

**Documentation of Land Use Plan Conformance and NEPA Adequacy (DNA)**  
**U.S. Department of the Interior Bureau of Land Management**  
**Grand Junction Field Office, Colorado**  
**Black Hills DeBeque Exploratory Proposal – Amended Conditions of Approval**  
**DOI-BLM-CO-130-2014-0006-DNA**

**Background:**

On May 2, 2013, the BLM Grand Junction Field Office (BLM-GJFO) issued a Finding of No Significant Impact (FONSI) and a Decision Record (DR) for the Black Hills DeBeque Exploratory Proposal Environmental Assessment (EA). The exploratory proposal was submitted by Black Hills Plateau Production, LLC (Black Hills). Also on May 2, 2013, four Black Hills Applications for Permit to Drill (APDs), proposed as part of the DeBeque Exploratory project, were approved by the BLM GJFO, for Federal wells 9-11AH, 9-11BH, 9-41AH, and 9-41BH, in the Homer Deep Unit.

Following the Decision Record, Black Hills requested clarification regarding 25 Conditions of Approval (COAs) attached to the four approved APDs, for several reasons:

1. Preparatory to applying the COA that required water gaging during diversion from the Dry Fork creek, Black Hills concluded that implementing that COA would be substantially more expensive to apply than previously anticipated. Therefore, they asked BLM whether alternative gaging methods could meet the intent of the COA. BLM has revised the COA to meet the resource protection intent of the original, while allowing Black Hills some flexibility of method.
2. Several of the COAs that had been based on the U.S. Fish and Wildlife Service (FWS) consultation for Black Hills' project were difficult for Black Hills to understand, but have been clarified with minor wording changes, or by adding a map reference.
3. Some COAs specified incorrectly the resource protection distances identified by FWS consultation: BLM has verified correct distances and revised the COAs accordingly.
4. Several of the COAs applied to other well pads in the project area, but not to the four APDs. For clarity, these are here and are proposed to be removed from those APDs.

**A. Purpose and Need:**

These statements of purpose and need are the same as the purpose and need analyzed in the Black Hills DeBeque Exploratory Proposal EA, to which this document refers.

The purpose of the Proposed Action is to permit Black Hills to discover and produce fluid minerals from valid federal oil and gas leases issued to them by the BLM, in the project area. Approvals of APDs and Sundry Notices would be consistent with other existing lease activities in the area and ultimately provide for federal lease development. If permitted, this Proposed Action would include implementation of appropriate mitigation that would be consistent with the goals, objectives and decisions of the Grand Junction Resource Area (here referred to as the GJFO) Resource Management Plan (RMP) (BLM, 1987); as well as with applicable policies, regulations and laws. Approval of the Proposed Action would allow Black Hills to exercise their rights to explore a leased resource.

The need for BLM to respond to the Proposed Action is established under the Mineral Leasing Act of 1920 (MLA) and by the Federal Land Policy and Management Act of 1976 (FLPMA), which establish the BLM's responsibility to respond to drilling applications. The MLA, as

amended (30 USC 181 et seq.), authorizes the BLM to issue oil and gas leases for the exploration of oil and gas and permit the development of those leases. Existing leases are binding legal contracts that allow development by the lease holder. Approved BLM applications to drill typically authorize an applicant to construct and drill proposed wells, access roads, associated pipeline and well facility construction and any necessary rights-of-way. The FLPMA authorizes the BLM to issue right-of-way grants for access to public lands.

**B. Proposed Action:**

The proposed action is to:

- revise or remove, as detailed in this document, 28 COAs attached to approved APDs
- amend the approved APDs to incorporate the revised COAs and
- apply the revised COAs in future APDs, as appropriate.

The proposed action, if approved, would apply to the previously referenced four Black Hills APDs in the Federal Homer Deep Unit (wells 9-11AH, 9-11BH, 9-41AH, and 9-41BH), and to future APDs, if any, that could be approved at those locations.

The following tables show the original COAs, the proposed revisions and rationales for the revisions.

Table 1 describes proposed revisions to APD Conditions of Approval.

Table 2 describes proposed removal of APD Conditions of Approval

**Table 1  
Proposed Revisions to APD Conditions of Approval**

<b>COA as originally included in APDs for Federal Wells 9-11AH, 9-11BH, 9-41AH, 9-41BH</b>	<b>Revised COA to be included in Amended APDs for Homer Deep Federal wells 9-11AH, 9-11BH, 9-41AH, 9-41BH</b>	<b>Rationale for Revision</b>
<p><b>Water Resources:</b> For proposed well pads HDU 9-41 and HDU 9-11, baseline water quality data shall be collected, prior to construction in Dry Fork of Roan Creek (or shallow well such as a sand point) specifically looking for TPH, BTEX and VOCs.</p> <p>Baseline samples shall be collected during low flow periods (e.g., late fall). Analytical parameters shall include: pH, alkalinity, specific conductance, major cations/anions chloride, fluoride, sulfate, sodium, BTEX compounds, TPH, polycyclic aromatic hydrocarbons (PAHs) (including benzo(a)pyrene), metals (arsenic, barium, calcium, chromium, iron, magnesium and selenium).</p> <p>Follow-up sampling shall occur within 6 to 12 months from the start of drilling and subsequent samples shall be collected between 60 to 72 months of following completion operations. Permits shall be obtained through the State of Colorado for monitoring wells.</p>	<p>For proposed well pads HDU 9-41 and HDU 9-11, baseline water quality data shall be collected <i>before and after operations, in the Dry Fork of Roan Creek (or a shallow well such as a sand point). At the time of APD submission, Surface Use Plans of Operation (SUPOs) shall also indicate that the baseline water quality data will be collected as described.</i></p> <p>Baseline water samples shall be collected during low flow periods (e.g., late fall), <i>prior to construction.</i> Analytical parameters shall include: pH, alkalinity, specific conductance, major cations/anions chloride, fluoride, sulfate, sodium, BTEX compounds, TPH, polycyclic aromatic hydrocarbons (PAHs) (including benzo(a)pyrene), and metals (arsenic, barium, calcium, chromium, iron, magnesium and selenium).</p> <p><i>Copies of all final laboratory analytical results shall be provided to the BLM within one month of sample results</i></p>	<p>This COA, as revised, is supported in the analysis included in the Black Hills DeBeque Exploratory Proposal EA (DOI-BLM-CO-130-2012-0021-EA).</p> <p>The COA revision provides clarification that copies of all final laboratory analytical results shall be provided to the BLM within one month of sample results receipt.</p> <p>It also clarifies that sampling done in accordance with analysis parameters set out by COGCC Rule 609 and amended Rule 318A.3(4) shall be considered to meet the requirements of this COA.</p> <p>Collection of baseline water quality data was discussed at the July 24, 2012 (pre-APD) on-site inspection and agreed to by Black Hills (BH). Following the onsite, BLM notified BH by email that baseline water quality data collection would be required in the APD submission, per Onshore Oil and Gas Order No. 1.</p>

COA as originally included in APDs for Federal Wells 9-11AH, 9-11BH, 9-41AH, 9-41BH	Revised COA to be included in Amended APDs for Homer Deep Federal wells 9-11AH, 9-11BH, 9-41AH, 9-41BH	Rationale for Revision
<p>Data shall be provided directly to the BLM from the laboratory conducting the analysis (see COGCC rule 609 and amended Rule 318A.e(4)).</p>	<p><i>receipt. Sampling done in accordance with analysis parameters set out by COGCC Rule 609 and amended Rule 318A.e.(4) shall be considered to meet the above requirements.</i></p> <p>Follow-up sampling shall occur within 6 to 12 months from the start of drilling and subsequent samples shall be collected <i>during the time frame</i> between 60 to 72 months of completion. <i>Complete results shall be provided to the BLM within one month of sample results receipt.</i></p>	
<p><b>Water Resources:</b> Black Hills shall fund the installation, observation and maintenance of a real-time stream gaging station (USGS operated gage preferable) installed below the proposed diversion on Dry Fork of Roan Creek. The following represent limiting volumes:</p> <ul style="list-style-type: none"> <li>• 1.4 cubic feet per second from March 1 through May 31. This creek experiences consistently low flows during late summer and fall, so it is important to</li> </ul>	<p><i>To protect resource values, water diversion from the Dry Fork of Roan Creek shall cease when the following required stream flow conditions are not being maintained below the point of diversion:</i></p> <ul style="list-style-type: none"> <li>• 1.4 cubic feet per second from February 15 through May 31</li> <li>• 0.3 cubic feet per second from June 1 through February 14.</li> </ul> <p><i>During water diversion from the Dry</i></p>	<p>This COA, as revised, is supported in the analysis in the EA in Section 3.2.4.2, which includes discussion regarding the potential impacts to surface water hydrology that could result from dewatering of area streams.</p> <p>The COA was revised to allow a BLM-approved 3<sup>rd</sup> party to install, observe, and maintain a stream stage data logger, rather than also requiring real-time stream flow data be broadcast to authorized parties through the internet.</p> <p>The revised COA accomplishes the same purpose as the original COA, which is to</p>

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<p>protect as much physical habitat as possible during the limited time when snowmelt runoff flows are available.</p> <ul style="list-style-type: none"> <li>• 1.2 cubic feet per second from June 1 to November 30. This flow rate is capable of maintaining pool habitat in the creek and preventing excessively high temperatures.</li> <li>• 1.05 cubic feet per second from December 1 to February 28. This flow rate is capable of maintaining sufficient flow to prevent pools from freezing and protect overwintering fish.</li> </ul>	<p><i>Fork of Roan Creek, the operator shall provide a qualified hydrological monitor who is approved by the GJFO (hydrologist or engineer preferred), to install, observe and maintain a stream stage data-logger under the following conditions:</i></p> <ul style="list-style-type: none"> <li><i>a. The BLM-approved hydrological monitor shall be present and document stream flow conditions during diversion.</i></li> <li><i>b. The data-logger shall be installed below the proposed diversion on the Dry Fork of Roan Creek, no closer than 50 ft. from diversion point.</i></li> <li><i>c. Beginning a day prior to diversion, during diversion, and ending no less than 24 hours after diversion stops, stream stage information from the data-logger shall be collected twice daily (morning and evening, when safety allows). While diversion is occurring, stream stage data-logging shall also take place every 15 minutes. Information from data-logger and</i></li> </ul>	<p>maintain aquatic resources on public lands.</p>

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	<p><i>stream flow measurements shall be collected using standard methods for installation and operation of stream stage data-loggers, per manufacturer's recommendations. Stream discharge measurements shall be taken using standard velocity-area procedure.</i></p> <p><i>d. Raw data, including field notes, shall be provided to BLM by the approved hydrological monitor every three days, or more frequently if requested by the BLM.</i></p> <p><i>e. Installation of appropriate gaging equipment, combined with field verification of stream flow measurements (standard for deployment of such devices), shall be required only during periods of diversion from the Dry Fork of Roan Creek.</i></p> <p><i>f. The gaging station need not be a permanent structure and may be removed when the diversion is not in use. Although such use is <u>not</u> required by this COA, gaging equipment could be used over</i></p>	

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	<i>longer periods, to provide hydrological information on the creek, to inform future water management decisions, and to help maintain downstream resources.</i>	
<p><b>Noise:</b> If necessary, for greater noise reduction, moveable paneled noise shields, barriers, or enclosures shall be installed adjacent to/around noisy equipment, to meet the project noise limits imposed by law. Temporary barriers can result in a noise reduction of up to 10 dBA at the receptor.</p>	<p><i>Consistent with COGCC 800-series rules for noise abatement, oil and gas operations at any well site, production facility, or gas facility shall comply with the COGCC maximum permissible noise levels. Where noise reduction is shown to be necessary, moveable paneled noise shields, barriers, or enclosures shall be installed adjacent to or around noisy equipment, where required to meet the project noise limits.</i></p>	<p>This COA, as revised, is supported in the analysis included in the Black Hills DeBeque Exploratory Proposal EA (DOI-BLM-CO-130-2012-0021-EA). Section 3.2.5.2 includes a discussion of potential noise impacts and the requirement for oil and gas operators to comply with maximum permissible noise levels consistent with COGCC 800-series rules for noise abatement.</p> <p>COA was developed in response to public comments.</p>
<p><b>Noise:</b> Generator(s) serving drilling rigs shall be installed and operated at the site in a manner that at least meets the COGCC’s Noise Abatement regulation (No. 802) for Residential/Agricultural/Rural Zones. This regulation requires that the noise level not exceed 50 dbA (Table 3.2-30).</p>	<p>Generator(s) serving drilling rigs shall be installed and operated at the site in a manner that at least meets the COGCC’s Noise Abatement regulation (No. 802) for Residential/Agricultural/Rural Zones. This regulation requires that the noise level not exceed 50 dbA.</p>	<p>Revision removes reference to table in EA.</p>

COA as originally included in APDs for Federal Wells 9-11AH, 9-11BH, 9-41AH, 9-41BH	Revised COA to be included in Amended APDs for Homer Deep Federal wells 9-11AH, 9-11BH, 9-41AH, 9-41BH	Rationale for Revision
<p><b>Colorado Hookless Cactus:</b> Silt barriers and fugitive dust control measures (watering roads/surface disturbance; no additives) shall be implemented, to minimize effects to cactus within 100 meters of existing disturbances.</p>	<p>Silt barriers and fugitive dust control measures (watering roads/surface disturbance; no additives) shall be implemented, to minimize effects to cactus within 100 meters of existing disturbances <i>(see Maps 1 through 5)</i>.</p>	<p>This COA, as revised, was reworded for clarity and includes a reference to Maps 1 through 5, which show areas where silt barriers and fugitive dust control would be required.</p> <p>The COA originated in the FWS letter dated February 15, 2013. It is part of the basis for FWS concurrence with BLM’s determination that the Black Hills DeBeque Exploratory Proposal is not likely to adversely affect the Colorado hookless cactus.</p>
<p><b>Colorado Hookless Cactus:</b> A SWMP, with site-specific BMPs such as straw wattles, shall be implemented to minimize/avoid alteration of hydrologic conditions within 20 meters of documented hookless cactus plants.</p>	<p><i>The required project SWMP shall include implementation, monitoring and maintenance of site-specific BMPs, such as straw wattles, to minimize or avoid alteration of hydrologic conditions when project activities are located</i> within 20 meters of documented hookless cactus plants.</p>	<p>This COA, as revised, has been reworded for clarity.</p> <p>The COA originated in the FWS letter dated February 15, 2013. It is part of the basis for FWS concurrence with BLM’s determination that the Black Hills DeBeque Exploratory Proposal is not likely to adversely affect the Colorado hookless cactus.</p>
<p><b>Colorado Hookless Cactus:</b> Herbicides shall not be used to control weeds within 100 meters of Colorado hookless cactus plants unless approved by BLM. Noxious weeds in such</p>	<p>Herbicides shall not be used to control weeds within 100 meters of Colorado hookless cactus plants unless approved by BLM. Noxious weeds <i>closer</i> to Colorado hookless cactus plants shall</p>	<p>This COA, as revised, includes the requirement that the operator must consult with the BLM prior to weed control and also refers to maps to be consulted before weeds are treated in restricted areas.</p>

COA as originally included in APDs for Federal Wells 9-11AH, 9-11BH, 9-41AH, 9-41BH	Revised COA to be included in Amended APDs for Homer Deep Federal wells 9-11AH, 9-11BH, 9-41AH, 9-41BH	Rationale for Revision
<p>proximity to Colorado hookless cactus plants shall be removed by hand prior to soil disturbance, to reduce reestablishment and potential re-distribution of weed seed and/or propagules.</p>	<p>be removed by hand prior to soil disturbance, to reduce reestablishment and potential re-distribution of weed seed and/or propagules. <i>Prior to weed control, operator shall consult with BLM on a site-specific basis. Areas where weed treatment may be restricted are shown on Maps 1 through 5.</i></p>	<p>The COA originated in the FWS letter dated February 15, 2013. It is part of the basis for FWS concurrence with BLM’s determination that the Black Hills DeBeque Exploratory Proposal is not likely to adversely affect the Colorado hookless cactus.</p>
<p><b>Colorado Hookless Cactus:</b> Colorado hookless cactus plants growing within 20 meters of project activities shall be monitored annually for a minimum of 3 years after ground-disturbing activities. Additionally, select sites shall be monitored every 5 years throughout the life of the project (estimated to be 20 years) to determine long-term effects on hookless cactus survival/recruitment near the project. Monitoring results shall be presented to the BLM and the FWS.</p>	<p>Colorado hookless cactus plants growing within 20 meters of project activities shall be monitored annually for a minimum of 3 years after ground-disturbing activities. Additionally, select sites shall be monitored every 5 years throughout the life of the project (estimated to be 20 years) to determine long-term effects, <i>if any</i>, on hookless cactus survival and recruitment near the project. <i>Monitoring of cacti within 20 meters of disturbance may be necessary within the areas identified on Maps 1 through 5 as “Restricted Weed Treatment/Dust Abatement.”</i> Monitoring results shall be presented to <i>both</i> the BLM and the FWS.</p>	<p>This COA, as revised was reworded for clarity and congruence with FWS requirements for concurrence. Specifically, a sentence clarifying the need for monitoring within 20m of disturbance was added. The reference to Maps 1 through 5 was also added.</p> <p>The COA originated in the FWS letter dated February 15, 2013. It is part of the basis for FWS concurrence with BLM’s determination that the Black Hills DeBeque Exploratory Proposal is not likely to adversely affect the Colorado hookless cactus.</p>

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<p><b>Colorado Hookless Cactus:</b> In areas where listed plants occur, buried pipelines shall be co-located with existing roads or existing pipeline corridors. This minimizes fragmentation of undisturbed habitats, but can lead to the burial of a pipeline closer than 20 meters to a hookless cactus. However, in those cases the pipeline shall be buried on the other side of the existing disturbance to maximize the distance between the pipeline and hookless cactus.</p>	<p>In areas where listed plants occur, buried pipelines shall be co-located with existing roads or existing pipeline corridors. This minimizes fragmentation of undisturbed habitats, but <i>could</i> lead to the burial of a pipeline <i>nearer to plants than 20 meters</i>.</p> <p><i>In this situation</i>, the pipeline shall be buried on the <i>far</i> side of the existing disturbance <i>from the hookless cactus</i> to maximize its distance <i>from the pipeline disturbance</i>. As a result, <i>new disturbance would not be closer to hookless cactus than existing disturbance (e.g., existing access roads and/or pipeline corridors)</i>.</p>	<p>This COA, as revised, was reworded for clarity and congruence with FWS requirements for concurrence.</p> <p>The COA originated in the FWS letter dated February 15, 2013. It is part of the basis for FWS concurrence with BLM’s determination that the Black Hills De Beque Exploratory Proposal is not likely to adversely affect the Colorado hookless cactus.</p>
<p><b>DeBeque Phacelia:</b> Areas within 100 meters of suitable habitat planned for well pads and associated project components, which have not yet been surveyed in a reliable year, shall have botanical surveys prior to ground-disturbing activities.</p>	<p>Areas within 100 meters of DeBeque phacelia habitat planned for well pads and associated project components, which have not yet been surveyed in a reliable year, <i>may require additional botanical surveys within the areas identified on Maps 1 through 5 as “Restricted Weed Treatment/Dust Abatement” prior to ground-disturbing</i></p>	<p>This COA, as revised, refers specifically to <i>DeBeque phacelia</i>, rather than relying on the heading “DeBeque phacelia,” as in the original COA document. The word “suitable” was removed and a reference to Maps 1 through 5 was added.</p> <p>The COA originated in the FWS letter dated February 15, 2013. It is part of the basis for FWS</p>

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	<i>activities.</i>	concurrence with BLM’s determination that the Black Hills DeBeque Exploratory Proposal is not likely to adversely affect DeBeque phacelia plants and suitable habitat.
<p><b>DeBeque Phacelia:</b> Silt barriers and fugitive dust control measures (watering roads/surface disturbance; no additives) shall be implemented, to minimize effects to DeBeque phacelia within 100 meters of existing disturbance.</p>	<p>Silt barriers and fugitive dust control (<i>watering roads and surface disturbance; no additives</i>) measures shall be implemented, to minimize effects to DeBeque phacelia within 100 meters of existing disturbance (<i>See Maps 1 through 5</i>).</p>	<p>This COA, as revised, includes a reference to Maps 1 through 5, which show areas where silt barriers and fugitive dust control would be required. It was also revised to include 100 meters as the distance within which silt barriers and fugitive dust control would be required, per the FWS concurrence letter.</p> <p>The COA originated in the FWS letter dated February 15, 2013. It is part of the basis for FWS concurrence with BLM’s determination that the Black Hills DeBeque Exploratory Proposal as approved would not be likely to adversely affect the DeBeque phacelia plants and suitable habitat.</p>
<p><b>DeBeque Phacelia:</b> A SWMP, with site-specific BMPs such as straw wattles, shall be implemented to minimize/avoid alteration of hydrologic conditions within 20 meters of documented phacelia.</p>	<p><i>The required project SWMP shall include implementation, monitoring and maintenance of site-specific BMPs, such as straw wattles, to minimize or avoid alteration of hydrologic conditions when project activities are located within 100 meters of</i></p>	<p>This COA, as revised, has been reworded for clarity and to correctly indicate that BMPs shall be applied within 100 meters rather 20 meters as originally stated. This was a typo in the FWS concurrence letter.</p> <p>The COA originated in the FWS letter dated February 15, 2013. It is part of the basis for FWS</p>

COA as originally included in APDs for Federal Wells 9-11AH, 9-11BH, 9-41AH, 9-41BH	Revised COA to be included in Amended APDs for Homer Deep Federal wells 9-11AH, 9-11BH, 9-41AH, 9-41BH	Rationale for Revision
	documented <i>DeBeque</i> phacelia <i>habitat</i> .	concurrence with BLM’s determination that the Black Hills De Beque Exploratory Proposal is not likely to adversely affect the DeBeque phacelia plants and suitable habitat.
<p><b>DeBeque Phacelia:</b> Herbicides shall not be used to control weeds within 100 meters of DeBeque phacelia plants unless approved by BLM. Noxious weeds in such proximity shall be removed by hand prior to soil disturbance, to reduce reestablishment and re-distribution of weed seed and/or propagules.</p>	<p>Herbicides shall not be used to control weeds within 200 meters of DeBeque phacelia <i>suitable habitat unless approved by the BLM. Noxious weeds closer than 200 meters to such habitat</i> shall be removed by hand prior to soil disturbance, to reduce reestablishment and <i>potential</i> re-distribution of weed seed and/or propagules. <i>Prior to weed control, operator shall consult with the BLM on a site-specific basis. Areas where weed treatment may be restricted are shown on Maps 1 through 5.</i></p>	<p>This COA, as revised, includes the requirement that the operator must consult with the BLM prior to weed control and also refers to maps that are to be consulted before weeds are treated in restricted areas. It has also been revised to more directly reference the FWS language, which states “200 meters” rather than “100 meters,” and which also refers to “habitat” rather than “plants.”</p> <p>The COA originated in the FWS letter dated February 15, 2013. It is part of the basis for FWS concurrence with BLM’s determination that the Black Hills De Beque Exploratory Proposal is not likely to adversely affect the DeBeque phacelia plants and suitable habitat.</p>
<p><b>DeBeque Phacelia:</b> DeBeque phacelia plants growing within 20 meters of project activities shall be monitored annually for at least 3 years after ground-disturbing activities. Additionally, select sites shall be</p>	<p>DeBeque phacelia <i>habitats</i> within 100 meters of project activities shall be monitored annually for <i>a minimum of 3</i> years after ground-disturbing activities. Additionally, select sites shall be monitored every 5 years throughout the</p>	<p>This COA, as revised, was reworded for clarity and congruence with FWS requirements for concurrence. Specifically, the term “habitat suitability” was added, as well as a sentence clarifying the need for monitoring within 100m of project activities. The reference to Maps 1</p>

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<p>monitored every 5 years throughout the life of the project (estimated to be 20 years) to determine long-term effects on phacelia survival/recruitment near the project. Monitoring results shall be presented to the BLM and the FWS.</p>	<p>life of the project (estimated to be 20 years) to determine long-term effects, <i>if any, on DeBeque phacelia survival and recruitment, and habitat suitability,</i> near the project. <i>Monitoring of DeBeque phacelia habitats within 100 meters of project activities may be necessary within the areas identified on Maps 1 through 5 as “Restricted Weed Treatment/Dust Abatement.”</i> Monitoring results shall be provided to <i>both</i> BLM and the FWS.</p>	<p>through 5 was also added.</p> <p>The COA originated in the FWS letter dated February 15, 2013. It is part of the basis for FWS concurrence with BLM’s determination that the Black Hills DeBeque Exploratory Proposal is not likely to adversely affect the DeBeque phacelia plants and suitable habitat.</p>
<p><b>Wildlife:</b> As dry open-cut construction requires isolating the workspace between the temporary dam upstream and downstream, fish and amphibians shall be captured, removed from the isolated workspace by seining and/or use of electroshock, and placed downstream.</p>	<p><i>Should dry open-cut construction be required across a body of water or a flowing drainage, the operator shall develop and implement a site-specific construction plan in coordination with Colorado Parks and Wildlife, to minimize impacts to fish and other wildlife. This plan shall require pre-approval by the BLM before construction occurs.</i></p>	<p>This COA, as revised, was reworded for clarity.</p> <p>The COA is supported in the EA analysis, in Section 3.3.7.2, page 150. It was also included in Black Hills’ proposed and approved Biological Resource Protection Plan, Section 6.0, Aquatic Wildlife Protection Measures.</p>
<p><b>Visual Resources:</b> Outdoor lighting on facilities and/or drilling rigs shall be down-directed and fixtures shall have a 90 degree cutoff, to eliminate glare and</p>	<p><i>To minimize upward light scattering/pollution, all drilling rig and well test facility lighting shall be limited to that required to safely</i></p>	<p>This COA, as revised, is supported in the analysis in the EA, in Section 3.4.4.2, p. 167 and Section 3.5.2, page 181.</p>

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minimize upward light scattering.	<i>conduct operations taking place at the time. Where safety is not compromised, lighting shall be down-directed and focused on work areas only. Permanent lighting shall be shielded and/or down-directed, and/or directed in a manner that targets light specifically to the work area.</i>	The potential effect of lighting on occupied dwellings near drilling rigs was also discussed at the July 24, 2012 (pre-APD) on-site inspection. The COA was developed in response to public comments.
<p><b>Special Status Plant Species:</b> A BLM-approved biological monitor shall be on-site during all ground-disturbing activities, including installation of conservation measures identified in the attached maps. Areas requiring monitors shall include activities within 100 meters of Colorado hookless cactus plants and within 200 meters of DeBeque phacelia suitable habitat.</p>	<p>A BLM-approved biological monitor shall be on-site during all ground-disturbing activities, including installation of conservation measures identified <i>on Maps 1 through 5</i>. Areas requiring monitors shall include activities within 100 meters of Colorado hookless cactus plants and within 200 meters of DeBeque phacelia suitable habitat.</p>	<p>This COA, as revised for clarity, now refers specifically to “Maps 1 through 5,” rather than to “attached maps.”</p>
<p><b>DeBeque Phacelia:</b> Well pads, centralized facilities, and new roads shall all be kept further than 20 meters from individual DeBeque phacelia plants and suitable habitats.</p>	<p>Well pads, centralized facilities, and new roads shall all be kept further than <i>100</i> meters from individual DeBeque phacelia plants and suitable habitats.</p>	<p>This COA, as revised, was reworded for clarity and congruence with FWS requirements for concurrence. Specifically, it now correctly states “100 meters” rather than “20 meters.”</p> <p>The COA originated in the FWS letter dated February 15, 2013. It is part of the basis for FWS concurrence with BLM’s determination that the</p>

COA as originally included in APDs for Federal Wells 9-11AH, 9-11BH, 9-41AH, 9-41BH	Revised COA to be included in Amended APDs for Homer Deep Federal wells 9-11AH, 9-11BH, 9-41AH, 9-41BH	Rationale for Revision
		Black Hills DeBeque Exploratory Proposal is not likely to adversely affect the DeBeque phacelia.
<p><b>DeBeque Phacelia:</b> In areas where listed plants occur, buried pipelines shall be co-located with existing roads or existing pipeline corridors. This minimizes fragmentation of undisturbed habitats, but can lead to the burial of a pipeline closer than 20 meters to a phacelia plant. However, in those cases the pipeline shall be buried on the other side of the existing disturbance to maximize the distance between the pipeline and the phacelia plant.</p>	<p>In areas where <i>DeBeque phacelia plants or suitable DeBeque phacelia habitat</i> occurs, buried pipelines shall be co-located with existing roads or existing pipeline corridors. This minimizes fragmentation of undisturbed habitats, but <i>could</i> lead to the burial of a pipeline <i>nearer to phacelia habitat than 100 meters.</i></p> <p><i>In this situation,</i> the pipeline shall be buried on the <i>far</i> side of the existing disturbance <i>from the phacelia habitat,</i> to maximize <i>its</i> distance <i>from the pipeline disturbance.</i> As a result, <i>new disturbance would not be closer to phacelia habitat than existing disturbance (e.g., existing access roads and/or pipeline corridors).</i></p>	<p>This COA, as revised, was reworded for clarity and congruence with FWS requirements for concurrence. Specifically, it now correctly states “100 meters” rather than “20 meters,” and correctly refers to phacelia “habitat” rather than “plants.”</p> <p>This COA originated in the FWS letter dated February 15, 2013. It is part of the basis for FWS concurrence with BLM’s determination that the Black Hills DeBeque Exploratory Proposal is not likely to adversely affect the Colorado hookless cactus.</p>

**Table 2**  
**Removed APD Conditions of Approval**

<b>COA as originally included in APD for Federal Wells 9-11AH, 9-11BH, 9-41AH, 9-41BH</b>	<b>Rationale for Removal</b>
<p><b>Vegetation:</b> Within areas used for livestock grazing, salt licks and water tanks shall be placed away from the reclaimed areas, to reduce livestock use and increase successful reclamation.</p>	<p>This COA was removed because the operator would not be expected to have control over placement of salt licks and water tanks.</p>
<p><b>Colorado Hookless Cactus:</b> In a few cases within the project area, hookless cacti are growing on both sides of an existing road. Where a proposed pipeline follows such an existing road, it shall be placed underneath the road surface, rather than to one side.</p>	<p>The COA does not apply to APDs for Federal Wells 9-11AH, 9-11BH, 9-41AH, and 9-41BH.</p> <p>The COA applies to other well pads analyzed as part of the Black Hills DeBeque Exploratory Proposal and would be applied as a site-specific COA to APDs as appropriate.</p>
<p><b>Colorado Hookless Cactus:</b> Permanent deterrent fencing constructed of pipe and cable shall be installed along existing project roads where hookless cacti are very close to the road to prevent vehicles from leaving the road and incidentally damaging any plants/habitat. Posts shall be capped or filled to mitigate risks to migratory birds.</p>	<p>The COA does not apply to APDs for Federal Wells 9-11AH, 9-11BH, 9-41AH, and 9-41BH.</p> <p>The COA applies to other well pads analyzed as part of the Black Hills DeBeque Exploratory Proposal and would be applied as a site-specific COA to APDs as appropriate.</p>
<p><b>Colorado Hookless Cactus:</b> Colorado hookless cactus surveys conducted outside of the flowering season shall be resurveyed during the 2013 flowering season within the staked well pad and pipeline disturbance limits and prior to ground-disturbing activities, to confirm absence</p>	<p>The COA does not apply to APDs for Federal Wells 9-11AH, 9-11BH, 9-41AH, and 9-41BH.</p> <p>The COA applies to other well pads analyzed as part of the Black Hills DeBeque Exploratory Proposal and would be applied as a site-specific COA to APDs where appropriate.</p>

COA as originally included in APD for Federal Wells 9-11AH, 9-11BH, 9-41AH, 9-41BH	Rationale for Removal
of cacti.	
<p><b>DeBeque Phacelia:</b> In a few cases within the project area, suitable DeBeque phacelia habitats are found on both sides of an existing road. Where a proposed pipeline follows such an existing road, it shall be placed underneath the road surface, rather than to one side.</p>	<p>The COA does not apply to APDs for Federal Wells 9-11AH, 9-11BH, 9-41AH, and 9-41BH.</p> <p>The COA applies to other well pads analyzed as part of the Black Hills De Beque Exploratory Proposal and would be applied as a site-specific COA to APDs as appropriate.</p>
<p><b>DeBeque Phacelia:</b> Permanent deterrent fencing constructed of pipe and cable shall be installed along existing project roads where DeBeque phacelia are very close to the road, to prevent vehicles from leaving the road and incidentally damaging any plants/habitats. Posts shall be capped or filled to mitigate risks to migratory birds.</p>	<p>The COA does not apply to APDs for Federal Wells 9-11AH, 9-11BH, 9-41AH, and 9-41BH.</p> <p>The COA applies to other wells analyzed as part of the Black Hills De Beque Exploratory Proposal and would be applied as a site-specific COA to APDs where appropriate.</p>
<p><b>Range Management:</b> Suitable fencing shall be installed (in consultation with BLM wildlife and range staff) to avoid over-grazing and to support successful reclamation. Salt licks and water tanks, which encourage animal congregation, shall be placed away from reclaimed areas.</p>	<p>This COA has been removed because the BLM GJFO Standard COA regarding fencing and site protection, which applies to these and to all APDs analyzed for the Black Hills De Beque Exploratory Proposal, meets the resource protection need. It reads as follows:</p> <p>“Fencing and Site Protection – The pad shall 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. The BLM will approve the type of fencing.”</p> <p>Also, the operator would not be expected to have control over placement of salt licks and water tanks.</p>

COA as originally included in APD for Federal Wells 9-11AH, 9-11BH, 9-41AH, 9-41BH	Rationale for Removal
	<p>The COA originated in Black Hills’ proposed and approved Biological Resources Protection Plan, which reads as follows:</p> <p>“Cattle will be excluded from revegetated well pads to ensure complete revegetation of the disturbed area and promote use by big game.”</p>
<p><b>Range Management:</b> Livestock owners shall be reimbursed for loss or damage to livestock resulting from the Proposed Action.</p>	<p>This COA has been removed because any agreement regarding reimbursement for loss or damage to livestock would be reached between the livestock owner and the operator. It would not be within the authority, knowledge or influence of the BLM.</p>
<p><b>Soil and Water Resources:</b> Areas proposed for disturbance on slopes over 40 percent shall be evaluated during an on-site inspection (at least proposed pads HDU 24-11, WT 12-16, DC 1-13, HSC 5-16, HSC 1-20, HSC 1-22). Relocation, redesign or state-of-the-art BMPs may be required.</p>	<p>The COA does not apply to APDs for Federal Wells 9-11AH, 9-11BH, 9-41AH, and 9-41BH.</p> <p>The COA applies to other wells analyzed as part of the Black Hills De Beque Exploratory Proposal and would be applied as a site-specific COA to APDs where appropriate.</p>

### **C. Land Use Plan (LUP) Conformance**

The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610:5, BLM 1617.3):

Name of Plan: GRAND JUNCTION Resource Management Plan

Date Approved: JANUARY, 1987

Decision Number/Page: Page 2-7

Decision Language: To make federal oil and gas resources available for leasing, except where prohibited by law or where administrative action is justified in the national interest; to make public lands available for economically and environmentally sound exploration and development projects; to avoid health and safety hazards; to protect important sensitive resource values from unacceptable impacts; and to minimize impacts to lessees from sensitive resource protection and hazard avoidance.

### **D. Identify applicable NEPA documents and other related documents that cover the proposed action.**

Grand Junction Resource Area RMP Environmental Impact Statement, January 1987

This DNA refers to the Black Hills DeBeque Exploratory Proposal EA (DOI-BLM-CO-130-2012-0021-EA), for which the FONSI and Decision Record were signed on May 2, 2013.

### **E. NEPA Adequacy Criteria**

**1. Is the current proposed action substantially the same action (or is a part of that action) as previously analyzed? Is the current proposed action located at a site specifically analyzed in an existing document?**

Yes, the previously analyzed proposed action is described in Section 2.2.1 of the DeBeque Exploratory Proposal EA. The current proposed action provides a clarification of COAs included with APDs associated with the DeBeque Exploratory Proposal EA without changing their degree of effectiveness at protecting the resource analyzed in the EA (see Tables 1 and 2 for a line-by-line comparison). There are no changes in geographic location.

**2. Is the range of alternatives analyzed in the existing NEPA document(s) appropriate with respect to the current proposed action, given current environmental concerns, interests, and resource values?**

Yes. Given current environmental concerns, interests, and resource values, the range of alternatives analyzed in the DeBeque Exploratory Proposal EA (Section 2.2 in the EA) is appropriate with respect to the current proposed action. The current proposed action is to clarify 19 COAs, and remove 9 COAs associated with APDs for Homer Deep Unit wells 9-11AH, 9-11BH, 9-41AH, and 9-41BH. Removed COAs are redundant (1), apply to other wells (6), are not within the operator's control (1) or are not within the BLM's control (1). The basic elements of

the proposed action in the Black Hills DeBeque Exploratory Proposal EA remain unchanged by this action.

**3. Is the existing analysis valid in light of any new information or circumstances?**

Yes. The existing analysis is valid. No new information or circumstances exist.

**4. Do the methodology and analytical approach used in the existing NEPA document(s) continue to be appropriate for the current proposed action?**

Yes. The clarifications under consideration do not affect nor change the scientific and analytic methodologies used in the impact assessment (Chapter 3 in the EA). The basic elements of the proposed action in the Black Hills DeBeque Exploratory Proposal EA are not changed. Rationale for removal of select COAs is included in Table 2.

**5. Are the direct and indirect impacts of the current proposed action substantially unchanged from those identified in the existing NEPA document(s)? Does the existing NEPA document analyze site-specific impacts related to the current proposed action?**

Yes. The basic elements of the proposed action and analysis in the DeBeque Exploratory Proposal EA (Chapter 3), including direct and indirect impacts, do not change with this proposed action. The objective of the original COA for stream gaging was to ensure that some level of stream flow would be sustained within Dry Fork while Black Hills was diverting water to produce federal minerals during free-river situations, to maintain existing sensitive natural resource values on the public lands (Northern leopard frog, riparian resources, and fish). The proposed bypass flow rates in the EA are the result of a stream modeling technique called “R2Cross,” developed by Region 2 of the USFS. The model identifies various flow rates needed to meet certain criteria in the stream, such as certain water velocities or certain depths.

The BLM’s objective, under both the original and the revised COA, is to ensure a balance between diverting water to produce federal minerals and maintaining stream flow to sustain sensitive resources on the public lands, by avoiding complete dewatering of the stream during free-river scenarios. Stream flow volumes described in the revised COA represent actual water availability given upstream diversions and also provide some level of protection to resources of concern (fish, frogs, riparian).

While water can legally be diverted during a free river scenario, FLPMA provides BLM with the authority to impose terms and conditions to protect resource values. CFR 3162.5-1 states: “The operator shall conduct operations in a manner that protects the mineral resources, other natural resources, and environmental quality.” Furthermore, the State of Colorado authority with regard to water is restricted to allocation of water and regulation of water quality. In Colorado state law, there is no legal mechanism to prevent or address impacts associated with awarding a water right. The only mechanism under state law to protect water-dependent resources is for the Colorado Water Conservation Board to establish an “instream flow water right,” and that has not been done on Dry Fork Roan Creek. Accordingly, the obligation to consider and mitigate impacts to aquatic environments rests with the BLM.

The original stream gaging COA also required real-time broadcasting of stream flow data to the BLM. The updated COA would allow Black Hills to utilize a BLM-approved hydrologic monitor

to read stream stage and measure stream flow during times of diversion, reporting these data to BLM during specified time periods or upon request.

The objective and protective value of the updated COA is the same as the original COA analyzed in the EA; the impacts to water resources, riparian, and aquatic organisms remain unchanged.

**6. Are the cumulative impacts that would result from implementation of the current proposed action substantially unchanged from those analyzed in the existing NEPA document(s)?**

Yes. The basic elements of the proposed action included in the DeBeque Exploratory Proposal EA and subsequent analysis for cumulative impacts (Chapter 4 in the EA) do not change with this proposed action.

**7. Are the public involvement and interagency review associated with existing NEPA document(s) adequate for the current proposed action?**

Yes. The public involvement and interagency review associated with existing NEPA documents (Section 1.5 in the DeBeque Exploratory Proposal EA), specifically the Black Hills DeBeque Exploratory Proposal EA, are adequate for the current proposed action. The current proposed action provides clarification (by revision or removal) of COAs included in the approved APDs. The basic elements of the Black Hills DeBeque Exploratory Proposal EA and subsequent analysis do not change with this proposed action.

**F. Interdisciplinary Analysis:** Team members conducting or participating in the NEPA analysis and preparation of this worksheet:

<u>Name</u>	<u>Title</u>
Anna Lincoln	Ecologist
Heidi Plank	Wildlife Biologist
Nathan Dieterich	Hydrologist
Jacob Martin	Range Management Specialist
Julia Christiansen	Natural Resource Specialist
Christina Stark	Planning and Environmental Coordinator

NAME OF ENVIRONMENTAL COORDINATOR: Christina Stark

DATE: 11/26/13

**Conclusion**

Based on the review documented above, I conclude that this proposal conforms to the applicable land use plan and that the NEPA documentation fully covers the proposed action and constitutes

BLM's compliance with the requirements of NEPA. Revised COAs and maps associated with APDs for Federal Homer Deep Unit wells 9-11AH, 9-11BH, 9-41AH, and 9-41BH are attached as Exhibit 1.

SIGNATURE OF AUTHORIZED OFFICIAL:

A handwritten signature in blue ink that reads "Katie A. Stevens". The signature is written in a cursive style and is positioned above a solid horizontal line.

Katie Stevens  
Grand Junction Field Manager

DATE SIGNED: 11/26/2013

The signed Conclusion on this Worksheet is part of an interim step in the BLM's internal decision process and does not constitute an appealable decision.

**SITE SPECIFIC SURFACE USE CONDITIONS OF APPROVAL**  
**Black Hills DeBeque Exploratory Proposal**  
**Homer Deep Unit Federal Wells 9-11AH, 9-11BH, 9-41AH, 9-41BH**

**Amended – November 2013**

The following measures are required by the BLM:

**Soils and Water Resources**

- Pre-construction inspections shall include on-the-ground review of installed pre-construction storm water BMPs and limit-of-disturbance staking.
- Exposed rock outcrops present in pipeline corridors or on proposed well pad locations shall be removed intact, as possible (salvaging large pieces from the outcrop), and replaced on the ground surface at the margins of the corridor and/or as close to the original location as practical, to be redistributed as part of reclamation. Equipment bridges and mats shall be used where soils are saturated, to minimize compaction of soils and subsequent stream bank erosion.
- At pads HDU 9-11 and HDU 9-41, along the northern pad edges, site-specific adaptable storm water BMPs shall be employed to manage expected alluvial sheet flow with loose shale rock.
- A copy of the SPCC Plan shall be provided to the BLM prior to construction.
- If hydrostatic test water or trench dewatering water is discharged, it shall be discharged to an upland area at least 150 feet from WoUS and wetlands, to infiltrate into the ground without causing erosion. BLM approval of the discharge location and proposed BMPs shall be obtained before discharging hydrostatic test water to an upland area.
- Pipeline construction across ephemeral and intermittent drainages shall occur when no flowing water is present.
- For proposed well pads HDU 9-41 and HDU 9-11, baseline water quality data shall be collected before and after operations, in the Dry Fork of Roan Creek (or a shallow well such as a sand point). At the time of APD submission, Surface Use Plans of Operation (SUPOs) shall also indicate that the baseline water quality will be collected as described.

Baseline water samples shall be collected during low flow periods (e.g., late fall), prior to construction. Analytical parameters shall include: pH, alkalinity, specific conductance, major cations/anions chloride, fluoride, sulfate, sodium, BTEX compounds, TPH, polycyclic aromatic hydrocarbons (PAHs) (including benzo(a)pyrene), and metals (arsenic, barium, calcium, chromium, iron, magnesium and selenium).

Copies of all final laboratory analytical results shall be provided to the BLM within one month of sample results receipt. Sampling done in accordance with analysis parameters set out by COGCC Rule 609 and amended Rule 318A.e.(4) shall be considered to meet the above requirements.

Follow-up sampling shall occur within 6 to 12 months from the start of drilling and subsequent samples shall be collected during the time frame between 60 to 72 months of completion. Complete results shall be provided to the BLM within one month of sample results receipt.

- To protect resource values, water diversion from the Dry Fork of Roan Creek shall cease when the following required stream flow conditions are not being maintained below the point of diversion:
  - 1.4 cubic feet per second from February 15 through May 31
  - 0.3 cubic feet per second from June 1 through February 14.

During water diversion from the Dry Fork of Roan Creek, the operator shall provide a qualified hydrological monitor who is approved by the GJFO (hydrologist or engineer preferred), to install, observe and maintain a stream stage data-logger under the following conditions:

- a. The BLM-approved hydrological monitor shall be present and document stream flow conditions during diversion.
  - b. The data-logger shall be installed below the proposed diversion on the Dry Fork of Roan Creek, no closer than 50 ft. from diversion point.
  - c. Beginning a day prior to diversion, during diversion, and ending no less than 24 hours after diversion stops, stream stage information from the data-logger shall be collected twice daily (morning and evening, when safety allows). While diversion is occurring, stream stage data-logging shall also take place every 15 minutes. Information from data-logger and stream flow measurements shall be collected using standard methods for installation and operation of stream stage data-loggers, per manufacturer's recommendations. Stream discharge measurements shall be taken using standard velocity-area procedure.
  - d. Raw data, including field notes, shall be provided to BLM by the approved hydrological monitor every three days, or more frequently if requested.
  - e. Installation of appropriate gaging equipment, combined with field verification of stream flow measurements (standard for deployment of such devices), shall be required only during periods of diversion from the Dry Fork of Roan Creek.
  - f. The gaging station need not be a permanent structure and may be removed when the diversion is not in use. Although such use is not required by this COA, gaging equipment could be used over longer periods, to provide hydrological information on the creek, to inform future water management decisions, and to help maintain downstream resources.
- Emergency spill response equipment shall be stored and staged at strategic locations along perennial water courses, to expedite effective spill response.
  - Avoid locating staging, refueling and storage areas within 300 feet of any natural perennial or seasonally flowing stream, wetland, reservoir, or lake.
  - Avoid constructing any road segment in the channel of an intermittent or perennial stream.
  - Avoid low water crossings. Structures for perennial or intermittent stream channel crossings shall be engineered using bridges or appropriately sized culverts.

- Pipelines that cross perennial, intermittent and ephemeral stream channels shall be constructed to withstand floods of extreme magnitude, to prevent rupture and accidental contamination of runoff. Closely follow methods and analysis outlined in BLM technical note 423-Hydraulic Considerations for Pipelines Crossing Stream Channels, to prevent undesirable events.

### **Noise**

- Construction shall occur during daylight hours, when there is less sensitivity to sound.
- All equipment shall have sound control devices no less effective than those provided by the manufacturer. All equipment shall have muffled exhausts.
- Consistent with COGCC 800-series rules for noise abatement, oil and gas operations at any well site, production facility, or gas facility shall comply with the COGCC maximum permissible noise levels. Where noise reduction is shown to be necessary, moveable paneled noise shields, barriers, or enclosures shall be installed adjacent to or around noisy equipment, where required to meet the project noise limits.
- Generator(s) serving drilling rigs shall be installed and operated at the site in a manner that at least meets the COGCC's Noise Abatement regulation (No. 802) for Residential/Agricultural/Rural Zones. The regulation requires that the noise level not exceed 50 dbA.
- Trucks shall not use engine brakes on BLM roads.

### **Invasive Non-Native Species**

- Weed treatments shall be limited to spot treatments within areas with sensitive plant species, subject to site-specific pre-approval by the BLM.

### **Vegetation**

- Vegetation removal and grading shall be minimized. Shrubs and trees shall be shredded or cut at ground level to facilitate reestablishment from existing root systems, to support reclamation and minimize erosion.
- Topsoil berms shall be placed around well pad perimeters to segregate seed banks and allow them to be replaced in the spatial context from which they were removed during construction.
- Exclusion fencing shall be erected along the revegetated pipelines and road disturbances in highly vulnerable areas (i.e., along stream banks) to exclude livestock, accelerate reclamation of surface disturbance and minimize weed infestations, until monitoring determines that reclamation is successful. The BLM shall determine exclusion areas.
- At well pads HDU 9-11 and HDU 9-41, to facilitate revegetation, 0.2 lbs *helianthus annuus* (sunflower) may be added to the seed mix.

### **Wetlands**

- To avoid direct effects to two wetlands adjacent to the proposed gathering pipelines in the Homer Deep Unit (SWNW, Sec. 10, T8S, R98W; 39.375115, -108.318406 and 39.375772, -108.31912), the pipeline corridor width shall be reduced to 30 feet. At the time of pre-construction inspection, the pipeline limit-of-disturbance shall be staked no wider than 30 feet and the wetlands shall be staked for avoidance.

- In areas that have not been previously surveyed, a monitor shall be on site during pipeline routing to identify potential wetlands and avoid, if feasible. A wetland delineation shall be conducted for the wetlands that cannot be avoided; and appropriate permits from the USACE shall be obtained.
- Riparian canopy or stream bank vegetation shall not be removed, where possible.
- Woody debris should be retained as much as possible during in-stream construction.
- The construction corridor and ROW width at perennial and intermittent stream crossings shall be reduced to 30 feet to reduce impacts.
- Site-specific riparian-appropriate species plantings, BMPs and restoration techniques shall be implemented.
- Riparian tree saplings, such as cottonwoods and box elders, with a diameter at breast height of 1 inch or greater, shall not be removed.

### **Special Status Animal Species**

- If water is extracted from within critical habitat, extraction procedures shall follow conservation measures to qualify for ESA section 7 consultation compliance under the 2008 PBO including, but not limited to the following conservation measures:
  - Screening of pump intakes with ¼ inch (or finer) mesh;
  - Placing the pump intake into faster moving water;
  - Pumping from off-channel locations without a connection to the river.
- Pipelines shall not cross the Colorado River.
- No riparian vegetation shall be affected within the 100-year floodplain of the Colorado River.
- Water shall not be withdrawn from a Colorado Department of Transportation (CDOT) pond near Interstate-70 that is used as rearing habitat for razorback suckers.

### **ESA and Sensitive Plant Species**

- A BLM-approved biological monitor shall be on-site during all ground-disturbing activities, including installation of conservation measures identified on Maps 1 through 5. Areas requiring monitors shall include activities within 100 meters of Colorado hookless cactus plants and within 200 meters of DeBeque phacelia suitable habitat.
- Selected sites with Colorado hookless cactus and/or DeBeque phacelia shall be monitored within varying distances of disturbance every 5 years throughout the life of the project, or at other recommended frequency as determined by monitoring results, to determine long-term effects on special status plants/habitat, effectiveness of conservation measures, and to develop adaptive conservation measures.
  - Site selection and monitoring shall be coordinated with the FWS.
  - Sample plots shall be photographed 1) prior to disturbance, 2) every 5 years after disturbance and 3) at the end of the proposed project (estimated to be 20 years).
  - Plants at each site shall be counted, if present; health and status of the plants and habitat shall be documented.
  - A monitoring report shall be submitted to the BLM and the FWS by December 1 of each monitoring year.

## **Colorado Hookless Cactus**

- No individuals shall be directly affected by project activities.
- Well pads, centralized facilities, and new roads shall all be kept further than 20 meters from individual hookless cacti.
- In areas where listed plants occur, buried pipelines shall be co-located with existing roads or existing pipeline corridors. This minimizes fragmentation of undisturbed habitats, but could lead to the burial of a pipeline nearer to plants than 20 meters.

In this situation, the pipeline shall be buried on the far side of the existing disturbance from the hookless cactus to maximize its distance from the pipeline disturbance. As a result, new disturbance would not be closer to hookless cactus than existing disturbance (e.g., existing access roads and/or pipeline corridors).

- No surface-disturbing activities shall occur within 100 meters of Colorado hookless cactus plants during the cactus flowering season (April through May), to minimize indirect effects (dust, etc.) to pollinators and cactus reproduction.
- Silt barriers and fugitive dust control measures (watering roads/surface disturbance; no additives) shall be implemented, to minimize effects to cactus within 100 meters of existing disturbances (see Maps 1 through 5).
- Temporary fencing near occupied habitats shall be installed prior to any disturbance, to prevent trampling by workers or equipment. Fencing shall be removed immediately after activities are complete.
- The required project SWMP shall include implementation, monitoring and maintenance of site-specific BMPs, such as straw wattles, to minimize or avoid alteration of hydrologic conditions when project activities are located within 20 meters of documented hookless cactus plants.
- Herbicides shall not be used to control weeds within 100 meters of Colorado hookless cactus plants unless approved by BLM. Noxious weeds closer to Colorado hookless cactus plants shall be removed by hand prior to soil disturbance, to reduce reestablishment and potential re-distribution of weed seed and/or propagules. Prior to weed control, operator shall consult with BLM on a site-specific basis. Areas where weed treatment may be restricted are shown on Maps 1 through 5.
- Colorado hookless cactus plants growing within 20 meters of project activities shall be monitored annually for a minimum of 3 years after ground-disturbing activities. Additionally, select sites shall be monitored every 5 years throughout the life of the project (estimated to be 20 years) to determine long-term effects, if any, on hookless cactus survival and recruitment near the project. Monitoring of cacti within 20 meters of disturbance may be necessary within the areas identified on Maps 1 through 5 as “Restricted Weed Treatment/Dust Abatement.” Monitoring results shall be presented to both the BLM and the FWS.

## **DeBeque Phacelia**

- No individuals shall be directly affected by project activities.

- Well pads, centralized facilities, and new roads shall all be kept further than 100 meters from individual DeBeque phacelia plants and suitable habitats.
- In areas where DeBeque phacelia plants or suitable DeBeque phacelia habitat occurs, buried pipelines shall be co-located with existing roads or existing pipeline corridors. This minimizes fragmentation of undisturbed habitats, but could lead to the burial of a pipeline nearer to phacelia habitat than 100 meters. In this situation, the pipeline shall be buried on the far side of the existing disturbance from the phacelia habitat to maximize its distance from the pipeline disturbance. As a result, new disturbance would not be closer to phacelia habitat than existing disturbance (e.g., existing access roads and/or pipeline corridors).
- No surface-disturbing activities shall occur within 200 meters of DeBeque phacelia suitable habitat during the growing/flowering season (April through June), to minimize indirect effects (dust, etc.) to pollinators and plant reproduction.
- Areas within 100 meters of DeBeque phacelia habitat planned for well pads and associated project components, which have not yet been surveyed in a reliable year, may require additional botanical surveys within the areas identified on Maps 1 through 5 as “Restricted Weed Treatment/Dust Abatement” prior to ground-disturbing activities.
- Silt barriers and fugitive dust control (watering roads and surface disturbance; no additives) measures shall be implemented, to minimize effects to DeBeque phacelia within 100 meters of existing disturbance (See Maps 1 through 5).
- Temporary fencing near occupied habitats shall be installed prior to any disturbance, to prevent trampling by workers or equipment. Fencing shall be removed immediately after activities are complete.
- The required project SWMP shall include implementation, monitoring and maintenance of site-specific BMPs, such as straw wattles, to minimize or avoid alteration of hydrologic conditions when project activities are located within 100 meters of documented DeBeque phacelia habitat.
- Herbicides shall not be used to control weeds within 200 meters of DeBeque phacelia suitable habitat unless approved by the BLM. Noxious weeds closer than 200 meters to such habitat shall be removed by hand prior to soil disturbance, to reduce reestablishment and potential re-distribution of weed seed and/or propagules. Prior to weed control, operator shall consult with the BLM on a site-specific basis. Areas where weed treatment may be restricted are shown on Maps 1 through 5.
- DeBeque phacelia habitats within 100 meters of project activities shall be monitored annually for a minimum of 3 years after ground-disturbing activities. Additionally, select sites shall be monitored every 5 years throughout the life of the project (estimated to be 20 years) to determine long-term effects, if any, on DeBeque phacelia survival and recruitment, and habitat suitability, near the project. Monitoring of DeBeque phacelia habitats within 100 meters of project activities may be necessary within the areas identified on Maps 1 through 5 as “Restricted Weed Treatment/Dust Abatement.” Monitoring results shall be provided to both BLM and the FWS.

## **Wildlife**

- All equipment used within drainages, which could transfer materials from one waterway to another, shall be sanitized per CPW protocols, including water extraction equipment.

- As part of the Bear Aware program, all project personnel shall review the CPW publication “Living with Bears” (<http://wildlife.state.co.us/WildlifeSpecies/LivingWithWildlife/Mammals/Pages/LivingWithBears.aspx>), developed as part of the Bear Aware program.
- Project staff shall report poaching incidents to Operation Game Thief.
- Should dry open-cut construction be required across a body of water or a flowing drainage, the operator shall develop and implement a site-specific construction plan in coordination with Colorado Parks and Wildlife, to minimize impacts to fish and other wildlife. This plan shall require pre-approval by the BLM before construction occurs.
- Workers shall carpool to drilling locations from December thru April.

### **Cultural Resources, Tribal and Native American Religious Concerns**

- A contracted archaeologist from a permitted cultural resource firm approved by the GJFO archaeologist shall monitor known sites during any and all construction activity within 100 yards, to prevent any surface disturbance. See Table 3.4-3, Potential Impacts and Mitigation Measures for NRHP-Eligible Sites within the APE. (DOI-BLM-CO-130-2012-0021-EA).
- Per the Memorandum of Agreement among the BLM, the SHPO, and Black Hills, the BHDEP Treatment Plan will document any adverse effects and specify measures for site avoidance, minimizing impacts, and treatments.

### **Paleontological Resources**

- An on-site monitor (BLM-permitted paleontologist) shall be present during construction in areas of Wasatch Formation bedrock outcrop. (No Wasatch Formation outcrops are present at well pads HDU 9-11 and HDU 9-41.)

### **Visual Resources**

- To minimize upward light scattering/pollution, all drilling rig and well test facility lighting shall be limited to that required to safely conduct operations taking place at the time. Where safety is not compromised, lighting shall be down-directed and focused on work areas only. Permanent lighting shall be shielded and/or down-directed, and/or directed in a manner that targets light specifically to the work area.
- Tanks and equipment shall be low-profile or set in-ground, to minimize visual dominance, and painted BLM color Shale Green, in a non-reflective finish.
- For surfacing road and pad surfaces, avoid using gravels or soils that contrast strongly in color or texture with native soil and rock components. For example, if setting is upland, with red sedimentary rocks/soil, don't bring in river cobbles and pit run.

### **Wastes**

- If a reportable spill occurs, immediately contact the BLM, CDPHE Water Quality Control Division and CPW.
- Spill station locations shall be established and placed in strategic locations.

### **Recreation**

- Warning signs shall be posted on project area roads to alert recreationists and project personnel to each other's presence and to help avoid accidents.

- Construction timing shall be coordinated with area outfitters and landowners, to avoid conflicts with users of dispersed recreation sites and to mitigate impacts to them.

### **Range Management**

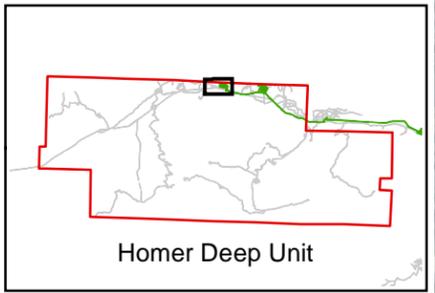
- Planned activities shall be coordinated with affected grazing permit holders.
- The grazing allotment boundary fence line coinciding with proposed well pad HDU 9-41 shall be realigned and rebuilt to go around the well pad.

### **Forest Management**

- When not shredded and salvaged with topsoil, woody materials 4+ inches in diameter shall be cut into sections not to exceed 4 feet, to be replaced following reclamation.

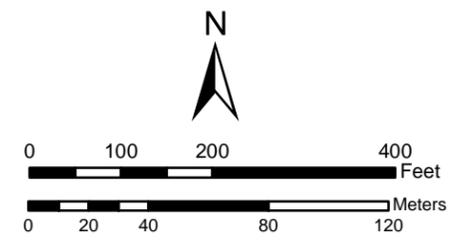
### **Fire and Fuels Management**

- A Fire Management Plan specific to oil and gas operations shall be prepared to assist Black Hills and contractors to prevent and/or contain project-related accidental ignitions.
- Develop and inform employees and contractors of a fire safety and evacuation plan, in the event a wildfire moves toward an active pad/facility.
- Any welding, acetylene or other open flame, shall be operated in an area barren or cleared of all flammable materials and no closer to vegetation than at least 10 feet.
- Internal combustion engines shall be equipped with approved spark arrestors and vehicles shall be parked in designated areas without fire/fuels hazards.



Homer Deep Unit

Legend		
<b>Proposed Disturbance</b>	<b>Pipeline</b>	<b>Suggested Mitigation</b>
Centralized Facility	Gas, Water Supply and Produced Water	T-posts with orange fencing
Well Pad	Existing ETC Pipeline	Silt Fence
Pipeline	<b>Access Roads</b>	Hay Wattles
Road	Existing - No Improvement	Restricted Weed Treatment / Dust Abatement
	New Resource Road	

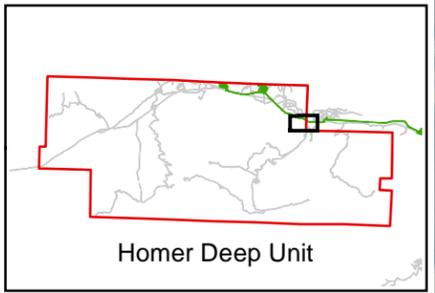
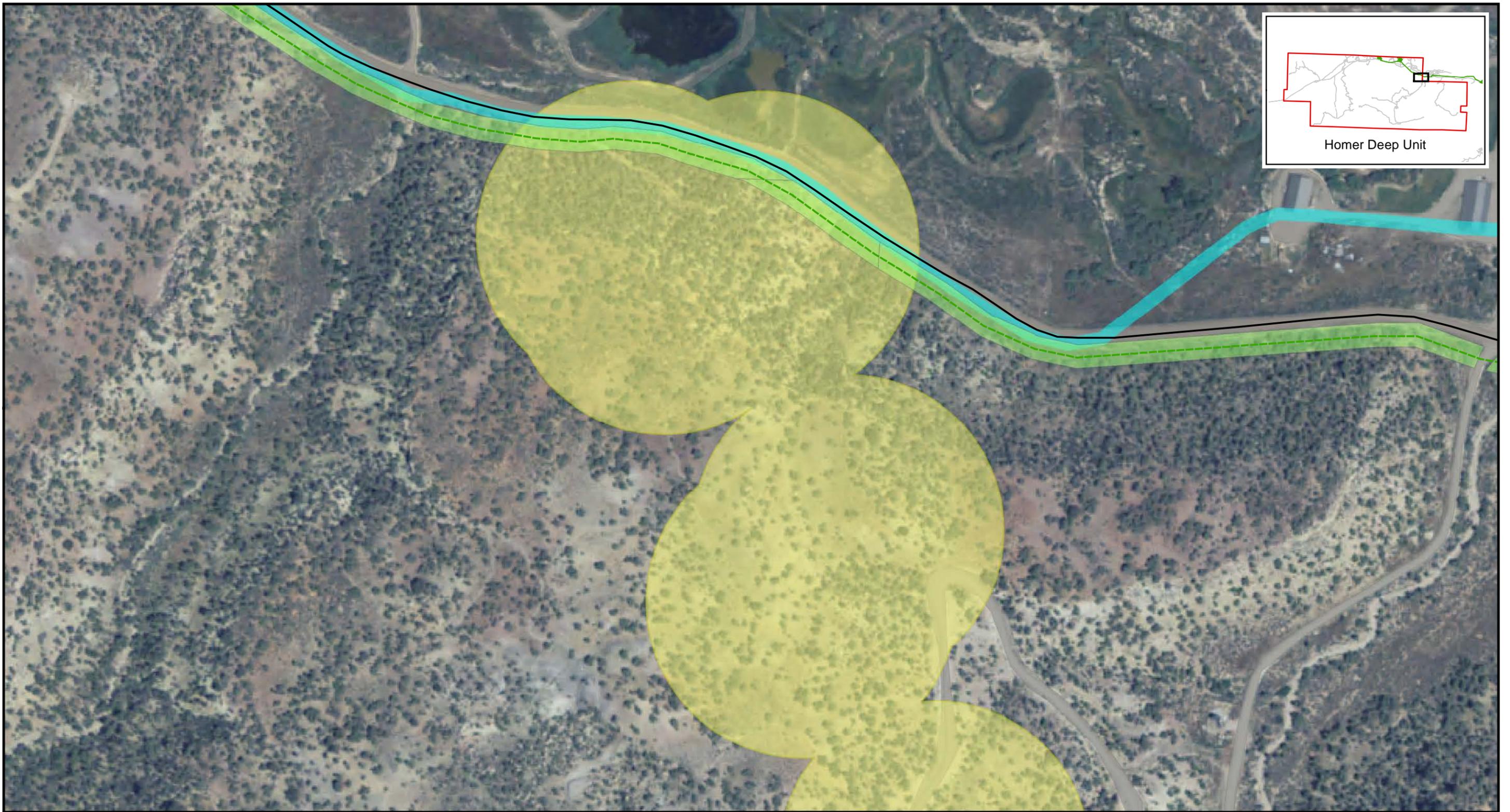


**Map 1**

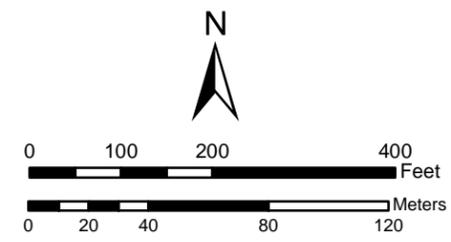
Black Hills DeBeque Exploratory Project

Federal Wells 9-11AH, 9-11BH, 9-41AH, and 9-41BH  
Threatened, Endangered and Sensitive Plant  
Conservation Measures - Homer Deep Unit

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Legend		
<b>Proposed Disturbance</b>	<b>Pipeline</b>	<b>Suggested Mitigation</b>
Centralized Facility	Gas, Water Supply and Produced Water	T-posts with orange fencing
Well Pad	Existing ETC Pipeline	Silt Fence
Pipeline	<b>Access Roads</b>	Hay Wattles
Road	Existing - No Improvement	Restricted Weed Treatment / Dust Abatement
	New Resource Road	

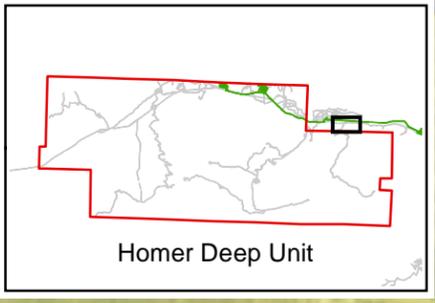


**Map 2**

Black Hills DeBeque Exploratory Project

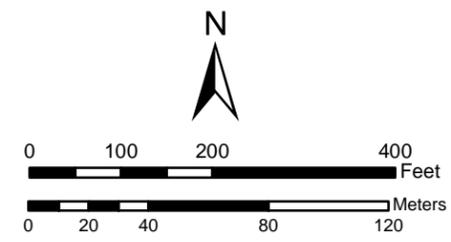
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Threatened, Endangered and Sensitive Plant  
Conservation Measures - Homer Deep Unit

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**Legend**

<b>Proposed Disturbance</b>	<b>Pipeline</b>	<b>Suggested Mitigation</b>
Centralized Facility	Gas, Water Supply and Produced Water	T-posts with orange fencing
Well Pad	Existing ETC Pipeline	Silt Fence
Pipeline	<b>Access Roads</b>	Hay Wattles
Road	Existing - No Improvement	Restricted Weed Treatment / Dust Abatement
	New Resource Road	



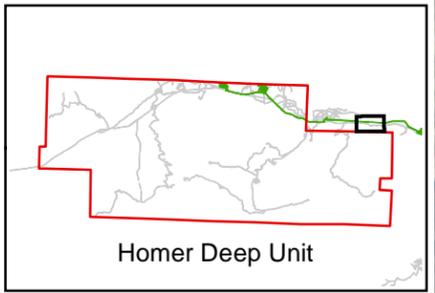
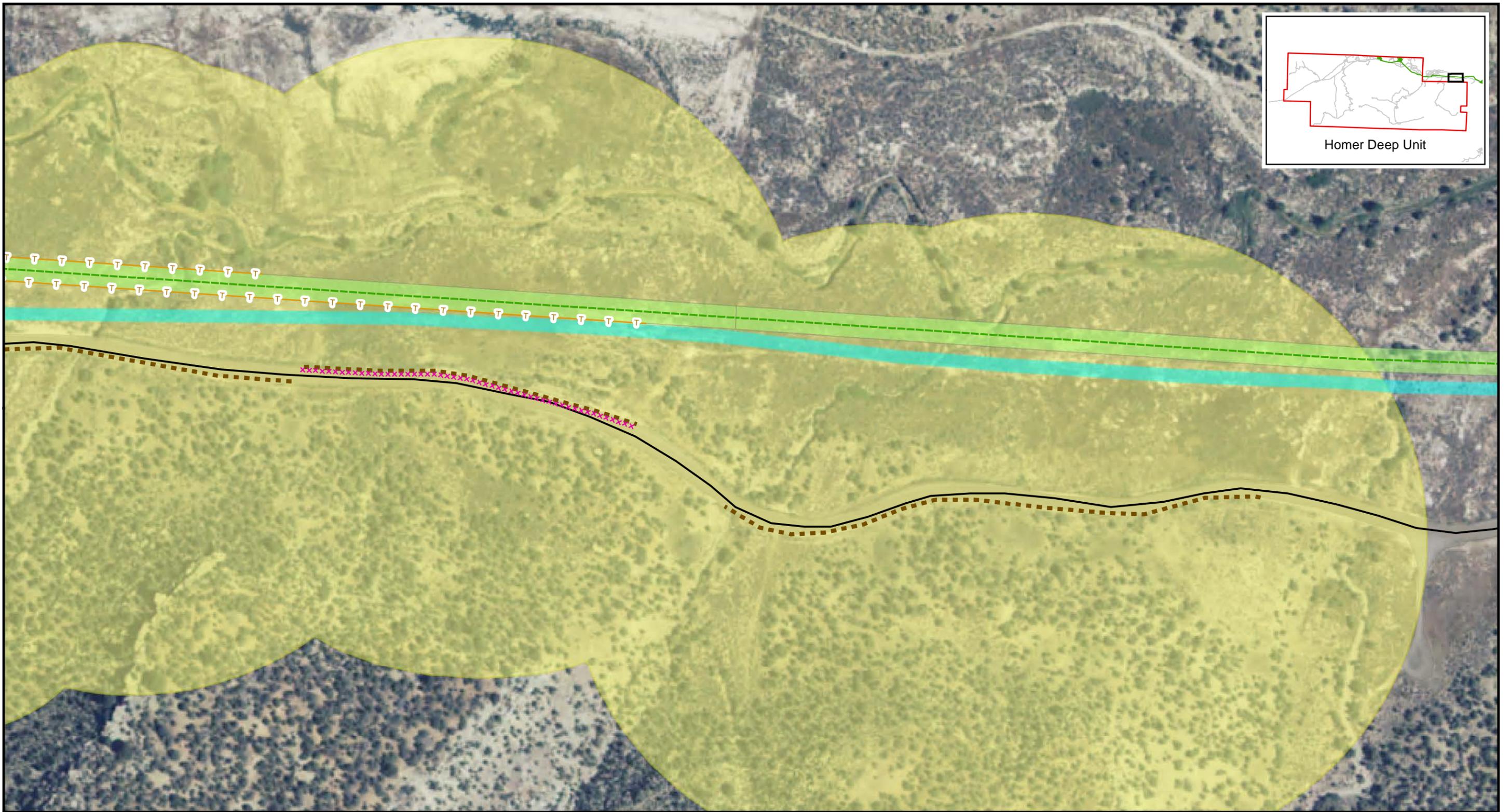
**Map 3**

Black Hills DeBeque Exploratory Project

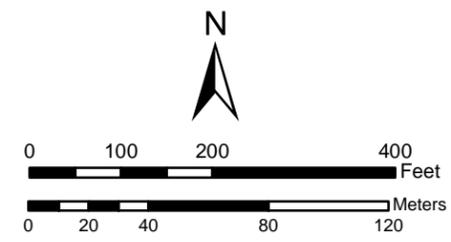
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Threatened, Endangered and Sensitive Plant  
Conservation Measures - Homer Deep Unit

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Legend		
<b>Proposed Disturbance</b>	<b>Pipeline</b>	<b>Suggested Mitigation</b>
Centralized Facility	Gas, Water Supply and Produced Water	T-posts with orange fencing
Well Pad	Existing ETC Pipeline	Silt Fence
Pipeline	<b>Access Roads</b>	Hay Wattles
Road	Existing - No Improvement	Restricted Weed Treatment / Dust Abatement
	New Resource Road	



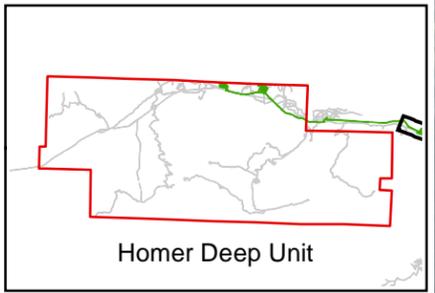
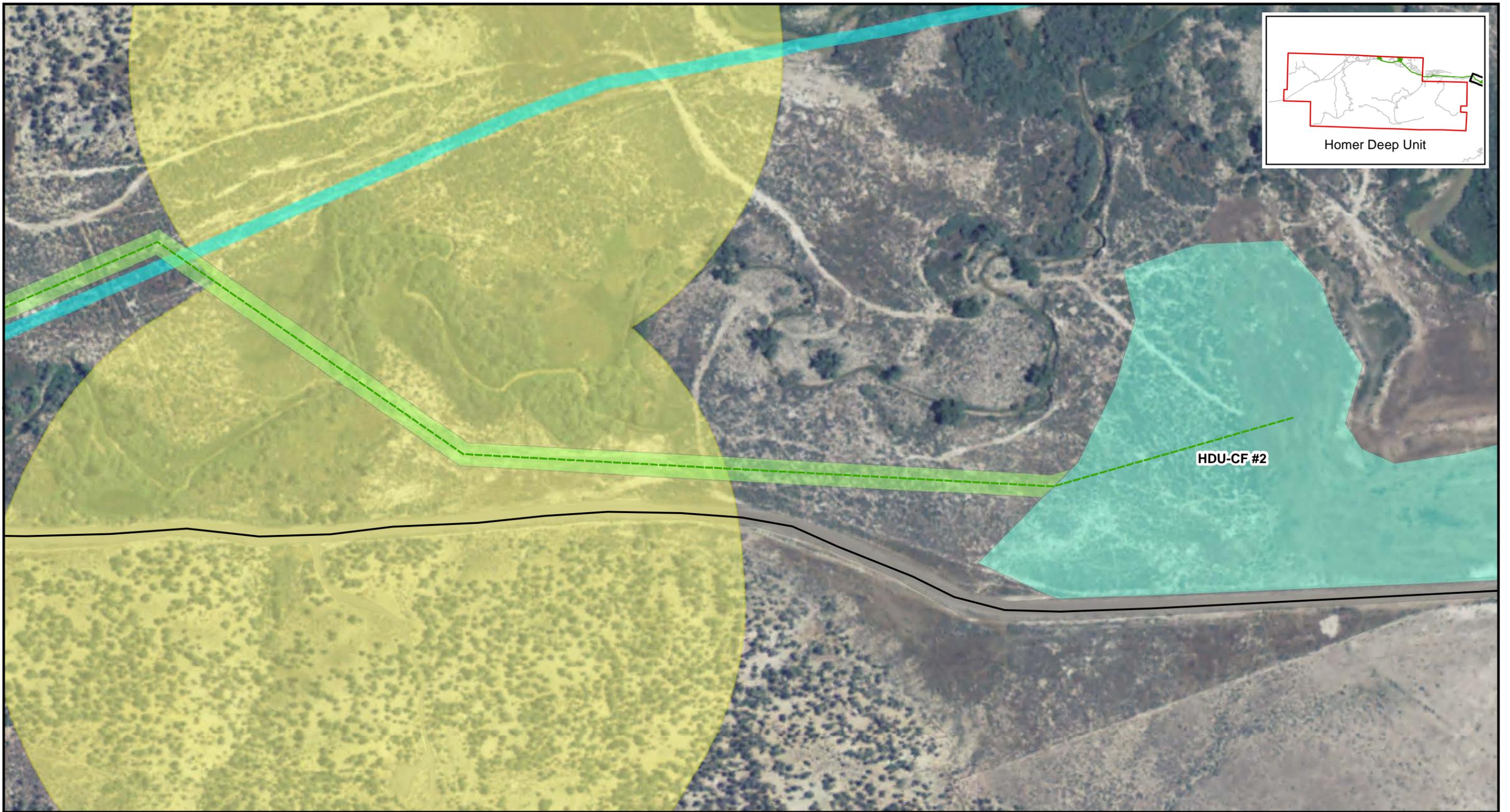
**Map 4**

Black Hills DeBeque Exploratory Project

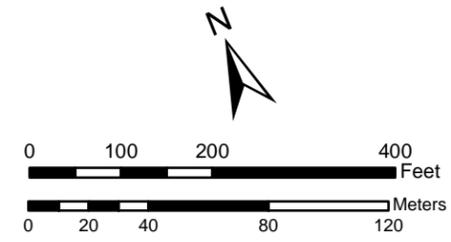
Federal Wells 9-11AH, 9-11BH, 9-41AH, and 9-41BH  
Threatened, Endangered and Sensitive Plant  
Conservation Measures - Homer Deep Unit

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10/17/2013



Legend		
<b>Proposed Disturbance</b>	<b>Pipeline</b>	<b>Suggested Mitigation</b>
Centralized Facility	Gas, Water Supply and Produced Water	T-posts with orange fencing
Well Pad	Existing ETC Pipeline	Silt Fence
Pipeline	<b>Access Roads</b>	Hay Wattles
Road	Existing - No Improvement	Restricted Weed Treatment / Dust Abatement
	New Resource Road	



**Map 5**

Black Hills DeBeque Exploratory Project

Federal Wells 9-11AH, 9-11BH, 9-41AH, and 9-41BH  
Threatened, Endangered and Sensitive Plant  
Conservation Measures - Homer Deep Unit

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