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Bureau of Land Management**

Colorado River Valley Field Office
2300 River Frontage Road
Silt, Colorado 81652
970-876-9000

Environmental Assessment

DOI-BLM-CO-N040-2015-0017-EA

***Red Rocks Gathering Company, LLC
Proposed Winter Flats Pipeline Project***

April 2016



It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public land for the use and enjoyment of present and future generations.

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1. INTRODUCTION

NUMBER: DOI-BLM-CO-N040-2015-0017-EA

PROJECT NAME: Winter Flats Pipeline Project

PLANNING UNIT: Grand Junction Field Office

APPLICANT: The company contact for the proposed project is:

Red Rock Gathering Company, LLC
707 Wapiti Avenue, Suite 202
Rifle, Colorado 81650

1.1 BACKGROUND

Red Rock Gathering Company, LLC (RRG), a subsidiary of Summit Midstream Partners (Summit), is proposing to construct 21.94 miles of varying-diameter buried steel natural gas pipelines (9.48 miles of 16-inch, 10.69 miles of 12-inch, and 1.27 miles of 8-inch) to service existing Federal oil and gas leases. The lessee and operator of the leases is Black Hills Plateau Production, LLC (BHPP). Most (20.67 miles) of the new pipeline length, including all of the 16-inch and 12-inch lines, would be along Mesa County Road V.2. A portion would also be adjacent to or collocated with an existing pipeline alignment. The 8-inch line, called the Wagon Track Lateral, would be constructed from the primary (V.2 Road) alignment to the BHPP Wagon Track 12-16 natural gas well pad. All but 0.5 mile of the 21.94 miles of new gas pipelines would cross BLM-administered public land, with the rest on private land. **Figure 1** shows the proposed pipeline alignment and components.

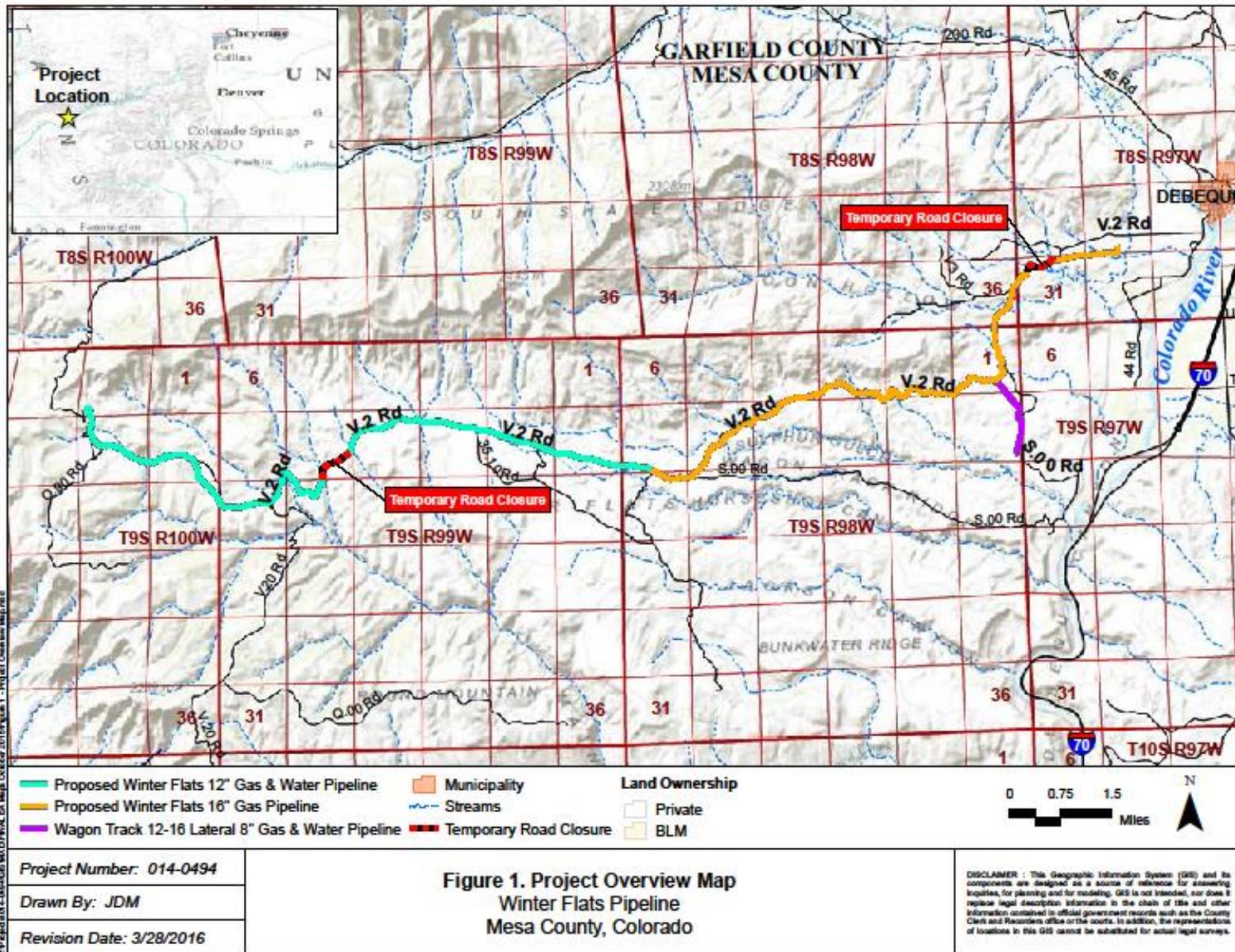
In addition to new gas pipeline, RRG proposes to construct a new 12-inch buried steel water pipeline collocated with the 12-inch gas pipeline in the western half of the V.2 Road alignment, and a new 8-inch buried steel water pipeline collocated with the 8-inch Wagon Track Lateral alignment (**Figure 1**). The new water pipelines would be owned and operated by BHPP. An additional 10.35 miles of existing gas pipeline in the eastern half of the V.2 Road alignment would be converted to use for water and assigned from RRG to BHPP. Construction and operation of the proposed new natural gas and water pipelines and conversion of part of an existing gas pipeline are referred to collectively as the Winter Flats project.

The project area lies within the administrative boundaries of the Bureau of Land Management (BLM) Grand Junction Field Office (GJFO), which is the entity that would issue and administer BLM rights-of-way (ROWs) and a Temporary Use Permit (TUP) required for the project. Preparation of environmental documentation as part of the National Environmental Policy Act (NEPA) process was conducted jointly between the GJFO and the Colorado River Valley Field Office (CRVFO) in Silt, Colorado, with CRVFO in the lead role as part of a consolidation of oil and gas programs in Colorado BLM's Northwest District.

1.2 PROJECT LOCATION AND LEGAL DESCRIPTION

The project area is located primarily on BLM-administered public land and a small amount of private land in Mesa County, Colorado, west of the Town of De Beque, and south of a major topographic feature known as South Shale Ridge (**Figure 1**). The primary alignment would start at RRG's De Beque Processing Plant in Section 28, Township 8 South, Range 97 West, 6th PM, and terminate at BHPP's Winter Flats 1-2-100 natural gas pad site in Section 2, Township 9 South, Range 97 West, 6th PM. **Appendix A** provides larger scale, aerial photo-based maps of the proposed pipeline alignment.

The project area includes portions of the De Beque, Wagon Track Ridge, Winter Flats, and Corcoran Peak U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles.



The legal description for the project is as follows:

Sixth Principal Meridian

Township 8 South, Range 97 West, Sections 29, 31-32;
Township 8 South, Range 98 West, Section 36;
Township 9 South, Range 97 West, Section 7;
Township 9 South, Range 98 West, Sections 1-4, 7-12, and 17-18;
Township 9 South, Range 99 West, Sections 7-12, 17-18;
Township 9 South, Range 100 West, Sections 2, 11-13.

1.3 PURPOSE AND NEED

The purpose of the action is to provide for transport of natural gas from existing, approved, and planned natural gas wells to RRG's De Beque Gas Processing Plant, located at 4325 V.2 Road, to meet the nation's need for natural gas. The purpose also includes providing for transport of raw water and produced water between existing, approved, and planned natural gas well pads and BHPP's De Beque Water Station facility, located at 4321 V.2 Road.

The need for the action is established by BLM's responsibility under the 1976 Federal Land Policy Management Act (FLPMA) and under the Mineral Leasing Act (MLA) of 1920 to respond to a request for right-of-way grants authorizing use of BLM-administered public land for construction, operation, and maintenance of the proposed pipelines.

The action incorporates design elements and mitigation measures intended to make the project consistent with the goals, objectives, and decisions of the 2015 Grand Junction Field Office Record of Decision and Approved Resource Management Plan ("2015 GJFO ARMP") (BLM 2015c) as well as applicable Federal, State, and local laws, regulations, and policies.

1.4 PLAN CONFORMANCE REVIEW

The Proposed Action and No Action Alternative are subject to and have been reviewed for conformance with the following plan (43CFR 1610.5, BLM 1617.3):

Name of Current Plan: Grand Junction Field Office Record of Decision and Approved Resource Management Plan (2015 GJFO ARMP), approved August 10, 2015; amended by the Northwest Colorado Greater Sage-grouse Approved Resource Management Plan Amendment, approved September 15, 2015.

Decision Language: Page 169, L&R-OBJ-01 – "Provide for the development and operation of transportation systems, pipelines, transmission lines, communication sites, renewable energy resources, and other land use authorizations in an environmentally responsible and timely manner."

Determination: The Proposed Action is in conformance with the land use plan cited above because the proposed natural gas and water pipelines would be developed in connection with existing and planned future development of valid Federal fluid mineral leases, and in an environmentally responsible manner. The Proposed Action is in conformance notwithstanding the presence of various Right-of-Way Avoidance Areas (ROWAs) in the project area. As stated in Appendix B of the 2015 GJFO ARMP, these ROWAs are to be avoided "if possible." **Section 3.1** and following resource-specific section (**Sections 3.2 through 3.24**) of this EA describe situations in which full adherence to eight ROWAs is infeasible, but for which the BLM could reasonably determine that the project would nonetheless conform to the 2015 GJFO ARMP. Such a determination would be based on project design features and/or mitigation measures (see **Appendix B** of this EA) intended to ensure that the resources protected by the ROWAs would not be unduly affected. **Table 3** in **Section 3.1** summarizes these considerations.

1.5 SCOPING

NEPA regulations (40 CFR §1500-1508) require the BLM to conduct scoping to identify potential significant issues in preparation for impact analysis. The principal goals of scoping are to allow public participation to identify issues, concerns, and potential impacts that require detailed analysis. The BLM placed a news release in the Grand Junction *Daily Sentinel* and the Glenwood Springs *Post Independent* on July 16, 2015. The news release, a posting on the BLM website, and a Dear Interested Public letter mailed to neighboring landowners and other interested parties invited the public to provide comments on the Proposed Action. The comment period extended through from July 16 through August 17, 2015. One set of comments was received (**Appendix C**).

1.6 DECISIONS TO BE MADE

The primary decision by the BLM upon completion of this environmental assessment (EA) is whether to issue the ROW grants and TUP requested to RRG for construction and operation of proposed natural gas pipelines across public land managed by the BLM, and the ROW grant to BHPP for operation and maintenance of the collocated water pipelines. The water pipelines would be constructed on BHPP's behalf by RRG. A related decision is whether to approve assignment of a segment of an existing natural gas pipeline ROW from RRG to BHPP following its being converted to use as a water pipeline.

In response to the requests by RRG and BHPP, the BLM may choose to (a) authorize the project as proposed; (b) authorize the project with modifications developed by the BLM in collaboration with the proponent; (c) authorize portions of the project, but defer a decision on other portions pending resolution of specific issues; or (d) not authorize the project at this time. Options (a) through (c) would include application by the BLM of conditions of approval as mitigation to avoid, minimize, or offset adverse project impacts. These are listed in **Appendix B** of the EA and would be applied as ROW Stipulations to any ROW/TUP documents issued by the BLM based on this assessment.

The Decision Record associated with this EA, if approved, does not constitute approval for component actions, such as issuance of individual permanent and short-term ROWs associated with the Proposed Action. However, it provides the BLM with an analysis upon which to base approval, if warranted.

2. PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

RRG is proposing to construct approximately 21.94 miles of buried steel natural gas pipelines, including 11.96 miles of buried steel water pipelines installed concurrently and in the same trench or bore along part of the total length (**Figure 1**). Most (21.44 miles, or 97.7%) of this length would be on BLM-administered public land (**Table 1**). See **Table 2** regarding the need for BLM permanent ROW grants and a construction TUP.

As described in **Section 1.1**, the proposed pipelines would include a new 12-inch gas pipeline and collocated 12-inch water pipeline in the western part, upsized to a new 16-inch gas pipeline in the eastern part. In addition, an existing RRG 8-inch gas pipeline would remain in use for gas in the western part and be converted to use for water, and assigned from RRG to BHPP, in the eastern part. The length of existing gas pipeline to be converted to use for water would be 10.35 miles. Of the 21.94 miles of total length, 20.67 miles would be located adjacent to, or partially within, V.2 Road and/or an existing RRG pipeline ROW. The remaining 1.27 miles of new 8-inch gas and collocated 8-inch water pipelines would be along the Wagon Track Lateral alignment, which would extend from the primary alignment along V.2 Road to BHPP's existing Wagon Track 12-16 well pad.

Table 1. Proposed Surface Disturbance on Public and Private Land

<i>Proposed Action Components</i> ¹		<i>Initial Disturbance to be Reclaimed</i> ²			<i>Unreclaimed Disturbance</i> ³
		<i>Miles</i>	<i>Width (feet)</i>	<i>Acres</i>	<i>Acres</i>
Winter Flats Alignment (V.2 Road)					
Public Land (97.6%)	Natural Gas Pipelines and Two Valve Yards ⁴	20.17	75	181.30	0.07
	Eight Storage Yards	--	--	7.90	0
	26 Extra Work Spaces	--	--	4.51	0
	Subtotal	20.17	75	193.71	0.07
Private Land (2.4%)	Natural Gas and Water Pipelines and Two Valve Yards	0.5	75	4.49	0
	Subtotal	0.5	75	4.49	0
Combined Total		20.67	75	198.20	0.07
Wagon Track Lateral Alignment					
Public Land (100%)	Natural Gas and Water Pipelines ⁴	1.27	75	10.74	0
Subtotal		1.27	75	10.74	0
GRAND TOTAL		21.94	75	208.94	0.07
¹ Includes portions not requiring a ROW (BHPP Federal Units and private land). See Table 2 for information specific to existing and requested ROW grants. ² Areas calculated by GIS reflect typical 50-foot permanent ROW and 25-foot TUP; narrower in some locations to avoid ACECs and WSA; no TUP needed adjacent to 4,305 feet of bored segments. ³ Portion to remain unvegetated limited to two valve yards along V.2 Road. ⁴ Includes new collocated water lines along 10.69 miles of V.2 Road and 1.27 miles of the Wagon Track Lateral.					

2.1.1 Natural Gas Pipelines

The new gas gathering pipelines would be used to transport natural gas from existing, approved, and planned natural gas wells to RRG’s De Beque Gas Processing Plant, located at 4325 V.2 Road. The project would ultimately provide natural gas to regional and national markets for the use and benefit of the public. The proposed pipelines also generally follow existing natural gas pipelines constructed in the early 1980s and now operated by RRG. An exception is a segment in the western portion in which the existing alignment deviates from V.2 Road and travels cross-country. This segment would remain in service, and the associated alignment would not be disturbed by the proposed project.

2.1.2 Water Pipelines

The new or converted water pipelines would have two purposes: (1) to transport produced water from BHPP’s existing and planned future oil and gas wells to BHPP’s existing water handling facility adjacent to RRG’s gas processing plant; and (2) to transport a combination of fresh water and treated/recycled produced water to BHPP’s well pads for use in well completions (hydraulic fracturing)

As described previously, these water lines would include a new segment collocated with a portion of the new gas pipeline along the V.2 Road alignment, a segment of existing gas pipeline to be converted to use for water and collocated with new gas pipeline along V.2 Road, and a new segment collocated with the new gas pipeline along the Wagon Track Lateral.

2.1.3 Associated Right-of-Way and Temporary Use Permit Lengths, Widths, and Areas

If approved, the proposed natural gas pipelines would be authorized under the Mineral Leasing Act (MLA) by issuance to RRG of 21.44 miles of permanent ROW (COC76833) and 20.62 miles of TUP (COC76833-01) (**Table 2**). The reason for this difference in length is that 4,305 feet (0.82 mile) does not involve an adjacent TUP. The 21.44 miles of requested permanent ROW would be 50 feet wide, except where narrowed along a total of 0.53 mile to avoid impacts to the South Shale Ridge ACEC and Little Book Cliffs WSA (**Figure 1**). The permanent ROW area would include two valve yards, of which 0.07 acres would remain unreclaimed.

Because of the variable width of the permanent ROW (with a maximum of 50 feet), the ROW areas for the 12-inch and 16-inch segments shown in the **Table 2** cannot be replicated by multiplying the lengths by the 50-foot width. The width of the ROW would not be reduced along the 1.27-mile Wagon Track Lateral. The term of RRG's permanent ROW grant would be 30 years.

The 20.61 miles of TUP (COC76833-01) sought by RRG for use during construction would be 25 feet wide and would not vary in width. However, as noted above, 0.82 miles of new pipeline length would not require a TUP, because that length would be constructed by boring. All surface disturbances would be limited to the permanent ROW. The TUP area would also include 4.51 acres for 26 extra work spaces and 7.90 acres for eight temporary storage yards.

If approved, the proposed water pipelines would be authorized under the Federal Land Management and Policy Act (FLPMA) by issuance to BHPP of 1.71 miles of permanent ROW (COC76837) (**Table 2**). No TUP is needed for the water lines, which would be installed in the same trenches or bores as the new gas lines. An additional 10.43 miles of new buried steel water pipelines would be located along V.2 Road and within the Winter Flats and Whittaker Flats Federal Units.

As noted previously, a portion of an existing RRG 8-inch gas line along V.2 Road would be converted to use for water. This would be 5.56 miles of permanent ROW grant (COC31077A) to be assigned from RRG to BHPP along the V.2 Road alignment (**Table 2**). Another 4.79 miles of this existing gas pipeline would be converted for transporting water but would be within the two Winter Flats and Whittaker Flats Federal Units and not require a ROW grant.

In addition to the narrowed ROW widths where needed to avoid the two ACECs and a WSA, two areas—one in the western part of the proposed alignment and one in the eastern part (**Figure 1**)—where construction would encroach into the V.2 Road to avoid adjacent sensitive resources. These three locations would include a combined length of approximately 2,748 feet and require closing V.2 Road for periods of approximately 1 to 2 weeks, with some limited access periods during these times. These are addressed in Section 3.2 (Access and Transportation).

Appendix A presents aerial photo-based maps depicting segments of the proposed primary (Winter Flats) and secondary (Wagon Track Lateral) alignments, associated surface disturbances, and locations where narrowed widths or bores would be used to protect adjacent resources.

Construction of the project is anticipated to begin in spring 2016, pending completion of this EA, consultation with the U.S. Fish and Wildlife Service (USFWS) pursuant to Section 7 of the Endangered Species Act, consultation with the Colorado State Historic Preservation Officer (SHPO) and the Ute Tribes, and authorization from the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act. Anticipated duration of the construction is approximately 7 months. To accomplish this tight schedule, up to five separate construction crews would be utilized. Reclamation would occur continually after pipeline segments are installed, pressure-tested, and backfilled. Revegetation is expected to be largely completed prior to winter 2016-2017. Once in service, the pipelines would be operated on a year-round basis by RRG (natural gas pipelines) and BHPP (water pipelines).

Table 2. Information Related to Proposed and Existing Pipeline ROWs/TUP and Additional Segments in Federal Units or on Private Land not requiring a ROW from the BLM ¹

<i>ROW Number/Type</i>	<i>Area</i>	<i>Type</i>	<i>Length (miles) ^{2,3}</i>	<i>Length (feet) ^{2,3}</i>	<i>Maximum Width (feet) ⁴</i>	<i>GIS-Calculated Area (acres) ⁵</i>
PROPOSED RRG NATURAL GAS PIPELINES						
COC76833 Proposed ROW (MLA)	Winter Flats	12-inch buried steel gas	10.69	56,443	50 ⁴	64.54 ⁵
		16-inch buried steel gas	9.48	50,054	50 ⁴	57.33 ⁵
	Wagon Track	8-inch buried steel gas	1.27	6,706	50	7.67
	Permanent ROW Total			21.44	113,203	50
COC76833-01 Proposed Temporary Use Permit (MLA)	Winter Flats	12-inch buried steel gas	10.48	55,350	25	31.79
		16-inch buried steel gas	9.12	48,186	25	27.64
		26 extra work spaces	--		--	4.51
		8 temporary storage yards	--		--	7.90
	Wagon Track	8-inch buried steel gas	1.01	5,361	25	3.07
TUP Total			20.62	108,897	25	74.91
No ROW on Private Land	Winter Flats	12-inch and 16-inch buried steel gas	0.50	2,624	75	4.49
TOTALS FOR NAUTRAL GAS PIPELINES			21.94	115,827	--	134.03
PROPOSED BHPP WATER PIPELINES, COLLOCATED WITH NATURAL GAS PIPELINES ⁶						
COC76837 Proposed Permanent ROW (FLPMA)	Winter Flats	12-inch buried steel water	0.44	2,323	50	2.69 ⁶
	Wagon Track	8-inch buried steel water	1.27	6,706	50	7.67 ⁶
	Total			1.71	9,029	50
COC31077A Existing ROW to be Assigned to BHPP	Winter Flats	Portion of RRG 8-inch gas line to be converted to water line and assigned to BHPP	5.56	29,357	50	33.72 ⁶
	Total			5.56	29,357	50
No ROW on Private Land or on Public Land in BHPP Units	Winter Flats	Portion of RRG 8-inch gas line to be converted to water line and assigned to BHPP	4.79	25,291	50	29.01 ⁶
		12-inch buried steel water	10.43	55,070	50	62.98 ⁶
TOTALS FOR WATER PIPELINES			22.49	118,747		136.07
<p>¹ ROW widths for new water pipelines would be within the same ROW width as for new natural gas pipelines and cannot be added to obtain a combined total. New ROWs in Winter Flats area would mostly overlap with existing RRG ROW COC31077A.</p> <p>² Proposed pipeline lengths include 4,305 feet for five bores instead of trenches in environmentally sensitive areas. No TUP needed adjacent to bored segments. Additional 5.56 miles of existing RRG gas pipeline (COC31077A) to be converted to water line and assigned to BHPP. Proposed ROWs in Winter Flats area include two valve yards within the ROW width.</p> <p>³ Length computed in feet by GIS and converted arithmetically to miles. Discrepancies are due to rounding.</p> <p>⁴ Proposed permanent ROW in Winter Flats area would be narrower than 50 feet along a combined length of 0.53 mile to avoid two ACECs and a WSA.</p> <p>⁵ ROW Areas computed by GIS, incorporating narrowed segments, and are not the product of length times 50 feet.</p> <p>⁶ All new water pipeline segments would be collocated with new gas pipelines, resulting in no additional disturbance.</p>						

2.1.4 Proposed Project Activities

Pre-Construction Civil Surveys

Civil surveys would be performed to identify the pipeline centerlines and boundaries of approved work spaces before construction commences. Flagged or painted lath would be set at intervals required to maintain line of sight along the proposed centerline and at the edges of the work limits. All EWS would be marked in a similar fashion, and all four corners of each EWS would be marked by flagged or painted lath. RRG construction inspectors would be responsible for verifying that the limits of authorized disturbance areas are staked prior to construction. Access to the ROW alignment and ancillary areas would be via V.2 Road and S.0 Road.

Clearing, Grading, and Topsoiling

Vegetation would be cleared and the construction workspace graded to provide for safe and efficient operation of construction equipment and vehicles, and to provide space for the storage of subsoil and topsoil. Construction activity and ground disturbance would be limited to approved, staked areas. Trees would be cut with a chainsaw and/or mechanical shears, and brush would generally be cut with a hydro-axe or similar equipment. Trees and brush would be cut as close to the ground as possible. Vegetation would typically be chipped or shredded and incorporated into the topsoil, or stored onsite for reuse during reclamation activities. Stumps not shredded or chipped would be removed and disposed of at an approved disposal facility.

Topsoil would be salvaged when not wet or frozen and windrowed along the pipeline route to facilitate revegetation of the workspace after construction is complete. All topsoil to a depth of 6 inches (if available) would be removed from the trench line and working side of the workspace. Topsoil would be stockpiled separately from subsoil and would not be used to pad the trench or construct trench breakers. Topsoil and subsoil would be placed outside the ordinary high water marks at crossings of drainages. Periodic gaps would be left in the windrowed topsoil and subsoil to avoid ponding during storm events.

Trenching and Rock Saws

Access points would be provided to allow landowners and grazing permittees to move vehicles, equipment, and livestock across the trench where needed. RRG would add soft plugs, using uncompacted fill placed back into the trenches, during the construction phase. The soft plugs of earth with ramps on either side would be left at all well-defined livestock and wildlife trails to allow access across the trench and provide a means of escape from the trench.

No blasting is expected to be required for pipeline construction. Instead, crews would utilize rock-saws to excavate through rock where bedrock is encountered during construction.

Pipe Welding, Cathodic Protection, and Coating

The joints of natural gas and water pipe would be strung along the ditch and welded together. When necessary, pipe would be bent to accommodate horizontal and vertical changes in direction. Pipe joints would be lined up end-to-end, clamped into position, and welded in accordance with regulations and standards currently required for natural gas pipelines or water lines, as applicable. All welds would be visually inspected by a qualified inspector. Non-destructive radiographic inspection methods would be conducted in accordance with current requirements, including all joints in bores. Any defects would be repaired or cut out as required under the specified regulations and standards.

All of the natural gas and water pipeline segments would have cathodic protection against internal corrosion, with one rectifier serving both lines. To prevent surface corrosion, the pipe would be externally coated with fusion-bonded epoxy prior to delivery. After welding, field joints would be coated with a tape wrap, shrinkable sleeve wrap, or field-applied fusion-bond epoxy. Before the natural gas and

water lines are lowered into the trench, the coating would be visually inspected and tested with an electronic detector, and any faults or scratches would be repaired.

Lowering-in and Padding the Pipeline

Before being lowered into the trench, a pipe section would be inspected to verify that it is properly fitted and that the bottom of the trench is at sufficient depth and free of rocks and other debris that could damage the external pipe coating. Dewatering may be necessary where water has accumulated in the trench. The pipe sections would be simultaneously lifted in position over the ditch and lowered in place. The natural gas pipeline and water line would be laid in the same trench, with approximately 24 inches of separation. Sifted soil fines from the excavated subsoils would provide rock-free pipeline padding and bedding. Sandbags may be used to pad the bottom of the ditch instead of, or in combination with, padding with soil fines. In rocky areas, padding material or a rock shield would protect the pipe.

Backfilling

Backfilling would begin after a section of pipe has been placed in the ditch. Backfilling would be conducted using a bulldozer or other suitable equipment. Backfilling the trench would generally use the subsoil previously excavated from the trench, except in rocky areas where imported, appropriate fill material may be needed. Backfill would be graded and compacted, where necessary for ground stability, by tamping or walking with a wheeled or tracked vehicle. Compaction would be performed to the extent that there are no voids in the trench. Any excavated materials or materials unfit for backfill would be utilized elsewhere, shallowly mounded on the trench (to help avoid settling issues), or properly disposed of in conformance with applicable laws or regulations.

Pneumatic Pipeline Testing

The maximum allowable operating pressure (MAOP) for the gas pipeline would be 1,440 pounds per square inch (psi), and the MAOP for the water line would be 1,000 psi. The pipeline would be pressure-tested in compliance with regulations. Prior to filling the pipeline with an inert gas for pneumatic testing, each section of the pipeline would be cleaned by passing reinforced poly pigs through the interior of the line. Incremental segments of the pipeline would then be filled with compressed air or nitrogen; pressurized; and held for the duration of the test.

Cleanup and Restoration

Cleanup and restoration would occur after the pipeline is installed and after backfilling is completed. Cleanup of the surface along the construction workspace and any EWS would include removing any construction debris and final grading the areas to the finished contour. Erosion control measures would be installed and seeding would be performed in accordance with BLM requirements. Any irrigation ditches, cattle guards, fences, and artificial and natural water sources for livestock and wildlife damaged during construction would be repaired to pre-construction conditions or better.

Livestock Barrier and Other Livestock Issues

RRG, in conjunction with BHPP, would provide compensation or interim measures for any critical facilities (such as livestock watering sites) disrupted during the construction or restoration process through prior agreements with the BLM, grazing permittees, or landowners. Temporary fencing would be installed as required by pre-construction agreements with landowners to prevent livestock entry into the construction workspace. Livestock crossovers (trench plugs), with ramps on either side of the open trench, would be utilized at maximum 1-mile intervals and at well-defined livestock and wildlife trails to facilitate passage of livestock across the construction workspace and to prevent livestock from becoming trapped in the trench.

2.1.5 Summary of Project-Related Surface Disturbance

Pipelines

Table 1 summarizes temporary and long-term disturbance associated with the Proposed Action. The proposed pipeline construction corridor would be a maximum of approximately 75 feet wide, including a 50-foot-wide permanent ROW and a 25-foot-wide short-term (construction) ROW. The pipeline would cross approximately 21.44 miles of BLM-administered land and 0.5 mile of private land. An open trench approximately 4 feet wide and 5 feet deep would be dug using either a trackhoe or trenching machine. RRG would then install the natural gas and produced water lines as described above. The trench would be backfilled and the surface recontoured to preconstruction conditions and reclaimed to BLM specifications. The pipeline would be sized for current and anticipated future gas production.

Extra Work spaces and Temporary Storage Yards

Forty-one EWS would be required for construction workspace along the pipelines and would be used to store pipe, construction equipment, and materials. In addition, RRG would use nine TSY along the project ROW for staging and equipment storage.

Aboveground Appurtenances

Pipeline markers would be placed along the pipeline route as necessary in accordance with safety requirements. Aboveground valve sets would be needed to accommodate future pipeline tie-ins and to allow the pipelines to be segregated into sections for future maintenance. All natural gas volume measurement would occur at the well pad locations and at the two valve yards, described below.

Permanent appurtenances at the two valve yards (totaling 0.07 acres of unreclaimed area) would include aboveground sections of pipe, valves, pig launchers and receivers, and small sheds containing natural gas measuring equipment. Small containers would also be onsite to help catch fluids from pigging operations. Valve yard sites are adjacent to the existing roadways to facilitate vehicle access during normal operations; steel guard posts/poles would be installed to protect facilities from vehicles. The unreclaimed area of the valve yards would be graveled and kept free of vegetation for safety reasons.

All aboveground facilities and equipment would be painted to BLM specifications to reduce visual impacts (**Appendix B**). The valve yards would be fenced throughout the operational phase of the pipelines to limit access by livestock, large wildlife species, and the public.

2.2 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD

During project planning, BLM and RRG investigated two alternative alignments in the western portion of the Winter Flats Pipeline. One alternative included a deviation for the main V.2 Road alignment to follow the existing alignment that cuts off two major curves in the road alignment, reducing overall pipeline length. This also would have kept the alignment within the previously disturbed alignment, although the period of around 30 years since it was constructed has allowed essentially complete restoration. This alternative alignment was not carried forward in the NEPA analysis because it would have included a segment within South Shale Ridge Area of Critical Environmental Concern (ACEC) as identified in the 2015 GJFO ARMP.

Initially when it was determined that following the existing alignment where it deviates from V.2 Road was not suitable, RRG investigated a deviation to the south of the road to avoid the two major curves mentioned above. However, resource surveys and the rugged nature of that alternative segment led to a decision not to consider it further and instead to follow V.2 Road along the entire pipeline length. The Wagon Track Lateral as currently proposed would be a new pipeline extending from a tie-in with the Winter Flats Pipeline to BHPP's Wagon Track 12-16 well pad. The proposed Wagon Track Lateral pipelines would not follow an existing pipeline or road ROW. Although the pipelines could have been

collocated with Mesa County Road S.0), it is a sinuous route with eight drainage crossings within a relatively short distance. The BLM agreed with RRG that a more direct route would be preferable and have lesser impacts during both construction and periodic maintenance.

2.3 NO ACTION ALTERNATIVE

For this project, the No Action Alternative would consist of denial by the BLM of the applications submitted by RRG and BHPP for use of Federal land to construct and operate the pipelines. Consequently, construction of the pipelines as currently envisioned would not occur on BLM-administered lands. However, BLM management and currently permitted activities in the project area, and associated impacts, would continue. These would include activities and impacts associated with existing, currently authorized, or potential new oil and gas developments, pipeline construction, access road construction and use, livestock grazing, and a variety of recreational uses. Instead of new, buried steel pipelines for transporting natural gas, raw water for use in drilling and completions, and produced water for treatment and recycling, BHPP and potentially other oil and gas operators would need to rely on other means of transport, primarily haul trucks and surface pipelines along roadways, to develop their valid existing leases.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section provides a description of the human and natural environmental resources that could be affected by the Proposed Action and presents comparative analyses of the direct and indirect impacts on the affected environment stemming from the implementation of the actions under the Proposed Action and other alternatives analyzed.

The BLM has identified 23 elements of the human environment, listed below, as potentially affected by the project. Information presented in this EA is intended to allow the decision-maker and the public to assess whether impacts of the Proposed Action would be significant under NEPA. The BLM also identified five additional components of the human environment as not present in the project area or not potentially affected. These environmental elements, also listed below, are not addressed in the EA.

Environmental Elements Present or Potentially Affected

Access and Transportation	Socioeconomics
Air Quality	Soils
Cultural Resources	Special Designations
Fire and Fuels	Special Status Plant Species
Fossil Resources	Special Status Animal Species
Geology and Minerals	Vegetation
Grazing and Rangeland Management	Visual Resources
Invasive Non-Native Species	Wastes – Hazardous or Solid
Land Tenure and Rights-of-Way	Water Resources
Native American Religious Concerns	Wildlife – Terrestrial and Aquatic
Noise	Wilderness and Wilderness Characteristics
Recreation	

Environmental Elements Not Present (NP) or Present but Not Affected (NA)

Climate Change – NA	Wild and Scenic Rivers – NP
Environmental Justice – NA	Wild Horses and Burros – NP
Public Health and Safety – NA	Wilderness Study Areas – NA

Within each resource type, and when applicable, definitions of the kinds of impacts are included in the evaluation of potential environmental impacts. Comparison of impacts is intended to provide an impartial

assessment to help inform the decision-maker and the public. The impact analysis does not imply or assign a value or numerical ranking to impacts. Actions resulting in adverse impacts to one resource might impart a beneficial impact to other resources. In general, adverse impacts described in this chapter are considered important if they result from, or relate to, the implementation of any of the alternatives. These impacts are defined as follows:

- Direct Impacts – Resulting from the action, at the same time, in the same general area.
- Indirect Impacts – Occurring at a different time or location from the action.
- Short-term Impacts – Occurring during or after the action and continuing up to 2 years.
- Long-term Impacts – Extending beyond the first 2 years.

Environmental impact analysis is based on existing data and information available from Federal and state agencies, peer-reviewed scientific literature, and relevant resource studies conducted in the project area in relation to the Proposed Action or other proposed development projects.

Standards for Public Land Health

In January 1997, the Colorado State Office of the BLM approved the Standards for Public Land Health. These standards, which describe the conditions needed to sustain public land health, apply to all uses of public land. The project area is located within the GJFO De Beque-Roan Creek Area, for which the BLM conducted a Land Health Assessment (LHA) in 2006 (BLM 2008a). The De Beque-Roan Creek LHA includes several grazing allotments, four of which (Coon Hollow, Winter Flats-Deer Park, Red Rock, and Corcoran Wash) would incur some disturbance from the proposed pipeline construction. The total area contained within these three allotments is approximately 75,000 acres. Land health standards, and current land health conditions for the project area (BLM 2008a), are as follows:

- Standard 1 – Upland Soils. Most of the project area was achieving or moving toward achieving standards for upland soils, with some problem areas associated with erosion due to slopes and sparse vegetation. This also included erosion related to oil and gas infrastructure, particularly in the Winter Flats-Deer Park area. Failure of some areas to achieve standards was attributed to past and present grazing and to invasive non-native plants, especially cheatgrass.
- Standard 2 – Riparian Systems: No riparian systems are present within the project area.
- Standard 3 – Plant and Animal Communities: The Coon Hollow, Red Rock, and Corcoran Wash allotments were generally achieving, moving toward achieving, or achieving standards with problems. The Winter Flats-Deer Park allotment was primarily achieving with problems, and all three included areas not achieving standards. On a finer scale, approximately one-third of the pipe line project area is not achieving standards. Drought, livestock grazing, and invasion by non-native plants, especially cheatgrass, were cited as problems or causes for failure to achieve standards. For animal communities, no allotments were failing to achieve standards, and most areas were achieving or moving toward achieving standards.
- Standard 4 – Special Status Species and Their Habitats: For special status plants (the LHA did not address special status wildlife), most were found to be achieving standards. The Colorado hookless cactus was described as generally meeting standards but at risk due to poor habitat conditions associated with invasive non-native plants. Herbivory by rabbits and fragmentation by oil and gas activities and infrastructure were also cited as risks.
- Standard 5 – Water Quality: The LHA cited risks to surface waters from erosion associated with oil and gas activities in the Winter Flats-Deer Park area but noted that implementation of best management practices would reduce this risk. Elevated sediment transport is also likely to occur

from areas with steep slopes and naturally sparse plant cover and from areas where plant cover has been reduced by the combination of grazing, drought, and invasion of non-native species.

The Proposed Action, by removing plant cover and disturbing upland soils and ephemeral drainages, has the potential to result in conditions unfavorable for the resources addressed above. However, the limited amount of surface disturbance, the project location along an existing road and existing pipeline alignment, and the ROW Stipulations listed in **Appendix B** would reduce impacts to no more than a negligible effect on achieving land health standards over the short term and, with successful reclamation, over the long term.

3.1 APPLICABLE RIGHT-OF-WAY AVOIDANCE AREAS AND PROJECT CONSIDERATIONS

For the Proposed Action, various Right-of-Way Avoidance Area (ROWA) constraints would be applied to the project pursuant to the 2015 GJFO ARMP. These constraints would be applied to the ROW grant and TUP sought by RRG, a third-party entity (i.e., not the holder of Federal oil and gas leases which the pipelines would service). **Table 3** lists ROWAs from the 2015 GJFO ARMP applicable to the Proposed Action. These ROWAs would apply to the ROW grant sought by BHPP only in relation to 0.44 mile of proposed water pipeline along V.2 Road and 1.27 miles of proposed water pipelines along the Wagon Track lateral. The combined 1.71 miles of new water pipelines would be on public land outside the two Federal Units (Winter Flats and Whittaker Flats) for which BHPP is the operator.

A ROWA is defined as “An area designated to be avoided due to some resource value that may become damaged or detracted from if development activities were allowed. Examples of an avoidance area may be a recreation site or known cultural site. An area may also be an avoidance area if some hazard exists, such as a landslide area. The area may not be totally unavailable but should be avoided *if possible* [emphasis added]. All land use authorizations are subject to avoidance area requirements.”

In addition, Section B.1 of Appendix B of the 2015 GJFO ARMP states, “ROW avoidance areas may have corresponding stipulations, as specifically noted in Tables B-1 through B-3 and Tables B-5 through B-7. In these cases, denoted as NSO-X (ROWA), CSU-X (ROWA), or TL-X (ROWA), the surface area covered by the stipulation is considered a ROW avoidance area.”

As noted above and shown in **Table 3**, the ROWAs considered by the BLM in analyzing the Proposed Action are analogous to No Surface Occupancy (NSO), Controlled Surface Use (CSU), and Timing Limitation (TL) stipulations in Appendix B of the 2015 GJFO ARMP. Eight of the ROWAs listed in **Table 3** would not be fully avoided or adhered to by the Proposed Action, given the alignment along V.2 Road or the Wagon Track Lateral and the 7-month construction schedule of May 1 to December 1.

The BLM has evaluated the lack of full adherence to these eight ROWAs using the exception criteria in Appendix B of the 2015 GJFO ARMP in combination with project design and applicable mitigation measures. Bases for considering the project proposal in relation to these ROWAs include:

- The need to provide natural gas and water pipelines to service valid existing Federal leases, including existing or approved developments and reasonably foreseeable future developments.
- Project design elements such as narrowed construction widths, use of bores in some segments, and extensive pre-project resource surveys to avoid or minimize impacts to the affected ROWAs.
- Collocation of gas and water pipelines primarily adjacent to V.2 Road and an existing pipeline, which would reduce new surface disturbance and avoid surface impacts to the South Shale Ridge and Pyramid Rock ACECs and the Little Book Cliffs WSA.

Table 3. Applicable Right-of-Way Avoidance Areas and Project Considerations

ROWA and Equivalent Stipulation	Purpose and Content of the ROWA	ROWA Applied Fully?	Project-Specific Considerations
No Surface Occupancy (NSO)			
Lands with Wilderness Characteristics (NSO CO)	Prohibit surface occupancy or use allowed on identified lands managed to protect inventoried wilderness characteristics in accordance with the RMP.	NA	South Shale Ridge LWC area not included due to RMP decision not to manage for wilderness characteristics.
Visual Class I (NSO CO)	Prohibit surface occupancy and use in VRM Objective Class I areas. Includes Little Book Cliffs WSA and The Goblins VRM Class I.	Yes	VRM Class I areas to be avoided.
Geology Slope (NSO CO)	No surface occupancy or use is allowed on lands with steep slopes greater than 40%.	No	Location adjacent to existing V.2 Road and existing pipeline alignment, which show no slope instability. Steep slopes mostly associated with stream crossings or toes of adjacent bedrock slopes. See Section 3.15.
NSO CO Hydrology River (NSO CO)	Prohibit surface occupancy or use within 400 meters of the ordinary high-water mark or within 100 meters (328 feet) of the 100-year floodplain of major rivers (includes the Colorado River).	Yes	Colorado River corridor would not be affected
ACECs (NSO-12)	Prohibit surface occupancy or use and surface-disturbing activities. Includes South Shale Ridge and Pyramid Rock ACECs.	Yes	Surface disturbance to ACECs to be avoided. A short segment would be bored beneath the edge of the South Shale Ridge ACEC because of a tight bend in the road alignment and limited working space. Future maintenance activities would not be allowed to disturb the surface without specific authorization from the BLM.
Occupied or Critical Habitat for Threatened or Endangered Species (NSO-13) -- PLANTS	Prohibit new disturbance within 200 meters of current and historically occupied habitat.	No	ESA Section 7 consultation and current surveys; direct and indirect impacts avoided or reduced by project design and conservation measures; alignment along V.2 Road and existing pipelines; monitoring for 3 years after completion. Incorporation of conservation measures from the USFWS Biological Opinion. See Section 3.17.1 and Appendix B.
Occupied or Critical Habitat for Threatened or Endangered Species (NSO-13) -- ANIMALS	Prohibit certain surface uses to protect threatened, endangered, proposed, and candidate plants and animals from indirect impacts, loss of adjacent suitable habitat, or impacts to primary constituent elements of critical habitat as designated by USFWS. Prohibit new disturbance within 200 meters of current and historically occupied habitat.	Yes	ESA consultation on endangered big-river fishes previously completed under Programmatic Biological Opinion for depletions in Colorado River flows; annual mitigation payments by the BLM to USFWS. No additional impacts anticipated, and no new disturbance within 200 meters of currently or historically occupied habitat.

ROWA and Equivalent Stipulation	Purpose and Content of the ROWA	ROWA Applied Fully?	Project-Specific Considerations
Golden Eagle Nest Sites (NSO-23)	Prohibit surface occupancy and surface-disturbing activities within 0.25 mile of active and associated alternate nests.	Yes	Applicable if surveys in 2016 nesting season reveal presence of active nests. Restriction may be altered based on status of nest or presence of natural screening.
Bald Eagle Nest Sites (NSO-24)	Prohibit surface occupancy and surface-disturbing activities within 0.25 mile of active nests.	Yes	Applicable only if surveys in 2016 nesting season reveal presence of active nests. Restriction may be altered based on status of nest or presence of natural screening.
BLM Sensitive Reptile and Amphibian Habitat (NSO-26)	Prohibit disturbance of breeding and denning sites (includes midget-faded rattlesnake, northern leopard frog, and Great Basin spadefoot.	Yes	No breeding or denning sites currently identified. Monitor required during construction in suitable habitat for midget faded rattlesnake during hibernation season. No amphibian breeding habitat expected to be affected.
Mapped Elk Production Areas (NSO-34)	Prohibit surface disturbance in elk production area year-round (includes mapped area at western end of project area).	No	Location of pipeline alignment and construction activities adjacent to or partially within existing V.2 Road. Concurrence from CPW. See Section 3.24 and Appendix B.
Wilderness Study Areas (NSO-43)	Prohibit surface occupancy or use and surface-disturbing activities in WSAs.	Yes	Little Book Cliffs WSA to be avoided.
Little Book Cliffs Wild Horse Range (NSO-36)	Prohibit surface occupancy or use and surface-disturbing activities within the LBCWHR.	Yes	Little Book Cliffs Wild Horse Range to be avoided.
Cultural Sites Allocated to Conservation Use (NSO-37)	Prohibit surface occupancy or use and surface-disturbing activities, including archaeological excavations, within 100 meters of eligible sites.	Yes	Project would avoid site boundaries. Archaeological monitor required during construction (including boring) and future maintenance with 100 feet (30 meters) of a site boundary.
Cultural Sites Allocated to Traditional Use (NSO-38)	Prohibit surface occupancy or use and surface-disturbing activities within 200 meters of the following known eligible or potentially eligible sites allocated to Traditional Use. Consider visual impacts on sites and apply appropriate mitigation.	No	Encroachment into one cultural site boundary due to narrow width along V.2 Road available for construction. Archaeological monitor present during construction (including boring) and future maintenance with 100 feet (30 meters) of a site boundary. Concurrence by the SHPO with determination of “no adverse effect.” See Section 3.4 and Appendix B.
Controlled Surface Use (CSU)			
Geology Soil (CSU CO)	Special design, construction, and implementation measures may be required to avoid, minimize, and mitigate potential effects to soil productivity in areas with fragile soils and mapped Mancos Shale and saline soils.	No	Location adjacent to V.2 Road and existing pipelines. Special design, construction, and implementation measures would be required as appropriate based on construction oversight.

ROWA and Equivalent Stipulation	Purpose and Content of the ROWA	ROWA Applied Fully?	Project-Specific Considerations
Wildlife Habitat (CSU CO)	Surface occupancy or use may be restricted—including relocation by more than 200 meters—in wildlife emphasis or priority areas identified in the RMP. Includes Winter Flats WEA.	Yes	Species-specific protections applied to high-value or essential habitats based on GJFO corporate database and project-specific surveys.
Definable Streams (CSU-3)	<i>Disturbances subject to site-specific relocation at the discretion of the BLM within 30 meters from the ordinary high-water mark.</i>	No	<i>Construction outside periods of flow; prompt restoration of channel and banks; approval by USACE; adherence to Gold Book standards, the SWMP, and the SPCC Plan. See Section 3.22 and Appendix B.</i>
BLM Sensitive Plants Occupied Habitat (CSU-9)	<i>Special design, implementation, and mitigation measures within 100 meters; may require relocation by more than 200 meters.</i>	No	<i>Special design, implementation, and mitigation incorporated into project to avoid, minimize, or mitigate impacts to plants and habitats. See Section 3.17.2 and Appendix B.</i>
Wildlife Habitat (CSU-10)	Require specific measures to mitigate impacts of operations on wildlife and wildlife habitat within high-value or essential wildlife habitat.	Yes	Species-specific protections and mitigation measures would be applied to high-value or essential habitats as appropriate based on GJFO corporate database and project-specific surveys.
Raptor Nest Sites (CSU-13, 14, 15, 16, 17, 18, and 19)	Require relocation of project-related activities by more than 200 meters when necessary to meet specified buffer distances for active nest sites of individual species or groups of species. Distances range from 0.125 mile to 0.5 mile. Dates vary by species or group of species.	Yes	Applicable if surveys in 2016 nesting season, or other information accepted by the BLM, reveals presence of active nests. Restriction may be altered based on status of nest or presence of topographic or other natural screening.
Cultural Sites Allocated to Scientific Use (CSU-27)	Require relocation by more than 200 meters or other restrictions for certain uses within meters of eligible or potentially eligible sites. Does not apply to archaeological excavation or documentation.	Yes	Project would avoid site boundaries. Archaeological monitor required during construction (including boring) and future maintenance with 100 feet (30 meters) of a site boundary. See Section 3.4 and Appendix B.
Cultural Sites Allocated to Public Use (CSU-28)	Require relocation by more than 200 meters or other restrictions for certain uses within 100 meters of sites allocated to Public Use. Also, consider integrity of setting, recreation opportunity, or visual impacts.	Yes	Sites allocated to public use in the project area include roads and ditches. These would not be altered in a way to affect public use, and avoidance is not required.
Timing Limitation (TL)			
Raptor Nests (TL CO)	Prohibit surface use within 0.25 mile of active nests of accipiters, buteos, and owls during specified nesting periods.	Yes	Applicable if surveys in 2016 nesting season reveal presence of active nest
Sensitive Raptor Nests (TL CO)	Prohibit surface use within 0.5 mile of active nests of ferruginous hawks, northern goshawks, peregrine falcons, and prairie falcons during specified nesting periods.	Yes	Applicable if surveys in 2016 nesting season reveal presence of an active nest.

ROWA and Equivalent Stipulation	Purpose and Content of the ROWA	ROWA Applied Fully?	Project-Specific Considerations
Big Game Production (TL CO)	Prohibit surface activities, including motorized travel. May 15 to June 15	No	Location of pipeline alignment and construction activities adjacent to or partially within existing V.2 Road. Concurrence from CPW. See Section 3.24 and Appendix B.
Salmonid and Native Non-Salmonid Fishes (TL-1)	Prohibit in-channel stream work in occupied streams during fish spawning, egg incubation, and fry emerging seasons (various timeframes specified in the RMP).	Yes	No fish-bearing streams to be affected.
Migratory Bird Habitat (TL-3)	Prohibit surface occupancy or use and surface-disturbing activities, including vegetation removal, in migratory bird habitat when birds are present. May 15 to July 15.	Yes	To the extent possible, alignments would be cleared of vegetation prior to start of TL period. Nesting surveys would be conducted in areas not able to be cleared of vegetation prior to construction. If nesting pairs are found to be present, damage or destruction of the nest would be avoided.
Golden Eagle Nests (TL-13)	Prohibit human encroachment within 0.5 mile of active nests if within direct line of site. December 15 to July 15.	Yes	Applicable if surveys in 2016 nesting season reveal presence of an active nest. Restriction may be altered based on status of nest or presence of natural screening.
Bald Eagle Nests (TL-14)	Prohibit human encroachment within 0.5 mile of active nests if within direct line of sight. November 15 to December 15 to July 31.	Yes	Potential nesting areas would not be affected.
Bald Eagle Winter Roosts (TL-15)	Prohibit activity within 0.25 mile of winter roosts if within direct line of sight. November 15 to March 15.	.Yes	Potential winter roosts would not be affected.
Big Game Winter Range (TL-20)	Prohibit surface occupancy, surface-disturbing activities, and intensive human activities in big game winter range as mapped by the CPW. December 1 to May 1.	Yes	TL period currently planned to be avoided.

- The location of the primary (20.67-mile) Winter Flats alignment (including 0.5 mile on private land) adjacent to a partially overlapping with existing pipeline ROWs and the existing V.2 Road, which is the route identified by the BLM as the preferred alignment during project planning.
- The need to construct the project between May 1 and December 1 to avoid issues associated with big game winter range, winter snowcover, springtime mud, and spring runoff in area drainages.

The underlying issue is whether authorizing granting of the requested ROWs and TUP would be consistent with the intent of the 2015 GJFO ARMP that ROWs should be avoided “if possible,” and that resources and uses represented by the ROWs would not be unduly affected. Based on the information presented above and in **Table 3**, the following sections analyze impacts potentially occurring from the Proposed Action along the alignments show in **Figure 1** and **Appendix A** and during the proposed construction period (May 1 to December 1, 2016). The resource-specific impact analyses reflect the mitigation measures applied by the BLM as ROW Stipulations attached to any approved ROW/TUP documents based on this assessment (see Appendix B).

3.2 ACCESS AND TRANSPORTATION

The transportation network analyzed for impacts resulting from the proposed project and cumulative impacts includes those segments of state highways and county roads in Mesa and Garfield Counties that serve the project area. The area chosen for the cumulative impacts analysis area for transportation is the project area and associated access roads from De Beque, Colorado.

Affected Environment

Table 4 shows average daily traffic volumes on Mesa County Roads near the project area. **Table 5** shows the average daily traffic volumes in 2014 for trucks and all vehicles on segments of Interstate 70 (I-70) in the project vicinity.

Table 4. Traffic Volumes on County Roads and De Beque Streets in the Project Vicinity

Road	Segment	Year	Average Daily Traffic
45 Road (Roan Creek Road)	1,430 feet northwest of Glenwood Ave.	2011	1,520
4th Street	136 feet west of 45 Road	2006	1,455
44 Road	1,500 feet northeast of V.2 Road	2007	262
V.2 Road (Winter Flats Road)	410 feet west of 44 Road	2012	91

Source: Town of De Beque (2009), White (2012)

Table 5. Average Daily Traffic on I-70 in the Project Vicinity, 2014

I-70 Road Segment	Milepost	All Vehicles	Trucks
I-70 southwest of US 6, Palisade	41.6 - 43.7	17,000	2,091
I-70 northeast of US 6, Palisade	43.7 - 49.0	17,000	2,244
I-70 north of SH 65, Plateau Creek Turnoff	49.0 - 61.6	15,000	2,220
I-70 northeast of 45 Road and 45.5 Road, De Beque	61.6 - 65.4	15,000	2,355
I-70 southwest of Battlement Parkway and CR 215, Parachute	65.41 - 74.7	16,000	2,512
I-70 northeast of Battlement Parkway and CR 215, Parachute	74.7 - 81.2	18,000	2,610

Source: Colorado Department of Transportation (CDOT) 2014

In **Table 4**, the dates of available traffic counts do not reflect subsequent increases due to expanded energy development in the area, or more recent decreases related to low commodity prices. In **Table 5**, traffic volumes are presented for the stretch of I-70 between the towns of Palisade and Parachute under the assumption that service vehicles associated with the project would originate from the Grand Junction and Rifle areas.

Environmental Consequences

Proposed Action

The Proposed Action could have impacts on transportation within and near the project area due to increasing traffic volumes. The potential for indirect impacts also exists, through increasing risks of wildlife collisions, contributions to roadway deterioration, dust creation on unpaved roads, and noise and nuisance impacts to residents of the De Beque and to recreational users in the project area. These impacts would be limited to the 7-month duration of construction. Traffic impacts following construction, consisting of routine inspection and maintenance, would be negligible compared to current levels.

No new access roads would be constructed as a part of the Proposed Action. Most of the proposed pipelines are parallel and adjacent to V.2 Road. Where the pipeline deviates from the roadside, temporary construction access would be provided along the ROW alignment. After construction is complete, the pipeline would be accessed for routine inspection and maintenance via V.2 Road. Use of the permanent ROW for access during inspection and maintenance would be limited to essential actions and locations.

During construction, project-related traffic is expected to total approximately 55 round-trips per day for construction workers. This traffic peak would have an imperceptible impact on traffic volumes on segments of I-70 between Rifle and Grand Junction. Project-related traffic on county and town roads would occur for the duration of the 7 months of construction. Daytime traffic during periods of active construction is estimated to cause the following increases in traffic volumes in and near the town of De Beque: 4 % on 4th Street and 45 Road, 21% on 44 Road, and 60% on V.2 Road. Upon completion of construction and reclamation, project-related traffic would decrease to less than one trip per day and would be imperceptible on all roadway segments analyzed.

The ROW Stipulations in **Appendix B** include measures specifically intended to minimize impacts to the town of De Beque, local residents, and other road users because of increased traffic, fugitive dust, noise, risks to wildlife, and damage to unpaved road surfaces during and following pipeline construction.

Two portions of the proposed alignment—one in the western part and one in the eastern part—are expected to require temporary closures of V.2 Road. These are shown on **Figure 1**. The closures would be where narrow construction widths are needed for the protection of sensitive resources adjacent to the road and pipeline alignment. The western closure would last up to 2 weeks. During this closure, access to areas farther west along V.2 Road would be via 45 Road north of De Beque to County Road 200 northwest of De Beque. The eastern closure would consist of multiple, short-duration closures over a period of up to 1 week. The closures would be coordinated with the County, and appropriate signage would be placed to inform other users of the road. The construction contractor would have flaggers to allow passage of vehicles, with minimal delays, in areas of construction adjacent to or partially within the roadway. As described in **Section 3.8** and a ROW Stipulation in **Appendix B**, the construction is required to be prepared at all times to allow passage of emergency response vehicles with minimal delays.

Any private landowners potentially affected by the temporary closures of V.2 Road would be contacted by the proponent to provide information on the locations, anticipated dates, and durations of the closures.

No Action Alternative

Under this alternative, the Proposed Action would not be constructed, and resulting temporary construction traffic would not occur. Existing oil and gas, ranching, and recreational traffic along V.2 Road and associated routes would continue and are expected to increase. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These would include activities associated with oil and gas development, pipelines, construction and use of access roads, recreation, and grazing.

3.3 AIR QUALITY

Affected Environment

Regional air quality is influenced by a combination of factors, including meteorology, the magnitude and spatial distribution of local and regional air pollution sources, and the chemical properties of emitted pollutants. Within the lower atmosphere, regional and local scale air masses interact with regional topography to influence atmospheric dispersion and transport of pollutants. The following subsections summarize the climate and air quality of the project area and region.

Climate

The project area is located in a semi-arid (dry and cold) mid-continental climate regime. The area is typified by dry, sunny days, clear nights, and large daily temperature changes. The nearest long-term meteorological measurements were collected from 1947 to present at Altenbern, Colorado, located about 15 air-miles north of the project area at an elevation of 5,690 feet (Western Regional Climate Center [WRCC] 2012). The region generally has cool temperatures, with monthly mean temperatures ranging from 10 °F to 37°F in January (the coldest month) and from 50°F to 89°F in July (the hottest month). The historic measured daily extreme temperatures range from -32°F in 1963 to 104°F in 1989. The frost-free period generally occurs from May to September.

The mean annual precipitation at Altenbern is about 16 inches, with annual totals ranging from 9.2 inches in 2002 to 24 inches in 1985. The monthly mean precipitation is relatively consistent throughout the year, ranging from 0.95 inch in June to 1.6 inches in October. Mean annual snowfall is about 63 inches, with the maximum of 140 inches measured in 1949. Most of the snowfall occurs from November through March. The two peak snowfall months, December and January, have mean depths of 15 and 17 inches, respectively.

Air Pollutants

National Ambient Air Quality Standards (NAAQS) and Colorado Ambient Air Quality Standards (CAAQS) are health-based criteria for the maximum acceptable concentrations of widespread air pollutants considered harmful to public health and the environment. The U.S. Environmental Protection Agency (USEPA) has established NAAQS for six criteria pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (less than 10 microns [µm] in diameter [PM₁₀] and particulate matter less than 2.5 µm in diameter [PM_{2.5}]), and SO₂. Note that O₃ is generally not directly emitted from sources but formed in the atmosphere by chemical interactions of nitrogen oxides (NO_x) and volatile organic compounds (VOCs) in the presence of sunlight and under certain meteorological conditions. The State of Colorado has established a standard for sulfur dioxide (SO₂) more stringent than the NAAQS. An area shown to exceed the NAAQS or CAAQS for a given pollutant may be designated a nonattainment area for that pollutant.

In addition to the criteria pollutants, regulations also exist to control the release of certain hazardous air pollutants (HAPs). Certain chemicals are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects. Ambient air

quality standards do not exist for HAPs. Instead, a variety of laws target the specific source category and industrial sector of HAP emissions, such as stationary and mobile sources, as well as production and product use.

Monitoring of air pollutant concentrations has been conducted in the region. These monitoring sites are part of several monitoring networks overseen by State and Federal agencies, including the Air Pollution Control Division (APCD) of the Colorado Department of Public Health and Environment (CDPHE), Clean Air Status and Trends Network, Interagency Monitoring of Protected Visual Environments, and National Acid Deposition Program National Trends Network.

The project area lies within an attainment area under NAAQS and CAAQS (CDPHE 2015). An attainment area is where ambient air pollution quantities do not exceed NAAQS and/or CAAQS. Regional background values are below established standards, and all areas within the cumulative study area are designated as attainment for the criteria pollutants.

Under the Prevention of Significant Deterioration (PSD) program, Federal air quality regulations adopted and enforced by the CDPHE-APCD limit incremental emissions increases of air pollutants from certain sources to specific levels defined by the classification of air quality in an area. All areas of the U.S. are assigned a classification, which describes the degree of degradation to the existing air quality allowable under the PSD permitting rules. PSD Class I areas are areas of special national or regional natural, scenic, recreational, or historic value. Little degradation in air quality is allowed by limiting industrial growth. PSD Class II areas allow for reasonable industrial/economic expansion. Certain national parks and wilderness areas are designated as PSD Class I. Air quality in these areas is protected by allowing only slight incremental increases in pollutant concentrations. Other areas not designated as PSD Class I are classified as PSD Class II, where less stringent limits on increases in pollutant concentrations apply. In addition, the State of Colorado applies Class I SO₂ increments to certain Class II areas in the State.

The project area and surrounding areas are classified as PSD Class II. PSD Class I areas located within 125 miles of the project area are the Black Canyon of the Gunnison National Park (50 air-miles south-southeast), Flat Tops Wilderness (55 air-miles northeast), Maroon Bells – Snowmass Wilderness (55 air-miles east-southeast), West Elk Wilderness (55 air-miles southeast), Arches National Park (65 air-miles west-southwest), Canyonlands National Park (90 air-miles southwest), La Garita Wilderness (105 air-miles southeast), Weminuche Wilderness (110 air-miles south-southeast), Eagles Nest Wilderness (115 air-miles east-northeast), and Mount Zirkel Wilderness (120 air-miles northeast).

PSD Class II areas with Class I SO₂ increment protection near the project area are Colorado National Monument (15 air-miles southwest), BLM lands in the Gunnison Gorge Recreation Area (40 air-miles southeast), areas of the Black Canyon of the Gunnison National Park that are not already Class I (50 air-miles south), Dinosaur National Monument (80 air-miles north), Uncompahgre Mountain Primitive Area (90 air-miles south-southeast), and Wilson Mountains Primitive Area (100 air-miles south).

Overview of Regulatory Environment

The APCD of the CDPHE, under its delegated authority from the USEPA pursuant to the Clean Air Act (CAA) and in conformance with Colorado's State Implementation Plan (SIP), is the agency with primary responsibility for air quality regulation and enforcement in connection with industrial developments and other air pollution sources in Colorado. Unlike the conceptual "reasonable but conservative" engineering designs used in NEPA analyses, any required CDPHE-APCD air quality pre-construction permitting demonstrations are based on detailed, site-specific engineering values, which are assessed in CDPHE's review of the permit application. Any facility developed under the Proposed Action that meets the requirements set forth under Colorado regulations would be subject to CDPHE-APCD permitting and compliance processes. Regulations and standards that limit permissible levels of air pollutant

concentrations and air emissions and are relevant to the air impact analysis for the project include NAAQS; CAAQS; and PSD increments.

Construction and operation of production equipment may be subject to emission limits, control requirements and recordkeeping and reporting requirements set forth in the New Source Performance Standards (NSPS) contained in 40 CFR 60. Construction activities associated with the project are temporary, and emissions from the pipeline once constructed would be negligible. Consequently, the NSPS do not apply. The final determination of applicability and compliance with these Federal standards, as well as Colorado oil and gas industry standards, would be made during the State permitting process.

The U.S. Supreme Court ruled in 2007 that the USEPA has the authority to regulate greenhouse gases (GHGs), such as methane (CH₄) and carbon dioxide (CO₂), as air pollutants under the CAA. However, ambient air quality standards do not currently exist for GHGs, nor would emissions limits on GHGs apply to sources associated with the Proposed Action.

Environmental Consequences

Proposed Action

Pipeline construction would occur 10 hours per day and 6 days per week over the estimated duration of 7 months. Activities described in the Proposed Action would result in localized short-term increases in emissions associated with clearing of brush, stripping and stockpiling topsoil, excavating the pipeline trench, delivering and installing pipe, backfilling the trench, recontouring, and seeding and mulching. Air pollutants generated during these activities would include emissions from vehicles and heavy equipment, and fugitive dust (PM₁₀ and PM_{2.5}) associated with soil disturbance and travel on unpaved roads. Once construction activities are complete, air quality impacts associated with these activities would decrease markedly and continue to decline as revegetation progresses to a self-sustaining condition.

The width of ROW clearing would be minimized to avoid undue disturbance to vegetation. Where topsoil salvage and storage is not necessary, brush clearing would be limited to removal of aboveground vegetation to avoid disturbance of root systems, reducing fugitive dust. In addition, the BLM would require dust abatement of access roads and construction areas throughout construction.

The CDPHE requires an Air Pollutant Emission Notice (APEN) and construction permit for land development activities that disturb greater than 25 contiguous acres. The operating terms and conditions of the construction permit require particulate emissions controls for activities associated with the project, including surface disturbance and vehicular travel.

Emissions from construction were quantified using accepted methodologies, including manufacturer's emission factors, USEPA emission factors, and engineering estimates. The maximum annual emissions of criteria pollutants anticipated from the proposed construction activities are shown in **Table 6**. Note that lead emissions are not expected to be associated with project-related activities and are therefore not addressed in the analysis.

Table 6. Maximum Annual Emissions Estimates for Project Construction

Activity	Tons Per Year							
	PM ₁₀	PM _{2.5}	NO _x	CO	SO ₂	VOCs	HAPs	CO ₂
Pipeline Construction	57.1	19.1	13.9	13	0.0	4.1	0.04	2,118

The maximum annual emissions estimates shown in the table represent negligible amounts of air pollutants following construction and reclamation, with the longest-term emissions being low levels of fugitive dust until reclamation success is achieved. **Appendix B** describes ROW Stipulations to reduce air quality emissions associated with the project, including dust abatement on unpaved access roads and other disturbed surfaces, strict speed limits (less than 20 mph on unpaved roads) for project personnel, and prompt and effective reclamation.

No Action Alternative

Under the No Action Alternative, the Proposed Action would not be constructed. Therefore, the types and amounts of project-related emissions and impacts to air quality described above would not occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue, including those associated with oil and gas, pipelines, access roads, recreation, and grazing.

3.4 CULTURAL RESOURCES

Affected Environment

The BLM manages cultural resources on public land in accordance with the Antiquities Act of 1906, National Historic Preservation Act (NHPA) of 1966, Native American Graves Protection and Repatriation Act (NAGPRA) of 1990, the Archaeological Resources Protection Act of 1979, and various other laws and Executive Orders (EOs). The management process is also governed by the Colorado BLM's Protocol with the State Historic Preservation Officer (SHPO), implementing BLM's National Programmatic Agreement with the Advisory Council on Historic Preservation. Section 106 of the NHPA applies to consideration of the presence of and effect to cultural resources on both public and private land in the area of potential effect (APE).

Original Pipeline Alignment

In October 2014, Aztec Archaeological Consultants, LLC (AAC) completed a literature review and Class III cultural resource inventory for the proposed Winter Flats pipeline alignment on behalf of RRG. AAC then surveyed 247.90 acres of the existing ROW (which was initially considered a potential route) from November 6 through December 9, 2014. Pedestrian surveys for the originally proposed alignment excluded areas previously inventoried by both Grand River Institute (GRI) and AAC in 2012. All previously recorded sites within the 2012 survey areas were revisited by AAC in 2014. The survey excluded 1.40 acres of land on property owned by Chevron Corporation, due to denial of access.

AAC personnel received the results of Colorado's On-line Cultural Resource Database (Compass) search in October 2014, and a literature review was conducted at the GJFO on October 28, 2014. A second literature review was conducted at the GJFO on November 7, 2014, based on revised project data received from the proponent. The literature reviews and Compass results indicated that 264 previously recorded sites were located within 1 mile of the proposed pipeline alignment.

Two sites (5ME20888 and 5ME20889) and 11 isolated finds (IF) (5ME20890 – 5ME20900) were discovered during surveys, while 12 previously recorded sites (5ME6445, 5ME7121, 5ME15882, 5ME16482, 5ME17717, 5ME18689.1, 5ME18690, 5ME18731, 5ME19477, 5ME19479, 5ME19480, and 5ME19482) were revisited and updated. These sites and related information are presented in **Tables 7 and 8**. One previously recorded linear resource documented in the survey area (5ME15882) could not be relocated. This resource appears to be plotted incorrectly and may be partly lost to modern impacts.

Table 8 lists sites evaluated in relation to eligibility for listing on the NRHP and the results of that evaluation. The isolated finds associated with this project are not recommended as eligible for listing on the National Register of Historic Places (NRHP). No artifacts were collected during fieldwork.

Table 7. Isolated Finds Encountered During Project Inventory

<i>Smithsonian Number</i>	<i>Artifact Description</i>
5ME20890	One white quartzite tertiary flake measuring 30 by 35 by 15 millimeters (mm).
5ME20891	Two artifacts spaced roughly 9 meters (m) apart; one cream colored silicified wood tertiary flake (53 by 40 by 2 mm) and a sandstone shaft straightener (180 by 85 by 22 mm).
5ME20892	One-hand mano fragment 990 by 100 by 35 mm) of fine-grained sandstone ground on at least one surface.
5ME20893	One-hand mano of fine-grained sandstone (85 by 120 by 40 mm).
5ME20894	Four lithic artifacts within an area 30 m north/south by 5 m east/west. These are one tan mudstone secondary flake (50 by 35 by 15 mm), one grey quartzite tertiary flake (23 by 15 by 1 mm), one modeled gray and red chert tertiary flake fragment, and one piece of brown chert angular debris.
5ME20895	One oxidized sandstone mano fragment (65 by 55 by 40 mm).
5ME20896	Two lithic artifacts spaced roughly 5 m apart. These are one quartzite tertiary flake (19 by 16 by 3 mm) and one chalcedony flake fragment.
5ME20897	One chalcedony secondary flake with 10% cortex (25 by 15 by 5 mm).
5ME20898	One chalcedony tertiary flake (16 by 13 by 1 mm).
5ME20899	One chalcedony tertiary flake fragment.
5ME20900	One possibly hafted translucent brown chert knife (42 by 23 by 4 mm).

Table 8. Summary of Sites and Eligibility for the National Register of Historic Places

<i>Site Number</i>	<i>Site Type</i>	<i>NRHP Eligibility</i>
5ME6445	Multicomponent Archaic and Ute open campsite with historic trash scatter	Officially eligible
5ME7121	Archaic open campsite	Officially eligible
5ME15882	Linear resource: ditch	Field recommended as not eligible
5ME16482	Multicomponent Archaic campsite with historic trash scatter	Officially eligible
5ME17717	Historic possible oil and gas exploration site	Officially not eligible
5ME18689.1	Linear resource: Wagon Track Ridge Road	Officially not eligible
5ME18690	Multicomponent Archaic and Ute open campsite with historic trash scatter	Officially eligible
5ME18731	Historic can scatter	Field recommended as not eligible
5ME19477	Archaic open campsite	Field recommended as eligible
5ME19479	Protohistoric Ute campsite	Field recommended as eligible
5ME19480	Historic can scatter	Field recommended as not eligible
5ME19482	Archaic open campsite	Field recommended as eligible
5ME20888	Fremont open campsite	Field recommended as not eligible
5ME20889	Protohistoric Ute open campsite	Field recommended as not eligible

Both of the newly recorded sites are recommended as not eligible for listing on the NRHP. Previously recorded sites 5ME15882, 5ME18689.1, and 5ME17717 are officially determined not eligible for listing on the NRHP, while sites 5ME6445, 5ME7121, 5ME16482, and 5ME18690 are officially determined eligible. The Colorado SHPO gave concurrence (on January 11, 2016) with BLM's determination of

eligibility for the remaining previously recorded sites. Sites 5ME19477, 5ME19479, and 5ME19482 are eligible for listing on the NRHP, while 5ME18731 and 5ME19480 are not

Proposed Pipeline Alignment Reroute

In June 2015, AAC performed a literature review for the revised and currently proposed pipeline alignment reroute and intensely surveyed an additional 3.9 acres along this route. The literature review indicated that no additional sites or cultural resource inventories had been conducted within 500 feet of the new survey areas. Of the previously recorded sites in the project area, only two (5ME18691 and 5ME18689/Wagon Track Ridge Road) were located within 500 feet of the reroutes.

AAC completed additional surveys on July 1, 2015, for six proposed pipeline reroutes, referred to as Reroutes 1 through 6. Three of these reroutes (Reroutes 3, 5, and 6) required additional surveys, while the other three fell entirely within previously surveyed areas. The inventory area for the reroutes was calculated as 19.25 acres, and the archaeological survey included a 200-foot-wide corridor centered on the proposed project centerline. No new sites or new isolated finds were encountered during the survey. Previously recorded site 5ME18691 was revisited and updated. The site is officially eligible for listing on the NRHP.

Environmental Consequences

Proposed Action

Numerous “historic properties” (cultural resources eligible or potentially eligible for the National Register of Historic Places) have been identified during the cultural inventories completed for this project. Direct impacts of pipeline construction have the potential to irreparably damage or destroy culturally sensitive sites. Impacts that affect the physical setting could result in a loss of characteristics that make a historic property significant. Other culturally sensitive or significant locations in the area may exist that have not been identified. Unauthorized ground-disturbing activities may lead to impacts. The proximity of Native American sites to planned development within the surveyed areas may result in indirect impacts that reduce the significance of resources by changing the setting, location, and association. The BLM and project proponents have attempted to avoid disturbance of these known cultural resources through rerouting the proposed project and/or boring under eligible sites rather than trenching.

Because the BLM has determined that the Proposed Action could have direct or indirect impacts to known historic properties, formal consultation was initiated with the Colorado SHPO by the CRVFO on October 14, 2015. Concurrence with the BLM’s determinations of site eligibility and recommended mitigation measures was received from the SHPO on October 26, 2015, with several comments requiring additional clarification by the BLM. Additional information regarding boring beneath cultural sites was provided to the SHPO, and additional ROW Stipulations were added to **Appendix B**. These measures are as follows:

- Conventional Construction -- A qualified archaeologist would be present during surface-disturbing activities within 100 feet (30 meters) of a site boundary. The monitor would have the authority to order that operations cease if a threat of damage to a site arises. Construction would not resume at that location until the situation has been evaluated and addressed by a BLM archaeologist and, as appropriate, the SHPO.
- Boring – During boring to avoid surface disturbance of eligible sites, a qualified archaeologist would be present during surface excavations at opposite ends of the bore and periodically during boring and pipe installation beneath the site boundary and 100-foot (30-meter) buffers. In addition to observing surface activities at both ends of the bore, the monitor would watch for any surficial indication of potential damage from boring through the subsurface. The contractor for the boring work would also be required to suspend work at that site and immediately notify the

BLM in the event of any indication of potential surface or shallow subsurface disturbance. Work at that site would not be allowed to resume until the BLM archaeologist has inspected the situation and, as appropriate, contacted the SHPO to develop a plan for future action, up to and including mitigation of the site. If a planned bore cannot be completed successfully in the initially identified alignment, the operator would be required to utilize an alternative subsurface alignment instead of conventional construction. If an appropriate alternative bore alignment cannot be identified, further work on that segment could not resume until the BLM has been consulted and a remedial plan determined.

- Operations and Maintenance – No surface-disturbing activities for operations and maintenance would be allowed outside the initially authorized disturbance corridor. A qualified archaeological monitor would be present to monitor any future surface-disturbing activities within 100 feet (30 meters) from a site boundary. Surface disturbance would not be allowed for future maintenance of bored segments within site boundaries.

The Proposed Action would not totally adhere to the restrictions of GJ-NSO-38 (ROWA) described in Appendix B of the 2015 GJFO ARMP for the protection of cultural resources allocated to traditional use because of encroachment into the site boundary. However, the Proposed Action may be approved and the requested ROWs/TUP issued based on a determination by the BLM that the protected resources and resource uses would not be adversely affected (see **Table 3**).

Final concurrence was issued by the Colorado SHPO on March 28, 2016, with a finding of “no adverse effect” for the proposed undertaking pursuant to 36 CFR 800.5(b). BLM’s cultural resources education/discovery stipulation would apply for any previously unidentified cultural resources encountered by the project.

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed, and no project-related impacts to cultural resources from construction of the project would occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These include activities associated with oil and gas development, pipelines, access roads, recreation, and grazing.

3.5 FIRE AND FUELS

Affected Environment

The BLM manages wildland fire using a multidisciplinary approach under the guidelines found in two sets of interagency frameworks: the broader directive *Guidance for Implementation of Federal Wildland Fire Management Policy* (Fire Executive Council 2009) and the regional *GJFO/Colorado National Monument Interagency Fire Management Plan* (IFMP) (BLM 2008b). BLM’s wildland fire and fuels management reflects consideration of fire history, land status, public concerns and issues, and other resource objectives.

The Proposed Action occurs within the Upper Colorado River (UCR) Interagency Fire Management Unit (FMU). This unit provides a full range of fire management services to participating Federal, state, and local jurisdictions in western Colorado. The UCR is composed of the CRVFO and GJFO of the BLM, the White River National Forest, and Colorado National Monument. The UCR cooperates with state agencies, local communities, and fire departments on a wide range of activities including fuels treatment, fire prevention, and suppression. The V.2 Road in the project vicinity lies between two Fire Management Zones. To the north, FMZ D is an area where unplanned and planned wildland fire may be used to achieve desired objectives such as to improve vegetation, wildlife habitat or watershed conditions. To the south, FMZ C is an area where fire is a desirable component of the ecosystem, although ecological,

social, or political constraints must be considered. These constraints could include air quality, threatened and endangered species considerations, or wildlife habitat considerations.

Existing and previously disturbed lands are common within the FMU in the project area. This surface disturbance includes roads, well pads, pipelines, residential areas, agricultural lands, rail lines, and reclaimed areas. In June 2012, the Pine Ridge Fire burned through a small portion of the project area (in the Wagon Track area, and adjacent to the Winter Flats ROW). The fire burned for 9 days through nearly 14,000 acres, mostly on BLM-administered lands. Fuels generally included grass, sagebrush, and pinyon-juniper woodlands. In the years since the Pine Ridge Fire, there has been successful revegetation of the burned area thanks to several wet years, and the area has subsequently been reopened to public use.

Environmental Consequences

Proposed Action

Surface disturbance as part of the Proposed Action would directly affect fuels within the UCR FMU. Construction of the proposed pipeline and facilities and maintenance and use of the roads would be the sources of disturbance. Approximately 208.94 acres of new disturbance would occur, which would remove existing grass, shrub, and woodland fuel types. These areas would be reclaimed and revegetated, and would be dominated by fine fuels (grasses and forbs) mixed with scattered shrubs for at least 20 years before heavier fuel types (pinyon pine and Utah juniper) begin to reestablish.

During surface disturbance, ignition threats from heavy equipment and workers would be likely to pose the greatest risks to increasing the number of ignitions, especially in dry conditions during summer months. Reestablishment of native and desirable grasses and forbs could reduce the threat of domination by non-native, fire-carrying species. Control of weeds, especially cheatgrass (*Anisantha tectorum*), would be essential to fire and fuels management in ROW area.

The operator would be required to implement measures to prevent fires on public and private land in conjunction with its project-related activities and would be responsible for the costs of suppressing fires on public land that result from the actions of its employees, contractors, or subcontractors. Fires or explosions would be reported immediately to the GJFO and through the 911 dispatch. The proponent would conduct its activities in conformance to its *Fire Safety and Evacuation Plan*.

Additional measures to reduce the risk of fires such as from operation of a chainsaw or other equipment to cut or trim trees, operation of vehicles and heavy equipment, use of generators, and welding or use of open flames are listed as ROW Stipulations in **Appendix B**. During conditions of extreme fire danger, surface-use operations may be restricted or suspended in specific areas.

As described in **Section 3.2**, the Proposed Action would involve multiple short-duration closures of V.2 Road in the eastern part of the project and a potentially longer (to 2 weeks) in addition to briefer closures in the western part. During the western closure, access to areas farther west along V.2 Road would be via 45 Road north of De Beque to County Road 200 northwest of De Beque. These closures, and increased traffic volumes on local roads associated with the construction activities, could cause a slower response time for firefighters in the event of a wildland or facilities fire normally accessed via V.2 Road. Alternative routes would continue to be available throughout construction but would represent a greater distance, poorer driving conditions, or both.

To ameliorate interference with emergency response vehicles at the longer duration western closure, a temporary bypass would be constructed if necessary to allow passage of emergency personnel. In other closure areas, flaggers will be present to allow emergency personnel to proceed through the closed area, and construction will be paused as needed. In the areas where the pipeline will be installed beneath the

roadway, the construction crew will have the ability to put the road back into passable condition within 10 minutes to a maximum of a half hour, and mats or plates would also be available. See **Appendix B**.

No Action Alternative

Under the No Action Alternative, the Proposed Action would not be constructed, and no fire danger from construction of the Proposed Action would occur. BLM management and currently permitted activities in the project area would continue, including activities associated with oil and gas development, pipelines, access roads, recreation, and grazing.

3.6 FOSSIL RESOURCES

Paleontological (fossil) resources include the remains or traces of prehistoric organism preserved by natural processes in the earth's crust. The BLM manages paleontological resources for their scientific, educational, and recreational values in compliance with the Paleontological Resources Preservation Act (PRPA) of 2009. The PRPA affirms the authority for many policies the BLM has for managing resources, such as issuing permits for collecting and curating paleontological resources and confidentiality of their locations. The law also defines prohibited acts, such as damaging or defacing paleontological resources and establishes both criminal and civil penalties.

The BLM classifies geologic formations to indicate the likelihood of significant fossil occurrence (usually vertebrate fossils of scientific interest) according to the Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public land (BLM 2007b). These classifications, Class 1 (very low potential) to Class 5 (very high potential) determine the procedures to be followed prior to authorizing initiation of ground-disturbing activities in an area.

Affected Environment

The project area is located in the Piceance Creek Basin, a major geologic subdivision of the Colorado Plateau physiographic province. The Piceance Creek Basin is located on the northeastern edge of the Colorado Plateau and occupies approximately 2,300 square miles of northwestern Colorado. It is bounded by the White River uplift to the east, the Uinta uplift and the Axial Basin anticline to the north, the Sawatch and Uncompahgre uplifts to the south, and the Uinta Basin to the west (WSP 2015).

The Piceance Creek Basin and the Uinta Basin are "closely related early Cenozoic structural and sedimentary basins...created by Laramide uplifts during latest Cretaceous and Paleocene time" separated by the Douglas Creek Arch, a "broad north-south trending anticline," and contain similar deposits (WSP 2015). Three geologic units are exposed at the surface along the proposed pipeline alignment. These are the Late Paleocene Atwell Gulch Member of the Wasatch Formation (PFYC Class 5), the Upper Cretaceous Hunter Canyon Formation (PFYC Class 3), and Quaternary alluvium deposits (PFYC Class 2) that intermittently mantle bedrock formations throughout the project area (WSP 2015).

The Atwell Gulch Member, the lowermost stratigraphic member of Wasatch Formation, forms the base and lower portion of the southern flank of South Shale Ridge. The Wasatch Formation was deposited during the Late Paleocene and Early Eocene by primarily fluvial (stream) processes on "low-relief basin floors...in river channels and swamps and on floodplains...in tropical to warm-temperate, humid climactic conditions, resulting in lush vegetation" (WSP 2015). Numerous vertebrate and other fossils have been recovered from the Wasatch Formation in the Piceance Creek Basin during the last several decades, including a "scientifically important continental fossil flora and fauna" consisting of plants, fishes, aquatic and terrestrial reptiles, birds, and a rich diversity of mammals, thus permitting many paleontological studies to be conducted in this unit" (WSP 2015). Donnell (1969) called it "the most variable part of the Wasatch Formation" lithologically, with carbonaceous shale, lignite beds, variegated

claystones, siltstones, sandstones, conglomerates, and thin limestones. Late Paleocene fossils, including vertebrates, invertebrates, and plants, have been recovered from the Atwell Gulch Member” (WSP 2015).

The Hunter Canyon Formation, the uppermost unit of the Upper Cretaceous Mesaverde Group in the Piceance Creek Basin, is a “stratigraphically complex sequence” of resistant sandstones, dark shales, and coals deposited in a “variety of coastal settings” along the transgressing and regressing western shoreline of the Western Interior Seaway (WSP 2015). Erdman (1934) named the Hunter Canyon Formation for the “upper division of the rocks mapped as Mesaverde Group” in the type locality in western Colorado. The Hunter Canyon Formation (or its equivalents) has produced fossil evidence of plants, invertebrates, amphibians, fishes, reptiles including turtles, crocodilians and crocodile-like champsosaurs, lizards, ornithiscian and saurischian dinosaurs, and at least 15 species of mammals (WSP 2015).

An initial paleontological survey was conducted by Western Slope Paleontological Services, Ltd. (WSP) in November and December 2014 under Colorado BLM Paleontological Resources Use Permit COC76202. Supplemental paleontological surveys were conducted by AAC in April and July 2015 under Colorado BLM Paleontological Resources Use Permit COC77075. The results are summarized below.

Environmental Consequences

Proposed Action

Findings of scientifically significant fossils and fossil traces (ichnofossils) within and near the proposed pipeline alignment during project-specific surveys include the information presented in **Table 9**.

Table 9. Summary of Paleontological Survey Findings

<i>Site</i>	<i>Site Description</i>	<i>Scientifically Significant?</i>	<i>Within ROWs?</i>
Initial Surveys (Western Slope Paleontological Services)			
WF14-VB.1	Five fossilized pieces of small, heavily weathered, unidentifiable bone fragments lying on the soil surface. Atwell Gulch Member.	No	Yes
WF14-P.1	A wood impression and small, fossilized wood fragments preserved in a large sandstone boulder apparently excavated from the Atwell Gulch Member during prior pipeline construction.	No	Yes
WF14-VI.5	Possible fossilized vertebrate footprint, along with unidentified fossilized invertebrate traces, preserved as natural casts on a large, upside-down sandstone boulder apparently excavated from the Hunter Canyon Formation during prior pipeline construction.	No	Yes
WF14-I.1, WF14-I.2	Fossilized social insect nests (or parts of nests) in two pieces of fluvial sandstone. Not discovered <i>in situ</i> but undoubtedly from a nearby outcrop of the Atwell Gulch Member. They are unique ichnofossils representing a “first occurrence” and potentially a new ichnogenus.	Yes	No
WF14-VI.1	Possible fossilized vertebrate footprints beneath a sandstone ledge and preserved as natural casts on the upper surfaces of upside-down sandstone boulders, Atwell Gulch Member. These are potentially unique footprints representing a first occurrence, and new ichnogenus.	Yes	No
WF14-VI.2	More than two dozen fossilized turtle swim traces preserved as natural casts on a large, upside-down boulder of fluvial sandstone. These fossils were not <i>in situ</i> , and the source bed could not be located. However, they are identifiable, unique vertebrate fossils from the Hunter Canyon Formation.	Yes	No
WF14-VI.3	A large, partially eroded, fossilized sandstone cast of a tridactyl dinosaur footprint lying on the soil. This fossil was not <i>in situ</i> , and the Hunter Canyon Formation source bed could not be located.	Yes	No

Site	Site Description	Scientifically Significant?	Within ROWs?
WF14-VI.4	A medium-sized, fossilized tridactyl dinosaur footprint preserved as a natural cast on the underside of an <i>in-situ</i> , eroding sandstone bed in the Hunter Canyon Formation.	Yes	No
WF14-VI.6	A manus and pes (“hand” and “foot”) set of unidentified, fossilized vertebrate footprints preserved as natural casts on the underside of a small sandstone boulder lying loose on the soil surface. This fossil was not discovered <i>in situ</i> , and the source bed from the Hunter Canyon Formation could not be located.	Yes	No
WF14-VB.2	More than two dozen fossilized turtle swim traces preserved as natural casts on a large, upside-down boulder of fluvial sandstone at the base of an outcrop of the Hunter Canyon Formation. The fossils were not discovered <i>in situ</i> , and its source could not be located.	No	No
WF14-VB.3	A small, heavily weathered, unidentifiable fossilized bone fragment lying on the surface of a thin, lightly vegetated soil derived from the Hunter Canyon Formation. The bone fragment was not discovered <i>in situ</i> , and its source could not be located.	No	No
Supplemental Surveys (Aztec Archaeological Consultants)			
Area 1, Sites 1, 2	A fragmented bone, possibly a reptile limb, weathering out of the side of a gray-green mudstone spread about 2 feet down the side of a hill in the Atwell Gulch Member. Stromatolites strewn across surface, some with intricate structures.	No	Yes
Area 2	Stromatolite cobbles strewn on the surface. Atwell Gulch Member of the Wasatch Formation.	No	Yes
Area 3, Sites 3-14	Twelve sites in the Hunter Canyon Formation, variously consisting of pieces of petrified wood, stromatolites, burrowing and bioturbation, the impression of a vertebrate bone, and a possible tridactyl dinosaur track.	No	Yes

Note in the table that no scientifically significant fossils were observed within the proposed permanent or short-term pipeline ROWs. Although two vertebrate fossils and one plant impression were identified within the proposed alignment, the fossils were not *in situ*, and the source rocks could not be determined.

The ROW Stipulations listed in **Appendix B** would include a requirement that sites listed in **Table 9** as scientifically significant but located outside the proposed ROW are preserved in an undisturbed condition and monitored by a BLM-approved paleontologist during nearby construction. At site WF14-P.1, within the proposed ROW but not scientifically significant, RRG would be asked to avoid the large boulder or relocate it to a location where it would not be damaged.

For the entire project area, a general fossil discovery stipulation (**Appendix B**) would be applied. This include a restriction on vehicular or pedestrian travel outside the approved areas of surface disturbance and a requirement that any new fossil discoveries be promptly reported to the BLM and, if practicable in terms of safety, that work at that site be temporarily suspended until inspected by the BLM.

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed. No project-related impacts to paleontological resources from activities described above for the Proposed Action would occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue, including from oil and gas development, pipelines, access roads, recreation, and grazing.

3.7 GEOLOGY AND MINERALS

Affected Environment

The project area is located within the southern Piceance Basin, a broad, elongate structural basin located in the eastern portion of the Colorado Plateau. The basin is highly asymmetrical and deepest along its eastern side near the White River Uplift, where more than 20,000 feet of sedimentary rocks are present. Surface exposures in the project area are primarily sedimentary rocks of the Cretaceous Hunter Canyon Formation and the Tertiary Wasatch and Ohio Creek Formations. The youngest deposits in the area consist of Quaternary alluvium dating.

The proposed pipeline would traverse shales, sandstone, claystone, and siltstone of the bedrock units and areas of Quaternary alluvium (**Table 10**).

Table 10. Surficial Geologic Formations in the Project Area

<i>Map Symbol</i>	<i>Formation Name</i>	<i>Age</i>	<i>Characteristics</i>	<i>General Location</i>
Qal	Quaternary Alluvium	Holocene	Boulder- to clay-sized alluvial deposits	Central portion and along localized drainages
Two	Wasatch and Ohio Creek Formations	Eocene and Paleocene	Claystone, siltstone, shale, and sandstone	Primarily in eastern and central portions
Kh	Hunter Canyon Formation	Cretaceous	Sandstone and shale	Primarily in western portion

No commercial deposits of coal, oil shale, uranium, precious metals, limestone, sand and gravel, gypsum, or other leasable, locatable, or salable minerals are believed to occur within or beneath the project area.

Environmental Consequences

Proposed Action

The Proposed Action would result in removal of surface materials and excavation of shallow subsurface materials along the proposed alignment. Extraction and displacement of sedimentary rocks, up to 8 feet deep in some places, would occur. The project would have minimal effect on geologic resources and no effect on economic mineral resources. Impacts associated with construction of the project to geologic resources would result in approximately 118.7 acres of temporary surface disturbance along the ROW alignment within the Wasatch and Ohio Creek Formations and 80.8 acres of temporary surface disturbance within the Hunter Canyon Formation. Temporary impacts associated with storage yards and temporary EWS would result in 13.0 acres of impacts to these formations. Long-term impacts associated with the two valve yards would result in an additional 0.3 acre of surface disturbance.

Disturbance associated with geologic formations would be primarily surficial, including disturbance of overlying soils, subsoils, eroded rock fragments, and colluvium or alluvium. Impacts to intact bedrock are expected to be minor except in areas of outcrops or thin overburden at the eastern and western ends.

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed. No project-related impacts to geologic or mineral resources from activities described above for the Proposed Action would occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These would include activities and impacts associated with oil and gas development, pipelines, access roads, recreation, and grazing.

3.8 GRAZING AND RANGELAND MANAGEMENT

Affected Environment

The project area coincides with parts of four BLM livestock grazing allotments. From east to west, these are the Coon Hollow Common, Winter Flats-Deer Park, Red Rock, and Corcoran Wash Allotments. The proposed pipeline passes north of the Little Book Cliffs Wild Horse Range (WHR) (**Section 3.13**), where cattle grazing is not permitted. Grazing is also not permitted in the Pyramid Rock ACEC, located within the boundaries of the Coon Hollow Common allotment. **Table 11** provides the size, number of AUMs, and period of use for the four grazing allotments traversed by the Proposed Action.

Table 11. BLM Cattle Grazing Allotments Coinciding with the Project Area

<i>Allotment Name (Number)</i>	<i>Public Acres</i>	<i>Private Acres</i>	<i>AUMs</i>	<i>Period of Use</i>
Coon Hollow Common (06712)	19,219	1,059	93	4/15 to 5/31
			120	10/25 to 12/19
Winter Flats-Deer Park (06713)	31,777	1,859	176	4/15 to 6/10
			232	11/15 to 1/28
Red Rock (06745)	12,421	0	461	4/25 to 6/25
			371	10/1 to 11/30
Corcoran Wash (06704)	9,972	1,357	490	5/1 to 6/15
			820	10/16 to 12/31
TOTAL	73,389	4,275	2,763	

Currently, with the exception of the wild horse allotment, all of the allotments are used to graze and/or trail cattle. The BLM grazing allotments encompass both public and private land, but only public land are included in determining active AUMs (BLM 2015a).

Several range improvements are present on grazing allotments within the project area. These include fences, stockponds, reservoirs, cattle trails, cattle guards, pipelines, vegetation treatments, and retention dams. In the eastern portion of the project area (Winder Flats-Deer Park allotment), existing range improvements provide critical water sources for wildlife and livestock.

Environmental Consequences

Proposed Action

Impacts to grazing resources under the Proposed Action would occur mostly from temporary removal of forage across the four grazing allotments. BLM-permitted cattle grazing would continue during construction and operation of the proposed pipelines. All of the 198.6 acres within the four grazing allotments to be crossed by the proposed pipelines would be temporarily disturbed but promptly revegetated upon completion of construction. **Table 12** shows the acres of proposed surface disturbance across each grazing allotment to be traversed by the proposed pipelines.

The level of impacts from implementation of the Proposed Action is not expected to require the adjustment of stocking rates. The level of forage utilization would be monitored on affected allotments and, if necessary, adjustments in livestock use would be made to protect land health. An increase in human activity related to construction and maintenance of the Proposed Action could cause cattle to move away from locations where construction is taking place.

Table 12. Potential Impacts to BLM Grazing Allotments

<i>Allotment</i>	<i>Estimated Surface Disturbance (acres)</i>
Coon Hollow Common (06712)	91.5
Red Rock (06745)	62.1
Winter Flats-Deer Park (06713)	40.5
Corcoran Wash (06704)	4.5

The negative impact that an increase in human activity would have on grazing livestock would be expected to be minor. Effects of increased human activity and construction equipment could also increase the introduction and spread of noxious weeds. Section 3.9 describes weeds present in the project area and mitigation measures to address existing occurrences and minimize the risk of new or expanded infestations. In areas with permanent aboveground facilities, such as the proposed valve yards, fencing would be erected to preclude livestock.

Removal of allotment fences and cattle guards during pipeline construction could temporarily allow cattle to escape their pastures and drift onto other pastures and/or allotments. The open trench could temporarily affect livestock movement within the allotment and present a hazard to livestock. To minimize the risk of injury or mortality of livestock from the open trenches, trenches would not be kept open except in areas where construction activity is ongoing. Any trenches left open overnight would be protected with temporary fencing, the sides of the trenches shored to minimize the risk of collapse if an animal were to fall in, and equipped with an escape ramp.

Increased vehicle traffic during of the proposed pipelines could increase the risk of injury or death to grazing cattle. This risk would be minimized by reducing project-related traffic such as through vanpooling and low speed limits (<20 mph). Damage to range improvements (fences, gates, reservoirs, pipelines, etc.) would be avoided to extent practicable. A ROW Stipulation (**Appendix B**) would require the operator to repair or replace any range improvements temporarily affected or inadvertently damaged by the project. The temporary nature of construction process and requirements for prompt revegetation and long-term weed control are expected to reduce impacts to grazing and rangeland management to minimal levels. The proponent would also be required to coordinate construction timing with affected grazing permittees and to reimburse livestock owners for injury or loss of livestock due to the project.

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed. No project-related impacts to grazing or range management activities described above for the Proposed Action would occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These would include activities and impacts associated with oil and gas development, pipelines, access roads, recreation, and grazing.

3.9 INVASIVE NON-NATIVE PLANTS

Affected Environment

State-listed noxious weeds are designated by the Colorado Department of Agriculture. Management of these weeds is regulated under the Colorado Noxious Weed Act, Title 35, Article 5.5. Three categories of noxious weeds have been identified under the Colorado Noxious Weed Act (Title 35, Article 5.5). The “A List” includes species designated for eradication. The “B List” includes species designated (in consultation with the state noxious weed advisory committee, local governments, and other interested parties) for inclusion in state noxious weed management plans designed to stop the continued spread of

these species. The “C List” includes species also designated for inclusion in noxious weed management plans to support control and weed management on private and public land by local governments with the goal of providing additional education, research, and biological control resources to jurisdictions that choose to require management of List C species (Colorado Department of Agriculture 2009). The *Mesa County Noxious Weed Management Plan* also designates species that occur on the State list as noxious weeds in the county (Mesa County Division of Pest Management 2009).

Noxious weeds were inventoried during surveys in fall 2014 and spring 2015 in accordance with the BLM GJFO’s *Standards for Contractor Inventories for Special Status Plants and, Significant Plant Communities* (BLM 2014). Under this protocol, the proposed areas of surface disturbance associated with the pipelines, EWS, and storage yards, and a 30-meter buffer of these disturbance areas were surveyed for species included on the State of Colorado Noxious Weed List.

The proposed ROW parallels existing roads and previous pipeline ROWs. Other existing surface disturbances are also present in the project vicinity, including those related to oil and gas development. Because of these previous disturbances and other human-related uses, scattered infestations of noxious weeds and other non-native, invasive species are common in the project area and vicinity.

Surveys found four State List B noxious weed species: Canada thistle, houndstongue, jointed goatgrass, and salt cedar. Jointed goatgrass and houndstongue are widespread in the project area, while salt cedar and common burdock are restricted to moist drainage areas. There were also seven State List C noxious weed species: bulbous bluegrass, cheatgrass, common burdock, common mullein, field bindweed, halogeton, and redstem filaree, varying in extent and density within the project area (**Table 13**).

Table 13. State-Listed Noxious Weeds Observed in the Project Area

<i>Common Name</i>	<i>Scientific Name</i>	<i>Colorado Designation</i>	<i>Occurrence</i>
Houndstongue	<i>Cynoglossum officinale</i>	B List	Existing roads, within existing pipeline ROW, in wildfire burn area, and some undisturbed areas near proposed ROW
Jointed goatgrass	<i>Aegilops cylindrica</i>	B List	
Bulbous bluegrass	<i>Poa bulbosa</i>	C List	
Halogeton	<i>Halogeton glomeratus</i>	C List	
Salt cedar	<i>Tamarix sp.</i>	B List	Mostly moist areas such as drainages and roadside ditches
Common burdock	<i>Arctium minus</i>	C List	
Cheatgrass	<i>Anisantha tectorum</i>	C List	Low density but widespread along roads and existing and proposed ROWs
Common mullein	<i>Verbascum thapsus</i>	C List	
Field bindweed	<i>Convolvulus arvensis</i>	C List	
Redstem filaree	<i>Erodium cicutarium</i>	C List	

In addition to these noxious weeds, numerous other non-native species that can negatively impacts native plant communities are present in the project area. These include annual wheatgrass (*Eremopyrum triticeum*), black medic (*Medicago lupulina*), common clasping pepperweed (*Lepidium perfoliatum*), common dandelion (*Taraxacum officinale*), common salsify (*Tragopogon dubius*), curvseed butterwort (*Ceratocephala testiculata*), flixweed (*Descurainia testiculata*), Japanese brome (*Bromus arvensis*), pale madwort (*Alyssum alyssoides*), and purple salsify (*Tragopogon porrifolius*).

A portion of the existing pipeline adjacent to the proposed new pipelines alignment was seeded with non-native species following its construction, including crested wheatgrass (*Agropyron cristatum*), intermediate wheatgrass (*Thinopyrum intermedium*), orchard grass (*Dactylis glomerata*), smooth brome (*Bromus inermis*), and yellow sweetclover (*Melilotus officinalis*). In the past, these species were

commonly seeded with the goal of range improvement for livestock grazing, and for reclamation prior to the commercial availability of native species seed. These species are now known to reduce native species diversity and impede reestablishment of native species, especially yellow sweetclover, can behave as an invasive weed. They also are difficult to eliminate once established (Wolf et. al. 2003, Dickson et. al. 2010, Pehrson and Sowell 2011, and Grant-Hoffman et. al. 2012).

Environmental Consequences

Proposed Action

Under the Proposed Action, a total of 208.94 acres along 21.94 linear miles would be disturbed, with complete removal of existing vegetation. Following pipeline installation, most of this disturbance area would be reclaimed. A total of 0.07 acre would remain as long-term disturbance at two valve yards. All but 0.5 miles (4.49 acres) of disturbance would occur on BLM land, with the remainder on private land.

Surface-disturbing activities, such as those proposed for this project, provide a niche for invasion and establishment of non-native plant species particularly when these species are already present in the surrounding area. The mechanisms for this invasion and establishment are multi-fold. Removal of native vegetation removes the competition from native plants for resources, including water and soil nutrients, opening up niches for invasive species (Parendes and Jones 2000). Linear disturbances, such as roads, provide corridors of connected habitat along which invasive plants can easily spread (Gelbard and Belnap 2003). Pipeline installation requires construction equipment and motorized vehicles which often transport invasive plant seeds either alone or in mud clods on the vehicle undercarriage or tires and deposit them in disturbed habitats along access roads and at construction sites (Schmidt 1989, Zwaenepoel et. al. 2006).

Noxious weeds and other invasive species are well adapted to colonize and dominate in disturbed ground. They generally do not require well-developed soils, can outcompete native species for resources, produce prodigious quantities of seeds, and have seeds that can survive for many years within the soil. When weeds establish on a site, they can also significantly alter the composition of the soil microbial community of bacteria and fungi, making it increasingly more difficult over time for native species to reestablish on the site (Hierro et. al. 2006, Reinhart and Callaway 2006, Vinton and Goergen 2006, Vogelsang and Bever 2009). Due to the quantity and longevity of weed seeds and the effects of weeds on the soil, once these invasive species have established on a site they can be difficult to eliminate.

The project area parallels an existing road and pipeline, with existing widely distributed noxious weeds and other invasive annual non-native species. Annual wheatgrass, cheatgrass, halogeton, Japanese brome, and redstem filaree are common along the ROW alignment, often at high densities. As a result, the potential for noxious weeds and other non-native invasive species is high and would increase with the new project disturbance. Movement of soil by construction equipment could spread weed seeds throughout the project area, and vehicles and equipment could also introduce new occurrences of noxious weeds, where the new disturbance would create conditions ideal for weed establishment.

As mandated by the Colorado Noxious Weed Act and the Colorado Oil and Gas Conservation Act, and in conformance with the GJFO's Weed Management and Invasive Species Program, pipeline operators are required to control noxious weeds on lands they disturb construction activities on both public and private land. Toward this end, RRG would implement measures outlined in BLM's *Noxious and Invasive Weed Management Plan* (BLM 2007a) to reduce or eliminate noxious weeds identified within the project area and prevent the spread of weeds into uninfested areas. These measures would also include power-washing equipment used at previous construction sites or in areas of weed infestations to remove mud and weed seeds and propagules before entering the project area. These weed prevention and treatment requirements would be attached as stipulations to the ROW/TUP documents (see **Appendix B**).

Establishment of desirable plant species is also crucial in preventing invasive non-native plant species establishment and spread. Reclamation seeding of disturbed areas within two weeks of backfilling and topsoil placement, season and weather permitting, with annual monitoring of seeding results, would be required as part of the ROW Stipulations attached to the ROW/TUP documents (see **Appendix B**). Reclamation seeding on BLM land would be restricted to native species only, while the reclamation on private land could include non-native species if requested by the private landowner.

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed. No project-related impacts relative invasive non-native plant species from activities described above for the Proposed Action would occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These would include activities and impacts associated with oil and gas development, pipelines, access roads, recreation, and grazing.

3.10 LAND TENURE, RIGHTS-OF-WAY, AND OTHER USES

Affected Environment

The Winter Flats Pipeline and Wagon Track Lateral would cross 21.44 miles of BLM-administered public land and 0.5 mile of private land (**Table 14**). Surface disturbance for the pipeline ROW would include 204.45 acres of public land and 4.49 acres of private land, for total pipeline ROW surface disturbance of approximately 208.94 acres. The proposed Winter Flats pipeline alignment generally follows existing 6- and 8-inch natural gas pipelines, constructed in the early 1980s and now operated by RRG. However, the final alignment incorporated into the Proposed Action also includes areas not within or adjacent to the existing ROW where it deviates from V.2 Road. This was done because that portion of the existing ROW traverses a substantial part of the newly established South Shale Ridge ACEC, which prohibits new pipeline construction and other surface-disturbing activities.

Table 14. Pending and Authorized Realty Actions in the Winter Flats Pipeline Project Area

<i>Serial Number</i>	<i>Company</i>	<i>ROW</i>	<i>Status</i>	<i>Legal Description</i>	<i>Grant Issued</i>
COC76833, COC76833-01	Red Rock Gathering	O & G Pipeline	Pending (MLA)	T. 8S, R. 97W, sec. 31, N1/2; T. 9S, R. 97W, sec. 7, SWNW, NWSW; T. 9S, R. 98W, sec. 1-9, 12, 17-18; T. 9S, R. 99W, sec. 7, 12, 17-20, 30-36. T. 9S, R. 100W, sec. 2, 11.	Pending
COC76837	Black Hills	Water Facility	Pending (FLPMA)	T. 8S, R. 97W, sec. 31; T. 9S, R. 100W, sec. 11	Pending
COC31077	Red Rock Gathering	O & G Pipeline	Authorized (MLA)	T. 8S, R. 97W, sec. 29, 30 and 31; T. 9S, R. 97W, sec. 6-7; T. 9S, R. 98W, sec. 1-9, 11-12, 14-19, 30-31; T. 9S, R. 99W, sec. 7-12, 15-18; T. 9S, R. 100W, sec. 11-12, 14;	Case established in 1980s, with many subsequent amendments.
COC31658	Coors Energy Co.	Road	Authorized (FLPMA)	T. 9S, R. 99W, sec. 17-20, 30.	07/24/1981
COC34088	Coors Energy Co.	Road	Authorized (FLPMA)	T. 9S, R. 99W, sec. 18; T. 9S, R. 100W, sec. 3, 10-13.	02/19/1982

<i>Serial Number</i>	<i>Company</i>	<i>ROW</i>	<i>Status</i>	<i>Legal Description</i>	<i>Grant Issued</i>
COC50819	Black Hills	O & G Pipeline	Authorized (MLA)	T. 9S, R. 98W, sec. 10.	03/18/1991
COC50861	Black Hills	O & G Pipeline	Authorized (MLA)	T. 9S, R. 98W, sec. 3, 10-11.	03/18/1991
COC56186	Black Hills	Road	Authorized (FLPMA)	T. 9S, R. 97W, sec. 7, 18; T. 9S, R. 98W, sec. 1, 12.	04/12/1994
COC56806	Maralex	Road	Authorized (FLPMA)	T. 9S, R. 98W, sec. 14-17, 19-23.	06/21/1994
COC56984	Red Rock Gathering	O & G Pipeline	Authorized (MLA)	T. 8S, R. 97W, sec. 32; T. 9W, R. 97W, sec. 7.	10/26/1994
COC57666	Maralex	O & G Pipeline	Authorized (MLA)	T. 9S, R. 98W, sec. 3, 10.	05/5/1995
COC59953	Red Rock Gathering	O & G Pipeline	Authorized (MLA)	T. 9S, R. 98W, sec. 11, 12	11/18/1996
COC64328	Maralex	O & G Pipeline	Authorized (MLA)	T. 9S, R. 98W, sec. 1.	01/30/2001
COC64608	Black Hills	Road	Authorized (FLPMA)	T. 9 S, R. 97 W, sec. 7, 18-19; T. 9 S, R. 98 W, sec. 1, 12-17;	01/25/2001
COC64990	Black Hills	O & G Pipeline	Authorized (MLA)	T. 9 S, R.98 W, sec. 1.	07/1/2001
COC66355	Robert L Bayless	Road	Authorized (FLPMA)	T. 9 S, R. 98 W, sec. 1, 12.	09/16/2002
COC76379	Black Hills	Water Facility	Authorized (FLPMA)	T. 8 S, R. 97 W, sec. 31, 36; T. 9 S, R. 98 W, sec. 1-4, 8- 9, 11.	12/23/2013
COC77005	Black Hills	O & G Pipeline	Authorized (MLA)	T. 9 S, R. 99 W, sec. 10.	02/18/2015
COC77006	Black Hills	Other Water	Authorized (FLPMA)	T. 9 S, R. 99 W, sec. 10.	02/18/2015
COC093825	Rio Grande	Railroad	Authorized (FLPMA)	T. 9 S, R. 97 W, sec. 5, 7-8, 19, 30-31.	09/26/1889
COC093942	Rio Grande	Railroad	Authorized (FLPMA)	T. 9 S, R. 97 W, sec. 5, 7-8, 18-19, 30-31.	03/16/1887

Environmental Consequences

Proposed Action

The Proposed Action requires permanent and short-term ROW grants from the BLM for the construction and operation of the proposed natural gas (MLA) pipeline, consistent with the ROW Stipulations presented in **Appendix B**. These Stipulations would minimize potential impacts to existing ROW and lease holders among a variety of other resource and use projections. These Stipulations would require the operator to obtain agreements with existing ROW holders, authorized users, and other pipeline operators prior to surface disturbance and construction of the pipeline. In addition, the operator would be required

to conduct a pre-construction with its staff, contractor staffs, and the BLM to review the ROW Stipulations.

Segments of the proposed pipelines would cross three oil and gas units: the Roan Creek Unit, Winter Flats Unit, and Whittaker Flats Unit. In areas where the proposed water pipelines would cross the Winter Flats and Whittaker Units, for which Black Hills Plateau Production is the Unit Operator, a ROW would not be required, because Black Hills would be the pipeline operator. However, because the natural gas pipeline would be operated by RRG, which is a third party and not the Unit Operator, a ROW would be required for the natural gas pipelines even on the two Black Hills units. In addition, a ROW would be required for both the gas and water pipelines where they would cross the Roan Creek Unit, for which Black Hills is not the operator. No ROW would be required for segments on private land.

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed. No project-related impacts to existing ROW holders and other authorized users from activities described above for the Proposed Action would occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These would include activities and impacts associated with oil and gas development, pipelines, access roads, recreation, and grazing.

3.11 NATIVE AMERICAN RELIGIOUS CONCERNS

Affected Environment

Native American religious concerns are legislatively considered under several acts and Executive Orders, namely the American Indian Religious Freedom Act of 1978 (AIRFA, PL 95-341), the Native American Graves Environmental Assessment Protection and Repatriation Act of 1990 (NAGPRA PL 101-601), and Executive Order 13007 (1996; Indian Sacred Sites). These require, in concert with other provisions such as those found in the NHPA and the Archaeological Resources Protection Act (ARPA), that the Federal government carefully and proactively take into consideration traditional and religious Native American culture and life and ensure, to the degree possible, that access to sacred sites, the treatment of human remains, the possession of sacred items, the conduct of traditional religious practices, and the preservation of important cultural properties are considered and not adversely infringed upon. In some cases, these concerns are directly related to “historic properties” and “archaeological resources.” In some cases, elements of the landscape without archaeological or other human material remains may be involved.

Identification of these concerns is normally completed during the land use planning efforts, review of existing studies, or direct consultation. Tribal consultation was initiated by written and e-mail correspondence in September 2015. Through the scoping process for this EA, The Ute Mountain Ute, Northern Ute, and Southern Ute Tribes were notified of the project and invited to comment on the Proposed Action. As of January 2016, the only feedback received was during face-to-face consultation on this project, which occurred in October and December of 2015. During consultation, tribal representatives expressed some concern with boring beneath sites, and indicated that this process could be acceptable in some circumstances, dependent upon the cultural landscape and cultural site types present, but that boring may not be ideal in all cases.

Environmental Consequences

Proposed Action

The Ute Tribes have a generalized concept of spiritual significance that is not easily transferred to Western models or definitions. As such, the BLM recognizes that they have identified sites that are of concern because of their association with Ute occupation of the area as part of their traditional lands. Some traditional cultural properties, natural resources, or properties of a type previously identified as

being of interest to the Ute Tribes have previously been identified through consultation within the project area, although not in the Area of Potential Effect (see **Section 3.4**).

As described above, the BLM considered the feedback on boring carefully, and given all of the other resources that were balanced through various construction methods, this was found to be the construction method with the least impact given the constrictions of the pipeline alignment. If new information is brought to light during continuing consultation with the Tribes, any site-specific Native American mitigation measures suggested during notification/consultation would be considered during implementation of the Proposed Action and may require further project modifications.

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed. No project-related impacts affecting Native American religious concerns from activities described above for the Proposed Action would occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These would include activities and impacts associated with oil and gas development, pipelines, access roads, recreation, and grazing.

3.12 NOISE

Affected Environment

The project area is located generally west of the town of De Beque (**Figure 1**) in a rural setting characterized by oil and gas development, ranching, and recreational travel and, on nearby private land at the eastern end, by rural sparse residences. Noise levels in the area are presently created by traffic on private, Mesa County, and BLM roads and by activities associated with oil and gas activities, the latter primarily during construction, drilling, and completion activities.

Noise is generally described as unwanted sound and may be measured as sound pressure in A-weighted decibels (dBAs). The decibel scale is logarithmic, not linear, because the range of sound that can be detected by the human ear is so great that it is convenient to compress the scale. A dBA scale accounts for the lesser sensitivity of the human ear to low and high frequencies, which are in turn weighted less on the dBA scale than on the standard dB scale. Sound levels have been calculated for areas that exhibit typical land uses and population densities. In rural recreational areas, ambient sound levels are expected to be approximately 30 to 40 dBA (USEPA 1974, Harris 1991). As a basis for comparison, the noise level is 60 dBA during a normal conversation between two people standing 5 feet apart.

Environmental Consequences

Proposed Action

The Proposed Action would temporarily increase local noise levels during the 7 months required to complete the project. Noise levels 50 feet away from typical construction equipment used to construct pipelines and roads, including upgrading of existing roads, are provided in **Table 15**. Also shown are distances for noise to attenuate to background levels for soft surfaces (roughened ground and vegetated surfaces) and hard surfaces (bare ground and rock).

Construction of the pipeline would occur for 7 months and would continually shift in location along the proposed ROW. As seen in **Table 15**, noise from typical construction machinery at distance of 50 feet ranges from around 80 dBA for a tractor to 90 dBA where rock excavation is required. Also shown in the table is that natural attenuation would reduce the levels by 20 dBA at 500 feet and 26 dBA at 1,000 feet.

Using this information, anticipated noise levels for the project would be less than the Colorado standards (CRS 25-12-103) for daytime operations (defined as 7:00 a.m. to 7:00 p.m.) in the industrial and light

industrial zones at a distance of 500 feet (**Table 16**). At a distance of 1,000 feet, anticipated levels would be less the standard for the residential/agricultural/rural zone. No residences are located within 1,000 feet of the construction corridor.

Table 15. Noise Levels at Typical Construction Sites and Access Roads ¹

Equipment	Noise Level (dBA)		
	50 feet	500 feet	1,000 feet
General Used Equipment ¹			
Backhoe	85	65	59
Bulldozer	89	69	63
Crane	88	68	62
Front End Loader	83	63	57
Heavy Truck	88	68	62
Motor Grader	85	65	59
Road Scraper	87	67	61
Tractor, Vibrator/Roller	80	60	54
Rock Excavation Equipment ²			
Mounted Impact Hammer	90	70	66
Auger Drill Rig	84	64	60
Rock Drill	81	61	55
¹ La Plata County (2002), WSDOT (2011)			

Table 16. State of Colorado Maximum Permissible Noise Levels ¹

Land Use Zone	Maximum Permissible Noise Level ² (dBA)	
	7:00 am to 7:00 pm ³	7:00 pm to 7:00 am
Residential/Agricultural/Rural	55	50
Light Industrial	70	65
Industrial	80	75
¹ As measured at a distance of 350 feet from the source (CRS 25-12-101 et seq.)		

Although some noise sources are likely to be elevated above the standard at 350 feet, construction would progress across the landscape and represent a disruption in a given area for a period of days or weeks. To reduce noise impacts to area residents and other users of the project vicinity, the BLM would require that construction be limited to daytime hours (7:00am to 7:00pm) when background levels are generally higher and sensitivity to sound is less—as reflected by the higher Colorado standards in **Table 16**.

Upon completion and operation of the proposed pipelines, noise impacts related to operation of heavy equipment at the site and travel by large trucks on County and local access roads would return to pre-construction levels. See **Section 3.24** for a discussion of potential noise impacts on wildlife.

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed. No project-related noise impacts from activities described above for the Proposed Action would occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These

would include activities and impacts associated with oil and gas development, pipelines, access roads, recreation, and grazing.

3.13 RECREATION

Impacts to recreation from oil and gas development result from actions that change recreational settings or create possible safety hazards for visitors. When areas or routes are closed during development, opportunities to participate in recreational activities could also be impacted.

Recreation settings include the physical, social, and operational environment in which visitor engage in outdoor recreation outings. The physical setting includes how remote an area is (i.e., how far the area is from a road or trail), how natural the area is (how much development is in the area and how noticeable that development is), and how many recreation facilities are in the area. The social setting includes how many other visitors are in the area (group size and number of groups encountered) and the evidence of other users. Evidence of other users includes what other visitors leave behind (e.g., trash, campfire rings, and off-road vehicle tracks) and the activities in which other visitors are participating. The operational setting is what agency management is present in the area. This includes rules and regulations (e.g., travel restrictions and limitations, and permit requirements), the types of visitor services present in the area (e.g., signs and information kiosks), and the level that agency personnel are present.

Visitor experiences are closely linked to these recreation settings. Changes in these settings often result in changes to visitor experiences. Development associated with oil and gas activities typically change the physical setting. Construction of new roads often changes the remoteness of the area. Pipelines, well pads, drilling equipment, and other infrastructure change the naturalness setting, resulting in a more developed landscape. Increased numbers of vehicles and people in the area, associated with oil and gas companies, changes the social setting. Visitors would see more people in areas of oil and gas activities.

Oil and gas development, including pipeline construction, could result in increased safety hazard for visitors. The increased hazard is primarily associated with increases on access roads. More traffic could result in a higher possibility of traffic accidents. The intensity of these impacts is associated with the duration of the development activities and the overall changes to the landscape. The longer it takes to construct pipelines or develop wells, the greater the impact is to visitors. The more infrastructure that is built (compressors, pipelines, roads) the greater the impact to recreational setting would be.

Recreation is planned for and managed through recreation management area (RMA) objectives. In areas designated as RMAs, recreation activities and settings are protected at different levels to meet management objectives. Inside RMAs, oil and gas development activities would be mitigated or restricted to protect recreation opportunities. Outside RMAs, recreation would be managed to ensure achievement of objectives for other resource uses. Also outside RMAs, changes to recreation settings and/or opportunities to participate in recreational activities would be allowed with little or no mitigation.

Affected Environment

The project area is located mostly in an area valued for rugged, scenic terrain. BLM has no developed recreational facilities, such as campgrounds or picnic areas, within the project area. BLM-administered lands within the project area are not designated as recreation management areas under the 2015 GJFO ARMP. Much of the project vicinity provides visitors with opportunities for varied forms of dispersed recreation in expanses of undeveloped land. Hunting, off-highway vehicle (OHV) use, mountain biking, camping, and scenic touring are the primary recreational uses in the project area.

As noted in the guidebook *Colorado Byways: Backcountry Drives for the Whole Family*, one relatively popular automobile day trip in the area is for visitors to make a loop around South Shale Ridge, typically approaching from the De Beque area by either Winter Flats Road (V.2 Road), or Dry Fork Road X.5

Road). In addition, recreationists use roads branching south off Mesa County V.2 Road to access the Little Book Cliffs Wilderness Study Area (WSA) and Little Book Cliffs Wild Horse Range (WHR), which overlap each other. These areas contain several established trails for hiking, sightseeing, OHV use, and horseback riding.

The BLM manages nine Special Recreation Permits (SRPs) in the project area: four for mountain lion hunting, one for big game hunting, one for camping, one for horseback riding, one for hiking, one for wild horse viewing, and one jeep tour event. A total of 895 user-days associated with these SRPs have been reported in the past 3 years. A majority of the user days, 664, are connected with the jeep tour event. The project area lies within CPW Game Management Unit (GMU) 31, which receives substantial numbers of hunters, primarily for mule deer and elk.

Environmental Consequences

Proposed Action

Impacts to recreation could result from increased vehicle traffic on area roads, human activity, noise, and dust during construction. Construction activities could temporarily displace game species in some areas, depending on levels of human activities as well as season of impact, forage, and cover opportunities. The proposed pipeline is located in a region containing existing oil and gas development and is adjacent to a main distribution road. Because existing and proposed well pads and other facilities are relatively dispersed in the project area, impacts to hunting, outfitting, and other dispersed recreation during construction may be seasonal and/or relatively short-term. Indirect impacts to area recreationists would be temporary and could include diminished hunting and wildlife viewing opportunities due to potential displacement caused by the construction of the pipeline.

Recreationists traveling by car around South Shale Ridge and/or seeking access to the Little Book Cliffs WSA or WHR could encounter more trucks and equipment traffic on the Mesa County V.2 Road during construction of the pipeline. Some delays may also occur. Proposed measures to reduce traffic and fugitive dust would also reduce such impacts to recreationists during the construction period. After construction, increased traffic would consist of one or two pickup trucks during daylight hours.

Other recreation opportunity impacts resulting from the Proposed Action could also include decreased solitude, reduced wildlife-viewing opportunities, diminished opportunities for camping near the construction area, and noise. Post-construction, long-term impacts are anticipated to be minor. These impacts would include decreased naturalness, especially until revegetation is completed, and a slight increase in traffic associated with periodic maintenance. The project is also likely to decrease opportunities for camping adjacent to or near the construction corridor.

To mitigate impacts to recreation potentially associated with the Proposed Action, the BLM would require posting of warning signs on access roads to alert recreationists and project personnel to each other's presence and to help avoid accidents. Coordination of construction timing with area outfitters and landowners would minimize conflicts with dispersed recreation users. These and other measures, including mitigation for noise, visual, and biological resource impacts, are described in the relevant sections of this EA and incorporated into the ROW Stipulations (**Appendix B**).

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed. No project-related impacts to recreation from activities described above for the Proposed Action would occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These would include activities and impacts associated with oil and gas development, pipelines, access roads, recreation, and grazing.

3.14 SOCIOECONOMICS

Affected Environment

The project area, including all proposed facilities, is located in Mesa County, as is all access to the project area. Labor and equipment for constructing and operating of the proposed pipelines would utilize local contractors to the extent feasible, but more regional or national construction companies may be consulted for construction services. Portions of Mesa County are within the Piceance Basin, which has seen natural gas development for the past 20 years, with the greatest intensity of development occurring between 2005 and 2009.

As a result of the proximity to natural gas fields in the Piceance Basin, both Mesa and Garfield Counties support a well-developed workforce that serves the oil and gas production and development industry. This workforce is currently operating at less than full capacity due to the low commodity price of natural gas in the regional marketplace and the resulting decrease in natural gas development activity.

Demographics

The rate of population growth in Mesa County has been below average for the state since the 2010 census. From 2010 through 2013, the population of Mesa County increased by 0.6%, while the population of the State of Colorado as a whole has increased by 4.8%. The low population growth in the project vicinity can be attributed to the generally slow pace of economic recovery, resulting in lower rates of net in-migration. Despite the current low population increase, Mesa County is projected to increase by 55% between 2010 and 2040.

Income, Labor, and Employment

The number of jobs in Mesa County in the second quarter of 2014 was estimated at 60,076 (DOLA 2014). Mesa County's unemployment rate was 4.7%, slightly higher than the state average of 4.0%. During the period 2009 through 2013, median household wages were \$49,471 in Mesa County, below the state median income of \$58,433. The number of people living below the poverty line represented 14.7% of the population, slightly higher than the 13.2% statewide (U.S. Census Bureau 2013). During the second quarter of 2014, weekly wages for the oil and gas extraction sector were \$2,712 in Mesa County, well above the median household income.

Principal economic sectors in Mesa County include educational, healthcare, and social services (23.5%); retail trade (13.2%); and entertainment, accommodation, and food services (10.3%). Neighboring Garfield County shares the same economic sectors, with the addition of a significant construction sector (16.1%) (U.S. Census Bureau 2013). The total number of workers employed in oil and gas development is difficult to determine, since development-related occupations are reflected in a variety of economic sectors such as construction, manufacturing, and professional services. However, during periods of strength in the oil and gas industry (particularly 2004-2009), drilling and production activities have been strong forces driving economic growth in the region. A total of 300 businesses in Mesa and Garfield Counties currently provide services to the industry.

Mesa County estimated that 9,000 individuals were employed in the oil and gas sector in 2007, comprising approximately 12% of the employment base. By 2014, the number of workers employed in that industry had declined to 4,152, or approximately 7% of the employment base (Mesa County 2014). Similar data for Garfield County are not available for 2007, but in 2014 the oil and gas industry supported 2,768 direct employees in Garfield County (Garfield County 2014). The Proposed Action would take place in an active area for the oil and gas industry. Currently, according to data posted on the COGCC, Garfield County is generating 25.4% of new Applications for Permit to Drill (APDs) in Colorado,

primarily on private land, while Mesa County is generating 1.8% of new APDs. Garfield County is second to Weld County in Colorado for the number of producing wells.

Housing

According to a 2009 housing study commissioned by Mesa County, most of the workers in the oil and gas industry who reside in Northwest Colorado live in Mesa County (Leland Consulting Group 2009). Most of the county's rental units are in Grand Junction, where, in the third quarter of 2012, the average apartment vacancy rate was 3.9% and the average rent was \$639 per month (Throupe and Von Stroh 2012). The towns of De Beque, Collbran, Palisade, Parachute, and Rifle provide additional housing opportunities for workers in the project area, particularly for those who choose to rent. Most of the housing stock in these towns consists of single-family and mobile homes.

Short-term housing accommodations, closest to the project area, are in the towns of De Beque (3 miles northeast), Parachute (13 miles northeast), and Grand Junction (40 miles southwest). An Internet search of lodging accommodations found four motels with over 260 rooms in Parachute and 27 listed motels or hotels in Grand Junction. In addition, motels in Rifle provide more than 630 rooms relatively nearby (30 miles northeast), along with 90 recreational vehicle sites.

Public Safety

Physicians and other medical practitioners in Rifle, Parachute, Collbran, and Grand Junction provide medical services to the De Beque area. The Grand River Medical Center and Hospital in Rifle provides family health, internal medicine, orthopedic, cardiopulmonary, surgery, radiology, physical therapy, and laboratory services. The Plateau Valley Medical Clinic in Collbran provides family practice services, emergency/urgent care, X-ray, and laboratory services. Grand Junction provides additional facilities.

The De Beque Fire Department provides fire protection services in the project area. It has six paid and four volunteer firefighters. All six paid personnel are emergency medical response providers. If needed, the Plateau Fire Protection District in Collbran and Parachute Fire Department dispatch additional firefighting personnel to the De Beque area. The De Beque Marshal's Department, which has two officers on staff, provides first-call police services in the project vicinity. Criminal offenses reported to the Marshal's Department and Mesa County Sheriff's Office are reported to be related primarily to larceny, burglary, and assault.

Environmental Justice

Executive Order 12898 established a requirement for Environmental Justice review on all Federal projects. The environmental analysis is to include identification of disproportionately high and adverse human health or environmental effects on minority or low-income populations. The minority population of note in either Mesa or Garfield County is the Latino population as previously described in the demographics of the County. Populations are described as "low-income" based on participation in county assistance programs that are based on a Federally determined poverty threshold. Neither minority populations nor low-income populations are located in the immediate vicinity of the Proposed Action.

Environmental Consequences

Proposed Action

Because the Proposed Action is of limited duration and because the oil and gas industry in Mesa and Garfield Counties is relatively large and developed, the likelihood is that most of the labor and equipment used would be drawn from existing local sources. This project is not anticipated to result in the creation of new jobs in this sector over the long term, due to the relatively small size of the project and the expectation of sufficient capacity within the existing local workforce (given its current underutilization).

However, this project is anticipated to improve current rates of employment and utilization during the 1-year construction period, when daily staffing on the project could involve around 70 personnel onsite. Although little or no change would be produced in the size of the local workforce or in the local population, additional construction workers from outside the local workforce, if required, would result in a minor influx to the local populations.

The Proposed Action would generate indirect economic benefits to local and regional businesses through the purchases of goods and services needed to construct and operate the proposed pipeline. The demand for goods and services would be further stimulated through purchases by the construction workforce. These benefits would occur in the communities of De Beque, Grand Junction, Parachute, Silt, and Rifle, where most local oil and gas service businesses are located. It would also generate sales tax revenue to Mesa and Garfield Counties through sales of taxable goods purchased in the county. Most tax revenue would result from retail expenditures by RRG employees, its contractors, and individuals whose jobs would be supported by the Proposed Action. Sales tax receipts would be highest during the construction timeframe and only minimally elevated thereafter.

The Proposed Action is not expected to have a substantial impact on the Mesa County or De Beque housing markets. The influx of construction workers would be temporary and would likely not include relocation of people to the project area. Any impacts on property values near the project area and access route due to traffic and activities associated with project construction would be short term.

Also because of the project's relatively short duration, it is not expected to have a substantial impact on medical service providers in the region. Increased demands potentially could be placed on De Beque Fire Department personnel and equipment, as well as supplementary firefighting personnel from the Plateau Fire Protection District and Parachute Fire Department. The project is not expected to increase response demands on the De Beque Marshal Office. In addition, short-term housing accommodations for the non-local workers associated with construction of the Proposed Action would be spread across neighboring communities, further reducing the potential for increased law enforcement demands on any single law enforcement agency.

No minority or low-income populations are located in the project vicinity. As a result, none of the potential short-term or long-term consequences would differentially affect any such populations.

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed. No project-related impacts affecting socioeconomics from activities described above for the Proposed Action would occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These would include activities and impacts associated with oil and gas development, pipelines, access roads, recreation, and grazing.

3.15 SOILS

Affected Environment

The proposed Winter Flats Pipeline would generally traverse level to moderate slopes, ranging from less than 1% on valley floors to approximately 30% on hillsides and mesa slopes. The proposed pipeline would cross 13 soil types. Soils to be disturbed by the Proposed Action are described in **Table 17**, arranged by decreasing percentage of the proposed disturbance area. As shown in the table, the soils most susceptible to erodibility are the Bunkwater and Uffens, which represent 17% of the project alignment. Note also that two soils—the Dominquez and the Panitchen—are considered prime farmland if irrigated. Because of their locations and land uses, these soils within or near the project area are not currently irrigated and not expected to be irrigated in the future.

Table 17. Soil Types and Characteristics Affected by the Proposed Action

<i>Soil Type</i>	<i>Description</i>	<i>Percent of ROW</i>
Travessilla - Rock outcrop complex (10 - 35% slopes)	Residuum weathered from sandstone at elevations from 5,400 to 6,800 feet on mesas. Surface runoff is very high; soil is well drained; erodibility is low to moderate.	32.2
Barx loam (3 - 12% slopes)	Mixed aeolian deposits at elevations from 5,000 to 6,400 feet on structural benches. Surface runoff is high; soil is well drained; erodibility is moderate.	27.6
Bunkwater very fine sandy loam (1 - 8% slopes)	Mixed material aeolian deposits at elevations ranging from 5,000 to 6,000 feet on structural benches. Surface runoff is high; soil is well-drained soil; erodibility is moderate to high .	15.2
Yamo, moist - Redcreek complex (3 - 25% slopes)	Mixed source residuum at elevations from 6,300 to 7,100 feet on mountains. Surface runoff is medium; soil is well drained; erodibility is low.	8.4
Hesperus - Empedrado, moist - Pagoda complex (5 - 55% slopes)	Colluvium and/or residuum derived from sandstone and shale at elevations from 6,200 to 8,500 feet on mountains and benches. Surface runoff is high to very high; soil is well drained; erodibility is moderate.	2.9
Torriorthents, cool - Rock outcrop complex (35 - 90% slopes)	Colluvium derived from limestone, sandstone, siltstone, and shale and/or residuum weathered from these on ridges, canyons, hills, and mountains; Surface runoff is medium; soil is well drained; erodibility is moderate.	2.7
Panitchen loam (1 - 6% slopes)	Mixed alluvium at elevations from 4,800 to 5,800 feet on floodplains and terraces. Surface runoff is medium; soil is well drained; erodibility is moderate. Considered prime farmland if irrigated.	2.6
Biedsaw - Sunup gravelly loams (10 - 40% slopes)	Wasatch shale colluvium over Wasatch shale residuum on mountains and ridges. Surface runoff is very high; soil is well drained; erodibility is moderate.	2.2
Uffens loam (1 - 8% slopes)	Mixed material alluvium at elevations from 4,800 to 5,100 feet on terraces and mesas. Surface runoff is high; soil is well drained; erodibility is moderate to high .	1.9
Dominguez clay loam (3 - 8% slopes)	Wasatch shales alluvium and/or residuum at elevations from 5,000 to 6,400 feet on mountains and alluvial fans. Surface runoff is very high; soil is well drained; erodibility is moderate. Considered prime farmland if irrigated.	1.7
Shawa loam (3 - 20% slopes)	Green River alluvium and/or colluvium derived from shale at elevations from 6,800 to 7,400 feet on structural benches. Surface runoff is medium; soil is well drained; erodibility is moderate.	1.5
Torriorthents, warm - Rock outcrop complex (35 - 90% slopes)	Colluvium and/or residuum derived from limestone, sandstone, siltstone, and shale on canyons, mountains, ridges, and hills; Surface runoff is medium; soil is well drained; erodibility is moderate.	0.8
Rock outcrop - Torriorthents complex (15 - 35% slopes)	Colluvium derived from sandstone and siltstone and/or residuum weathered from sandstone and shale on mountains, ridges, canyons, and hills; Surface runoff is high; soil is well drained; erodibility is moderate.	0.3
Source: USDA (2014)		

In addition to crossing some soils susceptible to severe erosion, several locations along the alignment are indicated in the 2015 GJFO ARMP as having slopes steeper than 40% and therefore having an NSO stipulation. These are primarily at crossings of steep-sided drainages or where V.2 Road and existing pipelines cross the toes of adjacent, rocky slopes, primarily on the north side of the road.

Environmental Consequences

Proposed Action

Vegetation clearing, trenching, backfilling, and recontouring/reclamation have the potential to impact soil characteristics, productivity, and potential for restoration. Additional potential impacts include:

- Erosion due to water, wind, loss of vegetation, and mass wasting
- Compaction and damage to soil structure from heavy construction equipment
- Mixing or displacement from grading, excavation, stockpiling, and reclamation
- Rutting from equipment or vehicle traffic
- Structural damage to wet or frozen soils and soils with poor drainage
- Introduction of large stones or rocks into the topsoil as a result of construction

Construction activities would cause slight to moderate soil loss, decreased soil productivity, and increased sediment available for transport to surface waters. Infestations of noxious weeds resulting from soil disturbance could also affect soil productivity. The potential for soil transport to surface waters would increase as a function of slope, proximity to streams, and type of disturbance. However, stormwater design criteria and BMPs built into the Proposed Action to meet the CDPHE stormwater regulations would minimize this risk.

Following reclamation, RRG (with BLM oversight) would be responsible for revegetating the disturbance area until self-sustaining communities of desirable native plants have been established and for monitoring and controlling infestations of noxious weeds and other invasive non-native plants. The Proposed Action would initially disturb an estimated 209 acres of surface soils (**Table 2**). Most of this initial disturbance would be temporary and thus reclaimed and revegetated. Less than approximately 0.1 acre would remain as permanent valve yards, which would be graveled and kept clear of vegetation for operations and maintenance of aboveground appurtenances. The ROW Stipulations presented in **Appendix B** for salvaging and handling of soils, revegetation, and control of weeds are expected to result in minimal long-term loss of soil volume and productivity within the project area.

The Proposed Action would not totally adhere to the restrictions of Geology Slope NSO CO described in Appendix B of the 2015 GJFO ARMP to ensure stability and facilitate reclamation success on slopes steeper than 40% (**Table 3**). However, the Proposed Action may be approved and the requested ROWs/TUP issued despite sections on slopes steeper than 40% based on a determination by the BLM that the protected resources and resource uses would not be unduly affected. This determination has been made based on location of the proposed pipeline alignment adjacent to, or partially within, an existing pipeline alignment and the existing V.2 Road with no signs of slope instability.

The project would adhere to Geology Soil CSU CO for fragile soils and mapped Mancos shale and saline soils. No Mancos shale or soils derived from Mancos shale are present, but soils in the eastern part of the primary alignment adjacent to V.2 Road are somewhat saline and are considered fragile because they are thin and sometimes on slopes. However, the project is subject to application by the BLM of special construction and reclamation techniques if required, based on BLM construction oversight, and therefore consistent with the language of the CSU (see **Table 3**).

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed. No project-related impacts to soil resources from activities described above for the Proposed Action would occur. BLM management and currently permitted activities in the project area, and associated impacts, would

continue. These would include activities and impacts associated with oil and gas development, pipelines, access roads, recreation, and grazing.

3.16 SPECIAL DESIGNATIONS

The project area is located near or adjacent to three management areas with special designations. These are the South Shale Ridge ACEC, the Pyramid Rock ACEC, and the Little Book Cliffs WSA (**Figure 2**). The two ACECs are afforded special protections in the 2015 GJFO ARMP by specified management actions associated with the resources that were the bases for their designation. Overarching management actions include designating the ACECs as ROW exclusion areas and prohibiting surface occupancy. The WSA is managed under BLM Manual 6330 - Management of BLM Wilderness Study Areas. The manual outlines procedures for conforming to the Congressional mandate to manage WSAs "so as not to impair the suitability of such areas for preservation as wilderness." See **Section 3.23** (Wilderness and Wilderness Characteristics) of this EA.

Affected Environment

The South Shale Ridge ACEC, established in the 2015 GJFO ARMP as including 27,800 acres, is located immediately north of the proposed pipeline. The South Shale Ridge ACEC was designated to protect rare plants, wildlife, and scenic resource values. The entire South Shale Ridge ACEC is designated as a ROW exclusion area. Portions of the ACEC provide important habitat for Colorado hookless cactus and De Beque phacelia as well as BLM sensitive plants.

The Pyramid Rock ACEC, established in the 1987 GJFO RMP (BLM 1987) as including 550 acres for the protection of rare plants and cultural resources. The 2015 GJFO ARMP (BLM 2015c) increased the size of this ACEC to 1,300 acres. The expanded ACEC extends to V.2 Road, which is the main access for construction and maintenance of the existing and proposed existing pipelines.

Environmental Consequences

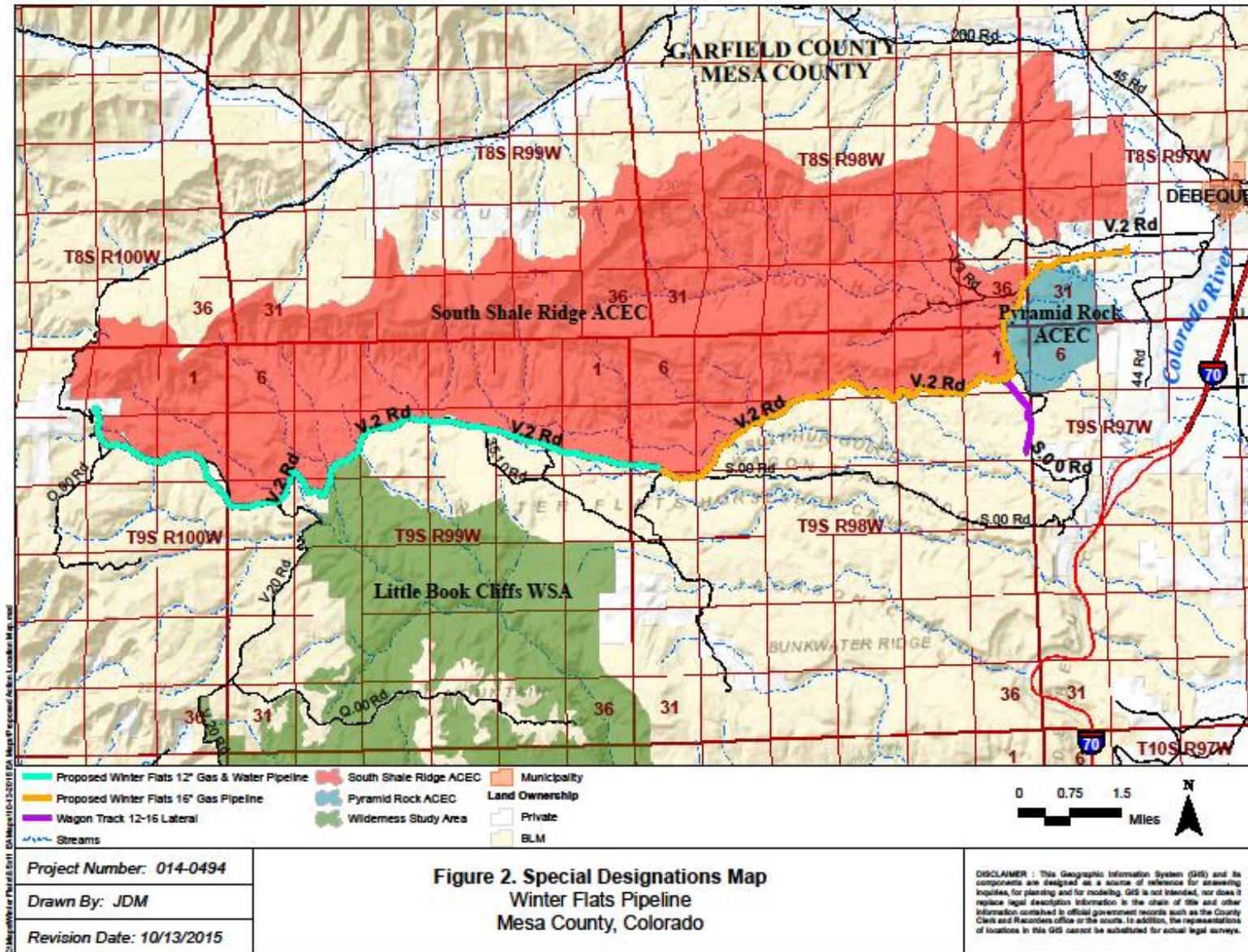
Proposed Action

Through BLM's internal scoping and project planning process, and with commitments by RRG to avoid impacts to the areas with special designations, the Winter Flats Pipeline route has been substantially modified from its initial alignment to be located almost entirely outside the boundaries of the two ACECs and the WSA. The lone exception is a short (0.17-mile) section of bored pipeline beneath a portion of the South Shale Ridge ACEC. This bore was needed to avoid constructing the pipeline around a sharp bend in the existing road.

Any indirect impacts resulting from proximity of the proposed pipelines to the areas with special designations would be primarily temporary in nature, declining through time as revegetation and natural recolonization by plants lessens the visual, botanical, and wildlife impacts. Ongoing monitoring of revegetation success and monitoring and treatment of weeds would reduce the potential for adverse impacts on vegetation, special status plants, and wildlife over the long term. Many of the ROW Stipulations listed in **Appendix B** are designed to avoid, minimize, or mitigate potential indirect impacts to the resources of concern in the areas with special designations.

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed, and no project-related impacts affecting areas with special designations (ACECs and WSAs) would occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These would include activities and impacts associated with oil and gas development, pipelines, access roads, recreation, and grazing.



3.17 SPECIAL STATUS PLANT SPECIES

3.17.1 Federally Listed, Proposed, or Candidate Plant Species

Affected Environment

Based on information from the USFWS, two Federally listed plant species were identified as potentially occurring within or potentially impacted by actions occurring in the project vicinity (**Table 18**).

Table 18. Potential for Adverse Impacts on Threatened or Endangered Plant Species

<i>Species and Status</i>	<i>Occurrence</i>	<i>Habitat Association</i>	<i>Range or Habitat in Vicinity?</i>	<i>Potentially Affected?</i>
Colorado hookless cactus (<i>Sclerocactus glaucus</i>) -- Threatened	Found in middle and eastern sections of Project,	Sagebrush, pinyon-juniper woodlands, xeric shrublands	Yes	Yes
De Beque phacelia (<i>Phacelia submutica</i>) – Threatened	Suitable and occupied habitats in middle and eastern sections of Project, outside of surface disturbance areas.	Barren soil types in sagebrush, pinyon-juniper and xeric shrublands	Yes	Yes

As shown in the table, both of these, Colorado hookless cactus (*Sclerocactus glaucus*) and De Beque phacelia (*Phacelia submutica*), have suitable habitat in the project area, including designated critical habitat for De Beque phacelia, and were found to be present within the proposed pipeline alignment or buffer zone during project-specific botanical surveys. Botanical surveys were conducted in and adjacent to the project area in September through October 2014 and April through June 2015 (Olsson 2015a).

Colorado Hookless Cactus (*Sclerocactus glaucus*). Colorado hookless cactus generally occurs on cobbly, gravelly, or rocky river terrace deposits and lower mesa slopes. It occurs on varying exposures, but is more abundant on south facing exposures and on slopes to about 30 percent. It is most abundant at the point where terrace deposits break from level tops to steeper side slopes. The species is found at an elevation of 4,500 to 5,900 feet. The project area supports widespread occupied habitat for Colorado hookless cactus, primarily in the middle and eastern sections of the project area. In fall 2014 and spring 2015, surveys for Colorado hookless cactus were conducted along the proposed Winter Flats Pipeline and Wagon Track Lateral ROWs, and within a 100-meter buffer area. The spring surveys began on April 9, 2015, as warm, spring conditions were occurring.

Surveys followed guidance from the CRVFO botanist and the document *BLM Grand Junction Field Office (GJFO) Standards for Contractor Inventories for Special Status Plants, Significant Plant Communities & Noxious Weeds* (BLM 2014). Per USFWS and BLM direction, the edge of disturbances of the project (including edge of pipeline construction areas, TSY, and EWS) was buffered by the 100-meter survey area. Within the disturbance areas and 100-meter buffer, pedestrian surveys utilizing 4-meter transect widths were used to conduct ocular searches for individual cacti. Surveyors utilized GPS to stay on prescribed transects, and locations of all individuals cacti were input into a sub-meter GPS (Trimble GeoXT). Once all Colorado hookless cactus locations were recorded, a second visit to located cacti within potential surface impact areas was conducted by senior biologists; a subsample of the locations within or adjacent to the disturbance areas were also verified and visited by BLM staff.

Based on these surveys, a total of 1,082 individual Colorado hookless cactus plants were located in the 1,935-acre survey area. Of these, 40 cacti were located within 20 meters of proposed surface disturbance areas (in buffer areas outside the ROW). Initially, 16 cacti were located within proposed surface disturbance areas (ROW, EWS, and staging areas), but after incorporation of bores instead of trenches in

these locations, only three cacti were within the proposed area of disturbance. RRG has shifted or narrowed the proposed construction corridor to avoid directly affecting these three cacti.

De Beque Phacelia (*Phacelia submutica*). De Beque phacelia is a small, springtime/early summer annual plant. It is restricted to the barren, multi-colored, clay soils of the Atwell Gulch and Shire members of the Eocene and Paleocene Wasatch Formation (Donnell 1969, O’Kane 1987, USFWS 2013). The De Beque phacelia appears to be adapted to the shrink-swell feature of the soils, which tends to expel plants that grow on them, although other early successional species can co-occur with De Beque phacelia. Because of the soil characteristics, susceptibility to erosion, and subsequent sparse vegetation cover, the sites remain in a fluctuating state of development. This species grows in climatic zones associated with pinyon pine and Utah juniper woodlands, usually at the margins of these woodland types where necessary soil conditions occur. It is also associated with climatic conditions that typically support sagebrush and desert scrub communities, although it does not occur in direct association with these species due to its obligate habitat conditions.

In spring 2015, surveys of De Beque phacelia habitat were undertaken along the proposed Winter Flats Pipeline and Wagon Track Lateral ROWs. Prior to beginning these surveys, a site-specific training with the CRVFO Botanist was held at known *P. submutica* locations around the project area to acquaint project staff with suitable versus unsuitable habitats.

Surveys followed guidance from the BLM and USFWS and utilized the De Beque Phacelia Field Form. Per BLM and USFWS direction, the edge of proposed disturbance, including edge of pipeline construction areas, TSY, and EWS, was buffered by a 200-meter survey area. Pedestrian surveys were conducted within the disturbance areas and the 200-meter buffer area to search for and locate potentially suitable habitats. Habitats identified as suitable exhibited appropriate soil conditions and associated plant community composition similar to known or suspected De Beque phacelia locations. These potential habitats were delineated on maps, recorded with a GPS unit, and digitized into potential habitat polygons within a Geographic Information System (GIS). The precise extents of these potential habitat areas were not field-measured by GPS on foot, due to concerns that foot traffic associated with mapping efforts could impact habitats or individual plants.

Once all potential habitat locations within the project area and 200 meter buffer were recorded, all sites were evaluated and verified by senior biologists, and sites within or adjacent to the disturbance areas were also verified and visited by BLM staff and De Beque phacelia expert Alicia Langton. Given the dry winter prior to the completion of the field surveys, germination rates were very low or zero during most of the survey period, and thus the mapped potential habitat areas were not verified to be occupied by De Beque phacelia but were assumed to be occupied.

Seven known occurrences of De Beque phacelia are located within 200 meters of the edge of disturbance, occupying a total of 4.88 acres of mapped habitat. In addition are five areas of suitable habitat (0.28 acre total) and 11 areas of marginally suitable habitat (2.06 acres total) within this 200-meter buffer. Of these, one known occurrence and six marginally suitable habitat areas are located within 50 meters of the edge of disturbance. The closest known occurrence is 50 meters from the edge of disturbance, and the closest marginally suitable habitat area is 13 meters from the edge of disturbance. All suitable and marginally suitable habitat was assumed occupied for purposes of effects analysis (WWE 2014, Olsson 2015a).

Environmental Consequences

Proposed Action

Both Colorado hookless cactus and De Beque phacelia could potentially experience both direct and indirect impacts from pipeline construction. In addition, ongoing activities such as livestock grazing and

motorized recreation could cumulatively add to the direct and indirect effects of pipeline construction. Species-specific impacts are described below.

Direct Effects. Direct impacts could result from vehicles or construction equipment driving over plants and crushing them, or from construction personnel walking on plants and crushing or breaking them. Plants growing within the disturbance corridor and associated work spaces would be most vulnerable to direct impacts, but those growing in close proximity to the disturbed areas would also be vulnerable to accidental damage from vehicle and foot traffic leaving the disturbance area. To prevent direct impacts to Colorado hookless cactus and De Beque phacelia, the project design incorporates boring beneath plants and route modifications to avoid plant occurrences. In addition, temporary construction fencing would be installed at the edge of planned disturbance where plants are located nearby to prevent accidental trampling or crushing.

Indirect Effects. Potential indirect effects include impacts from dust, introduction and expansion of noxious weeds and other non-native invasive species, herbicide drift during chemical weed treatment, and impacts to pollinators. The degree of vulnerability can vary by plant species and season of the year, and these specific differences are addressed under the Colorado hookless cactus and De Beque phacelia sections. The more generalized effects analysis is provided here.

Dust generated during construction would result from vehicular traffic on access roads, as well as from pipeline installation itself. Increased dust levels can negatively impact plants by clogging stomatal openings in the leaves, impeding gas exchange and reducing the ability of plants to take in carbon dioxide. Dust on the leaf surface can also reduce incident light at the leaf surface. Light and carbon dioxide are critical for plants to conduct photosynthesis, and reductions in either can reduce the quantity of carbohydrates plants can produce through photosynthesis, and thereby reduce plant growth and seed production. Dust on leaf surfaces can also facilitate plant tissue uptake of toxic pollutants (Thompson et. al. 1984, Farmer 1993, Sharifi et. al. 1997). Dust can also affect snowmelt patterns, affecting hydrology and soil moisture availability, alter soil pH and nutrient availability, and result in changes in plant community composition (Angold 1997, Auerbach et. al. 1997, Johnston and Johnston 2004, Field et. al. 2010, Gieselman 2010). To reduce impacts from dust, application of water-only dust control on all access roads would be required during pipeline construction and installation (**Appendix B**).

Additional indirect impacts to adjacent vegetation could occur from noxious weeds and other non-native plants associated with project area disturbances. The proposed removal of native vegetation would increase the site vulnerability to invasion and establishment of noxious weeds and other non-native invasive plant species, particularly where noxious weeds and other non-native species are already present. Neighboring vegetation would also become more vulnerable to invasion by noxious weeds and other non-native species. Ground disturbance combined with vehicle traffic and construction equipment provides both habitat and vectors for invasive species, particularly when these species are already present within the soil seed bank (Schmidt 1989, Parendes and Jones 2000, Gelbard and Belnap 2003, Larson 2003, Zaenepoel et. al. 2006).

These non-native species can negatively impact native plant communities, both directly through competition for resources, and indirectly through alteration of soil microbial communities (Klironomos 2002, Hierro et. al. 2006, Reinhart and Callaway 2006, Vogelsang and Bever 2009). Herbicide treatments of noxious weeds can also result in negative effects or mortality to native plants if they are co-occurring or located nearby (BLM 2007c). Implementation of ROW Stipulations (**Appendix B**) for noxious weeds and temporary reclamation would reduce the risk of noxious weed and invasive species establishment and spread through the combination of chemically treating noxious weeds while also reestablishing desirable vegetation through reclamation.

Another potential indirect impact to plants is a reduction in the density of flowering plants in proximity to rare plant habitats. The temporary reduction of flowering plants along the pipeline alignment could result in depressed pollinator populations, due to habitat loss and fragmentation. This could in turn result in reduced pollination success, seed production, and reproduction in affected plant species (Kearns and Inouye 1997, Bhattacharya et. al. 2003, Potts et. al. 2003). With the construction process, flowering forbs would be removed from the construction areas. Despite incorporation of forbs into reclamation seed mixes, reduced densities of flowering plants and, consequently, reduced numbers of pollinators are likely.

Cumulative Effects. Livestock grazing occurs throughout the project area, and cattle are often drawn to grasses seeded within reclamation areas. On long linear reclamation areas, such as pipeline, livestock exclusion fencing becomes impractical and livestock grazing and trampling impacts can impede establishment of desirable plants within reclamation areas. Livestock and wildlife can also serve as vectors for weed seeds, further increasing the risks of invasive species within disturbed areas.

Motorized recreation is a popular ongoing use within the project area. Off-highway vehicles such as ATVs and motorbikes can exacerbate project-related disturbance, while also serving as vectors for noxious weeds and other non-native, invasive species.

Colorado Hookless Cactus. RRG has modified its construction plans to incorporate two bores to avoid potential direct impacts to approximately 16 individual. In three other locations, RRG has narrowed and shifted the construction corridor to avoid direct impacts to cacti. In Winter Flats proper, RRG has moved the pipeline to the northern (opposite) side of the road for approximately 1.5 miles to separate construction activities from cactus locations (consistent with BLM and USFWS guidance). Within 100 meters of known occurrences, installation of temporary construction fencing is required, and a botanical monitor would be present during construction activities to ensure plants are protected. Because of these impact-avoidance measures, there are no anticipated direct impacts to individual plants.

Protective mitigations would be attached to the ROWs as Stipulations and implemented to minimize the potential for indirect impacts from fugitive dust, stormwater-related sedimentation, noxious weeds, and pollinator-related issues. Herbicide use would be prohibited within 100 meters of known plants, with control of noxious weeds limited to manual removal. From 100 meters to 0.5 mile, herbicide use would be restricted to spot-spraying only. Nevertheless, because construction activities would occur in proximity to Colorado hookless cactus plants, all potential indirect impacts may not be preventable (e.g., from livestock congregating near the pipeline alignment to forage on reclamation grasses, or increased OHV activities along or around the ROWs), and because construction activities would disturb soils and vegetation profiles within suitable habitat, the effects determination for Colorado hookless cactus is “**May Affect, Likely to Adversely Affect.**”

De Beque Phacelia. No known occurrences or mapped suitable or marginally suitable habitat for De Beque phacelia are located within the proposed disturbance area. With the requirement for installation of temporary construction fencing at the edge of disturbance within 100 meters of known occurrences and habitat areas, and use of botanical monitors, no direct impacts to De Beque phacelia plants or potential habitats are expected to result from the construction process

All of the known occurrences and mapped habitat areas have the potential to be indirectly impacted by project implementation. Protective mitigations would be attached to the ROWs as Stipulations (**Appendix B**) to mitigate these potential indirect impacts to De Beque phacelia. Surface disturbance within 200 meters of De Beque phacelia would not occur during the growing and flowering period to reduce possible dust impacts. Potential dust and sediment impacts are reduced farther by the incorporation of water-only dust control measures and stormwater-related sedimentation controls.

Control of noxious weeds would include revegetation of disturbance with native species (**Appendix B**) and use of herbicides. However, herbicide use would be prohibited within 100 meters of any De Beque

phacelia occurrence or habitat, with control of noxious weeds limited to manual removal. From 100 meters to 0.5 mile, herbicide use would be restricted to spot-spraying only.

Recent research on De Beque phacelia pollination indicates this species is self-pollinating (Langton 2015), and impacts to pollinator species would therefore not affect this species. Other potential indirect impacts to habitats include livestock congregating along the reclaimed ROW corridor to forage on reclamation species, and increased OHV activities along or around the ROWs. Because of the proximity of De Beque phacelia habitat to the edge of disturbance, and the potential for indirect effects, the effects determination for De Beque phacelia is “**May Affect, Likely to Adversely Affect.**” Because of the potential indirect impacts to designated critical habitat for De Beque phacelia, the effects determination for De Beque phacelia Critical Habitat is “**May Affect, Likely to Adversely Affect.**”

Synopsis

On April 5, 2016, the USFWS issued its Biological Opinion (BO) (ES/GJ-6-CO-16-F-001) for the Proposed Action. The BO noted that general and species-specific conservation (mitigation) measures incorporated into the Proposed Action or applied by the BLM as ROW Stipulations (**Appendix B**) would avoid direct impacts to Colorado hookless cactus, De Beque phacelia plants, suitable or occupied De Beque phacelia habitats, and would reduce the potential for indirect impacts associated with dust, introduction of noxious weeds, aerial drift of herbicides, and impacts to pollinators.

The BO also noted the potential for other indirect impacts from implementation of the project, including impacts from animals drawn to the reclaimed alignment for forage or from recreationists if their patterns of use are altered. Based on the potential indirect impacts, the BO concurred with BLM’s determination of “May Affect, Likely to Adversely Affect” for the Colorado hookless cactus De Beque phacelia, and areas within designated De Beque phacelia critical habitat.

The BO also stated, at page 16:

The proposed action and conservation measures will avoid the likelihood of jeopardy to the species. We have reached these conclusions because the BLM and RRG have committed to a series of conservation measures designed to avoid or minimize impacts from project activities such that effects will not be expected to reduce, directly or indirectly, the survival or recovery of either species.

As noted in **Table 3**, the Proposed Action would not adhere fully to the restrictions of GJ-NSO-13 (ROWA) identified in Appendix B of the 2015 GJFO ARMP for the protection of Federally listed, proposed, or candidate threatened or endangered plant species, due to construction within specified buffer distances of 200 meters from current and historically occupied and suitable habitat. However, the BLM may approve the Proposed Action and issue the requested ROW grants and TUP based on the results of the Section 7 consultation with USFWS and a determination by the BLM that the project would avoid or minimize direct and indirect impacts to Federally listed, proposed, or candidate threatened or endangered plant species and their habitats. See **Table 3** for a summary of considerations.

3.17.2 BLM Sensitive Plant Species

Affected Environment

BLM sensitive plant species in the Grand Junction Field Office area and their typical occurrences and habitat associations are listed in **Table 19**. Also noted are whether the project area is within their known ranges and/or if they potentially would be affected by project implementation. Surveys for BLM sensitive plant species were conducted in April through June 2015 (Olsson 2015a).

Of the BLM sensitive species occurring in the GJFO, only De Beque Milkvetch and Naturita milkvetch have known occurrences in the project area. Aromatic Indian breadroot (*Pedimelum aromaticum*) has

suitable habitat in the area, but this species was not observed during surveys. Adobe thistle is a former BLM sensitive species, now managed as a Species of Concern by the GJFO, which is also present within the project area. Extensive surveys for listed plant species indicate that other sensitive species do not occur.

Table 19. Potential for Adverse Impacts to BLM Sensitive Plant Species

<i>Species</i>	<i>Occurrence</i>	<i>Habitat Association</i>	<i>Range or Habitat in Vicinity?</i>	<i>Potentially Affected?</i>
Adobe thistle* (<i>Cirsium perplexans</i>)	Adobe hills associated with Mancos or Wasatch Formations.	Pinyon-juniper woodlands, sagebrush, saltbush, and mixed shrublands.	Yes	Yes
Aromatic Indian breadroot (<i>Pediomelum aromaticum</i>)	Sandy soils or adobe hills; 4,800 to 5,700 feet.	Pinyon-juniper shrublands	Yes	No
Canyonlands biscuitroot (<i>Lomatium latilobum</i>)	In sandy soils; 4,050 to 7,250 feet.	Semi-desert, foothills shrublands, and canyons.	No	No
Cathedral Bluffs meadowrue (<i>Thalictrum heliophilum</i>)	Endemic on sparsely vegetated, steep shale talus slopes of the Green River Formation; 6,300 to 8,800 feet.	Pinyon-juniper woodlands and shrublands; often with other oil shale endemics, sometimes with rabbitbrush or snowberry.	No	No
De Beque milkvetch (<i>Astragalus debequaeus</i>)	Varicolored, fine to textured, seleniferous, or saline soils of Wasatch Formation; 5,100 to 6,400 feet.	Pinyon-juniper woodlands and desert shrublands.	Yes	Yes
Dolores River skeletonplant (<i>Lygodesmia doloresensis</i>)	Reddish purple, sandy alluvium and colluvium of the Cutler Formation between the canyon walls and the river; 4,000 to 5,500 feet.	Juniper, shadscale, and sagebrush communities.	No	No
Eastwood's monkeyflower (<i>Mimulus eastwoodiae</i>)	Shallow caves and seeps on steep canyon walls; 4,700 to 5,800 feet.	Moist seep habitats	No	No
Ferron's milkvetch (<i>Astragalus musiniensis</i>)	Gullied bluffs, knolls, benches, and open hillsides on shale, sandstone, or alluvium derived from them; 4,700 to 7,000 feet.	Pinyon-juniper woodlands or desert shrub communities.	No	No
Fisher milkvetch (<i>Astragalus piscator</i>)	Sandy, sometimes gypsiferous soils of valley benches and gullied foothills; 4,300 to 5,600 feet.	Desert shrublands.	No	No
Grand buckwheat (<i>Eriogonum contortum</i>)	Mancos Shale badlands; 4,500 to 5,100 feet.	Shadscale and other salt desert shrub communities.	No	No
Grand Junction milkvetch (<i>Astragalus linifolius</i>)	Chinle and Morrison Formations; 4,800 to 6,200 feet.	Pinyon-juniper and sagebrush.	No	No
Grand Junction suncup (<i>Camissonia eastwoodiae</i>)	Mancos shale; 3,900 to 5,900 feet.	Mat saltbush, shadscale, blackbrush, and juniper communities.	No	No

<i>Species</i>	<i>Occurrence</i>	<i>Habitat Association</i>	<i>Range or Habitat in Vicinity?</i>	<i>Potentially Affected?</i>
Horseshoe milkvetch (<i>Astragalus equisolensis</i>)	Dolores River Canyon, sagebrush, greasewood, mixed desert shrub, on Duchesne River Formation; 4,800 to 5,200 feet.	Sagebrush, horsebrush, and other mixed desert shrub communities.	No	No
Jones' bluestar (<i>Amsonia jonesii</i>)	Areas with clay, sandy, or gravelly soils in desert steppe, rocky gorges, and canyons.	Pinyon-juniper, xeric shrublands.	Yes	No
Kachina fleabane (<i>Erigeron kachinensis</i>)	Found on saline soils in alcoves and seeps in canyon walls, Montrose County and eastern Utah; 4,800 to 5,600 feet.	Canyons in desert shrublands.	No	No
Narrowstem gilia (<i>Aliciella stenothyrsa</i>)	Silt, loam, gravel soils from Green River/Uinta Formation; 5,000 to 6,000 feet.	Grassland, sagebrush, mountain-mahogany, or pinyon-juniper communities.	No	No
Naturita milkvetch (<i>Astragalus naturitensis</i>)	Western Colorado, New Mexico, and Utah.	Semi-deserts, pinyon-juniper woodlands, sandstone mesas, ledges, crevices and slopes in pinyon-juniper woodlands.	Yes	Yes
Osterhout's cryptantha (<i>Cryptantha gypsophila</i>)	Grayish, near-barren gypsum hills of Paradox Member of Hermosa Formation.	Bare gypsum soils.	No	No
Piceance bladderpod (<i>Lesquerella parviflora</i>)	Sparsely vegetated shale talus slopes of Green River Formation.	Shrublands, often with other oil shale endemics.	No	No
Roan Cliffs blazingstar (<i>Mentzelia rhizomata</i>)	Sparsely vegetated shale talus slopes of Green River Formation.	Shrublands, often with other oil shale endemics	No	No
San Rafael milkvetch (<i>Astragalus rafaalensis</i>)	Gullied hills, washes, talus, seleniferous clay, silt, sand; 4,400 to 6,500 feet.	Desert shrublands.	No	No
Strigose Easter-daisy (<i>Townsendia strigosa</i>)	Sandy or clay soils of dry, open places; 5,000-9,000 feet, Whitewater area.	Desert shrublands	No	No
Tufted frasera (<i>Frasera paniculatum</i>)	Western Mesa County; near Utah border, sandy soils in desert shrub, pinyon-juniper. 4,000 to 6,500 feet.	Desert shrub and pinyon-juniper.	No	No

*Adobe thistle has been removed from the BLM sensitive species list but is managed as a Species of Concern by the GJFO.

De Beque Milkvetch (*Astragalus debequaeus*). The De Beque milkvetch flowers from April to May and produces fruit from May to July (Colorado Natural Heritage Program 2013). It is found in varicolored, fine-textured, seleniferous, saline soils of the Atwell Gulch Member of the Wasatch Formation, in areas surrounded by pinyon-juniper woodlands and desert shrubs. Plants are mostly clustered on toeslopes and along drainages, but many occur on steep side slopes. Soils are clayey but littered with sandstone fragments. Associated taxa include Indian ricegrass (*Achnatherum hymenoides*), Wyoming sagebrush

(*Artemisia tridentata* ssp. *wyomingensis*), yellow milkvetch (*Astragalus flavus*), shadscale (*Atriplex confertifolia*), Gardner's saltbush (*Atriplex gardneri*), mountain-mahogany (*Cercocarpus montanus*), longflower rabbitbrush (*Chrysothamnus depressus*), green Mormon tea (*Ephedra viridis*), broom snakeweed (*Gutierrezia sarothrae*), Intermountain Indian breadroot (*Pediomelum megalanthum*), prickly pear cactus (*Opuntia polyacantha*), sharpleaf twinpod (*Physaria acutifolia*), basindaisy (*Platyschkuhria integrifolia*), and Ives' four-nerved daisy (*Tetraneuris ivesiana*) (Welsh 1985, O'Kane 1986, Spackman et al. 1997, CNHP 2014). De Beque milkvetch is common in the project area. Six plants were found within the proposed disturbance area, and an additional 603 plants were present within 100 meters.

Naturita Milkvetch (*Astragalus naturitensis*). Naturita milkvetch occurs in semi-desert habitats, including pinyon-juniper woodlands, sandstone mesas, and ledges, crevices, and slopes in pinyon-juniper woodlands at elevations from 5,000 to 7,000 feet. This is a rare species found in six counties in Colorado, two in New Mexico, and one in Utah. The plant grows in sand islands on rock expanses and in other sandy areas and is common in the project area. Approximately 500 plants were found within the proposed disturbance area, and an additional 2,500 plants were present within 100 meters (Olsson 2015b).

Adobe Thistle (*Cirsium perplexans*). Adobe thistle, no longer listed as a BLM sensitive species but a Species of Concern in the GJFO, is a biennial to perennial species with purplish striate stems, found almost exclusively on barren clay soils or "adobe hills" derived from shales of the Mancos or Wasatch formations. Associated plant communities are pinyon-juniper woodlands, and sagebrush, saltbush, and mixed shrublands. It often is found in disturbed areas. This species is common in and around the project area. Surveys conducted in 2015 found approximately 200 plants within the proposed disturbance area, and an estimated 1,000 additional plants were present within 100 meters.

Environmental Consequences

Proposed Action

All three of the BLM sensitive plant species present in the area—De Beque milkvetch, Naturita milkvetch, and adobe thistle—have the potential to experience the same direct, indirect, and cumulative effects as were described above in **Section 3.17.1** for Federally listed, proposed, or candidate plant species. However, unlike the Federally listed plant species, direct impacts and loss are anticipated to occur to all three BLM sensitive plant species. Direct and indirect impacts are described below.

De Beque Milkvetch. Pipeline construction would occur within occupied habitat, and would result in mortality of six plants, or 1% of the known plants in the project vicinity. Approximately 600 additional plants could experience adverse indirect effects from dust deposition, competition from noxious weeds and other invasive species, aerial drift of herbicides during weed treatments, and impacts on pollinators. Mitigations included in the ROWs would alleviate some of these adverse effects risks. Post-construction, the establishment of native species and treatment of weeds could facilitate colonization or recolonization by De Beque milkvetch. However, the extent to which this might happen cannot be predicted, given the disruption to the soils resulting from pipeline installation. Cumulatively, the Proposed Action would contribute to other stressors affecting this species, including noxious weed competition, grazing, recreational activities, and other oil and gas exploration and production activities in the area. This project would adversely affect individuals, but would not likely result in a loss of viability in the planning area, or cause a trend toward Federal listing or a loss of rangewide species viability.

Naturita Milkvetch. Approximately 510 of 3,685 plants, or 14% of known plants occurring in the project area, would experience direct mortality from project implementation. The remaining plants would potentially experience adverse indirect impacts, similar to those described above for De Beque milkvetch. Mitigation measures included in the ROW grants (**Appendix B**) would ameliorate some of these adverse effects risks. Because this species requires shallow sandy soils overlying rock, it is unlikely that reclamation of the pipeline would be sufficient to replace habitat for Naturita milkvetch, so this loss of

habitat would likely be permanent. Cumulatively, the Proposed Action would contribute to other stressors affecting this species, including noxious weed competition, grazing, recreational activities, and other oil and gas exploration and production activities in the area. Overall, this project would adversely affect individuals but is not likely to result in a trend toward Federal listing or loss of rangewide viability.

Adobe Thistle. Approximately 200 of 1,000 plants, or 20% of known plants occurring in the project area, would experience direct mortality from project implementation. The remaining estimated 800 plants would potentially experience indirect effects as described above for De Beque milkvetch. Mitigation measures included in the ROW grants would alleviate some of these adverse effects risks. Post-construction reclamation of disturbed areas might eventually provide suitable habitat for this species. However, pipeline installation would disrupt the soils, and reclamation seedings emphasizing grasses would not be conducive to restoring the barren habitat preferred by adobe thistle. Cumulatively, the Proposed Action would contribute to other stressors impacting this species, including noxious weed competition, grazing, recreational activities, and other oil and gas exploration and production activities in the area. Overall, this project would adversely affect individuals, but would not likely to result in a trend toward Federal listing or a loss of rangewide viability.

Synopsis

As noted in **Table 3**, the Proposed Action would not adhere fully to the restrictions of GJ-CSU-9 (ROWA) identified in Appendix B of the 2015 GJFO ARMP for the protection of BLM sensitive plant species and their habitats, due to construction within specified buffer distances of 100 meters from occupied habitat. Although the project would incorporate special design, construction, and implementation measures to reduce impacts, the species-specific impact summaries above document loss of individual plants of all three species present, the BLM may approve the Proposed Action and issue the requested ROW grants and TUP. Such approval would be based on the considerations summarized in **Table 3** and the mitigation measures included as ROW Stipulations in **Appendix B**.

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed. No project-related impacts to BLM sensitive plant species from activities described above for the Proposed Action would occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These would include activities and impacts associated with oil and gas development, pipelines, access roads, recreation, and grazing.

3.18 SPECIAL STATUS ANIMAL SPECIES

3.18.1 Federally Listed, Proposed, or Candidate Animal Species

Affected Environment

Table 20 presents information on the distribution, habitat associations, potential for occurrence, and potential for adverse impacts on Federally listed, proposed, or candidate threatened or endangered vertebrate wildlife. The potential for occurrence and potential for adverse impacts are based on known habitat requirements, geographic ranges, and potential threats associated with the Proposed Action. Note that the Canada lynx, Gunnison sage-grouse, yellow-billed cuckoo (western distinct population segment), Mexican spotted owl, and Green Lineage Colorado River cutthroat trout are not present in the project area. Impacts on four endangered Colorado River fishes are described following the table.

Table 20. Potential for Adverse Impacts on Threatened or Endangered Animal Species

Species and Status	Distribution in Region	Preferred Habitats	Potentially Present?	Potentially Affected?
Canada lynx (<i>Lynx canadensis</i>) – Threatened	Dispersed use in upper montane and subalpine zones.	Spruce-fir, lodgepole pine, and aspen forests and movement corridors.	No	No
Gunnison sage-grouse (<i>Centrocercus minimus</i>)	Extends as far northwest as northern end of Uncompahgre Plateau, approximately 27 miles southwest.	Areas of Wyoming or mountain sagebrush, often interspersed with grasslands, meadows, and riparian habitats.	No	No
Yellow-billed cuckoo (<i>Coccyzus americanus</i>), Western Distinct Population Segment – Threatened	Occurs primarily in cottonwood riparian corridors along major rivers and tributaries of western and south-central Colorado. Designated critical habitat occurs along the Colorado River 12 miles to the south.	Stands of large cottonwoods, typically with well-developed understory of tall shrubs.	No	No
Mexican spotted owl (<i>Strix occidentalis lucida</i>) – Threatened	No historic occurrence in project vicinity. Present in southwestern Colorado and southern Front Range.	Cliffs and steep, rocky walls in canyons with closed-canopy coniferous forests.	No	No
Razorback sucker (<i>Xyrauchen texanus</i>) – Endangered Colorado pikeminnow (<i>Ptychocheilus lucius</i>) – Endangered	Colorado River and major tributary rivers, including mainstem Colorado River downstream from the site.	General: Deep, slow runs, pools, and eddies. Spawning: Silt, sand, or gravel substrates in shallow water and seasonally flooded overbank areas.	Yes	Yes
Humpback chub (<i>Gila cypha</i>) -- Endangered	Mainstem Colorado River and major tributaries. Critical habitat is designated in the Colorado River at Black Rocks near Utah line.	Rocky runs, riffles, and rapids in swift, deep rivers.	Yes	Yes
Bonytail chub (<i>Gila elegans</i>) – Endangered			Yes	Yes
*Green Lineage Colorado River cutthroat trout (<i>Oncorhynchus clarki</i> ssp.) – Threatened	Identified in 60 streams in Colorado River basin, including headwaters of Roan Creek north of De Beque.	Clean, cool headwaters streams and ponds isolated from other strains of cutthroat trout.	No	No
*Green Lineage = Relict populations of Colorado River cutthroat trout indigenous to the Colorado, Gunnison, and Dolores River Basins. Currently protected under the ESA pending further evaluation of ecological and taxonomic status.				

Environmental Consequences

Proposed Action

Razorback Sucker, Colorado Pikeminnow, Humpback Chub, and Bonytail Chub. These four species of Federally listed big-river fishes occur within the Colorado River drainage basin near or downstream from the project area (Olsson 2015a). Designated critical habitat for the razorback sucker and Colorado pikeminnow includes the Colorado River and its 100-year floodplain both downstream and upstream from the confluence of tributary streams draining the project area and vicinity. Critical habitat for the humpback and bonytail chubs extends westward from Black Rocks area west of Grand Junction.

Ephemeral drainages potentially affected by the Proposed Action are tributary to the Colorado River within the area of Critical Habitat for the Colorado pikeminnow and razorback sucker. Potential impacts to this habitat and the big-river fishes include depletions of flows in the Colorado River associated with withdrawals for dust suppression and boring of some pipeline segments and potential inflow of sediments or chemical pollutants. These are described below.

- Depletions of Flows in the Colorado River. Use of water from the Colorado Basin in relation to the Proposed Action would use water withdrawn from the Colorado River for dust abatement on disturbed surfaces. The water would be obtained from the Town of De Beque's commercial water facility, for which the USFWS issued a Biological Opinion (BO) on December 21, 1984 (BO 6-5-85-F-006). The BO was prepared for the U.S. Army Corps of Engineers (USACE) to address impacts of a water intake structure and pipeline.

In addition, depletions associated with withdrawals of water for use in developing BHPP's planned natural gas wells to be served by the proposed raw water/treated water pipeline would be addressed through a Programmatic BO (PBO) (GJ-6-CO-08-F-006) issued in 2008. The PBO made a determination of "**May Affect, Likely to Adversely Affect**" for depletions in the Colorado River Basin flows.

Under the PBO, the BLM makes annual mitigation payments for water depletions associated with its fluid minerals program in the Upper Colorado River Basin, including drilling and completions of oil and gas wells, dust abatement on access roads, and hydraulic pressure-testing of pipelines. In addition to dust abatement, the Proposed Action would consume water during boring of five pipeline segments but would utilize pneumatic pressure-testing. Consumptive water use for dust abatement and boring are estimated at 11.9 acre-feet over the 9- to 12-month construction period. However, because this is an estimate, a ROW Stipulation in **Appendix B** would require RRG to report actual water usage during construction for 2016 and 2017. Depletions associated with future natural gas wells served by the pipelines would be addressed by the BLM in the De Beque Southwest Master Development Plan (DSMDP).

- Transport of Sediments to the Colorado River. The Colorado River endangered fishes are naturally tolerant of seasonally elevated suspended sediment, and turbid waters are thought to help conceal these species from avian and terrestrial predators while fish are using shallow waters for foraging and resting (Osmundson and Kaeding 1989). However, inflow of sediments is somewhat more problematic now than historically due to the reduced frequency and intensity of periodic flushing flows as a result of construction of dams and withdrawals for irrigation and other uses. Accumulation of sediments can choke the gravel or cobble beds used by adults for spawning and by larvae as shelter. Measures to avoid or minimize the transport of sediments from disturbed surface and drainage crossings associated with the Proposed Action include sediment control BMPs and restrictions on constructing across the drainages during periods when they contain flows or when the substrate is wet. Following construction, drainages crossed by the pipelines would be promptly restored to pre-existing contours and conditions, and the banks and adjacent disturbances would be revegetated desirable native plant species appropriate for the site. See the ROW Stipulations in **Appendix B**. Based on these measures, transport of sediments to the Colorado River is expected to have negligible impacts on the endangered big-river fishes and their designated critical habitat.
- Transport of Chemical Pollutants to the Colorado River. The measures designed to control transport of sediments from pipeline construction operations would also reduce the risk of transport of chemical pollutants associated with the Proposed Action. These would consist primarily of fuels, lubricants, and solvents associated with operations of heavy equipment. In the unlikely event of a spill of a chemical pollutant, the operator would implement its *Spill Prevention, Control, and Countermeasures (SPCC) Plan (Section 3.22)*. The SPCC Plan is designed to limit the extent of contamination associated with a chemical spill and ensure that affected soils, sediments, or waters are

promptly and adequately remediated. Because of the low potential for releases of chemical pollutants and the requirements for prompt control and cleanup, risks to the endangered big-river fishes or their Designated critical habitat would be negligible.

- **Impingement or Entrapment.** A ROW Stipulation in **Appendix B** specifies measures to minimize the risk that any withdrawal of fresh water from the project would not cause injury or mortality of fishes at the water intake point.

Under the 2008 PBO, the determination of effects for the big-river fishes due to depletion of flows in the Colorado River is “**May Affect, Likely to Adversely Affect.**” Based on the distance of the project from the Colorado River or perennial tributaries, and the ROW Stipulations (**Appendix B**) for minimizing potential transport of project-related sediments or chemical pollutants to the river or other perennial streams, the BLM has made a determination of “**No Effect**” relative to these potential impacts.

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed, resulting in “**No Effect**” on any Federally listed, proposed, or candidate threatened or endangered fish and wildlife species. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These would include activities and impacts associated with oil and gas development, pipelines, access roads, recreation, and grazing.

3.18.2 BLM Sensitive Animal Species

Affected Environment

Table 21 lists BLM sensitive vertebrate wildlife species known to occur or potentially present in the general project vicinity, or are not present but potentially affected by the Proposed Action. Species indicated as being present or having suitable habitat within the project area are described after the table.

Table 21. Potential for Adverse Impacts on BLM Sensitive Animal Species

<i>Species</i>	<i>Habitat Description</i>	<i>Known or Potential Presence in Area</i>
Townsend’s big-eared bat (<i>Corynorhinus townsendii</i>)	Coniferous forests, deciduous forests, sagebrush steppe, juniper woodlands, and mountain shrubland; maternity roosts and hibernacula in caves and mines; does not use crevices or cracks; caves, buildings, and tree cavities for night roosts.	Habitat suitable for foraging; roost sites limited.
Spotted bat (<i>Euderma maculatum</i>)	Semi-desert canyonlands with desert shrub, ponderosa pine, or pinyon-juniper woodland; open pastures and hayfields. Roosts in cliff crevices near surface water.	Habitat suitable for foraging; roost sites limited.
Fringed myotis (<i>Myotis thysanodes</i>)	Deserts, grasslands, semi-desert shrublands, ponderosa pine and pinyon-juniper woodlands, and scrub oak; roosts in caves, mines, rock crevices, and buildings.	Habitat suitable for foraging; roost sites limited.
Big free-tailed bat (<i>Nyctinomops macrotis</i>)	Rocky areas and rugged terrain in desert and woodland habitats; roosts in rock crevices in cliffs and in buildings, caves, and tree cavities.	Habitat suitable for foraging; roost sites limited.
Rocky Mountain bighorn sheep (<i>Ovis canadensis nelsoni</i>)	Prefer habitat dominated by grass, low shrubs, rock cover, and areas near open escape cover.	Habitat marginal at western end of area, receives limited use.
Greater sage-grouse (<i>Centrocercus urophasianus</i>)	Wyoming or mountain sagebrush, often mixed with grasslands, meadows, and riparian habitats.	Historically present in sagebrush flats; not documented since 1989.

<i>Species</i>	<i>Habitat Description</i>	<i>Known or Potential Presence in Area</i>
Northern goshawk (<i>Accipiter gentilis</i>)	Nests and forages in subalpine and upper montane conifer and aspen forests. Uses similar habitats in winter but may move to lower elevations to forage.	Habitat near western marginal for nesting but suitable for winter use.
Ferruginous hawk (<i>Buteo regalis</i>)	Forages in treeless grasslands and low shrublands; nests atop outcrops, shrubs, or pinyon and juniper trees. May congregate around prairie dog towns in winter.	Sagebrush flats in project area provide marginally suitable habitat.
Golden eagle (<i>Aquila chrysaetos</i>)	Nests on cliffs and forages across large areas for small to medium mammals, upland fowl, and waterfowl in unwooded or sparsely wooded expanses (sagebrush, salt-desert shrubs, grasslands).	Nests throughout the region, including relative proximity to project area.
Bald eagle (<i>Haliaeetus leucocephalus</i>)	Nests along lakes and rivers with large trees for nesting and roosting; preferred prey include fish and waterfowl.	Nests and roosts along Colorado River a few miles from the project.
Peregrine falcon (<i>Falco peregrinus</i>)	Nests on high cliffs and forages for waterfowl along rivers or reservoirs. May also take upland fowl in open country, especially in migration.	Nests on cliffs in general region and hunts along the Colorado River.
Burrowing owl (<i>Athene cunicularia</i>)	Nests and forages in grasslands and expanses of low shrubs; often nests and roosts in prairie dog burrows or burrows of other animals.	Observed in prairie dog colony near project area.
Brewer's sparrow (<i>Spizella breweri</i>)	Mostly associated with expanses of sagebrush steppe or shrubland at middle or lower elevations.	Present in sagebrush flats in portions of the project area.
Milksnake (<i>Lampropeltis triangulum taylori</i>)	Highly variable, from grassland to shrubland to pinyon-juniper woodland below 6,000 feet	Habitat suitable.
Midget faded rattlesnake (<i>Crotalus oreganus concolor</i>)	Uses rock outcrops for refuge and hibernation, generally below 7,500 feet. Hunts in sagebrush, pinyon-juniper, and other arid habitats.	Present in rocky uplands, especially eastern end of project area.
Northern leopard frog (<i>Lithobates pipiens</i>)	Inhabits perennial ponds, slow-flowing streams, and persistently inundated overbank areas along river. Requires clean water. Seldom strays far from water.	Suitable habitat along Colorado River and Roan Creek.
Roundtail chub (<i>Gila robusta</i>)	Deep pools and eddies adjacent to fast-flowing water in larger rivers and major tributaries.	Present in Colorado River.
Bluehead sucker (<i>Catostomus discobolus</i>)	Areas of moderate to high velocity with rock substrate in perennial waters ranging from headwater streams to large rivers.	Present in Colorado River.
Flannelmouth sucker (<i>Catostomus latipinnis</i>)	A variety of habitats (riffles, runs, eddies, and backwaters) in larger rivers and tributaries.	Present in Colorado River.
*Green Lineage Colorado River cutthroat trout (<i>Oncorhynchus clarki</i> ssp.)	Clean, cool headwaters streams and ponds isolated from other strains of cutthroat trout.	No suitable habitat.
*Green Lineage = Relict populations of Colorado River cutthroat trout indigenous to the Green, Yampa, and White River Basins. Managed as a BLM sensitive species pending further evaluation of ecological and taxonomic status.		

Environmental Consequences

Proposed Action

Bats. The project area provides suitable foraging habitat for four species of BLM sensitive bats—the Townsend’s big-eared bat, spotted bat, fringed myotis, and big free-tailed bat. Some minor caves as well as rock crevices, large conifers, and other suitable nocturnal roosting sites are present in the project area. Loss of large trees or of remaining habitats, suitable for foraging, would also be minimal, and disturbance due to construction activities would not occur at night when the bats are feeding. The Proposed Action is expected to have negligible impacts on these species.

Rocky Mountain Bighorn Sheep. This species occurs in broken, rocky uplands mostly southwest, west, and northwest of the project area. Although Colorado Parks and Wildlife (CPW) has recorded sightings in the project vicinity, the Proposed Action would be conducted primarily in areas not frequently used by bighorns. In addition, any temporary loss of potential habitat that could occur due to avoidance by sheep of areas of human activity and equipment operations would be temporary and minor in relation to the large expanses across which the animals range.

Greater Sage-Grouse. This species historically occurred in sagebrush flats that dominate portions of the project area, but no sightings of birds or their sign have been reported in more than a decade. Because of the mobility of any grouse that could use the area as transients from populations within the region, and the very low likelihood that any such use would involve nesting, the Proposed Action would not be expected to affect survival of any individuals or to disrupt critical behaviors.

Northern Goshawk. The northern goshawk is a large accipiter found year-round in subalpine spruce-fir and upper montane Douglas-fir forests, and in areas of these conifers mixed with aspen. In winter, goshawks may move to lower elevations, including ponderosa pine and pinyon-juniper woodlands, in search of prey. Diet consists primarily of birds, including dusky grouse and small birds, as well as diurnal small mammals such as squirrels and chipmunks. No goshawk nests are known to occur in the project area, although montane conifers at the western end are marginally suitable. Transitory winter use in these areas, and potentially lower into pinyon-juniper woodlands, is also possible during severe conditions. The amount of habitat loss for this species would be limited in area and in habitat quality. A ROW Stipulation in **Appendix B** would require a raptor nesting survey prior to initiation of project activities, and a Timing Limitation (TL) would be applied to prohibit initiation of construction within 0.5 mile of an active nest.

Ferruginous Hawk. The ferruginous hawk is a bird of open country species, inhabiting grasslands, shrub steppes, and deserts. Primary prey includes rabbits, ground squirrels, and prairie dogs, and ferruginous hawks may congregate near colonies of prairie dogs or ground squirrels in winter. They nest on the ground, on rocky bluffs and ridge crests, or atop shrubs and pinyon-juniper trees. Ferruginous hawks may aggregate near prairie dog and ground squirrel colonies in winter. No ferruginous hawk nests are known to be present in the project vicinity, and the sagebrush flats may be too limited in extent to support a nesting pair. The amount of habitat loss, especially considering the ROW Stipulation requiring prompt revegetation, would be negligible in relation to the potential of the project area to support nesting or other regular use by this species. A ROW Stipulation in **Appendix B** would require a raptor nesting survey to be conducted if project would be initiated during the raptor nesting season, and a Timing Limitation (TL) would be applied to prohibit initiation of construction within 0.5 mile of an active nest of this species.

Bald Eagle. This species nests and roosts along the Colorado River within a few miles of the project area. Bald eagles in the regions are strongly associated with riparian corridors where they hunt for fish and waterfowl. Nearby unwooded uplands receive limited use for feeding on carrion or diurnal small mammals (rabbits, ground squirrels, and prairie dogs), especially in winter when rivers may be covered

by ice. Although it is possible that a bald eagle could forage in the sagebrush flats of the project vicinity, any such use would be infrequent and transitory, and temporary loss of available habitat due to pipeline construction would be negligible.

Golden Eagle. Although this species nests throughout the region, no nests are known occur within 0.5 mile of the project area. However, even if no nests would be potentially affected, the proposed construction during a period of 7 months could temporarily disrupt foraging patterns, especially during construction in more open sagebrush and salt-desert shrub habitats in the central and eastern areas of the proposed alignment. Because golden eagles have very large home ranges, it is unlikely that the temporary disruption in foraging, if it occurs, would have demonstrable impacts to any affected individuals, nesting pairs, or fledglings. As with other raptors, nesting surveys would be required prior to initiation of construction, and activities within 0.5 mile of an active or alternate nest site would be prohibited unless an exception is granted based topographic or vegetation screening (see **Appendix B**).

Peregrine Falcon. This migratory raptor nests in high cliffs in portions of Mesa and Garfield Counties and other parts of Colorado and hunts primarily for waterfowl on major waterbodies, including the Colorado River. Peregrines nesting on the Roan Cliffs several miles from the project area are very unlikely to use the types of dry, upland habitats along or near the proposed pipeline alignments, but infrequent transitory use, such as hunting for upland fowl (chukars), is possible during migration. Any such use would involve a very small portion of potential foraging area, and impacts would be negligible.

Burrowing Owl. This species is active in both daytime and nighttime and nests in burrows, especially those of prairie dogs, with the clipped grasses also providing foraging habitat for insects and small vertebrates. While no prairie dog towns or other suitable burrows for burrowing owls were discovered in the area directly affected by construction, a burrowing owl—apparently a transient—was observed in a small colony of white-tailed prairie dogs on private land approximately 500 feet east of the eastern terminus of the project area (Olsson 2015b). Construction-related traffic along the portion of V.2 Road used to access the project areas would have the potential to affect burrowing owls that might nest in the area. The BLM would apply a TL (**Appendix B**) requiring a preconstruction survey for burrowing owls in the prairie dog town and prohibiting initiation of construction within 0.25 mile of the colony while a burrowing owl is present.

Brewer's Sparrow. This migratory songbird, both a BLM sensitive species and a Bird of Conservation Concern (see **Section 3.22**), is mostly associated with expanses of Wyoming sagebrush at lower elevations or mountain sagebrush at middle elevations or, less frequently, with short shrubs such as snowberry and dwarf willows in the upper montane and subalpine. Construction of pipeline ROW would reduce available sagebrush habitats in the short-term, but over the long term (10 to 15 years), many of these areas would be recolonized by sagebrush. In addition, reestablishment of sagebrush would be emphasized during revegetation of temporarily disturbed areas within sagebrush shrubland or sagebrush steppe. Only 0.07 acre, associated with two valve yards, would remain unreclaimed.

The ROW Stipulations in **Appendix B** include application of GJ-TL-3 (ROWA) as described in the 2015 GJFO ARMP for the protection of active nests of migratory birds by prohibiting vegetation removal or surface-disturbing activities during the period **May 15 to July 15**. RRG currently plans to conduct as much vegetation removal as practicable prior to the start of the TL period. However, a constraint along portions of the alignment would prohibit vegetation removal (as well as construction) during the flowering season for two special status plant species. Surveys for nesting Brewer's sparrow (and other birds; **Section 3.24**) would be conducted during the nesting season and prior to disturbance in any suitable habitat areas along the alignment that could not be cleared prior to construction. Results of these surveys would be used to refine construction schedules and avoid nests. This is expected to limit the level of direct disturbance to Brewers sparrow. Although indirect impacts to Brewer's sparrow through

displacement and disturbance may still occur as a result of the proposed action, these impacts are expected to be minimal.

Milk Snake. In Colorado, milk snakes occur below 8,000 feet in grasslands, sagebrush steppe, other low shrublands, open pinyon-juniper or ponderosa pine woodlands, rocky canyons, and arid river valleys. Except at night, this snake stays hidden underneath surface debris and rocks. It hibernates belowground, sometimes with other snake species. Milk snakes are somewhat nocturnal and more active when soils are moist. Suitable habitat is present in the project area, and the presence of milk snakes is assumed for the purposes of this report, although presumably in low densities as is typically the case, and probably not in proximity to V.2 Road. Because of the potential presence of this species, construction may affect individuals, or multiple individuals in hibernacula.

A ROW Stipulation(**Appendix B**) would require construction to cease if a den or hibernaculum is discovered within the proposed disturbance areas during the period **October 1 through April 30**. Work would be suspended until a BLM wildlife biologist is consulted and the snakes can be safely relocated. Despite these protections and general avoidance of construction through rock outcrops, some mortality and habitat loss is possible but would not be expected to be discernible at the population level.

Midget Faded Rattlesnake. The midget faded rattlesnakes typically occurs below 7,000 feet in elevation on the Green River Formation in Southwest Wyoming, Eastern Utah, and Western Colorado, where it is mostly associated with south- to southeast-facing rock outcrops. Larger adults may use adjacent sagebrush communities to hunt during the summer months. Other low shrublands and pinyon-juniper woodlands also support some use. However, the focal points of midget faded rattlesnake populations are rock outcrops that provide escape cover, thermal cover, and hibernation sites. Suitable outcrops typically include multiple den chambers.

Midget faded rattlesnakes were observed in the project area during field surveys, primarily limited in the portion of the project where outcrops of Green River Formation are most abundant (Olsson 2015b). However, no breeding or denning sites were found during surveys in potentially suitable habitat in proximity to the sightings. A ROW Stipulation (**Appendix B**) would require a monitor to be present during construction from **October 1 through April 30** in areas where multiple midget faded rattlesnakes were observed and the potential for breeding and denning (hibernation) sites appears greatest. Despite these protections and general avoidance of construction through rock outcrops, some mortality or habitat loss is possible. However, effects at the population level are not expected and the Proposed Action may be approved and the requested ROWs granted based on a determination by the BLM that this BLM sensitive species would not be unduly affected, with impacts expected to be limited to the level of individuals. See **Table 3** for a summary of pertinent considerations.

Northern Leopard Frog. Suitable habitat, consisting of perennial surface waters of good quality with emergent aquatic or wetland plants along the shoreline, has not been identified in project area. However, the northern leopard frog is likely to occur in perfluvial wetlands and overbank areas along Roan Creek and the Colorado River, neither of which would be affected by the project. ROW Stipulations in **Appendix B** for restoring disturbed drainage crossings, reestablishing self-sustaining vegetation, reducing erosion and transport of sediments, and responding quickly to any chemical spills or releases would avoid or minimize impacts to this species from downstream transport to the river.

Roundtail Chub, Bluehead Sucker, and Flannelmouth Sucker. As with the endangered Colorado River fishes described previously, these BLM sensitive species also occur in the Colorado River, including areas within and downstream from inflow of runoff from the project area. Also like the endangered fishes, they are potentially subject to impacts from project activities resulting in depletions in flows, transport of sediments, and transport of chemical pollutants potentially affecting the Colorado River. However, they are much more abundant and widespread, and the magnitude of potential impacts

on populations would therefore be less. In general, risks for indirect impacts to these species are expected to be negligible, based on the relatively small volume of water required for dust abatement and the Stipulations in **Appendix B** for preventing or minimizing transport of sediments or chemical pollutants and potential impingement and entrapment of fishes at any project-related water intake points on the Colorado River. See the discussion for endangered fishes in **Section 3.18.1**.

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed. No project-related impacts to BLM sensitive animal species from activities described above for the Proposed Action would occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These would include activities and impacts associated with oil and gas development, pipelines, access roads, recreation, and grazing.

3.19 VEGETATION

Affected Environment

The primary vegetation types along the proposed pipeline alignment include an open woodland dominated by Utah juniper (*Juniperus osteosperma*) and pinyon pine (*Pinus edulis*), sagebrush shrubland dominated by Wyoming sagebrush, salt-desert shrubland dominated by shadscale saltbush, and mixed montane shrubland dominated by Gambel's oak (*Quercus gambelii*). While the proposed pipelines would traverse the habitat types described above, much of the alignment would be adjacent to V.2 Road, an area that has with existing impacts from pipeline construction in the early 1980s. Much of the eastern end of the previous pipeline ROW was not reseeded following construction, and native vegetation has established on its own in this area with a species composition similar to areas outside the existing alignment.

In the Winter Flats portion of the previous pipeline alignment, post-construction seeding with perennial grasses occurred, and this area is now dominated by native western wheatgrass (*Pascopyrum smithii*). Because western wheatgrass can be an aggressive species, this portion of the existing ROW remains in a condition dominated by western wheatgrass. Major plant community types present are described below.

Pinyon-Juniper Woodland

Pinyon-juniper woodlands in the project area generally consist of an overstory of Utah juniper interspersed with sagebrush and other scattered shrubs and forbs. Pinyon pine is a minor component increasing with altitude on the western end of the project area. This habitat type is located along most of the proposed alignment. Other shrub species in this community include bitterbrush (*Purshia tridentata*), snakeweed, skunkbrush (*Rhus aromatic* ssp. *trilobata*), and Utah serviceberry (*Amelanchier utahensis*). Associated herbaceous plants include bluebunch wheatgrass, western wheatgrass, Indian ricegrass (*Achnatherum hymenoides*), Junegrass (*Koeleria macrantha*), and squirreltail (*Elymus elymoides*).

Sagebrush Shrubland

Sagebrush shrublands includes sagebrush mixed with other shrubs such as rubber rabbitbrush (*Chrysothamnus nauseosus*) and sticky-flowered rabbitbrush (*Chrysothamnus viscidiflorus*), broom snakeweed, and lesser amounts of bitterbrush. Most upland sites are dominated by Wyoming sagebrush, with mountain sagebrush (*Artemisia vaseyana*) in cooler, moister sites where sagebrush grades into Gambel's oak or pinyon-juniper habitats. Basin big sagebrush (*Artemisia tridentata* ssp. *tridentata*) occurs in areas of deep, silty soils, with black sagebrush (*Artemisia nova*) on dry, thin, rocky soils. Sagebrush shrublands typically contain a well-developed herbaceous component.

Common grasses include Indian ricegrass, bottlebrush squirreltail, western wheatgrass, slender wheatgrass (*Elymus trachycaulus*), and muttongrass (*Poa fendleriana*). Common forbs include tapertip onion (*Allium acuminatum*), running fleabane (*Erigeron tracyi*), sego lily (*Calochortus nuttallii*), lobeleaf groundsel (*Packera multilobata*), tailcup lupine (*Lupinus caudatus*), veined death-camas (*Toxicoscordion venenosum*), scarlet globemallow (*Sphaeralcea coccinea*), arrowleaf balsamroot (*Balsamorhiza sagittata*), and Indian paintbrush (*Castilleja* spp.). Brittle prickly pear (*Opuntia fragilis*) is also common.

Salt-Desert Shrubland

Salt-desert shrublands mostly occur on the eastern end of the project area and are characterized by large, sparsely vegetated areas associated with rock outcrops and shale slopes. Vegetation is dominated by shadscale saltbush with a sparse understory of black sage and other woody plants such as sticky-flowered rabbitbrush, broom snakeweed, and winterfat (*Krascheninnikovia lanata*). Utah juniper is widely scattered throughout. Succulents include Harriman's yucca (*Yucca harrimaniae*), strawberry hedgehog cactus (*Echinocereus triglochidiatus* var. *melanacanthus*), Simpson's pincushion cactus (*Pediocactus simpsonii*), plains prickly pear cactus, and Colorado hookless cactus, the last a Federally listed threatened species (see **Section 3.17.1**). Common herbaceous species include galleta grass (*Hilaria jamesii*), Indian ricegrass, sand dropseed (*Sporobolus cryptandrus*), and Salina wildrye (*Leymus salinus*).

Mixed Mountain Shrubland

This vegetation type is limited to the higher elevations and north-facing aspects in the area. Vegetation typically consists of oakbrush alone or codominant with Utah serviceberry, mountain big sagebrush, mountain-mahogany (*Cercocarpus montanus*), common chokecherry (*Prunus virginiana*), and roundleaf snowberry (*Symphoricarpos rotundifolius*). Native forbs include tailcup lupine, Rocky Mountain penstemon (*Penstemon strictus*), Watson's penstemon (*Penstemon watsonii*), aspen daisy (*Erigeron speciosus*), trailing fleabane (*Erigeron flagellaris*), Drummond's rockcress (*Boechera drummondii*), Nuttall's larkspur (*Delphinium nuttallianum*), small-leaf pussytoes (*Antennaria parviflora*), lamb's-tongue groundsel (*Senecio integerrimus*), longleaf phlox (*Phlox longifolia*), James' mouse-ear (*Pseudostellaria jamesii*), and narrowleaf mountain trumpet (*Collomia linearis*). Elk sedge (*Carex geyeri*), a native perennial graminoid, is also common.

Riparian and Wetland Communities

Although the proposed pipeline alignment would cross a number of ephemeral drainages (39 mapped along the Winter Flats Pipeline route and four along the Wagon Track Lateral route), no riparian or wetland vegetation would be affected. These drainages carry surface waters only in early spring from snowmelt and protracted rainfall events and periodically in summer from thunderstorm events. The infrequent, unreliable, and flashy flows in these drainages are insufficient to sustain such species in the area potentially affected by the Proposed Action. Minor amounts of riparian or wetland vegetation occur farther downstream in these drainages, especially where they join the Colorado River. Named drainage features include Pine Gulch, Alkali Canyon, Redrock Canyon, numerous unnamed headwater draws tributary to Sulphur Gulch, and Coon Hollow. All of the project area drains toward the Colorado River.

Environmental Consequences

Proposed Action

Pipeline construction would remove most vegetation in the proposed alignment and other disturbed areas. Approximate amounts of direct impacts by major vegetation type would be as shown in **Table 22**.

The Proposed Action would result in surface disturbance affecting approximately 209 acres of pinyon-juniper woodland, sagebrush shrubland, salt-desert shrubland, and mixed mountain shrubland plant communities—portions of which were previously disturbed by pipeline construction in the early 1980s—

would be removed. Most of the disturbance would occur on BLM land. Following project completion, all but 0.07 acre would undergo reclamation. Some of the vegetation material cleared in preparation for construction would be stockpiled adjacent to the alignment for use in reclamation, but effectively no viable vegetation would remain. These areas would remain unvegetated during construction. Following completion of pipeline installation, the disturbed areas would be reseeded in conformance with BLM revegetation requirements (**Appendix B**).

Table 22. Approximate Surface Disturbance by Major Vegetation Type

<i>Vegetation Type</i>	<i>Length (miles)¹</i>	<i>Pipeline Area (acres)</i>	<i>Other Areas (acres)</i>	<i>Combined Area (acres)¹</i>
Sagebrush Shrubland	12	110	7	117 (56%)
Pinyon-Juniper Woodland	5	44	2	46 (22%)
Salt-Desert Shrubland	4	34	2	36 (17%)
Mixed Mountain Shrubland	1	9	1	10 (5%)
Riparian or Wetland Communities	0	0	0	0 (0%)
Total (approximate)	22	197	12	209 (100%)
¹ Actual totals = 21.94 miles of pipeline and 208.94 acres of surface disturbance (see Table 2).				

Reclamation seeding on BLM land would consist of a mix of native grasses, forbs, and shrubs. This mix would also be used on private land, unless a different mix is requested by the private landowner. Given site soils and climate, establishment of self-sustaining populations of desirable native grasses, forbs, and shrubs would require multiple growing seasons. The proximity of the proposed alignment to an existing road, existing pipeline alignment, and recent wildfire area makes it likely that noxious weeds and other invasive non-native species associated with these areas would spread into reclaimed areas.

The greatest long-term negative impact on vegetation from the Proposed Action would be the potential for establishment and spread of weeds (**Section 3.9**), which could inhibit or in some cases preclude the establishment of native plant species. Because of the abundance of rare plant species in the project vicinity (**Section 3.17**), herbicide use would be restricted to spot-spray only, which would limit the extent of weed control should weeds become dominant in the reclaimed area.

Another impact would be the length of time required for native forbs and shrubs to establish in seeded areas, even when weeds are not an issue. Flowering forbs and shrubs are an important food source for pollinator species such as solitary bees, butterflies, moths, and birds). This could be problematic for rare plant species in the area (**Section 3.17**).

Adjacent native vegetation would not be directly affected but could be indirectly affected by increased dust deposition on leaves. Levels of fugitive dust could be expected to increase above ambient levels in the short term from pad expansion, well drilling, new road construction, and new pipeline installation. Increased dust levels can negatively impact plants by clogging stomatal openings in the leaves, impeding gas exchange and reducing the ability of plants to take in carbon dioxide. Dust on the leaf surface can also reduce incident light at the leaf surface. Light and carbon dioxide are critical for plants to conduct photosynthesis, and reductions in either can reduce the quantity of carbohydrates plants can produce through photosynthesis, and thereby reduce plant growth and seed production. Dust on leaf surfaces can also facilitate plant tissue uptake of toxic pollutants (Thompson et. al. 1984, Farmer 1993, Sharifi et. al. 1997). Dust can also affect snowmelt patterns and resulting hydrology and soil moisture availability, alter soil pH and nutrient availability, and result in changes in plant community composition (Angold 1997, Auerbach et. al. 1997, Johnston and Johnston 2004, Field et. al. 2010, Gieselman 2010).

Implementation of reclamation practices would be required by the BLM through Stipulations attached to the ROW grants, as presented in **Appendix B**. These practices include topsoil stripping and handling, seedbed preparation, seeding, mulching, and weed control. Establishment of desirable herbaceous vegetation on ROWs and temporary disturbance areas sufficient to minimize erosion by wind or water and invasion by weeds is anticipated to occur within 3 to 5 years. Annual monitoring and weed control, with follow-up re-seeding if necessary, would be required until the reclamation achieves BLM approval. Information on special-status plants is included in **Section 3.17**, and the ROW Stipulations in **Appendix B** include mitigation measures specific to those species.

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed. No project-related impacts to native vegetation from activities described above for the Proposed Action would occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These would include activities and impacts associated with oil and gas development, pipelines, access roads, recreation, and grazing.

3.20 VISUAL RESOURCE MANAGEMENT

Affected Environment

The proposed pipelines would be located on a combination of BLM and private land southwest of DeBeque, Colorado. Portions of the pipeline that on BLM lands are classified as Visual Resource Management (VRM) Class II, III, and IV, as identified by the 2015 GJFO ARMP. The objectives for VRM Class II, III and IV, as defined in BLM’s Manual H-8410-1 – Visual Resource Inventory (BLM 1986), and the acres within each classification, are provided in **Table 23**.

Table 23. Acres of Pipeline ROW within Visual Resource Management Classes

VRM Class	Class Objective	ROW Acres		
		Permanent	Short Term	Total
II	Retain existing landscape character. The level of authorized change should be low. Management activities may be seen but should not attract a casual observer’s attention. Any changes must repeat the basic elements of line, form, color, and texture found in the predominant natural features of the landscape.	64	40	104
III	Partially retain existing landscape character. The level of authorized change should be no more than moderate. Management activities may attract attention, but should not dominate a casual observer’s view. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.	9	5	14
IV	Provide for management activities that require major modification of the landscape character. The level of authorized change can be high. Management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repetition of the basic landscape elements.	54	31	85

VRM objectives do not apply to private land, although visual resource values are protected at landowner discretion and addressed to the extent possible under BLM’s regulatory authority when approving Federal

actions involving private land. The easternmost and westernmost 0.5 mile of the proposed pipeline is on private land, but no permanent or temporary residences are present in the vicinity. The easternmost segment is on lands owned by the applicant.

The project area generally parallels V.2 Road and the existing Winter Flats pipeline, constructed in the early 1980s. The project area is located primarily in sagebrush steppe habitats, interspersed with pinyon pine and juniper canyon lands. Toward the western end of the alignment, habitats transition into lower montane oakbrush shrublands. Much of the Winter Flats pipeline alignment would occur within a previously disturbed pipeline alignment or adjacent to V.2 Road. The Wagon Track Lateral would be constructed in undisturbed sagebrush and pinyon-juniper.

Environmental Consequences

Proposed Action

Visual resources would be impacted temporarily by construction associated with the Proposed Action. Vegetation removal, surface disturbance, and fugitive dust emissions would create impacts to the visual setting, including contrasts in form, line, color, and texture. These impacts would be noticeable to the casual observer within the Foreground-Middleground Zone, mostly from to travelers on V.2 Road. Because the pipeline is generally located in areas of relatively gentle topography between the higher Book Cliffs to the south and South Shale Ridge to the north, visual impacts during construction would be substantially unnoticeable to observers in the Background Zone or Seldom-Seen Zone, including observers in the towns of De Beque and Palisade, the city of Grand Junction, and I-70.

Long-term visual impacts would be mitigated by burial of the pipeline and prompt recontouring and reseeded with a diverse mix of native grasses, forbs, and shrubs adapted to the site and consistent with existing landscape elements. The casual observer from V.2 Road would be able to discern the visual impact of the Proposed Action, but it would not dominate the view or significantly disrupt the landscape elements. In general, the landscape throughout the project vicinity contains linear elements in vegetation due to human activities such as roads, pipeline ROWs, cattle trails, and well pads. In addition, the proposed pipeline alignment would follow existing ROW alignments and/or V.2 Road for the majority of its length. The project is compatible with the management objectives of VRM Classes II, III, and IV.

Design features to minimize impacts to visual resources including returning surface disturbances to pre-construction grades, segregating and re-placing topsoil, and seeding with a diverse native seed mix approved by the BLM. These and other measures would minimize erosion over the long term and enhance visual resources along the alignment. In addition, ROW Stipulations to be applied by the BLM (**Appendix B**) would include preserving vegetation to the extent practicable during pipeline construction. The BLM may also direct that cleared trees and rocks be salvaged and redistributed over reshaped cut-and-fill slopes or along linear features. To mitigate straight-line visual contrast effects of cleared vegetation, the BLM may also require adaptive management techniques such as removing additional trees along contrasting edges to create irregular openings or natural-looking mosaic patterns and use of texturing or coloring surfaces to mitigate visual contrasts.

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed. No project-related impacts to visual resources vegetation from activities described above for the Proposed Action would occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These would include activities and impacts associated with oil and gas development, pipelines, access roads, recreation, and grazing.

3.21 WASTES -- HAZARDOUS OR SOLID

Affected Environment

The affected environment for hazardous materials includes air, water, soil, and biological resources that may potentially be affected by an accidental release of hazardous materials during transportation to and from the project area, storage, and use in construction and operations. Sensitive areas for releases include areas adjacent to waterbodies and areas where humans or wildlife could be directly impacted. BLM Instruction Memoranda numbers WO-93-344 and CO-97-023 require that all NEPA documents list and describe any hazardous and/or extremely hazardous materials that would be produced, used, stored, transported, or disposed as a result of a proposed project. The most pertinent of the Federal laws dealing with hazardous materials contamination are as follows:

- The Oil Pollution Act (Public Law 101-380, August 18, 1990) prohibits discharge of pollutants into Waters of the U.S., which by definition would include any tributary, including any dry wash that eventually connects with the Colorado River.
- The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (Public Law 96-510 of 1980) provides for liability, compensation, cleanup, and emergency response for hazardous substances released into the environment. It also provides national, regional, and local contingency plans. Applicable emergency operations plans in place include the National Contingency Plan (40 CFR 300, required by section 105 of CERCLA), the Region VIII Regional Contingency Plan, the Colorado River Sub-Area Contingency Plan, and BLM's Hazardous Materials Contingency Plan.
- The Resource Conservation and Recovery Act (RCRA) (Public Law 94-580, October 21, 1976) regulates the use of hazardous substances and disposal of hazardous wastes. Note: While oil and gas lessees are exempt from RCRA, ROW holders are not. RCRA strictly regulates the management and disposal of hazardous wastes.

Emergency response to hazardous materials or petroleum products on BLM lands are handled through BLM's Contingency Plan. BLM would have access to regional resources if justified by the incident.

Environmental Consequences

Proposed Action

Possible pollutants that could be released during the construction phase of this project would include diesel fuel, hydraulic fluid, and lubricants. These materials would be used during construction of the pipeline and for refueling and maintaining equipment and vehicles. Potentially harmful substances used in the construction and operation phases would be kept onsite in limited quantities and trucked to and from the site as required. No hazardous substance, as defined by 40 CFR 355 would be used, produced, stored, transported, or disposed of in amounts above threshold quantities. Waste generated by construction activities would not be exempt from hazardous waste regulations under the oil and gas exploration and production exemption of RCRA. Exempt wastes would include those associated with transmission of natural gas through the gathering lines and the natural gas itself.

With the exception of produced hydrocarbons, ethylene glycol (antifreeze), lubricants, and amine compounds, chemicals subject to reporting under Title III of the Superfund Amendments and Reauthorization Act in quantities of 10,000 pounds or more would not be used, produced, stored, transported, or disposed of during construction or operation of the facilities. None of the chemicals used in construction meets the criteria for an acutely hazardous material/substance, or meet the quantities criteria per BLM Instruction Memorandum No. 93-344. In addition, no extremely hazardous substance, as defined in 40 CFR 355, in amounts above threshold planning quantities would be produced, used,

stored, transported, or disposed of during construction or operation of the facilities. Solid waste, including human waste and trash, would be generated during construction activities. These would be appropriately stored onsite and periodically removed to a landfill or water treatment facility.

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed. No project-related impacts associated with hazardous or solid materials as described above for the Proposed Action would occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These would include activities and impacts associated with oil and gas development, pipelines, access roads, recreation, and grazing.

3.22 WATER RESOURCES

3.22.1 Surface Water Quality

Affected Environment

The project area is included in the Upper Colorado region, Colorado Headwaters subregion and basin, Colorado Headwaters – Plateau subbasin, and the Jerry Creek – Colorado River watershed (NRCS 2012b) and overlaps with three subwatersheds (**Table 24** and **Figure 3**). Surface water quality depends on natural and anthropogenic factors including geology, precipitation, vegetation cover, and land use.

The geology within a watershed is a key determinant of its surface water quality. In areas with outcrops of sandstone, basalt, or granite, the surface water tends to be of good quality. Where the Morrison, Mancos, Wasatch, and Green River formations are exposed, water quality tends to be poorer, with high total dissolved solids and/or selenium concentrations. Selenium derived from marine shales is a leading cause of water quality impairment to surface water in western Colorado.

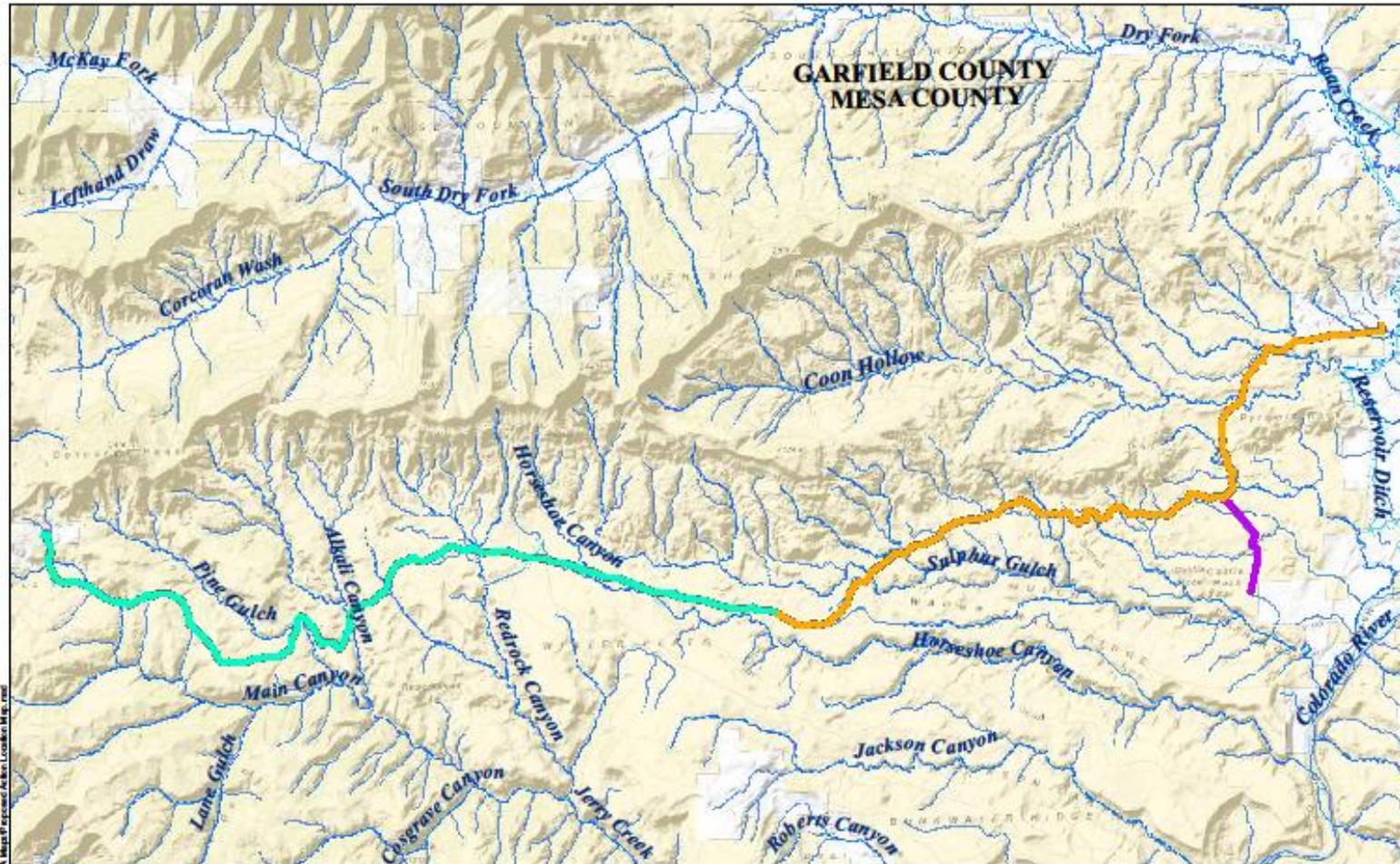
The climate of the project area is semi-arid, with precipitation mostly during peaks in spring and late summer or as brief, intense thunderstorms. In combination with often steep, rocky, and sparsely vegetated terrain, this may cause localized flood flows that have the power to erode and transport sediments, which in turn increase sediment loads, salinity, and selenium concentrations in surface waters.

Table 24. Characteristics of Subwatersheds in the Project Area

<i>Subwatershed Name</i>	<i>HUC 12 Number</i>	<i>Number of Crossings</i>	<i>Length (feet)</i>	<i>Drop in Elevation (feet)</i>	<i>Mean Gradient (%)</i>	<i>Drainage Area (acres)</i>
Coon Hollow	140100051405	4	60,904	3,052	5.0	11,270
Horseshoe Canyon – Colorado River	140100051406	32 ¹	67,124	3,183	4.7	37,919
Upper Jerry Creek	140100051408	10	45,114	1,981	4.4	21,959

¹ Includes four crossings associated with the proposed Wagon Track12-16 Lateral pipeline (**Figure 1**).

The CDPHE Water Quality Control Commission (WQCC) classifies stream segments according to river basin and specific water segments (CDPHE 2012a). Surface waters within Colorado are organized by basin and labeled by stream segment. For each stream segment, the State has set water quality standards for physical, chemical, and biological parameters based on the existing or potential beneficial uses for water supply, aquatic life, recreation, and agriculture. The USGS classifies watersheds of the U.S. into successively smaller units: regions, subregions, basins, subbasins, watersheds, and subwatersheds.



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Proposed Winter Flats 12" Gas & Water Pipeline	Proposed Winter Flats 16" Gas Pipeline	Wagon Track 12-16 Lateral	Municipality	Canal/Ditch	Stream/River	Private	BLM
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Project Number: 014-0494
 Drawn By: JDM
 Revision Date: 10/13/2015

Figure 3. Drainages/Waters of the U.S. Map
 Winter Flats Pipeline
 Mesa County, Colorado

DISCLAIMER : This Geographic Information System (GIS) and its components are designed as a source of reference for planning inquiries, for planning and for modeling. GIS is not intended, nor does it replace legal description information in the chain of title and other information contained in official government records such as the County Clerk and Recorder's office or the courts. In addition, the representations of locations in this GIS cannot be substituted for actual legal surveys.

Each hydrologic unit is identified by a unique hydrologic unit code (HUC), consisting of two to 12 digits based on the six levels of classification in the hydrologic unit system.

In the western part of the project area, the Upper Jerry Creek subwatershed consists of three tributary ephemeral drainages—Pine Gulch, Alkali Canyon, and Little Alkali Canyon—that drain the western end of South Shale Ridge and nearby Corcoran Peak (**Figure 3**). These join to flow through a topographic feature known as Main Canyon. Another ephemeral drainage, Redrock Canyon, would be crossed by the proposed alignment farther east, and joins Jerry Creek in Main Canyon farther downstream. Jerry Creek enters the Colorado River at the lower end of Main Canyon near Cameo, which lies near the downstream end of De Beque Canyon along the Colorado River. The Horseshoe Canyon – Colorado River subwatershed overlaps with the central portion and eastern end of the proposed alignment. The central portion of the proposed alignment—the area labeled on topographic maps as Winter Flats—drains to the east-southeast via Horseshoe Canyon, which joins the Colorado River at the upstream end of De Beque Canyon. The drainage that forms Horseshoe Canyon parallels the alignment in its headwaters and would be crossed at multiple locations.

Within the central portion of the proposed alignment but east of Redrock Canyon, the Sulphur Gulch drainage collects runoff from the southern slopes of South Shale Ridge in a number of short ephemeral drainages. Sulphur Gulch roughly parallels the Horseshoe Canyon drainage, crosses the proposed alignment near its midpoint, and then continues southeastward to join the Colorado River.

Coon Hollow drains the southeastern slopes of South Shale Ridge, crosses the proposed alignment north of Pyramid Rock, and flows eastward to join the Colorado River southwest of the Town of De Beque. Also in the eastern part of the project area, the Horseshoe Canyon – Colorado River subwatershed crosses the alignment west of Pyramid Rock and then flows southward to the Colorado River.

The Colorado River near the project area is part of the Lower Colorado River Basin water quality stream segment 2a. All tributaries of the Colorado River, including wetlands, from a point immediately below the confluence of Roan Creek at the Town of De Beque to the Colorado/Utah border are part of the Lower Colorado River Basin water quality stream segment 13a. Water quality standards and guidance for drainages within the Lower Colorado River Basin are included in the CDPHE WQCC Regulation No. 37 (CDPHE 2012b). General descriptions of the beneficial use classifications for these segments are:

- Segment 2a. Mainstem of the Colorado River in the project vicinity:
 - Aquatic Life Warm 1 – Capable of sustaining a wide variety of warmwater biota, including sensitive species where physical habitat, flows, and water quality are sufficient.
 - Recreation E – Existing use for primary contact recreation.
 - Domestic Water Supply – Suitable for potable water supplies with standard treatment.
 - Agriculture – Suitable for irrigation of crops usually grown in Colorado and suitable for livestock watering.
- Segment 13a. All tributaries, including wetlands, to the Colorado River in the project vicinity:
 - Aquatic Life Warm 2 – Not capable of sustaining a wide variety of coldwater or warmwater biota, including sensitive species, due to physical habitat, flows, or uncorrectable water quality conditions.
 - Recreation P – Potential use for primary contact recreation.
 - Agriculture – Suitable for irrigation of crops usually grown in Colorado and suitable for livestock watering.

The Clean Water Act (33 U.S.C. § 1251 et seq., 1972) requires states to compile a list of water bodies, known as the 303(d) list, that do not fully support their designated uses. CDPHE WQCC Regulation 93, Colorado's Section 303(d) list of impaired waters, indicates that sediment and selenium are the primary water quality impairments in the Colorado River drainage (CDPHE 2012a). A portion of the mainstem of the Colorado River, segment COLCLC02b, (Humphrey Backwater area, 28 river miles downstream from the Roan Creek confluence), is on the Colorado Monitoring and Evaluation List for sediment and is listed as impaired under Colorado's Section 303(d) list of impaired waters for selenium (CDPHE 2012a).

According to the CDPHE WQCC (2012b), the selenium standard for tributaries of the Colorado River (Segment 13a) in the project area is 20 micrograms per liter ($\mu\text{g/L}$). Table Value Standards for selenium for the mainstem of the Colorado River (Lower Colorado River Segment 2a) and for Roan Creek and all its tributaries (Lower Colorado River Segment 14c) are 18.4 $\mu\text{g/L}$ for acute toxicity and 4.6 $\mu\text{g/L}$ for chronic toxicity. A complete listing of numeric standards for physical, biological, inorganic, and metal parameters for these segments can be found in CDPHE WQCC Regulation 37, Classifications and Numeric Standards for Lower Colorado River Basin (CDPHE 2012b).

Water quality sampling data are not available for Jerry Creek. In March 2002, water quality samples were collected in the Horseshoe Canyon – Colorado River subwatershed at the mouth of Sulphur Gulch (USGS 391607108153500), which drains the Wagon Track area after it crosses the proposed pipeline alignment. The two samples had selenium concentrations of 11 and 3 $\mu\text{g/L}$ (USGS 2012).

The project area does not cross any 100-year floodplains as mapped by the Federal Emergency Management Agency (FEMA 2012).

Environmental Consequences

Proposed Action

Impacts to surface water quality could occur as a result of the proposed pipeline construction, including surface disturbance and grading, vegetation clearing, landform modification, and earthmoving operations. These activities can mobilize sediment and create soil compaction. Near-surface soil compaction caused by construction equipment activity could reduce the ability of the soil to absorb water and could increase surface runoff and the potential for ponding. The potential for sediment transport would increase in the ephemeral drainages crossed by the pipelines. This potential would be greatest during and following construction and would decrease as the channels and banks become stabilized as a result of reclamation.

Sediment transport from disturbed areas near drainages could be triggered by runoff events resulting from intense or protracted rainfall or from snowmelt. Possible effects could include increased erosion, increased sedimentation farther downstream, changes in channel morphology associated with trenching across streambanks and channels, and backfilling of pipeline trenches.

Where pipelines are to be placed in or adjacent to the roadway to avoid impacts to nearby sensitive resources, upgrading or replacing culverts at those locations would be another potential source of erosion and sediment transport. Design criteria and mitigation measures applied as ROW Stipulations by the BLM (**Appendix B**) would reduce these risks. Examples include not trenching across channels when flowing or when the substrates are wet and muddy from recent flows, restoring banks and channels to pre-existing configurations, and promptly revegetating the banks and adjacent upland areas.

In implementing the Proposed Action, RRG would adhere to its regional *Stormwater Management Plan* (SWMP), which includes stormwater runoff management designed for a 25-year or greater event. All pipeline construction and maintenance would follow Gold Book Standards (BLM and Forest Service 2007) and requirements specified by the U.S. Army Corps of Engineers (USACE) as part of its authorization of the project under Section 404 of the Clean Water Act. Pipeline crossings through

drainage channels would be constructed to withstand floods of extreme magnitude to prevent rupture and accidental contamination of runoff during high-flow events. Methods and analysis outlined in BLM Technical Note 423 – Hydraulic Considerations for Pipelines Crossing Stream Channels (USDI 2007) would be closely followed to prevent undesirable events.

During construction, the potential would exist for spills of fuels, lubricants, and solvents into surface waters as a result of operation of vehicles and heavy equipment at or near drainages. Any spills would be promptly contained and remediated in accordance with RRG's Spill Prevention, Control, and Countermeasure (SPCC) Plan. Spills would be promptly reported to the BLM and, if the potential exists for transport toward the Colorado River, to downstream municipalities. Over the long-term, leakage from the produced water pipeline at or near drainages could impact a channel that drains toward the Colorado River. This would also be addressed by the SPCC Plan. Volumes of spills from pipeline leaks or ruptures would be limited by use of automatic shutoff valves at seven block valve sites and two valve yards. The pipelines would be pressure tested pneumatically to detect leakage prior to operation.

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed. No project-related impacts to surface water quality from activities described above for the Proposed Action would occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These would include activities and impacts associated with oil and gas development, pipelines, access roads, recreation, and grazing.

3.22.2 Waters of the U.S.

Affected Environment

No perennial or intermittent drainages would be crossed by the pipelines. However, because of its length, the proposed alignment would involve 46 crossings of presumed Waters of the U.S. (**Table 24**), including four crossings along the proposed Wagon Track Lateral alignment (**Figure 3**). These include crossings in the subwatersheds described in **Section 3.22.1**, some of which would include multiple crossings, especially the Horseshoe Canyon and Sulphur Gulch subwatersheds. Impacts to Waters of the U.S. would be regulated by the USACE pursuant to Section 404 of the Clean Water Act. No feasible alignments could significantly reduce the number of these drainage crossings. During an evaluation of wetlands and other Waters of the U.S. in 2014 and 2015 (Olsson 2015c), none of the drainage crossings was found to support riparian or hydrophytic (wetland) vegetation.

Environmental Consequences

Proposed Action

At the ephemeral drainage crossings, direct impacts would consist of temporary disturbance of the channels and banks associated with open-trench installation of the pipeline. Disturbed areas would be recontoured and revegetated promptly following construction. Impacts to presumed Waters of the U.S. at the 46 planned crossings would include 3,224 linear feet (0.61 mile) of combined channel length and 22,504 square feet (0.51 acre) of combined channel area. Potential impacts associated with erosion and transport of sediments, changes in channel configuration, changes in bank stability, loss of adjacent vegetated buffers, and spills of chemical pollutants are described in **Section 3.22.1**.

Design features and mitigation measures to minimize adverse impacts to Waters of the U.S. would include restricting physical disturbance to the minimum amount necessary, promptly recontouring the affected channels, and promptly initiating reseeding efforts. Prior to construction, RRG would obtain verification from the USACE that the crossings are authorized under Nationwide Permit (NWP) 12 for utility line activities. Each drainage crossing would be considered a component of the single linear

project referred to in this EA as the Winter Flats Pipeline. All permit conditions of NWP 12 would be adhered to, including requirements to reclaim all drainage crossings to pre-construction contours, and the requirement to avoid working in drainages when surface water is present. Stormwater management protocols would be implemented to prevent discharge of sediment from the construction ROW into drainages. These requirements and other mitigations are listed in the ROW Stipulations in **Appendix B**.

The Proposed Action would not totally adhere to the restriction language of the applicable ROWAs identified in Appendix B of the 2015 GJFO ARMP for the protection of definable streams. However, the Proposed Action may be approved and the requested ROWs granted based on a determination by the BLM that the protected resources and resource uses would not be unduly affected. See **Table 3** for a summary of pertinent considerations.

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed. No project-related impacts to Waters of the U.S. from activities described above for the Proposed Action would occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These would include activities and impacts associated with oil and gas development, pipelines, access roads, recreation, and grazing.

3.22.3 Groundwater

Affected Environment

Substantial usable groundwater resources in the project area are contained in Quaternary alluvium in valleys with headwaters in the Roan Plateau. Most of the alluvial groundwater is recharged from snowmelt in those headwaters. Precipitation occurring as a result of convective summer thunderstorms can also be a substantial source of groundwater recharge to ephemeral stream channels and near-stream alluvial deposits. Valley fill alluvium in the Roan Creek and Upper Jerry Creek subwatersheds consists of unconsolidated gravel, sand, and silt, with occasional boulders from adjacent cliffs and bluffs.

In one well (USGS Well No. 391905108135901), located near the Colorado River upstream from Coon Hollow, the depth to water is 33 feet; the well is 300 feet deep and is completed in alluvium and terrace deposits. Colorado River alluvium is sandy gravel of substantial width in the Horseshoe Canyon subwatershed of the Colorado River, but has limited extent in De Beque Canyon in the Roberts Canyon subwatershed of the Colorado River (Topper et al. 2003), where the river is incised across the west flank of the Piceance structural basin. Water produced by this well has a specific conductance of 900 microsiemens per centimeter ($\mu\text{S}/\text{cm}$) and is a sodium bicarbonate type water. Deeper water-bearing strata generally have poorer water quality (Robson and Banta 1995).

Environmental Consequences

Proposed Action

Shallow alluvial groundwater flow could be affected if trenching for the proposed pipelines intersects a shallow groundwater table. In this event, the trench may need to be dewatered during construction to prevent instability. If this is required, the water would be pumped to an upland area where it would be allowed to infiltrate back to the shallow groundwater system. Trench plugs would be installed in the trench line to ensure that seasonally high groundwater levels do not lead to groundwater preferentially flowing down the pipeline alignment.

Water quality of the shallow alluvial groundwater could be impacted by spills of fuel, lubricants, and solvents during construction. However, RRG would comply with the protocols and measures described in its SPCC Plan, which ensures that leaks and spills are minimized and quickly contained and cleaned up

(see **Section 3.21.1**). The BLM would apply the additional protections described above for surface water quality and listed as ROW Stipulations in **Appendix B**.

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed. No project-related impacts to groundwater from activities described above for the Proposed Action would occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These would include activities and impacts associated with oil and gas development, pipelines, access roads, recreation, and grazing.

3.23 WILDERNESS AND WILDERNESS CHARACTERISTICS

Affected Environment

BLM's wilderness inventory in the project area and vicinity was completed in 1999, validated in 2009, and updated in 2012. The project area is located along the south side of the South Shale Ridge inventory area, which was determined to have wilderness characteristics. The 2012 inventory update concluded, *"This inventory was completed in by the BLM in 1999, and no changes have occurred to alter the findings. The 1999 findings were validated in 2009 as no new routes; range improvements, rights-of-way (ROWs) or other ground-disturbing activities were issued or constructed since the inventory was completed."*

The 2012 inventory identified 27,540 acres as having wilderness characteristics. The 2015 GJFO Resource Management Plan did not identify the South Shale Ridge inventory unit as an area managed to protect wilderness characteristics. The area is managed as an ACEC to protect rare plants, wildlife habitat, and scenic values. The ACEC has a "no surface occupancy or surface disturbance" stipulation and is designated as a ROW exclusion area (**Section 3.16**).

In 2011, the BLM issued a new policy for conducting inventories for lands with wilderness characteristics outside designated wilderness and outside wilderness study areas (WSAs). The new policy (BLM manual 6310) included specific guidance to determine boundaries for inventory areas. As part of the public comment period for the 2015 GJFO ARMP, BLM received comments from the Wilderness Society pointing out inconsistencies with the BLM inventory regarding the boundaries of areas south of V.2 Road. These comments suggested that the BLM boundaries for these areas are incorrect based on the 2011 policy and that areas south of V.2 Road are contiguous with the Little Book Cliffs WSA or the Hunter Canyon inventory units for lands with wilderness characteristics. The comments suggested that since these lands are contiguous, the wilderness characteristics found in the WSA and/or Hunter Canyon would apply to the area south of V.2 Road. The proposed pipeline ROW would impact approximately 100 acres of the area south of V.2 Road identified by the Wilderness Society and 23.4 acres of the South Shale Ridge inventory unit.

Environmental Consequences

Proposed Action

Under the Proposed Action, construction of the pipeline and additional disturbances associated with extra work spaces and temporary storage areas would affect the naturalness of the South Shale Ridge inventory area and the area proposed by the Wilderness Society south of V.2 Road. Since the pipeline ROW would authorize not only construction of the pipeline but also future maintenance, the result would be a loss of naturalness on the 23.4 acres inside the South Shale Ridge unit. The South Shale Ridge unit would continue to have lands with wilderness characteristics on approximately 27,516 acres. The slight reduction in acres would not change the overall findings of naturalness for the unit.

Although the project area south of V.2 Road is currently outside the areas found by the BLM to have wilderness characteristics, for the purpose of this analysis, the BLM has included the analysis assumption that wilderness character does in fact exist in the project area. This is not a determination on the inventory submitted but an analytical approach to ensure that the BLM decision-maker understands the most substantial impacts possible, and that this impact assessment will remain valid when the inventory is updated in the vicinity of the project area in the future, and to give the decision-maker a realistic opportunity to consider whether this “incomplete information” would materially change the decision.

Impacts to wilderness characteristics include changes to the size of the area, the apparent naturalness of the area, the outstanding opportunities for solitude or primitive and unconfined recreation, or identified supplemental values. The Proposed Action would affect the size and naturalness of the area along the ROWs. As noted, the area impacted south of V.2 Road would be approximately 100 acres. This amount of change would not preclude the BLM from determining the larger area identified by the Wilderness Society has wilderness characteristics in the future.

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed. No project-related impacts to lands with wilderness characteristics would occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These would include activities and impacts associated with oil and gas development, pipelines, access roads, recreation, and grazing.

3.24 WILDLIFE

3.24.1 Migratory Birds

Affected Environment

The Migratory Bird Treaty Act (MBTA) includes native passerines (flycatchers and songbirds) as well as birds of prey, migratory waterbirds (waterfowl, wading birds, and shorebirds), and other species such as doves, hummingbirds, swifts, and woodpeckers. Within the context of the MBTA, “migratory” birds include non-migratory “resident” species as well as true migrants, essentially encompassing virtually all native bird species. For most bird species, nesting habitat is of special importance because it is critical for supporting reproduction in terms of nesting and foraging sites. Because birds are generally territorial during the nesting season, their ability to access and utilize sufficient food is limited by the quality of the territory occupied. During non-breeding seasons, birds are generally non-territorial and able to feed across a larger area and wider range of habitats.

Emphasizing the need to conserve declining migratory bird species, the USFWS (2008) has published a list of Birds of Conservation Concern (BCC). This section focuses on BCC species, non-BCC species that are Neotropical (long-distance) migrants, and raptors—three groups especially vulnerable to habitat loss or modification on their breeding grounds. Species protected under the Endangered Species Act or classified by the BLM as sensitive species are addressed in the section on Special Status Species.

As described in **Table 22, Section 3.19**, approximately 56% of the area to be disturbed is sagebrush shrubland, 22% is pinyon-juniper woodland, 17% is salt-desert (saltbush) shrubland, and 5% is mixed mountain (Gambel’s oak) shrubland. A variety of migratory birds nest and forage within these vegetation communities, generally from May through July. Some of these species, and some additional species, use the area for foraging in winter or spring-fall migrations.

Sagebrush shrublands, the most extensive habitat type in the project area, support one species on the USFWS (2008) list of Birds of Conservation Concern (BCC) for the project region. That species, Brewer’s sparrow, is also a BLM sensitive species (see **Section 3.18.2**). Non-BCC migratory songbirds

nesting in this habitat type include the western kingbird (*Tyrannus verticalis*), western meadowlark (*Sturnella neglecta*), vesper sparrow (*Pooecetes gramineus*), and lark sparrow (*Chondestes grammacus*). These species are also likely to nest in semi-desert shrubland communities in the eastern portion of the proposed alignment, although in lower densities than in sagebrush. Two other non-BCC species that, like Brewer's sparrow, are mostly limited to expanses of sagebrush—the sagebrush sparrow (*Artemisiopiza bellii*) and sage thrasher (*Oreoscoptes montanus*)—are potentially present but primarily found farther north and northwest.

Birds potentially nesting in pinyon-juniper woodlands include three BCC species, the semi-colonial pinyon jay (*Gymnorhinus cyanocephalus*), gray vireo (*V. vicinior*), and juniper titmouse (*Baeolophus griseus*). Non-BCC species associated with this habitat type include the black-chinned hummingbird (*Archilochus alexandri*), western kingbird (*Tyrannus verticalis*), ash-throated flycatcher (*Myiarchus cinerascens*), Say's phoebe (*Sayornis saya*), gray flycatcher (*Empidonax oberholseri*), Townsend's solitaire (*Myadestes townsendii*), mountain bluebird (*Sialia sialis*), gray vireo (*V. vicinior*), blue-gray gnatcatcher (*Poliophtila caerulea*), black-throated gray warbler (*Dendroica nigrescens*), chipping sparrow (*Spizella passerina*), lark sparrow (*Chondestes grammacus*), lesser goldfinch (*Spinus psaltria*), and house sparrow (*Haemorrhous mexicanus*).

Areas of mixed mountain shrubs such as Gambel's oak, Utah serviceberry, mountain-mahogany, and bitterbrush support no BCC species but a variety of other migrants, including the common poorwill (*Phalaenoptilus nuttallii*), dusky flycatcher (*Empidonax oberholseri*), western scrub-jay (*Aphelocoma californica*), mountain chickadee (*Poecile gambeli*), Virginia's warbler (*Oreothlypis virginiae*), MacGillivray's warbler (*Oporornis tolmiei*), spotted towhee (*Pipilo maculatus*), green-tailed towhee (*P. chlorurus*), black-headed grosbeak (*Pheucticus melanocephalus*), and lazuli bunting (*Passerina amoena*).

Areas of Douglas-fir at the western end of the proposed pipeline could provide nesting habitats for two BCC species—the flammulated owl (*Psiloscoops flammeolus*) and Cassin's finch—and a variety of other montane birds such as the broad-tailed hummingbird (*Selasphorus platycercus*), western wood-pewee (*Contopus sordidulus*), plumbeous vireo (*Vireo plumbeus*), mountain chickadee (*Poecile gambeli*), western tanager (*Piranga ludoviciana*), and chipping sparrow (*Spizella passerina*).

Songbirds occurring more widely in the project vicinity and less tied to specific habitat types include three residents—the common raven (*Corvus corax*), American crow (*C. brachyrhynchos*), and black-billed magpie (*Pica hudsonia*)—and the migratory Brewer's blackbird (*Euphagus cyanocephalus*).

Birds of prey potentially nesting in the project vicinity include two BCC and BLM sensitive species, the northern goshawk and golden eagle. Three others less likely to occur in the project area are the ferruginous hawk, bald eagle, and peregrine falcon. All of these are also BLM sensitive species and addressed in **Section 3.18.2**. An additional BCC raptor, the prairie falcon, is more likely to nest in the project area than the species above. Like the golden eagle, it nests on cliffs and forages primarily in unwooded habitats such as the sagebrush and saltbush shrublands along much of the pipeline alignment.

Other raptors potentially present and more likely to nest and forage in proximity to the project area include the American kestrel (*Falco sparverius*), Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*A. striatus*), red-tailed hawk (*Buteo jamaicensis*), Swainson's hawk (*B. swainsoni*), northern harrier (*Circus cyaneus*), great horned owl (*Bubo virginiana*), and long-eared owl (*Asio otus*). In addition to these are two small owls—the flammulated owl (*Psiloscoops flammeolus*) and saw-whet owl (*Aegolius acadicus*)—potentially present in the limited areas of Douglas fir in the western end of the proposed pipeline alignment. The flammulated owl is a BCC species.

Environmental Consequences

Proposed Action

The Proposed Action would result in a loss of nesting, roosting, perching, and foraging habitat for migratory birds on disturbed areas and reduce habitat effectiveness adjacent to areas where disruption of behaviors by construction activities would occur. The proposed pipeline installation would result in 198.2 acres of surface disturbance, including both public and private lands, adjacent to the existing V.2 Road through the Winter Flats area (**Table 1**). As shown in the table, an additional 1.27-mile segment, with 10.74 acres of disturbance, would be constructed along the Wagon Track alignment. The Proposed Action would result in the long-term conversion of potential nesting habitats to a grass/forb community. The new alignment to the Wagon Track 12-16 well pad would also include new habitat fragmentation.

In addition to habitat loss and fragmentation, it is possible that during construction activities, individual birds would be displaced to adjacent habitats due to increased noise and human presence. Effects of displacement would include increased risk of predation, nest abandonment, or inability to reproduce if adjacent habitat is already at carrying capacity.

Consistent with Executive Order 13186 and BLM Colorado guidelines, the project would be subject to a ROW Stipulation (**Appendix B**) prohibiting vegetation removal or ground-disturbing activities in areas containing one or more active nests of migratory birds during the period **May 15 to July 15**. This stipulation is based on GJ-TL-3 (ROWA) (see **Table 3**). If the project is approved, the proponent plans to clear vegetation along as much of the proposed alignment as possible prior to May 15. In addition, a pre-construction survey for nesting birds would be conducted in areas where vegetation removal cannot be removed prior to May 15. Any active nests identified during the pre-construction nesting surveys would be avoided. These steps, in combination with location of 94% (all but 1.27 mile) of the proposed pipelines adjacent to V.2 Road and the documented aversion of nesting birds to areas near roads, are expected to limit impacts to the level of individuals.

A separate ROW Stipulation in **Appendix B** requires a raptor survey during the nesting season (**February 1 to August 15**) prior to initiation of construction. If an active raptor nest is found within species-specific buffer distances ranging from 0.125 to 0.5 mile, as described in the 2015 GJFO ARMP, would be applied. The varying buffer distances and dates are reflected in different TLs for general raptors, sensitive raptors, golden eagles, and bald eagles (see **Section 3.18.2**). If an active nest is found within the specified buffer distance, the BLM may evaluate the granting of an exception, consistent with the 2015 GJFO ARMP, based on the spatial relationship of the nest to the construction alignment, specifically regarding topographic screening and other considerations. See **Table 3**.

After pipeline installation has been completed, the disturbed area would be revegetated with a BLM-approved mix of native grasses, forbs, and shrubs (**Appendix B**). However, the habitat would not be restored to conditions approximating those prior to construction for several years, or potentially several decades in the case of trees and some shrubs. Habitat fragmentation and modification can result in some habitat-interior species avoiding an area within 100 feet or more of the newly created habitat edge. However, this is less of an issue for low-shrub communities such as those that dominate the project area, and a considerable amount of fragmentation already exists from numerous roads associated with ranching, oil and gas activities, and motorized recreation.

Based on the above, the project would have minor impacts on migratory birds at the level of individuals of some species, but these are not expected to be discernible at the population level.

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed. No project-related impacts to migratory birds from activities described above for the Proposed Action would occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These would include activities and impacts associated with oil and gas development, pipelines, access roads, recreation, and grazing.

3.24.2 Other Wildlife

Affected Environment

Habitats in the project area and vicinity range from xeric shrublands and pinyon-juniper to more mesic mixed mountain shrublands and, at the highest elevations, montane Douglas-fir. Given these vegetation types, the area provides cover, forage, breeding, and nesting habitat for a variety of big game and small game species as well as nongame species.

Big Game Ungulates

The project area is within overall ranges of mule deer (*Odocoileus hemionus*) and Rocky Mountain elk (*Cervus elaphus nelsoni*). Deer and elk are recreationally, culturally, and ecologically important species common throughout suitable habitats in the region. Most of the project area is mapped by CPW as mule deer winter range and also includes a production (calving) area for elk. The project area also includes portions of more limited mule deer winter habitats. The eastern portion, including the Wagon Track Lateral, is mapped by CPW as mule deer severe winter range and a winter concentration area. These are defined as follows:

- Severe Winter Range – That part of the overall range where 90% of the individuals are located when the annual snowpack is at its maximum and/or temperatures are at a minimum in the two worst winters out of ten.
- Winter Concentration Areas – That part of the winter range where densities are at least 200% greater than the surrounding winter range density during the same period used to define winter range in the average five winters out of ten.

Approximately 4 to 5 miles of the central portion of the proposed pipeline alignment crosses through the Winter Flats Wildlife Emphasis Area (WEA), which includes 3,200 acres south of V.2 Road. The WEA has been identified as an important movement alignment for deer and elk traveling between summer and winter ranges, including mule deer severe winter range and winter concentration areas to the south. In addition to seasonal restrictions on human use through application of big game winter range GJ-TL-20 (ROWA) for the period **December 1 to May 1 (Table 3.1 and Appendix B)**, the WEA is protected by a Controlled Surface Use (CSU) stipulation. The CSU allows the BLM to place additional restrictions on design, construction, and long-term use and to require that proposed operations be relocated by more than 200 meters to protect the resource.

The portion of the alignment from Redrock Creek to west of Pine Gulch becomes more rugged and higher in elevation and supports pinyon and juniper as well as areas of oakbrush and other foothills shrubs, ponderosa pine, and Douglas-fir. This area contains the mapped elk production area mentioned above. Areas where elk tend to concentrate during calving are generally transitional in elevation and provide a combination of thermal and hiding cover, water, and good-quality forage needed to sustain lactating females and the young. The mapped production area, with seclusion and water afforded by the Redrock, Alkali, Little Alkali, and Pine Gulch canyons, provides this combination of qualities. Seasonal restrictions on human use in late spring/early summer (**May 15 to June 15**) apply to elk production areas to minimize disruption the birthing season, when elk are present and especially sensitive to disturbance.

The Proposed Action would not adhere to the restriction language of GJ-NSO-34 (ROWA) or Big Game Production TL CO, identified in Appendix B of the 2015 GJFO ARMP for the protection of mapped elk production areas or (see **Table 3**). This is due to the location of a portion of the alignment within a mapped calving habitat, with construction planned to occur from May 1 to December 1. However, the Proposed Action may be approved and the requested ROWs/TUP issued based on a determination by the BLM that the protected resource would not be unduly affected.

The western end of the alignment also is mapped by CPW as elk severe winter range, which extends around the western end of South Shale Ridge and into the upper Dry Fork basin. This area is relatively high for elk severe winter range, while the more typical winter range south of V.2 Road is mapped by CPW as elk summer range. Regardless, construction is not currently planned during the TL period within critical or severe big game winter range or winter concentration areas.

Carnivores

Large carnivores potentially present in the project vicinity include the mountain lion (*Felis concolor*), which moves seasonally with its preferred prey, the mule deer, and the black bear (*Ursus americanus*). Black bears are uncommon in the lower elevations due to the scarcity of sufficient forest cover and suitable foods (including acorns and berries), but suitable habitat exists on the western end of the proposed pipeline alignment. Slightly to the west is an area mapped by CPW as a black bear fall concentration area associated with oaks and fruit-bearing shrubs that provide calorie-rich foods while bears are laying down fat prior to hibernation. Two smaller carnivores, the coyote (*Canis latrans*) and bobcat (*Lynx rufus*), are also present throughout the region in open habitats and broken or wooded terrain, respectively, where they hunt for small mammals, reptiles, and ground-dwelling birds. Other small carnivores potentially present are the ringtail (*Bassariscus astutus*) and spotted skunk (*Spilogale gracilis*) in rocky woodland or tall-shrub communities and along ephemeral drainages.

Rodents and Lagomorphs

Small mammals present within the project vicinity include rodents such as the rock squirrel (*Otospermophilus variegatus*), golden-mantled ground squirrel (*Callospermophilus lateralis*), and least chipmunk (*Tamias minimus*). Smaller rodents likely to occur include the packrat (bushy-tailed woodrat, *Neotoma cinerea*), deer mouse (*Peromyscus maniculatus*), long-tailed vole (*Microtus longicaudus*), and others in the same genera. Lagomorphs likely to occur include the desert cottontail (*Sylvilagus audubonii*) and black-tailed jackrabbit (*Lepus californicus*) at lower elevations in drier sites, with the mountain cottontail (*S. nuttallii*) and white-tailed jackrabbit (*L. townsendii*) potentially present in higher, more mesic, or more densely wooded sites. Rodents and lagomorphs are important prey species.

Upland Fowl

Two species of galliforms (upland gamebirds) are present in the project vicinity. One, the non-native chukar (*Alectoris chukar*), is widespread on rocky slopes with low or few shrubs. Another, the native wild turkey (*Meleagris gallopavo*), is mostly associated with more mesic or densely vegetated habitats, including mixed mountain shrubs, particularly those with Gambel's oak or other tall species, and foothills or montane conifers. The western portion of the project area is mapped as wild turkey overall range.

Reptiles

Lizards with the greatest potential to occur are the sagebrush lizard (*Sceloporus graciosus*) and potentially the short-horned lizard (*Phrynosoma hernandesi*) in sagebrush shrublands; the plateau lizard (*Sceloporus undulatus*) and tree lizard (*Urosaurus ornatus*) in rocky pinyon-juniper and oakbrush; and the plateau striped whiptail (*Cnemidophorus velox*) along ephemeral drainages. Snakes expected to occur include the gopher snake (bullsnake) (*Pituophis catenifer*) and yellow-bellied racer (*Coluber constrictor*) in most

habitat types but particularly areas of xeric low shrubs and the milk snake and smooth green snake (*Liochlorophis vernalis*) (see **Section 3.18.2**), in more mesic sites such as mixed mountain shrubs or along ephemeral drainages, although potentially present throughout. Less widely distributed than any of the above regionally, the striped whipsnake (*Masticophis taeniatus*) is potentially present in sagebrush and salt-desert shrubland habitats. One venomous snake, the midget faded rattlesnakes, is known to occur in the area, as described in **Section 3.18.2**.

Amphibians

Among amphibians, the area is within the known range of the Great Basin spadefoot (*Spea intermontana*), Woodhouse's toad (*Anaxyrus woodhousii*), and western chorus frog (*Pseudacris triseriata*). The Great Basin spadefoot occurs primarily in seasonal pools or drainages, while Woodhouse's toad occurs in similar habitats but generally those with more protracted surface water, including permanent ponds, small perennial streams, and overbank areas of larger rivers. Smaller than these species, the western chorus frog occurs primarily in cattail and bulrush wetlands and along the vegetated margins of seasonal or perennial ponds and slow-flowing streams. The northern leopard frog, a BLM sensitive species, was addressed in **Section 3.18.2**. The barred salamander (*Ambystoma tigrinum*) is also potentially present in the project vicinity, primarily perennial ponds for breeding but spreading farther afield than the other species as air-breathing adults and hiding in burrows during daylight.

Potential breeding habitats for amphibians in the project vicinity include a few small ponds, areas of protracted seasonal flows along the ephemeral drainages, and wetlands and seasonally inundated overbank areas along the Colorado River also provide potential breeding habitat.

Fishes

No perennial streams and therefore no fish populations are present in the project area. However, the project drains into the Colorado River, which supports a variety of native and non-native fish species, including Federally listed endangered fishes (**Section 3.18.1**) and BLM sensitive fishes (**Section 3.18.2**).

Environmental Consequences

Proposed Action

Construction of the proposed pipelines would have impacts to general wildlife habitat from the direct, temporary conversion of 208.94 acres of surface disturbance on public and private lands, mostly adjacent to V.2 Road (**Table 1**). Habitats affected would include sagebrush, salt-desert shrub, foothills shrub, and pinyon-juniper woodland (**Table 22**). Long-term reestablishment of shrubby habitats is expected to require 20 to 50 years to restore ecological functions fully, assuming that other impacts (e.g., wildfire, additional surface disturbances) do not keep the area in an early seral condition. Potential direct impacts to the terrestrial wildlife species described above include mortality, disturbance, interference with foraging or reproduction, habitat loss, and displacement to less suitable habitats. Impacts would generally be more substantial during critical seasons such as winter (deer and elk) or the spring/summer breeding season (small mammals, reptiles, and amphibians)—but see the discussion in **Section 3.18.2** regarding potential impacts on special status wildlife, including hibernating midget faded rattlesnakes, which also apply to other reptiles and birds and small mammals.

Deer and elk are often restricted to smaller areas during the winter months and may expend high amounts of energy to move through snow, locate food, and maintain body temperature. Disturbance during the winter can also displace other active wildlife, depleting much-needed energy reserves and may lead to decreased over winter survival. Indirect habitat loss may occur if increased human activity (e.g., traffic, noise) associated with construction over a period of 7 months displaces individuals or alters their patterns of habitat use. The extent of indirect habitat loss varies by species, the type and duration of the

disturbance, and the amount of screening provided by vegetation and topography. In general, disturbance-related impacts are temporary, with patterns of distribution and habitat use returning to predisturbance conditions rather quickly when disturbance stops.

Because the proposed pipeline alignment would be located within deer and elk winter range, a ROWA protection identified in the 2015 GJFO ARMP as GJ-TL-20 (ROWA) would be applied to prohibit initiation of construction activities during the period **December 1 to May 1** (see **Appendix B**). The current project schedule would not include construction during this TL period. Although a request for relief from this TL is not anticipated, it is possible that reclamation and cleanup would need to extend into December 2016 to avoid the need for additional work in the following year. In this situation, RRG would be required to submit a request in writing to the CRVFO. A decision by the BLM to grant an exception to this TL would be based on collaboration with CPW and may include a requirement for mitigation.

Two other ROWAs in the 2015 GJFO ARMP would prohibit surface occupancy and use year-round (GJ-NSO-34) and motorized activity from **May 15 to June 15** (Big Game Production TL CO) within an elk production area mapped by CPW in the western part of the project area. On April 4, 2016, CPW concurred with the BLM that these protections are not needed, due to the location of the proposed pipelines adjacent to V.2 Road (see **Table 3** and **Appendix B**). However, both the winter range and elk production ROWAs would apply to non-emergency maintenance activities involving substantial surface-disturbance and operation of heavy equipment.

The conversion of shrubby habitats to herbaceous communities until seeded or naturally colonizing shrubs become established would reduce foraging, breeding, and sheltering habitat for a number of wildlife species. The actual level of habitat impact would vary for each species that may utilize the area, and the linear disturbance may fragment some areas along the route to a level that represents effective habitat loss. The proposed Wagon Track Lateral would result in additional habitat fragmentation, with 1.27 miles or 10.74 acres of habitat directly affected (**Table 2**). However, while some fragmentation of habitats may occur, given the availability of similar habitat types in the greater area and the collocation of the proposed pipelines with existing disturbance along most of its length, no species is expected to suffer measurable long-term impacts to populations or their movement patterns.

Since the proposed pipelines would parallel V.2 Road, except for the 1.27 miles of the Wagon Track Lateral, post-construction avoidance of the alignment by deer and elk would be expected to be similar to current levels, and the integrity of the WEA should be maintained. However, the proposed pipelines would have the potential to impact wildlife movement in areas of active construction or where the trench is left open pending completion of pneumatic testing. This impact would be limited to the construction phase. The Proposed Action includes trench plugs to provide wildlife crossings during the period when trench segments are left open. CPW would be contacted to coordinate the best locations for trench plugs. The plugs would be installed with ramps on both sides of the trench at a maximum spacing of 1 mile.

The Winter Flats WEA would incur 8.7 acres of temporary impacts during construction of the pipeline and another 0.1 acre for an associated valve yard. Impacts to the WEA as a result of human disturbance would extend from the initiation of construction through completion of reclamation work. Short-term avoidance of the construction area by wildlife would occur primarily outside the winter period due to the TL. Recontouring and revegetation of the pipeline alignment would reestablish long-term use and migration through this area. Once fully established, reclamation of temporarily disturbed areas would reduce the initial surface disturbance of approximately 209 acres to 0.07 acre for valve yards (**Table 2**). However, even upon successful reclamation with herbaceous and low shrub species, impacts to wildlife resulting from removal of oakbrush and pinyon pine or Utah juniper trees would extend much longer, from a few decades for the oaks to many decades or longer for the conifers.

The earlier discussions of potential impacts and mitigation measures in relation to special status wildlife (**Section 3.18**) would also apply to other reptiles, amphibians, and fishes. For reptiles and amphibians, direct mortality could occur from operation of vehicles and other mobile equipment. For animals in dens, earthwork and trenching could cause additional mortality. Drainage crossings by pipeline construction have the potential to cause direct mortality of adult or larval amphibians occupying persistent or seasonal pools, and indirect mortality of larvae from transported sediment. For amphibians and fishes within ponds or seasonally inundated overbank areas associated with the Colorado River, transport of sediments from the project area via ephemeral drainages could affect reproductive success, and transport of chemical pollutants could affect survival of adults as well as eggs or larvae. The level of these risks would be low, as described in in **Sections 3.18, 3.21, and 3.22** and included in **Appendix B**.

No Action Alternative

Under the No Action Alternative, the proposed pipelines would not be constructed. No project-related impacts to mammals, reptiles, amphibians, and aquatic life from activities described above for the Proposed Action would occur. BLM management and currently permitted activities in the project area, and associated impacts, would continue. These would include activities and impacts associated with oil and gas development, pipelines, access roads, recreation, and grazing.

4. CUMULATIVE IMPACTS

NEPA requires Federal agencies to consider the cumulative effects of proposals under their review. Cumulative effects are defined in the CEQ regulations 40 CFR §1508.7 as "...the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions...." The following subsections describe past, present, and reasonably foreseeable oil and gas developments, known to BLM within the broader project vicinity.

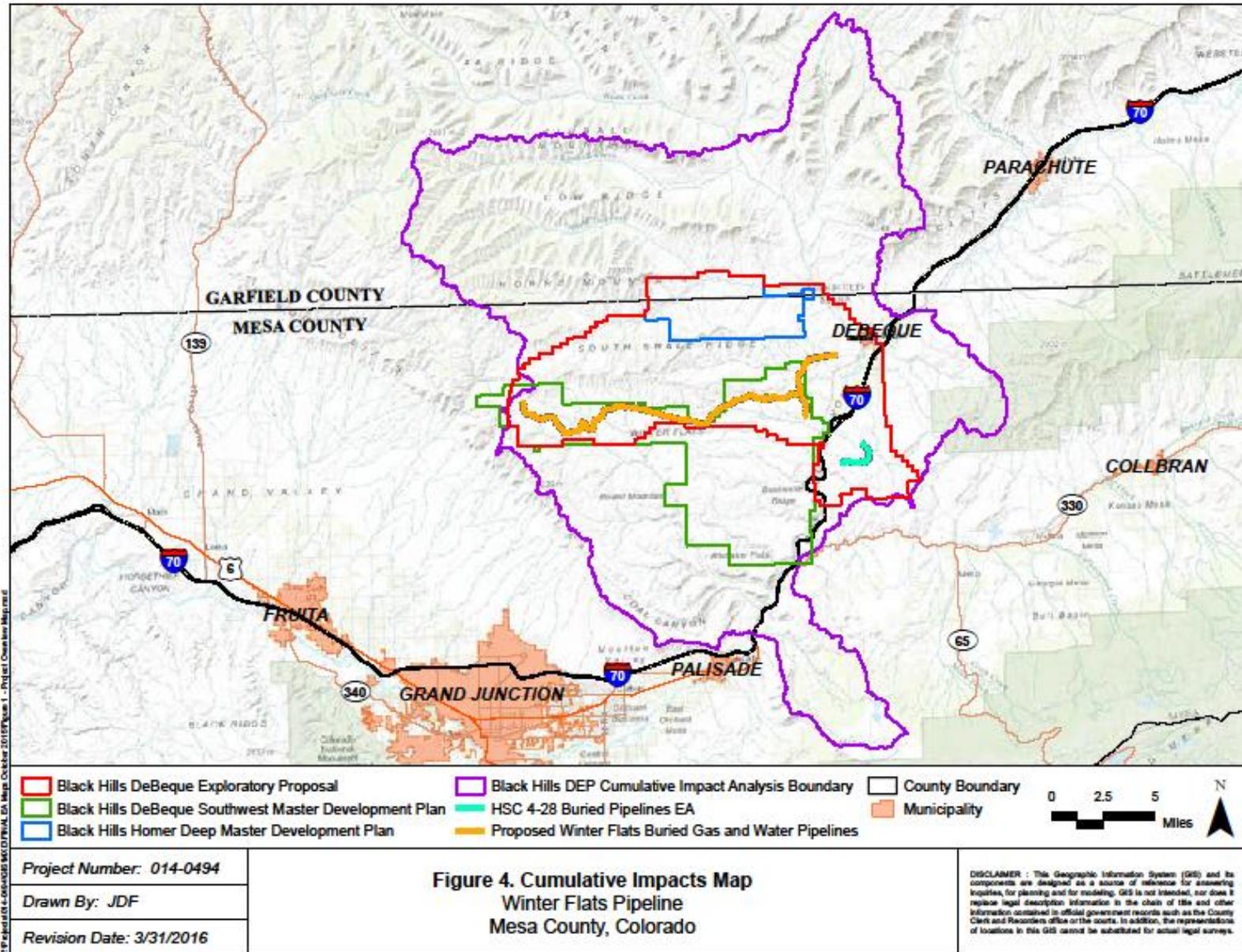
This section focuses on future oil and gas projects and related pipelines because they are expected to include developments in comparison to the limited amount that has occurred to date in proximity to the Proposed Action (**Figure 4**). Future cumulative impacts could also accompany the continuation of more dispersed and long-term activities, including livestock grazing and recreational use, that have and will continue to have impacts to certain resources and uses.

Impacts of the Proposed Action would also be cumulative to adverse impacts resulting from wildland fires. This includes the nearby Pine Ridge Fire, which burned approximately 14,000 acres of mostly public lands during a period of 9 days in 2012. Future fires are likely and would be expected to have similar impacts, with potentially greater impacts on special-status species, depending on location, intensity, duration, and timing. However, these variables cannot be assessed in terms of cumulative impacts for the currently proposed project.

Cumulative impacts associated with the Proposed Action would be less than indicated by the length and area of surface disturbance. This conclusion is based on two considerations: First, the width of surface disturbance would be located adjacent to V.2 Road, except for the 1.27-mile Wagon Track Lateral, and within 75 to 100 feet of V.2 Road. Second, all but 0.07 acres of the construction corridor would be revegetated promptly following completion of the project, using a combination of native woody and herbaceous plants. The long-term impacts would therefore be less than associated with many other types of disturbance, including oil and gas well pads, access roads, and new pipeline alignments.

4.1 EXISTING AND REASONABLY FORESEEABLE OIL AND GAS DEVELOPMENTS

The Winter Flats buried natural gas and water pipeline project is part of a larger area west of De Beque in which oil and gas development and pipeline construction and operation have been ongoing for more than



30 years, and in which substantial new development is planned. Few other types of surface impacts occur in the project vicinity. On BLM-administered lands, these are mostly limited to impacts associated with livestock grazing, off-highway motorized and mechanized travel, and historic surface coal mining. On nearby private land, other types of surface disturbance and increased human activity have included conversion of native habitats to agricultural lands (primarily for hay production) or sand and gravel operations along the Colorado River.

Industrial, commercial, and residential development has also occurred at a relatively low level. Expansion of transportation and public utility networks associated with both local and regional population growth have added considerable habitat loss and habitat fragmentation and increased recreational visitation. **Table 25** summarizes relevant natural gas and associated pipeline projects.

Table 25. Existing, Approved, and Reasonably Foreseeable Pipeline or Well Development Projects

Project Name	Project Summary	Surface Disturbance (acres)		Comments
		Initial	Long-term	
Well Pad and Pipeline Infrastructure Approved 2010 or earlier	Previously approved (pre-BHDEP) oil and gas activities within the greater project vicinity have included 92 single-well pads with an average of 1.4 acres of long-term disturbance per pad. Ancillary surface facilities caused 44 acres of disturbance. A total of 116 miles of gas pipelines were constructed in 50-foot alignments.	879	176	Within an area of 106,595 acres; encompasses current project area.
Black Hills DeBeque Exploratory Proposal (BHDEP) Approved 5/2/13	The BHDEP proposed up to 24 new wells on 12 well pads, each pad averaging 7 acres of initial disturbance, reduced to 3 acres at interim reclamation plus ancillary facilities. Associated facilities analyzed included 12.7 miles of new, upgraded, or rerouted access roads and 25.4 miles of gas gathering, water supply, and produced water pipelines as well as ancillary facilities.	300	79	Within an area of 79,700 acres; encompasses current project area
DeBeque Pipeline EA Approved 7/28/14	Three operators—Black Hills, Red Rock Gathering, and Bluestone—requested BLM ROWs for a collocated 12-inch gas gathering pipeline, 8-inch produced water pipeline, and 24-inch raw water pipeline, with a length of 10.6 miles. Total temporary disturbance width to accommodate all three pipelines was 73 feet.	94	0	South of De Beque
HSC 4-28 Buried Pipelines EA Approved 7/24/15	Black Hills has constructed a 1.51-mile natural gas gathering line and collocated water pipelines south of the Colorado River and I-70. Temporary disturbance width was 50 feet.	15	0	East of Colorado River
DeBeque Southwest Master Development Plan (DSMDP) In preparation	The DSMDP proposes development of up to 104 new horizontal oil and gas wells on 13 new well pads. Black Hills currently operates 10 wells, some drilled as early as 1982 by a predecessor operator. Each new pad would encompass approximately 7 acres initially, reduced to 3 acres at interim reclamation. Associated facilities would include 11.9 miles of new or upgraded access roads and collocated pipelines, with a combined initial disturbance width of 75 feet and long-term road width of 30 feet.	199	111	Within an area of 36,200 acres; encompasses current project area

<i>Project Name</i>	<i>Project Summary</i>	<i>Surface Disturbance (acres)</i>		<i>Comments</i>
		<i>Initial</i>	<i>Long-term</i>	
Homer Deep Master Development Plan (HDMDP) In preparation	The HDMDP proposes development of up to 36 new horizontal oil and gas wells, including four wells on an existing pad and eight wells on each of four new pads. Each pad would encompass approximately 7 acres initially, reduced to 3 acres at interim reclamation. Associated facilities would include 1.74 miles of new or upgraded access roads and collocated pipelines, with a combined initial disturbance width of 75 feet and long-term road width of 30 feet.	44	22	Within an area of 33,000 acres northwest of De Beque
TOTAL		1,531	388	

The approximately 209 acres of initial surface disturbance during construction of the Proposed Action would be cumulative to previous habitat loss or fragmentation and to concurrent surface-disturbing activities and elevated human presence. Long-term changes, primarily to vegetation communities, persisting beyond construction and early stages of revegetation would be cumulative to those associated with prior and reasonably foreseeable projects having similar impacts. The proximity of the current project to the existing, approved, or reasonably foreseeable projects listed in the table would tend to increase the level of both short-term and long-term cumulative impacts.

Adverse cumulative impacts typically associated with the types of pipeline or other oil and gas development projects described in **Table 25** include:

- Direct habitat loss, habitat fragmentation, and decreased habitat effectiveness
- Increased risk of adverse impacts to special status plant and animal species
- Expansion of noxious weeds and other invasive species
- Increased potential for runoff, erosion, and sedimentation of surface waters
- Increased potential for adverse impacts on fresh-water aquifers and water wells
- Increased fugitive dust from construction of well pads, roads, and pipelines
- Increased gaseous emissions, including VOCs and priority pollutants, from vehicles, compressors, and other internal combustion sources and from oil and gas production facilities
- Increased potential for spills and other releases of chemical pollutants
- Increased traffic on local roads
- Increased noise, especially along access and haul roads
- Increased risk of damage to cultural and paleontological resources
- Decreased solitude and scenic quality

In addition to these adverse cumulative impacts are beneficial cumulative impacts, including the increased availability of a valuable and important commodity, increased direct and indirect employment, and enrichment of Federal, State, and County/Local coffers from royalties, Payments in Lieu of Taxes (PILTs), property taxes, and/or sales taxes. Cumulative impacts associated with the Proposed Action would include those noted above for previous oil and gas projects in the GJFO area and nearby portions

of the CRVFO. It should also be noted that new technologies and increasingly stringent Federal and State requirements have reduced the impacts of oil and gas developments in recent years.

4.2 PROJECT-SPECIFIC RESOURCE CONSIDERATIONS

Of particular relevance to the current project are potential direct and indirect cumulative impacts to resources that represent a long-term loss or other changed condition. For some resources and uses, impacts would occur primarily or entirely during the 7 months of construction, while impacts to some other resources would extend a few additional years until disturbed areas are stabilized by establishment of a suitable plant cover. Consequently, cumulative impacts to some resources and uses would occur only in relation to existing impacts or to approved or potential future projects with impacts occurring during the same period as the Proposed Action.

Resources and uses for which substantial cumulative impacts would generally be limited to the construction period include:

Access and Transportation, Air Quality, Fire and Fuels, Noise, Recreation, Socioeconomics, Wastes

Resources and uses for which cumulative impacts would generally extend until reestablishment of a desirable, self-sustaining plant cover include:

Grazing and Rangeland Management, Invasive Non-Native Species, Soils, Special Designations (ACECs and WSAs), Water Resources

The following paragraphs address cumulative impacts to resources and uses for which impacts would extend over the long term, beyond initial revegetation success, and would therefore be cumulative not only to existing developments and concurrent construction projects but also to reasonably foreseeable future projects (**Table 25**) with overlapping timeframes.

- **Cultural Resources.** Identified cultural resources eligible for the NRHP would be avoided by the Proposed Action. However, some non-eligible sites would be directly or indirectly affected by construction of the project, adding cumulatively to similar losses likely to accompany ongoing or planned future well development or pipeline construction projects. Indirect impacts to the physical setting and significance of cultural resources would be additive to construction of other pipelines, access roads, well pads, and other surface facilities associated with other projects in the vicinity. In addition, the potential exists for contribution to cumulative loss of cultural resources through vandalism resulting from increased levels of human activity in association with existing or reasonably foreseeable future projects.
- **Fossil Resources.** The project area includes outcrops of bedrock formations and Quaternary surficial deposits known to contain plant, invertebrate, and some vertebrae fossils. Paleontological surveys for the project did not result in findings of scientifically significant fossils within the area of proposed surface disturbance, although some were identified nearby. In these areas, a resource monitor would be present during construction to ensure that loss of fossils is avoided or minimized. Any unavoidable loss of fossil resources during trenching and backfilling would be cumulative with similar losses for previous and reasonably foreseeable projects. In addition, the potential exists for contribution to cumulative losses of fossils through vandalism resulting from increased levels of human activity in association with existing or reasonably foreseeable future projects.
- **Land Tenure, ROWs, and Other Uses.** The granting of ROWs for the Winter Flats and Wagon Track Lateral pipelines would have the potential for some level of impact on existing ROW holders. Most ROWs are held by one of the two proponents of the current project, and ROWs held by others would generally be avoided. Some temporary interference with travel on V.2

Road would occur during construction adjacent to or, in a few locations, within the roadway. With prompt restoration of V.2 Road and other temporarily affected areas following construction, the Proposed Action is not expected to affect other ROW holders or authorized users.

- **Native American Religious Concerns.** Construction of the pipelines and, in some cases, reconstruction of V.2 Road to accommodate adjacent pipelines within limited widths could change the “feeling” or other special qualities of areas having special religious significance to Native Americans. It is not possible to quantify the extent of any diminution in the cultural or religious significance of traditional cultural properties. However, any such loss associated with the Proposed Action would be cumulative to changes in the natural and cultural landscape associated with other existing or reasonably foreseeable pipeline or gas development projects.
- **Special Status Plant Species.** An effort was made to avoid impacts to Federally listed threatened plants or BLM sensitive plants during pipeline construction. Nonetheless, some direct impacts to individual BLM sensitive plants and indirect impacts to Federally listed threatened plants were unavoidable. These effects would extend over the long term, although some recolonization of disturbed areas following successful revegetation and reestablishment of relatively natural ecological processes. Such losses would be cumulative to losses associated with other BLM-authorized projects and projects without a Federal nexus in the general vicinity and within the overall ranges of the affected species. For relatively recent and reasonably foreseeable BLM-authorized projects, disturbances from pipelines and natural gas developments incorporate measures to avoid or minimize adverse impacts to special status plants. Impacts are likely to have been greater for projects without a Federal nexus, and for older Federal projects that lacked some of the more recently applied protections.

Cumulative impacts from unrelated activities include those associated with livestock grazing, habitat treatments to improve forage production for livestock, use of herbicides to control weeds, widening or maintenance of roadways, off-road motorized and mechanized travel, and construction of other infrastructures such as pipelines, powerlines, and communication sites. Protections incorporated in the Proposed Action or applied by the BLM are expected to result in relatively minor incremental contributions to cumulative impacts to special status plants.

- **Special Status Wildlife Species.** Two types of special status wildlife are present in the project vicinity. Endangered Colorado River fishes would be potentially affected by depletions of flows during construction, when disturbed areas would be regularly watered to suppress fugitive dust, and by increased risk of transport of sediments to the Colorado River from erosion of temporarily disturbed areas, including ephemeral drainages. These impacts would gradually subside while disturbed areas are developing a desirable native plant cover. BLM sensitive fishes in the Colorado River would be similarly affected and mitigated. Impacts to BLM sensitive mammals, birds, and reptiles would also occur during construction and gradually subside during revegetation. For some species, such as Brewer’s sparrow (a BLM sensitive species and sagebrush obligate species), the long time period required for reestablishment of sagebrush (10 to 15 years or more) is expected to overlap with not only existing but several reasonably foreseeable projects also likely to result in loss of sagebrush habitat.
- **Vegetation.** A substantial portion of the proposed pipeline alignment was disturbed during pipeline construction in the early 1980s. Through subsequent years, much of the previous disturbance has become partially restored through colonization by species in adjacent undisturbed areas. As a result, portions of the alignment within the existing ROW are equivalent to new disturbance. Mitigation measures minimizing the amount of vegetation removal to the amount necessary for safe construction and promptly revegetating disturbed areas with a BLM-approved native seed. Herbaceous (grass and forb) species are expected to be relatively well established within 3 to 5 years, with establishment of seeded shrubs or species colonizing from adjacent areas

requiring perhaps 10 to 15 years. Full restoration would require 20 to 50 years or longer. Similar durations of effective habitat loss are likely to accompany similar types of surface disturbances to which the Proposed Action is cumulative.

- **Visual Resources.** The combination of past, present, and reasonably foreseeable future actions have had and will continue to have adverse effects on the visual resources in the project area. These impacts are associated primarily with natural gas development and ancillary infrastructure such as pipelines, roads, and processing, treatment, or disposal facilities. The Proposed Action would contribute incrementally to the collective impacts to visual resources. However, the impact from a single buried pipeline is substantially unnoticeable when compared to the significant proposals for oil and gas development in the area, and the observed increase in recreational motorized travel. The BLM has recently approved exploratory proposals near the project area that will require the construction of several well pads. The Proposed Action evaluated will greatly reduce the truck traffic required to maintain and produce from these pads, with dramatic benefit to visual resources from reduced fugitive dust and traffic on V.2 Road.
- **Wildlife.** Use of the project area by raptors, migratory birds, big game mammals, and other wildlife would be temporarily affected during the 7 months of project construction and, for most species, extending to a lesser degree until revegetation has substantially occurred. The greater impacts to wildlife during construction are associated with disruption by increased human presence, vehicle travel, and operation of heavy equipment. For the extended period of revegetation, habitat loss or modification and fragmentation are the principal impacts—both reduced by the location of the proposed pipelines adjacent to V.2 Road and an existing pipeline alignment. For species using sagebrush or other shrubs, including wintering big game, the 10 to 15 years or longer for restoration of shrubland composition and function would represent a protracted period of diminished habitat quality. For species using pinyon-juniper or other conifer woodlands, the habitat loss would persist for a period of 20 to 50 years or longer.

For these and other resources and uses, the potential exists during the operational lives of the pipelines for maintenance actions that require surface-disturbing activities and for accidental releases of fluids being transported in the pipelines. These risks are small for any given point along the pipeline and, if the situations do occur, would have very localized impacts. Non-emergency repairs would be subject to application of protective measures to protect specific resources and uses, and accidental releases would be promptly controlled and remediated as described in **Sections 3.21** and **3.22**.

Based on the information summarized above and in the following paragraphs, the relatively small scale of the project in terms of surface disturbance and duration, and the environmental and operational protections applied by the BLM, USFWS, and USACE, the contribution of the Proposed Action to cumulative impacts is expected to be negligible to minor over the long term but potentially greater (moderate) at a more localized level over the short term.

5. AGENCIES AND OTHER PARTIES CONSULTED

- Southern Ute Indian Tribe
- Ute Indian Tribe of the Uintah and Ouray Reservation
- Ute Mountain Ute Tribe
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- Colorado Parks and Wildlife
- Colorado State Historic Preservation Officer

6. INTERDISCIPLINARY REVIEW

BLM personnel who participated in preparation or review of this EA are listed alphabetically in **Table 26**.

Table 26. BLM Interdisciplinary Project Team

<i>Name</i>	<i>Title</i>	<i>Area of Participation</i>
Colorado River Valley Field Office		
Allen Crockett, Ph.D.	Supervisory NRS	Technical Review, Preliminary NEPA Review
Carmia Woolley	Physical Scientist	Air Quality, Noise, Surface Water, Waters of the U.S.
John Brogan	Archaeologist	Cultural Resources, Native American Religious Concerns
Judy Perkins, Ph.D.	Botanist	Invasive Non-native Species, Special Status Plants, Vegetation
Julie McGrew	Realty Specialist	Project Manager, Lands and Realty, Visual Resources
Sylvia Ringer	Wildlife Biologist	Migratory Birds, Special Status Species Animals, Aquatic and Terrestrial Wildlife
Vanessa Caranese	Geologist	Fossil Resources, Geology and Minerals, Groundwater, Soils
Grand Junction Field Office		
Alan Kraus	Hazardous Materials Specialist	Solid and Hazardous Wastes
Andy Windsor	Supervisory Outdoor Recreation Planner	Access and Transportation, Recreation, Special Designations, Visual Resources, Wilderness
Anna Lincoln	Ecologist	Special Status Plants, Vegetation
Christina Stark	Assistant Field Manager	Final NEPA Review
Heidi Plank	Wildlife Biologist	Migratory Birds, Special Status Species Animals, Aquatic and Terrestrial Wildlife
Janet Doll	Realty Specialist	Writing the Right-Of-Way Grants and TUP
Kevin Hyatt	Hydrologist	Surface Water, Waters of the U.S.
Natalie Clark	Archaeologist	Cultural Resources, Native American Religious Concerns
Scott Clarke	Range Ecologist	Grazing and Rangeland Management
Scott Gerwe	Geologist	Fossil Resources, Geology and Minerals, Soils

Participation by the BLM Interdisciplinary Team included conducting site visits to assess existing conditions, comparing site proposed activities and locations with resource information in the BLM's corporate GIS database, interacting with the project proponent and its contractors to improve project design, and identifying appropriate management actions and mitigation measures for avoiding, reducing, or offsetting adverse impacts, and ensuring compliance with the 2015 GJFO ARMP.

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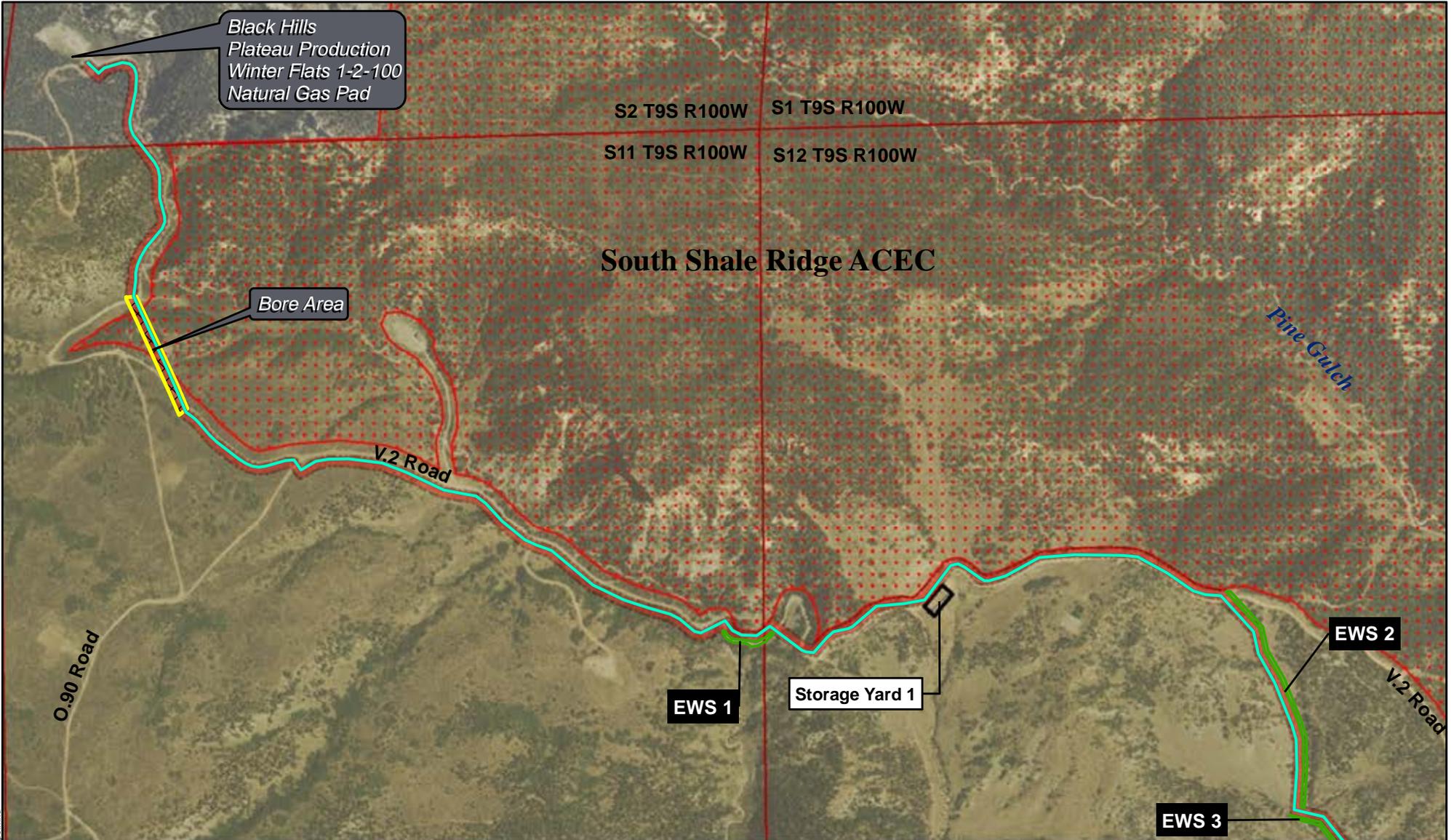
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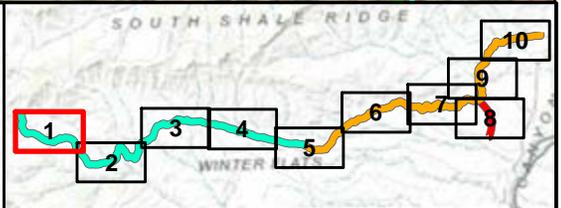
APPENDIX A

DETAILED PROJECT MAPS 1 - 10

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Proposed Winter Flats 12" Gas & Water Pipelines	Valve Yard	South Shale Ridge ACEC
Proposed Winter Flats 16" Gas Pipeline	Valve Set	Pyramid Rock ACEC
Wagon Track 12-16 Lateral	Temporary Storage Yard	Little Book Cliffs Wilderness Study Area (WSA)
Proposed Winter Flats Right-of-Way	Land Ownership	Winter Flats Wildlife Emphasis Area (WEA)
Bore Location	BLM	
Temporary Extra Work Space (EWS)	Private	

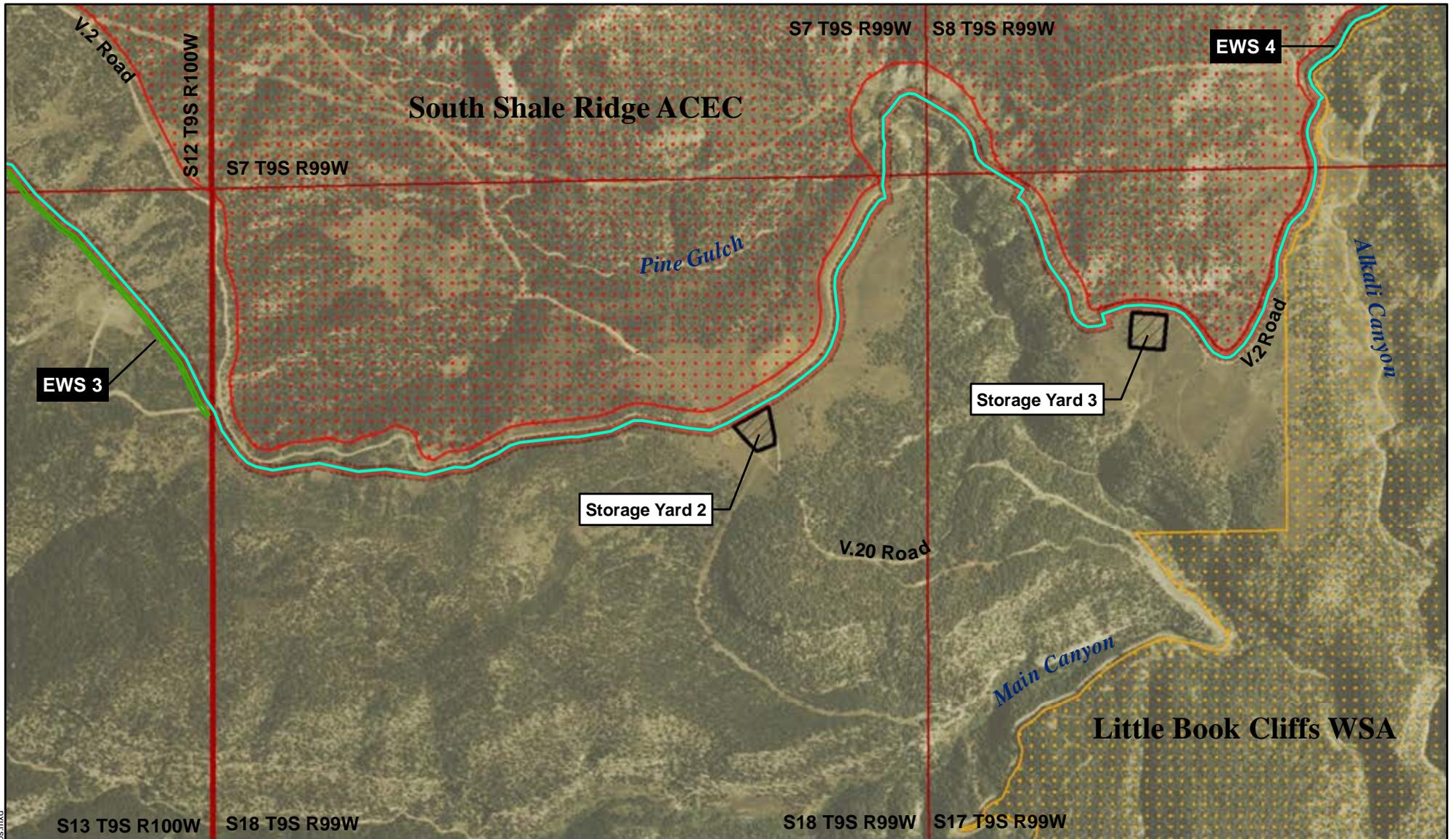


Project Number: 014-0494
Drawn By: JDF
Revision Date: 2/8/2016

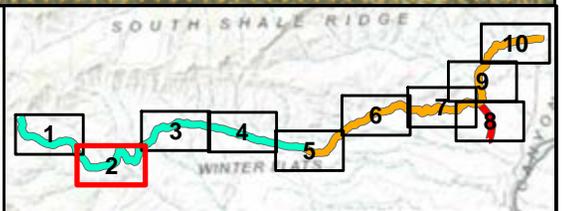
Maps
Tile 1
Winter Flats Pipeline
Mesa County, Colorado

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Maps
 Tile 2
 Winter Flats Pipeline
 Mesa County, Colorado

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South Shale Ridge ACEC

S5 T9S R99W S4 T9S R99W

S4 T9S R99W S3 T9S R99W

S8 T9S R99W S9 T9S R99W

Storage Yard 5

V.2 Road

Redrock Canyon

EWS 5

Bore Area

Winter Flats WEA

EWS 4

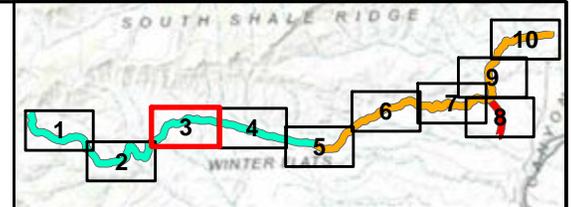
Storage Yard 4

Little Book Cliffs WSA

S9 T9S R99W S10 T9S R99W

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|---|------------------------|--|
| Proposed Winter Flats 12" Gas & Water Pipelines | Valve Yard | South Shale Ridge ACEC |
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| Bore Location | BLM | |
| Temporary Extra Work Space (EWS) | Private | |



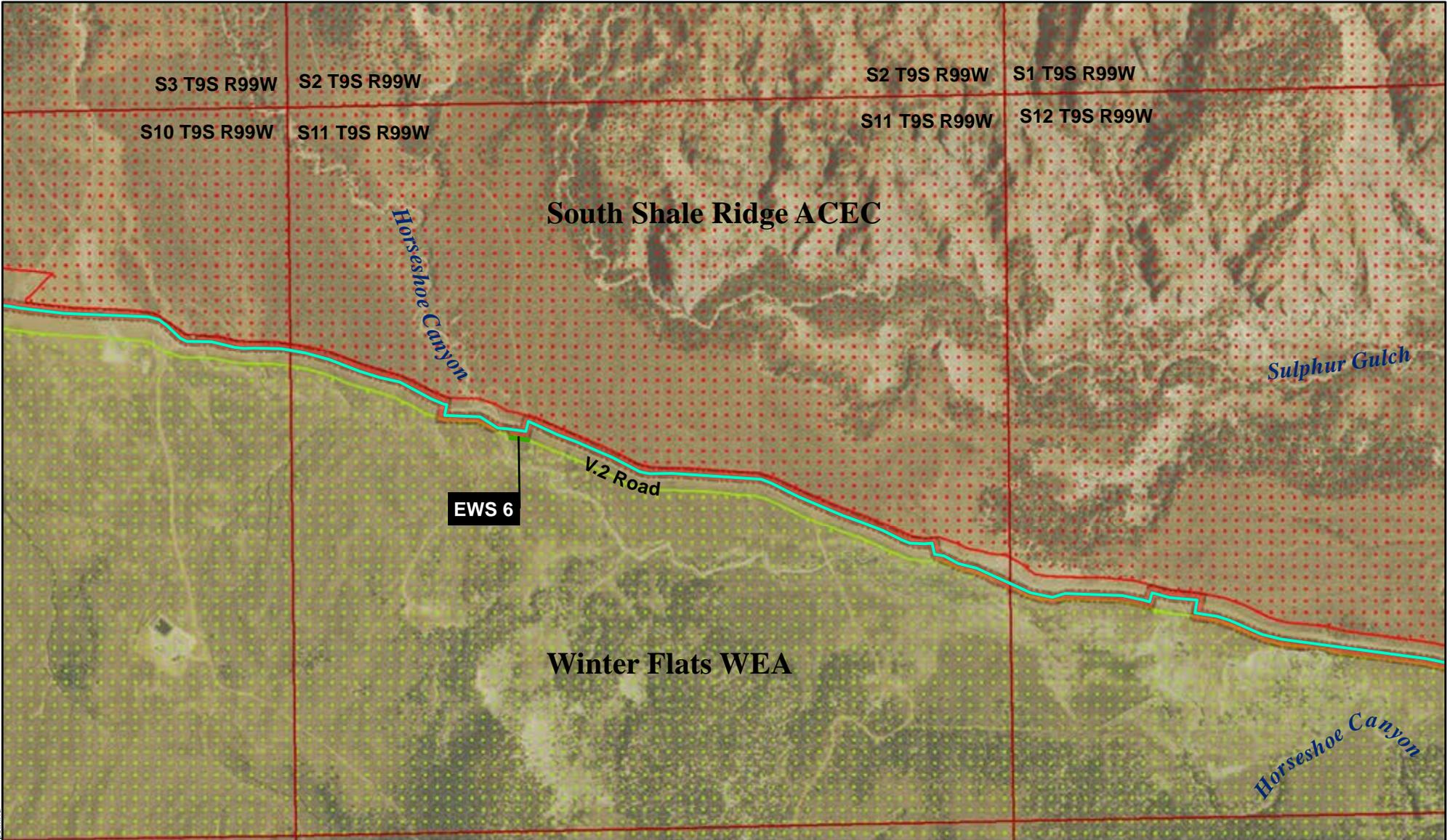
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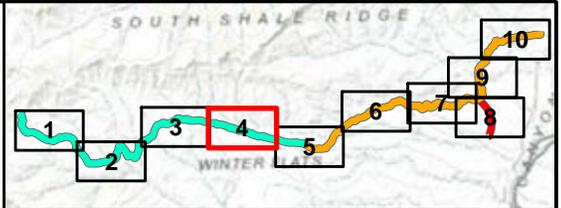
Revision Date: 2/8/2016

Maps
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 Mesa County, Colorado

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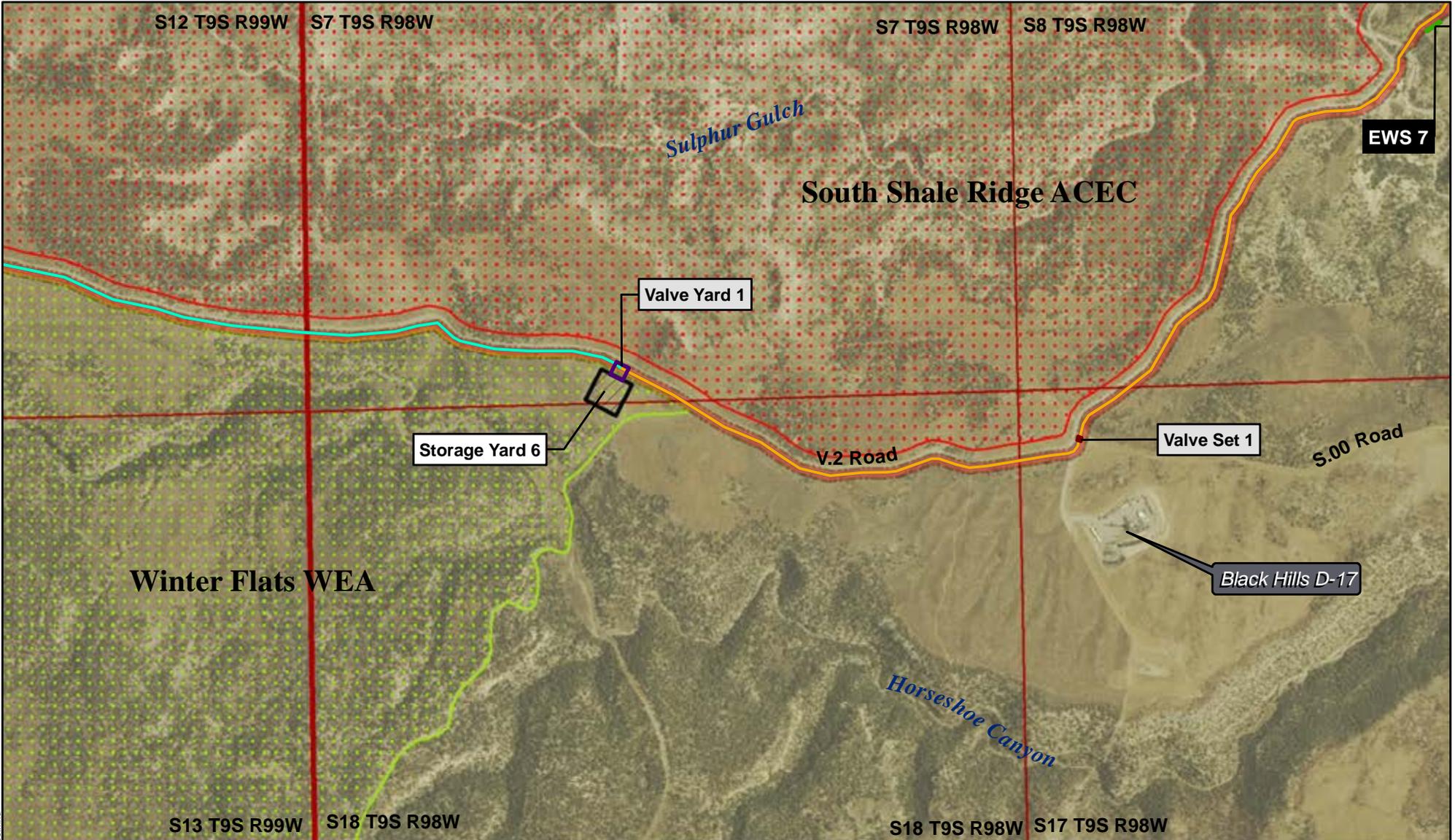


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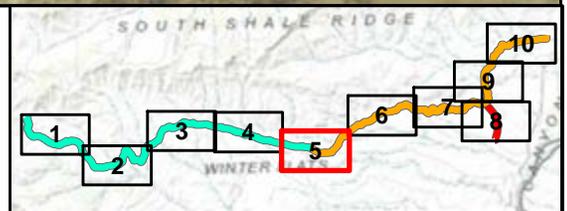
Maps
 Tile 4
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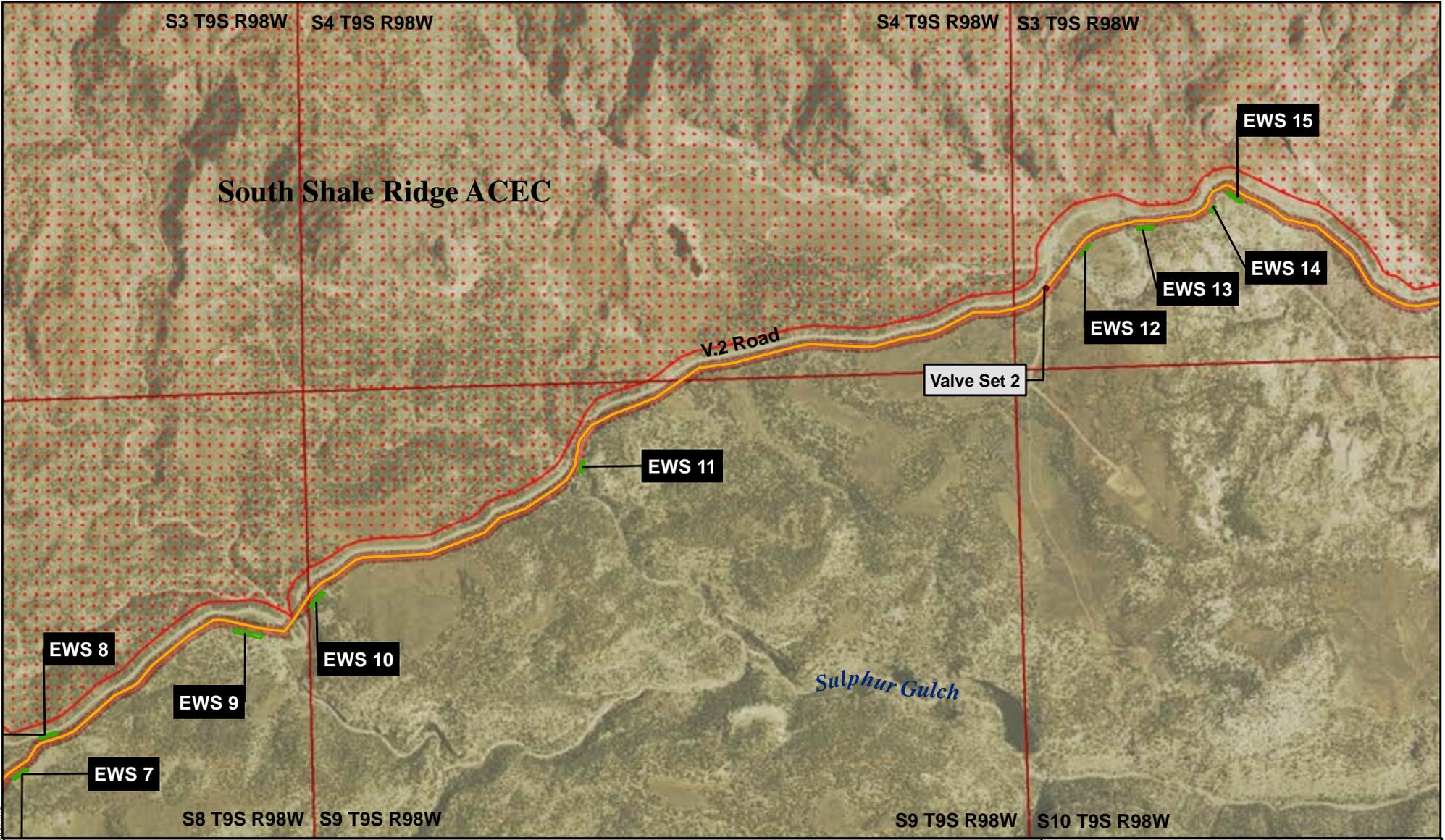


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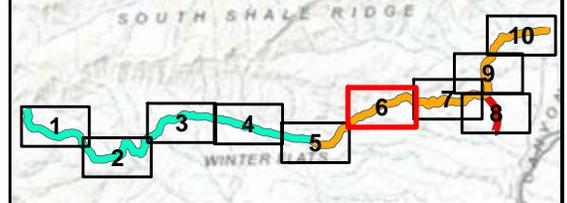
Maps
 Tile 5
 Winter Flats Pipeline
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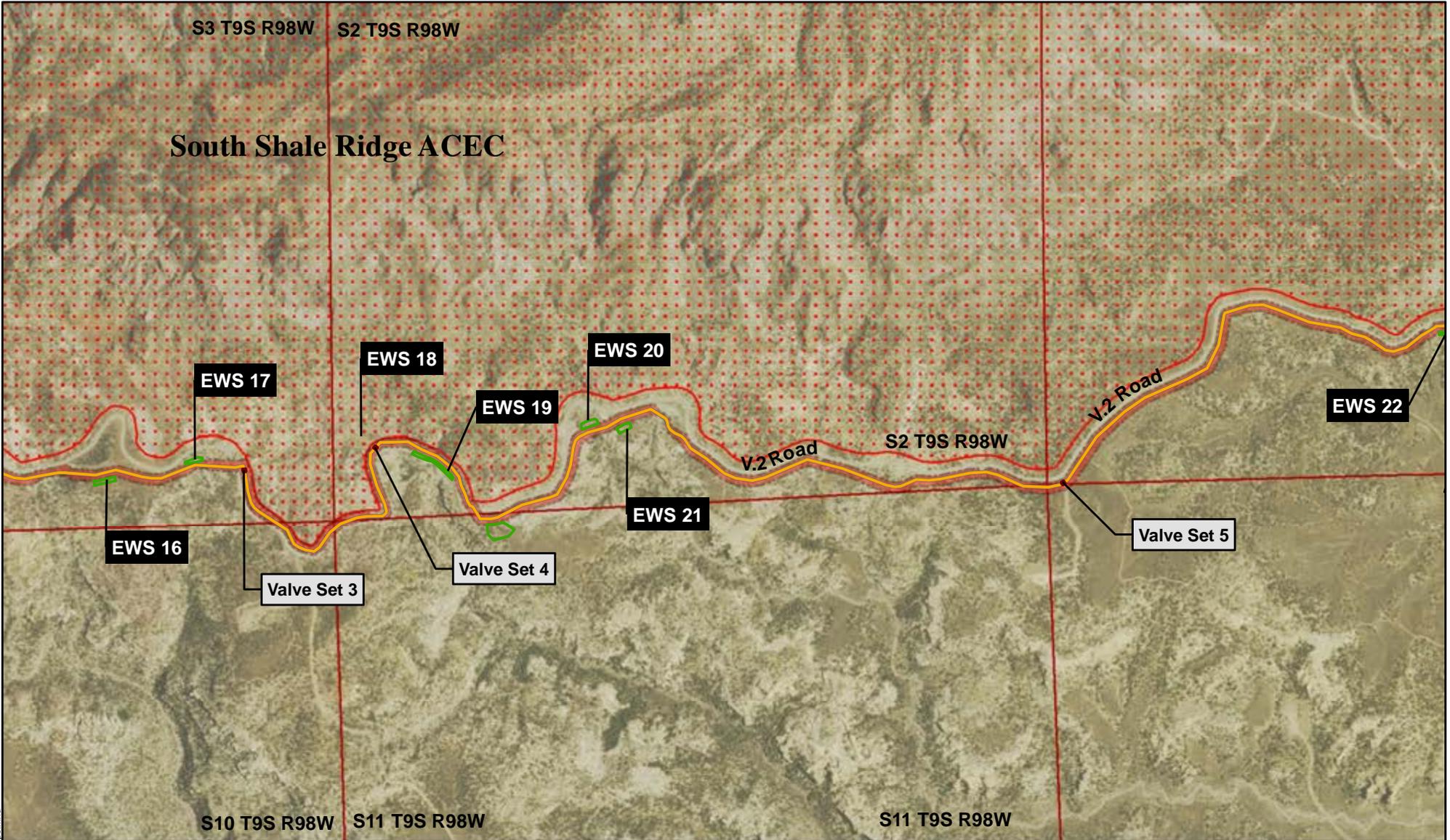


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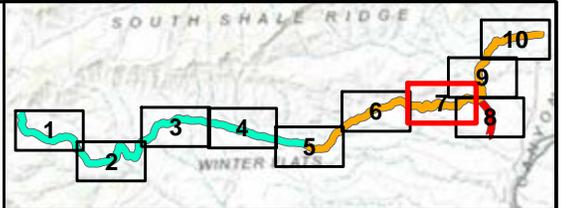
Maps
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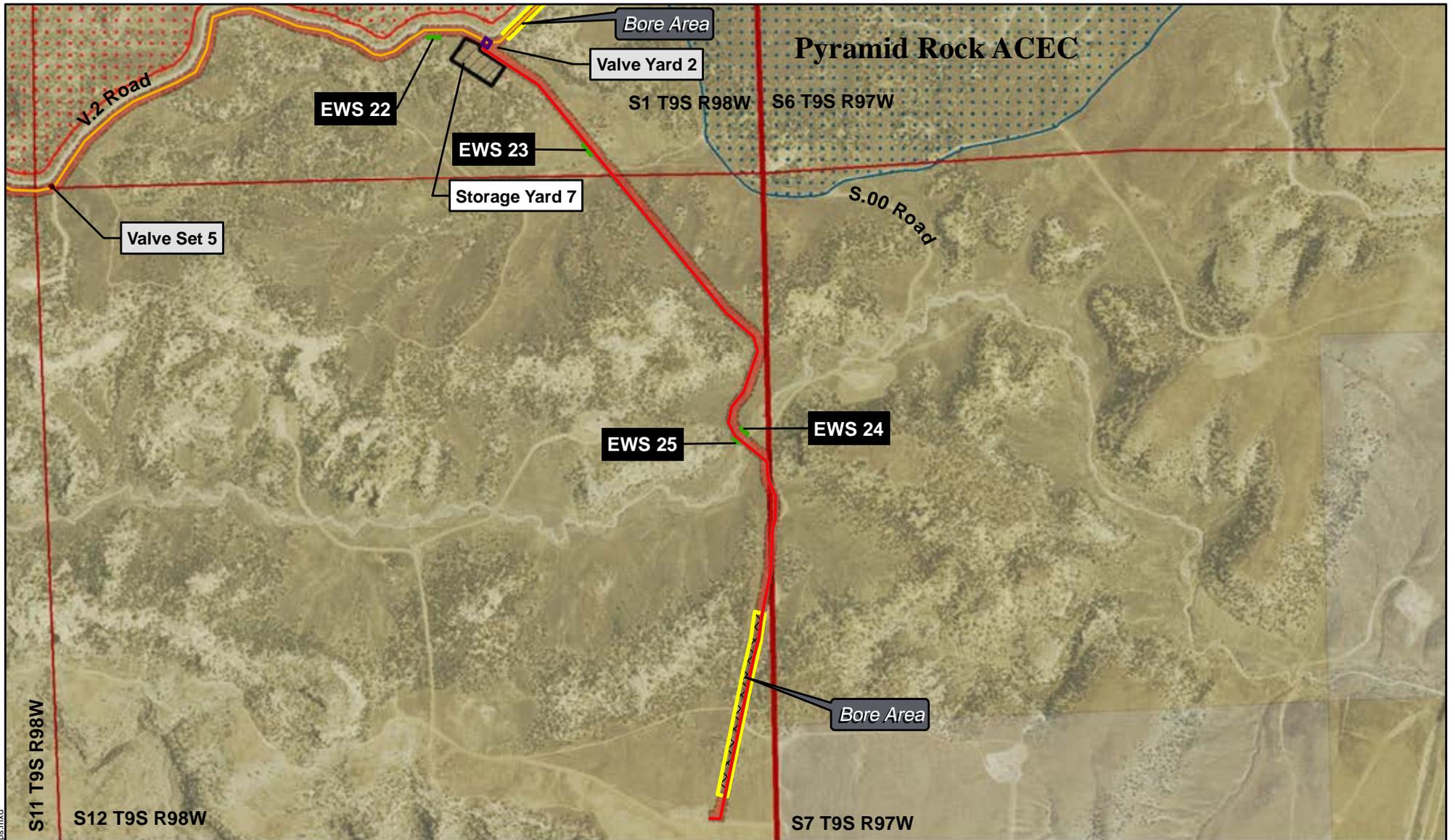


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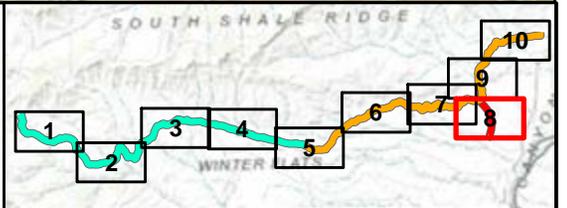
Maps
Tile 7
Winter Flats Pipeline
Mesa County, Colorado

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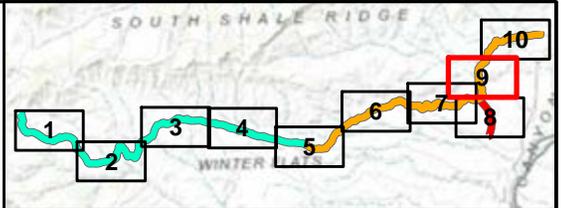
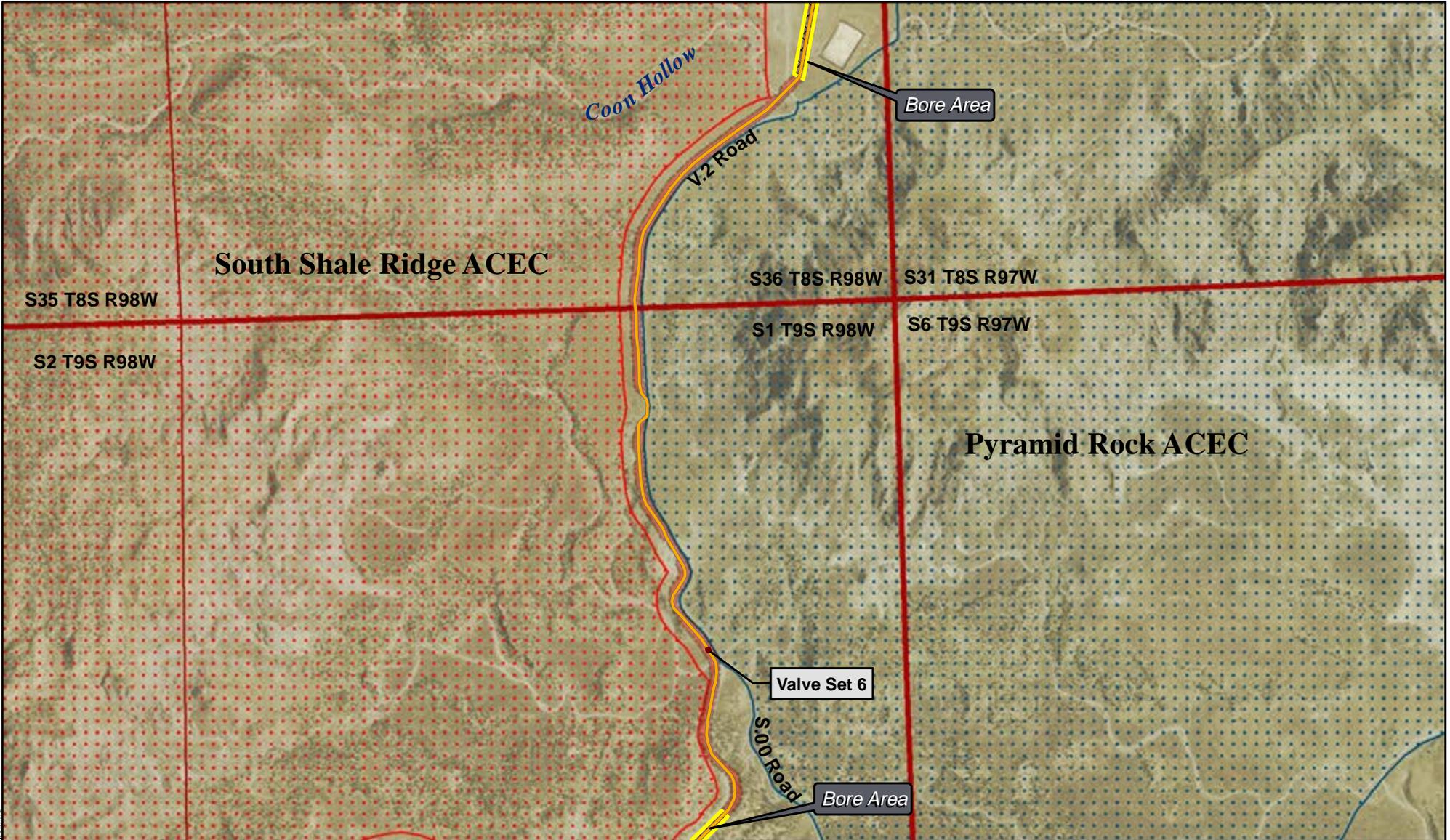


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Maps
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Winter Flats Pipeline
Mesa County, Colorado

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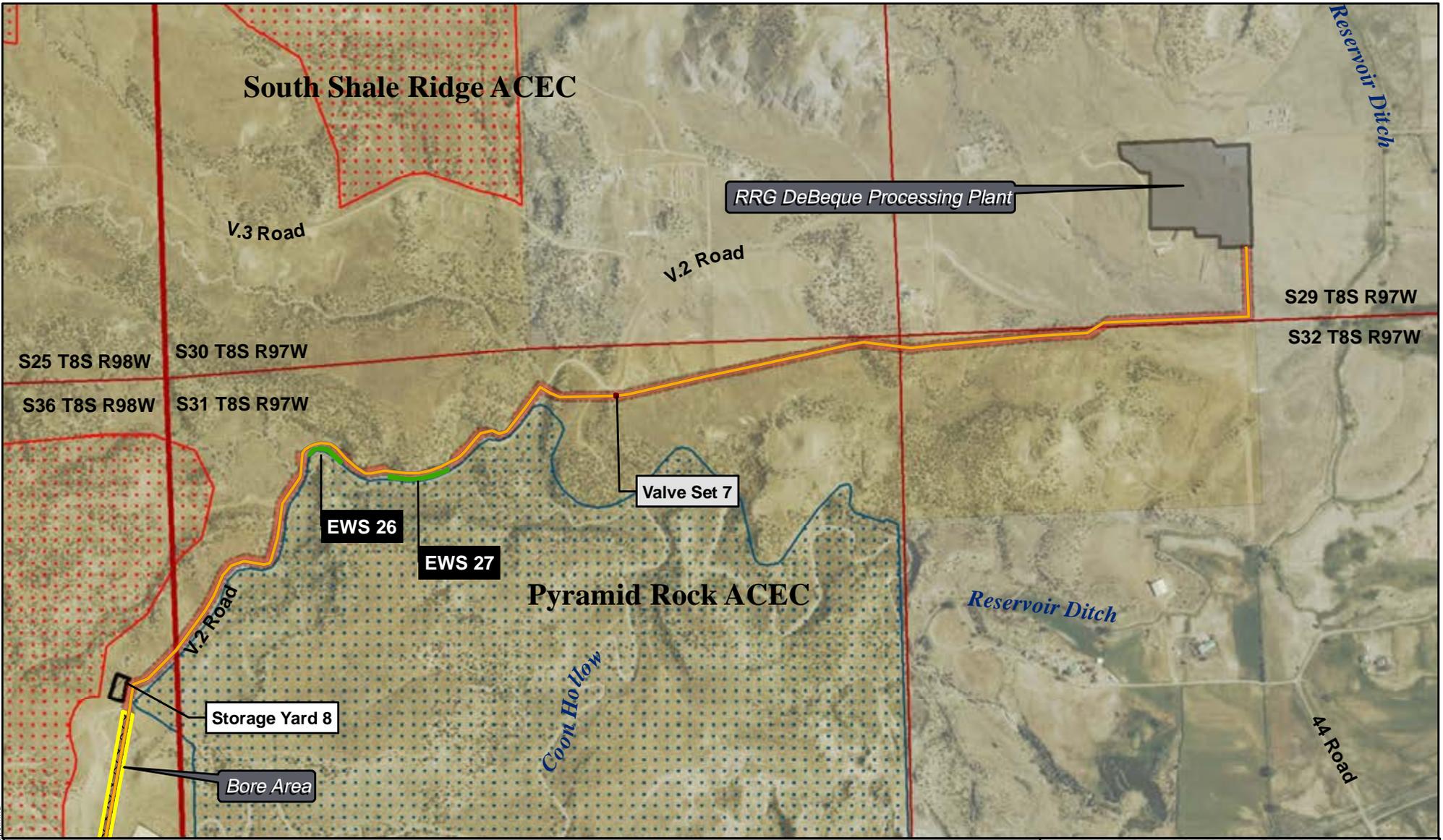
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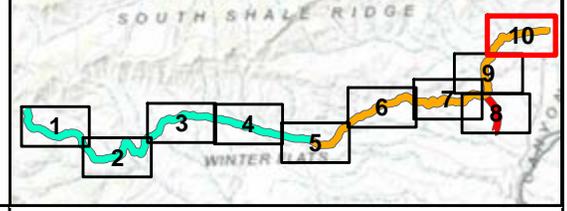
Maps
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APPENDIX B
STIPULATIONS TO THE ROW GRANTS/TUP
INCLUDING
CONSERVATION MEASURES FROM THE USFWS BIOLOGICAL OPINION

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APPENDIX B (Exhibit B, Stipulations)

COC76833 and COC76833-01, Red Rock Gathering Natural Gas Pipelines (MLA) COC76837, Black Hills Plateau Production Water Pipelines (FLPMA)

DOI-BLM-CO-N040-0017-EA, WINTER FLATS PIPELINE PROJECT

Conservation Measures from USFWS Biological Opinion ES/GJ-6-CO-16-F-001

Conservation measures are non-discretionary actions that the BLM and RRG agree to implement to minimize negative effects of the action and to further the conservation and recovery of the listed species under review.

The following conservation measures are taken directly from the Biological Opinion for the Proposed Action, issued by the USFWS on April 5, 2016. These conservation measures shall be given full weight and adhered to strictly by the holders (RRG and BHPP) and their contractors or assigns during all phases of the proposed construction, operation and maintenance, and eventual abandonment of natural gas and water pipelines described in this Environmental Assessment. In the case of inconsistency between any of the following conservation measures and the ROW Stipulations presented below in this Appendix, the conservation measures shall govern. *Note: Some conservation measures specific to oil and gas well pads and new roads are not included.*

General

- RRG shall notify the BLM at least 48 hours prior to initiation of construction or reclamation activities. A pre-construction meeting shall be scheduled to review all conservation measures with RRG and contractor personnel. All onsite personnel shall review these conservation measures before working on the project.
- RRG shall construct, operate, and maintain the facilities, improvements, and structures within the limits of the ROWs granted and in conformity with the plan of development approved and made part of the grant. Any relocation, additional construction, or use not in accord with the approved plan of development shall not be initiated without the prior written approval of the authorized officer. A copy of the complete ROW grant, including all stipulations and the approved plan of development, shall be made available on the ROW area during construction, operation, and termination.
- No hydrostatic testing of pipelines has been proposed. However, if this method becomes necessary, RRG shall notify the BLM to disclose source(s) of water, volume of water, and details of the manner in which the water is to be delivered, collected and reused/disposed.
- BLM's *Noxious and Invasive Weed Management Plan for Oil and Gas Operators* (BLM 2007) shall be used to control or eliminate noxious weeds and other undesirable plants within the project area. Weed treatments shall be limited to spot treatments.
- The Project Area shall be inventoried for weeds prior to ground-disturbing activities. If Colorado List A or List B noxious weeds are documented within 100 feet of the project area, they shall be treated or removed prior to ground-disturbing activities.
- Power wash to remove mud, weed seeds, and propagules from all equipment used at previous construction sites or within sites with weed seed contaminated soil before entering the Project Area and/or moving to uncontaminated terrain. All maintenance vehicles shall be regularly cleaned of soil.

- Construction control and limit-of-disturbance stakes shall be placed before construction and maintained in place to ensure conformance to the approved project plan. RRG shall confirm that limit-of-disturbance markers do not encroach into the South Shale Ridge ACEC, the Pyramid Rock ACEC, or the Little Book Cliffs Wilderness Study Area (WSA) and shall place boundary stakes for these areas where needed to ensure the integrity of these boundaries.
- Control, limit-of-disturbance, and (where appropriate) ACEC or WSA boundary stakes shall be maintained until final cleanup. Any markers that are disturbed, displaced, or removed shall be repositioned or replaced before construction proceeds.
- Pipeline edges shall be marked by construction control stakes to ensure construction in accordance with the specifications. Stakes shall be visible from one to the next and be staked with no more than 100-foot stationing. Any missing or displaced stakes shall be promptly replaced before construction proceeds in proximity to the missing or displaced stakes.
- The width of ROW clearing shall be minimized to avoid undue disturbance to vegetation. Where topsoil salvage and storage is not necessary, brush clearing shall be limited to removal of aboveground vegetation to avoid disturbance of root systems, reducing fugitive dust.
- Dust abatement measures shall be implemented as needed to prevent fugitive dust from vehicular traffic, equipment operations, or wind events. The BLM may direct RRG to change the frequency and/or type of treatment (watering or application of various dust-control agents, surfactants, and road-surfacing material) if dust abatement measures are observed to be insufficient.
- To minimize fugitive dust, associated risks to special status plants or their pollinators, and risks of injury or mortality of wildlife, RRG shall ensure that all project-related traffic west of the RRG natural gas facility adheres to a speed limit of 20 mph, or lower speed limit if posted by Mesa County or as directed by the BLM.
- Best management practices (BMPs), as identified in the stormwater management plan (stormwater discharge permit CO03B947), shall be implemented to prevent sediment from reaching sensitive resource areas, including occupied habitat for special status plants. The BMPs shall be in place before, during, and after construction until the location has reached final stabilization. BMPs include the following:
 - Install sediment traps to collect sediment-laden water from diversion ditches.
 - Install check dams in areas of concentrated flow.
 - Install culverts, rolling dips, or water bars as necessary to provide drainage from reconstructed road surfaces.
 - Install straw wattles/straw rolls to capture sediment.
 - Reclaim disturbance, including seedbed prep to capture water and sediment, as well as seeding disturbed areas and developing vegetative buffers using native vegetative seed mixes and materials. Reclamation shall occur within one growing season after pipeline construction.

Colorado River Endangered Fish Species and Critical Habitat

- During dust suppression, water shall not be applied in volumes that result in flow into drainages.
- All herbicides used in the vicinity of drainages shall be non-toxic to fish and other aquatic organisms. If use of non-toxic herbicides is not possible, other measures shall be used such as biological or mechanical measures to control noxious weeds.
- If trench dewatering water is discharged, it shall be discharged to an upland area at least 150 feet from jurisdictional Waters of the U.S., to infiltrate into the ground without causing erosion. BLM approval

of the discharge location and proposed BMPs shall be obtained before discharging hydrostatic test water to an upland area.

- RRG shall compile a record of the amount of water taken directly or indirectly from the Colorado River basin, including water purchased from the Town of DeBeque or pumped directly from the Colorado River, adjacent surface waters, or tributary streams. The record of water use shall be submitted to the BLM within 2 weeks following completion of construction.
- RRG shall apply the following measures to minimize impingement or entrainment of Colorado River endangered fishes and BLM sensitive fishes if water is pumped from Latham Ponds for use in dust abatement or for any other project-related purpose:
 - Pump water from off-channel locations, not from locations directly connected to the rivers.
 - Screen all pump intakes with 0.25-inch or finer mesh material.
 - Place pumps in fast moving water and/or riffle habitats.
 - Restrict pumping when larval fishes may be present (**June 1 to August 15**).
 - Depending on the species, immediately report any fish impinged on any intake screen to the U.S. Fish and Wildlife Service and/or Colorado Parks and Wildlife (CPW).

Colorado Hookless Cactus

The following conservation measures for cactus are expected to result in avoidance of impacts to cactus individuals.

- No surface-disturbing activities shall occur within 100 meters of Colorado hookless cactus plants during the cactus flowering season (April through May) to minimize indirect effects (dust, etc.) to pollinators and cactus reproduction.
- To prevent direct impacts to Colorado hookless cactus, the project design incorporates boring beneath plants and route modifications to avoid plant occurrences.
- Prior to project development, temporary construction fencing shall be installed at the edge of disturbance where it is within 100 meters of known Colorado hookless cactus plants, to prevent trampling by workers or equipment.
- A botanical monitor, approved by the BLM, shall be present on-site during construction or implementation of conservation measures within 100 meters of Colorado hookless cactus plants or any mapped occupied or suitable habitat.
- Fugitive dust control (watering of roads and other areas of surface disturbance) shall use no additives and shall be implemented along roads and construction areas within 100 meters Colorado hookless cactus plants.
- The holder shall implement a stormwater management plan and install BMPs (e.g., hay wattles) to minimize or avoid altering hydrologic conditions within 20 meters of documented Colorado hookless cactus plants.
- A botanical monitoring report shall be submitted to the BLM by the botanical monitor, providing photographs and documentation of all construction activities within 100 meters of known Colorado hookless cactus plants.
- Colorado hookless cactus plants growing within 20 meters of project activities shall be monitored annually for a minimum of 3 years after ground-disturbing activities. Additionally, select sites shall be monitored every 5 years throughout the life of the project.

- Plants shall be photographed from a staked location prior to ground-disturbing activities and annually during the appropriate flowering season.
- Plant status and health shall be described, including presence of weed species, if any.
- RRG shall submit monitoring reports to the BLM and the Service after each annual survey.
- The holder shall control noxious weeds within the project area. Herbicide used shall be limited to spot-spray or wicking only within 0.5 mile of any Colorado hookless cactus plant, and shall not be used to control weeds within 100 meters of the cactus plants. Noxious weeds closer to Colorado hookless cactus plants shall be removed by hand.

DeBeque Phacelia

The following conservation measures for DeBeque phacelia and its critical habitat are expected to result in avoidance of impacts to individuals.

- If construction is delayed beyond the onset of the 2016 DeBeque phacelia blooming season (April-June), all areas of mapped occupied, suitable, and marginally suitable habitat shall be resurveyed to check for plant emergence prior to construction.
- All identified habitat is potentially occupied, and shall be assumed occupied for purposes of effects analysis and mitigation design.
- If plants are found within 200 meters of the edge of disturbance, there shall be no surface disturbing activities until the plants have concluded their annual life cycle.
- Dust control shall be implemented along the existing road and within construction areas to reduce fugitive dust. This dust control shall be limited to water only, with no additives, unless specifically approved by the BLM. In no instance shall magnesium chloride be used.
- A botanical monitor, approved by the BLM, shall be present on-site during construction and implementation of conservation measures within 200 meters of any mapped occupied, suitable, or marginally suitable habitat. There shall be one botany monitor with each work crew, including the survey crew installing lath markers, at all times when work is occurring within the 200-meter protection buffer. The purpose of the monitors is to prevent negative impacts to special status plants, which could result in a Stop Work Order.
- A botanical monitoring report shall be submitted to the BLM by the botanical monitor, providing photographs and documentation of all construction activities within 100 meters of mapped DeBeque phacelia occupied, suitable, and marginal habitat.
- Known occupied DeBeque phacelia sites, as well as all mapped suitable and marginally suitable habitat, located within 200 meters of the edge of disturbance shall be monitored annually during the appropriate flowering season for a minimum of 3 years after ground-disturbing activities.
- Plants and/or habitat shall be photographed from a staked location prior to ground-disturbing activities and annually during the appropriate flowering season.
- Plant and/or habitat status and health shall be described, including presence of weed species, if any.
- RRG shall submit monitoring reports to the BLM and the Service after each annual survey.
- A temporary construction fence shall be installed at the edge of disturbance wherever disturbance will occur within 100 meters of any mapped occupied, suitable, or marginally suitable habitat. This fence shall remain in place for one year following reclamation seeding, unless the BLM decides it is necessary for the fence to remain longer to allow establishment of vegetation. This fence shall be monitored monthly and repaired as necessary to maintain the fence in a serviceable condition.

- The holder shall treat noxious weeds. No herbicide shall be applied within 100 meters of any known DeBeque phacelia occupied, suitable, or marginally suitable habitat, unless specifically approved by the BLM. In these areas, weeds shall be manually removed.
- Herbicide use shall be restricted to spot-spray or wicking only when applied more than 100 meters and within 0.5 mile of any mapped occupied, suitable, or marginally suitable habitat.
- Following construction, the holder shall implement reclamation seeding using only a BLM-approved seed mix of native, site-appropriate species. One or more BLM-approved mixes of native perennial grasses, native forbs, and native shrubs or subshrubs shall be used in all revegetation efforts. For private surfaces, RRG shall use a BLM-approved native seed mix unless specified otherwise by the private landowner.
- The holder shall conduct annual noxious weed and reclamation monitoring and submit annual reports to the BLM shall be required until the BLM deems the reclamation successful according to standard reclamation criteria.

Nesting Raptors and Migratory Birds

If construction activities occur during the spring months, pre-construction surveys for nesting raptors and migratory birds shall be conducted along the construction work space. The field survey results would be used by the BLM to establish adequate buffer and require protective signage, flagging, or fencing.

General BLM Surface-Use Stipulations for Pipeline Construction and Operation

1. **Administrative Notification.** The holder shall notify the BLM representative at least 48 hours prior to initiation of construction or reclamation activities. A pre-construction meeting shall be scheduled to review all ROW Stipulations with holder and contractor personnel. Copies of all applicable permits shall be kept onsite during construction. All onsite personnel shall review the approved permit and these Stipulations before working on the project.
2. **Construction.** The holder shall construct, operate, and maintain the facilities, improvements, and structures within the limits of the ROWs granted and in conformity with the plan of development approved and made part of the grant. Any relocation, additional construction, or use not in accord with the approved plan of development shall not be initiated without the prior written approval of the BLM. A copy of the complete ROW grant, including all stipulations and the approved plan of development, shall be made available on the ROW area during construction, operation, and termination. Noncompliance with the above will be grounds for an immediate temporary suspension of activities if it constitutes a threat to public health and safety or the environment.

All trash generated during construction of the proposed project shall be contained and removed frequently for disposal or recycling at a proper facility.

3. **Construction Control and Limit-of-Disturbance Staking.** Construction control and limit-of-disturbance stakes shall be placed before construction and maintained in place to ensure conformance to the approved project plan. The holder shall confirm that limit-of-disturbance markers do not encroach into the South Shale Ridge ACEC, the Pyramid Rock ACEC, or the Little Book Cliffs WSA and shall place boundary stakes for these areas where needed to ensure the integrity of these boundaries.

Control, limit-of-disturbance, and (where appropriate) ACEC or WSA boundary stakes shall be maintained until final cleanup. Any markers that are disturbed, displaced, or removed shall be repositioned or replaced before construction proceeds. Pipeline edges shall be marked by construction control stakes to ensure construction in accordance with the specifications. Stakes shall

be visible from one to the next and be staked with no more than 100-foot stationing. Any missing or displaced stakes shall be promptly replaced before construction proceeds in proximity to the missing or displaced stakes.

The width of ROW clearing shall be minimized to avoid undue disturbance to vegetation. Where topsoil salvage and storage is not necessary, brush clearing shall be limited to removal of aboveground vegetation to avoid disturbance of root systems, reducing fugitive dust.

4. Survey Monuments. The holder shall protect all survey monuments found within the ROW. Survey monuments include, but are not limited to, General Land Office and Bureau of Land Management Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of impracticability of avoiding removal of a survey monument, a photographic record shall be made and submitted to the BLM, and the monument shall be re-placed in the same location following project completion. A civil survey shall be conducted of the monument to ensure precision in re-placing the monument.
5. Pipelines. All pipeline construction and maintenance shall follow Gold Book Standards (BLM and Forest Service 2007) and requirements specified by the U.S. Army Corps of Engineers (USACE) as part of its authorization of the project under Section 404 of the Clean Water Act.

Buried pipelines shall have a minimum cover of 48 inches beneath a roadway and at road crossings, 48 inches at drainage crossings, 36 inches through typical soil and rock, and 24 inches in areas requiring boring through bedrock. The holder is responsible for burying a pipeline to a depth that safely accommodates existing land and road uses.

Pipeline crossings through drainage channels shall be constructed to withstand floods of extreme magnitude to prevent rupture and accidental contamination of runoff during high-flow events. Methods and analysis outlined in BLM Technical Note 423 – Hydraulic Considerations for Pipelines Crossing Stream Channels (DOI 2007) shall be closely followed to prevent undesirable events.

No hydrostatic testing of pipelines has been proposed. However, if this method becomes necessary, the holder shall notify the BLM to disclose source(s) of water, volume of water, and details of the manner in which the water is to be delivered, collected and reused/disposed.

All pipeline welds shall be X-rayed to minimize risk of leakage. Where pipelines cross streams that support Federal- or State-listed threatened or endangered species or other sensitive species, the BLM may require additional safeguards, including double-walled pipe, and remotely-actuated block or check valves on both sides of the stream.

Buried pipelines shall be reclaimed to final reclamation standards at the time of installation.

6. Boring of Certain Segments. The holder shall employ all reasonable means of avoiding the potential for future failure of bored segments. In the event of failure to complete a bored section along the specifically approved alignment, the holder will be limited to installing an alternative alignment by boring, unless a suitable surface reroute can be identified and approved by the BLM that avoids impacts to the surface resource surface resource(s) that required use of a bore instead of a trench.
7. As-Built Details. Within 30 days of completing construction, the holder shall submit to the BLM a digital “as-built” file that documents the actual boundaries of disturbance for the project. This perimeter shall include all disturbance related to the pipelines and surface appurtenances, as well as all fill slopes and cut slopes. The as-built file shall also indicate where the permanent pipeline ROWs are narrower than the nominal 50 feet associated with project. The digital depiction shall be in an

ArcGIS-compatible format (shapefile or geodatabase), in NAD83, UTM coordinate system, Zone 13 North, in meters.

8. Other Required Approvals and Permits. This authorization is contingent upon compliance with all appropriate Federal, State, County, and local permits. The holder shall be responsible for obtaining all necessary environmental clearances and permits from all agencies (USACE, U.S. Fish and Wildlife Service, Colorado Department of Transportation, Colorado Department of Public Health and Environment, Colorado Oil and Gas Conservation Commission, Mesa County Road and Bridge Department, and Town of De Beque) before commencing any work under this permit. The holder shall assume all responsibility and liability related to potential environmental hazards encountered in connection with work under this permit.
9. Existing ROWs. The holder shall obtain agreements with all other existing ROW holders, pipeline operators, and other authorized users prior to initiating any surface disturbance activity or other measure potentially affecting such holder's use of existing or approved aboveground or belowground infrastructure.
10. Hazardous Waste/Liability/Waste Disposal. The holder shall adhere to its *Spill Prevention, Control, and Countermeasure Plan* and shall comply with applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder(s) shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, *et seq.*) with regard to any toxic substances that are used, generated by, or stored on the ROW or on facilities authorized under this ROW grant. (See 40 CFR, Part 702799, and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1761.193.)

Any release (leaks, spills, discharges, etc.) of toxic substances in excess of the reportable quantity established by 40 CFR, Part 117, shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the BLM concurrently with the filing of the reports to the involved Federal agency or State government.

11. Road Maintenance. Roads used during implementation or completion of this project shall be restored to a condition consistent with BLM Gold Book standards, including restoration of proper crowns, ditches, water bars, and surface material, and as specified by the Mesa County Road and Bridge Department.
12. Dust Abatement. The holder shall implement dust abatement measures as needed to prevent fugitive dust from vehicular traffic, equipment operations, or wind events. The BLM may direct the holder to change the frequency and/or type of treatment (watering or application of various dust-control agents, surfactants, and road-surfacing material) if dust abatement measures are observed to be insufficient.
13. Vehicle Speeds. To minimize fugitive dust, associated risks to special status plants or their pollinators, and risks of injury or mortality of wildlife, the holder shall ensure that all project-related traffic west of the RRG natural gas facility adheres to a speed limit of 20 mph, or lower speed limit if posted by Mesa County or as directed by the BLM.
14. Road Closures. The holder shall cooperate with Mesa County Road and Bridge Department prior to implementing any road closures during construction and shall provide information signage and traffic control procedures to minimize adverse impacts to travelers on affected roadways. In areas of road closures, the construction contractor shall at all times be prepared to accommodate passage of emergency vehicles with the minimum delay practicable and shall pause the construction work where needed for safety of the emergency responders.

15. Drainage Crossings. The pipelines shall be constructed in a manner that limits alteration of natural drainages and flows. Construction at crossings of ephemeral or intermittent drainages shall not occur when surface flows are present at a crossing point. If surface flows cannot be avoided, the holder may, with written approval of the BLM and USACE, utilize either a piped stream diversion or a cofferdam and pump to divert flow around the disturbance area.

Prior to construction, the holder shall obtain verification from the USACE that drainage crossings are authorized under Nationwide Permit (NWP) 12 for utility line activities, or one or more other NWPs. All permit conditions of NWP shall be adhered to, including requirements to reclaim all drainage crossings to pre-construction contours, and the requirement to avoid working in drainages when surface water is present. Stormwater management protocols shall be implemented to prevent discharge of sediment from the construction ROW into drainages.

Operation of heavy equipment shall not occur in or adjacent to a channel when the substrate and/or adjacent soil is saturated (muddy).

To protect Waters of the U.S., certain locations of the pipeline shall have adequately narrowed ROW widths, shall be bored, or shall be constructed in the roadway.

Following construction, drainage channels shall be restored to approximate their original configuration, including alignment and gradient, channel substrate (including replacement of surficial cobbles or boulders removed during construction), and sideslope height and steepness.

All vehicles or other equipment shall be fueled at least 100 feet from drainages.

16. Fire. The holder shall adhere to its *Fire Safety and Evacuation Plan* and shall implement such additional measures as necessary to prevent fires on public and private land and may be held responsible for the costs of suppressing fires on public land that result from the actions of its employees, contractors, or subcontractors. Range or forest fires caused or observed by the holder's employees, contractors, or subcontractors shall be reported immediately to the BLM Grand Junction Dispatch 970-257-4800. All fires or explosions that cause damage to property or equipment, loss of oil or gas, or injuries to personnel shall be reported immediately to the BLM Grand Junction Field Office at 970-244-3000. During conditions of extreme fire danger, surface-use operations may be restricted or suspended in specific areas, or additional measures may be required by the BLM.

17. Subsequent Maintenance, Repairs, or Change of Use. The holder shall not initiate any construction or other surface-disturbing activities, including those associated with routine or other non-emergency repair or maintenance actions, within the limits of the ROW without prior written authorization by the BLM. Any notice to proceed shall authorize construction or use only as expressly described as to type of activity and to its specific location and timing.

No subsequent use of the pipelines to transport fluids (gases or liquids) other than originally authorized shall occur without approval by the BLM following a technical review and consultation with the SHPO.

18. Notice Prior to Termination. At least 90 days prior to termination of the ROW, the holder shall contact the BLM to arrange a joint inspection of the ROW. This inspection will be held to agree to an acceptable termination and rehabilitation plan. This plan shall include, but is not limited to, removal of surface facilities and recontouring and revegetation of any areas disturbed by the removal of surface facilities. Commencement of termination activities shall not occur without the prior written approval of the BLM.

Upon termination of the ROW, the pipelines associated therewith shall be abandoned in place.

Resource-Specific Stipulations Identified by the BLM during Preparation of the EA (also see USFWS Conservation Measures, above)

19. Air Quality. See Stipulations related to control of fugitive dust, including those related to dust abatement, vehicular speed limits, and reclamation.
20. Cultural Resource Education/Discovery. All persons in the area who are associated with this authorization shall be informed that 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 land is subject to arrest and penalty of law (16 USC 433, 16 USC 470, 18 USC 641, 18 USC 1170, and 18 USC 1361). Any heritage resource discovered requires that work in the area must stop and the BLM immediately notified. Strict adherence to the confidentiality of information concerning the nature and location of archeological resources would be required of the holder and all of their subcontractors (Archaeological Resource Protection Act, 16 U.S.C. 470hh).

Inadvertent Discovery:

- a. The National Historic Preservation Act (NHPA) [16 USC 470s., 36 CFR §800.13], as amended, requires that if newly discovered historic or archaeological materials or other cultural resources are identified during the Proposed Action implementation, work in that area must stop and the BLM must be notified immediately. Within five working days the AO will determine the actions that will likely have to be completed before the site can be used, assuming in place preservation is not necessary §800.13(b)(3).
- b. The Native American Graves Protection and Repatriation Act (NAGPRA) [25 USC 3001 et seq., 43 CFR 10.4] requires that if inadvertent discovery of Native American Human Remains or Objects of Cultural Patrimony occurs, any activity must cease in the area of discovery, a reasonable effort made to protect the item(s) discovered, and immediate notice be made to the BLM as well as the appropriate Native American group(s) (IV.C.2). Notice may be followed by a 30-day delay (NAGPRA §3(d)).

If human remains are discovered on private or state land associated with this authorization, the BLM will notify the State of Colorado Archaeologist immediately, who will comply with Colorado Revised Statutes (Appendix A) regarding the discovery of human remains (24-80-1302).

In the event of a new discovery, the holder may relocate activities to avoid the expense of mitigation and delays associated with this process, as long as the newly discovered area has been appropriately inventoried and has no resource concerns, and the exposed materials are recorded and stabilized. Otherwise, the holder shall be responsible for mitigation costs. The BLM will 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 holder will be allowed to resume construction.

21. Cultural Resource Monitor.

- a. Construction. The holder shall retain the services of a qualified archaeologist to monitor construction activities conducted within 100 feet (30 meters) of any cultural site considered eligible for the National Register of Historic Places. The BLM will provide the archaeological monitor with resource maps, shapefiles, and site descriptions prior to construction. If the monitor determines that construction activities are not in conformance with BLM requirements and that an eligible cultural site is at risk of damage or loss, the monitor shall have the authority to suspend

temporarily the construction activities in that area pending notification of the BLM and a determination by a BLM botanist of how to proceed. The monitor shall have the authority to direct that project-related activities in proximity to the site be temporarily suspended pending notification of the BLM and a determination by a BLM archaeologist of how to proceed.

- b. **Boring.** The archaeological monitor shall be present during all boring and subsequent pipe installation activities beneath cultural sites or within 100 feet (30 meters) of an eligible cultural site. If the monitor observes any indication of imminent risk to the cultural site, the monitor shall notify the holder or its contractor to suspend immediately all associated activities at that location. No further subsurface work shall occur at that site until the BLM project manager, BLM archaeologist(s), and (as appropriate) the SHPO and Tribes can evaluate the situation and develop a plan for how to proceed, up to and including mitigation of the cultural site.
- b. **Long-term Operations and Maintenance.** The holder shall retain a qualified archaeologist to monitor in connection with any necessary surface-disturbing activities within 100 feet (30 meters) of any eligible cultural site. The monitor shall have the same authority to direct that activities cease until review by a BLM archaeologist. Surface-disturbing activities during operations and maintenance shall be confined to the initially authorized disturbance corridor within the permanent ROW and shall not proceed without specific authorization by the BLM.

If future ground-disturbing work related to the bores is proposed by the holder within a site avoided by the bore, such work shall not proceed until the BLM, after consultation with the SHPO and the Tribes, has identified an appropriate treatment plan and such plan has been implemented, up to and including mitigation of the cultural site.

22. **Fossil Resources.** All persons associated with operations under this authorization shall be informed that any objects or sites of paleontological, 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 holder 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 shall be protected until notified to proceed by the BLM.

Where feasible, the holder 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 holder shall work around or set the discovery aside in a safe place to be accessed by the BLM-permitted paleontologist.

23. **Fossil Resource Monitor.** The holder shall retain the services of a qualified paleontologist to monitor construction activities conducted within 100 feet of any fossilized plant or animal remains, and any trace fossil, considered scientifically significant. The BLM will provide the paleontological monitor with resource maps, shapefiles, and site descriptions prior to construction. If the monitor determines that construction activities are not in conformance with BLM requirements or that an identified scientifically significant fossil resources it risk of damage or loss, the monitor shall have the authority temporarily suspend construction in that area pending notification of the BLM and a determination by a BLM paleontologist of how to proceed.
24. **Grazing and Range Management.** The holder shall ensure that damage to range improvements (fences, gates, reservoirs, pipelines, etc.) is avoided and, if damage occurs inadvertently, shall promptly repair or replace the damaged range improvement.

The holder shall minimize the length of trenches remaining open. Trenches remaining open shall have temporary construction fencing or other means of reducing the risk to livestock. Soft plugs of excavated material with ramps on either shall be provided at well-defined livestock trails to allow access across the trench and provide a means of escape for livestock that may fall into the trench. The sides of trenches left open shall be shored to reduce the risk of collapse.

25. Noise. The holder shall undertake measures to avoid unnecessary noise pollution, such as limiting unnecessary idling by heavy equipment and scheduling activities to minimize vehicle trips through or into the Town of De Beque on a daily basis.

To reduce noise impacts to area residents and other users of the project vicinity, the holder shall limit construction to the period 7:00 am to 7:00 pm, when background levels are generally higher and sensitivity to sound is less. Requests for exceptions to this requirement shall be made to the BLM via email (acrocket@blm.gov), with a rationale and detailed information on the location and duration of the exception.

26. Protection of Forest Resources. To minimize the potential for triggering or expanding an outbreak of the *Ips* beetle, any pinyon pine trees trimmed or damaged during construction shall be cut to the ground or grubbed from the ground, chipped, and removed within 24 hours to a location approved by the Colorado State Forest Service. Prior to authorizing use of any slash from pinyon pines for purposes of visual mitigation, erosion control, as a coarse mulch, or to impede travel along a pipeline route by off-highway vehicles OHVs, the BLM will inspect the affected stand for signs of *Ips* beetle infestation. No slash or pruned material from an infected stand shall be used for such purposes.

Any trees cut during preparation for construction shall be cut such that the angle of the cut stump faces away from adjacent roadways to minimize visual impacts.

27. Recreation. To mitigate impacts to recreation, the holder shall post warning signs on roads used for construction to alert recreationists and project personnel to each other's presence and to help avoid accidents. The holder shall also provide notice to landowners and BLM-authorized guides and outfitters of construction schedules, and of road closures, to minimize conflicts with dispersed recreation users.

28. Reclamation. In addition to the general reclamation requirements below, the holder shall adhere to the following reclamation requirements. Additional, site-specific requirements may be included in the *Special Status Plant Protection Plan* to be followed during construction and reclamation.

- a. Deadline for Reclamation Earthwork and Seeding. Reclamation, including seeding of temporarily disturbed areas shall be completed within 10 days following backfilling and contouring of pipeline construction segments. The holder shall contact the BLM by telephone or email at least 1 week before reclamation and reseeding on the first pipeline segment to be reclaimed. This will allow the BLM to schedule a pre-reclamation field visit to ensure that all parties are in agreement and to provide time for adjustments before work is initiated.
- b. Topsoil Stripping, Storage, and Replacement. All topsoil shall be stripped following removal of vegetation. 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.
- c. 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. Following final contouring, the backfilled or ripped surfaces shall be covered evenly with topsoil.

If directed by the BLM, the holder shall implement measures following seedbed preparation (if 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 holder shall conduct soil testing in the area to be reclaimed, and in the adjacent undisturbed soils, 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 holder 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.

- d. **Seed Mixes.** One or more BLM-approved mixes of native perennial grasses, native forbs, and native shrubs or subshrubs shall be used in all revegetation efforts. See **Appendix Tables 1-2 through 1-4** at the end of this appendix for seed-mix menus appropriate for the salt-desert, pinyon-juniper/Wyoming sagebrush/mountain sagebrush, and mountain shrub community types. For privately surface lands, the holder shall use the appropriate seed mix menus provided below unless specified otherwise by the private landowner.

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, with purity and germination test results, 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 land.

- e. **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.

An exception to these seeding requirements will be made for seeding of sagebrush and other small-seeded species such as alkali sacaton, sand dropseed, and showy fleabane. Sagebrush seeding shall occur prior to winter snowfall, or on top of snow. Sagebrush may be sown by broadcast-seeding, or, if not on snowpack, by placing the seed in the fluffy seed box of a seed drill, with the drop tube left open to allow seed to fall out on the ground surface. If drill seeding, other small-seeded species shall be packaged separately to allow for separate application, and shall be planted no deeper than 0.25 inch or broadcast. If an entire site is broadcast-seeded, the small seeds may go in the mix with other species.

If interim revegetation is unsuccessful, the holder shall implement subsequent reseeding until interim reclamation standards are met.

- f. Mulch. Mulch shall be applied within 24 hours following completion of seeding in project areas within pinyon-juniper, sagebrush shrubland, and/or salt desert shrub habitat types. Mulch may consist of either hydromulch or of certified weed-free straw or certified weed-free native grass hay crimped into the soil. Straw or hay mulch shall not be used within Gambel's oak/mountain shrub or montane conifer habitat types unless requested or approved by the BLM. Hydromulch may be used in these areas.

NOTE: Mulch is not required in areas where erosion potential mandates use of a biodegradable erosion-control blanket (straw matting).

- g. 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 be employed as necessary to reduce the transport of sediments into drainages. The BLM 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.
- h. Monitoring. The holder shall conduct annual monitoring surveys of all sites categorized as "holder 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 holder shall be responsible for implementing the corrective actions or other measures specified by the BLM.
29. Soils and Erosion. Cuts and fills shall be minimized when working on erosive soils and on slopes in excess of 30%. Cut-and-fill slopes shall be stabilized through revegetation practices with an approved seed mix shortly following construction activities to minimize the potential for slope failures, erosion, and soil loss. Slopes adjacent to drainages shall be protected with BMPs designed to minimize sediment transport.
30. Steep Slopes. At multiple locations, the proposed pipeline would cross slopes of 40% or greater, which the 2015 GJFO ARMP specifies are to be protected with an NSO stipulation. The steep slopes are associated primarily with crossings of deep, steep-sided drainages and the toes of adjacent slopes on one or both sides of V.2 Road and the existing pipeline alignment. For this project, the BLM has determined that crossing slopes of 40% or greater along the proposed alignment will be authorized, based on the fact that V.2 Road and existing pipelines cross the same areas with no signs of slope failure. In connection with this determination, the BLM may require the holder to utilize special construction or reclamation techniques to ensure subsequent slope stability and facilitate revegetation success.
31. Stormwater Management. The holder shall comply with its *Stormwater Management Plan* and shall install and maintain such other adaptive BMPs as necessary and appropriate for the location. Specific attention shall be given to avoiding or minimizing the transport of eroded soils and other surficial materials to drainages that could transport the eroded materials offsite and into perennial stream reaches. Stormwater BMPs may also serve in conjunction with the *Spill Prevention, Control, and Countermeasures Plan* to reduce or avoid the transport of chemical pollutants spilled or released in proximity to drainages.

Staging, refueling, and storage areas shall be located at least 300 feet from any reservoir, lake, wetland, or natural perennial or seasonally flowing stream or river.

32. **Weed Control.** Before mobilization of equipment onto public land, the holder shall perform inspections to ensure that all construction equipment and vehicles are clean and free of soil, mud, and plant material. Operators of vehicles and other mobile equipment shall avoid driving through or parking on weed infestations.

The holder shall regularly monitor and promptly control noxious weeds and other undesirable plant species as set forth in the Grand Junction 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, including GPS shapefiles of treatment areas and Pesticide Application Records (PARs) (see the letter provided to operators dated February 27, 2014), for the ROW alignments shall be submitted to the BLM by **December 1** of each year.

33. **Wildlife – Big Game.** Surface-disturbing activities, including vegetation removal, positioning of material, construction, other operation of heavy equipment, and reclamation activities shall not occur during the period **December 1 to May 1**. Requests for relief from this TL shall be submitted to the BLM via email.

The 2015 GJFO ARMP also identifies an NSO and TL restriction to protect elk production (calving) areas. However, Colorado Parks and Wildlife has concurred with BLM's determination that application of these restrictions is not required based on the location of the proposed pipeline alignment adjacent to V.2 Road.

To protect big game ungulates (deer and elk) and other large wildlife, the holder shall minimize the length time during which trench segments remain open. Trenches remaining open shall have temporary construction fencing or other means of reducing the risk to big game and other wildlife. Soft plugs of excavated material with ramps on either shall be provided at well-defined wildlife trails to allow access across the trench and provide a means of escape for wildlife that may fall into the trench. The sides of trenches left open shall be shored to reduce the risk of collapse.

34. **Wildlife – Migratory Birds.** Pursuant to BLM Instruction Memorandum 2008-050, and the Migratory Bird Treaty Act, vegetation removal in habitats potentially used for nesting by one or more migratory birds is prohibited from **May 15 to July 15** when nesting birds are present. The BLM may authorize vegetation removal during this period in all or part of the project area based on the limited duration of the construction window and proximity to V.2 Road and an existing pipeline corridor. However, to support such a determination, the holder shall conduct surveys for migratory bird species along the proposed alignments to document the presence and location of territorial (singing) migratory bird species potentially nesting in the area. All surveys shall be conducted during the known nesting periods for potentially present migratory bird species and no more than 2 weeks prior to the vegetation removal. If migratory bird species are found to be nesting within the proposed construction area, active nests shall be avoided.

35. **Wildlife – Birds of Prey.** To protect nesting and other seasonal critical use by raptors, surveys shall be conducted prior to construction activities that are to begin during the raptor nesting season (**February 1 to August 15**) or (for the bald eagle) the winter roosting season (**November 15 to March 15**). The surveys shall include all potential nesting habitat within the species-specific buffer distances from the pipeline alignment (see below) and the results submitted to the BLM. The associated avoidance periods for species or species groups are also presented below. Buffer distances and avoidance periods are identified in Appendix B of the 2015 GJFO ARMP:

- NSO for Golden Eagle or Bald Eagle Nest Sites: Surface occupancy and use and surface-disturbing activities (beyond those that historically occurred in the area prior to nest establishment) are prohibited within **0.25 mile** of active golden eagle or bald eagle nest sites and associated alternate nests.
- TL for Bald Eagle Winter Roosts. Surface-disturbing activities are prohibited within **0.25 mile** of bald eagle winter roosts from November 15 to March 15. Additional restrictions may be necessary within **0.5 mile** of active bald eagle winter roosts if there is a direct line of sight from the roost to the activities.
- TL for BLM Sensitive Raptors: No surface-disturbing activities or surface use is allowed within **0.5 mile** of active or inactive raptor nests:
 - Ferruginous hawk nests, including any alternate nests: February 1 to July 15
 - Northern goshawk nest sites: March 1 to September 30
 - Peregrine falcon and prairie falcon nest cliff(s): March 15 to July 31
- TL for Other Raptors: No surface-disturbing activities or surface uses are allowed within **0.25 mile** of active nests, as mapped in the 2015 GJFO ARMP, BLM's GIS database, or other maps provided by Federal, Tribal, State, or local agencies that are analyzed and accepted by the BLM. The TL applies until the end date specified for each species or until fledging and dispersal of young:
 - Red-tailed hawk nests, including any alternate nests: February 15 to July 15
 - Swainson's hawk nests and associated alternate nests: April 1 to July 15
 - Great horned owl nests: February 1 to August 15
 - Other owls and raptors: March 1 to August 15
 - Cooper's hawk, sharp-shinned hawk, and northern harrier nests: April 1 to August 15

These restrictions apply to nests (or bald eagle roosts) identified during project-specific surveys, and to other nests (or bald eagle winter roosts) within the specified buffers as mapped in the 2015 GJFO ARMP, included in BLM's GIS database, or included on other maps provided by Federal, Tribal, State or local agencies. The TL restrictions for active nests apply until the end date specified above for each species or until fledging and dispersal of young.

In addition to conforming to these restrictions, the holder is responsible for complying with the Migratory Bird Treaty Act, which prohibits the "take" of birds or of active nests, including nest failure caused by human activity that results in physical damage or loss of an active nest or in abandonment of an active nest by one or both adults.

36. Wildlife – Midget Faded Rattlesnake. A pre-project survey and assessment of habitat suitability did not identify breeding or denning sites for the midget faded rattlesnake within the proposed pipeline alignment. However, individual snakes were observed in portions of the project area. Therefore, to the extent practicable and consistent with worker safety, the holder shall avoid injury or mortality of any midget faded rattlesnakes encountered during project-related activities. If a den or other concentration of midget faded rattlesnakes is encountered, the holder shall immediately contact a qualified wildlife consultant or a BLM representative (Sylvia Ringer at 970-876-9062, Heidi Plank at 970-244-3012, Allen Crockett at 970-876-9005, or Julie McGrew at 970-876-9053) and shall temporarily suspend activities in the area until the snakes have dispersed or been relocated to a safe location. The potential for encountering breeding or denning is expected to be greatest during excavation through rock outcrops and associated boulders. See the site-specific monitoring requirement later in this appendix (ROW Stipulation 43).

37. Wildlife – Colorado River Endangered Fishes. The holder shall compile a record of the amount of water taken directly or indirectly from the Colorado River basin, including water purchased from the Town of De Beque or pumped directly from the Colorado River, adjacent surface waters, or tributary streams. The record of water use shall be submitted to the BLM within 2 weeks following completion of construction.
38. Wildlife – All Special Status Fishes. The holder shall apply the following measures to minimize impingement or entrainment of Colorado River endangered fishes and BLM sensitive fishes if water is pumped from Latham Ponds for use in dust abatement or for any other project-related purpose:
- Pump water from off-channel locations, not from locations directly connected to the rivers.
 - Screen all pump intakes with 0.25-inch or finer mesh material.
 - Place pumps in fast moving water and/or riffle habitats.
 - Restrict pumping when larval fishes may be present (**June 1 to August 15**).
 - Depending on the species, immediately report any fish impinged on any intake screen to the USFWS and/or Colorado Parks and Wildlife (CPW).
39. Visual Resource Mitigation. To blend with the natural environment, all permanent aboveground facilities shall be painted with a BLM-approved color. All aboveground facilities visible within the same area shall be painted the same color.

Any trees cut during preparation for construction shall be cut such that the angle of the cut stump faces away from adjacent roadways to minimize visual impacts.

Site-Specific ROW Stipulations for Pipeline Construction and Operation

40. Cultural Site-Specific Monitoring
- a. An archaeological monitor is required for construction and installation of the Winter Flats Pipeline in eight specific locations. The monitor shall be a representative of a cultural resource consultation firm and shall be qualified and permitted to do such archaeological work within the GJFO. The holder shall retain the services of a qualified archaeologist to monitor construction activities conducted within 100 feet (30 meters) of any cultural site considered eligible for the National Register of Historic Places (NRHP). The BLM will provide the archaeological monitor with resource maps, shapefiles, and site descriptions prior to construction.
 - b. No ground-disturbing construction activities at the previously identified eight cultural locations (topsoiling, grading, ditching, boring, etc.) shall begin prior to the archaeologist's arrival. The holder is responsible for notifying the archaeological firm at least 72 hours in advance of any proposed ground disturbance in the specified areas. The holder also is responsible for all construction delays and or damage to cultural manifestations due to insufficient notification of the Archaeological Contractor, and or noncompliance with the following procedures.
 - c. An archaeological monitor is required to be present during surface excavations at opposite ends of planned bores to avoid surface disturbance of eligible sites. In addition, the monitor will be present periodically during boring and pipe installation beneath the site boundary and adjacent 100-foot (30-meter) buffer. During boring, the monitor will watch for any surficial indication of potential damage from boring through the subsurface.

- d. The contractor for the boring work shall suspend work at that site and immediately notify the BLM in the event of any indication of potential surface or shallow subsurface disturbance. Work at that site shall not resume until the BLM archaeologist has inspected the situation and, as appropriate, contacted the SHPO to develop a plan for future action, up to and including mitigation of the site.
- e. If a planned bore cannot be completed successfully in the initially identified alignment, the holder would be required to utilize an alternative subsurface alignment instead of conventional construction. If an appropriate alternative bore alignment cannot be identified, further work on that segment could not resume until the BLM has been consulted and a remedial plan determined.
- f. Archaeological monitoring will involve on-the-ground visual inspection of all construction for the pipeline within specified areas. The archaeologists will follow all ground-disturbing equipment at a cautionary distance, allowing time for the construction dust to settle and for visible detection of buried cultural features to occur. If cultural resources are discovered, all ground-disturbing activities in the vicinity of identified feature(s) shall be halted and a buffer area extending at least 100 feet from the identified feature(s) shall be protected from any additional disturbance until a determination has been made regarding the eligibility of the feature(s) for the NRHP.

If the cultural resources are determined to be eligible for the NRHP, in accordance with the post review discovery provision of Section 106 of the NHPA (36 CFR 800.13(b), the BLM will notify the SHPO and three Ute Tribes within 48 hours of the discovery to provide these groups a reasonable opportunity to respond. Consultation will include identification of appropriate mitigation measures. BLM in cooperation with the holder 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 BLM.

- g. If mitigation via data recovery is deemed necessary, the archaeological contractor or other approved entity will collect appropriate samples for analysis to determine cultural/temporal affiliation and subsistence. At least one stratigraphic profile will be made for each feature identified, and samples for paleo-environmental reconstructions will be taken as appropriate. Periodic reporting to the CRVFO BLM archaeologist of progress and findings will be completed on a weekly or more frequent schedule as deemed necessary by the BLM.
- h. Once all ground-disturbing activities are complete, the archaeological contractor will produce and submit a draft written report to the Colorado River Valley Field Office. Upon acceptance of the report, three final reports will be submitted, one for the CRVFO BLM, one for the GJFO BLM, and one for the SHPO. This report must be in a contextual framework that is compatible with known archaeological knowledge of the area and the Northern Colorado River Basin Context.
- i. An archaeological monitor shall be present during any ground-disturbing work to repair or replace pipeline within the bore under any of the archaeological sites in question during the life of the pipeline. If ground-disturbing work related to the bore is proposed within the site, an appropriate cultural treatment plan will be developed and implemented after consultation with the SHPO and Ute Tribes.

41. Paleontological Site-Specific Monitoring

Six fossil sites considered scientifically significant and located near but not within the proposed ROW would be monitored during construction in proximity to the sites to ensure that they remain undisturbed. At an additional site not considered scientifically significant because the boulder on which the trace fossil is located is not resting in-situ, the holder would be asked to either avoid the

boulder or, alternatively, to use construction equipment, in the presence of the paleontological monitor, to relocate the boulder to a nearby, safe location.

If one or more of the scientifically significant fossils at monitored sites are placed at risk of damage by project-related activities, or if a previously unknown scientifically significant fossil is discovered during construction in proximity to the monitored sites, the monitor shall have the authority to direct that construction in the immediate vicinity be halted until the fossil is documented and salvaged or an alternative response can be determined.

42. Herpetological Site-Specific Monitoring

During field surveys, multiple individuals of midget faded rattlesnake, a BLM sensitive species, were observed in the rocky areas along an eastern segment of the proposed ROW along V.2 Road, suggesting possible proximity to one or more hibernacula (hibernation dens). To reduce the risk of injury or mortality to groups of denning snakes, a qualified biologist approved by the BLM shall be present as a herpetological monitor during construction involving cutting, blasting, or other removal of portions of rock outcrops or associated boulders in the suspected hibernaculum area. This requirement shall apply to construction through an area extending westward from the intersection of V.2 Road and S.0 Road to the crossing by V.2 Road of an unnamed fork of Sulphur Gulch in the south-central portion of Section 3. This requirement is for the period from **October 1 to April 30**.

43. Botanical (Special Status Plant) Site-Specific Monitoring. The following requirements are in addition to requirements for pre-construction staking, pre-construction meetings between BLM and RRG and its contractors, and the botanical monitor, and preparation of a *Special Status Plants Protection Plan*.

De Beque Phacelia:

- a. If construction is delayed beyond the onset of the 2016 De Beque phacelia blooming season (**April through June**), all areas of mapped occupied, suitable, and marginally suitable habitat shall be resurveyed to check for plant emergence prior to construction.
- b. If plants are found within 200 meters of the edge of disturbance, there shall be no surface-disturbing activities until the plants have concluded their annual life cycle.
- c. Dust control along the existing road and within construction areas shall be implemented during construction to reduce fugitive dust. Dust control shall be limited to the use of water, with no additives unless specifically approved by the BLM. In no instance shall magnesium chloride be used by RRG or its contractors during construction within 100 meters of mapped De Beque phacelia occupied, suitable, and marginal habitat.
- d. A botanical monitor, approved by the BLM, shall be present onsite during construction and implementation of conservation measures within 200 meters of any mapped occupied, suitable, or marginally suitable habitat. **There shall be one botany monitor with each work crew, including the survey crew installing lath markers, at all times when work is occurring within the 200-meter protection buffer.** The purpose of the monitors is to prevent negative impacts to special status plants, which could result in a Stop Work Order.
- e. A botanical monitoring report shall be submitted to the BLM by the botanical monitor, providing photographs and documentation of all **construction activities** within 100 meters of mapped De Beque phacelia occupied, suitable, and marginal habitat.
- f. Known occupied sites De Beque phacelia sites, as well as all mapped suitable and marginally suitable habitat, located within 200 meters of the edge of disturbance shall be monitored annually

during the appropriate flowering season for a minimum of 3 years after ground-disturbing activities.

- Plants and/or habitat shall be photographed from a staked location prior to ground-disturbing activities and annually during the appropriate flowering season.
 - Plant and/or habitat status and health shall be described, including presence of weed species, if any.
 - The holder shall submit monitoring reports to the BLM and FWS after each annual survey.
- g. A temporary construction fence shall be installed at the edge of disturbance wherever disturbance will occur within 100 meters of any mapped occupied, suitable, or marginally suitable habitat. This fence shall remain in place for **1 year** following reclamation seeding, unless the BLM decides it is necessary for the fence to remain longer to allow establishment of vegetation. **This fence shall be monitored monthly and repaired as necessary to maintain the fence in a serviceable condition.**
- h. The holder is required to treat noxious weeds. No herbicides shall be applied within 100 meters of any known De Beque phacelia occupied, suitable, or marginally suitable habitat, unless specifically approved by the BLM. In these areas, noxious weeds shall be removed manually.
- i. Within a zone from 100 meters to 0.5 mile from any mapped occupied, suitable, or marginally suitable habitat, herbicide use shall be by spot-spraying or wicking only.
- j. Following construction, reclamation seeding using only a BLM-approved seed mix of native, site-appropriate species shall be required. One or more BLM-approved seed mix of native perennial grasses, native forbs, and native shrubs or subshrubs shall be used in all vegetation efforts. For privately owned surfaces, RRG shall use a BLM-approved native seed mix unless specified otherwise by the private landowner.
- k. Annual noxious weed and reclamation monitoring and reporting to the BLM shall be required until the BLM deems the reclamation successful according to standard reclamation criteria.

Colorado Hookless Cactus:

- a. No surface-disturbing activities shall occur within 100 meters of Colorado hookless cactus plants during the cactus flowering season (**April through May**) to minimize indirect effects (dust, etc.) to pollinators and cactus reproduction.
- b. Control of fugitive dust control shall be implemented along roads and construction areas within 100 meters of Colorado hookless cactus plants. Dust control shall be limited to the use of water, with no chemical additives unless specifically approved by the BLM.
- c. Temporary construction fencing shall be installed at the edge of disturbance within 100 meters of known Colorado hookless cactus plants prior to project development to prevent trampling by workers or damage by equipment or vehicles.
- d. Implementation of a stormwater management plan and installation of BMPs (e.g., hay wattles) shall be required to minimize or avoid altering hydrologic conditions within 20 meters of documented Colorado hookless cactus plants.

- e. The holder is required to treat noxious weeds within the protection area. No herbicides shall be applied within 100 meters of any Colorado hookless cactus plant unless specifically approved by the BLM. In these areas, noxious weeds shall be removed manually.
- f. Within a zone from 100 meters to 0.5 mile from any Colorado hookless cactus plant, herbicide use shall be by spot-spraying or wicking only.
- g. A botanical monitor, approved by the BLM, shall be present onsite during construction and implementation of conservation measures within 100 meters of any mapped Colorado hookless cactus plants.
- h. A botanical monitoring report shall be submitted to the BLM by the botanical monitor, providing photographs and documentation of all construction activities within 100 meters of known Colorado hookless cactus plants.
- i. Colorado hookless cactus plants documented within 20 meters of project disturbance shall be monitored annually during the appropriate flowering period for a minimum of 3 years after ground-disturbing activities. In addition, selected sites shall be monitored every 5 years throughout the life of the project. The sites for long-term monitoring will be identified by the BLM following initial revegetation efforts and selected based on apparent vulnerability to disturbance.
 - Plants within 20 meters of project disturbance shall be photographed from a staked location prior to ground-disturbing activities and annually during the appropriate flowering season.
 - Plant status and health shall be described, including presence of weed species, if any.
 - The holder shall submit monitoring reports to the BLM and UFWS after each annual survey and no later than **October 1** of each year.

De Beque Milkvetch and Naturita Milkvetch:

- a. No surface-disturbing activities shall occur within 100 meters of De Beque milkvetch or Naturita milkvetch plants during their flowering season (**April through early June**) to minimize indirect effects (dust, etc.) to pollinators and milkvetch reproduction. These blooming-season avoidance areas shall be staked prior to construction.
- b. Control of fugitive dust control shall be implemented along roads and construction areas within 100 meters of De Beque milkvetch and Naturita milkvetch plants. Dust control shall be limited to the use of water, with no chemical additives unless specifically approved by the BLM.
- c. Temporary construction fencing shall be installed at the edge of disturbance within 20 meters of known De Beque milkvetch and Naturita milkvetch plants prior to project development to prevent trampling by workers or damage by equipment or vehicles.
- d. A botanical monitor, approved by the BLM, shall be present onsite during construction and implementation of conservation measures within 200 meters of any mapped occupied, suitable, or marginally suitable habitat. **There shall be one botanical monitor with each work crew, including the survey crew installing lath markers, at all times when work is occurring within the 200-meter protection buffer.** The purpose of the monitors is to prevent negative impacts to special status plants, which could result in a Stop Work Order.

- e. The holder is required to treat noxious weeds. No herbicides shall be applied within 100 meters of any mapped occurrence of De Beque milkvetch or Naturita milkvetch unless specifically approved by the BLM. In these areas, noxious weeds shall be removed manually.
- f. Within a zone from 100 meters to 0.5 mile from any mapped occurrence of De Beque milkvetch or Naturita milkvetch, herbicide use shall be by spot-spraying or wicking only.
- g. To mitigate the loss of Naturita milkvetch plants from pipeline construction, Red Rock Gathering Company, LLC, shall remit payment of approximately \$13,500 to the University of Northern Colorado to fund scientific research on response of Naturita milkvetch to disturbance.

APPENDIX TABLES
GJFO Menu-Based Native Seed Mixes by Habitat Type, Winter Flats Project

- All seed placed on public land shall be approved by the BLM and meet BLM standards for species and seeding rate for the specific habitat type within the project area.
- Seed tags must be approved by the BLM before seed application.
- All seed shall be tested by a registered seed analyst for viability/germination and noxious weeds at official state seed analysis lab, within a year of acceptance date.
- Certification shall include a minimum germination rate of 80%, a minimum purity of 90%, source-identification, no noxious weed seeds and no more than 0.5% weight of other weed seeds. Mulch shall be certified weed free. (IM 2006-073)
- Seeding rates in the tables below are for drill-seeding. Double the seeding rate when broadcast-seeding or hydro-seeding.
- Seed mixes shall be matched to the pre-disturbance plant community types.
- **Seed mixes shall adhere to the following menus unless approved in writing by the BLM.**

Table 1-2. Mixed Mountain Shrubland, including Big Sagebrush, Oakbrush (12 to 16 inches annual precipitation)				
<i>Common Name</i>	<i>Species Name</i>	<i>Variety or Species</i>	<i>Soil Preference</i>	<i>Lbs/acre (PLS)</i>
Plant at Least Three of the Following Grasses				
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata</i>	Native Colorado or Utah sources preferred, then Anatone or Goldar	No Limitation	3.7
Indian Ricegrass	<i>Achnatherum [Oryzopsis] hymenoides</i>	UP* variety White River, if available; if not, then Nezpar, Paloma, Rimrock	No Limitation; Good for Dry, Rocky Sites	2.2
Mountain Brome	<i>Bromus marginatus</i>	UP* variety Cold Springs	No Limitation	0.5
Slender Wheatgrass	<i>Elymus trachycaulus (Agropyron trachycaulum)</i>	WRNF, San Luis	No Limitation	3.5
And at Least Two of the Following Grasses				
Bottlebrush Squirreltail	<i>Elymus elymoides, Sitanion hystrix</i>	Fish Creek, Toe Jam, Wapiti	No Limitation	2.7
Muttongrass	<i>Poa fendleriana</i>	Native Colorado or Utah sources preferred	No Limitation	0.3
Prairie Junegrass	<i>Koeleria macrantha</i>	UP* variety Sims Mesa, if available; if not, Colorado or Utah sources preferred	No Limitation	0.6
And at Least One of the Following Grasses				
Letterman Needlegrass	<i>Achnatherum [Stipa] lettermanii</i>	Native Colorado or Utah sources preferred	No Limitation	1.7
Columbia Needlegrass	<i>Achnatherum [Stipa] nelsonii, A. columbiana</i>	Native Colorado or Utah sources preferred	No Limitation	1.7
And at Least One of the Following Grasses				
Thickspike Wheatgrass	<i>Elymus lanceolatus (Agropyron dasystachyum)</i>	Critana, Schwendimar	No Limitation; Some Salt Tolerance	2.0

Table 1-2. Mixed Mountain Shrubland, including Big Sagebrush, Oakbrush (12 to 16 inches annual precipitation)				
<i>Common Name</i>	<i>Species Name</i>	<i>Variety or Species</i>	<i>Soil Preference</i>	<i>Lbs/acre (PLS)</i>
Western Wheatgrass	<i>Pascopyrum [Agropyron] smithii</i>	Uncompahgre Project* (UP) variety, if available; if not, then Rosana, Recovery, or Rodan (Not Arriba)	No Limitation	2.0
And at Least Three of the Following Forbs or Shrubs				
Antelope Bitterbrush	<i>Purshia tridentata</i>	Native Colorado Plateau or Northern Utah sources	No Limitation	1.0
Arrowleaf Balsamroot	<i>Balsamorhiza sagittata</i>	Native Colorado or Utah sources preferred	No Limitation	7.0
Bluestem or Dusty Penstemon	<i>Penstemon cyanocaulis or P. comarrhenus</i>	UP* San Miguel or UP* Delta	No Limitation	1.0
Lewis Flax	<i>Linum lewisii</i>	Maple Grove, or Native Colorado/Utah sources	No Limitation	1.0
Showy Fleabane**	<i>Erigeron speciosus</i>	UP* Dry Fork	No Limitation	0.1
Utah Sweetvetch	<i>Hedysarum boreale</i>	Upper Colorado Environmental Plant Center***	No Limitation	2.0
Western Yarrow	<i>Achillea millefolium</i>	UP* Dry Fork	No Limitation	0.2

Footnotes are provided following Table 1-4.

Table 1-3 (Version 1). Pinyon-Juniper Woodland and/or Mountain/Wyoming Sagebrush/Grass Shrubland (12 to 16 inches annual precipitation)				
<i>Common Name</i>	<i>Species Name</i>	<i>Variety or Species</i>	<i>Soil Preference</i>	<i>Lbs/acre (PLS)</i>
Plant All of the Following Grasses				
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata</i>	Native Colorado or Utah sources preferred; if not, then Anatone or Goldar	No Limitation	2.8
Indian Ricegrass	<i>Achnatherum [Oryzopsis] hymenoides</i>	Native Colorado or Utah source; if not, then Nezpar, Paloma, Rimrock	No Limitation Good for Dry, Rocky Sites	2.7
Thickspike Wheatgrass	<i>Elymus lanceolatus</i>	Critana, Schwendimar	No Limitation Some salt tolerance	3.3
And at Least Two of the Following Grasses				
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	Fish Creek, Toe Jam, Wapiti	No Limitation	2.0
Sandberg bluegrass	<i>Poa sandbergii or P. secunda</i>	UP* Colorado-Sims Mesa	No Limitation	0.3
Slender wheatgrass	<i>Elymus trachycaulus</i>	San Luis	No Limitation	3.5
And at Least Two of the Following Grasses				
Galleta	<i>Pleuraphis jamesii</i>	Native Colorado or Utah sources preferred	No Limitation	1.0
Needle-and-thread; Needlegrasses	<i>Hesperostipa comata; Achnatherum [Stipa] nelsonii, A. lettermanii, or A. columbiana</i>	Native source within 500 miles	No Limitation; Good on Sandy Sites	0.3

Table 1-3 (Version 1). Pinyon-Juniper Woodland and/or Mountain/Wyoming Sagebrush/Grass Shrubland (12 to 16 inches annual precipitation)				
<i>Common Name</i>	<i>Species Name</i>	<i>Variety or Species</i>	<i>Soil Preference</i>	<i>Lbs/acre (PLS)</i>
Sand Dropseed**	<i>Sporobolus cryptandrus</i>	UP* Dolores; if not, then Native Colorado or Utah sources	No Limitation	0.1
And Three to Five of the Following Forbs or Shrubs				
American Vetch	<i>Vicia americana</i>		No Limitation	2.0
Bluestem or Dusty Penstemon	<i>Penstemon cyanocaulis</i> or <i>Penstemon comarrhenus</i>	UP* San Miguel or UP* Delta	No Limitation	1.0
Broom Snakeweed	<i>Gutierrezia sarothrae</i>	Native Colorado or Utah sources preferred	No Limitation	0.2
Fernleaf Biscuitroot	<i>Lomatium dissectum</i>	Native Colorado or Utah sources preferred	No Limitation	0.3
Fourwing Saltbush	<i>Atriplex canescens</i>	Native Colorado or Utah sources preferred	No Limitation	1.0
Hairy Golden-aster	<i>Chrysopsis villosa</i>	Native Colorado or Utah sources preferred	No Limitation	0.5
Lewis Flax	<i>Linum lewisii</i>	Maple Grove. Native Colorado or Utah sources preferred	No Limitation	0.5
Rocky Mountain Beeplant	<i>Cleome serrulata</i>	Native Colorado or Utah sources preferred	No Limitation; Alkali/Salt Tolerant	0.5
Scarlet Globemallow	<i>Sphaeralcea coccinea</i>	Native Colorado or Utah sources preferred	No Limitation	0.5
Showy Fleabane**	<i>Erigeron speciosus</i>	UP* Dry Fork	No Limitation	0.1
Sulphur Buckwheat	<i>Eriogonum umbellatum</i>	UP* Burn Canyon	No Limitation	0.5
Utah Sweetvetch	<i>Hedysarum boreale</i>	Upper Colorado Environmental Plant Center***	No Limitation	2.0
Western Yarrow	<i>Achillea millefolium</i>	UP* Dry Fork	No Limitation	0.3
Winterfat	<i>Krascheninnikovia [Eurotia] lanata</i>	Native Colorado or Utah sources preferred	No Limitation	2.4

Footnotes are provided following Table 1-4.

Table 1-3 (Version 2). Pinyon-Juniper Woodland and/or Mountain/Wyoming Sagebrush/Grass Shrubland (12 to 16 inches annual precipitation)				
<i>Common Name</i>	<i>Species Name</i>	<i>Variety or Species</i>	<i>Soil Preference</i>	<i>Lbs/acre (PLS)</i>
Plant All of the Following Grasses				
Indian Ricegrass	<i>Achnatherum [Oryzopsis] hymenoides</i>	Native Colorado or Utah source; if not, then Nezpar, Paloma, Rimrock	No Limitation Good for Dry, Rocky Sites	2.7
Thickspike Wheatgrass	<i>Elymus lanceolatus</i>	Critana, Schwendimar	No Limitation Some salt tolerance	3.3
Western Wheatgrass	<i>Pascopyrum [Agropyron] smithii</i>	Uncompahgre Project* (UP). Native Colorado or Utah variety; if not available, then Rosana, Recovery, Rodan (Not Arriba)	No Limitation	2.0
And at Least Two of the Following Grasses				
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata</i>	Native Colorado or Utah sources preferred, then Anatone or Goldar	No Limitation	2.8

Table 1-3 (Version 2). Pinyon-Juniper Woodland and/or Mountain/Wyoming Sagebrush/Grass Shrubland (12 to 16 inches annual precipitation)

<i>Common Name</i>	<i>Species Name</i>	<i>Variety or Species</i>	<i>Soil Preference</i>	<i>Lbs/acre (PLS)</i>
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	Fish Creek, Toe Jam, Wapiti	No Limitation	2.0
Sandberg Bluegrass	<i>Poa sandbergii</i> or <i>P. secunda</i>	UP* Colorado-Sims Mesa	No Limitation	0.3
Slender Wheatgrass	<i>Elymus trachycaulus</i>	San Luis	No Limitation	3.5
And at Least Two of the Following Grasses				
Basin Wildrye	<i>Leymus cinereus</i>	Intermountain Tetraploid	Salt Tolerant	1.0
Galleta	<i>Pleuraphis jamesii</i>	Native Colorado or Utah sources preferred	No Limitation	1.0
Needle-and-thread; Needlegrasses	<i>Hesperostipa comata</i> ; <i>Achnatherum [Stipa] nelsonii</i> , <i>A. lettermanii</i> , or <i>A. columbiana</i>	Native source within 500 miles	No Limitation; Good on Sandy Sites	0.3
Sand Dropseed**	<i>Sporobolus cryptandrus</i>	UP* Dolores; if not, then Native Colorado or Utah sources	No Limitation	0.1
And Three to Five of the Following Forbs or Shrubs				
Bluestem or Dusty Penstemon	<i>Penstemon cyanocaulis</i> or <i>Penstemon comarrhenus</i>	UP* San Miguel or UP* Delta	No Limitation	1.0
Broom Snakeweed	<i>Gutierrezia sarothrae</i>	Native Colorado or Utah sources preferred	No Limitation	0.2
Fernleaf Biscuitroot	<i>Lomatium dissectum</i>	Native Colorado or Utah sources preferred	No Limitation	0.3
Fourwing Saltbush	<i>Atriplex canescens</i>	Native Colorado or Utah sources preferred	No Limitation	1.0
Hairy Golden-aster	<i>Chrysopsis villosa</i>	Native Colorado or Utah sources preferred	No Limitation	0.5
Lewis/Blue Flax	<i>Linum lewisii</i>	Maple Grove. Native Colorado or Utah sources preferred	No Limitation	0.5
Rocky Mountain Beeplant	<i>Cleome serrulata</i>	Native Colorado or Utah sources preferred	No Limitation; Alkali/Salt Tolerant	0.5
Scarlet Globemallow	<i>Sphaeralcea coccinea</i>	Native Colorado or Utah sources preferred	No Limitation	0.5
Showy Fleabane**	<i>Erigeron speciosus</i>	UP* Dry Fork	No Limitation	0.1
Sulphur Buckwheat	<i>Eriogonum umbellatum</i>	UP* Burn Canyon	No Limitation	0.5
Utah Sweetvetch	<i>Hedysarum boreale</i>	Upper Colorado Environmental Plant Center***	No Limitation	2.0
Western Yarrow	<i>Achillea millefolium</i>	UP* Dry Fork	No Limitation	0.3
Winterfat	<i>Krascheninnikovia lanata</i>	Native Colorado or Utah sources preferred	No Limitation	2.4

Footnotes are provided following Table 1-4.

Table 1-4. Low Elevation Semi-/Salt-Desert Grass/Shrubland, Basin Big Sagebrush (8 to 10 inches annual precipitation)				
<i>Common Name</i>	<i>Species Name</i>	<i>Variety or Species</i>	<i>Soil Preference</i>	<i>Lbs/ acre (PLS)</i>
Plant All of the Following Grasses				
Alkali Sacaton**	<i>Sporobolus airoides</i>	Native Colorado or Utah sources preferred	Alkali/Salt Tolerant	0.1
Indian Ricegrass	<i>Achnatherum [Oryzopsis] [Stipa] hymenoides</i>	Native Colorado or Utah source preferred; if not, then Nezpar, Paloma, Rimrock	No Limitation; Good for Dry, Rocky Sites	3.7
Sand Dropseed**	<i>Sporobolus cryptandrus</i>	UP* Dolores, if available; if not, then Native Colorado or Utah sources preferred	No Limitation; Good on Sandy Sites	0.1
And at Least Two of the Following Grasses				
Bottlebrush Squirreltail	<i>Elymus elymoides, Sitanion hystrix</i>	Fish Creek, Toe Jam, Wapiti	No Limitation	2.4
Salina Wildrye	<i>Leymus salinus</i>	Native Colorado or Utah sources preferred	No Limitation; Salt/Clay Tolerant	1.0
Western Wheatgrass	<i>Pascopyrum [Agropyron] smithii</i>	UP* variety, if available; if not, then not, then: Rosana, Recovery, Rodan (NOT Arriba)	No Limitation	1.5
And at Least One of the Following Grasses				
Galleta	<i>Pleuraphis jamesii</i>	Native Colorado or Utah sources preferred	No Limitation	1.0
Purple (Red) Three-Awn	<i>Aristida purpurea</i>	(Not parishii or perplexa)	No Limitation	1.0
And Both of the Following Shrubs				
Fourwing Saltbush	<i>Atriplex canescens</i>	Native Colorado or Utah sources preferred	No Limitation	2.7
Shadscale	<i>Atriplex confertifolia</i>	Native Colorado or Utah sources; if not, then Rincon, Snake River Plains, Wytana	No Limitation; Salt Tolerant	2.0
And One to Three of the Following				
Gardner's Saltbush	<i>Atriplex gardneri</i>	Native Colorado or Utah sources preferred	No Limitation; Alkali/Salt Tolerant	0.3
Scarlet Globemallow	<i>Sphaeralcea coccinea</i>	Native Colorado or Utah sources preferred	No Limitation	0.5
Winterfat	<i>Krascheninnikovia [Eurotia] lanata</i>	Native Colorado or Utah sources preferred	No Limitation; Good on Sandy Sites	2.4

Footnotes are provided following Table 1-4.

*Uncompahgre Project (UP), Kathy See, nativeplant@upartnership.org , 970-240-9498, 970-901-8247

UP seed - commercial growers/distributors:

- Granite Seed, <http://www.graniteseed.com>, 888-577-5650
- Southwest Seed, Walt Hennes, <http://www.southwestseed.com>, 970-565-8722
- Benson Farms, Jerry Benson, <http://www.bfinativeseeds.com>, 509-765-6348
- L & H Seed, Paul Herman, <http://www.lhseeds.com>, 509-234-1010
- Seed-rite, Keith Schafer, <http://www.seedrite.com>, 509-982-2400
- Bear Tooth Seed (was Heart Mountain Seed), Brian Duyck, 307-272-7779
- Southwest Seed, Walt Hennes, <http://www.southwestseed.com>, 970-565-8722

** If planning to drill-seed, small seeds must be packaged separately to allow for separate application. Small seeds, such as alkali sacaton, fleabane, flax, and sand dropseed shall be planted no deeper than 0.25 inch or broadcast. If an entire site will be broadcast-seeded, the small seeds can go in the mix.

***Upper Colorado Environmental Plant Center, Meeker, CO; 970-878-5003

****John Proctor, White River National Forest (sedimentary soils @ 9500' elev)
http://fs.fed/us/wildflowers/NativeP_Plant_Materials/developing/witeriver.shtml
- Southwest Seed, Walt Hennes, <http://www.southwestseed.com>, 970-565-8722

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APPENDIX C

PUBLIC COMMENTS AND BLM RESPONSES

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PUBLIC COMMENTS AND BLM RESPONSES

The BLM posted a letter and location map describing the project on the BLM website on July 15, 2015. At the same time, 20 copies of the letter and map were mailed to nearby landowners and other interested parties. In addition, the BLM placed a more detailed Proposed Action on the website and invited public comment for a 30-day period from August 1 to August 31, 2015. A synopsis of the project and invitation for comments was also posted in the Glenwood Springs *Post Independent* and the Rifle *Citizen Telegram* on July 16, 2015.

Only one group of comments were received. The comments were provided by telephone call from Ms. Kim Heidl, an adjacent landowner with a mailing address in De Beque, to Allen Crockett, BLM's Supervisory NRS for the CRVFO. The synopsis of the comments was then provided to Ms. Heidl for review, but no reply was received. Ms. Heidl's comments were as follows:

Comment: Ms. Heidl stated that she had talked with two BLM Grand Junction representatives perhaps 6 months previously about being surrounded by oil and gas facilities. When attempting to make follow-up contact, she was told that those individuals no longer work with BLM in Grand Junction.

Response: *With the oil and consolidation between the BLM Grand Junction and Colorado River Valley (Silt) Field Offices, it is possible that those individuals were among three who are now associated with the Silt Office.*

Comment: BLM is not considerate of residents and people's homes, which is why there are often hard feelings toward the agency. She disagrees with some locations that BLM has approved, such as a pipeline route that has been flagged across a small (300-foot) hill instead of below it. The flagged alignment is within 200 feet of her house and will require removal of juniper trees that would otherwise provide visual screening.

Response: *Ms. Heidl was asked to circle the specific hill on a map subsequently mailed to her and to return the map to the BLM office in Silt to help in understanding the comment. No return mailing was received.*

Comment: Construction of the pipelines is a good thing overall, including for the town, by replacing heavy truck traffic for the haulage of water to and from the well pads for use in drilling and completions and produced water from the well pads to a Black Hills facility for treatment and disposal.

Response: *Thank you for your comment.*

Comment: Black Hills and Red Rock Gathering have been great companies to deal with and make efforts to minimize impacts on neighbors and the community.

Response: *Thank you for your comment.*

A copy of the Dear Public letter is provided on the following page.



United States Department of the Interior



BUREAU OF LAND MANAGEMENT
Colorado River Valley Field Office
2300 River Frontage Road
Silt, CO 81652

IN REPLY REFER TO:
LLCON040/3160
COC76833, COC76833T, and COC76837

July 15, 2015

Dear Interested Public,

The Bureau of Land Management (BLM) Colorado River Valley Field Office is initiating an Environmental Assessment (EA) for the proposed Winter Flats natural gas and water pipeline upgrades and new pipeline construction. The project area is west of De Beque, Mesa County, Colorado, generally located along or near Mesa County Roads V.2 and V.6 (see attached map). The proponent, Red Rock Gathering Company, LLC (RRG), proposes to construct new buried, collocated natural gas and water pipelines and to convert an existing gas pipeline to a water pipeline. The pipelines would serve existing and proposed Black Hills Plateau Production (BHPP) oil and gas well pads. The water lines would transport fresh water to the oil and gas well pads for use in drilling and completion operations and produced water from the well pads for treatment and re-use or disposal.

The proposed pipelines would cross approximately 21.4 miles of BLM lands and would parallel an existing RRG pipeline corridor and County Roads V.2 and V.6 along most of their length. RRG is requesting a 30-foot-wide permanent ROW on BLM lands, encompassing approximately 77.8 acres along the 21.4-mile combined corridor length, plus an adjacent 45-foot-wide temporary use permit to provide for construction, access, equipment operation, and material handling. RRG hopes to begin work in fall 2015.

Rare plant and cultural resource surveys are currently nearing completion along the existing pipeline alignment, constructed in the 1980s. Surveys are also being conducted along one or more potential deviations from the existing alignment for resource protection. The EA will analyze the proponent's preferred alignment and any of the alternatives that it has identified as technically feasible and for which resource surveys have been completed to BLM's satisfaction.

Although the Winter Flats Pipeline project area lies within the administrative boundaries of BLM's Grand Junction Field Office (GJFO), the project is being managed by BLM's Colorado River Valley Field Office (CRVFO) in Silt, Colorado. This change is part of an oil and gas consolidation program in BLM Colorado's Northwest District. A more detailed Proposed Action, currently under review by the BLM, is expected to become available to the public later in July, either in the BLM office in Silt, Colorado, or online at https://www.blm.gov/epl-front-office/eplanning/lup/lup_register.do.

As a starting point in the assessment process, the BLM is soliciting input on the issues to be considered in preparation of the EA. You are encouraged to provide any comments, concerns, or issues that you may have with regard to the proposed development plan. Comments will be most helpful if received by August 17, 2015. Written comments and questions should be directed to the attention of the undersigned at BLM, Colorado River Valley Field Office, 2300 River Frontage Road, Silt, CO 81652, or electronically at blm_co_si_mail@blm.gov. Thank you in advance for your participation.

Sincerely,

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

**United States Department of the Interior
Bureau of Land Management
Grand Junction Field Office, Colorado**

FINDING OF NO SIGNIFICANT IMPACT

**Red Rock Gathering Company, LLC
Black Hills Plateau Production, LLC
Winter Flats Pipeline Project, Mesa County, Colorado
DOI-BLM-CO-N040-2015-0017-EA**

Based on the analysis of potential environmental impacts contained in the attached Environmental Assessment (EA), and considering the significance criteria in 40 CFR 1508.27, I have determined that the Proposed Action would not have a significant effect on the human environment. An Environmental Impact Statement (EIS) is therefore not required.

BACKGROUND

Red Rock Gathering Company, LLC (RRG) is currently operating natural gas gathering pipelines along a length of approximately 20 miles generally adjacent to Mesa County V.2 Road west of De Beque, Mesa County Colorado. The gas pipelines transport natural gas from existing wells operated by Black Hills Plateau Production LLC (BHPP) to RRG's facility at the eastern terminus of the pipelines. Although the existing number of BHPP wells is limited, the BLM approved an Environmental Assessment in 2013 (DOI-BLM-CO-130-2012-EA) authorizing additional BHPP well pads and wells on its Federal oil and gas leases in the area. Total length of proposed natural gas and collocated water pipelines would be 21.94 miles, of which 21.44 miles would be on BLM-administered public land. Because RRG is a third-party entity and not the oil and gas lessee, construction and operation of the gas pipeline would require issuance of a BLM Right-of-Way. An additional 0.5 mile on private land would not require a ROW grant.

In addition, the BLM is currently analyzing a proposal by BHPP that, if approved, would allow additional wells on its Federal leases in the area (DOI-BLM-CO-N040-2015-0015-EA). The request by RRG for authorization to construct the new gas pipeline, and a collocated water pipeline to be constructed concurrently in the same trench, is based on the need to accommodate expected future increases in natural gas development and production from the BHPP leases. Upon completion, the water pipelines would be owned and operated by BHPP to transport raw water to its existing, approved, and planned wells for use in drilling and completions and to transport produced water to its water management facility for treatment and reuse or proper disposal.

Both RRG and BHPP have submitted SF-299 forms to the BLM requesting new permanent ROW grants for natural gas and water pipelines, respectively. RRG has also requested a Temporary Use Permit (TUP) adjacent to the permanent ROW for use during construction. The water pipelines, being collocated with the gas pipeline, would not require a separate TUP. As a final component of the Proposed Action, RRG has requested authorization to convert 5.56 miles of existing natural gas pipeline on public land to a water pipeline and assign that segment to BHPP.

INTENSITY/SEVERITY

I have considered the potential intensity and severity of the impacts anticipated from the Proposed Action of constructing buried natural gas and water pipelines across 21.94 miles of public land. My decisions relative to each of the ten areas suggested for consideration by the CEQ are as follows:

1. Impacts that may be both beneficial and adverse.

This project would have short-term impacts to soils, vegetation, wildlife, and air and water quality during construction activities. These impacts would not be significant and would decrease following completion of construction and revegetation. The project would have a long-term benefit by accommodating increased production of Federal oil and gas resources and enabling Black Hills to utilize pipelines instead of haul trucks to transport fresh water and produced water. The project would also have short-term benefits from employment and long-term benefits from generation of revenue in the form of a variety of State and local taxes and, to the extent that additional natural gas production is accommodated, from increased Federal royalties.

2. The degree to which the proposed action affects public health and safety.

The proposed action is not expected to have significant adverse impacts on public health and safety.

3. Unique characteristics of the geographic area such as proximity of historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

The proposed action would not result in significant impacts to historic or cultural resources, park lands, irrigated prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas. The project has been designed to avoid impacts or minimize impacts to other resources and uses, including visual resources. The project would avoid the South Shale Ridge and Pyramid Rock ACECs and the Little Book Cliffs WSA. Impacts to surface resources would also be minimized by narrowing the ROW width along 0.53 mile of pipeline length and installing 0.82 mile of pipeline length by boring instead of trenching, narrowing the construction corridor. Two types of unique characteristics potentially affected by the proposed action required additional analysis in the EA based on specific Right-of-Way Avoidance Areas (ROWAs) identified in the 2015 GJFO ARMP:

Cultural Resources and Native American Religious Concerns – Some surface disturbance would encroach into the 200-meter buffer around one cultural site allocated to Traditional Use and protected under the GJ-NSO-38 (ROWA). In addition, some segments of pipeline would be installed using bores beneath other sites to avoid surface disturbance to cultural sites. Measures analyzed in the EA and attached as stipulations to the Right-of-Way grants and Temporary Use Permit would also prohibit future surface disturbance in connection with maintenance, repair, or abandonment activities. On March 28, 2016, the State Historic Preservation Officer (SHPO) concurred with a finding of no significant impact.

Ecologically Critical Areas – A portion of the proposed pipeline alignment would traverse an elk production (calving) area mapped by Colorado Parks and Wildlife (CPW) and protected under the 2015 GJFO ARMP by GJ-NSO-34 (ROWA) and would involve construction during the period of BLM statewide timing limitation Big Game Production TL CO (May 15 to June 15). Both of these aspects of the project were analyzed and disclosed in the attached EA. Consideration include location of the alignment adjacent to or partially within Mesa County V.2 Road and the regular motorized public travel on this road. On April 4, 2016, Colorado Parks and Wildlife concurred with authorization the project within the elk production area during the TL period.

Ecologically Critical Areas – Portions of the proposed alignment would encroach into 100-meter buffers for occupied habitat of two BLM sensitive plant species (De Beque milkvetch and Naturita milkvetch) and a GJFO species of concern (Adobe thistle). These species are protected under the 2015 GJFO ARMP by GJ-CSU-9 (ROWA). This aspect of the project was analyzed and disclosed in the attached EA. Considerations include narrowing the construction width where feasible, erecting

protective fencing, and conducting monitoring to ensure that impacts are minimized. See the response to Item 9, below, regarding Federally listed threatened or endangered plant species.

Steep Slopes – Portions of the proposed alignment would cross areas with slopes steeper than 40%, protected under the 2015 GJFO ARMP by Geology Slope NSO CO. Most of the steep areas are at crossings of drainage channels or in areas of sandstone outcrops. Considerations include the rocky substrate and proximity to the existing V.2 Road and existing pipeline ROW, with no evidence of slope stability associated with these linear features. The BLM may require special construction or reclamation techniques at these sites, if indicated as needed based on BLM's construction oversight.

Fragile or Saline Soils – Portions of the proposed alignment would cross areas mapped as having thin soils on slopes or saline soils, protected under the 2015 GJFO ARMP by Geology Soil CSU CO. Considerations include the relatively slight level of salinity, relatively short slope distances, and existing ability of these soils to support diverse plant growth. The BLM may require special construction or reclamation techniques at these sites, if indicated as needed based on BLM's construction oversight. Although Geology Soil CSU CO also applies to Mancos Shale, no outcrops or soils derived from Mancos Shale are present in the project area.

Definable Streams – Portions of the proposed alignment would cross ephemeral drainages with distinct channels and banks that would be characterized as definable streams, protected under the 2015 GJFO ARMP by GJ-CSU-3 (ROWA). Considerations include avoidance of disturbance to these drainages during periods of flow and prompt restoration to pre-construction channel and bank configurations, followed by revegetation with adapted native species.

4. *The degree to which effects on the quality of the human environment are likely to be highly controversial.*

Because of its relatively small scale and the short duration of construction, the resultant environmental effects are not expected to be controversial.

5. *The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.* The construction of buried natural gas and water pipelines is a common activity in the project vicinity, and no significant risks are currently anticipated.

6. *The degree to which the proposed action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.* This decision is similar to many that have previously been made and will continue to be made by the BLM regarding the development of valid Federal oil and gas leases in the GJFO area. The decision is within the scope of the applicable Resource Management Plan. The decision does not represent a decision in principle about a future consideration.

7. *Whether the proposed action is related to other actions with individually insignificant but cumulatively significant impacts.*

The proposed action would not have significant cumulative effects on the environment, either when combined with the effects created by past and concurrent projects, or when combined with the effects from natural changes taking place in the environment or from reasonably foreseeable future projects.

8. *The degree to which the proposed action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historic resources.*

The proposed action would have no adverse impacts to the above resources. A concurrence letter from the State Historic Preservation Officer was received on March 28, 2016. See the response to Question 3.

9. *The degree to which the proposed action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.*

Federally Listed Plant Species and Occupied or Historic Habitat – The proposed action includes some areas of surface disturbance within, or in established buffer distances from, two species of Federally listed threatened or endangered plant species, the Colorado hookless cactus and De Beque phacelia. This encroachment would not fully conform to GJ-NSO-13 (ROWA), as analyzed in the attached EA. Considerations include application and enforcement by the BLM of mitigation measures in Appendix B of the EA, which include conservation measures identified by the U.S. Fish and Wildlife Service (USFWS) in its Biological Opinion (BO) pursuant to Section 7 of the Endangered Species Act. The BO was issued on April 4, 2016, and conservation measures identified in the BO have been incorporated into Appendix B of the EA as ROW Stipulations to be attached to the requested ROW/TUP documents.

10. *Whether the proposed action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.*

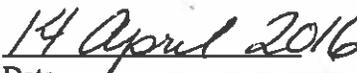
This decision complies with other Federal, State, or local laws and requirements imposed for the protection of the environment.

FINDING OF NO SIGNIFICANT IMPACT

On the basis of the information contained in the EA, and all other information available to me, it is my determination that: 1) the implementation of the Proposed Action or alternatives will not have significant environmental impacts beyond those already addressed in the “Grand Junction Resource Area Resource Management Plan and Record of Decision (RMP and ROD, BLM, January 1987), (2) the Proposed Action is in conformance with the RMP and ROD, and (3) the Proposed Action does not constitute a major Federal action having a significant effect on the human environment. Therefore, an EIS is not necessary and will not be prepared.

This finding is based on my consideration of Council on Environmental Quality (CEQ) criteria for significance (40 CFR 1508.27) with regard to both the context and the intensity of the impacts described in the EA.


Kathryn Stevens, Field Manager
Grand Junction Field Office


Date

United States Department of the Interior
Bureau of Land Management
Grand Junction Field Office, Colorado

DECISION RECORD

Red Rock Gathering Company, LLC
Black Hills Plateau Production, LLC
Winter Flats Pipeline Project, Mesa County, Colorado
DOI-BLM-CO-N040-2015-0017-EA

DECISION

It is my decision to authorize the Proposed Action—constructing and operating a buried natural gas pipeline and collocated buried water pipeline across 21.44 miles of BLM-administered public land—as described in Section 2 of the attached EA. The request for BLM action was submitted to the BLM by the proponent, Red Rock Gathering Company, LLC (RRG), on November 6, 2014. The submission was by SF-299 requesting issuance of permanent Right-of-Way COC76833 and Temporary Use Permit COC76833-01, under the Mineral Leasing Act, for construction, operation, and eventual abandonment of natural gas pipelines. In addition, Black Hills Plateau Production, LLC (BHPP), on December 4, 2016. The submission was by SF-299 requesting issuance of permanent Right-of-Way grant COC76837 authorizing operation, and eventual abandonment of water pipelines to be collocated with the natural gas pipelines and constructed on its behalf by RRG. The BHPP water pipelines would be used to transport of raw water and produced water to support development of its Federal oil and gas leases.

This decision is contingent on meeting all mitigation measures and monitoring requirements presented in Appendix B of the EA (ROW Stipulations to be attached to the ROW/TUP documents). The project was noticed to the public by posting on the GJFO and CRVFO NEPA websites in June 2015 and by posting of public notice in Grand Junction *Daily Sentinel* and the Glenwood Springs *Post Independent* on July 16, 2015. One set of public comments was received.

The EA resulted in a Finding of No Significant Impact (FONSI) for the Proposed Action. Consequently, an Environmental Assessment Statement (EIS) is not required.

RATIONALE

The bases for this decision are as follows:

1. The project would allow increased production of natural gas and delivery to markets for the use and benefit of the public.
2. The project would allow transport of raw water and produced water in pipelines instead of using haul trucks.
3. Environmental impacts would be avoided, minimized, or offset with the mitigation measures incorporated into the Proposed Action or attached and enforced by BLM as ROW Stipulations (Appendix B of the EA).
4. Table 3 in Section 3.1 of the EA lists eight applicable Right-of-Way Avoidance Areas (ROWAs) from the land use plan (the 2015 GJFO Record of Decision and Approved Resource Management Plan) that the Proposed Action will not adhere to fully. The inability to adhere fully results from the

need to construct the pipeline adjacent to an existing county road (V.2 Road) and, along most of its length, an existing pipeline ROW. A contributing factor is the construction schedule of May 1 to December 1. It is my decision to approve the Proposed Action notwithstanding the lack of full conformance to three ROWAs and two Colorado BLM statewide stipulations, as analyzed in the attached EA and summarized in the FONSI.

MITIGATION MEASURES AND MONITORING

The ROW Stipulations Appendix B of the EA would be applied as Exhibit B to the requested Right-of-Way grants and Temporary Use Permit and enforced by the BLM. These protections would be in addition to any design features and best management practices to which the proponent has committed in the Proposed Action, as described and analyzed in the attached EA.

PROTESTS AND APPEALS

This decision shall take effect immediately upon the date it is signed by the Authorized Officer (see below) and shall remain in effect while any appeal is pending unless the Interior Board of Land Appeals issues a stay (43 CFR 2801.10(b)). Any appeal of this decision must follow the procedures set forth in 43 CFR Part 4.

Within 30 days of the decision, a notice of appeal must be filed in the office of the Authorized Officer at the Grand Junction Field Office, w815 H Road, Grand Junction, CO 81501. If a statement of reasons for the appeal is not included with the notice, it must be filed with the Interior Board of Land Appeals, Office of Hearings and Appeals, U.S. Department of the Interior, 801 North Quincy St., Suite 300, Arlington, VA 22203 within 30 days after the notice of appeal is filed with the Authorized Officer.

NAME OF PREPARER

Allen B. Crockett, Ph.D., Supervisory NRS/Phys. Sci., Colorado River Valley Field Office

NAME OF ENVIRONMENTAL COORDINATOR

Christina Stark, Planning and Environmental Coordinator, Grand Junction Field Office

4/14/16

SIGNATURE OF AUTHORIZED OFFICIAL


Kathryn Stevens, Field Manager
Grand Junction Field Office

DATE SIGNED 14 April 2016