

Decision Memo

Wolf Creek Storage Wells Project

USDA Forest Service
Aspen-Sopris Ranger District, White River National Forest
Pitkin County, Colorado
Section 36, Township 8 South, Range 90 West

Decision

I have decided to approve the Surface Use Plans of Operations as modified submitted by Rocky Mountain Natural Gas, dba Black Hills Energy to drill two natural gas storage wells (WC 9-D2 and WC 9-D3) on the existing Wolf Creek #9 well pad, as described below, and as illustrated in the attached figures. The well pad is located approximately 16 miles southwest of Glenwood Springs, on the Aspen-Sopris Ranger District in Pitkin County, Colorado (Figures 1 & 2). The new wells are located in the existing Wolf Creek Storage Field (Figure 3) and will be used to replace two wells. The replacement is needed to maintain adequate gas storage to supply local demand for natural gas in the Roaring Fork Valley. The work area will be located on the original disturbance area of the well pad (Figures 4 & 5), and all access will be provided by existing roads (Figure 6).

I have also evaluated the Surface Use Plans of Operation to ensure that the appropriate exclusion category as described in Section 390 of the Energy Policy Act of 2005 has been correctly applied to each and that no further environmental analyses are required. The applicability of this Section 390 Categorical Exclusion, Category 3, to the current project requires that drilling each of the wells described in the two proposed APDs be completed within 5 years of the NEPA document (the *WRNF Oil and Gas Leasing FEIS*). This provision of the Section 390 Categorical Exclusion requires that initiation of drilling activities of each well occur before **December 3, 2020**, the fifth anniversary of the WRNF decision finalizing and approving the FEIS.

This decision will be implemented through the approval of the submitted Surface Use Plans of Operation. Additionally, the Bureau of Land Management must review and approve the Applications for Permit to Drill (APDs) prior to project commencement. Incorporation of protective design criteria will minimize the resource impacts that have been identified as potentially associated with this decision. These design criteria will be enforced as Conditions of Approval (COAs) to the APDs as authorized under 36 CFR 228.107(b)(2)(ii) (see the **Appendix**).

Background

The Wolf Creek Storage Area (Storage Area) is an underground natural gas storage facility, which Black Hills Energy operates as a component of its gas delivery infrastructure for the Roaring Fork Valley. The Storage Area uses an underground geologic formation that was drilled for natural gas production in the 1960s, and produced natural gas until the early 1970s, at which

point the wells were no longer economically viable. The depleted geological formation is now used by Black Hills to store natural gas during the summer months and is drained during the winter months to help meet the high residential demand for natural gas in the surrounding communities. This allows Black Hills to balance the seasonally variable demand for gas against their constant supply stream.

Under its current operations, Black Hills injects natural gas into wellbores to the geologic storage formation, where it fills the pore space that was emptied when the native natural gas was originally extracted. The injected gas is kept under pressure and can then be withdrawn at a later date through the same wellbores for distribution and use.

The Storage Area includes multiple wells that provide the storage capacity needed by Black Hills. Each well is located on a separate well pad, and the wells and well pads are named with sequential numbers. Two of the wells in the Storage Area (Wolf Creek #5 and Wolf Creek #9) have developed issues with the wellbore casings, which were detected by Black Hills' well monitoring program. As a proactive precautionary measure, Black Hills has plugged and discontinued use of the Wolf Creek #9 well, and intends to discontinue use of the Wolf Creek #5 well.

Project Description

Black Hills will drill two new wells on the Wolf Creek #9 well pad (WC 9-D2 and WC 9-D3). These wells will be directional injection wells, and will not be hydraulically fractured or otherwise prepared for natural gas production. As described, the wells will access an existing depleted geologic formation where natural gas can be stored. In addition to the wells, buildings and appurtenant pad equipment will be installed on the well pad to replace existing infrastructure, and to support the injection/withdrawal activity. The project will involve a series of sequential phases described below. In general, all work will be completed on a 7-days-per-week, 12-hours-per-day schedule; however, operations may occur 24 hours per day during the drilling phase.

Demolition and Site Preparation

The Wolf Creek #9 well pad is accessed via Four Mile Road (County Road 117), and Forest Service roads 300, 321, and 321.1B. Snow plowing will begin on the roads as soon as snow levels allow. Once adequate vehicle access to the well pad has been secured, all the existing buildings and equipment on the well pad will be removed to Black Hills' storage yards on private lands. The existing boundaries of the well pad will be expanded by approximately 520 square feet (0.01 acre) to accommodate the drill rigs, with an estimated volume of 40 dump truck loads of material being transported to the site to provide construction fill and surfacing. The well pad will generally be expanded back to its original dimensions when it was originally constructed. Areas that were previously reclaimed will be re-surfaced and used to accommodate the needed operating space. Figure 4 provides the site layout for WC 9-D2, and Figure 5 provides the site layout for WC 9-D3. During this process, estimated daily vehicle traffic on the access roads will generally include up to 6 pick-up trucks used to transport workers to the site daily, in addition to the dump trucks. Forest Roads 321 and 321.1B will remain closed to public use during the life of the project.

Drilling and Completions

The well drilling process will use three separate rigs sequentially, including a surface casing rig, a drilling rig, and a completions rig. Drilling will be completed using closed-

loop systems that do not require the construction of temporary or permanent pits for fluids or cuttings. The estimated duration for completion of these phases is approximately 14 weeks. Operations may occur 24 hours per day, 7 days per week during the drilling phase.

Traffic on the haul roads will vary depending on which drilling stage is currently underway, but there will generally be an increase in traffic and oversize traffic on the haul roads during the one summer season of drilling (Figure 6). Daily traffic may include up to 3 pickup trucks and 3 water trucks. Occasional traffic will amount to approximately 5 dump truck loads, and 10-15 large truck loads of equipment during the drilling phase. The rig moves will include approximately 13 loads for the surface rig, 42 loads for the drilling rig, and 6 loads for the completions rig.

Heavy equipment traffic will adhere to the conditions of Black Hills' Road Use Permit and Traffic Control Plan as approved by the Forest Service, including pilot vehicles for oversized traffic, signage and public notice, and road flaggers as necessary. Temporary road closures will be considered only if necessary to protect public health and safety, and will generally only apply to rig moves. Forest Roads 321 and 321.1B will remain closed to public use during the life of the project.

Construction and Site Layout

Surface equipment will be installed after the wells have been completed. This includes tanks for produced water and for operations fluids such as methanol, a small communication building and generator, and other appurtenant equipment. The construction of these facilities will take approximately 7 weeks. During this process, estimated daily vehicle traffic on the access roads will include approximately 3-5 pickup trucks and trailers to transport workers to the site on a daily basis, in addition to occasional traffic including cement trucks, cranes, and semi-trucks carrying equipment. Heavy equipment traffic will adhere to the conditions of Black Hills' Road Use Permit and Traffic Control Plan as described above.

Operations

Black Hills will continue to operate the Wolf Creek #9 facility much as it has in the past once construction is complete. The site is largely automated and remotely-monitored for safety and performance. Routine maintenance and inspections of all wells in the Wolf Creek Storage area will continue and will require semi-weekly (or more) visits including pickup truck traffic and occasional larger vehicle traffic during summer months. During the winter season, maintenance and inspection visits are accomplished via snow cat or snowmobile.

Purpose and Need

Recent well evaluations found that Storage Area Wells # 9 & #5 should be replaced for optimal efficiency of the overall storage system. Well #9 was plugged and abandoned in 2018. Well #5 may be plugged and abandoned based on the well replacement project. Black Hills needs the well replacement project to meet its requirement as a public utility to provide a consistent, safe, and reliable sources of natural gas for area residents.

The purpose of this decision is for the Forest Service to meet its responsibilities under the Mineral Leasing Act of 1920, as amended (30 United States Code [USC] § 181 et seq.), to respond to Surface Use Plans of Operation. The Forest Service's mandate for multiple uses of public lands includes development of energy resources in a manner that conserves the multitude of other resources found on public lands. Authorization will be provided by approval of the submitted Surface Use Plans of Operation, concurrently with the Bureau of Land Management's approval of the Applications for Permit to Drill.

The BLM manages all Federal onshore oil and gas resources in the United States. Because the existing and proposed surface facilities associated with these actions are or will be located on NFS lands administered by the US Forest Service, both that agency and the BLM have roles in reviewing, analyzing, and approving or denying the Proposed Actions. For surface locations on NFS lands, the White River National Forest (WRNF) is responsible for reviewing the Surface Use Plan of Operation of each of the two Federal APDs; attaching such COAs as it determines are needed to avoid, minimize, or offset impacts to surface resources; ensuring compliance with the National Environmental Policy Act, Federal Land Policy and Management Act, and applicable Federal laws and regulations related to surface resources; and approving or denying use of NFS lands for implementation of the Proposed Actions.

Concurrently with project review by the WRNF and BLM Colorado River Valley Field Office, which included participation by representative BLM and US Forest Service staff, the BLM has processed the APDs for two replacement injection wells to be drilled into the Federal lease. This process is defined by *Onshore Oil and Gas Order No. 1 – Approval of Operations on Federal and Indian Oil and Gas Leases* (36 CFR Part 228; 43 CFR 3160). The APD process focuses on the proposed technical engineering aspects of well drilling and operation, subsurface geology, and the protection of surface water, groundwater, and air quality in connection with drilling and completion operations for each of the two APDs. During processing of the two APDs, the BLM attaches the downhole (drilling) COAs and the surface-use COAs identified by the WRNF and reviewed by BLM resource staff (see the **Appendix**).

Reasons for Categorical Exclusion

I have concluded that this action can be categorically excluded from documentation in an environmental impact statement or environmental assessment, as it is an activity within category three of exclusion under Section 390 of the Energy Policy Act of 2005, 42 U.S.C. 15492, and there are no extraordinary circumstances related to the decision that may result in a significant individual or cumulative effect on the quality of the human environment.

Consistency with Categorical Exclusion Category #3: Drilling an oil or gas well within a developed field for which an approved land use plan or any environmental document prepared pursuant to NEPA analyzed drilling as a reasonably foreseeable activity, so long as such plan or document was approved within five (5) years prior to the date of spudding the well. Project screening questions relative these criteria are listed in **Table 1**. All screening questions must be answered “Yes” for use of this Section 390 Categorical Exclusion. Project screening questions apply to each APD for the two Proposed Replacement Wells WC 9-D2 and WC 9-D3.

Table 1. Project Screening Questions for use of Category 3

<i>Questions</i>	<i>Responses</i>
1. Is the proposed APD within a developed oil or gas field?	<u>Yes</u>
2. Is there an existing NEPA document (including that supporting a land use plan) that contains a reasonably foreseeable development scenario encompassing this action?	<u>Yes</u>
3. Was the NEPA document finalized or supplemented within 5 years of spudding the well?	<u>Yes</u>

NEPA Document Name: The WRNF Oil and Gas Leasing Final EIS (FEIS) was completed in December 2014, and a decision approving the FEIS was issued on December 3, 2015. The FEIS includes the following at page 138, Section 3.2.11 – Affected Environment, Geology/Minerals:

*Sixty of [the existing] 125 leases were issued and developed prior to the 1993 WRNF Oil and Gas Leasing EIS and ROD, comprising approximately 36,171 acres, **and could continue to be further developed** [emphasis added]. [These] leases are either held by production or committed to a Federal unit **or used for gas storage** [emphasis added]. The majority of these leases are within the Divide Creek Unit and the Wolf Creek leases authorized for gas storage.*

The following resource conditions were considered as part of this analysis, including the 7 extraordinary circumstances identified in 36 CFR 220.6(b):

(i) Federally listed threatened or endangered species or designated critical habitat:

As the project will occur on previously disturbed areas and using existing roads, and long-term operations will not be different from existing operations, the Biological Assessment found that there will be **no effect** to listed or proposed threatened or endangered species, and will have **no effect** on proposed or critical habitats. This project meets the Forest Service’s requirements under the Endangered Species Act.

The Forest Service additionally reviewed the proposal in a Biological Assessment and Biological Evaluation, and the project will meet requirements in the Forest Plan, and FSM 2672.41 to ensure that Forest Service actions do not contribute to loss of viability of any native or desired non-native plant or animal species, do not cause any species to move toward federal listing; and that concerns for sensitive species have been incorporated throughout the planning process, thus reducing negative impacts to species and enhancing opportunities for proactive conservation.

(ii) Flood plains, wetlands, or municipal watersheds

The Forest Service is required to determine whether any component of the Project authorized in this decision will occur in floodplains, and if so, to include appropriate design features or mitigation measures. A review of available floodplain data, including

Federal Emergency Management Agency (FEMA) maps¹ and county floodplain data from Garfield² and Pitkin³ Counties, indicate that the Project area and the access roads are located entirely outside of floodplain zones.

The Forest Service is required to avoid impacts associated with wetland destruction or degradation. Field surveys have not yet been completed for the Project, and field surveys are required before construction may begin. The National Wetlands Inventory (NWI) database⁴ indicates that a 0.24 acre palustrine emergent wetland is located approximately 200 feet east of the Project well pad. This type of wetland is dominated by herbaceous vegetation and provides water quality benefits as a groundwater recharge zone and surface water storage and filtration site. Desktop review and current photographs suggest that no wetlands exist in direct proximity to the well pad, but field surveys will be required to confirm the wetland boundaries in the vicinity of the project site prior to construction. Mitigation measures have been established to ensure that no incidental impacts to the offsite wetlands occur (see Appendix A and/or Hydrology specialist report). If field surveys discover wetlands within the 520 square feet proposed for pad expansion, the pad design and layout will be altered to avoid wetland impacts.

The Forest Service is required to avoid impacts to municipal watersheds. The Project is located outside of any municipal watersheds.

Based on this review, this decision will not affect any floodplains, wetlands, or municipal watersheds.

(iii) Congressionally designated areas

Congressional designation applies to areas such as wilderness, wilderness study areas, or national recreation areas. The nearest congressionally designated area is the Maroon Bells – Snowmass Wilderness, which is located approximately 10 miles to the southeast of the Project area. No congressionally designated areas will be affected by this decision.

(iv) Inventoried roadless area or potential wilderness areas

The 2012 Colorado Roadless Rule did not identify any roadless areas within the Project vicinity. The Project is accessed entirely from existing roads, including County Road 117 (4 Mile Road), and National Forest System Roads (NFSRs) 300, 321, and 321.1B.

The Project area is surrounded by Thompson Creek Roadless Area to the east and south, Baldy Mountain Roadless Area to the southwest, and East Divide/4 Mile Park Roadless area to the north. The drilling location is approximately 0.5 miles from the nearest boundary of the Thompson Creek Roadless Area. This decision will not affect inventoried roadless areas.

(v) Research natural areas

There are no candidate or designated Research Natural Areas (RNAs) within or near the Project area. The nearest RNA is Gothic RNA, located on the Gunnison National Forest approximately 32 miles southeast of the Project Area. This decision will not affect candidate or designated RNAs.

(vi) American Indians religious or cultural sites, archaeological sites, or historic properties:

¹ FEMA Flood Map Service Center, accessed 2019

² Garfield County Community Development, FEMA Preliminary FIRM maps, developed 2012, accessed 2019

³ Pitkin County Floodplain Mapping, accessed 2019

⁴ USFWS National Wetlands Inventory, accessed 2019

Section 106 of the National Historic Preservation Act (NHPA, 54 U.S.C.) requires federal agencies to account for the effect of a project or action on any site, building, structure or object included in or eligible for inclusion in the National Register of Historic Places.

The Project is located entirely within existing disturbance, or within areas that were previously disturbed during the original construction of the Wolf Creek #9 well pad. A cultural resource inventory has previously been completed for the project area with State Historic Preservation Officer concurrence, which indicated that no resources are present within the Project area. There will be no impact to cultural sites or historic properties as a result of this decision, therefore this decision is compliant with the National Historic Preservation Act.

No tribal consultation has been conducted for this project, due to the lack of reasonably foreseeable impacts.

I also considered the following additional pertinent issues that were raised during scoping and in the project assessment process.

Air/Climate: An air emissions inventory was compiled for the proposed development (construction, drilling, and completions) and operation of two Federal wells on the Wolf Creek 9 pad. In general, the proposed development will have a temporary localized impact to air quality and will mostly occur during well drilling. Fugitive dust and vehicle emissions will be generated from the mobilization of equipment necessary for well drilling and erecting the drill rig. During drilling, air quality will be affected by emissions from generators and engines to run equipment, onsite and offsite vehicle traffic, and fugitive gases. This phase will also produce short-term emissions of other criteria pollutants, hazardous air pollutants (HAPs), and greenhouse gases (GHGs) from vehicle and equipment exhausts. Once well development is complete, the daily activities at the site will reduce to operational and maintenance checks, which may be as frequent as daily visits. Emissions will result from fugitive dust and exhaust from vehicles during maintenance and process technician visits, pneumatic losses, and potential fugitive emissions of well gas, which contains mostly methane and a minor fraction of volatile organic compounds (VOCs) and HAPs. Modeled contributions to cumulative air quality for project-specific emissions generated during the temporary Development Phase, as well as the longer-term Operations Phase, will be below Significant Impact Levels (SILs). In addition, the modeled cumulative near-field air quality is adequately assessed in the Colorado Air Resource Management Modeling Study (CARMMS)⁵ 2.0 high scenario, which accounts for the longer-term proposed Operations Phase plus other foreseeable future Federal fluid mineral development in the area through 2025. The maximum predicted cumulative local air pollutant concentrations from all sources modeled for CARMMS 2.0 are less than the National Ambient Air Quality Standards (NAAQS).

As for the cumulative outlook, recent oil and gas development in the region approximates the new oil and gas development levels analyzed in the CARMMS low oil and gas development scenario. Air quality monitoring and modeling demonstrate compliance with the NAAQS. The CARMMS analysis does not predict any significant impacts to

⁵ Colorado Air Resource Management Modeling Study (CARMMS), 2025 CAMx Modeling Results for the High, Low and Medium Oil and Gas Development Scenarios, CARMMS 2.0 Final Report. Bureau of Land Management, Colorado State Office, Lakewood, CO. August. Available online at: <https://www.blm.gov/programs/natural-resources/soil-air-water/air/colorado>. Accessed on May 16, 2019.

visibility at nearby Class I areas for any of the scenarios or reporting-year emissions levels. The two biggest issues resulting from the analysis are the estimated impacts from deposition at the Flat Tops Wilderness Area and the estimated regional ozone formation potential. The report-year metrics for deposition impacts suggest that on a quasi-cumulative basis, oil and gas development in the region may be contributing to deposition at the Flat Tops Wilderness Area. The monitoring data suggest that cumulative deposition at nearby Class I areas is currently below the critical load levels. Future oil and gas development is expected to remain on the current track (i.e., tracking low relative to the CARMMS low scenario) for the foreseeable future in Colorado.

All climate model projections indicate future warming in Colorado⁶. Summer temperatures are projected to warm slightly more than winter temperatures, where the maximums will be similar to the hottest summers that have occurred in the past 100 years. Precipitation projections are less clear. Nearly all of the models predict an increase in winter precipitation by 2050, although most projections of snowpack (April 1 snow-water equivalent measurements) show declines by mid-century due to projected warming. Late-summer flows are projected to decrease as the peak shifts earlier in the season, although the changes in the timing of runoff are more certain than changes in the amount of runoff. In general, the majority of published research indicates a tendency towards future decreases in annual streamflow for all of Colorado's river basins. Increased warming, drought, and insect outbreaks, all caused by or linked to climate change, will continue to increase wildfire risks and impacts to people and ecosystems.

⁶ 2015 Annual Report. BLM Colorado State Office. Available online at: <https://www.co.blm.gov/nepa/airreports/AR2015.html>. Accessed on May 14, 2019.

The following specialists were involved in reviewing the project and making the determinations disclosed in this decision:

<i>Name</i>	<i>Title</i>	<i>Areas of Participation</i>
Vanessa Caranese	Geologist, BLM	Geology and Minerals, Groundwater
Allen Crockett, Ph.D., J.D.	Supervisory NRS, BLM	NEPA Review
Stephen Garcia, PE	Petroleum Engineer, BLM	Drilling Plan Review
Carmia Woolley	Physical Scientist, BLM	Air Quality, Noise, Soils, Surface Water
Alexander Nees	Senior Ecologist, SGM	Document Lead and Public Comment Response
Eric Patterson	Environmental Team Lead, SGM	Biological Resources
Angie Fowler	Water Services Sector Leader, SGM	Hydrologic Resources
Jenna Friesen	GIS Specialist, SGM	Spatial Data, Cartography
Karla Mobley	Civil Engineering Technician, USFS	Engineering, Transportation
Phil Nyland	Wildlife Biologist, USFS	Migratory Birds, Special Status Animals, Terrestrial Wildlife
Clay Ramey	Fisheries Biologist, USFS	Aquatic Wildlife
Liz Roberts	Ecologist, USFS	Botany, Non-native Invasive Plants
Justin Anderson	Hydrologist, USFS	Soils, Water, Flood Plains, Wetlands
Tom Fuller	Heritage Program Manager, USFS	Cultural Resources, Native American Religious Concerns, Historical Properties
Donna Graham	Landscape Architect, USFS	Scenery
Shelly Grail Braudis	Recreation Staff Manager, USFS	Recreation
Jason Gross	Physical Scientist, USFS	Interdisciplinary Team Lead, Minerals

Public Involvement

The APDs were posted at the Aspen-Sopris Ranger District and the White River National Forest Supervisor's Office for a 30 day public notification period when they were received as required under Onshore Oil and Gas Order No. 1. This project was first listed in the Schedule of Proposed Actions on March 20, 2019. The proposal was provided to the public and other agencies for comment during scoping, and a public request for comments was published. Direct request for comments was submitted to the email list previously compiled for the 2014 White River National Forest Oil and Gas Leasing Environmental Impact Statement, which was considered to represent the interested public. Black Hills prepared a media release in advance of the March 19, 2019 Pitkin County Planning Commission meeting, and also established a public outreach and

information website⁷, which will be maintained and updated for the duration of construction associated with the Project.

All comments were reviewed and considered in the evaluation process. Comments received were predominantly concerned with traffic impacts associated with the Project, including noise, temporary road closures, and road damage.

The Project proponent has applied for a Garfield County Road & Bridge permit for oversize vehicle movements, which will dictate road use conditions in conformance with local ordinances. The Project proponent has applied for a Pitkin County permit which mandates notification to affected municipalities of notable traffic impacts, including rig moves.

Findings Required by Other Laws

Energy Policy Act of 2005, Section 390: the Authorized Officer has reviewed the categorical exclusion criteria under Section 390 of the act and determined that the proposal meets the criteria under Category 3 - Drilling an oil or gas well within a developed field for which an approved land use plan or any environmental document prepared pursuant to NEPA analyzed such drilling as a reasonably foreseeable activity, so long as such plan or document was approved within five (5) years prior to the date of spudding the well.

This decision is consistent with the White River National Forest Land and Resource Management Plan (Forest Plan) as required by the National Forest Management Act. The project was designed to conform to the Forest Plan. Standards and guidelines will be applied as appropriate to meet Forest Plan goals, objectives, and desired conditions.

This decision complies with BLM CO IM No. CO-2015-009, Air quality compliance under the Colorado Air Resources Protection Plan.

36 CFR 228 Subpart E, Oil and Gas Operations: The Surface Use Plans of Operation are consistent with the requirements of 36 CFR 228.107-109.

This project is consistent with the National Historic Preservation Act. The Project is located entirely within existing disturbance, or within areas that were previously disturbed during the original construction of the Wolf Creek #9 well pad. A cultural resource inventory has previously been completed for the project area with State Historic Preservation Officer concurrence, which indicated that no resources are present within the Project area. There will be no impact to cultural sites or historic properties as a result of this decision,

A Biological Assessment and Biological Evaluation determined compliance with the Endangered Species Act of 1973. The project will meet requirements in the Forest Plan, and FSM 2672.41 to ensure that Forest Service actions do not contribute to loss of viability of any native or desired non-native plant or animal species, do not cause any species to move toward federal listing; and that concerns for sensitive species have been incorporated throughout the planning process, thus reducing negative impacts to species and enhancing opportunities for proactive conservation.

⁷ <https://www.blackhillsenergy.com/pipeline-projects/upgrades-wolf-creek-storage-field>

The project complies with the Clean Water Act of 1972, as amended. The project is not located in a flood plain, wetland, municipal watershed, or within areas subject to mass soil movement. Direction provided in Forest Service Handbook 2509.22 will be used to ensure consistency with applicable portions of the Clean Water Act for this project.

Administrative Review or Appeal Opportunities

The approved activities within this decision are not subject to appeal in accordance with the Consolidated Appropriations Act of 2014, Pub. L. No. 113-76, 128 Stat. 5 (2014). Section 431 of the Act directs that the 1993 and 2012 legislation establishing the 36 CFR 215 (post-decisional appeals) ... “shall not apply to any project or activity implementing a land and resource management plan...that is categorically excluded...under the National Environmental Policy Act (NEPA).”

Implementation Date

This project will be implemented on or after receiving all required permits. Construction is currently scheduled to begin in the spring of 2019. Implementation under this CE category states that initial drilling must be completed by December 3, 2020.

Contact Person

For additional information concerning this decision, contact Jason Gross, Physical Scientist, Colorado River Valley Field Office, 2300 River Frontage Road, by phone at 970-876-9046 or by email at jrgross@fs.fed.us.



Karen Schroyer
Aspen-Sopris District Ranger

5/17/19

Date

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Figure 1 - Vicinity Map

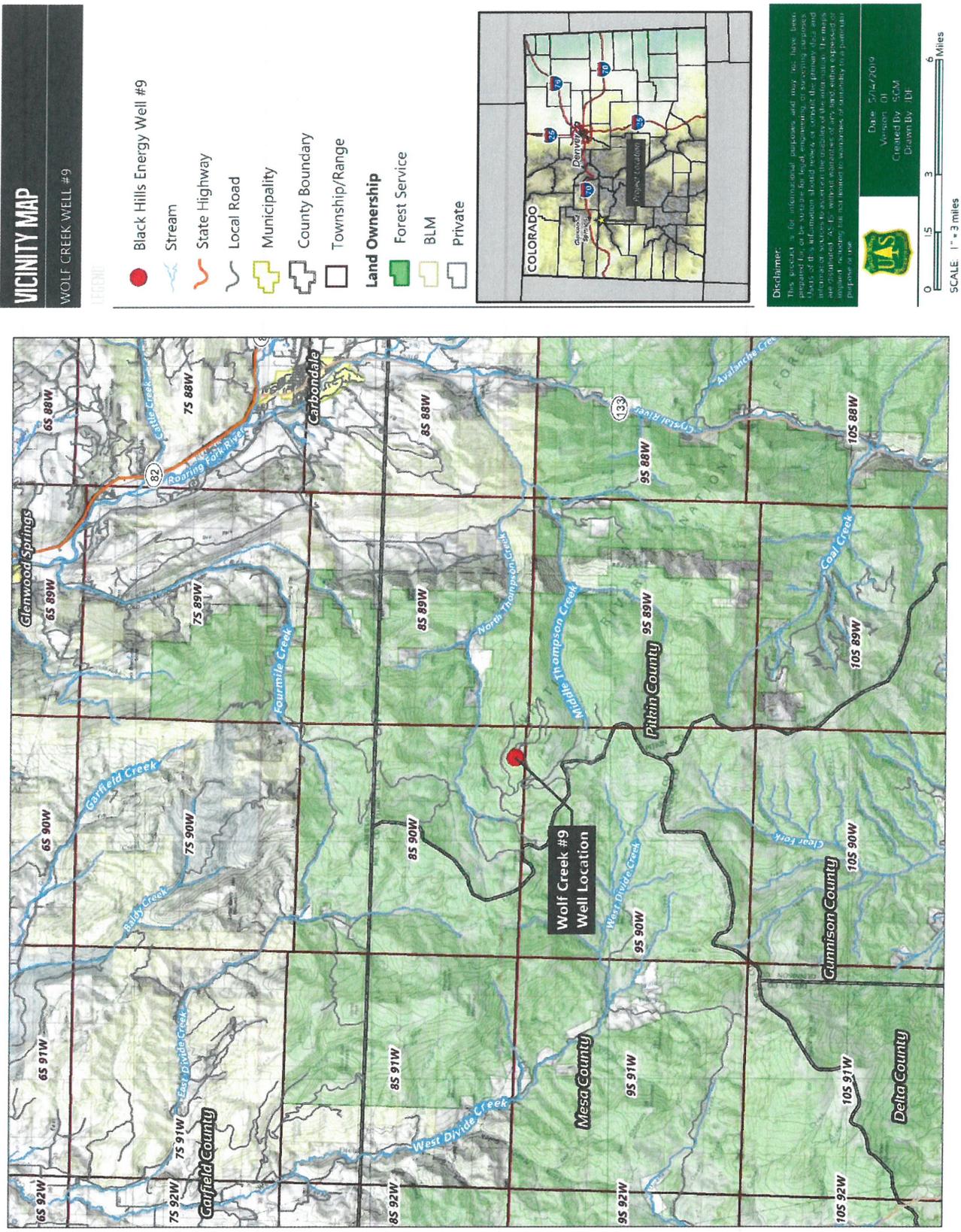
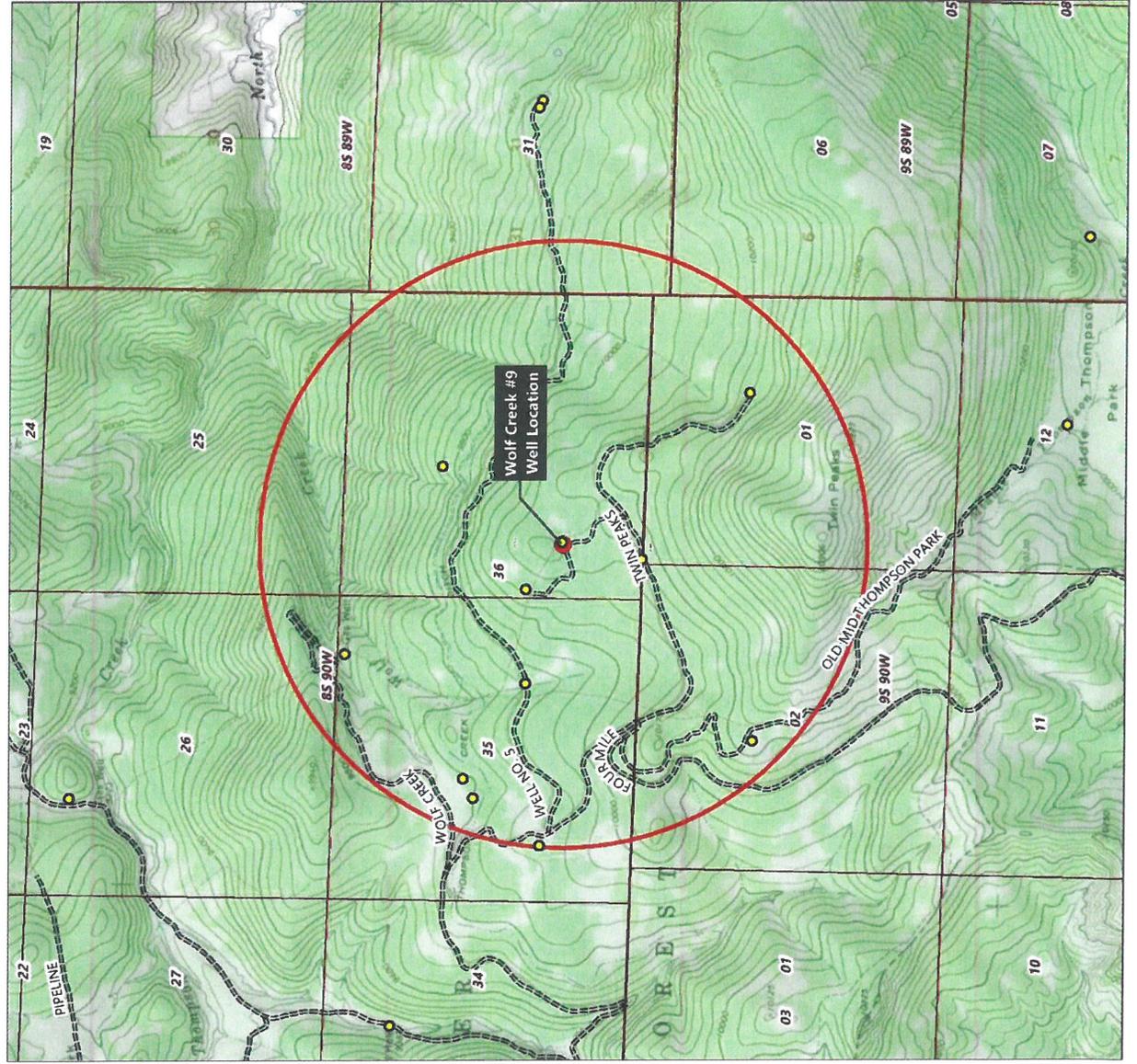


Figure 3 - Existing Well Locations Map



PROJECT LOCATION MAP

Existing Well Locations within 1 mile Radius

LEGEND

- Black Hills Energy Well #9
- Known Well Locations
- 1-mile Radius
- Local Road
- Township/Range
- Land Ownership**
- Forest Service



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Date: 5/14/2010
 Version: 01
 Created By: SCM
 Drawn By: JDF

0 1250 2500 5000 Feet
 SCALE 1" = 2,500 feet

Figure 4 – Well D2 Rig Layout

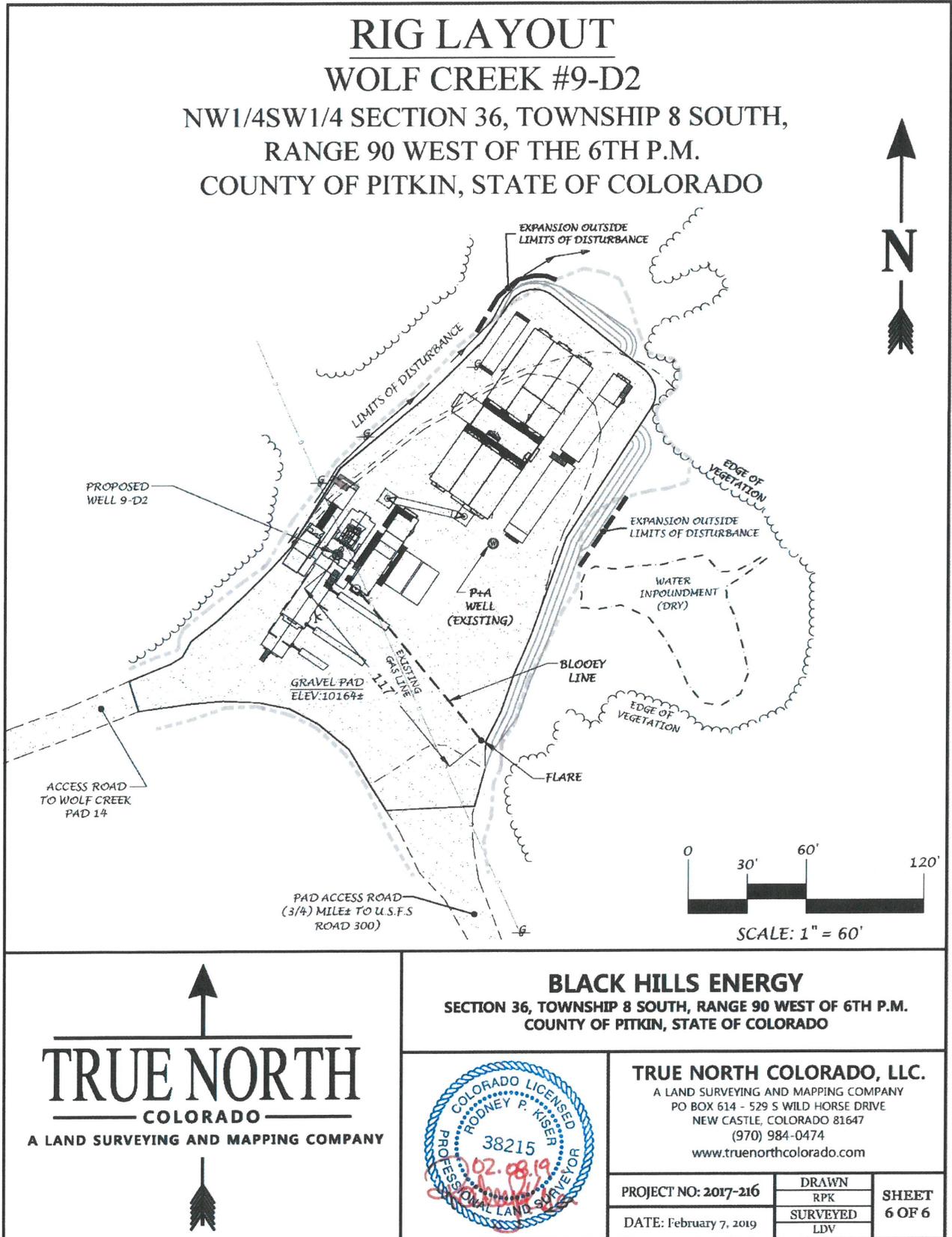
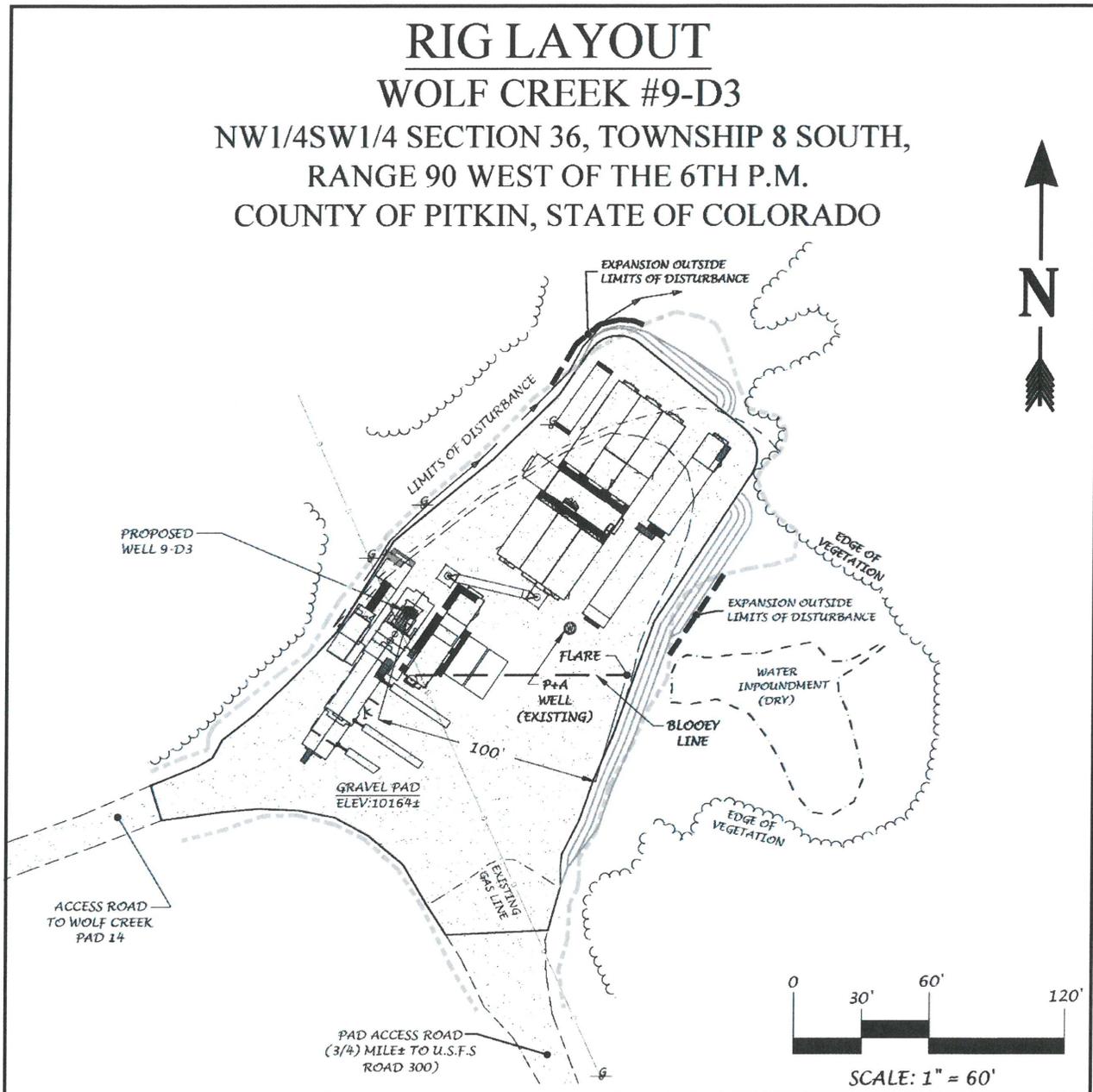


Figure 5 – Well D3 Rig Layout



TRUE NORTH
 COLORADO
 A LAND SURVEYING AND MAPPING COMPANY

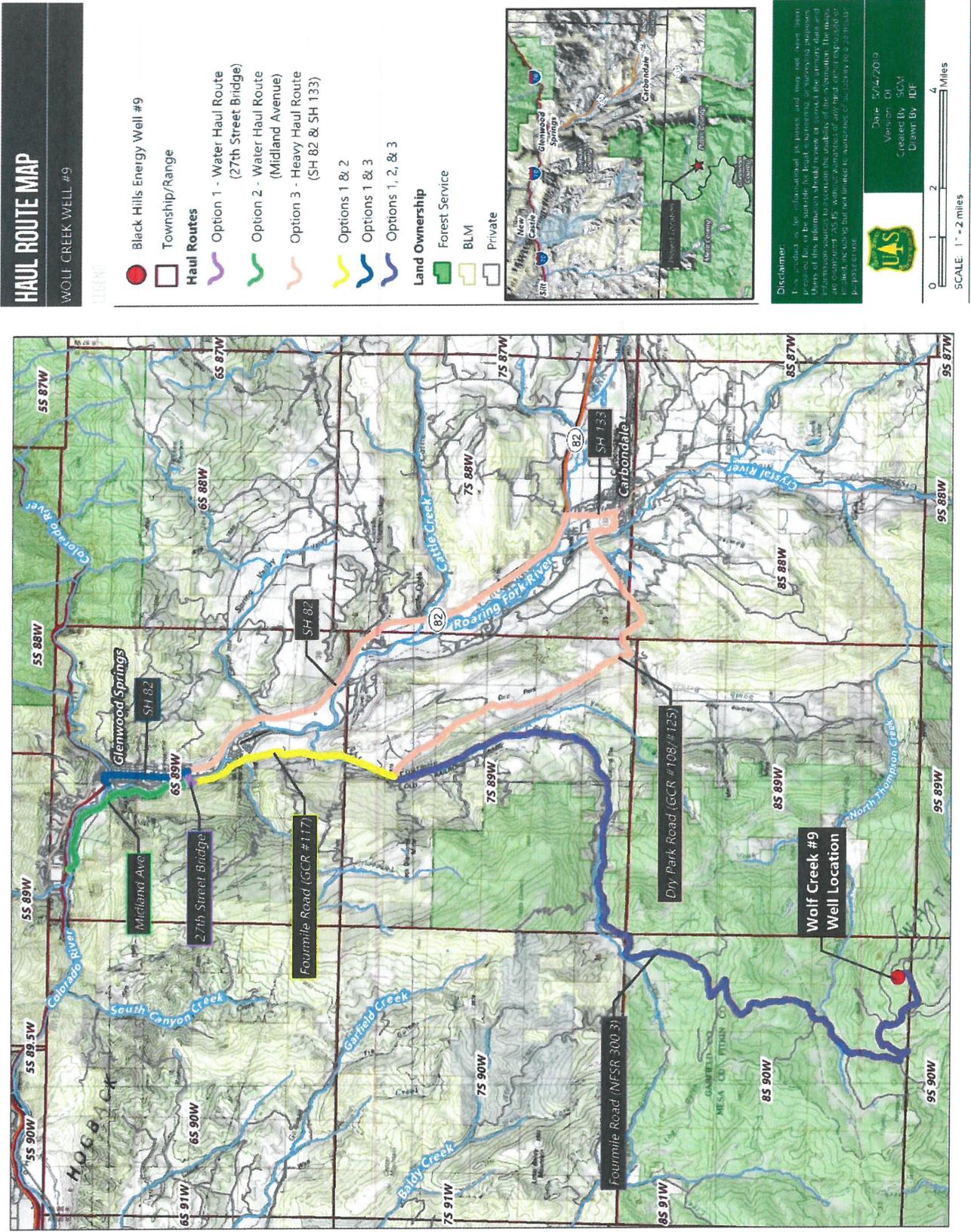
BLACK HILLS ENERGY
 SECTION 36, TOWNSHIP 8 SOUTH, RANGE 90 WEST OF 6TH P.M.
 COUNTY OF PITKIN, STATE OF COLORADO



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PROJECT NO: 2017-216	DRAWN RPK	SHEET 6 OF 6
DATE: February 7, 2019	SURVEYED LDV	

Figure 6 - Haul Route Map



APPENDIX

CONDITIONS OF APPROVAL

Applications for Permit to Drill Two Replacement Injection Wells (WC9-D2 and WC9-D3) Wolf Creek Unit, Pitkin County, Colorado DOI-BLM-CO-N040-2019-0073-SCX3

Surface-Use Conditions of Approval

The following surface-use COAs, developed by the WRNF and reviewed by the BLM-CRVFO, shall be implemented, where applicable and feasible, to reduce impacts from activities associated with the two proposed new injection wells. These COAs are in addition to all stipulations attached to the respective Federal leases and to any site-specific COAs for individual wells, presented following these general COAs. Wording and numbering of these COAs may differ from those included in the Wolf Creek Storage Wells Categorical Exclusion Decision Memo. In cases of discrepancies, the following COAs supersede earlier versions.

1. Administrative Notification. The operator shall notify the US Forest Service representative at least 48 hours prior to initiation of construction. If requested by the US Forest Service representative, the operator shall schedule a pre-construction meeting, including key operator and contractor personnel, to ensure that any unresolved issues are fully addressed prior to initiation of surface-disturbing activities or placement of production facilities. The US Forest Service representative shall notify other users within the project area of upcoming activities.
2. Vehicle Washing. Any construction or operational vehicles traveling between the Project Area and outside areas shall be power-washed off WRNF before entering the Forest to remove noxious weeds.
3. Road Closures. Regularly scheduled seasonal closures to public access on Four Mile Road and NFSR 300 shall be maintained by the Operator during the initial project stages. Gate closures shall be maintained, and signage shall be installed to inform the public.

Use of and being within 500 feet of NFSR 321, and 321.1B will be prohibited to protect public health and safety during commercial natural gas operations associated with natural gas well drilling and well maintenance activities.

4. Staging Area. The area for staging personnel and equipment on NFS lands shall be used during the drilling and completions operations only; and personnel shall not stage there past this time to minimize human presence in the area.
5. Road Maintenance and Dust Abatement. Road maintenance and dust abatement shall be performed as needed and per the current RMNG Road Use Permit (approved February 5, 2019).
 - a. Roads shall be crowned, ditched, surfaced, drained with culverts and/or water dips, and constructed to BLM/US Forest Service Gold Book standards. The operator shall provide timely year-round road maintenance and cleanup on the access roads. A regular schedule for maintenance shall include, but not be limited to, blading, ditch and culvert cleaning, road surface replacement, and dust abatement. When rutting within the traveled way becomes greater than 6 inches, blading and/or gravelling shall be conducted as approved by the US Forest Service. Construction and other activities shall be minimized and avoided when the pad is muddy.
 - b. Per the current Road Use Permit - Appendix D Commensurate Share calculations, approximately 860 tons of aggregate replacement will be accomplished in 2019. This quantity may be deferred until 2020 depending on road and traffic conditions.

Surface Rock Replacement (SRR) quantities for this project shall be calculated based on estimated and actual vehicle type and count (provided by the operator). Replacement shall be accomplished in 2020.

- c. Some SRR and dust abatement applications shall be coordinated with Garfield County Road and Bridge.
 - d. Per the Road Use Permit, an updated 2019 Operations and Maintenance Plan shall be provided by RMNG.
 - e. Per Clause II. A. Annual Operating Plan of the Road Use Permit of the approved Operations and Maintenance Plan includes a Traffic Control Plan (TCP). The TCP will be supplemented with a Temporary Traffic Control Plan/Sign Plan (TTCP) as outlined in the Road Use Permit Supplemental Pages Addition E – as amended. The required communications plan and emergency action plan are included in RMNG’s site-specific Emergency Response Plan.
 - f. The operator shall implement dust abatement measures as needed to prevent fugitive dust from vehicular traffic, equipment operations, or wind events. The US Forest Service may direct the operator to change the level and type of treatment (watering or application of various dust agents, surfactants, and road surfacing material) if dust abatement measures are observed to be insufficient to prevent fugitive dust.
6. Requirement for 5-year Spud Date Timing. The approval of APDs for wells identified in this document was categorically excluded from further NEPA analysis through Section 390 (b)(3) of the Energy Policy Act of 2005. This subsection specifically states for category #3: *“Drilling an oil or gas well within a developed field for which an approved land use plan or any environmental document prepared pursuant to NEPA analyzed such drilling as a reasonably foreseeable activity, as long as such plan or document was approved within 5 years prior to the date of spudding the well.”* If the well has not been spudded by December 3, 2020, this APD will be suspended, and the Operator shall cease all operations related to preparing to drill the well.
 7. Drilling. Closed-loop drilling systems shall be used to avoid using temporary pits on location.
 8. Drill Cuttings Management. Cuttings generated from the planned well bores shall be worked through a shaker system on the drill rig, mixed with a drying agent, if necessary, and transported to an approved commercial disposal facility. All drilling mud/water shall also be hauled off-site to an approved commercial disposal facility.
 9. Excavated Materials/Soils. Any excavated and/or stockpiled material/soils shall not be placed in a natural drainage or where flood hazards exist or surface runoff could leave the site. Any excavated material/soil, including topsoil, shall be stockpiled and used for revegetation of disturbed areas.
 10. Stormwater. Construction and post-construction activities shall adhere to the project’s Stormwater Management Plan (SWMP), which specifies erosion protection and silt retention measures.

Where determined necessary by the US Forest Service, erosion protection and silt retention shall be provided by the construction of silt catchment dams, installation of culverts or drainage dips, placement of surface rock on approaches to stream crossings, and placement of surface rock along road reaches within 100 feet of stream channels.
 11. Water Impoundment. The existing water impoundment on the well pad shall function to capture surface runoff during and after well development activities. Sediment shall be removed from this impoundment after well development activities are complete.
 12. Spills. The RMNG Wolf Creek Storage Field’s compliance with the Spill Prevention, Control, and Countermeasure Plan (SPCC) as set forth by CFR 112, is documented in the July 2018 SPCC Plan. Section 112.8(b) addresses Facility Drainage requirements, which are also included in the July 2018 SPCC Plan for this location.

13. Waste Management. Solid waste management and sanitation cleanup shall occur every day at the site of operations. Generated garbage shall be collected in bear-proof containers approved by the US Forest Service. Trash shall be removed weekly, and the containers shall be removed at the end of the project.

14. Reclamation. Specific measures to follow during interim reclamation are described below.

a. Reclamation Plans. The plan shall contain the following components: detailed reclamation plans, which include contours and indicate irregular rather than smooth contours as appropriate for visual and ecological benefit; timeline for drilling completion, interim reclamation earthwork, and seeding; soil test results and/or a soil profile description; amendments to be used; soil treatment techniques such as roughening, pocking, and terracing; erosion control techniques such as hydromulch, blankets/matting, and wattles; and visual mitigations if in a sensitive area.

b. Deadline for Revegetation. Revegetation of any disturbance shall be determined with the input and direction of the US Forest Service Botanist. Seeding shall be performed following well development activities before permanent snowfall. The Operator shall implement an intensive reclamation and weed control program beginning the first growing season after well completion.

Reclamation, including seeding, of temporarily disturbed areas (e.g., berms) shall be completed within 30 days following completion of construction. Any such area on which construction is completed prior to December 1 shall be seeded during the remainder of the early winter season instead of during the following spring, unless US Forest Service approves otherwise based on weather.

The deadlines for seeding described above are subject to extension upon approval of the US Forest Service based on season, timing limitations, or other constraints on a case-by-case basis. If the US Forest Service approves an extension for seeding, the operator may be required to stabilize the reclaimed surfaces using hydromulch, erosion matting, or other method until seeding is conducted.

c. Notification. If requested by the US Forest Service representative, the operator shall contact the US Forest Service representative by telephone or email approximately 72 hours before reclamation and reseeding begin. This will allow the US Forest Service representative to schedule a pre-reclamation field visit if needed to ensure that all parties are in agreement and provide time for adjustments to the plan before work is initiated.

d. Seedbed Preparation. For cut-and-fill slopes, initial seedbed preparation shall consist of backfilling and recontouring to achieve the configuration specified in the reclamation plan. For compacted areas, initial seedbed preparation shall include ripping to a minimum depth of 18 inches, with a maximum furrow spacing of 2 feet. Where practicable, ripping shall be conducted in two passes at perpendicular directions. Following final contouring, the backfilled or ripped surfaces shall be covered evenly with topsoil.

f. Soil Testing. If directed by the US Forest Service, the operator shall conduct soil testing prior to reseeding to identify if and what type of soil amendments may be required to enhance revegetation success. At a minimum, the soil tests shall include texture, pH, organic matter, sodium adsorption ratio (SAR), cation exchange capacity (CEC), alkalinity/salinity, and basic nutrients (nitrogen, phosphorus, potassium [NPK]). Depending on the outcome of the soil testing, the US Forest Service may require the operator to submit a plan for soil amendment. Any requests to use soil amendments not directed by the US Forest Service shall be submitted to the US Forest Service for approval.

g. Seed Mixes. A seed mix consistent with US Forest Service standards in terms of species and seeding rate for the specific habitat type shall be used on all NFS lands affected by the project (see Attachment 1 of the letter provided to operators dated September 9, 2014).

The seed shall contain no prohibited or restricted noxious weed seeds and shall contain no more than 0.5 percent by weight of other weed seeds. The seed may contain up to 2.0 percent of “other crop” seed by weight, including the seed of other agronomic crops and native plants; however, a lower percentage of other crop seed is recommended. Seed tags or other official documentation shall be submitted to US Forest Service at least 14 days before the date of proposed seeding for acceptance. Seed that does not meet the above criteria shall not be applied to public lands.

- h. Seeding Procedures. Seeding shall be conducted no more than 24 hours following completion of final seedbed preparation.

Where practicable, seed shall be installed by drill-seeding to a depth of 0.25 to 0.5 inch. Where drill-seeding is impracticable, seed may be installed by broadcast-seeding at twice the drill-seeding rate, followed by raking or harrowing to provide 0.25 to 0.5 inch of soil cover or by hydroseeding and hydromulching. Hydroseeding and hydromulching shall be conducted in two separate applications to ensure adequate contact of seeds with the soil.

If revegetation is unsuccessful, the operator shall implement subsequent reseeding until revegetation standards are met.

- i. Mulch. Mulch shall be applied within 24 hours following completion of seeding. Mulch may consist of either hydromulch or of certified weed-free straw or certified weed-free native grass hay crimped into the soil. NOTE: Mulch is not required in areas where erosion potential mandates use of a biodegradable erosion-control blanket (straw matting).
- j. Erosion Control. The pad shall be protected against erosion with the use of water bars or other BMPs approved by the US Forest Service. Additional BMPs such as biodegradable wattles, weed-free straw bales, or silt fences shall be employed as necessary to reduce transport of sediments into the drainages. The US Forest Service may, in areas with high erosion potential, require the use of hydromulch or biodegradable blankets/matting to ensure adequate protection from slope erosion and offsite transport of sediments and to improve reclamation success.
- k. Site Protection. The pad may be fenced to US Forest Service standards to exclude livestock grazing for the first two growing seasons or until seeded species are firmly established, whichever comes later. The seeded species will be considered firmly established when at least 50 percent of the new plants are producing seed. The US Forest Service will approve the type of fencing.
- l. Monitoring. The Operator shall conduct annual monitoring surveys of the site categorized as “operator reclamation in progress” and shall submit an annual monitoring report of the site, including a description of the monitoring methods used, to the US Forest Service by **December 31** of each year. The annual monitoring report shall document whether attainment of reclamation objectives appears likely. If one or more objectives appear unlikely to be achieved, the report shall identify appropriate corrective actions. Upon review and approval of the report by the US Forest Service, the operator shall be responsible for implementing the corrective actions or other measures specified by the US Forest Service.
15. Weed Control. The operator shall regularly monitor and promptly control noxious weeds or other undesirable plant species as set forth in the Glenwood Springs Field Office *Noxious and Invasive Weed Management Plan for Oil and Gas Operators*, dated March 2007. A Pesticide Use Proposal (PUP) must be approved by the US Forest Service prior to the use of herbicides. Annual weed monitoring reports and Pesticide Application Records (PARs), including GPS data in accordance with the February 27, 2014, letter to Operators, shall be submitted to US Forest Service by **December 1**.
16. Bald and Golden Eagles. It shall be the responsibility of the operator to comply with the Bald and Golden Eagle Protection Act (Eagle Act) with respect to “take” of either eagle species. Under the Eagle Act, “take” includes to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, and disturb. “Disturb” means to agitate or bother a bald or golden eagle to a degree that

causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle; (2) a decrease in its productivity by substantially interfering with normal breeding, feeding, or sheltering behavior; or (3) nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior. Avoidance of eagle nest sites, particularly during the nesting season, is the primary and preferred method to avoid a take. Any oil or gas construction, drilling, or completion activities planned within 0.5 mile of a bald or golden eagle nest, or other associated activities greater than 0.5 miles from a nest that may disturb eagles, should be coordinated with the US Forest Service project lead, US Forest Service wildlife biologist, and the USFWS representative to the BLM Field Office at 970-243-2778 x28.

17. Raptor Nesting. To protect nesting raptors, a survey shall be conducted prior to construction, drilling, or completion activities that are to begin during the raptor nesting season (February 1 to August 15). The survey shall include all potential nesting habitat within specified buffer distances (0.25 mile or 0.5 mile, depending on the species) of a well pad, access road, pipeline, or other surface facility. Results of the survey shall be submitted to the US Forest Service. If a raptor nest is located within the buffer widths specified above, a 60-day raptor nesting TL will be applied by the US Forest Service to preclude initiation of construction, drilling, and completion activities. The operator is responsible for complying with the Migratory Bird Treaty Act (MBTA), which prohibits the “take” of birds or of active nests (those containing eggs or young), including nest failure caused by human activity (see COA for Migratory Birds).

NOTE: Surveys for the boreal owl, flammulated owl, goshawk, and other nesting raptors should be carried out in all areas within ½ mile of the proposed location to document potential impacts and potential measures to reduce impacts.

In the vicinity of the well pad, any individual tree that may be cut shall be checked for nesting birds prior to cutting. If nesting birds are present, the tree(s) shall not be cut until the young birds have fledged.

18. Migratory Birds – General. It shall be the responsibility of the Operator to comply with the MBTA with respect to “take” of migratory bird species, which includes injury and direct mortality resulting from human actions not intended to have such result. To minimize the potential for the take of a migratory bird, the Operator shall take reasonable steps to prevent use by birds of fluid-containing tanks, cellars, or other container associated with well development. Liquids in tanks, cellars, or other container—whether placed or accumulating from precipitation—may pose a risk to birds as a result of ingestion, absorption through the skin, or interference with buoyancy and temperature regulation.

In addition, oil slicks and oil sheens shall be promptly skimmed off the fluid surface. All mortality or injury to birds shall be reported immediately to the US Forest Service project lead and to the USFWS representative to the BLM Field Office at 970-243-2778 x28 and visit <http://www.fws.gov/mountain-prairie/contaminants/oilpits.htm>.

19. Cones/Grates (Exhaust Stacks). The Operator shall equip all exhaust stacks on operation equipment with screens to keep out bats and nesting birds, which could include US Forest Service Sensitive species.
20. Escape Ramps (Open Cellars and Tanks). The Operator shall construct and maintain cellars and open-top tanks to exclude livestock, wildlife, and humans (except authorized personnel) and, in the event of inadvertent entry, to escape from these areas. At a minimum, the Operator shall construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape from each cellar and open-top tank. Ramps shall be secured and properly positioned to allow wildlife to escape.
21. Range Management. Range improvements (fences, gates, reservoirs, pipelines, etc.) shall be avoided during development of natural gas resources to the maximum extent possible. If range improvements are damaged during development, the Operator shall be responsible for repairing or replacing the

damaged range improvements. If a new or improved access road bisects an existing livestock fence, a steel frame gate(s) or a cattleguard with associated bypass gate shall be installed across the roadway to control grazing livestock.

22. Cultural Education/Discovery. All persons in the area who are associated with this project shall be informed that if anyone is found disturbing historic, archaeological, or scientific resources, including collecting artifacts, the person or persons shall be subject to prosecution.

If subsurface cultural values are uncovered during operations, all work in proximity to the resource shall cease and the Authorized Officer with the US Forest Service notified immediately. The operator shall take any additional measures requested by the US Forest Service to protect discoveries until they can be adequately evaluated by the permitted archaeologist. Within 48 hours of the discovery, the State Historic Preservation Office (SHPO) and consulting parties will be notified of the discovery and consultation will begin to determine an appropriate mitigation measure. The US Forest Service, in cooperation with the operator, will ensure that the discovery is protected from further disturbance until mitigation is completed. Operations may resume at the discovery site upon receipt of written instructions and authorization by the authorized officer.

Pursuant to 43 CFR 10.4(g), the Operator shall notify the authorized officer, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony on Federal land. Further, pursuant to 43 CFR 10.4 (c) and (d), the Operator shall stop activities in proximity to the discovery that could adversely affect the discovery. The Operator shall make a reasonable effort to protect the human remains, funerary items, sacred objects, or objects of cultural patrimony for a period of thirty days after written notice is provided to the authorized officer, or until the authorized officer has issued a written notice to proceed, whichever occurs first.

Antiquities, historic ruins, prehistoric ruins, and other cultural or paleontological objects of scientific interest that are outside the authorization boundaries but potentially affected, either directly or indirectly, by the project shall also be included in this evaluation or mitigation. Impacts that occur to such resources as a result of the authorized activities shall be mitigated at the operator's cost, including the cost of consultation with Native American groups.

Any person who, without a permit, injures, destroys, excavates, appropriates or removes any historic or prehistoric ruin, artifact, object of antiquity, Native American remains, Native American cultural item, or archaeological resources on public lands is subject to arrest and penalty of law (16 USC 433, 16 USC 470, 18 USC 641, 18 USC 1170, and 18 USC 1361).

23. Visual Resources. Production facilities shall be placed to avoid or minimize visibility from travel corridors, and other sensitive observation points—unless directed otherwise by the US Forest Service due to other resource concerns.

All permanent surface equipment shall use the same architectural design. Aboveground facilities shall be painted a natural color selected to minimize contrast with adjacent vegetation or rock outcrops. If the facility is located in an area with Spruce and Fir as the dominant species adjacent to the structures, Federal Color 34052 shall be used. If the facility is located in an area with Aspen and Oak as the dominant species adjacent to the structures, Federal Color 34095 shall be used.

24. Noise Abatement for Generators and Pumps. US Forest Service's objective for noise abatement is to reduce noise impacts to the existing solitude that is typical on US Forest Service-leased lands, and particularly to reduce impacts that could have an adverse impact on wildlife.

Noise control techniques to be considered for such production-related equipment shall include, but not be limited to, enclosure within a sound-insulated structure, installation of an improved muffler system, some combination of these, or potentially the use of electrical power. Methods for safe ventilation of sound-insulated buildings shall be a key consideration in building design to avoid open

doors or windows that defeat the intended noise controls. Any noise-abating structure shall use the same US Forest Service-approved color as used on other production facilities on the pad.

If the US Forest Service determines that noise from operations is excessive, the Operator may be required to suspend use of the generator/pump or implement additional noise abatement measures.

25. Fire Prevention: The Operator shall take measures to prevent and suppress fire in the project area and adjacent lands used or traversed in connection with operations. The Operator is responsible for ensuring that prevention, detection, pre-suppression, and suppression activities are conducted in accordance with Federal laws and regulations. The Operator shall provide all necessary firefighting tools and equipment at the project site and shall maintain the tools and equipment in a serviceable condition and readily accessible for use in fire suppression. The Operator shall take such additional fire prevention and suppression measures as may be required by the US Forest Service authorized officer based on weather or other conditions affecting fire incidence and control.
26. Hydraulic Fracturing: Effects of hydraulic fracturing were not analyzed for the Wolf Creek Storage Wells Project. Therefore, hydraulic fracturing is not authorized. If hydraulic fracturing is deemed necessary at a later date, additional analysis will be required.
27. Remote Telemetry. To minimize additional human presence and ensure safety, the Operator shall use remote telemetry to monitor the wells and associated infrastructure.
28. Dogs. No dogs shall be allowed on-site or in vehicles traveling between the Project Area and outside areas. The Operator shall be responsible for ensuring all personnel abide by this requirement, including subcontractors and delivery vendors.
29. Firearms. Project employees shall be prohibited from carrying firearms.