

U.S. Department of the Interior
Bureau of Land Management
Colorado River Valley Field Office
2300 River Frontage Road
Silt, Colorado 81652

Section 390 Categorical Exclusions for Oil and Gas Development, Exclusion No. 3

NEPA LOG NUMBER: DOI-BLM-CO-N040-2014-0060-CX (390)

A. Background

BUREAU OF LAND MANAGEMENT (BLM) OFFICE: Colorado River Valley Field Office (CRVFO)

CASEFILE/PROJECT NUMBER: Federal Lease COC36219 (bottomholes)

PROPOSED ACTION TITLE/TYPE: Proposal to Drill Three Additional Federal Wells (13 Federal Wells total) from the Proposed SG 23-22 Pad Located on Private Land Southwest of Parachute, Garfield County, Colorado, Authorized by Application for Permit to Drill (APD).

APPLICANT: WPX Energy Rocky Mountain LLC

LOCATION OF THE PROPOSED ACTION: Township 7 South (T7S), Range 96 West (R96W), Section 22, Lots 8 and 11, SW $\frac{1}{4}$ SE $\frac{1}{4}$, E $\frac{1}{2}$ SE $\frac{1}{4}$, Sixth Principal Meridian. Elevation across the project ranges from 5,250 to 5,680 feet above mean sea level (MSL). The proposed pad lies approximately 7 miles southwest of Parachute, Colorado, and is accessed by the field development road north of Interstate 70.

DESCRIPTION OF PROPOSED ACTION: In 2013, WPX Energy Rocky Mountain LLC (“WPX”) proposed to drill and develop 10 new Federal oil and gas wells from the proposed SG 23-22 well pad located on private land (Figure 1). BLM approved the Applications for Permit to Drill (APD) for these Federal wells in a November 4, 2013, decision based on the analysis provided in the Lower Kelly Gulch Environmental Assessment (EA) # DOI-BLM-CO-N040-2013-0106-EA. This SCX identifies three additional Federal wells to be drilled on the proposed SG 23-22 pad: Bosely SG 23-22, Bosely SG 323-22, and Bosely SG 423-22 wells. The new SG 23-22 access road, pipeline and pad construction are scheduled for summer 2014 with drilling and completion work to follow in fall 2014.

The proposed SG 23-22 pad, supporting 19 new wells with 3 additional Federal bottomholes (totaling 13 Federal wells), would be constructed on a ridge east of the SG 24-22 pad overlooking the Kelly Gulch drainage, I-70, and the Colorado River. The pad is located directly south of the site of a Mountain Bell telephone phone repeater abandoned in the 1990s and accessed by a steep, winding road.

Building the SG 23-22 pad would create a new disturbance footprint of 5.13 acres with a maximum cut of 23.8 feet at the northwest corner and a maximum fill of 22.4 feet at the southwest corner (Figure 2). Drill cuttings would be managed and stored against the northwest corner cutslope of the pad; any excess cuttings would be hauled and stored at the SG Cuttings Trench. Production facilities (separators and storage tanks) would be staged along the northern side of the pad.

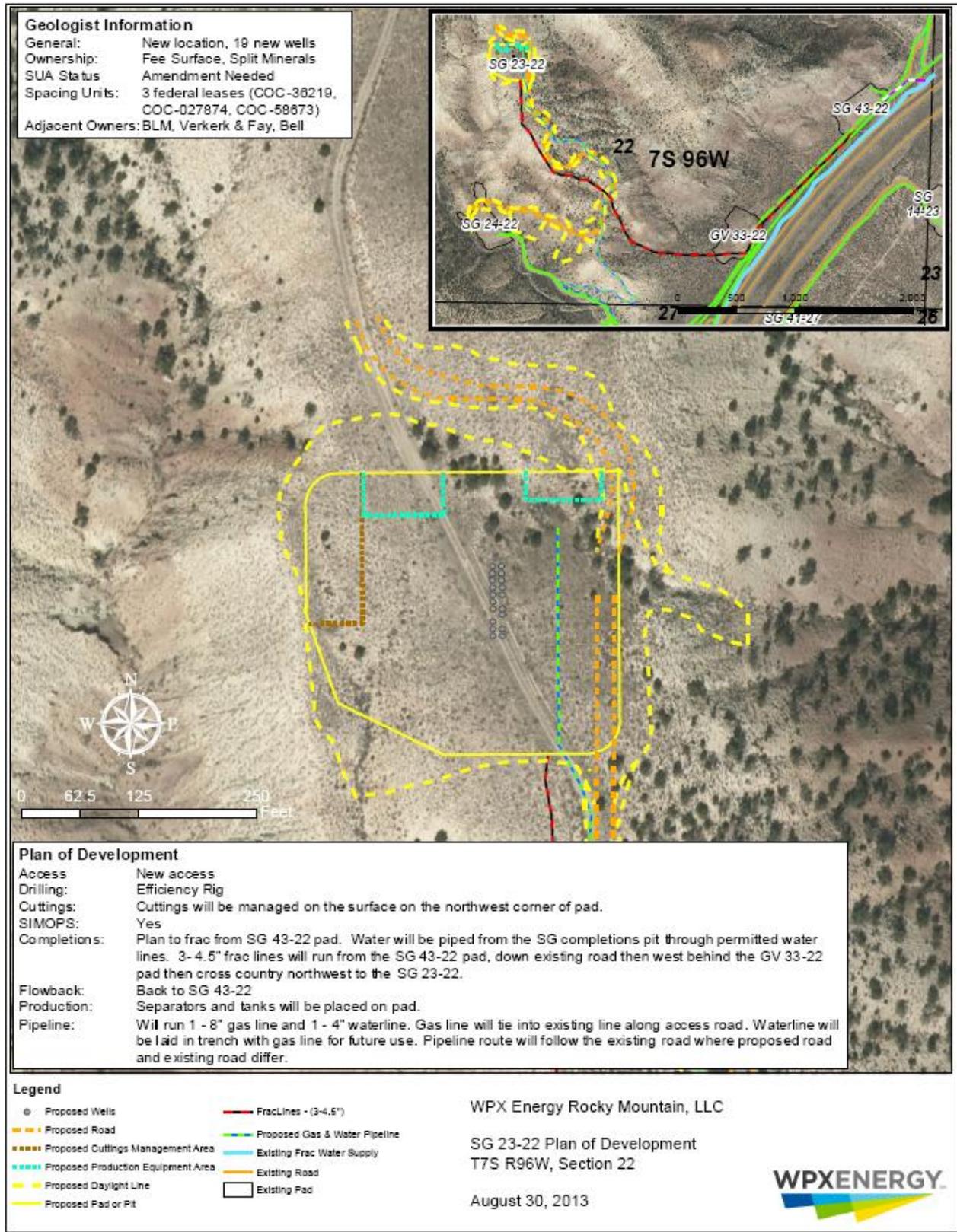


Figure 1. SG 23-22 Plan of Development

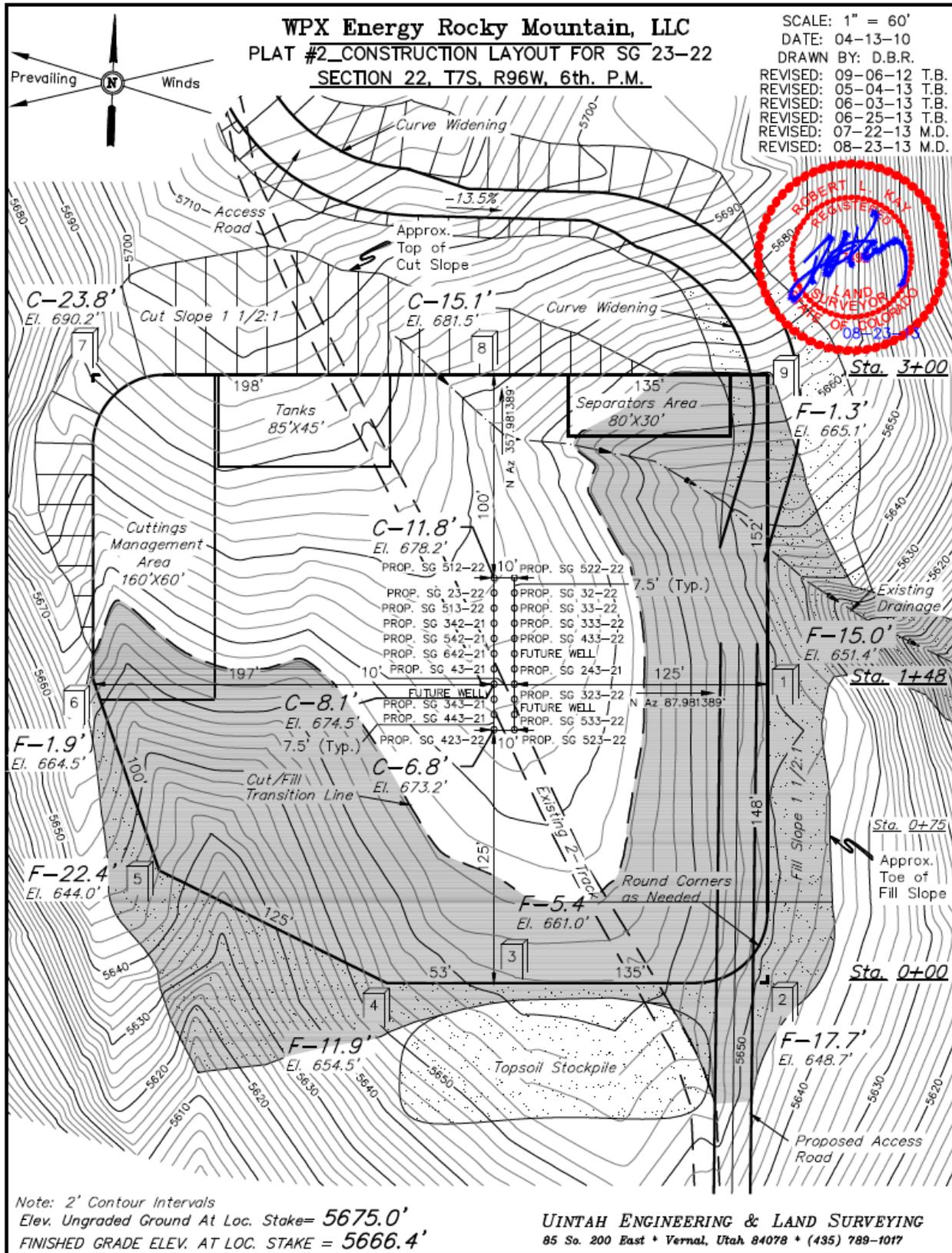


Figure 2. SG 23-22 Pad Construction Layout.

The new access road serving the SG 23-22 pad would be constructed with a length of 3,467 feet and a finished roadway width of 25 feet (which includes two 4-foot ditches on either side) creating 6.33 acres of new disturbance and 2.12 acres of long-term disturbance. The running surface (covering 1.48 acres) would be graveled for its entire length with minimum 6-inch depth of surfacing. The SG 23-22 road design package would be incorporated by reference into the project APDs. An additional 450-foot segment of new road (disturbing 0.92 acres of which 0.26 acres would remain long-term) would also be built from the northeast pad corner west across the SG 23-22 pad cutslope to connect with the existing old road north of the pad that served the phone repeater. Total interim disturbance related to SG 23-22 road construction would amount to 7.25 acres with long-term allotment of 2.38 acres (Figure 1 and Table 1).

Table 1. Project Surface Disturbance (initial & long-term acres)	
<i>New Initial Disturbance</i>	<i>SG 23-22 Pad</i>
New Pad	5.13
New Road	7.25 ¹
New Gas Pipeline (within New Road Corridor) ²	<i>Inclusive within 7.25Acres²</i>
<i>Existing Initial Redisturbance</i>	<i>SG 23-22 Pad</i>
New Gas Pipeline (Within Existing Road)	2.58
Initial Disturbance TOTAL	14.96
<i>Long-Term Disturbance</i>	<i>SG 23-22 Pad</i>
Working Area of Pad	1.35
Road Running Surface including ditches/turnouts	2.38
Long-Term Disturbance TOTAL	3.73
¹ Includes estimate of 6.33 acres for main SG 23-22 road and 0.92 acres for 450-foot road connection north of SG 23-22 pad.	
² Segments of new gas pipeline buried within the new SG 23-22 road corridor are included in new road disturbance estimate.	

The proposed 8-inch diameter welded steel gas gathering pipeline serving the SG 23-22 pad would be buried within the old repeater access road for the majority of its run. Of the total pipeline length of 3,806 feet, about 3,207 feet would be installed within the old roadway and about 599 feet would be buried across or within the new access road. The disturbance associated with the placement of the gas line along the existing repeater access road would amount to 2.58 acres of existing disturbance using an average 35-foot swath of disturbance to bury the line and reclaim the old road. The short segments of the gas line buried across or within the new road corridor would be considered new disturbance and are include within the disturbance estimate for the new road work. After the pipeline installation is complete, the reclamation earthwork would essentially obliterate the cuts and fills related to the old roadway (Figure 1).

Completions for the SG 23-22 wells would be conducted remotely from the SG 43-22 pad, which also serves as the remote frac base for the ongoing drilling operations on the SG 42-22 pad. Three 4½-inch diameter welded steel surface lines would be temporarily laid in a cross-country alignment from the GV 33-22 pad north up the ridge line to the SG 23-22 pad. The lines would be laid along the existing road between the SG 43-22 and GV 33-22 pads (Figure 1). The total length of the steel high-pressure lines would be 4,200 feet. These remote operations would eliminate the need for completions equipment and

traffic to negotiate the new road to the SG 23-22 pad. The water source for the completions operations would come from WPX's existing Smith Gulch 31-32-796 Water Storage Facility (previously analyzed in the SG 43-28 Drilling Project, EA # DOI-BLM-CO-N040-2013-0053-EA and constructed in 2013). A 10-inch poly surface water supply line (with length of 415 feet) would provide recycled water for the frac operations on the SG 43-22 pad and return frac flowback fluids via the existing dual 14-inch water line system to the Smith Gulch water storage facility.

For the construction, drilling and completion work on this pad, the short-term disturbance would amount to 14.96 acres. After reclamation of the planned work, the long-term disturbance footprint would be 1.35 acres for the pad working area and 2.38 acres for the access roads below and above the SG 23-22 pad (including ditches and turnouts) for a total long-term impact of 3.73 acres (Table 1).

Cuttings generated during the well drilling would be dried with shaker systems installed on the drill rig, mixed with inorganic materials to aid in the drying, and piled within the cuttings management area in the northwest corner of the SG 23-22 pad. Excess cuttings that could not be stored on the pad would be hauled periodically in dump trucks to the existing SG Cuttings Trench located on WPX property in T7S R96W Section 32, SE $\frac{1}{4}$ NW $\frac{1}{4}$, Sixth P.M. Any drill cuttings transported to the SG Cuttings Trench would be tested at the cuttings trench in a holding area that segregates the SG 23-22 well cuttings from other cuttings piles. Once testing results show the cuttings satisfy Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 standards, they would be moved and stored in a disposal cell at the SG Cuttings Trench. After the cell is filled with cuttings, they would be covered with a minimum 3-foot deep cap of overburden and the surface reclaimed.

Resource surveys for wildlife, noxious weeds and invasive plants were completed for this project in May 2013. Two cultural resource inventories have been conducted (2005 and 2010) with no findings of significance. The COAs identified in the original EA for the SG 23-22 project shall be included in the APD for this additional well.

B. Land Use Plan Conformance

Land Use Plan (LUP) Name: The current land use plan is the *Glenwood Springs Resource Management Plan (RMP)* (BLM 1984, revised 1988). Relevant amendments include the *Oil and Gas Plan Amendment to the Glenwood Springs Resource Management Plan* (BLM 1991) and the *Oil & Gas Leasing & Development Record of Decision and Resource Management Plan Amendment* (BLM 1999).

Date Approved/Amended: *Oil and Gas Plan Amendment to the Glenwood Springs Resource Management Plan* (BLM 1991) – approved November 27, 1991; *Oil & Gas Leasing & Development Record of Decision and Resource Management Plan Amendment* (BLM 1999) – approved March 24, 1999.

Determination of Conformance: The 1991 Oil and Gas Plan Amendment (BLM 1991) included the following at page 3: “697,720 acres of BLM-administered mineral estate within the Glenwood Springs Resource Area are open to oil and gas leasing and development, subject to lease terms and (as applicable) lease stipulations” (BLM 1991, page 3). This decision was carried forward unchanged in the 1999 ROD and RMP amendment at page 15 (BLM 1999b): “In areas being actively developed, the operator must submit a Geographic Area Proposal (GAP) [currently referred to as a Master Development Plan, MDP] that describes a minimum of 2 to 3 years of activity for operator controlled leases within a reasonable geographic area.”

The Proposed Action is in conformance with the 1991 and 1999 RMP amendments cited above because the Federal mineral estate proposed for development is open to oil and gas leasing and development, and Federal oil and gas lease COC36219 was duly leased pursuant thereto. The current project meets GAP exception criteria in the 1999 RMP Amendments based on its location entirely on private land and its location in proximity to existing pads, access roads and pipeline corridors. Therefore, the Proposed Action is in conformance with the current land use plan.

C. Compliance with NEPA

Consistency with CX Category #3 (Table 2): “Drilling an oil and 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.”

Table 2. Project Screening Questions		
1. Does the proposed drilling take place within a developed field?	<u>Yes</u>	No
2. Was the proposed drilling adequately analyzed as a reasonably foreseeable activity in an existing activity-level or project-specific National Environmental Policy Act (NEPA) document for a developed field?	<u>Yes</u>	No
3. Was the decision based on the NEPA document made within the last 5 years?	<u>Yes</u>	No

Persons and/or Agencies Consulted: WPX: April Mestas, Kris Meil, Adam Tankersley, Justin Hall

Interdisciplinary Review: BLM staff from the CRVFO listed in Table 3 participated in the preparation of this Section 390 CX, including review of resource survey results submitted by the Operator’s consultants, evaluation of impacts likely to occur from implementation of the proposed action, and identification of appropriate COAs.

MITIGATION: Conditions of Approval to be attached to the Applications for Permit to Drill for the Bosely SG 23-22, Bosely SG 323-22, and Bosely SG 423-22 wells on the proposed SG 23-22 pad are listed in the attachment to this Section 390 CX.

Table 3. BLM Interdisciplinary Team Authors and Reviewers		
<i>Name</i>	<i>Title</i>	<i>Areas of Participation</i>
John Brogan	Archaeologist	Cultural Resources, Native American Religious Concerns
Jim Byers	Natural Resource Specialist	EA Project Lead, Access & Transportation, Socioeconomics, Wastes-Hazardous or Solid,
Allen Crockett, Ph.D., J.D.	Supervisory NRS	NEPA Review
Shauna Kocman, Ph.D., P.E.	Hydrologist	Air Quality, Noise, Soils, Surface Water, Waters of the U.S.
Julie McGrew	Natural Resource Specialist	Visual Resources
Judy Perkins, Ph.D.	Botanist	Invasive Non-native Species, Special-status Species (Plants), Vegetation
Sylvia Ringer	Wildlife Biologist	Migratory Birds, Special-status Species (Animals), Wildlife, Aquatic and Terrestrial

Name of Preparer: Jim Byers, Natural Resource Specialist

Date Prepared: March 31, 2014

D. Implementation Date

The following is a COA for this project: The approval of this permit was categorically exempt from the requirements of NEPA through Section 390 (b)(3) of the Energy Policy Act of 2005, which states:

Drilling an oil and 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.

If the proposed well has not been spudded by **November 4, 2018**, this APD Drill will expire and the operator is to cease all operations related to preparing to drill the well.

E. Signature

The Proposed Action is statutorily categorically excluded from further NEPA documentation in accordance with Section 390 (b)(3) of the Energy Policy Act of 2005, which provides for exclusion of:

Drilling an oil and 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.

Authorizing Official: Allen Crockett Date: April 4, 2014

F. Decision and Rationale for Action

I have decided to approve the drilling of the Bosely SG 23-22, Bosely SG 323-22, and Bosely SG 423-22 wells on the proposed SG 23-22 pad with the stipulations and conditions of approval identified in Attachment A of this form. The stipulations and COAs are required by this decision, and variance from these stipulations and COAs during project implementation may require further NEPA review.

I have reviewed Section B, Land Use Plan Conformance, and Section C, Compliance with NEPA, and have determined that the proposed activity is in conformance with the applicable land use plan(s) and referenced NEPA documents. I have also evaluated the proposal to ensure the appropriate exclusion category as described in Section 390 of the Energy Policy Act of 2005 has been correctly applied. I have determined, that no further environmental analysis is required.

Allen Crockett
Allen Crockett, Ph.D.
Supervisory Natural Resource Specialist

April 4, 2014
Date

G. Administrative Review or Appeal Opportunities

Applications for Permit to Drill and Sundry Notices

Under BLM regulations addressed in 43 CFR 3165, a decision to approve the Application for Permit to Drill is subject to appeal and administrative review. An administrative review must be conducted in accordance with 43 CFR 3165.3 and must take place prior to pursuing an appeal to the Interior Board of Land Appeals.

Any adversely affected party may request an administrative review, before the State Director, either with or without oral presentation. Such a request must include information required under 43 CFR 3165.3(b), State Director Review (SDR), including all supporting documentation. Such a request must be filed in writing with the BLM Colorado State Office, 2850 Youngfield Street, Lakewood, Colorado 80215 within 20 business days from the date the decision is received or considered to have been received. Upon request and showing of good cause, an extension for submitting supporting/additional data may be granted by the State Director.

Any party who is adversely affected by the State Director's decision may appeal that decision to the Interior Board of Land Appeals in accordance with 43 CFR 3165.4.

**SURFACE-USE CONDITIONS OF APPROVAL
DOI-BLM-CO-N040-2014-0060-CX(390)**

GENERAL SURFACE-USE COAS

The following surface-use COAs shall be implemented, where applicable and feasible, to reduce impacts from project activities. Site-specific surface-use COAs and downhole COAs follow these general COAs.

1. **Administrative Notification.** The operator shall notify the BLM representative at least 48 hours prior to initiation of construction. If requested by the BLM 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. No construction activities shall commence without staking of pad construction limits, pad corners, and road/pipeline centerlines and disturbance corridors.
2. **Road Construction and Road Maintenance.** Roads shall be crowned, ditched, surfaced, drained with culverts and/or water dips, and constructed to BLM Gold Book standards. Initial gravel application shall be a minimum of 6 inches. 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 BLM.
3. **Drill Cuttings Management.** Cuttings generated from the numerous planned well bores shall be worked through a shaker system on the drill rig, mixed with a drying agent, if necessary, and deposited in the planned cuttings trench or piled on location against the cut slope for later burial during the interim reclamation earthwork. The cuttings shall be remediated per COGCC regulations (Table 1010-1 standards) prior to earthwork reshaping related to well pad interim reclamation.
4. **Dust Abatement.** The operator shall implement dust abatement measures as needed to prevent fugitive dust from vehicular traffic, equipment operations, or wind events. The BLM 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.
5. **Drainage Crossings and Culverts.** Construction activities at perennial, intermittent, and ephemeral drainage crossings (e.g. burying pipelines, installing culverts) shall be timed to avoid high flow conditions. Construction that disturbs any flowing stream shall utilize either a piped stream diversion or a cofferdam and pump to divert flow around the disturbed area.

Culverts at drainage crossings shall be designed and installed to pass a 25-year or greater storm event. On perennial and intermittent streams, culverts shall be designed to allow for passage of aquatic biota. The minimum culvert diameter in any installation for a drainage crossing or road drainage shall be 24 inches. Crossings of drainages deemed to be jurisdictional Waters of the U.S. pursuant to Section 404 of the Clean Water Act may require additional culvert design capacity. Due to the flashy nature of area drainages and anticipated culvert maintenance, the U.S. Army Corps of Engineers (USACE) recommends designing drainage crossings for the 100-year event. Contact the USACE Colorado West Regulatory Branch at 970-243-1199 ext. 17.

Pipelines installed beneath stream crossings shall be buried at a minimum depth of 4 feet below the channel substrate to avoid exposure by channel scour and degradation. Following burial, the channel grade and substrate composition shall be returned to pre-construction conditions.

6. Jurisdictional Waters of the U.S. The operator shall obtain appropriate permits from the U.S. Army Corps of Engineers (USACE) prior to discharging fill material into Waters of the U.S. in accordance with Section 404 of the Clean Water Act. Waters of the U.S. are defined in 33 CFR Section 328.3 and may include wetlands as well as perennial, intermittent, and ephemeral streams. Permanent impacts to Waters of the U.S. may require mitigation. Contact the USACE Colorado West Regulatory Branch at 970-243-1199 ext. 17. Copies of any printed or emailed approved USACE permits or verification letters shall be forwarded to the BLM.
7. Reclamation. The goals, objectives, timelines, measures, and monitoring methods for final reclamation of oil and gas disturbances are described in Appendix I (Surface Reclamation) of the 1998 Draft Supplemental EIS (DSEIS). Specific measures to follow during interim reclamation are described below.
 - a. Reclamation Plans. In areas that have low reclamation potential or are especially challenging to restore, reclamation plans will be required prior to APD approval. 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 VRM area.
 - b. Deadline for Interim Reclamation Earthwork and Seeding. Interim reclamation to reduce a well pad to the maximum size needed for production, including earthwork and seeding of the interim reclaimed areas, shall be completed within 6 months following completion of the last well planned to be drilled on that pad as part of a continuous operation. If a period of greater than one year is expected to occur between drilling episodes, BLM may require implementation of all or part of the interim reclamation program.

Reclamation, including seeding, of temporarily disturbed areas along roads and pipelines, and of topsoil piles and 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 BLM approves otherwise based on weather. If road or pipeline construction occurs discontinuously (e.g., new segments installed as new pads are built) or continuously but with a total duration greater than 30 days, reclamation, including seeding, shall be phased such that no portion of the temporarily disturbed area remains in an unreclaimed condition for longer than 30 days. BLM may authorize deviation from this requirement based on the season and the amount of work remaining on the entirety of the road or pipeline when the 30-day period has expired.

If requested by the project lead NRS for a specific pad or group of pads, the operator shall contact the NRS by telephone or email approximately 72 hours before reclamation and reseeding begin. This will allow the NRS 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.

The deadlines for seeding described above are subject to extension upon approval of the BLM based on season, timing limitations, or other constraints on a case-by-case basis. If the BLM 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 implemented.

- c. Topsoil Stripping, Storage, and Replacement. All topsoil shall be stripped following removal of vegetation during construction of well pads, pipelines, roads, or other surface facilities. In areas of thin soil, a minimum of the upper 6 inches of surficial material shall be stripped. The BLM may specify a stripping depth during the onsite visit or based on subsequent information regarding soil thickness and suitability. The stripped topsoil shall be stored separately from subsoil or other excavated material and replaced prior to final seedbed preparation. The BLM best management practice (BMP) for the Windrowing of Topsoil shall be implemented for well pad construction whenever topography allows.
- 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.

Final seedbed preparation shall consist of scarifying (raking or harrowing) the spread topsoil prior to seeding. If more than one season has elapsed between final seedbed preparation and seeding, and if the area is to be broadcast-seeded or hydroseeded, this step shall be repeated no more than 1 day prior to seeding to break up any crust that has formed.

If directed by the BLM, the operator shall implement measures following seedbed preparation (when broadcast-seeding or hydroseeding is to be used) to create small depressions to enhance capture of moisture and establishment of seeded species. Depressions shall be no deeper than 1 to 2 inches and shall not result in piles or mounds of displaced soil. Excavated depressions shall not be used unless approved by the BLM for the purpose of erosion control on slopes. Where excavated depressions are approved by the BLM, the excavated soil shall be placed only on the downslope side of the depression.

If directed by the BLM, 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 BLM may require the operator to submit a plan for soil amendment. Any requests to use soil amendments not directed by the BLM shall be submitted to the CRVFO for approval.

- e. Seed Mixes. A seed mix consistent with BLM standards in terms of species and seeding rate for the specific habitat type shall be used on all BLM lands affected by the project (see Attachments 1 and 2 of the letter provided to operators dated October 23, 2012).

For private surfaces, the menu-based seed mixes are recommended, but the surface landowner has ultimate authority over the seed mix to be used in reclamation. 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. 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 BLM 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.

- f. 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 interim revegetation is unsuccessful, the operator shall implement subsequent reseeding until interim reclamation standards are met.

- g. 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).

- h. Erosion Control. Cut-and-fill slopes shall be protected against erosion with the use of water bars, lateral furrows, or other BMPs approved by the BLM. Additional BMPs such as biodegradable wattles, weed-free straw bales, or silt fences shall have be employed as necessary to reduce transport of sediments into the drainages. The BLM may, in areas with high erosion potential, require use of hydromulch or biodegradable blankets/matting to ensure adequate protection from slope erosion and offsite transport of sediments and to improve reclamation success.
- i. Site Protection. The pad shall be fenced to BLM 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 BLM will approve the type of fencing.
- j. Monitoring. The operator shall conduct annual monitoring surveys of all sites categorized as “operator reclamation in progress” and shall submit an annual monitoring report of these sites, including a description of the monitoring methods used, to the BLM by **December 31** of each year. The monitoring program shall use the four Reclamation Categories defined in Appendix I of the 1998 DSEIS to assess progress toward reclamation objectives. The annual 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 BLM, the operator shall be responsible for implementing the corrective actions or other measures specified by the BLM.
8. 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 BLM prior to the use of herbicides. Annual weed monitoring reports and Pesticide Application Records (PARs) shall be submitted to BLM by **December 1** of each year.

9. 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, shall be coordinated with the BLM project lead and BLM wildlife biologist and the USFWS representative to the BLM Field Office (970-876-9051).
10. Raptor Nesting. Raptor nest surveys in the project vicinity resulted in the location of one or more raptor nest structures within 0.25 mile of a well pad or 0.125 mile of an access road, pipeline, or other surface facility. To protect nesting raptors, initiation of construction, drilling, or completion activities shall not occur during a 60-day Timing Limitation from **March 15 to May 15**. An exception to this TL may be granted for any year in which a subsequent survey determines one of the following: (a) all nests within the specified buffer widths are in a severely dilapidated condition or has been destroyed due to natural causes, (b) no nests within the buffer widths are occupied during the normal raptor nesting period, (c) a nest was occupied but subsequently failed due to natural causes, or (d) a nest was occupied, but the nestlings have fledged and dispersed.

If project-related activities are initiated within the specified buffer distance of any active nest, even if outside the 60-day TL period, the operator remains responsible for compliance with the MBTA with respect to a “take” of birds or of active nests (those containing eggs or young), including nest failure caused by human activity (see COA for Migratory Birds).

11. Migratory Birds – Birds of Conservation Concern. Pursuant to BLM Instruction Memorandum 2008-050, all vegetation removal or surface disturbance in previously undisturbed lands providing potential nesting habitat for Birds of Conservation Concern (BCC) is prohibited from **May 1 to June 30**. An exception to this TL may be granted if nesting surveys conducted no more than one week prior to surface-disturbing activities indicate that no BCC species are nesting within 30 meters (100 feet) of the area to be disturbed. Nesting shall be deemed to be occurring if a territorial (singing) male is present within the distance specified above. Nesting surveys shall include an audial survey for diagnostic vocalizations in conjunction with a visual survey for adults and nests. Surveys shall be conducted by a qualified breeding bird surveyor between sunrise and 10:00 AM under favorable conditions for detecting and identifying a BCC species. This provision does not apply to ongoing construction, drilling, or completion activities that are initiated prior to May 1 and continue into the 60-day period at the same location.
12. Migratory Birds – General. It shall be the responsibility of the operator to comply with the Migratory Bird Treaty Act (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 pits associated with oil or gas operations, including but not limited to reserve pits, produced-water pits, hydraulic fracturing flowback pits, evaporation pits, and cuttings trenches.

Liquids in these pits—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.

Based on low effectiveness of brightly colored flagging or spheres suspended over a pit, the operator shall install netting with a mesh size of 1 to 1.5 inches, and suspended at least 4 feet above the fluid surface, on all pits into which fluids are placed, except for storage of fresh water in a pit that contains no other material. The netting shall be installed within 24 hours of placement of fluids into a pit. The requirement for netting does not apply to pits during periods of continuous, intensive human activity at the pad, such as drilling and hydraulic fracturing phases or, as pertains to cuttings trenches, during periods of active manipulation for cuttings management, remediation of contaminated materials, or other purposes.

13. Fossil Resources. All persons associated with operations under this authorization shall be informed that any objects or sites of paleontological or scientific value, such as vertebrate or scientifically important invertebrate fossils, shall not be damaged, destroyed, removed, moved, or disturbed. If in connection with operations under this authorization any of the above resources are encountered the operator shall immediately suspend all activities in the immediate vicinity of the discovery that might further disturb such materials and notify the BLM of the findings. The discovery must be protected until notified to proceed by the BLM.

Where feasible, the operator shall suspend ground-disturbing activities at the discovery site and immediately notify the BLM of any finds. The BLM would, as soon as feasible, have a BLM-permitted paleontologist check out the find and record and collect it if warranted. If ground-disturbing activities cannot be immediately suspended, the operator shall work around or set the discovery aside in a safe place to be accessed by the BLM-permitted paleontologist.

14. 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 would be subject to prosecution.

Pursuant to 43 CFR 10.4(g), the BLM shall be notified by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4 (c) and (d), activities shall stop in the vicinity of the discovery, and the discovery shall be protected for 30 days or until notified by the BLM to proceed.

If in connection with operations under this contract, the operator, its contractors, their subcontractors, or the employees of any of them discovers, encounters, or becomes aware of any objects or sites of cultural value or scientific interest such as historic ruins or prehistoric ruins, graves or grave markers, fossils, or artifacts, the operator shall immediately suspend all operations in the vicinity of the cultural resource and shall notify the BLM of the findings (16 USC 470h-3, 36 CFR 800.112). Operations may resume at the discovery site upon receipt of written instructions and authorization by the BLM. Approval to proceed would be based upon evaluation of the resource. Evaluation shall be by a qualified professional selected by the BLM from a Federal agency insofar as practicable. When not practicable, the operator shall bear the cost of the services of a non-Federal professional.

Within five working days, the BLM would inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places

- what mitigation measures the holder would likely have to undertake before the site can be used (assuming that *in-situ* preservation is not necessary)
- the timeframe for the BLM to complete an expedited review under 36 CFR 800.11, or any agreements in lieu thereof, to confirm through the SHPO State Historic Preservation Officer that the findings of the BLM are correct and that mitigation is appropriate

The operator may relocate activities to avoid the expense of mitigation and delays associated with this process, as long as the new area has been appropriately cleared of resources and the exposed materials are recorded and stabilized. Otherwise, the operator shall be responsible for mitigation costs. The BLM would provide technical and procedural guidelines for relocation and/or to conduct mitigation. Upon verification from the BLM that the required mitigation has been completed, the operator would be allowed to resume construction.

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 Proposed Action 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).

15. Interim Reclamation Related to Drilling Phases. Within 1 year of completion of all exploratory wells proposed on a pad or within one year of completion of all development wells on a pad (whichever the situation may be), the operator would stabilize the disturbed area by recontouring, mulching, providing run-off and erosion control, replacing topsoil as directed, and seeding with BLM-prescribed native seed mixes (or landowner requested seed mix on Fee surface), and conducting weed control, as necessary. In cases where the exploratory drilling and development drilling on a single pad occur more than 1 year apart, slopes shall be recontoured to the extent necessary to accommodate seeding, and seed mixes required by BLM or requested by the private landowner shall be applied to stabilize the soil between visits per direction of the BLM.
16. Windrowing of Topsoil. Topsoil shall be windrowed around the pad perimeter to create a berm that limits and redirects stormwater runoff and extends the viability of the topsoil per BLM Topsoil Best Management Practices (BLM 2009 PowerPoint presentation available upon request from Glenwood Springs Field Office). Topsoil shall also be windrowed, segregated, and stored along pipelines and roads for later spreading across the disturbed corridor during final reclamation. Topsoil berms shall be promptly seeded to maintain soil microbial activity, reduce erosion, and minimize weed establishment.
17. Special Status Plant Protections
 - a. DeBeque Phacelia

Surface-disturbing activities located within 100 meters of mapped delineated DeBeque phacelia habitats shall have dust control measures implemented. Dust abatement applications shall be limited to water only to prevent negative impacts from additives.

- b. To prevent impacts from herbicide drift and from noxious weeds, no herbicide shall be applied within 20 meters of any mapped DeBeque phacelia habitat. Within these herbicide prohibition buffers, noxious weeds in these areas shall be controlled by manual treatments. In areas between 20 meters and 100 meters of mapped DeBeque phacelia habitat, spot treatments of noxious weeds may be made using herbicide, only when no DeBeque phacelia plants are present within mapped habitat areas. A BLM approved Pesticide Use Proposal (PUP) noting this sensitive area restriction must be obtained prior to any herbicide use. All mapped habitat areas within 100 meters of planned herbicide use shall be surveyed for DeBeque phacelia plants by a BLM approved botanist prior to any herbicide application. If DeBeque phacelia plants are found, the BLM botanist shall be notified immediately, and consultation with USFWS shall be reopened.
 - c. If botany surveys are conducted at the appropriate time of year, in a year when DeBeque phacelia plants are present at known sites of similar elevation and moisture conditions, and no DeBeque phacelia plants are found within the mapped habitat areas, the protections listed above shall no longer be necessary.
18. Visual Resources. Production facilities shall be placed to avoid or minimize visibility from travel corridors, residential areas, and other sensitive observation points—unless directed otherwise by the BLM due to other resource concerns—and shall be placed to maximize reshaping of cut-and-fill slopes and interim reclamation of the pad.

Above-ground facilities shall be painted with BLM Standard Environmental Color **Shadow Gray** to minimize contrast with adjacent vegetation or rock outcrops.

To the extent practicable, existing vegetation shall be preserved when clearing and grading for pads, roads, and pipelines. The BLM may direct that cleared trees and rocks be salvaged and redistributed over reshaped cut-and-fill slopes or along linear features.

SITE-SPECIFIC COAS APPLICABLE TO THE SG 23-22 PAD, ROAD AND PIPELINE

The following site-specific surface use COAs are in addition to the standard COAs listed above and all relevant stipulations attached to the respective Federal leases.

1. Implementation Date. If the proposed well has not been spudded by **November 4, 2018**, this Application for Permit to Drill will expire and the operator is to cease all operations related to preparing to drill the well.
2. SG 23-22 Pad, Road and Pipeline Construction Details
 - a. Pad Containment Berm Spill Prevention Measures. With the pad being in direct proximity to drainages on all but the north side, attention shall be given to installing a solid containment berm system around the perimeter of the pad working area. Sediment basins shall be located and designed to readily accept pad drainage with focus of locating these basins near the cut/fill balance line of the pad surface. Using windrowed topsoil as sediment controls and/or basin catchments shall be incorporated into the storm water control plan. Sediment basin outlets with drop-down black piping are discouraged and, if used, such piping shall not feed directly into the nearby drainages. As a minimum, a hand-drawn schematic on Plat #2 shall provide the details for the storm water control plan for this pad. This plan shall be presented to the BLM and approved prior to completion of pad construction earthwork.

- b. Pad Construction Details. Any sizable rock or boulders generated during the SG 23-22 pad construction or the nearby road construction shall be collected, stockpiled and used to install a rock retaining wall around the pad fillslopes particularly between Corners #4 and #6 in effort to reduce the fillslope disturbance area in the drainage below the pad.
- c. Road Construction Details. The new access road serving the SG 23-22 pad shall be constructed with a length of 3,467 feet and a finished roadway width of 25 feet (which includes two 4-foot ditches on either side). The road running surface shall be graveled for its entire length with minimum 6-inch depth of surfacing. The road design package (prepared and stamped by Uintah Engineering and Land Surveying and referenced in the project APDs) shall outline the construction limits, design standards, road alignment and grades, earthwork quantities, culvert locations and construction practices to be used in the road work. The proposed road shall be staked (centerline and limits of disturbance) prior to start of road work in manner that allows adequate review during the pre-construction meeting.

Road construction work on the new SG23-22 access road shall not occur while there is any drilling or completion activity on the SG 24-22 pad.

A considerable volume of excavated material (~10,000 cy) generated from the SG 24-22 pad expansion shall be used to construct portions of the SG 23-22 access road as there is a deficit of material on the SG 23-22 road design.

The 2-foot by 84-foot culvert planned near Station 2+60 of the SG 23-22 road shall be field reviewed by WPX and BLM personnel during road pioneering with idea of eliminating the culvert and installing a suitably-sized storm water ditch along the outside edge of the road way to divert all drainage flow from the ephemeral drainage west to a storm water drop down structure into Kelly Gulch.

At the SG 23-22 pad, an additional 450-foot segment of new road (18-foot width) shall also be constructed from the SG 23-22 northeast pad corner (#9) west across the SG 23-22 pad cutslope to connect with the existing old road north of the pad that served the phone repeater.

- d. Buried Gas Pipeline Installation Details. The proposed 8-inch diameter welded steel gas gathering pipeline serving the SG 23-22 pad shall be buried within the old repeater access road for the majority of its run. The limits of the pipeline disturbance corridor shall generally adhere to the existing disturbance limits of the old roadway (generally not to exceed 35 feet in width). Of the total pipeline length of 3,806 feet, about 3,207 feet shall be installed within the old roadway and about 599 feet shall be buried across or within the new access road. After the pipeline installation is complete, the pipeline reclamation earthwork shall reshape and reclaim the cuts and fills related to the old roadway essentially removing the old roadway from service. The pipeline installation work shall adhere to the following standard procedures:
- Administrative Notification. The operator shall notify the BLM representative at least 48 hours prior to initiation of construction. If requested by the BLM 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.
 - Pipeline Construction and Maintenance. The pipelines (natural gas, condensate, and water for production) shall be installed to industry and BLM “Gold Book” standards.

All pipeline(s) shall be buried with a minimum depth of 48 inches from the top of the pipe to the surface. Where the alignments are shared, the gas gathering line and the water collection line shall be installed concurrently in the same trench. The centerline and disturbance limits of the proposed pipeline(s) shall be clearly staked and/or flagged prior to any commencement of operations. No equipment or vehicle use shall be allowed outside the staked disturbance corridor of the pipeline ROW unless authorized by BLM personnel.

Approved permitting shall be obtained by the operator for the planned pipeline boring under County Road 215 and the boring project under Parachute Creek.

- Welding of Pipeline. Visual inspections shall be performed on 100% of all pipeline welds. All welders shall be appropriately certified. (43CFR109.227) *Qualification of welders.* 49CFR192.241) *Inspection and test of welds.*

Welding must be performed by a qualified welder in accordance with welding procedures qualified under section 5 of API 1104 (incorporated by reference, *see* §192.7) or section IX of the ASME Boiler and Pressure Vessel Code “Welding and Brazing Qualifications” (incorporated by reference, *see* §192.7) to produce welds meeting the requirements of this subpart. The quality of the test welds used to qualify welding procedures shall be determined by destructive testing in accordance with the applicable welding standard(s).

- Pipeline Testing. The entire pipeline shall be tested in compliance with United States Department of Transportation (DOT) Code of Federal Regulations (CFR) (49 CFR Part 192). (Ref. 49 CFR 192.500.Subpart J entitled “Test Requirements”). (49 CFR 192.225, Welding Procedures.)
 - Fire Suppression. Welding with acetylene or other open-flame torch shall be operated in an area barren or cleared of all flammable materials at least ten feet on all sides of equipment. Internal combustion engines must be equipped with approved spark arrestors which meet either (a) Department of Agriculture, Forest Service Standard 5100-1a, or (b) Society of Automotive Engineers (SAE) recommended practices J335(b) and J350(a).
 - Saturated Soil Conditions. When saturated soil conditions exist on or along the proposed right-of-way, construction shall be halted until soil material dries out or is frozen sufficiently for construction to proceed without undue damage and erosion to soils.
 - Warning Signs. Pipeline warning signs shall be installed within 5 days of completion of construction and prior to use of the pipeline for transportation of product. Pipeline warning shall be installed at all road crossings and shall be visible from sign to sign along the ROW. For safety purposes each sign shall be permanently marked with the operator’s name and shall clearly identify the owner (emergency contact) and purpose (product) of the pipeline.
- d. Surface Pipeline Installation Details. Three 4½-inch diameter welded steel surface lines shall be temporarily laid in a cross-country alignment from the GV 33-22 pad north up the ridge line to the SG 23-22 pad. The lines shall be laid along the existing road between the SG 43-22 and GV 33-22 pads. The total length of the steel high-pressure lines shall be 4,200 feet. A 10-inch poly surface water supply line (with length of 415 feet) shall be installed to provide recycled water for the frac operations on the SG 43-22 pad and return frac flowback fluids via the existing dual 14-inch water line system to the Smith Gulch water storage facility

3. SG 23-22 Cuttings Storage. Any excess cuttings volume exceeding the capacity of the storage area shown on the pad construction plat in the APD shall be hauled to the SG Cuttings Trench at the existing SG 22-32 pad for storage. Prior to removing the cuttings to the SG Cuttings Trench, the cuttings shall be tested on location and satisfy COGCC Table 1010-1 standards. Cuttings shall be covered with a minimum of 3-foot deep cap.
4. Well Completions Operations. The completion work for the SG 23-22 wells shall be remotely conducted from the SG 43-22 fee pad which also is serving as the remote frac base for the ongoing drilling operations on the SG 42-22 pad.

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BUREAU OF LAND MANAGEMENT

Colorado River Valley Field Office
2300 River Frontage Road
Silt, CO 81652

DOWNHOLE CONDITIONS OF APPROVAL Applications for Permit to Drill

Operator: WPX Energy Rocky Mountain LLC
Lease Number: COC27874, COC36219, & COC58673
Pad(s): SG 23-22
Engineer: Shauna Kocman
Surface Location: Garfield County; Lot 8, Sec. 22 T7S R96W

See list of wells following the COAs.

1. Twenty-four hours *prior* to (a) spudding, (b) conducting BOPE tests, (c) cementing/running casing strings, and (d) within 24 hours *after* spudding, the CRVFO shall be notified. One of the following CRVFO inspectors shall be notified by phone. The contact number for all notifications is: 970-876-9064. The BLM CRVFO inspectors are Julie King, Lead PET; David Giboo, PET; Greg Rios, PET; Tim Barrett, PET; Alex Provstgaard, PET; Brandon Jamison, PET.
2. A CRVFO petroleum engineer shall be contacted for a verbal approval prior to commencing remedial work, plugging operations on newly drilled boreholes, changes within the drilling plan, sidetracks, changes or variances to the BOPE, deviating from conditions of approval, and conducting other operations not specified within the APD. Contact Shauna Kocman or Peter Cowan for verbal approvals (contact information below).
3. If a well control issue or failed test (e.g. kick, blowout, water flow, casing failure, or a bradenhead pressure increase) arises during drilling or completions operations, Shauna Kocman or Peter Cowan shall be notified within 24 hours from the time of the event. IADC/Driller's Logs and Pason Logs (mud logs) shall be forwarded to CRVFO – Petroleum Engineer, 2300 River Frontage Road, Silt, CO 81652 within 24 hours of a well control event.
4. The BOPE shall be tested and conform to Onshore Order No. 2 for a **3M** system and recorded in the IADC/Driller's log. A casing head rated to 3,000 psi or greater shall be used.
5. Flexible choke lines shall meet or exceed the API SPEC 16C requirements. Flexible choke lines shall have flanged connections and configured to the manufacturer's specifications. The flexible choke lines shall be anchored in a safe and workmanlike manner. At minimum, all connections shall be effectively anchored in place for safety of the personal on location. Manufacturer specifications shall be kept with the drilling rig at all times and immediately supplied to the authorized officer/inspector upon request. Specifications at a minimum shall include acceptable bend radius, heat range, anchoring, and the working pressure. All flexible choke lines shall be free of gouges, deformations, and as straight/short as possible.
6. An electrical/mechanical mud monitoring equipment shall be function tested prior to drilling out the surface casing shoe. As a minimum, this equipment shall include a pit volume totalizer, stroke counter, and flow sensor.
7. Prior to drilling out the surface casing shoe, gas detecting equipment shall be installed in the mud return system. The mud system shall be monitored for hydrocarbon gas/pore pressure changes, rate of penetration, and fluid loss.

8. A gas buster shall be functional and all flare lines effectively anchored in place, prior to drilling out the surface casing shoe. The discharge of the flare lines shall be a minimum of 100 feet from the wellhead and targeted at bends. The panic line shall be a separate line (not open inside the buffer tank) and effectively anchored. All lines shall be downwind of the prevailing wind direction and directed into a flare pit, which cannot be the reserve pit. The flare system shall use an automatic ignition. Where noncombustible gas is likely or expected to be vented, the system shall be provided supplemental fuel for ignition and maintain a continuous flare.
9. After the surface/intermediate casing is cemented, a Pressure Integrity Test/Mud Equivalency Test/FIT shall be performed on the first well drilled in accordance with OOGO No. 2; Sec. III, B.1.i. to ensure that the surface/intermediate casing is set in a competent formation. This is not a Leak-off Test, but a formation competency test, insuring the formation at the shoe is tested to the highest anticipated mud weight equivalent necessary to control the formation pressure to the next casing shoe depth or TD. Submit the results from the test via email (skocman@blm.gov) on the first well drilled on the pad or any horizontal well and record results in the IADC log. Report failed test to Shauna Kocman or Peter Cowan. A failed pressure integrity test is more than 10% pressure bleed off in 15 minutes.
10. As a minimum, cement shall be brought to 200 feet above the Mesaverde. After WOC for the production casing, a CBL shall be run to verify the TOC and an electronic copy in .las and .pdf format shall be submitted to CRVFO – Petroleum Engineer, 2300 River Frontage Road, Silt, CO 81652 within 48 hours. If the TOC is lower than required or the cement sheath of poor quality, a CRVFO petroleum engineer shall be notified for remedial operations within 48 hours from running the CBL and prior to commencing fracturing operations,

A greater volume of cement may be required to meet the 200-foot cement coverage requirement for the Williams Fork Formation /Mesaverde Group. Evaluate the top of cement on the first cement job on the pad (Temperature Log). If cement is below 200-foot cement coverage requirement, adjust cement volume to compensate for low TOC/cement coverage.
11. On the first well drilled on this pad, a triple combo open-hole log shall be run from the base of the surface borehole to surface and from TD to bottom of surface casing shoe. This log shall be in submitted within 48 hours in .las and .pdf format to: CRVFO – Todd Sieber, 2300 River Frontage Road, Silt, CO 81652. Contact Todd Sieber at 970-876-9000 or asieber@blm.gov for clarification.
12. Submit the (a) mud/drilling log (e.g. Pason disc), (b) driller's event log/operations summary report, (c) production test volumes, (d) directional survey, and (e) Pressure Integrity Test results within 30 days of completed operations (i.e. landing tubing) per 43 CFR 3160-9 (a).
13. Prior to commencing fracturing operations, the production casing shall be tested to the maximum anticipated surface treating/fracture pressure and held for 15 minutes without a 2% leak-off. If leak-off is found, Shauna Kocman or Peter Cowan shall be notified within 24 hours of the failed test, but prior to proceeding with fracturing operations. The test shall be charted and set to a time increment as to take up no less than a quarter of the chart per test. The chart shall be submitted with the well completion report.
14. During hydraulic frac operations, monitor the bradenhead/casing head pressures throughout the frac job. Frac operations shall be terminated upon any sharp rise in annular pressure (+/- 40 psi or greater) in order to determine well/wellbore integrity. Notify Shauna Kocman or Peter Cowan immediately.
15. Per 43 CFR 3162.4-1(c), no later than the 5th business day after any well begins production on which royalty is due anywhere on a lease site or allocated to a lease site, or resumes production in a case of a well which has been off production for more than 90 days, the operator shall notify the authorized

officer by letter or sundry notice, Form 3160-5, or orally to be followed by a letter or sundry notice, of the date on which such production has begun or resumed.

Contact Information

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 Petroleum Engineer

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List of Wells			
<i>Proposed Pads</i>	<i>Proposed Wells</i>	<i>Surface Locations</i>	<i>Bottom Hole Locations</i>
Bosely SG 23-22 (Fee Surface)	Bosely SG 23-22	T7S R96W, Sec. 22 Lot 8	T7S R96W, Sect. 22 Lot 9
	Bosely SG 43-21	T7S R96W, Sect. 22 Lot 8	T7S R96W, Sect. 21 Lot 3
	Bosely SG 243-21	T7S R96W, Sect. 22 Lot 8	T7S R96W, Sect. 21 Lot 3
	Bosely SG 323-22	T7S R96W, Sec. 22 Lot 8	T7S R96W, Sect. 22 Lot 9
	Bosely SG 342-21	T7S R96W, Sect. 22 Lot 8	T7S R96W, Sect. 21 SWNE
	Bosely SG 343-21	T7S R96W, Sect. 22 Lot 8	T7S R96W, Sect. 21 Lot 3
	Bosely SG 423-22	T7S R96W, Sec. 22 Lot 8	T7S R96W, Sect. 22 Lot 9
	Bosely SG 443-21	T7S R96W, Sect. 22 Lot 8	T7S R96W, Sect. 21 Lot 3
	Bosely SG 512-22	T7S R96W, Sect. 22 Lot 8	T7S R96W, Sect. 22 Lot 4
	Bosely SG 513-22	T7S R96W, Sect. 22 Lot 8	T7S R96W, Sect. 22 Lot 4
	Bosely SG 522-22	T7S R96W, Sect. 22 Lot 8	T7S R96W, Sect. 22 Lot 5
	Bosely SG 542-21	T7S R96W, Sect. 22 Lot 8	T7S R96W, Sect. 21 SWNE
Bosely SG 642-21	T7S R96W, Sect. 22 Lot 8	T7S R96W, Sect. 21 SWNE	