second wire would be no less than 12 inches. Middle wires would be barbed, with 6-inch spacing.

Final Reclamation and Dry Hole or Abandoned and Plugged Locations. A well pad that no longer has a producing well would undergo final reclamation within no more than 1 year following plugging and abandonment of the final well on that pad. Buried pipelines would be reclaimed to final reclamation standards at the time of installation.

Prior to final reclamation of a well pad or gathering line, Black Hills would meet with the BLM to inspect the disturbed area, review the existing reclamation plan, and agree to any changes to the plan.

Black Hills would notify the BLM at least 48 hours prior to commencing any reclamation work and within 48 hours of completion of reclamation work.

Prior to recontouring and reseeding the pad, Black Hills would complete the following:

- All equipment, facilities, and trash would be removed from the location.
- Each borehole would be plugged and capped, and its related surface equipment removed.
- Subsurface gathering lines would be purged and plugged at specific intervals.
- Dry hole markers would be subsurface, to prevent their use as raptor perching sites.

Recontouring for final reclamation would consist of returning the pad, material storage piles, cut-and-fill slopes, and storm water control features to natural contours that blend with adjacent undisturbed areas, as specified in the final reclamation plan or final reclamation plat approved by the BLM.

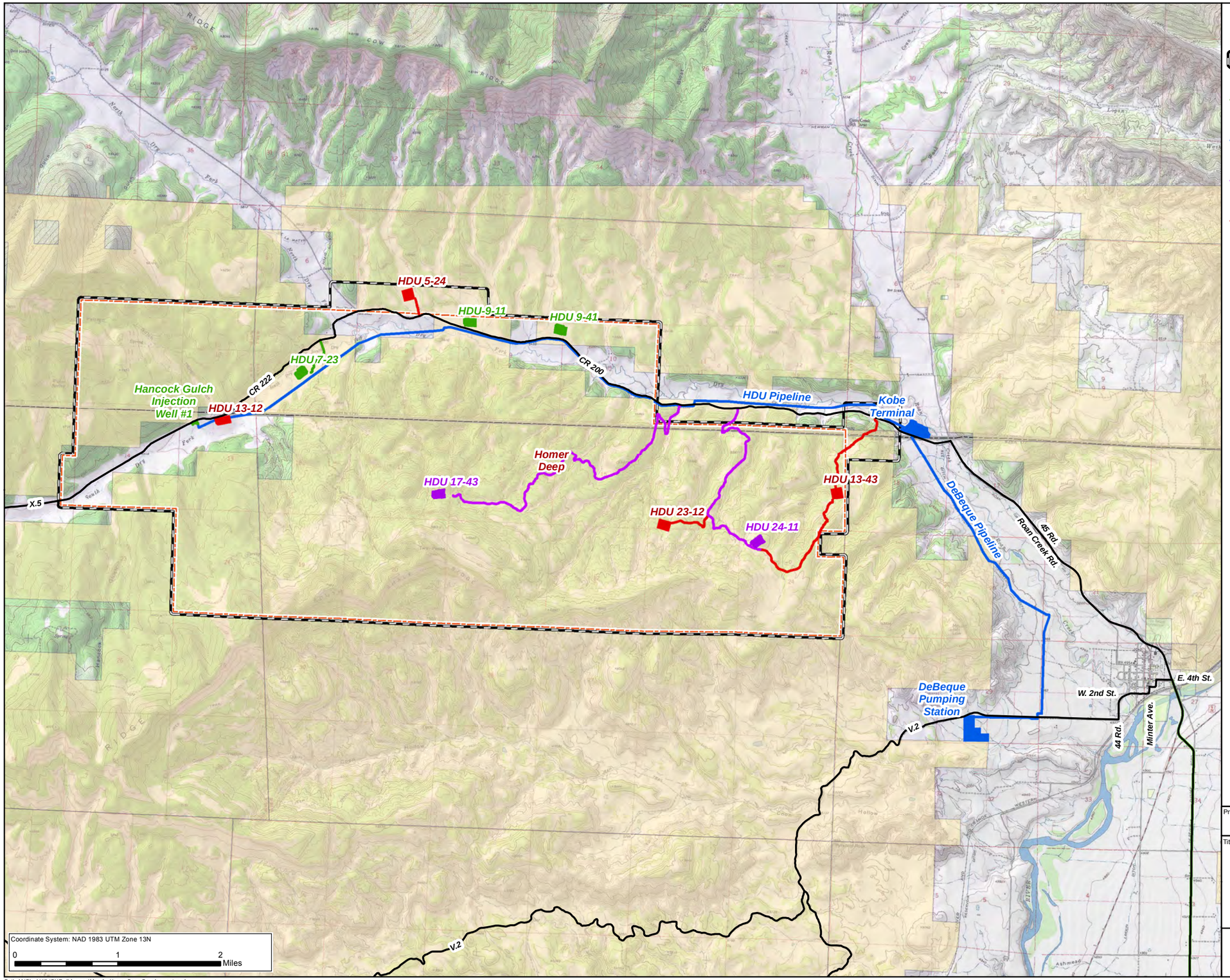
Requirements for seedbed preparation, soil amendments, seed, seeding procedures, mulching, erosion control, fencing, site security, and monitoring would be as specified for interim reclamation.

3.11 MONITORING

To determine progress and/or success, Black Hills would conduct annual monitoring surveys of all sites categorized as "operator reclamation in progress." An annual report would be submitted each year by December 1 until reclamation is considered successful by the BLM. The annual report would document whether attainment of reclamation objectives appears likely. If one or more objectives appear unlikely to be achieved, the report would identify appropriate corrective actions, such as reseeding an area. Upon review and approval of the report by the BLM, Black Hills would be responsible for implementing the corrective actions or other measures specified.

As set forth in the *Noxious and Invasive Weed Management Plan for Oil and Gas Operators*, Black Hills would regularly monitor and promptly control noxious weeds and other undesirable plant species. Prior to ground-disturbing activities, during construction, and post-construction, Black Hills would map weed infestations, promptly control noxious weeds or other undesirable plants using methods approved by the BLM, and regularly monitor known/treated infestation and retreat, if necessary. Black Hills would provide an annual report to the BLM that identifies the extent of noxious weed infestations and treatment used to eradicate or minimize undesirable species. Reports would be provided by December of 1 each year until the BLM has determined that the desired level of control is achieved. Prior to the use of herbicides, a Pesticide Use Proposal (PUP) would be approved by the BLM.

Monitoring methods and requirements for Federally listed, proposed, or candidate threatened or endangered plant species would be determined once the USFWS has issued a Biological Opinion pursuant to Section 7 of the Endangered Species Act. Monitoring for BLM sensitive plant species would be in accordance with BLM guidelines.



Legend

- Unit Boundary
- Project Area Boundary
- Existing Well Pad
- Existing Resource Road/Gathering Line
- Existing Facilities
- Existing Pipeline
- Approved Well Pad – Not Constructed
- Approved Resource Road/Gathering Line
- Proposed Well Pad
- Proposed Resource Road/Gathering Line

N

Project: Black Hills Plateau Production, LLC

Title: **Homer Deep Master Development Plan**

Black Hills Plateau Production

Project No. 008-30			File No.
GIS:	JST	3/12/2015	Scale = 1:60,000 Rev 0
Check:	MAB		**Map 1**
Review:	MAB		

Path: M:\BlackHills\BHE_4\Arcmap\Map 1 - Homer Deep Development.mxd