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**Proposed Peter's Point Loop Line
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1.0 PURPOSE AND NEED

1.1 INTRODUCTION

This Environmental Assessment (EA) has been prepared to evaluate and disclose the environmental consequences of Bill Barrett Corporation's (BBC) (proponent) proposal to obtain a Federal right-of-way (ROW) grant that authorizes the use of public land, and to construct a pipeline (loop line) adjacent to an existing pipeline which has been in place since 1977. The Peter's Point Natural Gas Loop Line Project (also referred to as Peter's Point Loop Line Project or Proposed Project) involves the installation of approximately 7 miles of steel natural gas pipeline, up to 20-inches in diameter, with necessary associated infrastructure (valves, an upgraded pigging facility, etc.). The Peter's Point Loop Line Project Area (also referred to as the Peter's Point Project Area or Project Area) would cross lands owned by the Bureau of Land Management (BLM), BBC, Sekani LLC, and the State of Utah School and Institutional Trust Lands Administration (SITLA) in Carbon County, Utah (see **Appendix B, Figure 1 – Proposed Action**). The ROW (serial number UTU-88696) would provide a limited interest in the land that would enable BBC to install, operate, test, inspect, repair, maintain, replace, and protect the pipeline within the designated ROW.

The proposed loop line would parallel existing pipeline infrastructure with minor deviations on private land and to avoid impacts to cultural resources. The pipeline would maximize the productivity of the new and existing wellbores by maintaining low pressure.

As the proposed loop line crosses Federal surface and requires a BLM ROW, it is subject to analysis under the National Environmental Policy Act (NEPA). Typically, an EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of "Finding of No Significant Impact" (FONSI). "Significance" is defined by NEPA and is found in regulation 40 CFR 1508.27. If the decision maker determines that a project has "significant" impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a Decision Record (DR) may be signed for the EA approving the selected alternative, whether the Proposed Action or another alternative. A DR, including a FONSI statement, documents the reasons why implementation of the selected alternative would not result in "significant" environmental impacts (effects) beyond those already addressed in the *Price Field Office Record of Decision (ROD) and Approved Resource Management Plan (RMP)* (BLM 2008). This EA is a site-specific analysis of potential impacts that could result with the implementation of a Proposed Action or alternatives to the Proposed Action, which will further assist the BLM in project planning and ensuring compliance with the NEPA, and in making a determination as to whether any "significant" impacts could result from the analyzed actions.

The BLM is also directed by the Federal Lands Policy and Management Act of 1976 (FLPMA) to manage public lands for multiple use including recreation, conservation, wildlife habitat, development of timber and forest products, livestock grazing, and energy and mineral development such as the Peter's Point loop line proposal. The BLM must consider the loop line proposal in a manner that meets the multiple use mandate of the agency, and sustains the health and productivity of public lands for the use and enjoyment of present and future generations.

1.2 BACKGROUND

Proposed pipeline locations (including loop lines) were previously analyzed by the BLM within the West Tavaputs Plateau Natural Gas Full Field Development Plan Final Environmental Impact Statement (EIS No. UT-070-05-055) (WTP FEIS), for which a ROD was issued on July 29, 2010 (BLM 2010). In general, gathering pipelines for individual wells would consist of 6- to 8-inch outer diameter (OD) pipeline. Each gathering line would tie into a larger trunk line with a 10- to 16-inch OD, which would eventually transport the gas to the Questar gas sales pipeline. The dimensions of the pipe used would be dependent on the number of wells served and production estimates.

The Peter's Point Project Area is fully encompassed within the greater West Tavaputs Plateau Project Area (greater WTP landscape). The Peter's Point Loop Line Project Area consists of lands administered by BLM, the State of Utah, and private holdings. The legal location of the Project Area is as follows within the Salt Lake Meridian:

- Sections 7, 8, 9, 16, 15, 22, and 27 of Township (T) 12 South (S), Range (R) 16 East (E)

1.3 PURPOSE(S) AND NEED OF THE PROPOSED ACTION

The purpose of the Peter's Point project is to provide a pipeline in the West Tavaputs Plateau to transport low pressure natural gas to the existing Dry Canyon Compressor Station.

The need for the Peter's Point project is due to the increased natural gas production from year-round drilling operations in the West Tavaputs Plateau.

An additional need for this project is to respond to the applicant's proposal to exercise valid existing rights by gathering natural gas produced from Federal oil and gas leases on the West Tavaputs Plateau in accordance with its multiple-use mandate, the Mineral Leasing Act (MLA) of 1920 as amended by the FLPMA, and the Federal Onshore Oil and Gas Leasing Reform Act of 1987. Specific to this project, the FLPMA directs the BLM to grant and manage ROWs on public land managed by the BLM.

1.4 CONFORMANCE WITH BLM LAND USE PLAN(S)

Policies for development and land use decisions are currently contained in the *Price Field Office Record of Decision (ROD) and Approved Resource Management Plan (RMP)* (BLM 2008). Development and land use decisions selected and approved for BLM Price Field Office administered lands must be in conformance with the RMP while considering environmental, social, economic, and interagency concerns.

The proposed project would be consistent with the objectives, goals, and decisions of the Price Field Office ROD and Approved RMP as they relate to the ROW program. The RMP provides broad direction for the management of lands administered by the Price Field Office and general discussions of associated environmental effects (BLM 2008).

1.5 RELATIONSHIP TO STATUTES, REGULATIONS, OR OTHER PLANS

The EA is being prepared in accordance with NEPA, as amended (42 USC §§ 4321 to 4370e) and in compliance with all applicable regulations and laws passed subsequently, including CEQ regulations 40 CFR 1500–1508, U.S. Department of Interior requirements (*Department Manual 516, Environmental Quality*), *BLM Handbook H 1790 1, Guidelines for Assessing and Documenting Cumulative Impacts*, and *Considering Cumulative Effects under the National Environmental Policy Act*. As the lead agency, BLM is responsible for analyses and documents that conform to NEPA, CEQ, and other pertinent Federal laws and regulations.

Under the CEQ regulations, Federal agencies responsible for preparing NEPA analyses and documentation may do so in cooperation with Federal, State, and local governments and agencies with jurisdiction by law or special expertise (40 CFR 1501.6). No other Federal agencies have been identified to participate in the preparation of this EA.

Portions of the proposed Peter's Point loop line would intersect lands owned by the State of Utah. State lands within the Project Area are managed by SITLA. SITLA's objectives are to produce funding for the State school system, and because the proposed loop line would maximize the productivity of the new and existing wellbores, the proposed loop line is consistent with the objectives of the State.

The *Carbon County Master Plan* (Carbon County 2005) set a goal that resource development activities on public lands within the County be fully bonded for all estimated reclamation costs (separate from Federal performance bonds). The area of Carbon County associated with the proposed project is regulated as M&G-1, Mining and Grazing, and has been reviewed and approved for Non-Conditional Use by the Carbon County Planning and Zoning Board; therefore, the proposed Peter's Point loop line is in compliance with the Carbon County Master Plan.

The proposed project would also be consistent with the selected alternative approved in the ROD for the WTP FEIS. Specifically, the decision within the ROD allows the construction of new pipeline (BLM 2010, page 20).

1.6 IDENTIFICATION OF ISSUES

The BLM Interdisciplinary Team (ID Team) completed a checklist (see **Appendix A**), which identifies the issues considered and concerns expressed by resource specialists. The ID Team checklist is the foundation for the impact analysis in this EA. This section briefly describes the issues, concerns, and potential impacts identified by the ID Team as being potentially impacted by the Proposed Action.

1.6.1 Soils

Installation of the pipeline under Alternative A or B has the potential to disturb soil resource and result in increased erosion.

Soil contamination along the pipeline route has the potential to result from at least two sources: material spills during construction and trench excavation through existing contaminated areas.

Potential negative impacts to soils from the installation of a portion of the pipeline under Alternative A or B are more likely to occur in the high country watershed (HCW), which are sensitive areas above 7,000 feet in elevation.

1.6.2 Surface and Ground Water

Soil disturbance resulting from installation of the pipeline under Alternative A or B has the potential to lead to increased sediment yield to Nine Mile and Cottonwood Creeks.

Leaks or ruptures of the pipeline could lead to surface and/or groundwater contamination from natural gas, condensate, and produced water.

Potential negative impacts to surface water resources from the installation of a portion of the pipeline under Alternative A or B are more likely to occur in the HCW, which are sensitive areas above 7,000 feet in elevation.

1.6.3 Vegetation

Installation of the pipeline under Alternative A or B would result in the disturbance of native vegetative cover types and could contribute to infestation of noxious and invasive plants.

1.6.4 Wetlands/Riparian Zones

Surface disturbing activities could result in a loss of riparian vegetation and degrade the Proper Functioning Condition (PFC) of riparian habitat.

Surface disturbing activities could impact the viability of wetland communities and the function of the system.

1.6.5 Wildlife

Installation of the pipeline under Alternative A or B would result in the temporary disturbance of wildlife habitats and could lead to temporary displacement of wildlife during pipeline construction.

1.6.6 Threatened, Endangered, Candidate, and Special Status Animal Species

Leaks or ruptures of the pipeline could lead to surface water contamination from natural gas, condensate, and produced water, which could lead to contamination of downstream critical habitat for the Colorado River endangered fish species.

The project occurs in mapped habitat for the greater sage grouse and therefore, has the potential to affect sage grouse.

The project occurs in mapped habitat for the Mexican spotted owl (MSO), and therefore, has the potential to affect MSO.

1.6.7 Non-WSA Lands with Wilderness Characteristics

Installation of a pipeline under Alternative A or B could impact the area's naturalness, solitude, and primitive recreation opportunities.

Based on the placement of the pipeline under Alternative A or B, a portion of the Desolation Canyon inventoried area (89,000 acres) would no longer qualify as a wilderness characteristics area.

1.6.8 Visual Resources

Installation of the pipeline under Alternative A or B could result in linear visual intrusion into the visual landscape of the greater WTP landscape.

Installation of the pipeline under Alternative A or B could result in visual resource impacts along Cottonwood Canyon, and specifically, at the Great Hunt Panel which is visible from Cottonwood Road, and receives high visitation.

1.6.9 Cultural Resources

Installation of the pipeline under Alternative B would result in adverse effects to the cultural landscape at the Great Hunt Panel and would decrease the cultural recreational experience based on pipeline visibility.

1.6.10 Recreation / Special Designations

The proposed pipeline would cross a portion of the Nine Mile Canyon Area of Critical Environmental Concern (ACEC) under Alternative A or B.

Under Alternative A or B, the Peter's Point pipeline would occur partially within the Nine Mile Canyon Scenic Byway; which is a State Scenic Byway and a BLM Backcountry Byway.

1.6.11 Transportation

ROW construction would result in temporary road closures along Nine Mile Canyon and Cottonwood Canyon Roads. Interim road closures could impact recreation opportunities, increase road congestion, increase potential for vehicle accidents, and reduce emergency response time / evacuation time in the event of an emergency on Peter's Point.

1.6.12 Health and Safety

Under Alternative B, a 20-inch surface line in close proximity to an existing roadway and high-use recreation corridor would pose a degree of hazard to the general public and, through potential third-party damage, could threaten the integrity of the line.

Health and safety could be impacted if leaks or spills occur during pipeline operation under Alternative A or B.

1.7 SUMMARY

This chapter has presented the purpose and need of the proposed project, as well as the relevant issues, i.e., those elements of the human environment that could be affected by the implementation of the proposed project. In order to meet the purpose and need of the proposed project in a way that resolves the issues, the BLM has considered a range of action alternatives. These alternatives, as well as a No Action alternative, are presented in **Chapter 2**. Current baseline conditions for potentially affected resources and issues identified in **Section 1.6** are presented in **Chapter 3**. The potential direct and indirect environmental impacts or consequences resulting from the implementation of each alternative are then analyzed in **Chapter 4** for each of the identified issues. Cumulative impacts are disclosed in **Chapter 5**.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

BBC proposes to construct, operate, and maintain a new low pressure natural gas pipeline (loop line) along the existing ROW (serial number UTU-34418). This proposal includes the installation of approximately 7 miles of steel pipeline, up to 20-inches in diameter, with necessary associated infrastructure (valves, an upgraded pigging facility, etc.). The proposed loop line would be buried except in limited circumstance where locally established criteria would require surface placement of the proposed pipeline. The circumstances where surface-laid pipeline is proposed is in accordance with the following mitigation measures stated in the ROD for the WTP FEIS (BLM 2010): 1) where there is very shallow topsoil occurring over bedrock (5-20 inches); 2) where the loop line ROW does not follow an existing access road; and/or 3) where the loop line would extend across abrupt elevation changes where no other viable route is available. Specifically, under the Proposed Action, up to 20-inch OD, surface-laid loop line would originate at a tie-in point along the existing pipeline route just northeast of the Sage Brush Flats Compressor Station (see **Appendix B, Figure 1 – Proposed Action**). The surface-laid loop line would then travel north along the existing pipeline ROW to the NE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 9, T12S, R16E in Nine Mile Canyon. From the NE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 9, T12S, R16E in Nine Mile Canyon, the pipeline would be buried and would travel west along the existing pipeline route adjacent to Nine Mile Creek to the Dry Canyon Compressor Station.

The proposed loop line would operate under low pressure gathering (i.e., 100-300 pounds per square inch [psi]) and would transport unit and non-unit natural gas production from the Peter's Point mesa area to the tie-in point at BBC's Dry Canyon natural gas compressor station. The pipeline would parallel an existing pipeline corridor for most of its length (6.1 miles), with a segment (0.8 mile) crossing private property owned by Sekani LLC. A small section of the route (0.75 mile) in Section 15, T12S, R16E would be offset to the east from the existing pipeline route to avoid impacts to cultural resources.

The Proposed Action would also involve the conversion of the existing 12-inch OD pipeline (serial number UTU-34418) into a high pressure line (200-1500 psi) downstream of the Sage Brush Flats Compressor Site once operational. Upgrade of the existing 12-inch OD pipeline would require no additional surface disturbance.

Existing ROW widths approved within case number UTU-34418 are 30 feet for the surface laid portions of the pipeline and 40-50 feet for the buried portions of the pipeline. The existing ROW widths combined with the new proposed pipeline width would not exceed a total width for surface lines of 80 feet and a total width of 90-100 feet for the buried portions of the line (see **Appendix B, Figure 1 – Proposed Action**). The majority of the new pipeline will be parallel and overlapping within the existing ROW corridor to minimize new surface disturbance. For the current proposal, BBC is requesting a 50-foot permanent ROW for the entire length of the corridor and would construct buried lines where existing lines are buried and surface lines where existing lines are on the surface. For the purpose of this proposal, BBC estimates that actual short-term disturbance would be limited to a 50-foot width along the ROW corridor (**Table 2.1-1**). The existing pipeline would not be removed and is intended to remain in place for natural gas transportation.

In total, there would be approximately 4.0 miles of surface-laid loop line and approximately 3.0 miles of buried pipeline installed under the Proposed Action. Total surface disturbance would be approximately 42 acres. Surface disturbance along the 4.0 miles of the surface-laid portion of the loop line ROW would be limited. However, this EA conservatively assumes that the vegetation and soils within the 50-foot

wide disturbance corridor within the 50-foot ROW could be temporarily impacted. Disturbance by surface owner under the Proposed Action is summarized in **Table 2.1-1**.

Table 2.1-1 – Proposed Action Surface Disturbance Summary

Surface Owner	Approximate ROW Corridor Length	Approximate Short-Term Surface Disturbance for Temporary Use Areas ¹
BLM	4.8 miles (or 25,413 feet)	29 acres
SITLA	0.8 mile (or 4,288 feet)	5 acres
Sekani, LLC	0.8 mile (or 4,431 feet)	5 acres
BBC	0.4 mile (or 1,916 feet)	2 acres
Total Linear Distance/Surface Disturbance	7 miles (or 36,048 feet)	42 acres

¹Based on a 50-foot wide disturbance corridor.

Proposed surface disturbance and vehicular travel would be limited to existing access roads and the ROW corridor.

2.1.1 Pipeline Corridor Specifications

All project activities in the area would follow procedures specified by the BLM as well as other applicable Best Management Practices (BMPs) and guidelines, including the latest editions of ASME B31.8 “Gas Transmission and Distribution Piping Systems” and API 1104 “Welding of Pipelines and Related Facilities.”

2.1.2 Construction

Installation of the loop line under the Proposed Action would require approximately four months and would occur upon project approval. It is BBC’s intention and preference to begin construction activities during the winter months as there are fewer construction challenges and impacts to various resources; however, the commencement of construction activities is dependent upon approval. Multiple construction crews would work to achieve the four month schedule. Members of the project workforce would commute from surrounding towns and cities or would be housed at the existing approved Peter’s Point temporary housing location located on Federal lands in the SE¼ of Section 34, T12S, R16E.

Trash containers and portable toilet(s) would be located on construction sites during construction. Upon completion of construction, the toilet and its contents would be transported to a nearby, permitted and approved sewage disposal facility in accordance with applicable rules and regulations regarding sewage treatment and disposal. Accumulated trash and nonflammable waste materials would be hauled to nearby, approved landfills. All debris and waste materials not contained in the trash containers would be cleaned up, removed from the corridor, and disposed of at the landfill. No potentially harmful materials or substances would be left on the corridor or vicinity. Scrap metal and other recyclable refuse would be hauled to the BBC pipe yard.

Equipment needed to construct the corridor would include track excavators, dozers, grader, transport trucks, backhoes, sidebooms, welding rigs, water trucks, and pick-up trucks. During construction activities all equipment and personnel would be restricted to remain within the approved ROW.

Vehicle traffic during the construction phase would include the transportation of materials and heavy equipment, the commuting of the workforce, and the daily operation of the construction equipment. Signs providing traffic control would be installed, as necessary.

During construction, emissions of particulate matter from construction activities would be minimized by the application of water or other dust suppressants. Dust inhibitors (surfacing materials and water) would be used as necessary on unpaved roads that present a fugitive dust problem.

Pre-construction Activities

The centerline of the new 20-inch OD pipeline, and the final ROW would be staked and flagged prior to construction activities to indicate access locations, and avoidance areas for the protection of cultural and biological resources. A Storm Water Management Plan (SWMP) and permit would be in place prior to the commencement of construction. All applicable Federal, State, or local permits would be obtained as appropriate.

BBC would provide georeferenced spatial data depicting as-built locations of the proposed pipeline and other related facilities to the BLM by November 1 of each year until completion of project construction activities has occurred.

Clearing – Upland Areas

The proposed loop line route follows an existing pipeline route for the majority of its entire length with the exception of areas where archaeological sites are to be avoided (0.75 miles or 4.6 acres) or on private land (0.8 miles or 5.0 acres). When necessary, shrubs and small trees would be cut or mowed from the construction ROW and vegetation would be cleared using a brush hog to leave roots intact. All trees salvaged from the construction ROW would be clearly segregated from the spoil material, to prevent burying of trees in the spoil material. The ROW may be minimally graded as necessary to provide a work space for excavation and pipe laying equipment. Topsoil removal would not occur except directly over the trench, which would be stripped of available topsoil, stockpiled, and protected from erosion.

Trenching

After the working area has been prepared, trenching operations would begin. Trenches would be excavated with a trenching machine or backhoe. Soil would be stockpiled to one side, making sure the topsoil and spoil do not mix together. Trench depth would be approximately 5 to 6 feet deep and about 3 feet wide. Trenches may be open several days until the pipe is placed and backfilling completed. Trenched roads would remain passable at all times by providing detours, and earthen plugs and escape ramps would be installed at intervals to facilitate wildlife and livestock movement. Soil cover depth would be 3 feet, but could be less than 3 feet in rocky terrain. The soil cover depth over the pipe would be 4-feet under the road crossings.

Buried Line Fabrication and Placement

After pipe stringing, pipe bending, lining up, welding, radiographic examination, wrapping, and coating operations would be completed for the construction of the buried pipeline (3.0 miles).

Pipe bending would be required for changes in topography, crossing under pipelines, roads, and utilities, and horizontal bends.

Before the pipe is placed in the ditch, selected material would be used to pad the pipe in areas where there are rocks in the ditch. The pipe would be lowered into the ditch by side-boom tractors. After the pipe has been placed in the ditch, fill materials would be used to pad the pipe before the ditch is backfilled.

Padding material typically consists of soils excavated from the trench, however sand or other rock free material may be obtained from other permitted sources. Topsoil would not be used as padding for the pipeline. Fill would be placed over the pipe to protect the pipe and coating material. Sales contracts or

permits would be obtained from the affected surface managing agency or landowner prior to obtaining any additionally required padding material.

Backfilling would be completed using the soil previously excavated from the trench. Fill materials would be free of fines, waste, pollutants, and noxious weeds and seeds. Surface rock would not exceed that of adjacent areas, and the ROW would be recontoured to specifications acceptable to the Authorized Officer (AO) or affected landowner.

During backfill and compaction, temporary swales would be restored as closely as possible to the original contour. Following trench backfill and compaction, the stockpiled topsoil would be spread over the disturbed area to begin the restoration and final stabilization process. Backfilling would be maintained to correct backfill settling and prevent erosion. Pipeline trenches would be routinely inspected and maintained to ensure proper settling, stabilization, and reclamation. Construction of water bars and earthen berms, surface roughening, recontouring to restore the original contour, revegetation and permanent seeding in accordance with the reclamation plan, mulching, and erosion control blanketing would be completed as part of the reclamation process.

Pipeline weights would be utilized as appropriate to anchor the pipe in low laying areas to prevent the pipe from moving in the ditch during periods when the soil is saturated or underwater. The trench backfill would be compacted and trench plugs would be utilized to prevent water flows from utilizing the trench as a preferential pathway. Scalped vegetation would be lopped and scattered on the ROW to reduce erosion potential and reduce visual impacts. Where practicable, plants would be removed with the root balls intact and replanted along the ROW. The entire ROW would be reseeded in the first appropriate season after completion of disturbance. Pipeline markers would be strategically placed at intervals along all buried and surface pipelines.

In areas where compacted sandstone or bedrock exists, the following techniques would be employed to bury pipelines:

- Shrubs and small trees would be removed from the ROW. Topsoil removal would not occur except directly over the trench.
- In most areas where the pipeline would be buried, chain trenchers and/or rock saws (also known as wheel or disc trenchers) would be used to excavate trenches.
- In areas where blasting is required in order to excavate pipeline trenches, the following safety measures would be adhered to (e.g., on slopes or other areas where use of chain trenchers and/or rock saws are not feasible):
 - As needed, roads along areas to be blasted may be temporarily closed for safety purposes.
 - The charges would be detonated in accordance with relevant safety regulations.
- Following excavation of the pipeline trenches (whether by chain trencher and/or rock saw or detonation), debris would be removed from the trench.
- Spoil would be used to pad the bottom of the trench. As needed, additional soil, sand, or gravel would be brought in from an approved borrow area and used to pad the bottom of the trench.
- The spoil would be compacted in the trench. Stockpiled topsoil would be placed over the compacted spoil to facilitate reclamation.
- Scalped vegetation would be lopped and scattered on the ROW to reduce erosion potential and reduce visual impacts.
- The entire ROW would be reseeded in the first appropriate season after completion of disturbance.

Surface Line Fabrication and Placement

In most cases, the surface-laid pipeline (4.0 miles) is required where the steep terrain and shallow bedrock limit the feasibility of buried lines.

Where surface-laid pipelines are approved, stipulations would include painting or allowing the pipe to oxidize, matching the surrounding environment. Bonding may be considered on a case-by-case basis, as approved by the AO. Surface pipelines adjacent to roads or within the ROW would be assembled on the roadway or construction ROW, then lifted, normally with a sideboom crawler or trackhoe, and set in the existing vegetation with minimal disturbance. Pipeline markers would be strategically placed at intervals along all buried and surface pipelines.

Road and Stream Crossings

Open trenching techniques would be used to cross-unimproved roads. Installation and restoration of the surface would likely be completed in one day. Installation of the loop line would require intermittent road closure periods for up to two hours at a time. Heavy equipment and trucks would be entering and leaving the work zone throughout the day. Traffic control procedures would be approved by the appropriate surface management agency (BLM and/or Carbon County) and in place with traffic control personnel on hand to direct traffic through the work zone. Safety measures would include warning signs, flagmen, and barricades as appropriate. Temporary road closure signs would be posted in appropriate locations at least 48 hours prior to the temporary closure and landowners in the area would be notified 48 hours in advance of a closure.

Pipeline construction would not block nor change the natural course of any drainage. The proposed pipeline would cross perpendicular to drainages, and would not run parallel in drainage bottoms. Suspended portions of the pipeline would provide adequate clearance for maximum runoff.

Installation of the loop line would require several crossings of Nine Mile Creek. The BLM would require implementation of the *BLM Technical Note Hydraulic Considerations for Pipeline Crossings of Stream Channels*. Stream alteration permits (GP-40) for all stream crossings would be approved by the Utah State Engineers' office prior to initiating any stream crossing construction. A United States Army Corps of Engineers (USACE) Nationwide Permit 12 (NWP 12) notification would be submitted to the USACE prior to any pipeline construction work in riparian areas that may be jurisdictional wetlands. Furthermore, all applicable Federal, State, or local permits would be obtained as appropriate.

The crossings would utilize open trenching construction techniques and all crossings would be buried at least 6 feet beneath the stream. Two open trenching techniques, the dry trench and open-cut techniques, would be used for the installation of pipeline across the creek. The dry trench technique involves routing the flow around the trench during trench excavation, installation of the pipeline, and backfilling. The open-cut technique allows the stream flow to continue through the work area during trench excavation, installation of the pipeline, and backfilling. Backhoes would be used to create a trench across dry washes and intermittent stream crossings. Additional temporary use areas (TUAs) would be required in these areas. The banks of the wash would be excavated to create a slope gentle enough to allow equipment to progress to the floor of the wash. Soil would be stockpiled at the top of the banks of the wash. After the pipe has been installed, the stockpiled soil would be used to restore the banks of the wash to a stable configuration. This approach could be modified to fit specific situations, such as when rock riprap or other reinforcing material is required where bank stabilization and scour may be a problem. Erosion and sediment control would be employed for all stream crossings in accordance with the USACE permit and COAs defined in the ROD for the WTP FEIS (BLM 2010). As previously discussed, BBC is planning on constructing the loop line during the winter months when stream flow would be lowest.

2.1.3 Operations and Maintenance

The pipeline would be a permanent facility operated year-round, lasting the 30-year lifespan of the associated Project Area. The existing 12-inch OD pipeline would be converted into a high pressure line downstream of the Sage Brush Flats Compressor Site once operational. Upgrade of the existing 12-inch OD pipeline would require no additional surface disturbance.

BBC would operate and maintain the proposed pipeline in a manner that meets or exceeds the requirements of 49 CFR § 192. The pipeline operations would minimize the collection of fluids, such that the volume of gas that would move through the line would continuously sweep liquids from the lines, pigs would be used to clean the line twice a week, and ‘smart pigs’ would run periodically to check for corrosion and scaling issues (see **Section 2.1.4**).

In the unlikely event of an abnormal operation or failure, there would be automatic shut-down of the pipeline by activation of an emergency shut-down valve (ESV). These ESVs would be sited and installed in accordance with the requirements of 49 CFR § 192.179.

BBC would be responsible for all maintenance of the pipeline corridor including appropriate storm water drainage structures and weed control. Pipeline trenches would be routinely inspected and maintained to ensure proper settling, stabilization, and reclamation. All maintenance activities would be confined to the proposed pipeline corridor. No new or expanded access would be needed for the operation and maintenance.

BBC would be responsible for necessary preventative and corrective road maintenance for the duration of the project. Maintenance responsibilities may include, but are not limited to, blading, gravel surfacing, cleaning ditches and drainage facilities, dust abatement, noxious weed control, or other measures as deemed appropriate.

2.1.4 Additional Components of the Right of Way

Associated infrastructure for the pipeline would include valves, and an upgraded pigging facility to accommodate the high pressure line and the diameter change. The existing pigging facility is an above ground structure positioned in Section 8, T12S, R16E to launch and recover pigs, which are devices inserted into a pipeline to clean the inner walls of the pipe and monitor for critical conditions that could compromise pipeline integrity or operational efficiency, such as cracks, corrosion, or pipe deformations. No metering facilities are proposed as there is an existing metering facility located at the Dry Canyon Compressor Station.

Staging areas would not be required on Federal surface since existing well pads on Federal surface and previously disturbed areas exist on State and private lands where necessary staging would occur. The following locations have been identified as staging areas for the installation of the proposed Peter’s Point loop line:

- Peter’s Point Pipe Yard (Section 27, T12S, R16E),
- Peter’s Point 16-27 Well Pad (Section 27, T12S, R16E), and
- Dry Canyon Compressor Station (Section 7, T12S, R16E).

2.1.5 Applicant-Committed Environmental Protection Measures

Under the Proposed Action, several design features would be implemented by BBC to reduce the potential environmental impacts of the proposed project. The Applicant-committed Environmental Protection Measures (ACEPMs) for the Peter’s Point loop line would be consistent with the Conditions of

Approval (COAs) identified in Attachment 2 of the ROD for the WTP FEIS (BLM 2010) (refer to **Appendix C**). In addition, all construction activities would be implemented in accordance with the site-specific plan of development (POD) for this project.

The COAs in the ROD include the COA stating that well pads and access roads within the HCW (areas above 7,000 feet in elevation) would be fully constructed or upgraded during the period between April 15 and December 1. Under the Proposed Action, approximately 1,426 feet (0.27 mile) of the proposed loop line route is above 7,000 feet in elevation. As the Decision Record for this EA would not likely be issued prior to December 1, 2011, this Proposed Action serves as BBC's request to waive or modify this COA.

In order to ensure that undue or unnecessary environmental impacts to the environment are not occurring as a result of the Proposed Action, a third-party compliance monitor approved by the BLM and/or representatives of the BLM would monitor project implementation through routine compliance inspections and would adhere to the reporting and monitoring requirements prescribed by the BLM.

An archaeological inventory was completed for this pipeline project. The report entitled "Cultural Resource Inventory of BBC's Proposed Peter's Point to Dry Canyon Pipeline, Carbon County, Utah (U-10-MQ-0469b,p) was submitted to the State Historic Preservation Officer's (SHPO's) office on November 9, 2010. BLM received SHPO's concurrence in a letter dated November 18, 2010. SHPO concurred with BLM's determination of "No Historic Properties Affected." A total of 45 eligible properties would be avoided. In addition, the following stipulations would be adhered to:

- All pipeline construction in the canyon bottom, where BBC would bury the pipeline, would be monitored by an archaeologist.
- On Peters Point, the "Meadow" in Section 26, T12S, R16E would be monitored by an archaeologist during pipeline construction.
- An avoidance fence would be erected by BBC along the site boundaries of 42Cb2085.
- Pipeline construction would be monitored on the mesa tops as necessary.

On November 23, 2011, the BLM sent a consultation letter to the SHPO and requested a "No Historic Properties Affected" determination for the approximate 0.8 mile section of pipeline that crosses through private land. Four eligible sites would be avoided and monitored during construction activities.

All personnel (including contractors; new, added, or replaced personnel; etc.) involved in construction, operation and maintenance of this project would be instructed (to a degree appropriate to their involvement in the project) by BBC's cultural resource consultant, with BLM guidance, on site avoidance and protection measures, including information on the statutes protecting cultural resources, prior to being authorized to work in the Project Area. At a minimum, all employees would receive written information sheets that discuss the importance of cultural resources and archaeological laws including penalties for violation. Personnel who routinely work in the canyon would be required to receive additional cultural resource awareness training. BBC would maintain records demonstrating that the above described personnel training has been carried out.

A third-party paleontological monitor or representative of the BLM would also be present during the use of excavation equipment, specifically during the original cutting of previously undisturbed lands of high paleontological resource potential to inspect exposures for contained fossils. The qualified paleontological monitor would adhere to the reporting and monitoring requirements prescribed by the BLM. A qualified paleontologist is defined as an individual with an M.S. or Ph.D. in paleontology or geology, who is familiar with paleontology procedures and techniques, and holds a BLM-issued paleontological permit.

BBC would also inform their employees, contractors and subcontractors of the potential impacts that could result from accidental spills, as well as the appropriate actions to take if a spill does occur. An existing field-wide Spill Prevention, Control, and Countermeasure (SPCC) plan and a field-wide SWMP would be implemented by BBC at the commencement of construction activities.

Furthermore, project personnel and contractors would be educated on and subject to the following requirements:

- no dogs would be allowed within the Project Area;
- no firearms would be allowed within the Project Area;
- no littering would be allowed within the Project Area;
- smoking within the Project Area would only be allowed in off-operator active locations or in specifically designated smoking areas;
- all cigarette butts would be placed in appropriate containers and not thrown on the ground or out windows of vehicles;
- personnel and contractors would abide by all fire restriction orders;
- campfires or uncontained fires of any kind would be prohibited within the Project Area; and
- portable generators used in the Project Area would have spark arrestors.

2.1.6 Reclamation

Reclamation would be completed according to the BLM's published BMPs and according to BBC's BLM-approved West Tavaputs Field-wide Reclamation Plan. A site-specific reclamation plan would be submitted within 90 days of project authorization.

Disturbed areas would be revegetated after the site has been satisfactorily prepared. Site preparation may include respreading topsoil to an adequate depth, and may also include ripping, tilling, disking, or contour and dozer track-imprinting. In areas that contain environmentally sensitive fragile soils and vegetation, BBC may be required to perform special measures such as mulching, erosion fencing, and use of erosion fabric per the direction of the BLM AO to stabilize any disturbed areas and ensure the reestablishment of long-term perennial vegetation.

Reclaimed areas receiving incidental disturbance during the life of the pipeline would be re-contoured and reseeded as soon as practical.

Reclamation measures would begin as soon as possible after the disturbance and continue until successful reclamation is achieved. Reclamation could be judged successful when a self-sustaining, vigorous, diverse, native (or otherwise approved) plant community is established on the site, with a density sufficient to control erosion and non-native plant invasion and to re-establish wildlife habitat or forage production.

Interim and final reclamation activities and evaluation would be consistent with the *Green River District Reclamation Guidelines for Reclamation Plans* outlined in the ROD for the WTP FEIS (BLM 2010) or other subsequent guidance by the BLM. Earthwork for interim and final reclamation generally must be completed within six months of completion of construction activities. However, final reclamation would occur as soon as feasible following pipeline installation, and would be completed in accordance with reclamation guidelines outlined in the ROD for the WTP FEIS (BLM 2010).

Monitoring of reclamation success and report submission would be consistent with the memorandum of understanding (MOU) for Mitigation Compliance and Monitoring Plan and the *Green River District Reclamation Guidelines for Reclamation Plans* outlined in the ROD for the WTP FEIS (BLM 2010).

2.2 ALTERNATIVE B – COTTONWOOD CANYON PIPELINE ROUTE

Under Alternative B, BBC would install the proposed pipeline as illustrated on **Figure 2 – Alternative B** (see **Appendix B**). Under Alternative B, the pipeline route would originate at a tie-in point along the existing pipeline route just northeast of the Sage Brush Flats Compressor Station (consistent with the Proposed Action) to the SE $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 22, T12S, R16E. From the SE $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 22, T12S, R16E the loop line would veer west from the existing pipeline ROW, travel west across the mesa and down into Cottonwood Canyon. The surface-laid pipeline would then continue north along Cottonwood Canyon Road to its confluence with Nine Mile Canyon Road in the extreme NW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 9, T12S, R16E just below the Sekani, LLC property line. This segment of the pipeline would constitute new surface disturbance as it would not follow an existing pipeline ROW. From the Cottonwood and Nine Mile canyon confluence in Section 9, T12S, R16E the pipeline would then follow a route identical to the Proposed Action and would be “looped” along the existing pipeline ROW adjacent to Nine Mile Creek to the Dry Canyon Compressor Station. This portion of the pipeline route would also be buried.

Under Alternative B, the proposed pipeline would be buried except in limited circumstances where locally established criteria would require surface placement. The circumstances where surface-laid pipeline is proposed include the following criteria: 1) where there is very shallow topsoil occurring over bedrock (5-20 inches); 2) where the loop line ROW does not follow an existing access road; and/or 3) where the loop line would extend across abrupt elevation changes where no other viable route is available. With regard to the aforementioned criteria, there would be approximately 4.2 miles of 20-inch OD, surface-laid pipeline and approximately 2.2 miles of 20-inch OD buried loop line under Alternative B. Construction activities along the 4.2 miles of surface-laid portion of the loop line ROW would be limited. However, this EA conservatively assumes that the vegetation and soils in the entire 50-foot wide disturbance corridor within the 50-foot ROW could be temporarily impacted. Surface disturbance under Alternative B is summarized in **Table 2.2-1**.

Table 2.2-1 – Alternative B Surface Disturbance Summary

Surface Owner	Approximate ROW Corridor Length	Approximate Short-Term Surface Disturbance for Temporary Use Areas ¹
BLM	4.9 miles (or 26,052 feet)	30 acres
SITLA	1.1 miles (or 5,916 feet)	7 acres
Sekani, LLC	0.0	0
BBC	0.36 mile (or 1,885 feet)	2 acres
Total Linear Distance / Surface Disturbance	6.4 miles (or 33,853 feet)	39 acres

¹Based on a 50-foot ROW width.

The proposed pipeline route under Alternative B has an average slope of 33.7 percent, with a maximum slope of 76.7 percent. Any slope greater than 65 percent presents constructability constraints as it is less feasible to operate equipment and presents potential health and safety impacts. Construction challenges associated with installing the loop line over several cliffs would require additional time for ROW preparation and pipeline installation. Under Alternative B, pipeline installation is expected to take slightly longer than the Proposed Action given the narrow nature of Cottonwood Canyon and the additional time it would take to install that segment of the pipeline.

Installation of the pipeline along Cottonwood Canyon Road would require the permitting and construction of five stream crossings under Cottonwood Creek due to the limited space available for the ROW and the meandering nature of the creek, as well as several crossings of Nine Mile Creek. Stream alteration permits (GP-40) for all stream crossings would be approved by the Utah State Engineers office prior to initiating any stream crossing construction. A USACE NWP 12 notification would be submitted to the USACE prior to any pipeline construction work in riparian areas that may be jurisdictional wetlands. Furthermore, all applicable Federal, State, or local permits would be obtained as appropriate.

The crossings would utilize open trenching construction techniques and all crossings would be buried at least 6 feet beneath the stream. Two open trenching techniques, including the dry trench and open-cut techniques would be used for the installation of pipeline across water bodies. The dry trench technique involves routing the flow around the trench during trench excavation, installation of the pipeline, and backfilling. The open-cut technique allows the stream flow to continue through the work area during trench excavation, installation of the pipeline, and backfilling. Backhoes would be used to create a trench across dry washes and intermittent stream crossings. Additional TUAs would be required in these areas. The banks of the wash would be excavated to create a slope gentle enough to allow equipment to progress to the floor of the wash. Soil would be stockpiled at the top of the banks of the wash. After the pipe has been installed, the stockpiled soil would be used to restore the banks of the wash to a stable configuration. This approach could be modified to fit specific situations, such as when rock riprap or other reinforcing material is required where bank stabilization and scour may be a problem.

During construction, there would be times when public traffic would be controlled on sections of Cottonwood Canyon Road out of operational necessity and/or safety concerns. Temporary road closures to Cottonwood Canyon Road would be short, but for yet undetermined periods of time. Traffic would be controlled using roadside signs, flagmen, and barricades as appropriate. Temporary road closures would be approved by the appropriate surface management agency (BLM and/or Carbon County), and temporary road closure signs would be posted in appropriate locations at least 48 hours prior to the temporary closure and landowners in the area would be notified 48 hours in advance of a closure.

To address safety-related traffic concerns, all drivers would be advised of the hazards to recreational traffic along the access roads, as well as hazards present due to blind corners, cars parked on the road, and pedestrian traffic. In addition, appropriate signs would be posted to warn non-project personnel about traffic hazards associated with project-related activities.

All other elements of Alternative B would be identical to the construction and operational design features discussed under the Proposed Action.

2.3 ALTERNATIVE C – NO ACTION

The CEQ regulations require the consideration of the alternative of No Action (40 CFR 1502.14). Under the No Action alternative, the Peter's Point loop line would not be constructed and the existing 12-inch pipeline would not be converted into a high pressure line. Under the No Action alternative BBC would be required to transport natural gas in decreased volumes and thus extend the life of the greater WTP full field development project. Thus, the No Action alternative does not meet the purpose or need for the project.

2.4 ALTERNATIVES CONSIDERED BUT DISMISSED FROM ANALYSIS

During the preliminary siting phase of this project, the BLM reviewed several alternative routes to BBC's Proposed Action. Evaluation factors for the alternative routes, including construction (i.e., engineering, operational constraints, constructability, and safety) and environmental (i.e., viewshed, archaeological, wildlife, and reclamation) factors were analyzed in a feasibility study (see **Appendix D**). Two routes, the Flat Iron Pipeline and Hunt Panel Pipeline routes were dismissed from detailed analysis because they would lead to undue degradation of natural and/or cultural resources as compared to Alternatives A or B. More specifically, the feasibility study concluded that the Flat Iron Pipeline route posed construction and environmental challenges due to low feasibility ratings assigned to the engineering, operational constraints, wildlife, viewshed, and reclamation factors; and the Hunt Panel Pipeline route posed construction and environmental challenges due to low feasibility ratings assigned to operational constraints, constructability, safety, archaeological, wildlife, and reclamation factors. These two routes are briefly described below and are illustrated on **Figure 3 – Alternatives Dismissed from Analysis** (see **Appendix B**).

2.4.1 Flat Iron Pipeline Route

As implied by its name, the Flat Iron Pipeline route would traverse a lengthy and topographically challenging route on Flat Iron Mesa and then drop down off of a steep cliff face into Dry Canyon. Installation of this route poses multiple engineering, construction and operational challenges.

The main engineering challenges associated with the Flat Iron route would include pipe corrosion and buckling. As temperatures increase and decrease, the pipe expands and contracts. These fluctuations cause the pipe to rub the surface upon which it is installed; in this case against the sharp faces of the steep slope. This friction between the pipe and sharp faces of the steep slope along this dismissed route could cause discrepancies or “scrapes” in the pipe. These scrapes can then cause unwanted corrosion to the pipe and contribute to a catastrophic failure in the pipeline. To avoid these issues, BBC would be required to add a thicker walled pipe and stronger coating along the Flat Iron route. However this potential remedy presents its own suite of challenges along the Flat Iron route. With a thicker pipe, it becomes heavier and more difficult to handle and thus there are more construction challenges and safety concerns with thicker pipe. Installation of heavier pipe also requires more supports along the line to prevent pipe buckling due to overstress on the line. Heavier pipe, such as the pipe that would be required for the Flat Iron route, requires the pipeline to be fixed to or contacting ground surface every 45 feet to prevent buckling (Pipeline Strategies and Integrity, LLC 2011). Because of the varied topographic relief along the Flat Iron route, the operator would be unable to satisfy this construction and safety requirement.

Construction challenges would be substantial because of the back-country nature of the route and the challenging topography; the use of vehicles to transport pipeline materials would be severely limited or would result in substantial disturbance in order to facilitate vehicle access.

Operationally, the main challenge for the Flat Iron route would be in keeping the pipeline free of liquids. As gas flows through the pipeline it cools and liquid hydrocarbons tend to fall out and settle in the pipeline. These liquids naturally sweep to the low spots of the line and begin taking up room in the pipeline (in this case the low spot would be along Cottonwood Canyon in the SE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 29, T12S, R16E). Stagnant liquid essentially eliminates pipeline volume that should be devoted to gas transportation, adds back pressure to the wellbores, and can be a major corrosion point in the line. To prevent these stagnant liquid issues, the Flat Iron pipeline would require installation of a tank battery in the bottom of the canyon, which would serve as a line blowdown. The tank battery would operate as a relief to extract some of the natural gas liquids from the pipeline and keep the line operational. However,

installation of a tank battery in the bottom of Cottonwood Canyon would result in substantial visual impacts along Cottonwood Road. Finally, the Flat Iron route would require a greater amount of methanol injected to prevent freezing issues associated with stagnant liquids.

Because of its extensive length, the ROW alone (assuming a 50-foot wide disturbance corridor similar to Alternatives A and B) would result in the disturbance of more than 49 acres, almost all of which would be new disturbance as most of the route would not follow existing road or pipeline ROWs. The use of vehicles and pipeline stringing equipment could necessitate additional disturbance as there are no existing ROWs along the majority of the route.

Of the 49 acres of disturbance, 17 acres fall within the designated Nine Mile Canyon ACEC. The Flat Iron Pipeline route also falls within the Nine Mile Canyon Scenic Byway; which is a State Scenic Byway and a BLM Backcountry Byway. A portion of the Flat Iron Pipeline route (3.5 miles) falls within the HCW (areas above 7,000 feet in elevation), which are sensitive areas where potential negative impacts (e.g., impacts to high elevation soils and surface water) from construction activities are more likely to occur. Under the Flat Iron Pipeline route more than 3 additional miles of pipeline would be constructed in the HCW as compared to either Alternative A or B.

Because of its varied and severe topographic relief, erosion potential would also be much higher along this route when compared to Alternatives A or B. Similarly, because of its remote nature, in the event of a pipeline leak or rupture, emergency response time would be delayed in comparison to a similar event occurring along the routes illustrated for Alternatives A or B. Based on increased surface disturbance and the engineering, construction, and operational challenges associated with the Flat Iron route, this pipeline route was dismissed from detailed analysis.

2.4.2 Hunt Panel Pipeline Route

The Hunt Panel Route would be similar to that proposed under Alternative B with one primary difference; from the SE $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 16, T12S, R16E, the pipeline would drop down a cliff face into Cottonwood Canyon and would be clearly visible from the Great Hunt Panel and Big Buffalo Panel, both of which are part of the Cottonwood Complex and receive high visitation. The Hunt Panel route falls within the designated Nine Mile Canyon ACEC and the Nine Mile Canyon Scenic Byway; which is a State Scenic Byway and a BLM Backcountry Byway. A spur of the byway extends to the Great Hunt Panel in Cottonwood Canyon along Cottonwood Canyon Road. Visitation to the greater WTP landscape is predominantly comprised of tourists and recreational users who travel the Nine Mile Canyon Backcountry Byway and branch canyon roads to view and experience the cultural and historical assets of the area.

Where the pipeline is proposed to drop down Cottonwood Canyon, the slope averages 38 percent and has a maximum slope of 80 percent. Any slope greater than 65 percent presents constructability constraints as it is less feasible to operate equipment and presents potential health and safety impacts to project employees and contractors. Engineering challenges associated with the Hunt Panel route, specifically with pipeline traversing slopes greater than 65 percent would include pipe corrosion and buckling.

While this alternative would pose engineering, construction, and operational issues similar to those presented in **Section 2.4.1**, the Hunt Panel route was largely dismissed from analysis because of its adverse impacts to the cultural landscape and the recreational and cultural experience. Adverse impacts would include long-term, linear visual intrusion that could decrease the recreational experience, and diminish the scenic value of the portion of the byway in Cottonwood Canyon as well as the cultural setting and sense of place associated with the Great Hunt Panel and Buffalo Village.

3.0 AFFECTED ENVIRONMENT

Chapter 3 describes the affected environment of the Peter's Point Loop Line Project Area (Project Area). Resources and resource uses described in this chapter include the key resources or land uses in the Project Area, as well as the substantive issues of concern brought forward during internal and public scoping. Affected environment information within this chapter is intended to establish a baseline for comparison of the direct, indirect, and cumulative impacts of each of the alternatives for the Peter's Point Loop Line Project (Proposed Project). Additional information on each of the resources and resource values within this chapter is provided in the WTP FEIS (BLM 2010), and this EA incorporates relevant information within the WTP FEIS by reference.

Resource and resource uses dismissed from analysis in this EA include geology and minerals, climate and air quality, rangeland management and wild horses, socioeconomics, noise, and land use and status. Rationale for the dismissal of these resources and resource values from analysis in this EA is provided in the ID Team checklist (see **Appendix A**).

3.1 SOILS

Seven soil units occur within the Peter's Point Loop Line Project Area. A description of each soil map unit, the general locations where each soil exists, and the dominant vegetation on each soil unit, is provided below. Additional information on these soil types, including soil texture, landforms on which the soil is found, the parent material from which the soil was derived, the slopes on which the soil exists, the depth and drainage classes for the soil, runoff speed, reclamation source material rating, and water erosion potential is provided in Section 3.4 of the WTP FEIS (BLM 2010).

Haverdad Loam, 1 to 8 Percent Slopes

Haverdad loam is a very deep soil that occurs on alluvial fans located in Nine Mile Canyon. The vegetation includes Wyoming big sagebrush, blue grama, winterfat, and bottlebrush squirreltail. The reclamation potential is poor because of the high alkaline conditions in the soil.

Cabba Family-Guben-Rock Outcrop Complex

This soil association is one of the three primary soil associations found throughout the Project Area and can be found in nearly every canyon. This unit is 50 percent Cabba, 20 percent Guben, 15 percent Rock outcrop, and 15 percent other soils. In general, slopes range from 40 to 75 percent. The Cabba family soil, found on canyon sides between ledges of rock outcrop, is a shallow soil susceptible to rapid runoff and erosion. The primary vegetation includes pinyon, juniper, Salina wildrye and Mormon-tea. The Guben soil, which occurs on toe slopes, is deep and contains Douglas fir in addition to pinyon-juniper. The unit is not conducive to grazing or wood harvesting because of the steep slopes.

Podo Gravelly Sandy Loam, 1 to 8 Percent Slopes

This shallow, well-drained soil can be found on benches and mesa tops throughout the Project Area. The primary areas are along the Cottonwood Canyon Road, on Flat Iron Mesa and on Prickly Pear Mesa. The present vegetation is mainly pinyon, Utah juniper, black sagebrush, Mormon-tea, and birchleaf mountain mahogany. The unit is used as rangeland, woodland, and wildlife habitat. The shallow soil depth makes it difficult to revegetate. Runoff occurs slowly and the water erosion potential is slight.

Green River-Juva Variant Complex

This complex is found on floodplains, alluvial fans, and stream terraces along the Green River. The unit is 45 percent Green River silt loam, 30 percent Juva variant fine sandy loam, and 25 percent other soils. The present vegetation includes tamarisk, willows, saltgrass, sedges, and cottonwood on the floodplains; and shadscale, pricklypear, galleta, greasewood, and rabbitbrush on the alluvial fan surfaces. The water erosion potential is moderate.

Travessilla-Travessilla Family-Rock Outcrop Complex

This complex can be found on steep canyon sides (50 to 80 percent) in Nine Mile, Dry, Cottonwood, and Rock House canyons. The complex consists of Travessilla fine sandy loam (35 percent), Travessilla family channery sandy loam (20 percent), rock outcrop (15 percent), and other soils (30 percent). The Travessilla soil is generally on the canyon rims, the Travessilla family soil is located in the canyon bottoms, and the rock outcrop is on vertical cliffs. In general, the soils within the complex are shallow and susceptible to rapid runoff and high erosion. The plant community is predominantly shrubs.

Travessilla-Rock Outcrop-Gerst Complex

This complex is the second most common soil in the greater WTP landscape. The soil complex can be found on canyon sides, including the canyon sides of Cottonwood Canyon, and Dry Canyon. The unit is 40 percent Travessilla (40 to 70 percent slopes), 30 percent rock outcrop, 20 percent Gerst very channery loam (50 to 70 percent slopes), and 10 percent other soils. Travessilla is a shallow soil that can be found on north and west slopes at higher elevations. The vegetation is primarily pinyon, juniper, Douglas-fir, Salina wildrye and birchleaf mountain mahogany. Runoff is rapid and erosion potential is high. The Gerst soil is also a shallow soil; however, it is primarily found on south and west slopes. The vegetation includes juniper, pinyon, Salina wildrye, and Mormon-tea. Similar to Travessilla, runoff is rapid and the erosion potential is high.

Podo-Cabba Family Complex

The Podo-Cabba complex is the most common soil complex within the greater WTP landscape. The complex can be found on side slopes, benches, and canyon rims on slopes ranging from 3 to 30 percent. The complex is comprised of 50 percent Podo, 30 percent Cabba, and 20 percent other soils. The present vegetation is mainly pinyon, juniper, Mormon-tea, black sagebrush, and shadscale. The unit can be used for wildlife habitat, rangeland, and woodland. Runoff potential is medium and erosion potential is moderate.

3.2 SURFACE AND GROUND WATER

3.2.1 Surface Water

As described in Section 3.5 of the WTP FEIS (BLM 2010), Nine Mile Creek is one of the two primary drainages within the greater WTP landscape, and runs through the north half of the Peter's Point Project Area (see **Appendix B, Figure 1 – Proposed Action**).

Additional springs are located within the HCW (areas above 7,000 feet) to the south of the greater WTP landscape boundary, as shown on Figure 3.5-2 of the WTP FEIS (BLM 2010).

Waters in Nine Mile Creek have high hardness, with the averages at the four water quality monitoring stations ranging from 354 milligrams per litre (mg/L) to 392 mg/L. Specific conductance is fairly constant, with average values ranging from 991 microsiemens per centimeter ($\mu\text{S}/\text{cm}$) to 1,030 $\mu\text{S}/\text{cm}$ for the four stations. The average total dissolved solids (TDS) increases in a downstream direction from 616

mg/L below Dry Canyon to 676 mg/L at the mouth. The average TDS is above the Federal secondary standard of 500 mg/L at all stations. Alkalinity decreases from 373 mg/L below Dry Canyon to 345 mg/L at the mouth. The concentrations of ammonia, total phosphorus, sulfate, and arsenic generally increases in a downstream direction.

The Utah Water Quality Board (UWQB) classifies Utah surface water resources according to quality and degree of protection. All streams and water bodies in Utah are assigned to one or more of five classes. Nine Mile Creek and its tributaries are classified as Class 2B and 3A. Class 2B streams are protected for secondary contact recreation such as boating, wading, or similar uses. Class 3A streams are protected for cold water species of game fish and other cold water aquatic life.

Water in Nine Mile Creek and the major side canyons within the greater WTP landscape are used for livestock watering, wildlife, dispersed recreation, and industrial uses.

3.2.2 Ground Water

A detailed discussion of groundwater resources in the greater WTP landscape is found within Section 3.5.2 of the WTP FEIS (BLM 2010). Water-bearing zones may be present in nearly all geologic formations beneath the greater WTP landscape, but the main aquifers are the alluvium along Nine Mile Creek and the lower portions of Dry and Cottonwood Canyons, and porous and fractured zones within the Green River Formation that correlate with the Bird's-Nest Aquifer.

Groundwater in the consolidated regional aquifers beneath the Project Area moves to the east toward the Green River and to the north toward Nine Mile Creek. Locally, water in perched aquifers moves toward the closest drainage. The rate of groundwater movement is slow. This slow movement allows for long periods of contact between the water and the rocks, and contributes to the high levels of dissolved solids common in the groundwater of the area.

The unconsolidated materials present along Nine Mile Creek and the lower portions of the major side canyons, especially Dry and Cottonwood Canyons, form the principal aquifer in the area. Unconsolidated deposits of alluvium and gravel on mesa tops and ridges may also locally produce some groundwater. The alluvium along Nine Mile Creek is saturated for the entire length through the greater WTP landscape. There are seven existing water wells located along Nine Mile Creek within the greater WTP landscape. A well log is available for a well completed in the alluvium at the confluence of Cottonwood Canyon and Nine Mile Creek. The alluvium at this location consists of clay with gravel, cobbles, and boulders to a depth of 44 feet, sand and gravel from 44 feet to 79 feet, and gravel from 79 feet to 88 feet. This well produced about 0.031 cubic feet per second (cfs) (i.e., 13.9 gallons per minute [gpm]) with 70 feet of drawdown in a one-hour bailer test. A well log is also available for one well located on Nine Mile Creek down gradient from the confluence with Cottonwood Canyon. This well was completed at a depth of 100 to 120 feet. It is not clear from the log whether this well is completed in alluvium or fractured bedrock below the alluvium. The water level was reported to be 103 feet below ground surface (bgs) during drilling, and the surface casing was set in this well to a depth of 18 feet. Drill-stem testing showed a yield of about 0.022 cfs (9.9 gpm) for this well.

Recharge to the groundwater aquifers is principally from precipitation that falls on the West Tavaputs Plateau. Most recharge occurs during snowmelt in the spring. Little recharge occurs during short duration, high intensity thunderstorms during the summer (Hood 1976 as cited in BLM 2010). These thunderstorms may produce flooding in the ephemeral drainages common in the area. These channels are dry for most of the year and the flood discharges represent the majority of the total annual flow in these drainages. Relatively small quantities of recharge result from infiltration of flow from the Green River into bedrock units.

Groundwater in shallow deposits generally flows toward and discharges into streams and major rivers. Discharge from the consolidated bedrock aquifers is from springs and seeps to the surface, from seepage into streambeds, by upward leakage into the overlying formations, and by downward leakage into underlying formations.

3.3 VEGETATION

The distribution of vegetation types within the Peter's Point Loop Line Project Area can primarily be attributed to a combination of localized climate, soils, and topography. Utah Geographic Approach to Planning (GAP) data and land cover information provide a general illustration of land cover for the entire Price Field Office. Cover type categories are listed by principal species, which define the cover type. Cover type mapping is done on a landscape scale, identifying primary associated species that can occur as localized or substantial areas within the given cover type (Edwards et al. 1995 as cited in BLM 2010). For the purposes of this EA and consistent with the WTP FEIS (BLM 2010), vegetation types within the Peter's Point Loop Line Project Area are addressed based on Utah GAP data cover types and mapping. Three vegetative cover types occur within the Peter's Point Loop Line Project Area; pinyon-juniper, sagebrush, and salt desert scrub. **Figure 4 – Vegetation** illustrates the cover types within the Peter's Point Loop Line Project Area (see **Appendix B**). Brief narrative descriptions of the cover types illustrated on **Figure 4 – Vegetation** are provided below:

Pinyon-Juniper

The pinyon-juniper cover type is a coniferous forest type principally co-dominated by pinyon (*Pinus edulis*) and juniper (*Juniperus scopulorum* and *Juniperus osteosperma*). Primary associated tree species include mountain mahogany (*Cercocarpus ledifolius*). Primary associated shrub species include sagebrush (*Artemisia* species [spp.]) (Edwards et al. 1995 as cited in BLM 2010).

Sagebrush

The sagebrush cover type consists of shrubland principally dominated by big sagebrush (*Artemisia tridentata*), black sagebrush (*Artemisia nova*), low sagebrush (*Artemisia arbuscula*), or silver sagebrush (*Artemisia cana*). Primary associated tree species include juniper (*Juniperus* spp.), pinyon (*Pinus* spp.), mountain mahogany (*Cercocarpus ledifolius*), and ponderosa pine (*Pinus ponderosa*). Primary associated shrub species include rabbitbrush (*Chrysothamnus* spp.), snakeweed (*Gutierrezia sarothrae*), winterfat (*Ceratoides lanata*), shadscale (*Atriplex confertifolia*), and bitterbrush (*Purshia tridentata*) (Edwards et al. 1995 as cited in BLM 2010).

Salt Desert Scrub

Salt desert scrub shrublands are principally dominated by shadscale (*Atriplex confertifolia*), gray molly (*Kochia vestita*), mat-atrilex (*Atriplex corrugate*), castle valley clover (*Atriplex cuneata*), winterfat (*Ceratoides lanata*), budsage (*Artemisia spinescens*), fourwing saltbush (*Atriplex canescens*), Mormon tea (*Ephedra* spp.), horsebrush (*Tetradymia canescens*), snakeweed (*Gutierrezia sarothrae*), and rabbitbrush (*Chrysothamnus* spp.). Primary associated shrub species include greasewood (*Sarcobatus vermiculatus*) and sagebrush (*Artemisia* spp.). Primary associated forb species include halogeten (*Halogeten glomeratus*), an invasive weed species (Edwards et al. 1995 as cited in BLM 2010).

Additional information on vegetation within the Peter's Point Loop Line Project Area encompassed in the greater WTP landscape can be found in Section 3.8 of the WTP FEIS (BLM 2010).

3.3.1 Riparian Areas

The *BLM Manual 1737, Riparian-Wetland Area Management*, defines riparian areas as a form of wetland transition between permanently saturated wetlands and upland areas. These areas exhibit vegetation or physical characteristics reflective of permanent surface or subsurface water influence. Lands adjacent to, or contiguous with, perennially and intermittently flowing rivers and streams are typical riparian areas.

The BLM utilizes the concept of Proper Functioning Condition (PFC) to delineate riparian habitat quality and to assist in guiding management actions. The following definitions are used when determining the PFC of a given riparian area (BLM 2004b as cited in BLM 2010):

- **Proper Functioning Condition:** The ability of the riparian area to dissipate energy, filter sediment, transfer nutrients, develop ponds, and channel characteristics that benefit wildlife populations and improve water retention and groundwater recharge, while improving stream bank stability and supporting greater biodiversity.
- **Functioning-At-Risk:** Riparian-wetland areas that are in functional condition but an existing soil, water, or vegetation attribute makes them susceptible to degradation. The following are categories of Functioning-at-Risk riparian areas:
 - *Upward Trend* – Those riparian areas in which changes in management strategies have shown an increase in riparian vegetative communities and improved bank stability.
 - *Stable Trend* – Those riparian areas that have not demonstrated significant upward or downward trends in vegetative communities and/or bank stability.
 - *Downward Trend* – Those riparian areas in which there has been a significant deterioration in riparian vegetative communities, a decrease in bank stability, and an increase in erosion of stream banks.
 - *Non-Functioning* – Riparian areas where stream flow has been altered, the stream channel is degraded, vegetation is insufficient to naturally reseed the area, exotic plants (e.g., tamarisk [*Tamarix ramosissima*]) are present, and there is a lack of structural components such as woody debris.

The Utah Riparian Management Policy mandates that the BLM field offices maintain and/or improve riparian areas to PFC by incorporating riparian resource needs into RMPs and other land use planning documents (BLM 2005b as cited in BLM 2010). Riparian areas are considered properly functioning when adequate vegetation, land form, or large woody debris is present to:

- dissipate stream energy associated with high water quality;
- filter sediment, capture bedload, and aid floodplain development;
- improve floodwater retention and groundwater recharge;
- develop root masses that stabilize stream banks against cutting action;
- develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for native fish production, waterfowl breeding, and other uses; and
- support great biodiversity (BLM 2005b as cited in BLM 2010).

Riparian functioning condition assessments have been completed by the BLM for several riparian areas within the Price Field Office. Portions of the Peter's Point Loop Line Project Area occur within the Sage Brush Flat, Lower Nine Mile Creek, and HCWs. Lower Nine Mile Creek flows through the northern portion of the Project Area. Riparian habitats along this portion of Nine Mile Creek are functioning-at-risk with an improving trend.

Additional information on riparian habitats within the Peter's Point Loop Line Project Area encompassed within the greater WTP landscape can be found in Section 3.8 of the WTP FEIS (BLM 2010).

3.3.2 Wetland Areas

Executive Order (EO) No. 11990 (42 Federal Register [FR] 26961) outlines that agencies must minimize destruction, loss or degradation of wetlands, as well as preserve the natural function of wetland areas on Federal lands when carrying out responsibilities pertaining to water and other related land resource activities. In adherence with this management objective, the *United States Army Corps of Engineers Wetland Delineation Manual* refers to wetlands as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (Environmental Laboratory 1987 as cited in BLM 2010). Principal wetland species include cattail (*Typha latifolia*), bullrush (*Scirpus* spp.), and sedge (*Carex* spp.).

No surveys have been conducted by the BLM within the Project Area to identify or delineate specific wetlands. However, Nine Mile Creek is known to contain active beaver dams that have created ponds and associated wetlands within the canyon. Thus, the portion of the Project Area along Nine Mile Creek may support wetlands.

3.3.3 Invasive and Noxious Plants

The Utah Noxious Weed Act, Section 4-17-2 defines a noxious weed as any plant that the Commissioner of Agriculture and Food determines to be especially injurious to public health, crops, livestock, land, or other property. The Utah Noxious Weed Act, Section 4-17-3 also vests the Commissioner of Agriculture and Food with authority to designate and publish a noxious weed list for the State of Utah. As of October 2010, the Utah Commissioner had identified 27 noxious weeds for the State of Utah; and Carbon County had identified one additional noxious weed (Utah Weed Control Association 2011). Other invasive weed species, such as cheatgrass (*Bromus tectorum*), may be of management concern but are not considered priorities for noxious weed work or funding, and therefore are not included on the noxious weed list.

Section 3.8.4 of the WTP FEIS (BLM 2010) provides a detailed description of weed species in the greater WTP landscape. Weed concentrations within the greater WTP landscape are generally located along existing transportation corridors, thus are likely to occur within the Peter's Point Loop Line Project Area. The Price Field Office has an existing MOU with Carbon County for noxious weed control. As such, aggressive treatments are used on seven invasive and noxious species within the Price Field Office: black henbane (*Hyoscyamus niger*), Canada thistle (*Cirsium arvense*), musk thistle (*Carduus nutans*), purple loosestrife (*Lythrum salicaria*), Russian knapweed (*Acroptilon repens*), scotch thistle (*Onopordum acanthium*), and whitetop (*Cardaria* spp.) (BLM 2008).

3.4 WILDLIFE SPECIES

The Peter's Point Loop Line Project Area supports a diversity of wildlife and wildlife habitats. As described in the previous section, vegetation within the Peter's Point Loop Line Project Area is dominated by pinyon-juniper, sage brush, and salt desert scrub, with riparian and wetland habitats likely to occur along Nine Mile Creek. Current land uses affecting wildlife populations and wildlife habitats include mineral resource extraction, livestock grazing, wildlife habitat improvement projects, hunting, dispersed recreation, and cultural/heritage tourism.

3.4.1 Big Game Species

Four resident big game species are known to occur within the Peter’s Point Loop Line Project Area: mule deer (*Odocoileus hemionus*), elk (*Cervus elaphus nelsoni*), Rocky Mountain bighorn sheep (*Ovis canadensis canadensis*), and desert bighorn sheep (*Ovis canadensis nelsoni*). Detailed descriptions of big game population trends and habitats within the greater WTP landscape are provided in Section 3.9 of the WTP FEIS (BLM 2010). This section of this EA is limited to describing the types of big game habitats that occur within the Peter’s Point Loop Line Project Area.

Mule Deer

Mule deer utilize nearly all of the Project Area year-long; however, crucial spring/fall habitats have been identified along the portion of Nine Mile Creek within the Peter’s Point Loop Line Project Area.

Elk

Yearlong substantial elk habitat is found on the western side of the Peter’s Point Loop Line Project Area, along Nine Mile Creek west to the existing Dry Canyon Compressor Station.

Rocky Mountain Bighorn Sheep

The Peter’s Point Loop Line Project Area supports both year-long substantial and year-long crucial habitat for Rocky Mountain bighorn sheep. Crucial year-long habitat largely occurs in and adjacent to the steep walled canyons.

Desert Bighorn

The Peter’s Point Loop Line Project Area supports crucial year-long habitat for desert bighorn sheep in and adjacent to the steep walled canyons.

3.4.2 Migratory Birds

Table 3.4-1 identifies potential migratory bird species that may occur in associated habitats within the Peter’s Point Loop Line Project Area. Species denoted with an asterisk (*) have been identified as Priority Species by Utah Partners In Flight (UPIF).

Table 3.4-1 Migratory Bird Species with the Potential to Occur in the Peter’s Point Loop Line Project Area

Common Name	Scientific Name
Pinyon-Juniper	
Ash-throated Flycatcher	<i>Myiarchus cinerascens</i>
Black-chinned Hummingbird	<i>Archilochus alexandri</i>
Black-throated Gray Warbler	<i>Dendroica nigrescens</i>
Blue-gray Gnatcatcher	<i>Polioptila caerulea</i>
Bushtit	<i>Psaltriparus minimus</i>
Common Nighthawk	<i>Chordeiles minor</i>
Common Poorwill	<i>Phalaenoptilus nuttallii</i>
Gray Flycatcher	<i>Empidonax wrightii</i>
Gray Vireo*	<i>Vireo vicinior</i>
Pinyon Jay	<i>Gymnorhinus cyanocephalus</i>
Juniper Titmouse	<i>Baeolophus ridgwayi</i>
Sagebrush	
Brewer’s Sparrow*	<i>Spizella breweri</i>
Sage Sparrow*	<i>Amphispiza belli</i>

Common Name	Scientific Name
Sage Thrasher	<i>Oreoscoptes montanus</i>
Desert Shrub	
Black-throated Sparrow	<i>Amphispiza bilineata</i>
Loggerhead Shrike	<i>Lanius ludovicianus</i>
Northern Mockingbird	<i>Mimus polyglottos</i>
Say's Phoebe	<i>Sayornis saya</i>
Vesper Sparrow	<i>Pooecetes gramineus</i>
Western Meadowlark	<i>Sturnella neglecta</i>
Riparian	
Bank Swallow	<i>Riparia riparia</i>
Black Phoebe	<i>Sayornis nigricans</i>
Blue Grosbeak	<i>Guiraca caerulea</i>
Broad-tailed Hummingbird*	<i>Selasphorus platycercus</i>
Cassin's Kingbird	<i>Tyrannus vociferans</i>
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>
Lark Sparrow	<i>Chondestes grammacus</i>
Macgillivray's Warbler	<i>Oporornis tolmiei</i>
Western Kingbird	<i>Tyrannus verticalis</i>
Yellow-billed Cuckoo*	<i>Coccyzus americanus</i>
Canyons and Cliffs	
Canyon Wren	<i>Catherpes mexicanus</i>
Common Raven	<i>Corvus corax</i>
White-throated Swift	<i>Aeronautes saxatalis</i>

* Priority Species as identified by Utah Partners In Flight

3.4.3 Raptors

Table 3.4-2 identifies those raptor species with the potential to occur within the Peter's Point Loop Line Project Area, and a description of their typical nesting habitats.

Table 3.4-2 Raptor Species with the Potential to Occur in the Peter's Point Loop Line Project Area

Common Name	Scientific Name	Nesting Habitats
American Kestrel	<i>Falco sparverius</i>	Holes in trees, cliffs
Cooper's Hawk	<i>Accipiter cooperii</i>	Woodland areas and riparian zones
Ferruginous Hawk	<i>Buteo regalis</i>	Ground, pinyon-juniper woodlands, balanced pinnacles
Golden Eagle	<i>Aquila chrysaetos</i>	Cliff ledges and rocky outcrops
Great-horned Owl	<i>Bubo virginianus</i>	Abandoned stick nests of other large birds
Long-eared Owl	<i>Asio otus</i>	Coniferous and deciduous forests, and shrublands
Northern Harrier	<i>Circus cyaneus</i>	Ground, often with thick vegetation
Peregrine Falcon	<i>Falco peregrinus</i>	Cliff ledges
Prairie Falcon	<i>Falco mexicanus</i>	Cliff ledges
Red-tailed Hawk	<i>Buteo jamaicensis</i>	Cliff ledges, rocky outcrops, aspen, pinyon-juniper woodlands
Saw-whet Owl	<i>Aegolius acadicus</i>	Dead tree cavities, squirrel nests, hollows in trees, rocky caves
Short-eared Owl	<i>Asio flammeus</i>	Small depression on ground near open habitats
Swainson's Hawk	<i>Buteo swainsonii</i>	Solitary trees or bushes, often in junipers
Turkey Vulture	<i>Cathartes aura</i>	Caves, crevices in cliffs, or tree thickets

Source: Parrish et al. 2002 as cited in BLM 1010

3.4.4 Fisheries (including Special Status Species)

Nine Mile Creek is a known cold water fishery. In addition, portions of Nine Mile Creek have been identified as warm water fisheries by the Price Field Office. Representative cold and warm water fish species occupying habitats within or directly downstream of the Project Area are identified in **Table 3.4-3**.

Table 3.4-3 Fish Species Potentially Occurring Within or Directly Downstream of the Peter’s Point Loop Line Project Area

Common Name	Scientific Name	Origin	Status
Black Bullhead	<i>Ameiurus mel</i>	Exotic Game	None
Bluehead Sucker	<i>Catostomus discobolus</i>	Native Nongame	Sensitive Species
Bonytail Chub	<i>Gila elegans</i>	Native Nongame	Federally Endangered
Brown Trout	<i>Salmo trutta</i>	Exotic Game	None
Channel Catfish	<i>Ictalurus punctatus</i>	Exotic Game	None
Colorado Pikeminnow	<i>Ptychocheilus lucius</i>	Native Nongame	Federally Endangered
Colorado River Cutthroat	<i>Oncorhynchus clarki pleuriticus</i>	Native Game	Sensitive Species
Common Carp	<i>Cyprinus carpio</i>	Exotic Nongame	None
Fathead Minnow	<i>Pimephales promelas</i>	Exotic Nongame	None
Flannelmouth Sucker	<i>Catostomus latipinnis</i>	Native Nongame	Sensitive Species
Green Sunfish	<i>Lepomis cyanellus</i>	Exotic Game	None
Humpback Chub	<i>Gila cypha</i>	Native Nongame	Federally Endangered
Mottled Sculpin	<i>Cottus bairdi</i>	Native Nongame	None
Mountain Sucker	<i>Catostomus platyrhynchus</i>	Native Nongame	None
Rainbow Trout	<i>Oncorhynchus mykiss</i>	Exotic Game	None
Razorback Sucker	<i>Xyrauchen texanus</i>	Native Nongame	Federally Endangered
Red Shiner	<i>Cyprinella lutrensis</i>	Exotic Nongame	None
Redside Shiner	<i>Richardsonius balteatus</i>	Exotic Nongame	None
Roundtail Chub	<i>Gila robusta</i>	Native Nongame	Sensitive Species
Sand Shiner	<i>Notropis stramineus</i>	Exotic Nongame	None
Speckled Dace	<i>Rhinichthys osculus</i>	Native Nongame	None
Utah Chub	<i>Gila atraria</i>	Exotic Nongame	None
Yellowstone Cutthroat Trout	<i>Oncorhynchus clarki bouvieri</i>	Exotic Game	None

Special status fish species potentially occurring directly downstream from the Peter’s Point Loop Line Project Area are discussed in **Section 3.5** of this EA.

Nine Mile Creek is also managed by the Utah Division of Wildlife Resources (UDWR) as a wild fishery, and as such is maintained by natural recruitment rather than stocking.

3.5 THREATENED, ENDANGERED, AND CANDIDATE SPECIES

This section discusses species that have a Federal designation under the Endangered Species Act (ESA). This includes:

- Species listed as threatened or endangered, proposed for listing as threatened or endangered, or considered a candidate for listing as threatened or endangered under the Endangered Species Act (ESA) of 1973, as amended.

Section 7(a) of the ESA requires Federal agencies to evaluate their actions with respect to any species that are proposed or listed as endangered or threatened, and their critical habitat, if any has been formally designated. Regulations implementing this interagency cooperation provision of the ESA are codified at 50 FR 402. Section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to “adversely affect” or “jeopardize the continued existence” of a Federally-listed species or result in the adverse modification or destruction of its critical habitat. If a Federal action “is likely to adversely affect” a Federally-listed species or its critical habitat, the responsible Federal agency must enter into formal Section 7 consultation with the United States Fish and Wildlife Service (USFWS).

Based on an agreement between the BLM and USFWS, the information on threatened, endangered, and candidate species within the WTP FEIS (BLM 2010) was used as the Biological Assessment (BA). As such, the WTP FEIS was used by the USFWS to prepare a Biological Opinion (BO). The USFWS’ BO concurred with the BLM’s findings for threatened, endangered, and candidate species within the greater WTP landscape. The final BO covering the Peter’s Point Project Area was signed by the USFWS prior to completion of this WTP FEIS, thereby formally concluding the Section 7 consultation process.

Candidate species for listing under the ESA and the BLM as sensitive species are also managed to prevent future listing as threatened or endangered.

Mexican Spotted Owl

The Mexican spotted owl (MSO, *Strix occidentalis lucida*) was listed as threatened under the ESA, effective April 15, 1993 (USFWS 1993 as cited in BLM 2010). Critical habitat for the MSO was later designated in 2004, including 2.2 million acres in Utah (USFWS 2004a as cited in BLM 2010). In addition, a recovery plan for the MSO has been developed to outline the steps necessary to remove the MSO from Federal listing (USFWS 1995b as cited in BLM 2010).

In Utah, primary constituent elements of MSO habitat include one or more of the following: 1) presence of water (often providing cooler temperatures and higher humidity than the surrounding areas); 2) clumps or stringers of mixed conifer, pine-oak, pinyon-juniper, and/or riparian vegetation; 3) canyon walls containing crevices, ledges, or caves; and 4) high percent of ground litter and woody debris (USFWS 1995b, 2004a as cited in BLM 2010).

Detailed descriptions of this species, life history information, habitat types, and known occurrences are included within Section 3.10 of the WTP FEIS (BLM 2010).

As discussed in the WTP FEIS, MSO surveys in Cottonwood, Dry, Harmon, Nine Mile, Prickly Pear canyons, and the Peter’s Point area were conducted during the 2007 breeding and nesting season. No MSO were seen or heard during these surveys (EIS 2006d, 2007a-e, as cited in BLM 2010). In addition, the Peter’s Point Loop Line Project Area does not contain USFWS-designated critical habitat for the MSO, and therefore, the Proposed Action and Alternatives would have “no effect” on the species. Furthermore, more recent surveys for the proposed Peter’s Point Project have been completed, and no MSO were seen or heard during these surveys. While a portion of the pipeline route has only been surveyed for one year, there would be no effect on MSO for the following reasons:

- No MSOs have been documented in the Project Area to date;
- The pipeline would likely be constructed during the winter season when MSOs are unlikely to occur there; and

- If any MSOs were still in the general area, they would be found at lower elevations (e.g., down in Desolation Canyon).

As such, the MSO is not further analyzed in this EA.

Colorado River Endangered Fish Species

As identified in **Table 3.4-3**, four endangered fish species have the potential to occur downstream of the Peter's Point Loop Line Project Area: bonytail chub, Colorado pikeminnow, humpback chub, and razorback sucker.

A total of 139 river miles in Utah have been designated as critical habitat for the bonytail chub; a species thought to spawn in spring and early summer. USFWS-designated critical habitat for the bonytail chub occurs in Desolation Canyon along the portion of the Green River, which forms the eastern boundary of the greater WTP landscape, and is downstream (approximately 25.7 river miles) from the Peter's Point Loop Line Project Area.

A total of 726 river miles in Utah in portions of the Green, Colorado, White, and San Juan Rivers, and their respective 100-year floodplains has been designated as critical habitat for the Colorado pikeminnow; an obligate warm-water species that requires relatively warm temperatures for spawning, egg incubation, and survival of young. The species spawns during the spring and summer over riffle areas with gravel or cobble substrate. Spawning typically occurs at water temperatures of 16°C or higher between late June and mid-August (USFWS 1990a, USFWS 2002c; as cited in BLM 2010). USFWS-designated critical habitat for the Colorado pikeminnow occurs along the portion of the Green River, which forms the eastern boundary of the greater WTP landscape, and is downstream from the Peter's Point Loop Line Project Area.

A total of 139 river miles in Utah has been designated as critical habitat for the humpback chub; an obligate warm-water species that requires relatively warm temperatures for spawning, egg incubation, and survival of larvae. USFWS-designated critical habitat for the humpback chub in Utah occurs in portions of the Green River and Colorado River. USFWS-designated critical habitat for the humpback chub occurs in Desolation Canyon along the portion of the Green River, which forms the eastern boundary of the greater WTP landscape, and is downstream from the Peter's Point Loop Line Project Area.

A total of 688 river miles in Utah have been designated as critical habitat for the razorback sucker in portions of the Green, Colorado, Duchesne, White, and San Juan rivers, and their respective 100-year floodplains. Razorback sucker populations move into flooded areas in early spring and begin spawning migrations to specific locations as they become reproductively active; spawning occurs over rocky runs and gravel bars (Tyus and Karp 1990; as cited in BLM 2010). USFWS-designated critical habitat for the razorback sucker occurs along the portion of the Green River that forms the eastern boundary of the greater WTP landscape, and is downstream from the Peter's Point Loop Line Project Area.

Greater Sage-Grouse

As of March 5, 2010, the greater sage-grouse (*Centrocercus urophasianus*) is a Federal candidate for listing under the ESA. This means the species does not receive statutory protection under the ESA and individual states currently retain responsibility for managing the bird (USFWS 2010). However, the USFWS will review the status of the species annually to determine whether it warrants more immediate action. The southern end of the Peter's Point Loop Line Project Area is mapped as crucial winter habitat for sage-grouse.

Due to the sage-grouse's dependence on sagebrush habitats, the greater sage-grouse is considered a

sagebrush obligate (Braun et al. 1976 as cited in BLM 2010). Sagebrush habitats across the range of sage-grouse may vary considerably (Tisdale and Hironaka 1981, West and Young 2000; as cited in BLM 2010), and the specific habitat components used by the species can vary due to biotic and abiotic factors. Large, woody species of sagebrush including big sagebrush, silver sagebrush, and threetip sagebrush (*A. tripartita*) are used by sage-grouse throughout the year in all seasonal habitats (Dalke et al. 1963, Griner 1939, Patterson 1952; as cited in BLM 2010). Other species of sagebrush such as low sagebrush (*A. arbuscula*) and black sagebrush (*A. nova*) provide important seasonal habitat components during spring and winter (Dalke et al. 1963, Griner 1939, Patterson 1952; as cited in BLM 2010). Summer habitats used by sage-grouse include riparian and upland meadows and sagebrush grasslands (Dalke et al. 1963, Griner 1939, Patterson 1952; as cited in BLM 2010). Sage-grouse have also been documented using a variety of human-modified habitats, such as irrigated and non-irrigated croplands and pasturelands (Patterson 1952, Sime 1991; as cited in BLM 2010).

Additional information on greater sage-grouse within the Peter's Point Loop Line Project Area encompassed in the greater WTP landscape can be found in Section 3.10 of the WTP FEIS (BLM 2010).

3.6 NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS

Non-Wilderness Study Area (WSA) lands with wilderness characteristics are defined as areas having at least 5,000 acres in a natural or undisturbed condition, and provide outstanding opportunities for solitude or primitive forms of recreation. The Peter's Point Loop Line Project Area is adjacent to and partially within the Desolation Canyon non-WSA lands with wilderness characteristics area, an 89,000-acre area that was inventoried by the BLM. Within the inventory of the Desolation Canyon area, there were an additional 18,000 acres that were inventoried and found not to have wilderness characteristics. This information is documented in a Wilderness Characteristics Review completed by the Price Field Office and further discussed in the Price Field Office Proposed Plan/FEIS (BLM 2008).

The ROD for the Approved Price Field Office RMP (BLM 2008) did not carry the Desolation Canyon area forward as a BLM natural area for the protection, preservation, or maintenance of the wilderness characteristics. This management decision was based on analysis in the Price Field Office Proposed Plan/FEIS (BLM 2008). A full analysis of impacts to this area and other non-WSA lands with wilderness characteristics within the lands administered by the Price Field Office is contained in the Proposed RMP/FEIS. In addition, under the Approved Price Field Office RMP, the Desolation Canyon area is subject to other management decisions that allow for degradation or loss of the wilderness characteristics values.

3.7 VISUAL RESOURCES

The BLM is directed to manage public lands in a manner that will protect the quality of the visual (scenic) values in accordance with Section 102(a)(8) of FLPMA. The BLM Visual Resource Management (VRM) system provides the BLM with a methodological approach to identify visual (scenic) values; establish objectives for managing those values through the RMP process; and provide timely input into proposed surface-disturbing projects to ensure that the assigned objectives are met or intrusions are sufficiently mitigated (see **Table 3.7-1**). The VRM inventory process considers the scenic quality of the landscape, the sensitivity of the viewer, and the distance from the viewer to the landscape. Based upon these characteristics, the BLM assigns a VRM class to the lands under their jurisdiction, the objectives are as follows:

Table 3.7-1 VRM Class Objectives

VRM Class	Objective
I	To preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
II	To retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
III	To partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
IV	To provide for management activities that requires major modification to the existing character of the landscape. The level of change to the characteristic landscape can be high. These 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 elements.

The BLM has applied the VRM system on the public lands under their management throughout the greater WTP landscape, with the overall objective being to minimize impacts resulting from human activities. The Peter's Point Loop Line Project Area occurs within Federal lands designated as VRM Class III. Thus, the BLM's objective for the Project Area is to partially retain the existing character of the landscape and to keep a moderate level of change to the characteristic landscape.

The *Draft BLM Price Field Office Visual Resource Management Inventory* (BLM 2011) establishes visual resource inventory (VRI) classes, which are used to assess visual values for the RMP. Visual management objectives are developed through the BLM's resource management planning process and reflect the resource-allocation decisions made in the RMP. According to *BLM Manual H-1601-1, Land Use Planning*, implementation decisions must be designed to achieve VRM objectives within each VRM class. VRM classes may reflect VRI classes, but they may not necessarily do so since management objectives for other resources as determined in the planning process may require different visual management needs. While the VRM system was used to inventory and classify the scenic (visual) resources for the Project Area, the VRI identifies the scenic quality, sensitivity levels, and distance zones and determines the VRI class, according to the VRM manual. The Peter's Point Loop Line Project Area has been classified as a VRI Class II, which serves as baseline information for assessing potential effects to visual resources.

Scenic Quality

The BLM defines scenic quality as the measure of the visual appeal of the landscape. The landscape within the greater WTP landscape are described by identifying forms, lines, colors, and textures that are characteristic of the region and are the primary elements making up how the landscape is perceived.

The characteristic forms within the greater WTP landscape consist of a network of plateaus, ridges, and rugged canyons that divide the landscape. Bands of red rock cliffs are ubiquitous throughout and extend along the majority of the ridges. Many ridges extend downward off the plateaus, creating a sequence and layering of ridges that add much visual variety and spatial definition to the Project Area. Cliffs are often

broken up and of varying heights. Many boulders have cascaded down the ridges after breaking off the face, leaving the lower canyon walls peppered with scattered boulders of various sizes. Forms of vegetation in the greater WTP landscape consist of clumps of pinyon pines, junipers, and firs, intermixed with sagebrush and grasses on the upper ridges and plateaus. These plant groupings are scattered across the tops of the plateaus and transition into more sagebrush/grasses on the ridge faces that descend to the canyon floors. The canyon floors consist primarily of sagebrush, rabbitbrush, greasewood, and grasses with groupings of aspens, cottonwoods, willows, tamarisks, and associated riparian species.

Many prominent lines occur repeatedly throughout the greater WTP landscape, including strong silhouettes of ridgelines against the sky, diffuse edges where vegetative cover transitions from species to species, meandering drainages, roadways, pipelines, and fences, as well as edges where rock faces protrude from sloped areas covered with vegetation. Many cliff faces have definitive structure evidenced through a pattern of horizontal and vertical lines created by cracks and fissures in the rock.

Color of the cliff faces remains constant throughout the seasons with some variations occurring on less steeply sloped and vegetated faces. These sloped areas change from winter snow-cover to early fall tans, ochres, and browns in the grassland, greens in the juniper and pine stands, light green and grays in the sage and greasewood, and yellows of the aspen and cottonwood.

Texture of the characteristic landscape includes rock faces and exposed landform that ranges from fine and medium to coarse grain depending upon age, makeup, and orientation of the face, as well as distance of the observer. Texture is highly influenced by the seasonal change that occurs in this region; many vegetative textures change from season to season.

The *Draft BLM Price Field Office Visual Resource Management Inventory* (BLM 2011) assigns a scenic quality rating based on the result of totaling the scores of seven analysis factors and assigning the rating based on points according to the following schedule:

- Class A = a score of 19 points or more
- Class B = a score of 12 to 18 points
- Class C = a score of 11 points or less

The scenic quality rating assigned to the Peter's Point Loop Line Project Area is 12 or Class B. Areas rated as Class B typically encompass river valleys or canyons and have variable to steep topographic relief.

Sensitivity Levels

The evaluation of sensitivity levels in the VRM process provides a measure and an indication of the public's concern for scenic quality. Factors that contribute to the public's overall concern, as identified in *BLM Manual H-8410-1*, include the following:

- Types of Users – Visual sensitivity will vary with the type of users. Recreational sightseers may be highly sensitive to any changes in visual quality, whereas workers who pass through the area on a regular basis may not be as sensitive to change.
- Amount of Use – Areas seen and used by large numbers of people are potentially more sensitive. Protection of visual values usually becomes more important as the number of viewers increase.
- Public Interest – Visual quality of an area may be of concern to local, state, or national groups. Indicators of this concern are usually expressed in public meetings, letters, newspaper or magazine articles, newsletters, land-use plans, etc. Public controversy created

in response to proposed activities that would change the landscape character should also be considered.

- Adjacent Land Uses – Interrelationship with land uses in adjacent lands can affect the visual sensitivity of an area. For example, an area within the viewshed of a residential area may be very sensitive, whereas an area surrounded by commercially developed lands may not be visually sensitive.
- Special Areas – Management objectives for special areas such as natural areas, wilderness areas or WSAs, wild and scenic rivers, scenic areas, scenic roads or trails, and ACECs frequently require special consideration for the protection of the visual values. This does not necessarily mean that these areas are scenic but rather that one of the management objectives may be to preserve the natural landscape setting. The management objectives for these areas may be used as a basis for assigning sensitivity levels. Other factors include other information, such as research or studies, that includes indicators of visual sensitivity should also be considered when assigning sensitivity levels to an area.

While sensitivity levels can be based on physical attributes along with a thorough understanding of the sensitivity factors, distance zones can play an important role because sensitivity to changes in the visual landscape can be moderated by the level of detail or visibility of a potential change.

The *Draft BLM Price Field Office Visual Resource Management Inventory* (BLM 2011) has identified the Peter's Point Loop Line Project Area as having a high sensitivity level. This high level of sensitivity has been recognized and has resulted in the designation of the Nine Mile ACEC; designated because of scenic, cultural, or historic sensitivities. Nine Mile Canyon's high recreational usage and notable sightseeing, also results in a high sensitivity level.

Delineation of Distance Zones

The analysis of distance zones in the VRM process considers the distance from which the area is generally viewed but does not take into account every possible viewing location. According to *BLM Manual H-8410-1*, landscape areas are generally subdivided into three distance zones based on their relative visibility from travel routes or other observation points:

- Foreground-Middle Ground Zone – Areas that are seen from major highways and other primary travelways, rivers, trails, or other viewing locations that are less than 3 to 5 miles away. Management activities and proposed projects may be viewed in more detail in this zone.
- Background Zone – Areas that are seen beyond the foreground-middle ground zone to a distance of about 15 miles away. Activities and changes to the landscape in this zone would be generally less visible.
- Seldom-Seen Zone – Areas that are beyond the background zone, more than about 15 miles away from the viewing locations. Seldom seen areas also may not be visible within the foreground-middle ground or background zones or are generally hidden from view from those distances.

The viewing distances and sense of scale in this landscape are dependent upon the location of the viewer and include longer unobstructed views from the ridge tops, limited abrupt views toward the canyon walls, longer views framed and bordered by the canyon walls, and views associated with moving through a narrow canyon corridor. Widths of canyons vary, creating areas of various spatial proportions on the canyon floor. Some of these areas are narrow and constricted with very focused and framed views; whereas others are more open with broad views of expansive ridges.

The *Draft BLM Price Field Office Visual Resource Management Inventory* (BLM 2011) has identified the Peter's Point Loop Line Project Area as being located in a foreground-middle ground distance zone. This is due to the number of routes that are transportation corridors providing access to the recreation areas.

In addition to the aforementioned VRI information, human influence provides additional baseline information on the Peter's Point Loop Line Project Area. Human influence is evidenced in the landscape as remnants of rock art and dwellings from early inhabitants; some agricultural fields in the canyon bottoms with associated dwellings, roads, and fences; some residential dwellings and associated structures; and burned areas. There are landscape disturbances within the greater WTP landscape from oil and gas development, including compressor stations, a network of pipelines, and producing wells. The Peter's Point Loop Line Project Area has landscape disturbances from compressor stations and the surface-laid portions of the existing 12-inch OD pipeline.

3.8 CULTURAL RESOURCES

Cultural resources are defined as any evidence of past human activities. They include structures such as historic or prehistoric buildings, bridges, homesteads, canals, roads, or shipwrecks. They also include such things as art, stone tools, food remains, ceramics, glass items, tin cans, documents, and many other items that show how people lived, thought, and felt about the world around them (Stettler and Seddon 2005, as cited in BLM 2010). Cultural resources also include places that are significant to a particular group's history and traditions. These places are often called Traditional Cultural Properties (TCPs). These types of properties can be archaeological sites, such as prehistoric campsites, rock art, burials, rock shelters, lithic scatters, and village sites. TCPs can also be non-archaeological site types such as lakes and springs, land features, and traditional gathering or collection areas (16 U.S.C. 470, Section 101[d][6][a]). Section 3.12 of the WTP FEIS provides a detailed description of the cultural landscape and resources within the greater WTP landscape. Of most interest in the Peter's Point Project Loop Line Project Area are the Great Hunt and Buffalo Village rock art sites. The Great Hunt and Buffalo Village rock art panels are located in Cottonwood Canyon, and appear to be related to shamanistic activities to bring hunting success as depicted by anthropomorphs with headdresses (or horns); some shown holding bows and arrows (Cole 1990 as cited in BLM 2010). Midden piles located in proximity to the Buffalo Village site suggest that additional and yet undiscovered cultural resources are likely present in Cottonwood Canyon. The Hunt Panel site receives high recreational visitation and is likely the best known of the many rock art panels in the area. Cottonwood Canyon Road is used by recreational vehicles to access the Hunt Panel and Buffalo Village sites.

The prehistoric cultural history of the Project Area and region has been synthesized by Montgomery Archaeological Consultants, Inc. (MOAC) and this synthesis is briefly summarized in the Class III archaeological report (MOAC Report No. 10-111) provided by MOAC (MOAC 2010). The study area covered in this review encompassed 387.4 acres (0.6 square miles) on the West Tavaputs Plateau in Carbon County, Utah. The objectives of the inventory were to locate, document, and evaluate any cultural resources within the study area in accordance with Section 106 of 36 CFR 800, the National Preservation Act of 1966 (as amended).

The inventory for the proposed Peter's Point Loop Line Project resulted in the identification of 57 previously recorded archaeological sites. Eight previously documented sites were updated, and forty-one sites are determined eligible to the National Register of Historic Places (NRHP). These 41 sites include, 20 prehistoric rock art sites, 6 lithic scatters, 3 rock shelters, 3 prehistoric temporary camps, 2 rock art/cists, a rock art/granary, a granary, a lithic scatter/soil stain, a historic habitation, and a corral/fence (MOAC 2010). The majority of the eligible cultural resources are considered significant under Criterion D since they have yielded, or may be likely to yield, information important in prehistory or history.

Table 3.8-1 summarizes the findings, eligibility, and effects for the sites encountered during the inventory.

Table 3.8-1 Known Archaeological Sites within the Peter’s Point Loop Line Project Area

NRHP Eligibility	Number	Percentage	Dominant Site Type
Eligible Sites	20	35	Prehistoric Rock Art Sites
	6	11	Lithic Scatters
	3	5	Rock Shelters
	3	5	Prehistoric Temporary Camps
	2	3	Fremont Habitations
	2	3	Rock Art/Cists
	1	2	Rock Art/Granary
	1	2	Granary
	1	2	Lithic Scatter and Stained Soil Features
	1	2	Historic Habitation
Ineligible Sites	16	28	Corral and Fence
			Lithic Scatters
			Historic Ranch
			Inscriptions
			Fences
			Cairn
			Historic Temporary Camp
			Lithic-Ceramic Scatter
Total	57	100	Fence and Dam

Source: MOAC 2010

The prehistoric cultural history of the private property owned by Sekani LLC within the Project Area has been synthesized by Uinta Research and this synthesis is briefly summarized in the Class III archaeological report (Uinta Research Report No. U-11-C2-0214p) provided by Uinta Research (Uinta Research 2011). The study area in this review covered 1,296 linear meters on the West Tavaputs Plateau in Carbon County, Utah. The objectives of the inventory were also to locate, document, and evaluate any cultural resources within the study area in accordance with Section 106 of 36 CFR 800, the National Preservation Act of 1966 (as amended).

The inventory for the proposed alignment crossing private property owned by Sekani, LLC resulted in the identification of two previously recorded archaeological sites and two new sites, all of which are determined eligible for listing to the NRHP. The two previously recorded sites did not require updating. Of the two new sites, one consists of an expansive complex of two prehistoric rock alignments (perhaps structural remnants), bedrock mortars and metates, a dispersed scatter of lithic debitage and groundstone tool fragments, more than 1,000 pieces of fire-cracked rock, and one historic fire pit; and the other site consists of a small panel of three pecked images and an area of fire scarring at the base of the cliff that could be indicative of a subsurface hearth (Uinta Research 2011). The majority of the eligible cultural resources are considered significant under Criterion D since they have yielded, or may be likely to yield, information important in prehistory or history.

The results of the Class III inventory, listed above, are used to make predictions about the type and potential site density of cultural resources within the area, and to provide a basis for assessing potential

impacts to archaeological sites in the event of surface disturbing activities. The results indicate a high site density of 0.15 sites per acre for the Project Area.

3.9 RECREATION / SPECIAL DESIGNATIONS

3.9.1 Area of Critical Environmental Concern

An ACEC is defined in FLPMA, Public Law 94-579, Section 103(a) as an area within the public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values; and fish and wildlife and botanical resources. ACECs differ from other special designations, in that designation by itself does not automatically prohibit or restrict other uses in the area. The management of ACECs is focused on the resource or natural hazard of concern and varies considerably from area to area. In addition, ACECs are protected by the provisions of 43 CFR 3809.1-4(b)(3), which requires an approved plan of operations for all activities under the mining laws except for casual use.

To be considered for designation as an ACEC, an area must meet the requirements of relevance and importance as described in the Code of Federal Regulations (43 CFR 1610.7.2). The definitions for relevance and importance are as follows:

Relevance: An area is considered relevant if it contains one or more of the following:

- a significant historic, cultural, or scenic value (for example rare or sensitive archaeological resources and religious or cultural resources important to Native Americans);
- a fish or wildlife resource (for example habitat for endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity);
- a natural process or system (for example endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities; rare geologic features); and/or
- a natural hazard (for example areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs). A hazard caused by human action may meet the relevance criteria if it is determined through the RMP process that it has become part of the natural process.

Importance: The value, resource, system, process, or hazard described above must have substantial significance to satisfy the importance criteria. This generally means it is characterized by one or more of the following:

- has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource;
- has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change;
- has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of the FLPMA;
- has qualities that warrant highlighting in order to satisfy public or management concerns about safety and public welfare; and/or
- poses a significant threat to human life and safety or to property.

A portion of the proposed Peter's Point Loop Line Project Area falls within the Nine Mile Canyon ACEC

(see **Appendix B, Figure 5 – Areas of Critical Environmental Concern**). The Nine Mile Canyon ACEC (26,200 acres), managed by the Vernal and Price Field Offices, was established to protect and enhance the cultural values and special status plant species of the canyon while enhancing its scenic and wildlife resource values (BLM 1994b as cited in BLM 2010). The Nine Mile Canyon ACEC possesses significant prehistoric archaeological resources. Nine Mile Canyon is known to contain the country's highest concentration of rock art panels, remnants of the prehistoric Archaic, Fremont, and Ute cultures. Because of the vast cultural and historical resources throughout the canyon the BLM has considered and nominated eligible sites for inclusion on the NRHP.

Section 3.17 of the WTP FEIS provides a detailed description of the Nine Mile Canyon ACEC within the greater WTP landscape (BLM 2010). Additional details regarding management of these areas can be found in the *Price Field Office ROD and Approved RMP* (BLM 2008).

3.9.2 Scenic Byway

In addition, the Peter's Point Loop Line Project Area occurs partially within the Nine Mile Canyon Scenic Byway; which is a State Scenic Byway and a BLM Backcountry Byway. It follows the length of Nine Mile Canyon from Wellington, along Soldier Creek Road, through Nine Mile Canyon along Nine Mile Canyon Road, continues to the north through Gate Canyon, and terminates at Highway 40. The total length of the byway is approximately 78 miles. Within Nine Mile Canyon is the greatest concentration of rock art sites in the United States. A spur of the byway extends to the Great Hunt Panel in Cottonwood Canyon along Cottonwood Canyon Road. A management plan (*Nine Mile Canyon Special Recreation and Cultural Management Area* [BLM 1995]) exists for Nine Mile Canyon. As indicated in **Section 3.10** of this EA, and as discussed more in Sections 3.11, 3.16, and 3.17 of the WTP FEIS (BLM 2010), the Nine Mile Canyon Scenic Byway, including Cottonwood Canyon Road, receives high recreational visitation. Additional information on recreational resources and uses in the Peter's Point Project Area and greater WTP landscape is available in the WTP FEIS (BLM 2010).

3.9.3 Recreation

Visitation to the greater WTP landscape is predominantly comprised of tourists and recreational users who travel the Nine Mile Canyon Backcountry Byway and branch canyon roads to view and experience the cultural and historical assets of the area. As described in the WTP FEIS (BLM 2010), intensive visitation inventories for the Nine Mile Canyon and branch side canyon areas have not been conducted since 1995. At that time, the average daily count of vehicles passing over traffic counters in the area was 100 per day. During Easter weekend, April 1993, 600 people were observed recreating in the canyon. Visitation occurs year-round, with peaks on the weekends from the spring through the fall. Vehicle touring, bicycling, camping and guided tours are the most popular recreational activities.

3.10 TRANSPORTATION

This section describes the existing transportation network surrounding and within the Peter's Point Project Area. Additional information on the existing transportation network of the Peter's Point Project Area and greater WTP landscape can be found in the WTP FEIS (BLM 2010).

General access to and within the Peter's Point Project Area would be provided by Federal and State highways, county roads, and the BLM system roads. Within the Project Area, BLM and county-maintained roads provide access to existing and proposed ROWs (see **Appendix B, Figures 1 – Proposed Action and 2 – Alternative B**).

In general, county and BLM system roads to and within the Project Area were not engineered to accommodate industrial traffic. Many upgrades have been made to these roads in recent years as a result of increased industrial activity in the area. However, steep gradients, erosion, drainage, encroachment upon streams, blind corners, and travel width still present environmental and engineering concern.

Nine Mile Canyon Road

Within the greater WTP landscape, the existing road through Nine Mile Canyon is maintained by Carbon and Duchesne counties. Surfacing, road width, and general condition along the road all vary tremendously. Portions of the road that do not have adequate surface materials have been eroded into native material, which results in dust when very dry or mud when very wet. Vehicles traversing the area frequently have trouble maintaining control, traction, and vision because of problems associated with the road surface.

However, during 2011-2012, 36 miles of the Nine Mile Canyon Road will be under construction for the purpose of improving the road to further protect cultural resources, improve drainage, and satisfy public safety standards. W.W. Clyde Co. will be installing drainage pipe, widening the existing road, and hard surfacing the road using a double chip seal. An environmentally friendly dust suppressant is being used on the road to control dust until the chip seal is applied. Delays are expected in portions of the canyon until the project is completed.

The travel corridor within Nine Mile Canyon is narrow in sections (approximately 14 to 18 feet wide) and there are numerous blind curves. The width of the road is generally constrained by the incised channel of Nine Mile Creek, cliffs, boundary fences on private land, irrigation ditches, and cultural sites.

Finally, Nine Mile Canyon is the primary drainage in the greater WTP landscape, meaning that numerous side canyon drainages intersect the road. Flash floods and debris flows across the road from side canyons may occur during inclement weather. Since the road runs along the base of steep slopes and/or cliffs, occasional rock falls have also occurred in the area.

Dry Canyon Road

Dry Canyon (BLM system road 6519) provides access to the proposed pipeline from the Nine Mile Canyon confluence where the existing Dry Canyon Compressor Station is located (see **Appendix B, Figure 1 – Proposed Action**). Dry Creek is the largest drainage in the greater WTP landscape. In the lower portion of Dry Canyon, the road is in close proximity to, and at times encroaches upon Dry Creek. In the upper reaches of the canyon, the road narrows and crosses Dry Creek in several places. The road has been washed out numerous times by flash floods.

Cottonwood Canyon Road

Cottonwood Canyon Road, located downstream of Dry Canyon Road, provides access to the Peter's Point Project Area and is currently used by vehicles, drilling, completion, and operational equipment as the primary point of ingress and egress to Peter's Point for natural gas development on the mesa (see **Appendix B, Figure 1 – Proposed Action**). The road is also used by recreational vehicles to access the Hunt Panel (one of the most recognized rock art walls in the Nine Mile Canyon). Below the Hunt Panel, the road is narrow with blind corners. Above the Hunt Panel, the road is frequently flooded by Cottonwood Creek. From the canyon bottom, Peter's Point is reached via a dugway (a road cut into a steep hillside), which has gradients of approximately 20 percent or via the Cottonwood Spur Road.

All roads that provide access from the canyon to the plateau have steep initial grades, narrow surfaces, and drainage issues. Seasonal bottleneck problems occur in Cottonwood Canyon, and in particular on the dugway to Peter's Point, when large equipment is moved in or out of the greater WTP landscape.

Because of the excessive gradients, heavy equipment is required to assist the haul trucks during large equipment mobilization. Bottleneck problems also frequently occur during periods of inclement weather.

Extensive modifications have been made in recent years to Cottonwood Canyon and the dugways including widening, drainage, and the creation of staging areas to accommodate industrial use.

3.11 HEALTH AND SAFETY

From the standpoint of human health and safety, the affected environment consists of rural development on private lands in Nine Mile Canyon, as well as primarily undeveloped public lands, which are predominately used for wildlife habitat, recreation, grazing, and energy development. No communities or population centers are within the immediate vicinity of the greater WTP landscape. As such, large public exposures to health and safety risks are currently limited.

3.11.1 Occupational Hazards

Health and safety concerns associated with the installation of the proposed pipeline include occupational hazards resulting from construction, operation, and maintenance activities. Construction of pipelines involves the use of heavy equipment, welding equipment, power tools, and other machinery that inherently exposes workers to the risks of accident or injury.

3.11.2 Traffic Accidents

Trucks and other vehicle traffic using roads providing access to the existing and proposed ROWs create a risk of traffic accidents. As discussed in Section 3.14 and Appendix F of the WTP FEIS, roads providing access to and within the greater WTP landscape are predominately unpaved roads that were not constructed to accommodate industrial traffic. Few if any roads currently meet safety standards promulgated by the American Association of Safe Highways and Transportation Officials (AASHTO), UDOT, the BLM, or Carbon County. Additional data regarding traffic and vehicles accidents in the greater WTP landscape are presented in Section 3.14 of the WTP FEIS (BLM 2010).

3.11.3 Dust

Vehicle traffic on unpaved roads without sufficient road base is the primary source of dust generation in the greater WTP landscape. Dust created by traffic is most noticeable in Nine Mile Canyon and Gate Canyon, which are the primary access routes in the greater WTP landscape. During hot, windy, and/or dry conditions, dust can limit visibility creating a potential safety hazard for drivers. Baseline dust emissions in the region are discussed in detail in Section 3.3, Air Quality of the WTP FEIS (BLM 2010). However, as defined in the ROD for the WTP FEIS (BLM 2010), BBC is responsible for implementing rigorous fugitive dust abatement.

According to the dust suppression plan within the WTP FEIS and ROD (BLM 2010), dust would be considered controlled when 1) no dust is generated above the cab of the vehicle; 2) there are no hanging dust plumes; or 3) until a less subjective but equally effective method of evaluating the effectiveness of suppressant materials is approved by the Nine Mile Canyon Road Committee.

More recently, a less subjective, but equally effective method of evaluating dust control is a 20 percent opacity standard at cab height was implemented by the Nine Mile Canyon Road Cooperative Board on March 16, 2011. The standard includes the following elements:

- 20 percent maximum opacity at cab level,
- 15 days to correct deficiencies,

- monitoring by counties or representatives using a data-over-cable system (DOCS) camera-based system satisfying Environmental Protection Agency (EPA) Method 9 requirements, and
- BBC would retain responsibility for ancillary routes.

During construction, and as necessary, emissions of particulate matter from well pad and road construction would be minimized by application of water or other dust suppressants with at least 50 percent control efficiency. Dust inhibitors (surfacing materials, non-saline dust suppressants, and water) would be used as necessary on unpaved roads that present a fugitive dust problem. The use of chemical dust suppressants on public surface would require prior approval from the BLM AO.

Application methods on segments of road would be contingent on site conditions, but in accordance with supplier recommendations. Maintenance requirements would be based on the loss of effective suppression, which would depend on factors such as traffic volumes.

3.11.4 Pipeline Hazards

Pipelines are the safest and most cost-effective means to transport natural gas; nonetheless, there are risks associated with pipelines, including leaks and ruptures. Oil and gas development has been ongoing in the greater WTP landscape since the 1950s. There is an existing pipeline (surface-laid and buried) within the Peter's Point Project Area. Pipelines co-located with road are at greater risk of being damaged by heavy equipment.

3.11.5 Fires, Explosions, and Wildfires

Natural gas is combustible; fires or explosions from pipeline ruptures have been known to occur in gas fields. Wildfires are integral natural forces affecting public lands. While the majority of wildfires are caused by lightning or prescribed burns, wildfires can also be caused by human activity. Past fire suppression policies on public land did not take into account the long-term effects of suppressing wildfires. As such, pinyon-juniper and sage brush have become dominant plant communities. These communities are more susceptible to wildfires.

The greater WTP landscape is within the Bruin Point Fire Management Unit (FMU). The current policy is to contain all unplanned fires of 100 acres or less, approximately 90 percent of the time, under all burning conditions. In Nine Mile Canyon, wildfires are fought aggressively (BLM 2004b as cited in BLM 2010).

3.11.6 Risk of Accidental Spills

Natural gas production can produce liquid hydrocarbons, or condensate, which may contain compounds, deemed hazardous if spilled.

3.11.7 Hydrogen Sulfide

Hydrogen sulfide is a common by-product of natural gas production. Exposure to relatively small concentrations of hydrogen sulfide can result in death. Samples from existing wells within the greater WTP landscape show that there is no hydrogen sulfide in the Project Area.

4.0 ENVIRONMENTAL CONSEQUENCES

This chapter evaluates the potential direct and indirect effects of the Peter's Point loop line alternatives on the affected environment. Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action and are later in time and/or farther removed in distance, but are still reasonably foreseeable.

4.1 ALTERNATIVE A - PROPOSED ACTION

This section of the EA discloses the potential direct and indirect effects of the Proposed Action.

4.1.1 Soils

Potential impacts to soils from installation of the Peter's Point loop line include the disturbance of approximately 41 acres of vegetation, mixing of soil horizons, soil compaction, increased susceptibility of the soils to wind and water erosion, contamination of soils with petroleum products, disturbance of topsoil productivity, and disturbance of biological soil crusts due to construction and installation of the proposed loop line. The primary effect of surface disturbances on soil resources is increased erosion and the resulting potential increase in sediment yield to nearby ephemeral drainages, perennial streams, and livestock ponds. However, the proposed loop line route follows an existing pipeline route for the majority of its entire length with the exception of areas where archaeological sites are to be avoided (0.75 miles or 4.6 acres) or on private land (0.8 miles or 5.0 acres). Soil disturbance by soil type is provided in **Table 4.1-1**.

Table 4.1-1 Soil Disturbance by Soil Type under the Proposed Action

Soil Unit Type	Surface Disturbance Under the Proposed Action (acres)
Haverdad Loam, 1 to 8 Percent Slopes	3
Cabba Family-Guben-Rock Outcrop Complex	1
Podo Gravelly Sandy Loam, 1 to 8 Percent Slopes	2
Green River-Juva Variant Complex	15
Travessilla-Travessilla Family-Rock Outcrop Complex	4
Travessilla Rock Outcrop-Gerst Complex	1
Podo-Cabba Family Complex	16
Shupert Winetti Complex	0

Contamination of surface and subsurface soils could occur if the proposed loop line were to suffer a leak or rupture. Depending on the size and type of spill, the effect on soils would primarily consist of the potential disturbance of soil productivity, alteration of native microbial populations, and disturbance of biological crusts. However, there are several factors that would limit the potential for a significant release of hydrocarbons or other toxic substances from the proposed Peter's Point loop line in the area. The proposed loop line would carry a very limited volume of liquid, and that liquid would predominantly consist of water. There are separators in place at individual wellheads that extract free liquids from the gas stream before it enters the gathering system. The only liquids that would occur in the proposed pipeline would be a result of condensation from cooling. The volume of liquid that would form in this fashion would be limited, measuring in the range of a few tens of barrels or less per day. The proposed

pipeline design features (e.g., size and grade) would minimize the collection of fluids. The volume of gas that would move through the line would continuously sweep liquids from the lines. In addition, pigs would be used to clean the line twice a week and ‘smart pigs’ would also run periodically to check for corrosion and scaling issues. Therefore, at any point in time, there would be a very limited volume of liquid in place in the line. This volume would be even more limited (i.e., a few gallons) at any particular location that may be breached.

If loop line construction, including stream crossings, occurs during the winter months, as planned, potential impacts to surface water would be reduced based on diminished stream flow, and therefore less opportunity for erosion and sediment yield into nearby ephemeral drainages, perennial streams, and livestock ponds.

Under the Proposed Action, 1,426 feet (0.27 mile) of loop line is proposed within the HCW (areas above 7,000 feet in elevation) which is a sensitive area where potential negative resource impacts from construction activities are more likely to occur. While construction would likely occur in the winter season when stream flow is diminished, impacts to HCW soils are expected to be minimal because the pipeline within the HCW area would be surface-laid, and because the ACEPMs for the Peter’s Point loop line would be consistent with the COAs identified in Attachment 2 of the ROD for the WTP FEIS (BLM 2010), which includes the following mitigation measures.

- Appropriate erosion control and revegetation measures would be employed. In areas with unstable soils where seeding alone may not adequately control erosion, grading would be used to minimize slopes and water bars would be installed on disturbed slopes. Erosion control efforts would be monitored by the operator and necessary modifications would be made to control erosion.
- Snow must be removed within 48 hours of cessation of each winter storm producing greater than 4 inches of snowfall; snow removal would occur only on those roads necessary to access the pipeline and associated components.
- BBC would be required to fund an annual water quality monitoring program as outlined in the ROD for the WTP FEIS (BLM 2010, Attachment 7). If samples and monitoring detect or determine any degradation of water quality as a result of the Proposed Action the BLM would reevaluate the effectiveness of the BMPs and mitigation measures contained within the WTP FEIS ROD (BLM 2010, Attachment 2).
- Pipeline construction would not block nor change the natural course of any drainage. The pipeline would cross perpendicular to drainages, and would not run parallel in drainage bottoms. Suspended pipeline would provide adequate clearance for maximum runoff.

4.1.2 Surface and Ground Water

Surface Water

Potential impacts to surface water resources from installation and operation of the Peter’s Point loop line include:

- temporary increased sedimentation and turbidity of Nine Mile Creek and Cottonwood Creek, as a result of increased soil erosion and sediment delivery to surface waters during pipeline installation (especially where the pipeline is buried and surface disturbance is required along the stream channel), and the deposition of fugitive dust within streams and on rock surfaces;
- increased sediment loading to the Nine Mile Creek and the Green River, potentially increasing salinity levels in the Colorado River system;
- increased runoff to Nine Mile Creek, potentially increasing erosion of the channel banks;
- potential contamination of surface water resources should a pipeline rupture occur; and

- potentially result in mixing of soil horizons.

If loop line construction, including stream crossings, occurs during the winter months as planned, potential impacts to surface water would be reduced based on diminished stream flow, and therefore less opportunity for erosion and sediment yield into flowing water.

Under the Proposed Action, 1,426 feet (0.27 mile) of loop line is proposed within the HCW (areas above 7,000 feet in elevation) which are sensitive areas where potential negative resource impacts from construction activities are more likely to occur. While construction would likely occur in the winter season when stream flow is diminished, impacts to HCW water resources are expected to be minimal because the pipeline within the HCW area would be surface-laid, and because the ACEPMs for the Peter's Point loop line would be consistent with the COAs identified in Attachment 2 of the ROD for the WTP FEIS (BLM 2010), which includes the following mitigation measures.

- Appropriate erosion control and revegetation measures would be employed. In areas with unstable soils where seeding alone may not adequately control erosion, grading would be used to minimize slopes and water bars would be installed on disturbed slopes. Erosion control efforts would be monitored by BBC and necessary modifications would be made to control erosion.
- Snow must be removed within 48 hours of cessation of each winter storm producing greater than 4 inches of snowfall; snow removal would occur only on those roads necessary to access the pipeline and associated components.
- BBC would be required to fund an annual water quality monitoring program as outlined in the ROD for the WTP FEIS (BLM 2010, Attachment 7). If samples and monitoring detect or determine any degradation of water quality as a result of the Proposed Action the BLM would reevaluate the effectiveness of the BMPs and mitigation measures contained within the WTP FEIS ROD (BLM 2010, Attachment 2).
- Pipeline construction would not block nor change the natural course of any drainage. The pipeline would cross perpendicular to drainages, and would not run parallel in drainage bottoms. Suspended pipeline would provide adequate clearance for maximum runoff.

Ground Water

In the event of a pipeline rupture, potential impacts to groundwater resources from installation and operation of the Peter's Point loop line include contamination of groundwater with natural gas, condensate and produced water and could also impact spring water quality and flow rates. Specifically, contaminants released to surface soils could infiltrate the soil and, under the right conditions, could migrate vertically until the water table is encountered; thus, contaminating shallow groundwater. Contaminated groundwater could then potentially be discharged by springs or as base flow into the Nine Mile Creek stream channel, leading to surface water contamination.

However, the limited volume of liquid (see **Section 4.1.1**) that may encounter surface water would be quickly be diluted and attenuated by adsorption to clays and vegetation in the stream banks. In the event of a breach in the pipeline resulting from a major flood, any hydrocarbons would be immediately diluted to the point of insignificance by the large volume of water that would be present in the stream at that time. Furthermore, the likelihood of a flood related breach would be minimal due to the pipeline design features.

4.1.3 Vegetation

Potential impacts to soils from installation of the Peter's Point loop line include the disturbance of approximately 41 acres of vegetation due to construction and installation of the proposed loop line.

However, the vegetation types affected are very common for the region. In addition, the proposed loop line route follows an existing pipeline route for the majority of its entire length with the exception of areas where archaeological sites are to be avoided (0.75 miles or 4.6 acres) or on private land (0.8 miles or 5.0 acres). Where the pipeline is buried, vegetation and topsoil would be removed along the length of the buried pipeline segment of the ROW.

Indirect impacts would include increased deposition of fugitive dust, spread of invasive and noxious weeds, and the increased potential for wildfires. **Table 4.1-2** summarizes surface disturbance by vegetative cover type.

Table 4.1-2 Surface Disturbance by Vegetative Cover Type under the Proposed Action

Vegetation Cover Type	Surface Disturbance Under the Proposed Action (acres)
Pinyon-Juniper	34
Sagebrush	2
Salt Desert Scrub	6

Note: Riparian vegetation is a vegetation cover type that may be encountered by surface disturbance.

Anticipated construction of the Proposed Action is slated to begin in early winter 2011. If loop line construction occurs during the winter months as planned, potential impacts to vegetation would be somewhat reduced as construction activities would occur outside the growing/flowering season. Similarly, there would be less opportunity for the dispersal of noxious and invasive weeds as construction would occur outside the season when weed species go to seed. Finally, as BBC intends to use a brush hog for ROW preparation, long-term impacts to vegetation would be reduced as root materials would be left in place thereby improving the opportunity for successful reclamation.

Riparian Areas

According to the Utah GAP vegetation cover data analysis, no lowland riparian habitat loss would occur as the result of surface disturbance under the Proposed Action. However, given the scale of Utah GAP vegetation mapping (1:119,000), pockets of riparian habitat not identified by GAP data may exist along Nine Mile Creek, along the lower portion of Cottonwood Creek, and along other area drainages. Individual riparian stands may range from a few square feet to a few acres.

It is likely that impacts to riparian areas associated with implementation of the Proposed Action would be similar in nature to those previously discussed above, with one noted exception. Unlike surrounding upland areas, the most damaging influences to riparian areas may not be limited to where they occur; many influences become cumulative downstream or lower within the watershed (Winward 2000 as cited in BLM 2010). Also, some disturbance events may alter the composition of riparian vegetation communities for considerable distances from the original event location, especially if the disturbances occur upstream (Winward 2000 as cited in BLM 2010).

Increased sedimentation and fugitive dust could also affect water quality, which could further degrade riparian vegetation productivity and overall functioning condition of riparian areas. Long-term impacts to riparian areas could include changes in the microclimate (temperature and moisture retention), depending on the quantity and type of vegetation removed.

The construction of the proposed loop line in or near riparian areas could increase the potential for contamination of riparian vegetation in the event of a spill. However, operational protocol minimizing the volume of fluid in the line and compliance with SPCC regulations would minimize these impacts.

To the maximum extent possible, construction would be avoided in riparian zones. In riparian areas where road and pipeline crossings are necessary, an erosion, revegetation, and reclamation plan would be required. Impacts to riparian areas would be limited to the removal of riparian vegetation at proposed stream crossings. Up to 5 acres of riparian habitat could be impacted by equipment during placement of the Peter's Point loop line in Lower Nine Mile Canyon but would be expected to recover in 1 to 3 years as demonstrated by the recovery of the vegetation along the original pipeline that was installed in the same area in 2004. There would be no permanent loss of riparian vegetation and the current functioning condition of the riparian area would remain unchanged.

The *EA for the West Tavaputs Plateau Drilling Program* (BLM 2010) discusses the placement of the first pipeline. Pages 4-11 provides a brief analysis of the impacts of the pipeline to riparian areas.

Wetland Areas

According to Utah GAP vegetation cover data analysis, no lowland riparian habitat (which includes wetlands) loss would occur as a result of surface disturbance under the Proposed Action. However, given the scale of Utah GAP vegetation mapping (1:119,000), pockets of riparian habitat and wetlands not identified by GAP data may exist along Nine Mile Creek, along the lower portions of Cottonwood Creek, and along area drainages. These wetland areas could be degraded by fugitive dust, and increased erosion and sedimentation. Wetland impacts related to construction near natural seeps and springs would likely affect the local hydrology of the area, and therefore the viability of the wetland community and function of the system.

Dust suppression activities would substantially reduce fugitive dust from construction related traffic, and dust-related impacts on wetlands in those areas.

Invasive and Noxious Plants

The spread of invasive and noxious weeds is a concern in areas proposed for surface-disturbing activities. Many invasive and noxious plants can spread through areas undeterred, producing changes in native vegetation communities. Disturbed areas where native vegetation and topsoil have been removed are particularly susceptible to noxious weed invasions. Specific adverse effects of invasive plants and noxious weeds can include 1) reduction in the overall visual character of an area; 2) competition with, or elimination of native plants; 3) reduction or fragmentation of wildlife habitats; and 4) increased soil erosion. Construction activities could potentially spur the introduction and spread of new and existing weed species within the Project Area (Gelbard and Belnap 2003 as cited in BLM 2010).

Invasive weed infestations already occur on disturbed areas throughout the greater WTP landscape, primarily along existing roadsides. As such, increased travel on these roads could potentially lead to the transport of weed seeds through the greater WTP landscape.

Although implementation of the Proposed Action would likely increase the spread of invasive and noxious weeds by increasing traffic and human activity within the Project Area, the above-described potential impacts could be partially reduced by interim reclamation and the following ACEPMs: 1) reclamation would be conducted as soon as practical after disturbance occurs, 2) weed-free mulch and native seeds would be used during reclamation, 3) all construction equipment coming into the Project Area would be power-washed prior to entering the Project Area, and 4) herbicides would be applied as necessary and determined by the BLM or appropriate SMA. In addition, an Approved Pesticide Use and Weed Control Plan would be prepared and implemented in consultation with the AO. Weed monitoring would be continued on an annual basis (or as frequently as the SMA determines) throughout the life of the project (LOP). The Pesticide Use and Weed Control Plan would include prescribed application methods that account for the reclamation objective of re-establishing native forbs, shrubs and trees in addition to

grasses.

4.1.4 Wildlife Species

Big Game Species

Impacts from installation and operation of the proposed loop line would have similar effects on the four species of big game found in the Project Area, which could include:

- decreased habitat values and reduced habitat use within and/or near the loop line corridor due to direct habitat disturbance and fragmentation of habitat;
- temporary decreased reproductive success and nutritional conditions from increased energy expenditure as a physical response to disturbance during ROW preparation and pipeline installation;
- temporary increased stress from intra- and inter-specific competition for resources due to increased animal densities in adjoining or unsuitable habitats during ROW preparation and pipeline installation;
- temporary increased potential for collisions between vehicles and big game during ROW preparation and pipeline installation; and
- if pipeline installation occurs during the winter months, the above-mentioned impacts would be of most concern in crucial winter ranges.

Big game species-specific surface disturbance impacts in the Project Area are provided in **Table 4.1-3**.

Table 4.1-3 Big Game Habitat Disturbance under the Proposed Action

Big Game Habitat Surface Disturbance	Surface Disturbance under the Proposed Action (acres)
Rocky Mountain Elk	
Crucial Winter	17
Substantial Year-Long	25
Rocky Mountain Bighorn Sheep	
Crucial Year-long	26
Substantial Year-Long	16
Desert Bighorn Sheep	
Crucial Year-long	23
Mule Deer	
Crucial Spring/Fall	19
Substantial Winter	22

Because the ACEPMs for the Peter’s Point loop line would be consistent with the COAs identified in Attachment 2 of the ROD for the WTP FEIS (BLM 2010), which include restrictions that would limit project-related vehicle traffic within the dawn and dusk hours during periods of major animal movement, and snow removal requirements that would improve animal movement in the greater WTP landscape, potential impacts to big game species related to winter construction activities in crucial winter range would be reduced. Additionally, the acres of disturbance would be added to the WTP wildlife mitigation requirements.

Migratory Birds

Implementation of the Proposed Action and associated impacts would depend on seasonal timing of construction of the proposed loop line. Anticipated construction of the Proposed Action is slated to begin in early winter of 2011. If ROW authorization and loop line installation occurs during the winter months, many of the migratory bird species would have left the Project Area for southern wintering grounds and direct impacts to breeding and nesting birds would not occur. Surface disturbances, visual, and noise-related impacts during this time would not impact most individual birds or nesting locations. However, the Proposed Action could result in reproductive failure of breeding adults, nest abandonment, and direct impacts to nest sites if loop line installation activities are conducted during the spring and summer months.

Fragmentation of habitat and associated edge avoidance by migratory birds has been documented as leading to lower levels of productivity in the area. Associated noise and increased human presence during loop line installation could cause temporarily displacement from foraging or nesting habitats. If displaced birds move to less suitable habitats during loop line installation, a temporary deteriorated physical condition, increase in competition levels, and decrease in reproductive success could occur.

Raptors

Implementation of the Proposed Action could affect breeding, nesting, and wintering raptors, depending on the timing of loop line installation relative to occupied territories, active or inactive nest sites, wintering areas, and the seasonal or daily timing of Proposed Action activities.

Anticipated construction of the Proposed Action is slated to begin in the winter of 2011. If ROW authorization and loop line installation occurs during the winter months, many of the raptor species would have left the Project Area for southern wintering grounds and direct impacts to breeding and nesting birds would not occur. If construction occurs during the spring or summer months, loop line installation activities in close proximity to an active raptor nest could lead to nest failure or nest abandonment, thereby affecting the breeding pair and their annual productivity. However, BBC's compliance with the *Utah Raptor Protection Guidelines* as defined in the ROD for the WTP FEIS (BLM 2010) would avoid or substantially reduce the potential for direct impacts to active raptor nests. Surface disturbances associated with the Proposed Action would result in the temporary disturbance of approximately 41 acres of habitat for raptor prey species such as small mammals, songbirds, and reptiles.

Loop line installation activities could also result in temporary avoidance or displacement from affected areas due to visual disturbances on the landscape, noise from equipment use or other human activity, and increased vehicle traffic. Temporary displacement could lead to temporary increased use of adjacent habitats, which could consequently lead to increased inter- and intra-specific competition for resources.

Fisheries

Fish habitats could be affected by increased erosion and sediment deposition that could be yielded into Nine Mile Creek via surface disturbance associated with the loop line construction. Similarly, natural gas, condensate, and produced water could potentially be yielded to waterways, and subsequently to the Green River system, if any pipeline spills were to occur during a storm event. Erosion leading to sediment loading into streams has been identified as resulting in lower fish species density. Additionally, increased levels in disturbances such as sediment deposition and spills can lead to a reduction in invertebrate species richness and thereby a reduction in prey availability for many fish species.

Anticipated construction of the Proposed Action is slated to begin in the winter of 2011. If loop line construction occurs during the winter months as planned, potential impacts to surface water would be reduced based on diminished stream flow, and therefore less opportunity for erosion and sediment yield

into flowing water/fisheries.

4.1.5 Threatened, Endangered, and Candidate Species

As previously discussed in **Section 3.5**, The USFWS' BO for the WTP FEIS (BLM 2010) concurred with the BLM's findings for threatened, endangered, and candidate species within the greater WTP landscape. The final BO covering the Peter's Point Project Area was signed by the USFWS prior to completion of this WTP FEIS, thereby formally concluding the Section 7 consultation process.

Construction activities associated with burying approximately 3 miles of the proposed loop line, could degrade USFWS-designated, downstream critical habitat for Colorado River fish in the Green River by increasing erosion, increased sediment yield, and the potential for exposure to hazardous substances in the case of an accidental pipeline rupture. However, impacts related to accidental spills of hazardous substances would be substantially minimized due to operational protocol minimizing the volume of fluid in the line and compliance with SPCC and storm water management regulations.

Based upon required compliance with spill plan and storm water management guidelines, and implementation of the field-wide SPCC and the field-wide SWMP upon commencement of construction activities, the Proposed Action "*may affect, is not likely to adversely affect*" the Colorado River fish and their USFWS-designated critical habitats. Furthermore, winter construction would correspond with the preferred timing window for Colorado River fish and their USFWS-designated critical habitats. The spring and summer months are critical time frames for Colorado River fish spawning species. However, the closest Colorado River fish spawning species is found 25.7 river miles from the Project Area. Any potential impacts would be reduced due to the distance between the Green River and the Project Area. Any potential fish species response to a spill from the pipeline has been discussed on page 46 of the WTP FEIS Biological Opinion (BLM 2010).

Under Alternative A, a portion of the loop line route occurs in mapped sage grouse crucial winter habitat; however, based on the BLM Price Field Office's on-the-ground evaluation, it has been confirmed as not being sage grouse habitat. Specifically, the route goes through wooded/treed habitat and does not go through open sage brush.

ACEPMs for the Peter's Point loop line would be consistent with the COAs identified in Attachment 2 of the ROD for the WTP FEIS (BLM 2010) (refer to **Appendix C**), which includes the following mitigation measures:

- if any dead or injured threatened, endangered, proposed, or candidate plant or animal species are located during construction or operation, the BLM Price Field Office (435-636-3600) would be notified within 24 hours; and
- BBC would conduct clearance surveys for threatened, endangered or other special-concern species at the optimum time. This would require coordination with the BLM before November 1, annually, to review the potential for disturbance and to agree on inventory parameters.

4.1.6 Non-WSA Lands with Wilderness Characteristics

Under the Proposed Action, up to 17 acres would be directly disturbed within the non-WSA lands with wilderness characteristics area. Indirect impacts would extend beyond the 17 acres of direct disturbance, and would include those areas within sight and/or sound of construction activities or production facilities. Impacts to the individual components of wilderness characteristics are described below:

Size

Implementation of the Proposed Action would directly disturb approximately 17 acres or less than 0.02 percent of the total area with wilderness characteristics. Although linear surface disturbances would be introduced into the natural landscape, the size of the wilderness characteristics area would not be segmented into areas less than 5,000 acres as the disturbance would occur on the border of the inventoried area.

Naturalness

Changes in naturalness are often described in terms of human modification of the natural landscape. The installation of a loop line parallel to an existing pipeline would result in both short-term and long-term impacts to the area's predominantly natural appearing landscape. The proposed loop line would cause a direct loss of naturalness on 17 acres (less than 0.02 percent of the total wilderness characteristics area) and change the natural character of the landscape.

Indirect impacts would include all changes in the natural environment that would be visible to the casual observer from within the wilderness characteristics areas (e.g., surface disturbance, construction equipment, and production facilities). Under the Proposed Action, it is assumed that the indirect loss of naturalness (i.e., those wilderness characteristics areas that fall within a 0.5 mile sight and sound buffer of development) could be up to 902 acres. However, due to the rugged topography, vegetation, and overall size of the impacted area, the pipeline would be visually screened. Therefore, naturalness may still exist in isolated pockets throughout the impacted area.

Outstanding Opportunities for Solitude

Noise from construction equipment would reduce the quality of the opportunity for solitude in the immediate vicinity of the development. These noise effects would be temporary in that they would last only during the time (daytime activity only) it would take to construct the loop line. During production, a limited loss of solitude would occur from noise and associated visual effects of the development. Constructing and maintaining the loop line would result in a direct loss of solitude on 17 acres (or less than 0.02 percent of the total unit). Implementation of the Proposed Action could indirectly impact approximately 902 acres of the wilderness characteristics area and opportunities for solitude.

Outstanding Opportunities for Primitive and Unconfined Recreation

Opportunities for primitive and unconfined recreation would be diminished in proportion to the expected loss of naturalness and solitude. In disturbed locations, the loss of opportunity for primitive recreation would be related to the change from an undeveloped setting to a more industrial setting. Due to the rugged topography and overall size of the impacted area, some of the pipeline would be visually screened. Therefore, opportunities for primitive and unconfined recreation may still exist in isolated pockets throughout the impacted area; these opportunities would no longer be outstanding.

BBC has agreed to a number of ACEPMs which would reduce the above-mentioned impacts (e.g., the pipeline would be painted or allowed to oxidize to match the surrounding environment, water would be used during construction activities to abate fugitive dust, interim reclamation would begin as soon as possible after the disturbance and continue until successful reclamation is achieved); however, it is expected that wilderness characteristics would be degraded in the Desolation Canyon area.

4.1.7 Visual Resources

The Peter's Point Loop Line Project Area was inventoried in October of 2011 as VRI Class II. However, this area is currently managed by the BLM as a VRM Class III. The proposed loop line in the study area was analyzed using field reconnaissance and photography, establishment of four Key Observation Points (KOPs), and expert contrast rating analysis from selected KOPs. Of the four KOPs that were established

by the BLM, one KOP is from the route designated for the Proposed Action, Alternative A based on important representative and significant views that would likely be seen by the casual observer, and then studied. This included pedestrians viewing rock art and roadside views typical for automobile travelers at speed of 15 to 25 miles per hour from the Cottonwood Canyon to Nine Mile Canyon Pipeline Dropdown Site (KOP 1). A contrast rating form was completed for KOP 1, and is included in **Appendix E**.

Impacts to visual resources within the Peter's Point Project Area were also analyzed in an existing NEPA document, *West Tavaputs Drilling Program EA* (BLM 2004), using field reconnaissance and photography, establishment of multiple KOPs, development of computer visual simulations, and expert contrast rating analysis from selected KOPs. During this previous analysis, 16 KOPs were established. Visual simulations and contrast ratings were completed for eight of these KOPs, which are identified in Appendix E of the *West Tavaputs Drilling Program EA* (BLM 2004). The potential impacts disclosed in the 2004 EA would be similar to those anticipated for this loop line EA. Based on the studies completed for the 2004 EA and this loop line EA, it is likely that the following aspects of the Peter's Point Proposed Action would not meet VRI Class II standards.

- Installation of a larger diameter loop line along the existing pipeline route from Cottonwood Canyon into Nine Mile Canyon would not meet Class II standards due to the increase in structure that would contrast in form, line, and texture with the characteristic landscape.

However, the aforementioned aspect of the Proposed Action would meet VRI Class II standards by using proper siting so that existing vegetation/topography is used for screening to the extent possible, and by implementing the following mitigation strategies:

- proper and successful revegetation, introduction of screening vegetation where the corridor allows;
- careful initial placement of the larger pipeline to take advantage of existing vegetation for screening;
- visual resource BMPs, COAs, and ACEPMs, including placement of the pipe to adhere to the route visually simulated for purposes of preparing a contrast rating;
- existing topography and vegetation used to screen the line wherever possible; and
- all above ground facilities including any visible equipment would be painted the darker colors selected from the latest national color charts or allowed to oxidize, whichever best allows the facility to blend into the background (refer to Standard Environmental Colors, CC-001: June 2008).

As previously stated, the Peter's Point Loop Line Project Area is managed as a VRM Class III area, and as such, installation of the Peter's Point loop line would be consistent with the BLM's VRM objective for the Project Area. In addition, the ROD for the approved RMP states that the BLM will manage the Nine Mile Canyon ACEC as a VRM Class III to allow for the infrastructure needed for oil and gas development, as well as to properly develop the cultural sites for the enjoyment of the public while protecting the landscape. The VRM Class III management continues to protect the area from visual impacts because other surface disturbing activities can be blended in with vegetative screening. Impacts to the visual resources would also be temporary and would consist of reduced scenic value because of the visibility of pipeline construction equipment and personnel, and the temporary linear scar that would be partially visible from the byway until such time as reclamation is successful. As the majority of the pipeline would be installed adjacent to an existing pipeline, new linear visual disturbance would be minimized. Based on peak visitation occurring from the spring through the fall, construction activities occurring during the winter months would further reduce temporary visual impacts.

4.1.8 Cultural Resources

Direct impacts to cultural resources are not anticipated under the Proposed Action because all COAs, and ACEPMs defined in the ROD for the WTP FEIS and the Programmatic Agreement, and a site/project specific Section 106 consultation would be followed during installation and operation of the Peter's Point loop line. Included within these COAs and ACEPMs is a commitment to complete Class III cultural resource clearance surveys prior to any surface disturbing activity, which was completed by MOAC in 2010 and Uinta Research in 2011. The MOAC Class III inventory resulted in the location of 57 previously recorded archaeological sites. Forty-one sites are determined eligible to the NRHP. The Uinta Research Class III inventory resulted in two previously recorded archaeological sites, and two new sites; all of which are determined eligible to the NRHP. According to the BLM stipulations and ACEPMs, all eligible sites should be avoided by the installation of the Peter's Point loop line by at least 100 feet. Due to the constricted terrain along several portions of the proposed pipeline under the Proposed Action, various sites occur within less than 100 feet from the proposed pipeline centerline. To avoid potential impacts, BBC would implement the mitigation measures listed below.

- All pipeline construction in the canyon bottom, where BBC would bury the pipeline, would be monitored by an archaeologist. This includes areas that are not adjacent to eligible sites.
- Pipeline construction on Peter's Point, the "meadow" in Section 26, T12S, R16E would be monitored by an archaeologist during construction activities.
- An avoidance fence would be erected by BBC along the sites boundaries of 42Cb20875.
- Pipeline construction would be monitored on the mesa top where the pipeline would be buried.
- BBC would be required to fulfill mitigation commitments included in the WTP FEIS ROD (BLM 2010).
 - If unanticipated cultural sites are discovered during surface-disturbing activities, the steps in the *Preconstruction Cultural Resource Identification Plan* included in the WTP FEIS (BLM 2010) would be followed to ensure proper mitigation and handling (see **Appendix F**).

Other COAs and mitigation measures include having a compliance monitor present during construction activities, and to halt construction should cultural resources be discovered during construction activities. Implementation of these COAs would reduce the potential for disturbance or destruction of cultural resources during ROW preparation and pipeline installation. Furthermore, as the majority of the loop line would be installed along an existing pipeline ROW, new disturbance and the associated potential for uncovering previously undiscovered cultural artifacts and sites would be reduced.

As discussed in Section 4.12 of the WTP FEIS, fugitive dust presents potential indirect impacts to rock art. However, the *Nine Mile Canyon Dust Study* (Itasca 2011), a scientifically based study directly examining the correlation between particulates and any associated detrimental effects of dust on rock art, discloses the following conclusions:

1. the constituents identified in the dust on the rock art are associated with natural weathering processes of geologic sediments in the Study Area;
2. most of the solute mass released from the rock panel sediments (dust) is from dissolution of naturally occurring gypsum, which was not identified in any of the road samples;
3. the dust on rock panels is statistically similar to the materials that occur in the mudstone (and limestone) beds overlying the sandstone beds on which the rock art occurs;
4. the dust on rock panels is statistically different from the dust from the roads; and
5. no evidence of magnesium chloride from road dust, or of any other detrimental constituents from the road, was observed in the rock panel samples.

For the most conservative analysis, it is assumed that during ROW preparation and pipeline installation, fugitive dust generated by vegetation and soil disturbance or from vehicle use along project roads has the potential to affect rock art in the Peter's Point Loop Line Project Area. Impacts resulting from fugitive dust are greatest during summer months where hot, windy, and/or dry conditions are present; however, if construction activity occurs during the winter months, as planned, potential impacts to rock art in the Peter's Point Loop Line Project Area would be reduced. Furthermore, as defined in the ROD for the WTP FEIS (BLM 2010), BBC is responsible for implementing rigorous fugitive dust abatement during construction activities, which would reduce the potential effects of fugitive dust on rock art panels.

4.1.9 Recreation / Special Designations

As discussed in **Section 3.9**, the Peter's Point Loop Line Project Area occurs partially within the Nine Mile Canyon ACEC and the Nine Mile Canyon Scenic Byway. Under the Proposed Action, approximately 13 acres of the disturbance corridor would occur within the Nine Mile Canyon ACEC. As discussed in the *Price Field Office ROD and Approved RMP* (BLM 2008), ACEC management actions include a NSO stipulation for oil and gas leasing and other surface disturbing activities, excluding land treatments, OHVs limited to designated routes, and avoidance for ROWs. Development would be limited to the designated ROW within the Nine Mile Canyon ACEC, limiting the impacts in those areas. However, installation of the proposed loop line would temporarily increase traffic and human activity in Nine Mile Canyon, which may result in minimal impacts to the relevant and important values for which the ACEC was designated. Potential impacts to cultural values, special status plant species, scenic and wildlife resource values for which the ACEC is managed for are discussed in **Sections 4.1.8, 4.1.5, 4.1.7, and 4.1.4**, respectively.

The Nine Mile Canyon Scenic Byway receives high recreational traffic and use due to the density of rock art and other recreational opportunities. Recreational impacts would include temporary, diminished recreational experience and potential traffic conflicts during pipeline installation along the Nine Mile Canyon segment of the proposed ROW. These impacts would last for the approximately two months that would be required to install the loop line within the existing pipeline ROW. Impacts to the Scenic Byway would also be temporary and would consist of reduced scenic value because of the visibility of pipeline construction equipment and personnel, and the temporary linear scar that would be partially visible from the byway until such time as reclamation is successful.

Anticipated construction of the Proposed Action is slated to commence in the winter of 2011. If ROW authorization and loop line installation occurs during the winter months, short-term visual impacts resulting from construction activities would be reduced based on peak visitation occurring on weekends from the spring through the fall.

Additional information on the potential impacts of pipeline construction and operational uses on recreational resources and special designations is available in the WTP FEIS (BLM 2010).

4.1.10 Transportation

Under the Proposed Action, vehicle traffic during the construction phase would include transportation of materials and heavy equipment, commuting of the workforce, and daily operation of the construction equipment. Signs providing traffic control would be installed, as necessary.

Increased traffic and dust-related impacts were identified in the WTP FEIS; however, during construction activities, dust levels would be reduced through applicant-committed dust-suppression measures also identified in the WTP FEIS (BLM 2010). Dust suppression measures are typically performed most under hot, windy, and/or dry conditions, commonly during the summer months. ROW authorization and pipeline installation occurring during the winter months would further reduce dust levels resulting from

construction activities. Dust levels from other existing activities, including tourist traffic, would also be reduced for the duration of loop line construction activities.

As stated in Section 3.14 of the WTP FEIS, based on concerns that use of magnesium chloride on canyon roads in the greater WTP landscape could damage rock art, both BBC and Carbon County have agreed to discontinue use of this suppressant in Nine Mile Canyon between Harmon and Cottonwood Canyons, in Harmon, Gate, and Cottonwood canyons. Dust abatement applications would be comprised of water or other approved dust suppressant materials (see **Section 3.11.3**).

As the proposed loop line follows an existing pipeline ROW corridor, vehicle traffic and equipment would be able to use the ROW corridor during pipeline installation. Use of the ROW corridor would reduce the presence of construction equipment and vehicles along Project Area roads, and therefore the potential for vehicle accidents during pipeline construction would be minimal. The locations where accidents are most likely to occur are at intersections where project-related vehicles turn onto or off of highways from access roads and/or the existing pipeline ROW.

4.1.11 Health and Safety

The potential impacts on human health and safety associated with implementation of the Proposed Action would include:

- potential occupational accidents and injuries,
- increased potential for traffic accidents during loop line construction,
- explosions and accidental ignition of wildfires should a pipeline rupture occur,
- accidental rupture or damage of the loop line by heavy equipment, and
- accidental spills should a serious pipeline rupture occur.

In general, compliance with health and safety regulations would minimize human health and safety concerns. Fire suppression equipment (e.g., fire extinguishers, fire water, and hoses) would be available at the construction site. Compliance with Federal regulations pertaining to pipeline safety CFR Title 49 Part 186-199 would reduce potential leaks or ruptures. Impacts related to accidental spills of hazardous substances would be substantially minimized due to operational protocol minimizing the volume of fluid in the line, and compliance with SPCC and storm water management regulations.

Based on the burial of 43 percent (3.0 miles) of the proposed loop line, implementation of the field-wide SPCC and the field-wide SWMP, the suppression of traffic related dust, the location of the loop line route along an existing pipeline ROW, it is reasonable to conclude the implementation of the Proposed Action would not substantially affect public health or safety. Anticipated construction of the Proposed Action is slated to commence in the winter of 2011. If loop line construction occurs during the winter months as planned, traffic volumes and fugitive dust would be reduced; thus, further reducing potential impacts to public health and safety.

4.2 ALTERNATIVE B – COTTONWOOD CANYON PIPELINE ROUTE

4.2.1 Soils

Potential impacts to soils under Alternative B include the disturbance of approximately 39 acres of vegetation, mixing of soil horizons, soil compaction, increased susceptibility of the soils to wind and water erosion, contamination of soils with petroleum products, disturbance of topsoil productivity, and disturbance of biological soil crusts due to construction and installation of the proposed pipeline. The

length of pipeline (1,162 feet or 0.22 mile) within the HCW proposed under Alternative B would be slightly less than that proposed under Alternative A. The primary effect of surface disturbances on soil resources is increased erosion and the resulting potential increase in sediment yield to nearby ephemeral drainages, perennial streams, and livestock ponds.

While overall surface disturbance would be less under Alternative B according to GIS calculations (i.e., 2.5 acres less disturbance than the Proposed Action), the severity of the impact would be greater under Alternative B as the pipeline route would result in more “new” disturbance than the Proposed Action.

Table 4.2-1 Soil Disturbance under Alternative B

Soil Unit Type	Surface Disturbance Under Alternative B (acres)
Haverdad Loam, 1 to 8 Percent Slopes	2
Cabba Family-Guben-Rock Outcrop Complex	3
Podo Gravelly Sandy Loam, 1 to 8 Percent Slopes	2
Green River-Juva Variant Complex	12
Travessilla-Travessilla Family-Rock Outcrop Complex	1
Travessilla Rock Outcrop-Gerst Complex	2
Podo-Cabba Family Complex	8
Shupert Winetti Complex	10

4.2.2 Surface and Ground Water

Surface Water

While the length of pipeline (1,162 feet or 0.22 mile) within the HCW area proposed under Alternative B is slightly less than that proposed under Alternative A, potential impacts to surface water under Alternative B would be moderately higher than those described for Alternative A given the increased number of stream crossings required to successfully install the pipeline along Cottonwood Canyon. Specifically, as described in **Section 2.2**, installation of the pipeline under Alternative B would require the construction of five stream crossings under Cottonwood Creek due to the limited space available for the ROW and the meandering nature of the creek. The increased number of buried stream crossings increases the risk of surface water contamination in the event of a pipeline leak or rupture. Additionally, the remote nature the pipeline route dropping into Cottonwood Canyon would reduce emergency response time in the event of a pipeline leak or rupture in that area, thereby increasing the risk that natural gas, condensate, and produced water could be yielded to Cottonwood Creek.

However, there are several factors that would limit the potential for a significant release of hydrocarbons or other toxic substances from the proposed pipeline in the area. The proposed pipeline would carry a very limited volume of liquid, and that liquid would predominantly consist of water. There are separators in place at individual wellheads that extract free liquids from the gas stream before it enters the gathering system. The only liquids that would occur in the proposed pipeline would be a result of condensation from cooling. The volume of liquid that would form in this fashion would be limited, measuring in the range of a few tens of barrels or less per day. The proposed pipeline design features (e.g., size and grade) would minimize the collection of fluids. The volume of gas that would move through the line would continuously sweep liquids from the lines. In addition, pigs would be used to clean the line twice a week and ‘smart pigs’ would also run periodically to check for corrosion and scaling issues. Therefore, at any point in time, there would be a very limited volume of liquid in place in the line. This volume would be

even more limited (i.e., a few gallons) at any particular location that may be breached.

Furthermore, the low volume of liquids, carried by the very high volume of gas that could escape in the event of a breach, usually results in vaporization of any liquids.

Ground Water

Potential impacts to groundwater under Alternative B would be similar, but slightly higher to those described for the Proposed Action. Specifically, in the event of a pipeline rupture, potential impacts to groundwater resources from installation and operation of the pipeline include contamination of groundwater with natural gas, condensate, and produced water; and impacts to spring water quality and flow rates. Specifically, natural gas released to surface soils could infiltrate the soil and, under the right conditions, could migrate vertically until the water table is encountered; thus, contaminating shallow groundwater. Contaminated groundwater could then potentially be discharged by springs or as baseflow into either the Cottonwood Creek and/or Nine Mile Creek stream channels, leading to surface water contamination.

While the low volume of liquid that would be present in the proposed pipeline would likely result in the evaporation of fluids, the limited volume of liquid that could be released in the event of a pipeline rupture would be attenuated quickly by adsorption to clays and vegetation in the stream banks and is rapidly diluted. In the event of a breach in the pipeline resulting from a major flood, any hydrocarbons would be immediately diluted to the point of insignificance by the large volume of water that would be present in the stream at that time. Furthermore, the likelihood of a flood related breach would be minimal due to the pipeline design features.

4.2.3 Vegetation

Potential impacts to vegetation under Alternative B would include the disturbance of approximately 39 acres of vegetation due to construction and installation of the proposed pipeline. While overall surface disturbance would be less under Alternative B (i.e., 2.5 acres less disturbance than the Proposed Action), the severity of the impact would be greater under Alternative B as the pipeline route would result in more “new” disturbance than the Proposed Action. Where the pipeline is buried (2.2 miles), vegetation and topsoil would be removed along the length of the buried pipeline segment of the ROW. **Table 4.2-2** summarizes surface disturbance by vegetative cover type under Alternative B.

Table 4.2-2 Surface Disturbance by Vegetative Cover Type under Alternative B

Vegetation Cover Type	Surface Disturbance Under Alternative B (acres)
Pinyon-Juniper	27
Sagebrush	9
Salt Desert Scrub	3

4.2.4 Wildlife Species

Direct and indirect impacts to wildlife under Alternative B would be similar to those described for the Proposed Action. **Table 4.2-3** summarizes big game habitat disturbance under Alternative B.

Table 4.2-3 Big Game Habitat Disturbance under Alternative B

Big Game Habitat Surface Disturbance	Surface Disturbance Under Alternative B (acres)
Rocky Mountain Elk	
Crucial Winter	10

Substantial Year-Long	29
Rocky Mountain Bighorn Sheep	
Crucial Year-long	28
Substantial Year-Long	11
Desert Bighorn Sheep	
Crucial Year-long	28
Mule Deer	
Crucial Spring/Fall	15
Substantial Winter	24

4.2.5 Threatened, Endangered, and Candidate Species

Direct and indirect impacts to federally-listed threatened and endangered species under Alternative B would be similar to those described for the Proposed Action. However, potential impacts to Colorado River fish under Alternative B would be moderately higher than those described for the Proposed Action given the increased number of stream crossings required to successfully install the pipeline along Cottonwood Canyon. However, based upon required implementation of the field-wide SPCC and the field-wide SWMP upon commencement of construction activities, Alternative B “*may affect, is not likely to adversely affect*” the Colorado River fish and their USFWS-designated critical habitats. Furthermore, winter construction would correspond with the preferred timing window for Colorado River fish and their USFWS-designated critical habitats as they support spring and summer spawning species.

4.2.6 Non-WSA Lands with Wilderness Characteristics

Impacts to non-WSA lands with wilderness characteristics under Alternative B would be similar to those described under the Proposed Action. However, impacts to non-WSA lands with wilderness characteristics would be less under Alternative B because 10 acres of the disturbance corridor falls within the Desolation Canyon area (i.e., approximately 7 fewer acres of disturbance in the Desolation Canyon area).

4.2.7 Visual Resources

The potential for impacts to visual resources would be higher under Alternative B, Cottonwood Canyon Pipeline Route, as a large segment of the pipeline does not follow an existing ROW and thus would result in new visual disturbance.

As previously stated, the Peter’s Point Loop Line Project Area was inventoried in October of 2011 as VRI Class II, but this area is currently managed by the BLM as a VRM Class III. The proposed pipeline in the study area was analyzed using field reconnaissance and photography, establishment of four KOPs, and expert contrast rating analysis from selected KOPs. Of the four KOPs that were established by the BLM, three KOPs are from the route designated for Cottonwood Canyon Pipeline Route, Alternative B based on important representative and significant views that would likely be seen by the casual observer, and then studied. These included roadside views typical for automobile travelers at speeds of 15 to 25 miles per hour and pedestrians viewing rock art from the Great Hunt Panel (KOP 2), from the Cottonwood Canyon (KOP 3), and from the Cottonwood Canyon Pipeline Dropdown Site (KOP 4). Contrast rating forms were completed for the KOPs and are included **Appendix E**.

Impacts to visual resources under Alternative B were also analyzed in an existing NEPA document, *West Tavaputs Drilling Program EA* (BLM 2004), using field reconnaissance and photography, establishment

of multiple KOPs, development of computer visual simulations, and expert contrast rating analysis from selected KOPs. Based on previous studies, studies done for this EA, and recent inventories, much of the aspects that would not meet VRI Class II standards under Alternative B would be similar to those under the proposed Action with the addition of the following:

- The visual impacts associated with the installation of pipeline in Cottonwood Canyon traveling north along Cottonwood Canyon Road to its confluence with Nine Mile Canyon Road in the extreme NW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 9, T12S, R16E just below the Sekani, LLC property line would establish new disturbance and create moderate contrast in the landform and the vegetation. In Cottonwood Canyon, these impacts are more visually prevalent to the casual observer due to the new disturbance and narrow travel corridor.

However, the aspects of Alternative B would meet VRI Class II standards by using proper siting so that existing vegetation/topography is used for screening to the extent possible, and by implementing the following mitigation strategies:

- proper and successful revegetation, introduction of screening vegetation where the corridor allows;
- careful initial placement of the larger pipeline to take advantage of existing vegetation for screening;
- visual resource BMPs, COAs, and ACEPMs including placement of the pipe to adhere to the route visually simulated for purposes of preparing a contrast rating;
- existing topography and vegetation used to screen the line wherever possible; and
- all above ground facilities including any visible equipment would be painted the darker colors selected from the latest national color charts or allowed to oxidize, whichever best allows the facility to blend into the background (refer to Standard Environmental Colors, CC-001: June 2008).

Furthermore, installation of the Peter's Point pipeline would be consistent with the BLM's VRM Objective III for the Project Area. However, unlike the Proposed Action, the majority of the pipeline route would result in new linear disturbance, thus creating a new visual intrusion in the greater WTP landscape. Additionally, the pipeline would follow Cottonwood Canyon Road, which receives heavy recreational traffic because of the high visibility of rock art panels (see **Sections 4.2.8** and **4.2.9**).

4.2.8 Cultural Resources

The potential for direct impacts to cultural resources would be higher under Alternative B as a large segment of the pipeline does not follow an existing ROW; and thus, would result in new surface disturbance. BBC would still be held to the COAs and ACEPMs described in **Section 4.1.8**, pre-construction Class III inventory requirements (completed in 2010 and 2011) and would be required to halt construction should cultural resources be discovered during construction activities under Alternative B. However, because the pipeline segment that follows Cottonwood Canyon would require a new ROW, the potential for uncovering new cultural sites would be higher than within an existing pipeline ROW. A surface-laid pipeline would be required in this area given the physical and topographic constraints. However, the long-term presence of a 20-inch OD pipeline along Cottonwood Canyon Road would diminish the cultural setting and sense of place given the close proximity of the pipeline route to the Great Hunt Panel and Buffalo Village sites.

The potential for dust related impacts to rock art would also be higher under Alternative B given the close proximity of the pipeline route to the Great Hunt Panel and Buffalo Village sites. Installation techniques

along the steep cliff dropping into Cottonwood Canyon and associated erosion and dust would exacerbate these potential effects.

4.2.9 Recreation / Special Designations

For the segment of the pipeline that would follow Nine Mile Canyon, impacts to the recreational experience, the Nine Mile Canyon ACEC, and the Nine Mile Canyon Scenic Byway under Alternative B would be similar to those described under the Proposed Action. However, impacts to recreation and special designations would be greater under Alternative B because 19 acres of the disturbance corridor falls within the Nine Mile Canyon ACEC (i.e., approximately 6 more acres of disturbance in the ACEC), the segment of pipeline in Cottonwood Canyon would follow the heavily traveled Cottonwood Canyon Road, and the pipeline would be visible from the Hunt Panel and Buffalo Village sites. As this segment of the pipeline would be surface-laid, Alternative B would result in a long-term, linear visual intrusion that could decrease the recreational experience, and diminish the scenic value of the portion of the byway in Cottonwood Canyon as well as the cultural setting and sense of place associated with the Great Hunt Panel and Buffalo Village panels.

Anticipated construction of the Proposed Action is slated to commence in the winter of 2011. If ROW authorization and pipeline installation occurs during the winter months, short-term visual impacts resulting from construction activities would be reduced based on peak visitation occurring on weekends from the spring through the fall. However, if construction occurs during the winter months, road closures along Cottonwood Canyon Road would have a temporary but negative impact on hunters who use Cottonwood Canyon Road to access permit areas.

4.2.10 Transportation

Impacts to transportation under Alternative B would be similar to those described under the Proposed Action. However, impacts to transportation under Alternative B would be greater because the construction activities for the segment of pipeline that would follow the realigned ROW along Cottonwood Canyon Road (see **Appendix B, Figure 2 – Alternative B**) would necessitate long delays for tourist traffic, hunter traffic, and oil and gas development traffic.

4.2.11 Health and Safety

In terms of health and safety impacts, the majority of health and safety impacts would be similar to those described in the Proposed Action. However, the intensity and duration of potential impacts would be greater under Alternative B due to the construction activities for the segment of pipeline that would follow the realigned ROW along Cottonwood Canyon Road (see **Appendix B, Figure 2 – Alternative B**). Specifically, temporary road closures, stream crossings, and construction activities near frequently visited cultural sites proposed under Alternative B pose greater risk to health and safety. Potential impacts under Alternative B include:

- traffic-related impacts may be increased under Alternative B as a result of temporary road closures along Cottonwood Canyon Road;
- in the event of an emergency (i.e., drilling incident) the temporary road closures proposed under Alternative B could limit or restrict emergency response as Cottonwood Canyon is the primary and closest vehicle route in and out of Peter's Point;
- potential occupational accidents and injuries;
- potential for traffic accidents;
- explosions and accidental ignition of wildfires should a pipeline rupture occur;
- proposed pipelines co-located with road are at greater risk for accidental rupture or damage of pipelines by heavy equipment; and

- accidental spills should a serious pipeline rupture occur.

4.3 ALTERNATIVE C – NO ACTION

4.3.1 Soils

Under the No Action alternative the proposed loop line would not be constructed and installed and there would be no project related, direct or indirect impacts on soils.

4.3.2 Surface Water

Under the No Action alternative the proposed loop line would not be constructed and installed and there would be no project related, direct or indirect impacts on surface or ground water resources.

4.3.3 Vegetation

Under the No Action alternative the proposed loop line would not be constructed and installed and there would be no project related, direct or indirect impacts on vegetation.

4.3.4 Wildlife Species

Under the No Action alternative the proposed loop line would not be constructed and installed and there would be no project related, direct or indirect impacts on wildlife species or habitats.

4.3.5 Threatened, Endangered, and Candidate Species

Under the No Action alternative the proposed loop line would not be constructed and installed and there would be no project related, direct or indirect impacts on special status species.

4.3.6 Non-WSA Lands with Wilderness Characteristics

Under the No Action alternative the proposed loop line would not be constructed and installed and there would be no project related, direct or indirect impacts to non-WSA lands with wilderness characteristics.

4.3.7 Visual Resources

Under the No Action alternative the proposed loop line would not be constructed and installed and there would be no project related, direct or indirect impacts on visual resources. Like the Proposed Action and Alternative B, the Project Area would remain consistent with BLM's VRM Class III objectives.

4.3.8 Cultural Resources

Under Alternative C, No Action alternative, the proposed loop line would not be constructed and installed. As such, no changes to the existing environment would occur, and no impacts would be anticipated.

4.3.9 Recreation / Special Designations

Under the No Action alternative the proposed loop line would not be constructed and installed and there would be no project related, direct or indirect impacts on recreation and special designations.

4.3.10 Transportation

Under the No Action alternative the proposed loop line would not be constructed and installed and there would be no project related, direct or indirect impacts on transportation.

4.3.11 Health and Safety

Under the No Action alternative the proposed loop line would not be constructed and installed and there would be no project related, direct or indirect impacts on health and safety.

5.0 CUMULATIVE IMPACTS

Cumulative impacts result from the incremental impacts of an action when added to past, present, and reasonably foreseeable future actions, regardless of who takes the action. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time. As the cumulative effects of pipeline installation were contemplated within the cumulative impact analysis of the WTP FEIS, this EA tiers to and incorporates the cumulative impact analysis from Chapter 5 of the WTP FEIS (BLM 2010) in its entirety. Briefly, however, implementation of either Alternatives A or B would contribute to cumulative effects on soils, surface and groundwater, vegetation, wildlife, non-WSA lands with wilderness characteristics, visual resources, cultural resources, recreation, special designations, transportation, health and safety, and cumulative impacts. Cumulative impacts would be slightly lower under the Proposed Action given that the majority of the loop line would be installed adjacent to an existing pipeline, thereby reducing “new” cumulative impacts. Cumulative impacts would be slightly higher under Alternative B given that about half of the pipeline would be installed within a new pipeline ROW. Cumulative impacts would not occur under Alternative C.

6.0 CONSULTATION AND COORDINATION

6.1 INTRODUCTION

Staff from the BLM Price Field Office reviewed the Proposed Action and identified potential resource issues. The issue identification section identifies those issues carried forward for detailed analyses in **Chapters 3, 4, and 5** (see **Appendix A**). **Appendix A** provide rationale for issues that were considered but not analyzed further.

6.2 PERSONS, GROUPS, AND AGENCIES CONSULTED

The proposed loop line route, construction, utilization, and maintenance were discussed between BBC representatives; staff members and resources specialist of the BLM Price Field Office, and representatives from Kleinfelder, Inc., a third-party contractor.

This pending EA (DOI-BLM-UT-G020-2011-0055-EA) was posted on the Environmental Notification Bulletin Board (ENBB) on September 21, 2011 as part of the scoping process.

Native American Tribal consultation was initiated on September 09, 2011 with the Hopi, Navajo Nation, Paiute, and Northern Ute Indian Tribes (see **Table 6.2-1**):

Table 6.2-1 List of Tribal Responses for Purposes of this EA

Contact	Title	Organization	Objections/Concerns
Leigh J. Kuwanwisiwma	Cultural Preservation Office Director	Hopi Tribal Council	Concern was expressed that the impacts of additional traffic to the rock markings and sites in Nine Mile Canyon immediately adjacent to the road. Therefore, the Hopi Tribe Cultural Preservation Office determined that the proposal is likely to contribute to long-term, indirect adverse effects to cultural resources significant to the Hopi Tribe in Nine Mile Canyon. If cultural resources are identified that will be adversely affected in the Peter's Point Loop Line area of potential effect, provide the Hopi Tribe with copies of the cultural resources survey and any proposed treatment plans for review and comment.
Tony H. Joe, Jr.	Supervisory Anthropologist	The Navajo Nation	The Navajo Nation Historic Preservation Department – Traditional Cultural Properties (NNHPD-TCP) reviewed the consultation documents and concluded the proposed undertaking/Project Area will not impact Navajo traditional cultural resources. The NNHPD-TCP, on behalf of the Navajo Nation has no concerns at the time of consultation. However, the NNHPD-TCP request

Contact	Title	Organization	Objections/Concerns
			notification in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA) of any inadvertent discoveries of habitation sites, plant gathering areas, human remains, and objects of cultural patrimony as a result of the proposed project.
Dorena Martineau	Cultural Resources	The Paiute Indian Tribe of Utah	The Paiute Indian Tribe of Utah has reviewed the material pertaining to the above named project (Peter's Point Loop Line Project) and do not have any objections. The Tribe supports the identification and avoidance of prehistoric archaeological sites and Traditional Cultural Properties.

Per the WTP FEIS (BLM 2010), the BLM would continue to consult with appropriate Indian Tribes regarding historic properties of religious and cultural significance, in accordance with the National Historic Preservation Act (NHPA), the Native American Graves Protection and Repatriation Act (NAGPRA), Archaeological Resources Protection Act of 1979 (ARPA), American Indian Religious Freedom Act of 1978 (AIRFA), EO 13007 Sacred Sites, and their implementing regulations. The BLM would provide copies of any report/studies developed pursuant to the Proposed Action to those Tribes that have expressed a desire for information as it is gathered for the project.

An archaeological inventory was completed for the loop line project. The report entitled *Cultural Resource Inventory of BBC's Proposed Peter's Point to Dry Canyon Pipeline, Carbon County, Utah* (U-10-MQ-0469b,p) was submitted to the SHPO's office on November 9, 2010. BLM received SHPO's concurrence in a letter dated November 18, 2010. SHPO concurred with BLM's determination of "No Historic Properties Affected". Forty-one eligible properties would be avoided. In addition, the following stipulations would be adhered to:

- 1) all pipeline construction in the canyon bottom, where BBC would bury the pipeline, would be monitored by an archaeologist,
- 2) on Peter's Point, the "Meadow" in Section 26, T12S, R16E would be monitored by an archaeologist during pipeline construction,
- 3) an avoidance fence would be erected by BBC along the site boundaries of 42Cb2085, and
- 4) pipeline construction would be monitored on the mesa tops as necessary.

On November 23, 2011, the BLM sent a consultation letter to the SHPO and requested a "No Historic Properties Affected" determination for the approximately 0.8 mile section of pipeline that crosses through private land. Four eligible sites would be avoided and monitored during construction activities. SHPO concurred with BLM's determination of eligibility and effect for this undertaking in a letter dated December 13, 2011.

7.0 LIST OF PREPARERS

Bureau of Land Management – Lead Agency Reviewers		
Area of Expertise/Responsibility	Name	Affiliation
Invasive Species/Noxious Weeds	Stephanie Bauer	BLM Price Field Office
Woodland / Forestry		
Areas of Critical Environmental Concern	Kyle Beagley	BLM Price Field Office
Hydrologic Conditions	Jeffrey Brower	BLM Price Field Office
Soils		
Water Resources/Quality (drinking/surface/ground)		
NEPA	Donna Dixon	BLM Price Field Office
Cultural Resources and Native American Religious Concerns	Julie Howard	BLM Price Field Office
Wetlands/Riparian Zones	Karl Ivory	BLM Price Field Office
Project Leader	Connie Leschin	BLM Price Field Office
Paleontology	Mike Leschin	BLM Price Field Office
Project Manager	Don Stephens	BLM Price Field Office
Visual Resources	Rob Sweeten	BLM Utah State Office
BLM Sensitive Plant Species	Dana Truman	BLM Price Field Office
Threatened, Endangered or Candidate Plant Species		
Fish and Wildlife Excluding USFW Designated Species and BLM Sensitive Species	David Waller	BLM Price Field Office
Migratory Birds		
Threatened, Endangered or Candidate Animal Species		

Contractor – List of Preparers		
Area of Expertise/Responsibility	Name	Affiliation
Project Manager /Senior Author	Dawn Martin	Kleinfelder
Assistant Project Manager/Senior Author	Chrissy Lawson	Kleinfelder
GIS/Mapping	Lindsey Hockert	Kleinfelder

8.0 ACRONYMS

AASHTO – American Association of Safe Highways and Transportation Officials
ACEC – Area of Critical Environmental Concern
ACEPM – Applicant-committed Environmental Protection Measure
AIRFA – American Indian Religious Freedom Act of 1978
AO – authorized officer
ARPA – Archaeological Resources Protection Act of 1979
BA – Biological Assessment
BBC – Bill Barrett Corporation
bgs – below ground surface
BLM – Bureau of Land Management
BMP – Best Management Practices
BO – Biological Opinion
CEQ – Council of Environmental Quality
CFR – Code of Federal Regulations
cfs – cubic feet per second
COA – Condition of Approval
DOCS – data-over-cable system
DR – Decision Record
E - east
EA – environmental assessment
EIA – Energy Information Administration
EIS – environmental impact statement
EO – Executive Order
EPA – United States Environmental Protection Agency
ESA – Endangered Species Act of 1973
ESV – emergency shut-down valve
FEIS – Final Environmental Impact Statement
FLPMA - Federal Land Policy Management Act
FMU – Fire Management Unit
FONSI – Finding of No Significant Impact
FR – Federal Register
GAP – Utah Geographic Approach to Planning
GIS – Geographic Information System
GP40 – General Permit 40
gpm – gallons per minute
HCW – high country watershed
ID Team – Interdisciplinary Team
KOP – key observation point
LOP – life of the project
mg/L – milligrams per liter
MLA – Mineral Leasing Act of 1920
MLE – maximally exposed individual
MOAC – Montgomery Archaeological Consultants, Inc.
MOU – memorandum of understanding
MSO – Mexican spotted owl
NAGPRA – Native American Graves Protection and Repatriation Act
NEPA – National Environmental Policy Act of 1969
NHPA – National Historic Preservation Act

NI – no impact
NNHPD-TCP - Navajo Nation Historic Preservation Department – Traditional Cultural Properties
NRHP – National Register of Historic Places
NWP12 – Nationwide Permit 12
OD – outer diameter
PFC – Proper Functioning Condition
POD – Plan of Development
psi – pounds per square inch
R – Range
RMP – Resource Management Plan
ROD – Record of Decision
ROW – right-of-way
S – south
SHPO – State Historic Preservation Officer
SITLA – State of Utah School and Institutional Trust Lands Administration
SPCC – Spill Prevention, Control, and Countermeasure
spp. – species
STORET – STOrage and RETrieval database
SWMP – Storm Water Management Plan
T – Township
TCP – Traditional Cultural Property
TDS – total dissolved solids
TUA – temporary use area
UDOT – Utah Department of Transportation
UDWR – Utah Division of Wildlife Resources
UPIF – Utah Partners In Flight
U.S. – United States
USACE – United States Army Corp of Engineers
U.S.C. – United States Code
USFWS – United States Fish and Wildlife Service
UWQB – Utah Water Quality Board
VRI – Visual Resource Inventory
VRM – Visual Resource Management
WSA – Wilderness Study Area
WTP – West Tavaputs Plateau
 $\mu\text{S/cm}$ – microsiemens per centimeter

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APPENDIX A: INTERDISCIPLINARY TEAM CHECKLIST

INTERDISCIPLINARY TEAM CHECKLIST

Project Title: Peter's Point Loop Pipeline
NEPA Log Number: DOI-BLM-UT-G021-2011-0055
File/Serial Number: UTU-88696
Project Leader: Connie Leschin

DETERMINATION OF STAFF: (Choose one of the following abbreviated options for the left column)

NP = not present in the area impacted by the proposed or alternative actions

NI = present, but not affected to a degree that detailed analysis is required

PI = present with potential for relevant impact that need to be analyzed in detail in the EA

NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.

Determination	Resource	Rationale for Determination*	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
NI	Air Quality	Overall, air quality in the Project Area is considered to be in attainment of the NAAQS. There are no regulatory monitoring data for the Project Area. Dust emissions currently occur from vehicles utilizing the subject roads. It is anticipated that the incremental change from this project's alternatives would be so small as to be undetectable by both models and monitors.	Jeffrey Brower	09/19/11
PI	Areas of Critical Environmental Concern	The proposed pipeline would cross a portion of the Nine Mile Canyon ACEC (10)	Don Kranendonk	11/18/11
NP	BLM Natural Areas**	There are no BLM Natural Areas within the proposed Project Area as per GIS and RMP review	Don Kranendonk	11/18/11
NP	BLM Sensitive Animal Species	BLM sensitive animal species are not known to be present within the Project Area as per GIS/Map review. BLM sensitive animal species have been adequately addressed in the WTP EIS. Refer to sections 3.10 & 4.10.	David L. Waller	09/23/11
NP	BLM Sensitive Plant Species	After review of BLM records there are no known populations or habitat within the Project Area for BLM sensitive plants.	Dana Truman	09/21/11
PI	Cultural Resources	An archaeological inventory was completed for the pipeline project. The report entitled "Cultural Resource Inventory of BBC's Proposed Peters Point to Dry Canyon Pipeline, Carbon County, Utah (U-10-MQ-0469b,p) was submitted to the SHPO's office on November 9, 2010. BLM received SHPO's concurrence in a letter dated November 18, 2010. SHPO concurred with BLM's determination of "No Historic Properties Affected". Forty one eligible properties will be avoided. In addition, the following stipulations will be adhered to: 1) All pipeline construction in the canyon bottom, where BBC will bury the pipeline, shall be monitored by an archaeologist. 2) On Peters Point, the "Meadow" in T.12S.,	Julie Howard	12/15/11

Determination	Resource	Rationale for Determination*	Signature	Date
		<p>R16E. Section 26 will be monitored by an archaeologist during pipeline construction.</p> <p>3) An avoidance fence shall be erected by BBC along the site boundaries of 42Cb2085.</p> <p>4) Pipeline construction will be monitored on the mesa tops as necessary.</p> <p>On November 23, 2011, the BLM sent a consultation letter to the SHPO and requested a "No Historic Properties Affected" determination for the approximately one mile section of pipeline that crosses through private land. Four eligible sites will be avoided and monitoring during construction activities. SHPO concurred with BLM's determination of eligibility and effect for this undertaking in a letter dated December 13, 2011.</p>		
NI	Greenhouse Gas Emissions**	<p>There are currently no regulatory standards for controlling GHG emissions or accepted analytical methods for evaluating project specific impacts related to GHG emissions. As a consequence, the impacts of site-specific proposals cannot be determined. Based on the nature of the action, GHG emissions are expected to be minimal.</p>	Jeffrey Brower	09/19/11
NP	Environmental Justice	<p>There are no minority or low income populations that would be adversely effected by implementation of the Proposed Action.</p>	Donna Dixon	10/06/11
NP	Farmlands (Prime or Unique)	<p>According to the NRCS soils surveys and knowledge of the soils, there are no prime and unique soils mapped within the Project Area.</p>	Jeff Brower	09/19/11
PI	Fish and Wildlife Excluding USFW Designated Species and BLM Sensitive Species	<p>The proposed Project Area, as per GIS and RMP review, contains crucial winter sage grouse, substantial winter mule deer, crucial winter elk, substantial yearlong black bear, substantial yearlong rocky mountain bighorn, chukar, and wild turkey habitats. Impacts to wildlife resources were sufficiently addressed in the West Tavaputs Plateau EIS, refer to sections 3.9 & 4.9.</p>	David L. Waller	09/23/11
NP	Floodplains	<p>After an inspection of USGS 7.5 minute maps of the area, it is determined no floodplains as defined by EO 11988, FEMA, or Corps of Engineers is found on or near the Project Area</p>	Jeffrey Brower	09/19/11
NP	Fuels/Fire Management	<p>The proposed activities may have an impact due to the increased chance of promoting invasive species; primarily Bromus tectorum. Bromus tectorum may become established through soil disturbance and may increase fire frequency in those areas. The proposed reclamation guidelines outlined in the ROD for the WTP FEIS should prevent excessive hazardous fuels from occurring.</p>	Blaine Tarbell	10/27/11
NI	Geology / Mineral Resources/Energy Production	<p>The project, as proposed, would not negatively affect mineral resources. There are no known solid mineral deposits (i.e. aggregate, gypsum, clay) that could not be obtained at other more accessible locations, coal is not known to be present at economic depths, metallic minerals are not known to be of economic value (uranium-vanadium, gold), and fluid mineral resources, could be withdrawn directionally or from off-site if necessary.</p>	Chris Conrad	10/11/11
PI	Hydrologic Conditions**	<p>There could be changes in surface runoff patterns due to disturbance created in burying pipeline. Disturbance created</p>	Jeffrey Brower	09/19/11

Determination	Resource	Rationale for Determination*	Signature	Date
		by this project could create ruts and rills.		
PI	Invasive Species/Noxious Weeds (EO 13112)	Surface disturbing activities could result in the introduction or spread of invasive species/noxious weeds. A PUP and PAR would be required prior to any treatment of infested areas. Control of invasive species/noxious weeds is the responsibility of the ROW holder and will be included as stipulations in the ROW grant.	Stephanie Bauer	09/26/11
NI	Lands/Access	A review of LR2000 and the Master Title Plats showed that the Proposed Action is compatible with the existing land use and authorized right-of-ways. There are no conflicts with other land use authorizations.	Connie Leschin	12/02/11
NI	Livestock Grazing	Livestock Grazing issues or concerns have been adequately addressed in the WTP EIS. Refer to sections 3.7 & 4.7.	Mike Tweddell	09/20/11
PI	Migratory Birds	There are mapped important migratory bird habitat areas in the Project Area. There is a cottonwood/willow cover type along Nine-mile canyon. Impacts to Migratory Birds were addressed in the WTP EIS in sections 3.9.3.3 & 4.9. Construction outside a breeding period would reduce impacts.	David L.Waller	09/23/11
PI	Native American Religious Concerns	Tribal Consultation was initiated on September 8, 2011. Letters were sent to the Hopi Tribe, the Navajo Nation, the Paiute Indian Tribe of Utah, and the Uintah and Ouray Indian Tribe. The Paiute Indian Tribe responded in a letter dated September 27, 2011 and had no objections. The Navajo Nation responded in a letter dated September 26, 2011 and concluded that the proposed undertaking will not impact Navajo traditional cultural resources. If any inadvertent discoveries of habitation sites, plant gathering areas, human remains, and objects of cultural patrimony are discovered as a result of the proposed project that they be notified. The Hopi Tribe responded in a letter dated September 19, 2011. The Hopi expressed concern that the impacts of additional traffic to the rock markings and sites in Nine Mile Canyon immediately adjacent to the road. The Hopi Cultural Preservation Office determined that the proposal is likely to contribute to long-term indirect adverse effects to cultural resources significant to the Hopi Tribe in Nine Mile Canyon. If cultural resources are identified that will be adversely affected within the APE, the Hopi Tribe would like to be provided with copies of the cultural resources survey and any proposed treatment plans for review and comment.	Julie Howard	11/30/11
NI	Paleontology	Surface-laid pipe will not impact paleontological resources in the area of the project. The POD outlines buried pipe but only in areas of alluvium which is not known to hold paleontological resources.	Michael Leschin	10/31/11
NI	Rangeland Health Standards	Rangeland health standards were not addressed directly in the WTP EIS, however vegetation, soils, wetlands were sufficiently addressed and impacts were expected to be mitigated due to protection measures. Refer to sections 3.4, 3.5, 3.8, 4.4, 4.5, & 4.8.	Mike Tweddell	09/20/11
NI	Recreation	The Proposed Action is in an area (Extensive Recreation Management Area) where recreation opportunities and problems are limited and explicit recreation management is	Don Kranendonk	11/18/11

Determination	Resource	Rationale for Determination*	Signature	Date
		not required. Implementation of the proposed project will have minimal impact on recreation.		
NI	Socio-Economics	Implementation of the Proposed Action would have no measureable social or economic impacts because the project is relatively small in scope when compared to the larger economy of the area.	Donna Dixon	10/06/11
PI	Soils	There would be mixing of soil horizons when burying pipeline. Surface disturbance could cause increased soil erosion, especially in riparian areas.	Jeffery Brower	09/19/11
NP	Threatened, Endangered or Candidate Plant Species	After review of BLM records there are no known populations or habitat within the federal lands portion of the Project Area for T and E plants.	Dana Truman	09/21/11
NP	Threatened, Endangered or Candidate Animal Species	No effect – because, after GIS review, there are no known occurrences of federally listed or candidate species in the Project Area. There is no designated critical habitat present either. There would be no surface water depletion that would affect federally listed fish species that occur downstream. The designated critical habitat for the fish species would not be affected. There is modeled Mexican Spotted Owl habitat. MSO calling surveys have not located any birds in the area. Threatened, Endangered or Candidate Animal Species have been adequately addressed in the WTP EIS. Sage grouse were adequately analyzed as either a BLM sensitive or candidate species. Sage grouse are currently a candidate species. Refer to sections 3.10 & 4.10.	David L. Waller	09/23/11
NP	Wastes (hazardous or solid)	No chemicals subject to reporting under SARA Title III will be used, produced, stored, transported, or disposed of annually in association with the project. Furthermore, no extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities, will be used, produced, stored, transported, or disposed of in association with the project. Trash would be confined in a covered container and disposed of in an approved landfill. No burning of any waste will occur due to this project. Human waste will be disposed of in an appropriate manner in an approved sewage treatment center.	Jeffery Brower	09/19/11
PI	Water Resources/Quality (drinking/surface/ground)	There is a possibility of impact to the stream beds at the crossings creating increased erosion in the stream. BMP must be implemented. Slips and hazardous releases are a possibility. This could affect water quality in the stream. A spill prevention and cleanup plan is needed.	Jeffery Brower	09/20/11
PI	Wetlands/Riparian Zones	The proposed pipeline passes through riparian zones in several locations along Nine Mile Creek. Pipeline should cross perpendicular to the stream to reduce impacts to riparian vegetation. Avoid disturbance to riparian vegetation parallel to the proposed pipeline route.	Karl Ivory	09/21/11
NP	Wild and Scenic Rivers	There are no Wild and Scenic Rivers within the Project Area as per review of RMP/GIS maps.	Don Kranendonk	11/18/11
NP	Wilderness/WSA	There are no Wilderness/WSAs within the Project Area as per review of RMP/GIS maps.	Don Kranendonk	11/18/11

Determination	Resource	Rationale for Determination*	Signature	Date
PI	Woodland / Forestry	Implementation of the Proposed Action could result in the loss of merchantable woodland/forestry products.	Stephanie Bauer	09/26/11
PI	Vegetation Excluding USFW Designated Species and BLM Sensitive Species	Installation of the pipeline may result in the disturbance of native vegetative cover types and could contribute to infestation of noxious and invasive weeds.	Dana Truman	09/20/11
PI	Visual Resources	<p>Installation of the pipeline under Alternative A or B may result in linear visual intrusion into the visual landscape of the greater WTP landscape.</p> <p>Installation of the pipeline under Alternative B may result in visual resource impacts along Cottonwood Canyon, and specifically, at the Great Hunt Panel which is visible from Cottonwood Road, and receives high visitation.</p> <p>All impacts to visual resources are allowed within the visual resource management classes identified in the RMP.</p>	Rob Sweeten	12-7-11
NP	Wild Horses and Burros	As per review of GIS and the Price Resource Management Plan (2008) maps, there are no Herd Management Areas within the Project Area.	Mike Tweddell	09/20/11
PI	Non- WSA lands with Wilderness Characteristics not carried forward	There are Non-WSA lands with Wilderness Characteristics within the vicinity of the project that were not carried forward into the approved RMP and do not require special protection.	Floyd L. Johnson	12/07/11

FINAL REVIEW:

Reviewer Title	Signature	Date	Comments
Environmental Coordinator	Donna Dixon	12/15/11	
Authorized Officer	Patricia A Clabaugh	12/15/11	

APPENDIX B: FIGURES

Figure 1: Proposed Action

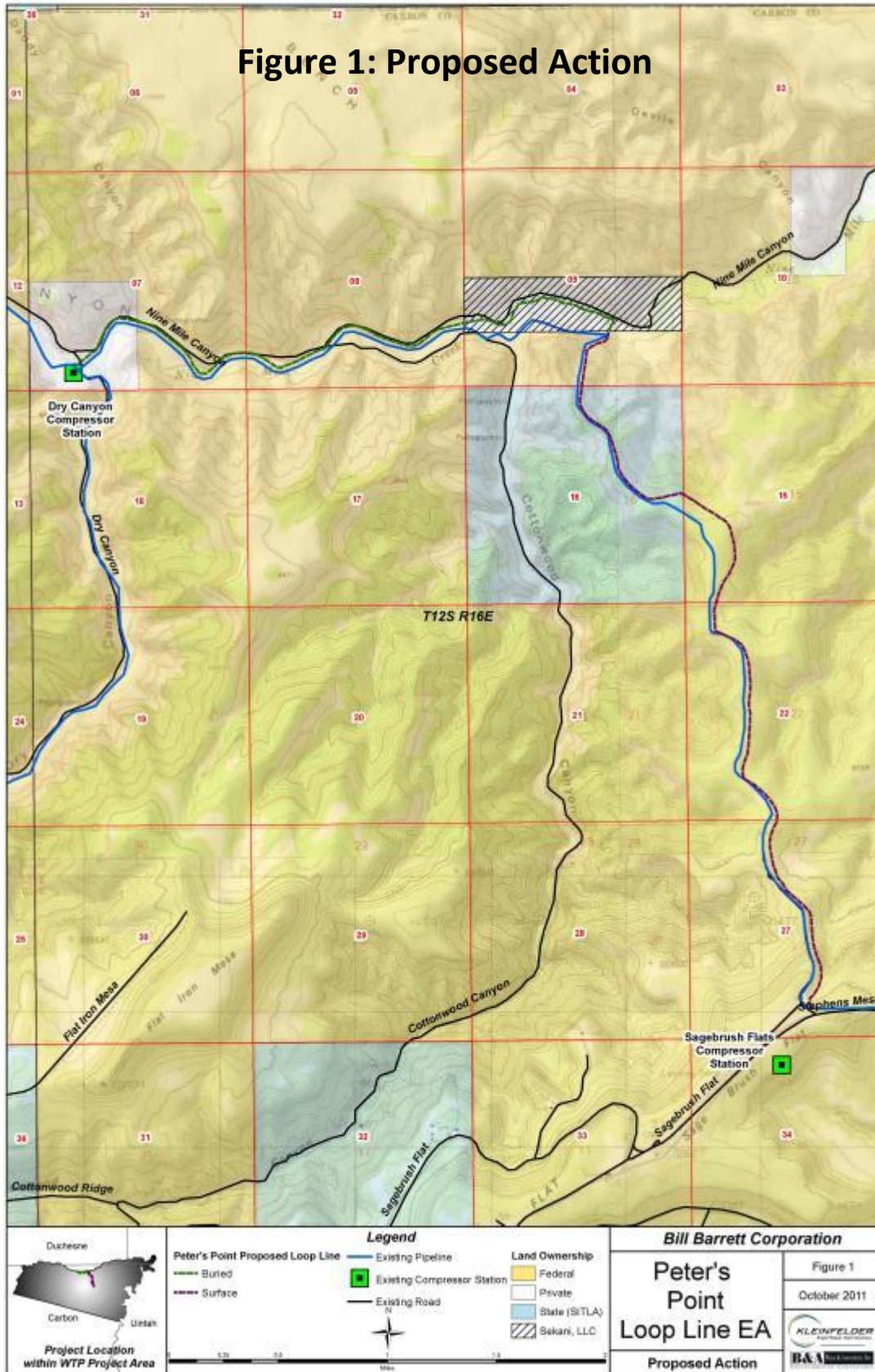


Figure 2: Alternative B

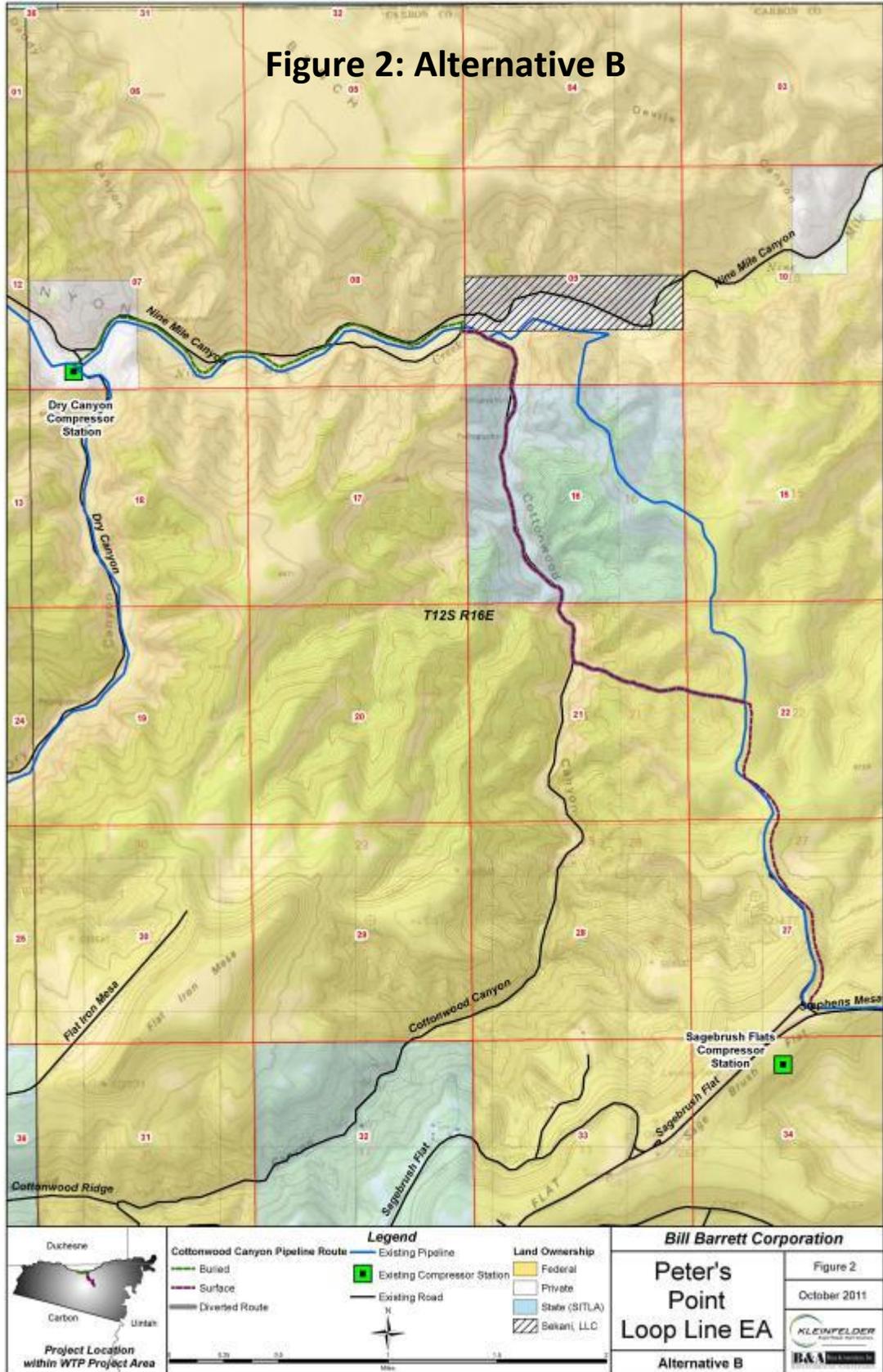


Figure 3: Alternatives Dismissed From Analysis

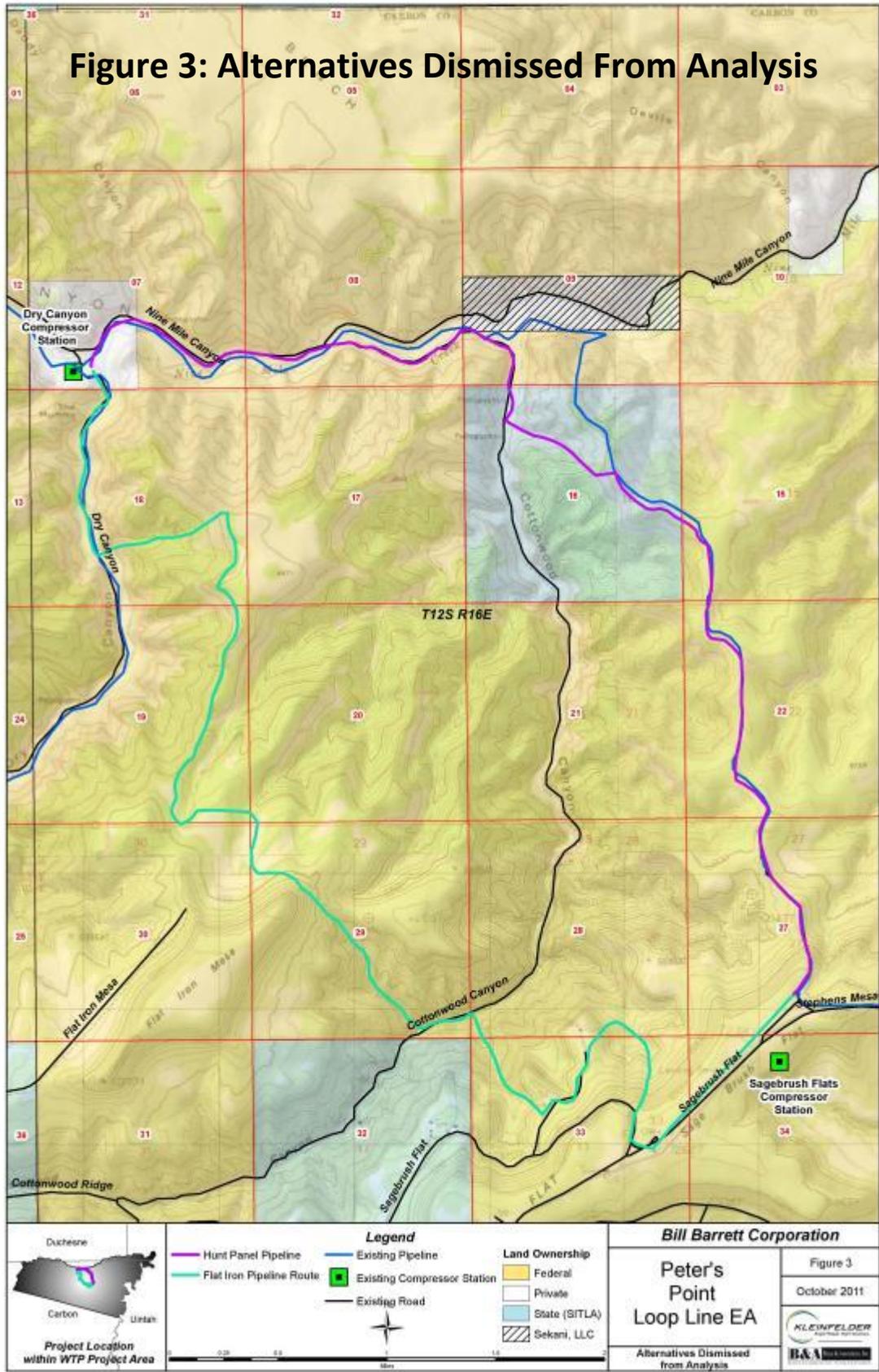


Figure 4: Vegetation

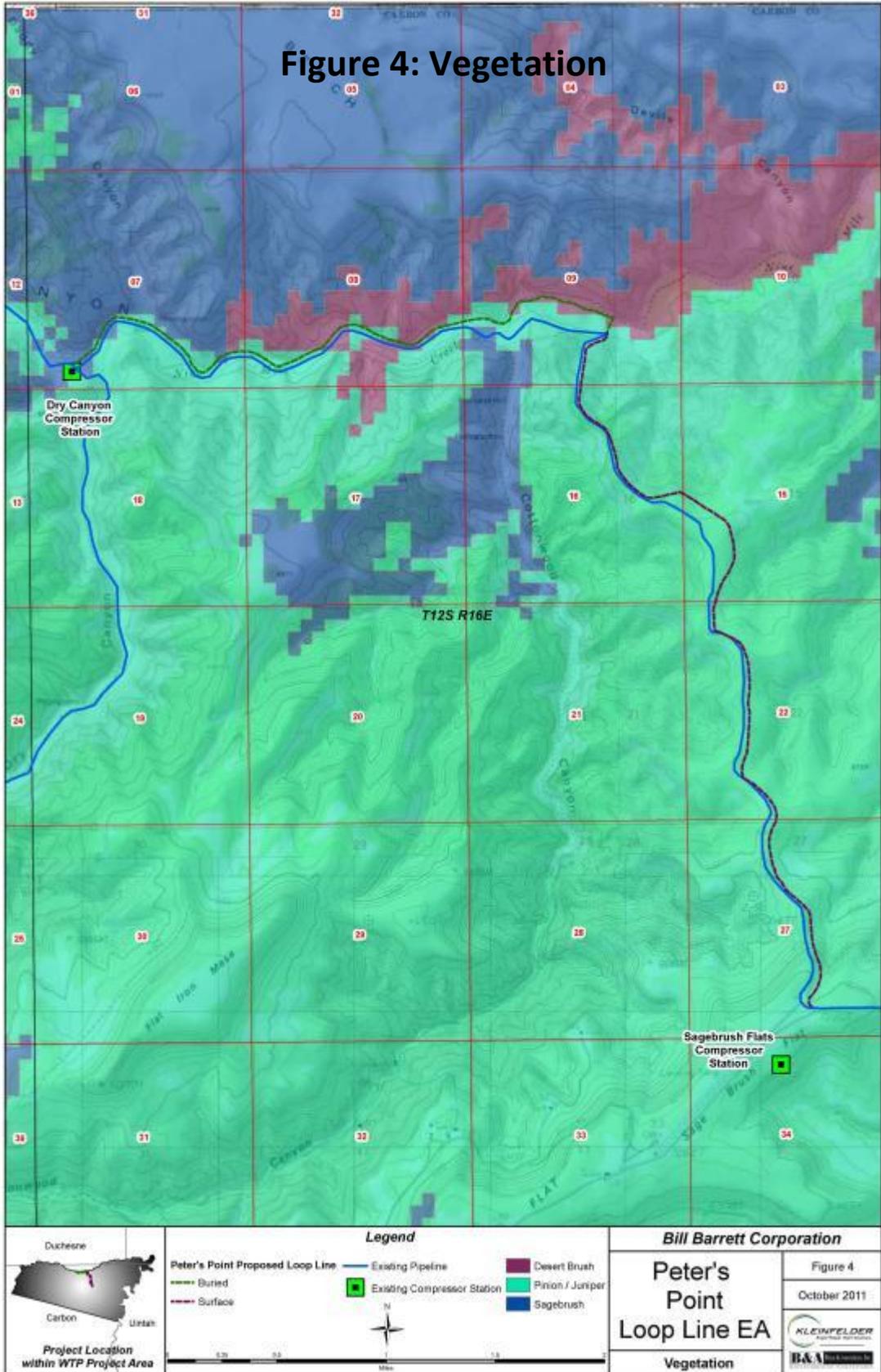
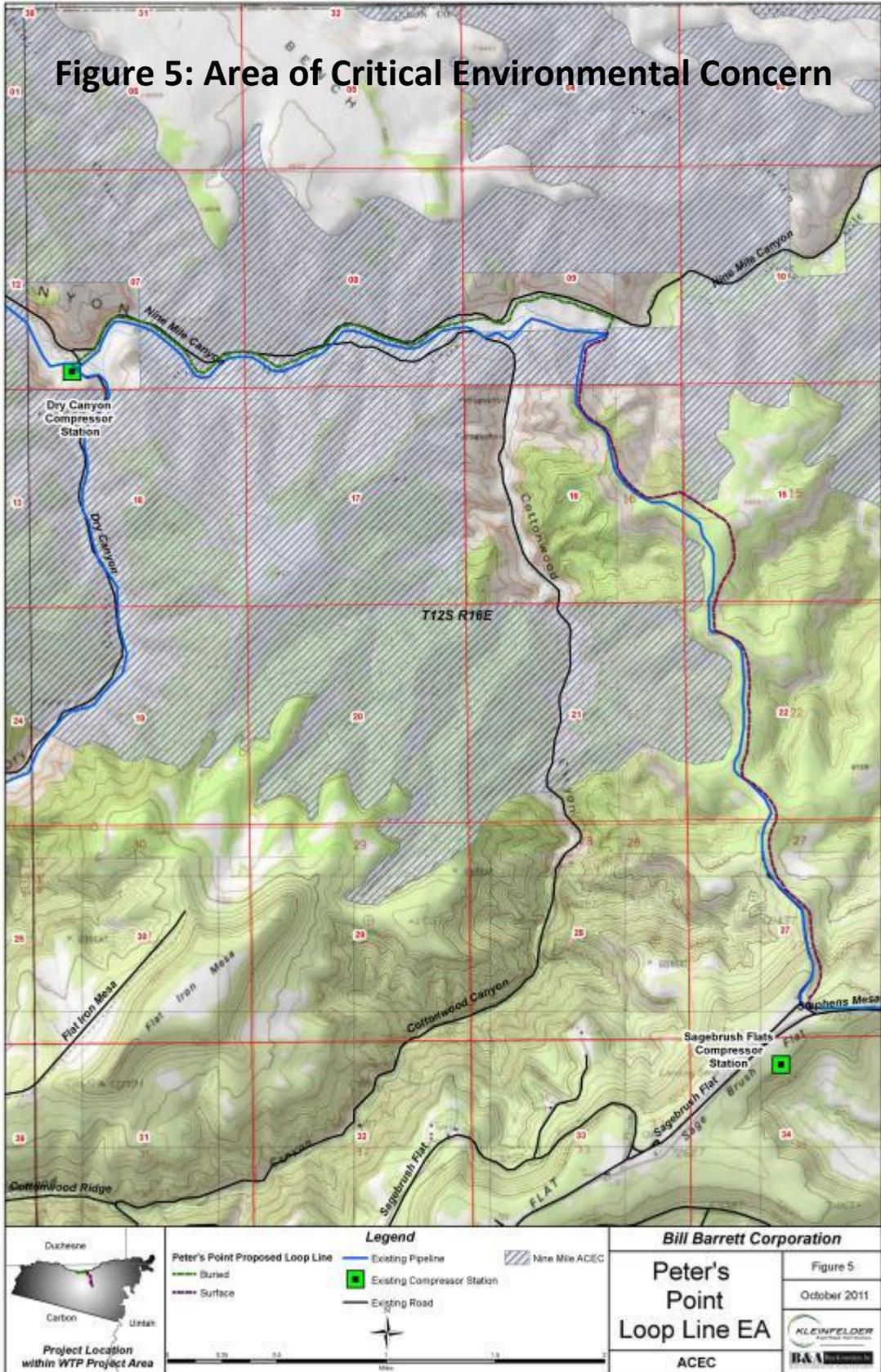


Figure 5: Area of Critical Environmental Concern



**APPENDIX C: MITIGATION & APPLICANT-COMMITTED
PROTECTION MEASURES**

Peter’s Point Loop Line Project-specific Environmental Protection Measures

Resource	Summary of Mitigation Measure
General	The Applicant-committed Environmental Protection Measures for the Peter’s Point loop line would be consistent with the Conditions of Approval (COAs) identified in Attachment 2 of the ROD for the WTP FEIS (BLM 2010).
	Under the Proposed Action, several design features would be implemented by BBC to reduce the potential environmental impacts of the proposed project.
	All construction activities would be implemented in accordance with the site-specific plan of development (POD) for this project.
	In order to ensure that undue or unnecessary environmental impacts to the environment are not occurring as a result of the Proposed Action a third-party compliance monitor approved by the BLM and/or representatives of the BLM would monitor project implementation through routine compliance inspections, and would adhere to the reporting and monitoring requirements prescribed by the BLM.
	BBC would inform their employees, contractors and subcontractors of the potential impacts that could result from accidental spills, as well as the appropriate actions to take if a spill does occur. An existing field-wide Spill Prevention, Control, and Countermeasure (SPCC) plan and a field-wide SWMP would be implemented by BBC at the commencement of construction activities.
	Project personnel and contractors will be educated on and subject to the following requirements: <ul style="list-style-type: none"> • no dogs within the Project Area; • no firearms within the Project Area; • no littering within the Project Area; • smoking within the Project Area will only be allowed in off-operator active locations or in specifically designated smoking areas; • all cigarette butts will be placed in appropriate containers and not thrown on the ground or out windows of vehicles; • personnel and contractors will abide by all fire restriction orders; • campfires or uncontained fires of any kind will be prohibited within the Project Area; • portable generators used in the Project Area will have spark arrestors.
	BBC will be responsible for necessary preventative and corrective road maintenance for the duration of the project. Maintenance responsibilities may include, but are not limited to, blading, gravel surfacing, cleaning ditches and drainage facilities, dust abatement, noxious weed control, or other measures as deemed appropriate.
Construction	In accordance with WO IM-2007-021 (Integration of Best Management Practices into Application for Permit to Drill Approvals and Associated Right of Way), the BLM will require the burial of pipelines except in limited circumstances where locally established criteria allow for the consideration of a surface-laid pipeline. Surface-laid pipeline may be allowed: <ul style="list-style-type: none"> • where very shallow topsoil occurs over bedrock (5-20 inches); • where the pipeline does not follow an access road (cross-country); • over cliffs where there is no other viable route available; and/or • as determined during the onsite process.
	A determination as to whether one or more of these exceptions apply will be made on a site-specific basis. In the circumstances where the operator proposes to construct a new pipeline adjacent to an existing surface pipeline, the proposed pipeline and existing pipeline will be

Resource	Summary of Mitigation Measure
	<p data-bbox="428 254 980 281">buried subject to the exception criteria listed above.</p> <p data-bbox="428 285 1409 348">In areas where sufficient soil is present such that blasting will not be required, the following techniques will be employed to bury pipelines:</p> <ul data-bbox="477 359 1414 667" style="list-style-type: none"> <li data-bbox="477 359 1360 415">• Shrubs and small trees will be removed from the right of way (ROW). Topsoil removal will not occur except directly over the trench. <li data-bbox="477 422 1360 478">• A trench will be excavated and the soil stockpiled to one side, making sure the topsoil and spoil do not mix together. <li data-bbox="477 485 1240 512">• The trench will be backfilled and the spoil compacted in the trench. <li data-bbox="477 518 1409 546">• Stockpiled topsoil will be placed over the compacted spoil to facilitate reclamation. <li data-bbox="477 552 1360 609">• Scalped vegetation will be lopped and scattered on the ROW to reduce erosion potential and reduce visual impacts. <li data-bbox="477 615 1414 667">• The entire ROW will be reseeded in the first appropriate season after completion of disturbance. <p data-bbox="428 709 1360 772">In areas where compacted sandstone or bedrock exists, the following techniques will be employed to bury pipelines:</p> <ul data-bbox="477 783 1425 1459" style="list-style-type: none"> <li data-bbox="477 783 1386 840">• Shrubs and small trees will be removed from the ROW. Topsoil removal will not occur except directly over the trench. <li data-bbox="477 846 1425 903">• In most areas where pipelines will be buried, chain trenchers and/or rocks saws (also known as wheel or disc trenchers) will be used to excavate trenches. <li data-bbox="477 909 1393 1115">• In areas where blasting is required in order to excavate pipeline trenches, the following safety measures will be adhered to (e.g., on slopes or other areas where use of chain trenchers and/or rock saws are not feasible): <ul data-bbox="574 999 1398 1115" style="list-style-type: none"> <li data-bbox="574 999 1398 1056">○ As needed, roads along areas to be blasted may be temporarily closed for safety purposes. <li data-bbox="574 1062 1308 1115">○ The charges will be detonated in accordance with relevant safety regulations. <li data-bbox="477 1121 1377 1178">• Following excavation of the pipeline trenches (whether by chain trencher and/or rock saw or detonation), debris will be removed from the trench. <li data-bbox="477 1184 1409 1272">• Spoil will be used to pad the bottom of the trench. As needed, additional soil, sand, or gravel will be brought in from an approved borrow area and used to pad the bottom of the trench. <li data-bbox="477 1278 1419 1335">• The spoil will be compacted in the trench. Stockpiled topsoil will be placed over the compacted spoil to facilitate reclamation. <li data-bbox="477 1341 1360 1398">• Scalped vegetation will be lopped and scattered on the ROW to reduce erosion potential and reduce visual impacts. <li data-bbox="477 1404 1414 1459">• The entire ROW will be reseeded in the first appropriate season after completion of disturbance. <p data-bbox="428 1465 1409 1612">Where surface-laid pipelines are approved, stipulations will include painting to match the surrounding environment and bonding considered on a case-by-case basis. Surface pipelines adjacent to roads will be assembled on the roadway or construction ROW, lifted, and placed in the existing vegetation. Pipeline markers will be strategically placed at intervals along all buried and surface pipelines.</p> <p data-bbox="428 1619 1409 1734">In areas that contain environmentally sensitive fragile soils and vegetation, the operator may be required to perform special measures such as mulching, erosion fencing, use of erosion fabric, etc. per the direction of the BLM AO to stabilize any disturbed areas and ensure the reestablishment of long-term perennial vegetation.</p> <p data-bbox="428 1740 1425 1797">All equipment and personnel used during drilling and construction activities will be restricted to only approved access roads.</p> <p data-bbox="428 1803 1398 1860">All trees salvaged from the construction of the well pad will be clearly segregated from the spoil material, to prevent burying of trees in the spoil material.</p> <p data-bbox="428 1866 1341 1894">The operator will provide georeferenced spatial data depicting as-built locations of all</p>

Resource	Summary of Mitigation Measure
	<p>facilities, wells, roads, pipelines, power lines, and other related facilities to the BLM by November 1 of each year until completion of project construction activities has occurred.</p> <p>Pipeline trenches shall be compacted during backfilling. Pipeline trenches shall be routinely inspected and maintained to ensure proper settling, stabilization, and reclamation.</p> <p>During construction, emissions of particulate matter from construction activities would be minimized by application of water or other dust suppressants with at least 50 percent control efficiency. Dust inhibitors (surfacing materials and water) would be used as necessary on unpaved roads that present a fugitive dust problem.</p>
Cultural	<p>An archaeological inventory was completed for the pipeline project. The report entitled “Cultural Resource Inventory of BBC’s Proposed Peters Point to Dry Canyon Pipeline, Carbon County, Utah (U-10-MQ-0469b,p) was submitted to the SHPO’s office on November 9, 2010. BLM received SHPO’s concurrence in a letter dated November 18, 2010. SHPO concurred with BLM’s determination of “No Historic Properties Affected”. Forty one eligible properties will be avoided. In addition, the following stipulations will be adhered to:</p> <ol style="list-style-type: none"> 1. All pipeline construction in the canyon bottom, where BBC will bury the pipeline, shall be monitored by an archaeologist. 2. On Peters Point, the “Meadow” in T.12S., R16E. Section 26 will be monitored by an archaeologist during pipeline construction. 3. An avoidance fence shall be erected by BBC along the site boundaries of 42Cb2085. Pipeline construction will be monitored on the mesa tops as necessary. <p>On November 23, 2011, the BLM sent a consultation letter to the SHPO and requested a “No Historic Properties Affected” determination for the approximately one mile section of pipeline that crosses through private land. Four eligible sites will be avoided and monitoring during construction activities.</p> <p>BBC and other operators will be required to fulfill mitigation commitments included in the WTP FEIS Proposed Action (BLM 2010).</p> <ul style="list-style-type: none"> • If unanticipated cultural sites are discovered during surface-disturbing activities, the steps in the Preconstruction Cultural Resource Identification Plan, included with Appendix F, would be followed to ensure proper mitigation and handling.
Paleontology	<p>A third-party paleontological monitor or representative of the BLM would also be present during the use of excavation equipment, specifically during the original cutting of previously undisturbed lands of high paleontological resource potential to inspect exposures for contained fossils. The qualified paleontological monitor would adhere to the reporting and monitoring requirements prescribed by the BLM. A qualified paleontologist is defined as an individual with an M.S. or Ph.D. in paleontology or geology, who is familiar with paleontology procedures and techniques, and holds a BLM-issued paleontological permit.</p>
Reclamation	<p>Reclamation would be completed according to the BLM’s published Best Management Practices and according to BBC’s BLM-approved West Tavaputs Field-wide Reclamation Plan. A site-specific reclamation plan would be submitted within 90 days of project authorization.</p> <p>Reclaimed areas receiving incidental disturbance during the life of the pipeline would be re-contoured and reseeded as soon as practical.</p> <p>Final reclamation would occur as soon as feasible following pipeline installation, and would be completed in accordance with reclamation guidelines outlined in the ROD for the WTP FEIS (BLM 2010).</p> <p>Weed-free mulch and native seeds will be used during reclamation.</p> <p>Herbicides will be applied as necessary and determined by the BLM or appropriate SMA.</p> <p>Disturbed areas should be revegetated after the site has been satisfactorily prepared. Site preparation may include respreading topsoil to an adequate depth, and may also include ripping, tilling, disking, on contour and dozer track-imprinting.</p> <p>Reclamation measure should begin as soon as possible after the disturbance and continue</p>

Resource	Summary of Mitigation Measure
	<p>until successful reclamation is achieved.</p> <p>Reclamation can be judged successful when a self-sustaining, vigorous, diverse, native (or otherwise approved) plant community is established on the site, with a density sufficient to control erosion and non-native plant invasion and to re-establish wildlife habitat or forage production.</p> <p>Earthwork for interim and final reclamation generally must be completed within 6 months of the completion of construction activities (weather permitting).</p> <p>Pipeline routes and roads should be co-located as much as possible to reduce reclamation needs and impact to other resources.</p> <p>Pipeline trenches are to be compacted during backfilling and must be maintained to correct backfill settling and prevent erosion. Reclamation involves filling the trench, compacting the fill, regarding cut-and-fill slopes to restore the original contour, replacing topsoil, installing temporary water bars only where necessary to control erosion, and revegetation in accordance with a reclamation plan.</p>
Soils	<p>Snow must be removed within 48 hours of cessation of each winter storm producing greater than 4 inches of snowfall; snow removal would occur only on those roads necessary to access wells and production facilities; and</p> <p>The operators will be required to fund an annual water quality monitoring program as outlined in the ROD for the WTP Final EIS (BLM 2010, Attachment 7). If samples and monitoring detect or determine any degradation of water quality as a result of the [Proposed Action] the BLM will reevaluate the effectiveness of the BMPs and mitigation measures contained within the WTP FEIS ROD (BLM 2010, Attachment 2).</p>
Threatened, Endangered, and Candidate Species	<p>If any dead or injured threatened, endangered, proposed, or candidate plant or animal species is located during construction or operation, the BLM Price Field Office (435-636-3600) shall be notified within 24 hours.</p> <p>The operator will conduct clearance surveys for threatened, endangered or other special-concern species at the optimum time. This will require coordination with the BLM before November 1, annually, to review the potential for disturbance and to agree on inventory parameters.</p>
Transportation	<p>Vehicle traffic during the construction phase would include the transportation of materials and heavy equipment, the commuting of the workforce, and the daily operation of the construction equipment. Signs providing traffic control would be installed, as necessary.</p> <p>To address safety-related traffic concerns, all drivers would be advised of the hazards to recreational traffic along the access roads, as well as hazards present due to blind corners, cars parked on the road, and pedestrian traffic. In addition, appropriate signs would be posted to warn non-project personnel about traffic hazards associated with project-related activities.</p>
Tribal Consultation	<p>Per the WTP FEIS Proposed Action (BLM 2010), the BLM will continue to consult with appropriate Indian Tribes regarding historic properties of religious and cultural significance, in accordance with the National Preservation Act (NHPA), the Native American Graves Protection and Repatriation Act, Archaeological Resources Protection Act (NAGPRA) of 1979 (ARPA), American Indian Religious Freedom Act of 1978 (AIRFA), Executive Order 13007 Scared Sites, and their implementing regulations. The BLM will provide copies of any report/studies developed pursuant to the Proposed Action to those tribes that have expressed a desire for information as it is gathered for the project.</p>
Vegetation, Riparian Areas, Wetland Areas, and Invasive and Noxious Plants	<p>An Approved Pesticide Use and Weed Control Plan will be prepared and implemented in consultation with the AO. Weed monitoring will be continued on an annual basis (or as frequently as the SMA determines) throughout the LOP. The Pesticide Use and Weed Control Plan will include prescribed application methods that account for the reclamation objective of re-establishing native forbs, shrubs and trees in addition to grasses.</p> <p>Interim and final reclamation activities and evaluation will be consistent with the Green River District (Attachment 3) Reclamation Guidelines for Reclamation Plans or other subsequent guidance by the BLM.</p>

Resource	Summary of Mitigation Measure
	<p>Monitoring of reclamation success and report submission will be consistent with the memorandum of understanding (MOU) for <i>Mitigation Compliance and Monitoring Plan</i> (Attachment 8) and the Green River District Reclamation Guidelines for Reclamation Plans (Attachment 3) (BLM 2009).</p> <p>All construction equipment coming into the WTP Project Area will be power-washed prior to entering the Project Area.</p> <p>BLM will require implementation of the BLM Technical Note Hydraulic Considerations for Pipeline Crossings of Stream Channels.</p> <p>To the maximum extent possible, construction will be avoided in riparian zones. In riparian areas where road and pipeline crossings are necessary, an erosion, revegetation, and reclamation plan will be required.</p>
Visual	<p>All above ground facilities including power boxes, building doors, roofs, and any visible equipment will be painted the darker colors selected from the latest national color charts that best allows the facility to blend into the background. Refer to Draft Standard Environmental Color Chart - 2nd Edition Standard Environmental Color Chart (which replaces the current Standard Environmental Color Chart and the Supplemental Environmental Color Chart) for guidance when selecting colors for treating facilities.</p> <ul style="list-style-type: none"> • Source: WO IM 2007-021: Integration of Best Management Practices into Application for Permit to Drill Approvals and Associated Right of Way <p>The placement of production facilities on hilltops and ridgelines will be prohibited where they are highly visible. In all areas, low profile tanks may be used in combination with vegetative and landform screening wherever and whenever possible.</p> <ul style="list-style-type: none"> • Source: WO IM 2007-021: Integration of Best Management Practices into Application for Permit to Drill Approvals and Associated Right of Way
Water Resources	<p>Appropriate erosion control and revegetation measures will be employed. In areas with unstable soils where seeding alone may not adequately control erosion, grading will be used to minimize slopes and water bars will be installed on disturbed slopes. Erosion control efforts will be monitored by the operator and necessary modifications will be made to control erosion.</p>

Record of Decision West Tavaputs Plateau Natural Gas Full Field Development Plan Conditions of Approval

The Applicant-committed Environmental Protection Measures for the Peter’s Point loop line would be consistent with the Conditions of Approval (COAs) identified in Attachment 2 of the ROD for the WTP FEIS (BLM 2010). However, not all measures from the ROD for the WTP FEIS (BLM 2010) are applicable to the Peter’s Point Loop Line Environmental Assessment.

Design Features of the Selected Alternative (From Alternatives D and E)	
Resource	Summary of Mitigation Measure
Special Designations	No surface occupancy (NSO) by new well pads or other facilities on existing Federal leases within the Jack Canyon and Desolation Canyon Wilderness Study Areas (WSA) (also see Applicant-Committed Measures below).
	NSO on existing Federal leases within the Desolation Canyon National Historic Landmark (NHL).
	As feasible (where to do so will not preclude the development of valid and existing lease rights), NSO on existing Federal leases within canyon bottoms.
Transportation	Horse Bench, Jack Canyon, Jack Ridge, and Cedar Ridge roads will be gated within 6 months of signing this Record of Decision (ROD). Use of these roads will be limited to those granted administrative access by the Bureau of Land Management (BLM).
	Bill Barrett Corporation (BBC) and other operators will be required to maintain and lock gates for the life of the project (LOP). The selection of actual sites and the color and design of the gates will be determined on a site specific basis by the BLM.
	All project-related trailer traffic or vehicles with truck-load capacity of 1-ton or larger will be prohibited from using Prickly Pear Canyon Road (i.e., from Nine Mile Canyon to the top of Prickly Pear Mesa).
	BBC and other operators will minimize transportation of routine drilling and completion supplies on weekends and holidays.
	Immediately after drilling and completion activities are completed, locked gates will be installed on all new roads longer than 2 miles. Gates may be left open during work over operations.
	BBC and other operators will be required to maintain and lock gates until the final removal of roads after the LOP. The location of gates will be determined on a site-specific basis during the onsite process.
	BBC and other operators will be required to reclaim existing roads that create unnecessary loops, or roads that unnecessarily compromise natural and cultural resources as determined by the BLM.
	No existing routes will be reclaimed that are the sole access to lands managed the State of Utah without consultation with the State Institutional Trust Land Administration (SITLA).
Roads will be upgraded to achieve the following objectives: <ul style="list-style-type: none"> • accommodate future road use needs (increased traffic volumes); • ensure public safety; • Design Features of the Selected Alternative (From Alternatives D and E) allow year-round access for oil and gas operations; • facilitate drainage and reduce erosion and sedimentation; • alleviate dust; and • prevent stream degradation. 	

Design Features of the Selected Alternative (From Alternatives D and E)	
Resource	Summary of Mitigation Measure
	<p>These objectives will be met by constructing or upgrading roads on Federal land to standards established in the latest edition of the Gold Book (DOI-USDA); the <i>BLM Manual 9113</i> (BLM 1985); and in the <i>Price Field Office's Hydrological Modification Standards for Roads</i> (Appendix 19- Draft Price RMP EIS [BLM 2004b]).</p>
	<p>BLM may approve reroute of roads as an alternative to improving existing roads. Road reroutes could include the existing dugways from Cottonwood Canyon to Flat Iron Mesa and Peter's Point. If BBC and other operators select to reroute a road segment, the existing road segment will be closed and reclaimed to BLM standards upon completion of the new road.</p>
	<p>Prior to upgrading or rerouting a road, BBC and other operators will submit appropriate road plans and profiles that demonstrate compliance with BLM road standards associated with each road classification to the BLM for approval.</p>
	<p>Where environmental conditions and/or economic considerations make road upgrades to BLM standards infeasible, BBC and other operators will be required to obtain a waiver to these standards from the AO. A waiver could be granted provided BBC and other operators can demonstrate that roads open to the public will not compromise safety, as well as demonstrate one or more of the following criteria:</p> <ul style="list-style-type: none"> • Road construction or upgrades will require extensive economic resources. • Road construction or upgrade to BLM standards will cause undue or unnecessary degradation to sensitive environmental resources (e.g., visual and wildlife resources). • Road construction to BLM standards will cause environmental harm through erosion and stream degradation.
	<p>Upon completion of road construction or expiration of available aggregate, quarry areas will be recontoured and reclaimed. No more than one aggregate borrow area on each of the three mesas (Prickly Pear, Flat Iron, or Peter's Point) will be open at any one time.</p>
	<p>BBC and other operators will be required to maintain roads, which they construct or use, to the standards specified in their use authorization, and in accordance with road standards established in the latest version of the BLM/U.S. Forest Service (USFS) publication <i>Surface Operating Standards for Oil and Gas Exploration and Development – The Gold Book</i> (DOI-USDA); <i>BLM Manual 9113- Roads</i>; and Appendix 19 of the <i>Price Field Office's Hydrological Modification Standards for Roads</i> (BLM 2004a).</p>
	<p>BBC and other operators are encouraged to make use of air travel to reduce employee-related traffic between surrounding municipalities and the West Tavaputs (WTP) Project Area.</p>
	<p>BBC and other operators will be required to transport produced water/condensate via pipeline (i.e., liquids gathering system) with the following exceptions:</p> <ul style="list-style-type: none"> • Use of water/condensate lines will not be required in areas where development is considered exploratory. • Use of water/condensate lines will not be required in remote locations where the number of proposed wells is limited and construction of water/condensate line will be cost prohibitive. • Use of water/condensate lines will not be required in locations where the topographical variations require construction of additional pumping facilities in addition to those illustrated on Figure 1.
Wildlife	<p>The BLM will grant a waiver or exception to the seasonal restrictions for wildlife protection in the WTP Project Area on a lease-by-lease basis as specific applications for development on the existing lease are submitted, under the condition that operators comply with the special protection measures outlined in Attachment 5 and carryout wildlife mitigation measures included in Attachment 6.</p>
	<p>On leases that have no stipulations attached, the special protective measures outlined in Attachment 5 will be applied to Application for Permits to Drill (APDs) (and other individual applications) as Conditions of Approval (COAs) to ensure that impacts to sensitive resources within the WTP Project Area are mitigated.</p>

Design Features of the Selected Alternative (From Alternatives D and E)	
Resource	Summary of Mitigation Measure
	<p>BBC and other operators will be required to realign and reclaim existing roads within sage-grouse core winter use habitat (see ROD Figure 1) within 1 year of signing this ROD. Strategic planning will include cooperation with the Utah Division of Wildlife Resources (UDWR) to determine appropriate locations for road realignments and other proposed surface activities.</p> <p>No exceptions will be granted to seasonal restrictions in areas that the UDWR and the BLM have identified as the core winter-use sage grouse areas.</p> <p>BBC and other operators will be required to mitigate impacts to wildlife as required by the Agency Wildlife Mitigation Plan. For every acre of long-term disturbance, BBC and other operators will be required to enhance 4 acres of habitat (See Attachment 6).</p>
Cultural	<p>BBC and other operators will be required to fulfill mitigation commitments included in the WTP PA, which has been included as Attachment 4.</p> <p>BBC and other operators will be required to provide funding for a Class II cultural resource inventory not to exceed 3,700 acres, which is a approximately 2.5 percent of the Project Area of potential effect (APE).</p> <p>BBC and other operators will be required to provide financial support for a cultural resource monitoring plan.</p> <p>Within 6 months of signing this ROD, BBC and other operators will be required to fund a research project, which examines whether dust that has settled on rock art is causing physical degradation to the rock art.</p> <p>BBC and other operators will be required to ensure that dust suppression efforts are expanded to include portions of Nine Mile and Gate Canyon roads within the APE, which extends beyond the WTP Project Area boundary. BBC, in coordination with the Nine Mile Canyon Road Committee will also be required to identify new dust monitoring methods that will be qualitative, cost effective, and easy to operate.</p> <p>All personnel (including contractors; and new, added, or replaced personnel) will be instructed on site avoidance, site etiquette, and statutes protecting cultural resources prior to working in the WTP Project Area. BBC and other operators will be required to maintain records demonstrating that training has been carried out.</p> <p>As discussed in the Development Plan Programmatic Agreement (WTP PA), BBC and other operators will be required to fund development of visitor interpretation/enhancement at 9 to 11 sites within the WTP Project Area (e.g., parking, walking paths, signage, and/or information kiosks) selected by the BLM.</p>
General	<p>Annual surface disturbance will be limited to approximately 250 acres, and total unreclaimed surface disturbance at any given time will be limited to approximately 1,250 acres. The BLM will not limit the number of drill rigs, well pads, roads, pipelines, or ancillary facilities constructed on Federal lands as long as operations 1) do not exceed surface disturbance limitations; 2) comply with conditions and requirements within this ROD; and 3) comply with State and Federal regulations (e.g., Federal NAAQS).</p>
Pipeline Construction	<p>In accordance with WO IM-2007-021 (Integration of Best Management Practices into Application for Permit to Drill Approvals and Associated Right of Way), the BLM will require the burial of pipelines except in limited circumstances where locally established criteria allow for the consideration of a surface-laid pipeline. Surface-laid pipeline may be allowed:</p> <ul style="list-style-type: none"> • where very shallow topsoil occurs over bedrock (5-20 inches); • where the pipeline does not follow an access road (cross-country); • over cliffs where there is no other viable route available; and/or • as determined during the onsite process. <p>A determination as to whether one or more of these exceptions apply will be made on a site-specific basis. In the circumstances where the operator proposes to construct a new pipeline adjacent to an existing surface pipeline, the proposed pipeline and existing pipeline will be</p>

Design Features of the Selected Alternative (From Alternatives D and E)	
Resource	Summary of Mitigation Measure
	<p>buried subject to the exception criteria listed above.</p> <p>In areas where sufficient soil is present such that blasting will not be required, the following techniques will be employed to bury pipelines:</p> <ul style="list-style-type: none"> • Shrubs and small trees will be removed from the right of way (ROW). Topsoil removal will not occur except directly over the trench. • A trench will be excavated and the soil stockpiled to one side, making sure the topsoil and spoil do not mix together. • The trench will be backfilled and the spoil compacted in the trench. • Stockpiled topsoil will be placed over the compacted spoil to facilitate reclamation. • Scalped vegetation will be lopped and scattered on the ROW to reduce erosion potential and reduce visual impacts. • The entire ROW will be reseeded in the first appropriate season after completion of disturbance. <p>In areas where compacted sandstone or bedrock exists, the following techniques will be employed to bury pipelines:</p> <ul style="list-style-type: none"> • Shrubs and small trees will be removed from the ROW. Topsoil removal will not occur except directly over the trench. • In most areas where pipelines will be buried, chain trenchers and/or rocks saws (also known as wheel or disc trenchers) will be used to excavate trenches. • In areas where blasting is required in order to excavate pipeline trenches, the following safety measures will be adhered to (e.g., on slopes or other areas where use of chain trenchers and/or rock saws are not feasible): <ul style="list-style-type: none"> ○ As needed, roads along areas to be blasted may be temporarily closed for safety purposes. ○ The charges will be detonated in accordance with relevant safety regulations. • Following excavation of the pipeline trenches (whether by chain trencher and/or rock saw or detonation), debris will be removed from the trench. • Spoil will be used to pad the bottom of the trench. As needed, additional soil, sand, or gravel will be brought in from an approved borrow area and used to pad the bottom of the trench. • The spoil will be compacted in the trench. Stockpiled topsoil will be placed over the compacted spoil to facilitate reclamation. • Scalped vegetation will be lopped and scattered on the ROW to reduce erosion potential and reduce visual impacts. • The entire ROW will be reseeded in the first appropriate season after completion of disturbance. <p>Where surface-laid pipelines are approved, stipulations will include painting to match the surrounding environment and bonding considered on a case-by-case basis. Surface pipelines adjacent to roads will be assembled on the roadway or construction ROW, lifted, and placed in the existing vegetation. Pipeline markers will be strategically placed at intervals along all buried and surface pipelines.</p>
Noise	All applicable production equipment, including compressor engines, will have hospital grade mufflers.
General	Closed-loop drilling will be used in sensitive areas such as locations proposed within or near 100-year floodplains or drainages, cultural resources or archaeological sites, and within important wildlife habitats. The designation of a proposed location as a sensitive location requiring closed-loop drilling will be determined on a site-specific basis during the APD process.
	If a well is located in an environmentally sensitive area, protective barriers, as determined appropriate during the onsite process, will be installed around the production facilities

Design Features of the Selected Alternative (From Alternatives D and E)	
Resource	Summary of Mitigation Measure
	(including tanks) or they will be moved off site.
	<p>The following limitations will apply to pump stations proposed in canyon bottoms on Federal lands:</p> <ul style="list-style-type: none"> • All pump station engines will be fitted with at least hospital grade mufflers for noise abatement. In addition, all pumps and generators will be enclosed in acoustically insulated buildings. • Pump station design and mitigation measures will be reviewed by a BLM landscape architect. • Site-specific visual simulations and a detailed visual contrast rating will be completed by a BLM landscape architect to determine whether the proposed pump station is in conformance with VRM Class Objectives. • A BLM approved landscape architect will be onsite during construction of the pump stations to document that the appropriate visual resource mitigation measures are implemented. A report would be provided to the BLM. • A BLM permitted archaeologist will be located on-site during surface disturbing activities to prevent damage to cultural sites. • No pump stations will be allowed within “line of sight” of Key Observation Points (KOPs) within Nine Mile Canyon, which includes the sites that will be developed as part of the WTP PA. • Class I and Class III inventories of the proposed pump station location and a ½-mile buffer zone will be completed during the permitting phase to determine whether any eligible National Register of Historic Places (NRHP) properties could be affected. For any pump stations proposed within ½- mile of eligible NRHP properties, appropriate Section 106 consultation will be completed prior to approval of the pump station location. Native American consultation will also be completed prior to approving a pump station location(s). • Pump stations will not be located within 330 feet of riparian zones or within 100-year floodplains unless there are no practical alternatives and long-term impacts can be fully mitigated.

Bill Barrett Corporation Applicant-Committed Environmental Protection Measures (Proposed Action)
Pre-Drilling
Pipeline construction methods and practices will be planned and conducted by BBC with the objective of enhancing reclamation and fostering the re-establishment of the native plant community.
BBC will require their personnel, contractors, and subcontractors to comply with Federal regulations intended to protect archeological and cultural resources.
BBC will require that their personnel, contractors, and subcontractors abide by all State and Federal laws and regulations regarding hunting.
Construction
In order to avoid potential noise-related impacts to potential Mexican spotted owl (MSO) habitats, new compressor stations will not be located within approximately 0.5 miles of canyon rims.
BBC will use existing crowned and ditched roads for access where reasonably practical to minimize new surface disturbances.
BBC will construct roads on private surface to essentially the same specifications as those on Federal surface, considering the specifications of landowners, topography, subsurface bedrock, etc.
Where topsoil removal is necessary, it will be windrowed (i.e., stockpiled/accumulated in a low row/profile along the edge and parallel to the ROW) and re-spread over the disturbed area after construction and backfilling are completed. Vegetation removed from the disturbed area will also be re-spread to provide protection, nutrient recycling, and a seed source for reclamation.

Bill Barrett Corporation Applicant-Committed Environmental Protection Measures (Proposed Action)
No unnecessary side-casting of material will occur on steep slopes.
Unnecessary topographic alterations will be mitigated by avoiding road construction, when practicably feasible, on steep slopes, rugged topography, and perennial and ephemeral/intermittent drainages.
Pipelines within the channel crossings or in mapped flood hazard areas will be constructed such that the pipeline is buried at least 3 feet below the channel bottom and in conformance with hydrological design practices.
Removal and disturbance of vegetation will be kept to a minimum through construction site management (e.g., using previously disturbed areas and existing easements, limiting equipment/materials storage yard and staging area size, to that required, etc.)
Surface disturbance within significant erosion-prone or high salinity areas will be avoided where practical. Necessary construction in these areas will be completed to minimize erosion.
Final Reclamation and Abandonment
All reclamation will be accomplished as soon as practical after the disturbance occurs with efforts continuing until satisfactory revegetation cover is established. Inter-seeding (i.e., seeding into existing vegetation), secondary seeding, or staggered seeding may be used to accomplish revegetation objectives. During rehabilitation of areas in important wildlife habitat, provisions will be made for the establishment of native browse and forb species. Follow-up seeding or corrective erosion control measures will occur on areas where initial reclamation efforts are unsuccessful, as determined by the BLM or the appropriate Surface Management Agency (SMA).
Any mulch used by the operators will be weed-free and free from mold, fungi, or noxious weed seeds. Mulch may include native hay, small grain straw, wood fiber, live mulch, cotton, jute, synthetic netting, or rock.
BBC will reshape disturbed channel beds to their approximate original configuration.
Reclamation of abandoned roads may include reshaping, recontouring, resurfacing with topsoil, installation of water bars, and seeding on the contours. Road beds, well pads, and other compacted areas will be ripped to a depth of approximately 1.0 foot on 1.5-foot centers to reduce compaction prior to spreading the topsoil across the disturbed area. Stripped vegetation will be spread over the disturbance area for nutrient recycling, where practical. Additional erosion control measures (e.g., fiber matting) and road barriers to discourage travel may be constructed if appropriate. Graveled roads, well pads, and other sites will be stripped of usable gravel prior to ripping as deemed necessary. Culverts, cattle guards, and signs will be removed as roads are abandoned.
Common to All Project Phases
Project personnel and contractors will be educated on and subject to the following requirements: <ul style="list-style-type: none"> • no dogs within the WTP Project Area; • no firearms within the WTP Project Area; • no littering within the WTP Project Area; • smoking within the WTP Project Area will only be allowed in off-operator active locations or in specifically designated smoking areas; • all cigarette butts will be placed in appropriate containers and not thrown on the ground or out windows of vehicles; • personnel and contractors will abide by all fire restriction orders; • campfires or uncontained fires of any kind will be prohibited within the WTP Project Area; • portable generators used in the WTP Project Area will have spark arrestors.
BBC will be responsible for necessary preventative and corrective road maintenance for the duration of the project. Maintenance responsibilities may include, but are not limited to, blading, gravel surfacing, cleaning ditches and drainage facilities, dust abatement, noxious weed control, or other measures as deemed appropriate.
Additional Applicant-Committed Environmental Protection Measures (Contracted Plan of Development)
No wells will be drilled within the Wilderness Study Areas (WSAs), from WSA cherry stems, or from roads that constitute a WSA boundary.
On some locations in areas that have wilderness characteristics, the operator will eliminate surface facilities and install subsurface wellheads. In particular, two proposed well pads on Horse Bench (T12S R17E Sections 30 and 32) will be constructed in a way that allows for the wellheads and/or separators to be placed in sub-surface concrete vaults that minimize visual impacts. The vaults will be covered with steel grates to prevent public and wildlife access. Tanks for these two well pads would not be located on the well pad.
Roads leading to the two Horse Bench well sites that will not have surface production equipment (T12S R17E Sections 30 and 32) will be designed and reclaimed in a way that minimizes impacts to the visual character of the landscape.

Bill Barrett Corporation Applicant-Committed Environmental Protection Measures (Proposed Action)	
On new locations within wilderness characteristics areas the operator will use low profile, low visibility production equipment.	
In areas that have wilderness characteristics, roads will be designed to minimize changes to the visual character of the landscape.	
On locations where the derrick will be visible from the Green River and on pads within ¼ mile of the WSA boundary, wells will only be drilled during the recreational off-season (October-April).	
BBC will employ Forward-Looking Infrared (FLIR) methodology for detecting fugitive emissions (volatile organic compound (VOC) and Hazardous Air Pollutant (HAP) reduction).	
All diesel fueled drill rigs will meet or exceed Environmental Protection Agency (EPA) Tier II emission standards.	
If more than two drill rigs are being used in the WTP Project Area, the additional rigs would be fueled by natural gas engines.	
BBC will not use well-site dehydrators.	
The well pad density will not exceed approximately one surface pad per 160 acres. In the event that downhole well density exceeds one well per 160 acres, multiple wells from a single well pad would be necessary.	
On lands with wilderness characteristics, well pad density will not exceed approximately one surface pad per 320 acres.	
BBC will limit the maximum number of drill rigs to five.	
BBC will use centralized tank batteries and multi-phase gathering where feasible to reduce trucking.	

Oil and Gas Best Management Practices	
PRE-DRILLING	
Source of Mitigation Measure	Summary of Requirements
Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. (Gold Book) Chapter 4: Construction and Maintenance	The site layout should be located and staked in the most level area, off narrow ridges, and set back from steep slopes, while taking into consideration the geologic target, technical, economic and operational feasibility, spacing rules, natural resource concerns, and safety considerations.
	Operations should be avoided or properly mitigated in riparian areas, floodplains, wetlands, and areas subject to severe erosion and mass soil movement.
	In visually sensitive areas, locations should be selected that provide for vegetative and topographic screening.
CONSTRUCTION	
Source of Mitigation Measure	Summary of Requirements
Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. (Gold Book) Chapter 4: Construction and Maintenance	All surface soil materials (topsoil) are to be removed from the entire cut and fill area and temporarily stockpiled for reuse during interim and final reclamation.
	Topsoil should be segregated and stored separately from subsurface materials to avoid mixing during construction, storage, and interim reclamation. Subsurface materials should never be placed on top of topsoil material at any point in the operation. Stockpiles should be located and protected so that wind and water erosion are minimized and reclamation potential is maximized.
	Fill slopes should be compacted to minimize the chance of slope failure. If excess cut material exists after fill areas have been brought to grade, the excess material will be stockpiled at approved locations.
	To reduce erosion and soil loss, the operators will be required to divert storm water away from the well location with ditches, berms, or waterbars above the cut slopes and to trap well location runoff and sediments on or near the location through the use of sediment fences or water retention ponds.
	Reserve pits should not be constructed in natural water courses. Water courses include lake beds, gullies, draws, streambeds, washes, arroyos, or channels that

	are delineated on a 1:24,000 USGS quadrangle map or have a hydrologic connection to streams, rivers, or lakes.
	To prevent contamination of groundwater and soils or to conserve water, it is recommended that operators use a closed-loop drilling system or line reserve pits with an impermeable liner.
	New road construction or reconstruction by the operator must be suitable for the intended use and must comply with the BLM road and safety standards, such as those found in the BLM's 9113-Roads Manual.
	In areas of high environmental sensitivity, special road location, design, and construction and maintenance techniques may be required, as well as seasonal vehicular closures to the general public.
	Existing roads should be considered for use as access routes and may be used when they meet agency standards, transportation and development needs, and environmental objectives.
	To ensure successful growth of plants and forbs, topsoil must be salvaged where available during road construction and respread to the greatest degree practical on cut slopes, fill slopes, and borrow ditches prior to seeding.
	Construction within saturated or frozen soils should be avoided.
	Drainage control must be ensured through the use of drainage dips, in-sloping, natural rolling topography, ditch turnouts, ditches, or culverts. Ditches and culverts may be required in some situations, depending on grades, soils, and local hydrology. If culverts or drainage crossings are needed, they should be designed for a 25-year or greater storm frequency.
	Steep hillsides and water course should be avoided in the location of pipelines and flowlines.
	Flowline routes should take advantage of road corridors wherever possible to minimize surface disturbance and provide better leak detection and access for installation and repair operations.
	When clearing is necessary, the width disturbed should be kept to a minimum. Topsoil material must be stockpiled to the side of the routes where cuts and fills or other surface disturbances occur during the pipeline construction. Topsoil material must be segregated and not be mixed or covered with subsurface material. Bladed material must be placed back into the cleared route upon completion of construction and returned back to the original contour before reapplying topsoil.
	Pipeline construction should not block, dam, or change the natural course of any drainage.
WO IM 2007-021: Integration of Best Management Practices into Application for Permit to Drill Approvals and Associated Right of Way: Road Construction	All new roads will be designed and constructed to a safe and appropriate standard, "no higher than necessary" to accommodate intended vehicular use. New roads will follow the contour of the land. Existing oil and gas roads that are in eroded condition or contribute to other resource concerns will be brought to the BLM standards within a reasonable period of time.
DRILLING	
Source of Mitigation Measure	Summary of Requirements
The BLM/USFS Surface Operating Standards for Oil and Gas Exploration and Development (Gold Book) Chapter 5: Drilling and Production Operations	Pits, water impoundments, and surface discharges that present a potential hazard to humans, livestock, wildlife, or to the resources should be subject to appropriate mitigation, such as, fencing, netting, caging, or covers as appropriate. Noise that has the potential to disturb wildlife, livestock and private surface owners or neighbors should be controlled to reduce sound levels. Suitable mufflers should be installed on all internal combustion engines and certain compressor components.
WO IM 2007-021: Integration of Best Management Practices	Multiple wells will be drilled from a single well pad wherever technically feasible.

into Application for Permit to Drill Approvals and Associated Right of Way: Multiple Wells From Single Pad	
PRODUCTION AND MAINTENANCE	
Source of Mitigation Measure	Summary of Requirements
Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. (Gold Book) Chapter 4: Construction and Maintenance	The operator shall submit a road maintenance plan for all roads that will be constructed or used in conjunction with the drilling program.
Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. (Gold Book) Chapter 5: Drilling and Production Operations	<p>The operator must comply with the visual resource management objectives established in the land use plan for all activities that alter landforms, disturb vegetation, or require structures (BLM 8400 Manual Series). Site-specific mitigation practices may be required by the SMA to minimize visual impacts, while remaining consistent with the lessee's right to conduct operations under the lease.</p> <p>All long-term facility structures, including worker housing, will be painted a color that enables the facilities to blend in with the natural background color of the landscape as seen from a viewing distance and location typically used by the public. The selected color should be one or two shades darker than the dominant background color, typically a vegetation color.</p> <p>In VRM Class II areas, the use of properly chosen camouflage techniques may be an appropriate method for matching the texture of the landscape. This strategy should be given strong consideration when proposed facilities are between 0.25 and 1.25 miles from a KOP. Semi-gloss paints may be preferred because of their resistance to staining and weathering. Where necessary, the use of contrasting safety paint can be used to highlight and mitigate a potential hazard, such as a tripping hazard or protruding or mechanical edge that could harm the operator or public. Refer to Draft Standard Environmental Color Chart - 2nd Edition Standard Environmental Color Chart (which replaces the current Standard Environmental Color Chart and the Supplemental Environmental Color Chart) for guidance when selecting colors for treating facilities.</p> <p>Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.</p> <p>Operators are expected to initiate their own inspection programs, identify noncompliance, and take appropriate corrective actions, rather than relying on Federal inspections to identify problems.</p>
WO IM 2007-021: Integration of Best Management Practices into Application for Permit to Drill Approvals and Associated Right of Way	<p>All above ground facilities including power boxes, building doors, roofs, and any visible equipment will be painted the darker colors selected from the latest national color charts that best allows the facility to blend into the background. Refer to Draft Standard Environmental Color Chart - 2nd Edition Standard Environmental Color Chart (which replaces the current Standard Environmental Color Chart and the Supplemental Environmental Color Chart) for guidance when selecting colors for treating facilities.</p> <p>The placement of production facilities on hilltops and ridgelines will be prohibited where they are highly visible. In all areas, low profile tanks may be used in combination with vegetative and landform screening wherever and whenever possible.</p> <p>Noise reduction techniques and designs will be used to reduce noise from compressors or other motorized equipment.</p> <p>As determined appropriate during the onsite process, the operators may be required to place wellheads below ground.</p>
RECLAMATION AND ABANDONMENT	

Source of Mitigation Measure	Summary of Requirements
Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. (Gold Book) Chapter 6: Reclamation and Abandonment	At producing wells, the operators will reduce slopes to original contours. Areas not used for production purposes will be reclaimed and blended into the surrounding terrain, reseeded, and erosion control measures installed. Erosion control measures may be necessary after slope reduction. Mulching, erosion control measures, and fertilization may be necessary to achieve acceptable stabilization.
	Disturbed areas should be revegetated after the site has been satisfactorily prepared. Site preparation may include respreading topsoil to an adequate depth, and may also include ripping, tilling, disking, on contour and dozer track-imprinting.
	Reclamation measure should begin as soon as possible after the disturbance and continue until successful reclamation is achieved.
	Reclamation can be judged successful when a self-sustaining, vigorous, diverse, native (or otherwise approved) plant community is established on the site, with a density sufficient to control erosion and non-native plant invasion and to re-establish wildlife habitat or forage production.
	Earthwork for interim and final reclamation generally must be completed within 6 months of well completion or plugging (weather permitting).
	All pits must be reclaimed to a natural condition that blends with the rest of the reclaimed pad area. In addition, the pit must be restored to a safe and stable condition. Pits must be free of oil and other liquid and solid wastes, allowed to dry, be pumped dry, or solidified in-situ prior to filling.
	Pipeline routes and roads should be co-located as much as possible to reduce reclamation needs and impact to other resources.
	Pipeline trenches are to be compacted during backfilling and must be maintained to correct backfill settling and prevent erosion. Reclamation involves filling the trench, compacting the fill, regarding cut-and-fill slopes to restore the original contour, replacing topsoil, installing temporary water bars only where necessary to control erosion, and revegetation in accordance with a reclamation plan.
WO IM 2007-021: Integration of Best Management Practices into Application for Permit to Drill Approvals and Associated Right of Way:	Final reclamation of all oil and gas disturbance will involve recontouring of all disturbed areas, including access roads, to the original contour or a contour that blends with the surrounding topography and revegetating all disturbed areas. Mulching, soil amendments and other state-of-the-art techniques will be utilized to assure the highest possible re-vegetation success.

Environmental Protection Measures	
Resource	Summary of Mitigation Measure
Paleontology	A BLM permitted paleontologist will be on site during road, pipeline, well pad, and other excavations that will disturb rocks of the Green River Formation.
Air Quality	Tier II rig standards will be required for all new and re-located rigs.
	All new and replaced pneumatic controllers will be a no bleed or low bleed design.
	Emission controls will be utilized on all condensate storage batteries with emissions greater than 5 tons/year. This will include all tank batteries located at well sites, centralized production facilities and compressor stations. The emission controls may consist of vapor recovery, thermal oxidation or other available technologies. At a minimum, the applied control technology must be capable of reducing emissions by 95 percent.
	Best management practices will be employed during completion operations to minimize emissions to the atmosphere as a result of well flowback. The preferential best management practice shall be "Green Completion" where the well flowback is captured, separated, and sold as product. When Green Completions are not technically reasonable, flaring or other control practices shall be employed to minimize venting emissions directly to the atmosphere.

Environmental Protection Measures	
Resource	Summary of Mitigation Measure
	<p>Emissions from engines will be controlled utilizing Best Available Control Technology (BACT) in accordance with Utah Division of Air Quality (UDAQ) regulations. Emissions controls may consist of lean-burn technology, catalysts, air/fuel ratio controllers or other technologies as they become commercially available. Engines located at facilities outside of UDAQ jurisdiction (EPA jurisdiction) will be controlled in a like manner.</p>
	<p>In accordance with a Utah Department of Environmental Quality/ Division of Air Quality (UDEQ-DAQ) letter dated June 6, 2008 requesting implementation of interim nitrogen oxide control measures and compressor engines; the BLM will require the following as a Lease Stipulation or COA for APDs:</p> <ul style="list-style-type: none"> • All new and replaced internal combustion oil and gas field engines of less than or equal to 300 design rated horsepower must not emit more than 2 gms of NOx per horsepower-hour. This requirement does not apply to oil and gas field engines of less than or equal to 40 design-rated horsepower. • All new and replacement internal combustion oil and gas field engines of greater than 300 design rated horsepower must not emit more than 1.0 gms of NOx per horsepower-hour.
	<p>To ensure that this project will result in the continued attainment of National Ambient Air Quality Standards (NAAQS) and not contribute to ozone exceedances, within one year of the signing of this ROD, the BLM and BBC with input from appropriate stakeholders (i.e., EPA, Ute Indian Tribe, UDAQ), will refine the NOx and VOC emissions inventory for the Project based upon updated actual and projected levels of development. BBC will update its emissions inventory on an annual basis and provide this inventory to the BLM and other interested stakeholders (i.e., EPA, UDAQ, Ute Indian Tribe). This information will be made publicly available on an annual basis.</p> <p>In the event that the updated emissions inventory shows a significant increase in NOx, VOCs, or other ozone precursors relative to the levels predicted by the EIS, then BBC, in consultation with the BLM and appropriate Federal, Tribal and State stakeholders, will perform a new air quality model analysis utilizing the new inventory and monitored data, or incorporate the updated emissions inventory in a planned regional scale air quality modeling study. The modeling will consider the current operating practices, operator committed mitigation, and BACT requirements in place at the time the model is conducted. BLM, in consultation with appropriate Federal, State, and Tribal stakeholders, will evaluate the modeling results and identify any needed additional reductions in ozone precursors emissions.</p> <p>As soon as possible following evaluation of the modeling results, BLM and appropriate stakeholders will use their respective authorities to implement any needed emission control mitigation measures and/or operating limitations necessary to ensure continued compliance with applicable ambient air quality standards for ozone. Absent an effective technology to implement, reductions in the pace of development may be utilized to ensure ambient air quality standards are met. Potential mitigation measures that the BLM and appropriate stakeholders may employ include:</p> <ul style="list-style-type: none"> • additional natural gas-fired rig engines; • fuel additives; • gas turbines rather than internal combustion engines for compressors; • secondary controls on drill rig engines; • electric drill rigs; • electric compression; • cleaner technologies on completion activities, and other ancillary sources; • reduction in the pace of development; • further centralization of gathering facilities to reduce truck traffic, including liquids gathering system; and/or

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	<ul style="list-style-type: none"> • advancements in drilling technologies.
Soils	NSO on slopes greater than 40 percent.
	If surface disturbing activities are proposed on slopes of 20 to 40 percent, BBC and other operators will develop an erosion control strategy and topsoil segregation/restoration plan. Such construction must be properly surveyed and designed by a certified engineer and approved by the BLM prior to project implementation, construction, or maintenance.
	The presence of biological crusts will be evaluated during the APD process for each proposed project facility. Consideration will be given to relocating project facilities that will destroy significant amounts of biological crusts.
100-year Floodplains, Springs, and Riparian Areas	Consistent with stipulations contained in the Price Field Office Approved RMP, where no practical alternative exists, surface disturbance could be permitted within 330 feet from centerline of intermittent or perennial streams.
	Where no practical alternative exists, surface disturbance could be permitted within the 100-year floodplains of intermittent or perennial streams in compliance with E.O. 11988.
	No excess material (e.g., soil, overburden, etc.) will be stored within 100-year floodplains; all excess material will be relocated to appropriate locations outside of 100-year floodplains but within the WTP Project Area.
	Design and placement of any structures that may need to be placed in washes or 100-year floodplains of tributaries to the Green River will be coordinated with the USFWS.
	Centralized production facilities will be located at an optimal location away from 100-year floodplains.
	For wells within 100-year floodplains, springs, or riparian areas, closed-loop drilling system will be utilized.
	As feasible, crossings of intermittent or perennial streams to access well pads will be avoided. Where stream crossings are necessary, engineered culverts, low water crossings, or a bridge will be constructed as appropriate; the type and location of crossing structures will be determined by the SMA as part of the APD process.
	BLM will require implementation of the BLM Technical Note Hydraulic Considerations for Pipeline Crossings of Stream Channels.
	For wells within 100-year floodplains, springs, or riparian areas, impervious well pads will be constructed using plastic, bentonite, etc.
	For wells within 100-year floodplains, springs, or riparian areas, an impervious containment structure or a permanent high berm (approximately 18 - 24 inches in height) will be constructed around all storage tanks located within 100-year floodplains.
	For wells within 100-year floodplains, springs, or riparian areas, all cuttings will be solidified on location, or removed and disposed of appropriately.
	Within 100-year floodplains, springs, or riparian areas, remote monitoring of well locations will be used to closely observe the status of each well.
	To the maximum extent possible, construction will be avoided in riparian zones. In riparian areas where road and pipeline crossings are necessary, an erosion, revegetation, and reclamation plan will be required.
Within 100-year floodplains, springs, or riparian areas, major spill kits will be available on each location during drilling.	
Water Resources	Detailed construction plans will be prepared by the operator and will include site-specific drainage components and sediment and erosion controls that will be utilized to address control of sedimentation of surface waters in the WTP Project Area.
	Appropriate erosion control and revegetation measures will be employed. In areas with unstable soils where seeding alone may not adequately control erosion, grading will be used to minimize slopes and water bars will be installed on disturbed slopes. Erosion control efforts will be monitored by the operator and necessary modifications will be made to control erosion.
	Production facilities (e.g., well pads, tanks, pipelines, roads, etc.) will be located outside of

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	the channel of Nine-Mile Creek. During on-sites, production facility locations will be determined to <u>minimize potential impacts to the environment.</u>
	Regular inspections of well locations, topsoil stockpiles, cut- and fill-slopes, roads, and pipeline corridors will be conducted by the third-party monitor for signs of erosion and runoff problems. Problem locations will be stabilized and seeded as appropriate to prevent additional erosion and potential impacts to receiving waters.
	Regular inspections of erosion control structures, drainage structures, and culverts will be conducted for signs of failure or malfunction and repair of those facilities.
	Any shallow groundwater zones encountered during drilling of the proposed wells will be properly protected and the presence of these zones reported to the appropriate SMA. After the completion of drilling operations, the producing formation(s) will be logged and production casing run and cemented in accordance with the drilling program approved in the APD. This will isolate all groundwater-bearing formations in the borehole and will effectively eliminate communication between hydrocarbon-bearing zones and shallow groundwater aquifers.
	Screened containment troughs will be used around ethylene glycol on locations.
	If oil based drilling muds are using in the drilling of wells, proper environmental controls will be used (i.e., closed-loop systems, placing an impermeable barrier under the rig, etc.)
	Water quality will be monitored as outlined in the Water Quality Monitoring Program (see Attachment 7).
	Prior to surface use, the cuttings would be tested for the parameters described in the 1996 Utah Division of Oil, Gas and Mining (UDOGM) Environmental Handbook (version 1.0, 1-96) (Environmental Regulations for the Oil & Gas Exploration & Production Industry). In addition to the testing required by UDOGM, prior to surface use, drill cuttings would be subject to Toxicity Characteristic Leaching Procedure (TCLP) testing. These data would be used to evaluate potential impacts to surface water and other natural resources, and whether surface use of the cuttings is appropriate.
	All cuttings piles would be located on an impermeable barrier and provided with secondary containment or other BMPs to prevent impacts to stormwater.
To ensure proper tracking of water depletions from the Upper Colorado River System, BBC will notify the BLM and/or our office as to what water resources will be used for the project as they are designated, and the amounts that will be withdrawn from each one.	
Rangeland Management and Wild Horses	Damaged fences, gates, or cattle guards will be fixed by the operators as soon as they are damaged in order to prevent unintentional movements of livestock.
	Roads will be plowed to improve access and movement of livestock and horses during periods of heavy snow, generally 16 inches or greater.
	During a typical deep snow, the operators will open edges of plowed roads to create exit points and crossing areas when snow walls develop.
	Pilots will buzz the existing Peter’s Point airstrip and proposed Flat Iron and Prickly Pear Mesa airstrips prior to landing to reduce the potential for plane/livestock collisions.
	The operators will be required to construct watering facilities if during the onsite process it is determined that the project location/facility/activity will adversely affect, or preclude use of, an existing watering source for livestock or wild horses.
Migratory Birds	On Federal lands, the operators would install netting on reserve pits to prevent contact of birds with harmful fluids. For water management facilities on Federal lands, netting or other bird deterrent techniques such as, the “Birdavert System,” would be installed to prevent contact of birds with produced water in water management facilities. If flagging is used, it would be in combination with other bird deterrent techniques. The Birdavert system manufactured by Peregrine Systems, Salt Lake City, UT, is a fully automated system that prevents bird contact with fluids in ponds based on emission of sounds, light, or motion at random intervals that are designed to frighten birds and other wildlife away from ponds. The Birdavert system, which was designed by ornithologists, computer programmers, and radar technologists, specifically uses radar, computer technology, and hazing devices to deter birds

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	<p>from landing on ponds. Use of bird deterrent techniques on State or private lands would be determined by the SMA during the onsite process.</p> <p>On Federal lands, surface-disturbing activities may be restricted in high-value migratory breeding habitat for migratory birds during the migratory bird nesting season (i.e., approximately April 15 – August 1). Species-specific spatial and temporal “closures” in high-value breeding habitat will be determined on a site-specific basis during the Federal onsite process. The need to restrict surface disturbing activities to protect migratory bird nesting activities at a site-specific location will be determined by the Authorized Officer (AO) based on the presence of breeding or nesting bird species at the time of surface disturbing activities, climatic and weather conditions, and/or topographical and/or vegetative visual screening. Priority consideration will be given to BLM sensitive migratory bird species.</p>
Big Horn Sheep	To avoid impacts to bighorn sheep lambing activities, construction, drilling and completion activities will be prohibited or limited (based on site-specific review with the BLM and UDWR) within identified bighorn sheep lambing areas from March 15 – June 30.
Vegetation	<p>An Approved Pesticide Use and Weed Control Plan will be prepared and implemented in consultation with the AO. Weed monitoring will be continued on an annual basis (or as frequently as the SMA determines) throughout the LOP. The Pesticide Use and Weed Control Plan will include prescribed application methods that account for the reclamation objective of re-establishing native forbs, shrubs and trees in addition to grasses.</p> <p>Site-specific interim reclamation plans will be prepared by the operator and submitted with APD packages.</p> <p>Interim and final reclamation activities and evaluation will be consistent with the Green River District (Attachment 3) Reclamation Guidelines for Reclamation Plans or other subsequent guidance by the BLM.</p> <p>Monitoring of reclamation success and report submission will be consistent with the memorandum of understanding (MOU) for <i>Mitigation Compliance and Monitoring Plan</i> (Attachment 8) and the Green River District Reclamation Guidelines for Reclamation Plans (Attachment 3) (BLM 2009).</p> <p>The operators may use materials from well pad or reserve pit construction as aggregate.</p> <p>All construction equipment coming into the WTP Project Area will be power-washed prior to entering the WTP Project Area.</p>
Mexican Spotted Owl (MSO)	<p>Where feasible, well pads and facilities will be located away from steep-walled canyons.</p> <p>On Federal lands, all noise-producing production facilities (e.g., compressor engines, pump jacks, water pumping units, etc.) within potential MSO habitats* and within 0.5 miles of potential MSO habitat will be tested to determine noise levels of the equipment. If noise from production equipment within potential MSO habitat exceeds 45 dBA, the operators will be required to use reasonable measures (e.g., hospital-grade mufflers, housing of equipment, and/or other measures determined to be reasonable by the BLM and operator) to reduce noise levels of that particular facility to 45 A-weighted decibel (dBA) or lower. Furthermore, if production equipment located more than 0.5 miles from potential MSO habitat is determined to generate exceedances of the 45 dBA within the 0.5-mile buffer of potential MSO habitat, operators will also be required to use reasonable measures to reduce noise levels of that particular facility so that it does not exceed 45 dBA within 0.5 miles of potential MSO habitat.</p> <p>If future modeling or ground-truthing of existing modeling determines that an area currently mapped as potential MSO habitat actually does not support the constituent elements needed for potential MSO habitat, the operators will not be obligated to comply with this mitigation measure.</p> <p>Where feasible, well pads and facilities will be located in a manner that will conceal development if development is proposed within mixed-conifer vegetation.</p> <p>Field surveys for MSO will be conducted according to USFWS protocol in all “fair” and</p>

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	<p>“good” MSO habitats and within 0.5 mile buffer of those habitats. Furthermore, the operators will fund ground-truthing exercises to categorize modeled MSO habitats into “good,” “fair,” or “poor” MSO habitat.</p> <p>If during Mexican spotted owl surveys a Mexican spotted owl sighting/auditory response is documented, the BLM will require a 1/2 mile no surface occupancy around the location until further surveys confirm whether or not a protected activity center (PAC) is needed. If during Mexican spotted owl surveys a breeding pair or nest is documented, the BLM would require a temporary 1-mile no surface occupancy around the location until a PAC is established.</p> <p>Road access and fencing will be minimized to reduce or prevent habitat fragmentation and disturbance, and to reduce above-ground obstacles to birds in flight.</p> <p>White (preferable) or red strobe lights will be used at night at airstrips.</p> <p>Lighting at all facilities will be downshielded/directed to areas of human activity as much as possible while ensuring human safety. Lighting at compressor stations will be kept to the minimum safely permissible level.</p> <p>TDS levels in water management facilities and reserve pits will be regularly monitored to minimize the risk of salt toxicity.</p> <p>A noise monitoring study will be initiated if field surveys detect MSO in the WTP Project Area.</p>
Colorado River Fish Species	<p>Species As appropriate (i.e., if water is pumped directly Nine-Mile Creek or perennial drainages), the following measures will be applied to reduce or eliminate direct impacts to habitat for the Colorado River fish species.</p> <ul style="list-style-type: none"> a) Where directed by the appropriate surface management agency (SMA), the operator will construct erosion control devices (e.g., riprap, bales, and heavy vegetation) at culvert outlets. All construction activities will be performed to retain natural water flows. b) Closed-loop drilling (see Appendix A) will be used for any wells within the 100-year floodplain for Nine-Mile Creek.
Bald Eagle and Golden Eagles	<p>The operators would conduct field surveys for bald and golden eagle winter roosting sites in all suitable habitats on a site-specific basis as determined necessary by the BLM, prior to beginning surface disturbance activities from November 1 – March 31.</p> <p>The operators would protect and preserve communal roosting sites and important foraging areas. The operators would retain mature trees and old growth stands wherever possible, particularly within ½-mile from surface water features.</p> <p>Where feasible, the operators would locate well pads and facilities in a manner to conceal them from bald and golden eagle winter roosting sites by considering vegetation (e.g., cottonwood trees and other large trees) and topographical features (e.g., rivers).</p> <p>The operators would locate water management facilities away from important bald and golden eagle foraging areas.</p> <p>The operators would avoid conducting potentially disruptive activities and development in the eagles’ direct flight path between roosting and foraging areas.</p> <p>During the winter months, and where to do so would not endanger personal safety, the operators would remove carrion from access roads to reduce the potential for vehicle collisions with wintering bald and golden eagles that may forage in the area.</p> <p>The operators would not use explosives within ½-mile (or within 1 mile in open areas) of communal roosts when bald or golden eagles are congregating, without prior coordination with USFWS.</p> <p>Airstrips would be located at least 1,000 feet from bald or golden eagle winter roosting sites.</p>
Uinta Basin Hookless Cactus	<p>Pre-project habitat assessments will be completed across 100 percent of the project disturbance area within potential* habitat prior to any surface disturbing activities to determine if suitable Uinta Basin hookless cactus habitat is present.</p> <p><i>*Potential habitat</i> is defined as areas which satisfy the broad criteria of the species habitat</p>

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	<p>description; usually determined by preliminary, in-house assessment.</p> <p>Within suitable** habitat, site inventories will be conducted to determine occupancy.</p> <p>Inventories:</p> <ol style="list-style-type: none"> a. must be conducted by qualified individual(s) and according to the BLM and USFWS accepted survey protocols; b. will be conducted in suitable and occupied habitat for all areas proposed for surface disturbance prior to initiation of project activities and within the same growing season, at a time when the plant can be detected, and during appropriate flowering periods: <ol style="list-style-type: none"> i. <i>Sclerocactus wetlandicus</i> surveys can be done any time of the year, provided there is no snow cover, but surveys during the bloom time are preferred (mid March to end of June); c. will occur within 300 feet from the perimeter of the proposed ROW for surface pipelines or roads; and within 300 feet from the perimeter of disturbance for the proposed well pad including the well pad; d. will include, but not be limited to, plant species lists and habitat characteristics; e. will be valid until March 15th the following year for <i>Sclerocactus brevispinus</i> and one year from the survey date for <i>Sclerocactus wetlandicus</i>; and f. survey methods will follow the survey protocol outlined by the USFWS. <p>**Suitable habitat is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain Uinta Basin hookless cactus. Habitat descriptions can be found in the USFWS's 1990 Recovery Plan and Federal Register Notices for the Uinta Basin hookless cactus. Surveys during the first year will be conducted at a maximum of 6 feet apart. In ideal suitable habitat surveys will be completed no greater than 3 feet apart.</p> <p>Design project infrastructure to minimize impacts within suitable habitat:</p> <ol style="list-style-type: none"> a. reduce well pad size to the minimum needed, without compromising safety; b. limit new access routes created by the project; c. roads and utilities should share common ROWs where possible; d. reduce width of ROWs and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road within habitat; e. place signing to limit OHV travel in sensitive areas; f. stay on designated routes and other cleared/approved areas; and g. all disturbed areas will be re-vegetated with native species comprised of species indigenous to the area and non-native species that are not likely to invade other areas. <p>Within occupied*** habitat, project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants:</p> <ol style="list-style-type: none"> a. follow the recommendations for project design within suitable habitats; b. buffers of 300 feet minimum between the edge of the ROW (roads and surface pipelines) or surface disturbance (well pads) and plants and populations will be incorporated; c. surface pipelines will be laid such that a 300 foot buffer exists between the edge of the ROW and the plants, use stabilizing and anchoring techniques when the pipeline crosses the habitat to ensure the pipelines don't move towards the population; d. before and during construction, areas for avoidance should be visually identifiable in the field (e.g., flagging, temporary fencing, rebar, etc.); e. where technically and economically feasible, use directional drilling or multiple wells from the same pad; f. designs will avoid concentrating water flows or sediments into occupied habitat; g. place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat;

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	<p>h. and minimize the disturbed area of producing well locations through interim and final reclamation.</p> <p>i. Reclaim well pads following drilling to the smallest area possible.</p> <p>***<i>Occupied habitat</i> is defined as areas currently or historically known to support Uinta Basin hookless cactus; synonymous with “known habitat.”</p> <p>Occupied Uinta Basin hookless cactus habitats within 300 feet of the edge of the surface pipelines’ ROWs, 300 feet of the edge of the roads’ ROWs, and 300 feet from the edge of the well pad shall be monitored for a period of three years after surface-disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Annual reports shall be provided to the BLM and the USFWS. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the USFWS.</p> <p>Reinitiation of Section 7 consultation with the USFWS will be sought immediately if any loss of plants or occupied habitat for the Uinta Basin hookless cactus is anticipated as a result of project activities.</p>
Graham’s Beardtongue	<p>Pre-project habitat assessments will be completed across 100 percent of the project disturbance area within potential habitat prior to any surface-disturbing activities to determine if suitable Graham’s beardtongue habitat is present (<i>potential habitat</i> is defined as areas which satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment).</p> <p>All surface disturbing activities having potential direct or indirect impacts on proposed critical habitat are prohibited (<i>proposed critical habitat</i> is defined as habitat proposed in the Federal Register (71 FR 3158) to be designated as critical habitat under Section 4 of the Endangered Species Act).</p> <p>Within suitable habitat (<i>suitable habitat</i> is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain Graham’s beardtongue plants; detailed habitat and plant descriptions can be found in the Federal Register 71 (12): 3158-3196), site inventories will be conducted to determine occupancy. Inventories:</p> <ol style="list-style-type: none"> a. must be conducted by qualified individual(s) and according to the BLM and USFWS accepted survey protocols; b. will be conducted in suitable and occupied habitat (occupied habitat is defined as areas currently or historically known to support Graham’s beardtongue; synonymous with “known habitat”) for all areas proposed for surface disturbance prior to initiation of project activities and within the same growing season, at a time when the plant can be detected (usually April 15 to May 20 in the Uinta Basin; however, surveyors should verify that the plant is flowering by contacting a BLM or USFWS botanist or demonstrating that the nearest known population is in flower); c. will occur within 300 feet from the centerline of the proposed ROW for surface pipelines or roads; and within 300 feet from the perimeter of disturbance for the proposed well pad including the well pad; d. will include, but not be limited to, plant species lists and habitat characteristics; and e. will be valid until April 15 the following year. <p>Design project infrastructure to minimize impacts within suitable habitat:</p> <ol style="list-style-type: none"> a. reduce well pad size to the minimum needed, without compromising safety; b. limit new access routes created by the project; c. roads and utilities should share common ROWs where possible; d. reduce the width of ROWs and minimize the depth of excavation needed for the road bed; e. where feasible, use the natural ground surface for the road within habitat; f. place signing to limit OHV travel in sensitive areas; and

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	<p>g. Stay on designated routes and other cleared/approved areas.</p> <p>Within occupied habitat, project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants:</p> <ul style="list-style-type: none"> a. follow the recommendations for project design within suitable habitats; b. construction of roads will occur such that the edge of the ROW is at least 300 feet from any plant; c. roads will be graveled within occupied habitat; the operator is encouraged to apply water for dust abatement to such areas from April 15 to May 20 (flowering period); dust abatement applications will be comprised of water only; d. the edge of the well pad should be located at least 300 feet away from plants; e. surface pipelines will be laid such that a 300 foot buffer exists between the edge of the ROW and the plants, use stabilizing and anchoring techniques when the pipeline crosses the habitat (exposed raw shale knolls and slopes derived from the Parachute Creek and Evacuation Creek members of the geologic Green River Formation) to ensure pipelines don't move towards the population; f. construction activities will not occur from April 15 through May 30 within occupied habitat; g. before and during construction, areas for avoidance should be visually identifiable in the field (e.g., flagging, temporary fencing, rebar, etc.); h. where technically and economically feasible, use directional drilling or multiple wells from the same pad; i. designs will avoid concentrating water flows or sediments into occupied habitat; j. place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat; and k. minimize the disturbed area of producing well locations through interim and final reclamation. <p>Reclaim well pads following drilling to the smallest area possible.</p> <p>Occupied Graham's beardtongue habitats within 300 feet of the edge of the surface pipelines' ROWs, 300 feet of the edge of the roads' ROWs, and 300 feet from the edge of well pads shall be monitored for a period of three years after surface-disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Annual reports shall be provided to the BLM and the USFWS.</p> <p>To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the USFWS.</p> <p>Reinitiation of Section 7 consultation with the USFWS will be sought immediately if any loss of plants or occupied habitat for the Graham's beardtongue is anticipated as a result of project activities.</p>
Cultural Resources	<p>If unanticipated cultural sites are discovered during surface-disturbing activities, the steps in the Preconstruction Cultural Resource Identification Plan, included with Attachment 4 will be followed to ensure proper mitigation and handling.</p> <p>To account for direct and indirect impacts, a 160-acre area will be inventoried at the Class III level at each worker housing location within the WTP Project Area prior to surface disturbance / installation of the temporary worker housing facilities.</p>
Tribal Consultation	<p>Per the 2010 WTP PA (see Attachment 4), the BLM will continue to consult with appropriate Indian Tribes regarding historic properties of religious and cultural significance, in accordance with the National Preservation Act (NHPA), the Native American Graves Protection and Repatriation Act, Archaeological Resources Protection Act (NAGPRA) of 1979 (ARPA), American Indian Religious Freedom Act of 1978 (AIRFA), Executive Order 13007 Scared Sites, and their implementing regulations. The BLM will provide copies of any report/studies developed pursuant to the WTP PA to those tribes that have expressed a desire</p>

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	for information as it is gathered for the WTP project.
Transportation	BBC and other operators will prepare erosion control plans and install erosion control BMPs prior to constructing or upgrading roads in sensitive areas.
	All well heads will be fitted with remote telemetry equipment to facilitate remote monitoring of the wells and reduce pumper traffic.
	Access route closures will be accompanied by public outreach, including appropriate signage to ameliorate conflicts between the public and operators.
	In canyon bottoms within the WTP APE, dust will be considered controlled when 1) no dust is generated above the cab of the vehicle, or 2) there are no hanging dust plumes (see Attachment 4).
Health and Safety	Fire suppression equipment (e.g., fire extinguishers, fire water, and hoses) will be available at each construction site.
	Storage facilities may be fenced as determined necessary during the onsite process.
Visual Resources	During the onsite process, the BLM will consider adding visual resource mitigation measures as COAs as necessary to meet VRM Class III objectives on Horse Bench.
	The operators will minimize pumping unit heights.
	Lighting at all drilling locations and facilities will be downshielded/directed to areas of human activity as much as possible to ensure human safety.
	Within Canyon Bottoms in VRM Class II areas, the alignment of facilities with respect to key observation points (roads in particular) will be reviewed during the pre-installation phase of well development and visual contrast ratings will be performed.
	No development will be located within the viewshed of the Green River unless to do so will preclude the development of valid and existing lease rights. If development were to occur within the viewshed, drilling and completion will only be permitted outside of the high use river recreation season (October to April).
	Within VRM Class II areas, the operators will contract with a licensed landscape architect approved by the BLM for construction monitoring, inspection, and supervision of visual mitigation and environmental protection measures such as recontouring of landform to approximate natural conditions and berming, revegetation and introduction of screening vegetation, pipeline texturing and coloring (where appropriate), and other measures mentioned below and elsewhere in this document.
	Edges of disturbed areas will be feathered by creating a vertical transition from taller to shorter vegetation along disturbed edges.
	The width of disturbance will be varied and some plant masses will be preserved to create a more naturally appearing edge, thereby avoiding straight, sweeping, and converging lines in the landscape.
Noise	Where stream crossings are necessary, equipment will be kept away from the edge of escarpments and stream banks as feasible, thereby minimizing impacts to the escarpment edge. These edges will be preconstructed using vegetative or mechanical methods.
	Operators will be required to reduce noise from drilling and completion operations from within sound of the Green River (approximately 2 miles), through use of mechanisms such as hospital-grade mufflers on drill rigs, compressor stations, and pumping units.

Surface Use Standard Conditions of Approval
A pre-construction field meeting may be conducted prior to beginning any dirt work approved under this APD. The operator shall contact the BLM AO at least 7-days prior to beginning operations so that the meeting can be scheduled. The operator is responsible for having all contractors present (dirt contractors, drilling contractor, pipeline contractor, project oversight personnel, etc.) including the overall field operations superintendent, and for providing all contractors copies of the approved APD(s), project map and BLM COA pertinent to the work that each will be doing.
In areas that contain environmentally sensitive fragile soils and vegetation, the operator may be required to perform special measures such as mulching, erosion fencing, use of erosion fabric, etc. per the direction of the BLM AO to

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stabilize any disturbed areas and ensure the reestablishment of long-term perennial vegetation.
All equipment and personnel used during drilling and construction activities will be restricted to only approved access roads.
All trees salvaged from the construction of the well pad will be clearly segregated from the spoil material, to prevent burying of trees in the spoil material.
The operator will provide georeferenced spatial data depicting as-built locations of all facilities, wells, roads, pipelines, power lines, and other related facilities to the BLM by November 1 of each year until completion of project construction activities has occurred.
If any dead or injured threatened, endangered, proposed, or candidate plant or animal species is located during construction or operation, the BLM Price Field Office (435-636-3600) shall be notified within 24 hours.
The operator will conduct clearance surveys for threatened, endangered or other special-concern species at the optimum time. This will require coordination with the BLM before November 1, annually, to review the potential for disturbance and to agree on inventory parameters.
Construction
The operator will not push soil material and overburden over side slopes or into drainages. All soil material disturbed will be placed in an area where it can be retrieved without creating additional undue surface disturbance and where it does not impede watershed and drainage flows.
Construct the backslope no steeper than 1½:1, and construct the foreslope no steeper than 2:1, unless otherwise directed by the BLM AO.
Maintain a minimum 20-foot undisturbed vegetative border between toe-of-fill of pad and/or pit areas and the edge of adjacent drainages, unless otherwise directed by the BLM AO.
With the overall objective of minimizing surface disturbance and retaining land stability and productivity, the operator shall utilize equipment that is appropriate to the scope and scale of work being done for roads and well pads (utilize equipment no larger than needed for the job).
Reserve pits will be adequately fenced during and after drilling operations until pit is reclaimed so as to effectively keep out wildlife and livestock. Adequate fencing, in lieu of more stringent requirements by the surface owner, is defined as follows: <ul style="list-style-type: none"> • Construction materials will consist of steel or wood posts. Three or four strand wire (smooth or barbed) fence or hog panel (16-foot length by 50-inch height) or plastic snow fence must be used with connectors such as fence staples, quick-connect clips, hog rings, hose clamps, twisted wire, etc. Electric fences will not be allowed. • Construction standards: Posts shall be firmly set in ground. If wire is used, it must be taut and evenly spaced, from ground level to top wire, to effectively keep out animals. Hog panels must be tied securely into posts and one another using fence staples, clamps, etc. Plastic snow fencing must be taut and sturdy. Fence must be at least 2-feet from edge of pit. Three sides must be fenced before beginning drilling, the fourth side must be fenced immediately upon completion of drilling and prior to rig release. Fence must be left up and maintained in adequate condition until pit is closed.
The reserve pit will be oriented to prevent collection of surface runoff. After the drilling rig is removed, the operator may need to construct a trench on the uphill side of the reserve pit to divert surface drainage around it. If constructed, the trench will be left intact until the pit is closed.
The reserve pit will be lined with an impermeable liner if permeable subsurface material is encountered. An impermeable liner is any liner having permeability less than 10 ⁻⁷ cm/sec. The liner will be installed so that it will not leak and will be chemically compatible with all substances that may be put in the pit. Liners made of any man-made synthetic material will be of sufficient strength and thickness to withstand normal installation and pit use. In gravelly or rocky soils, a suitable bedding material such as sand will be used prior to installing the liner.
The reserve pit will be constructed so that at least half of its total volume is in solid cut material (below natural ground level).
The reserve pit shall have 2 feet of freeboard maintained at all times to prevent overflow of fluids.
Culverts will be placed on channel bottoms on firm, uniform beds, which have been shaped to accept them, and aligned parallel to the channel to minimize erosion. Backfill will be thoroughly compacted.
The minimum diameter for culverts will be 18 inches. However, all culverts will be appropriately sized in accordance with standards in BLM Manual 9113.
Construction and other project-related traffic will be restricted to approved routes. Cross-country vehicle travel will not be allowed.

Surface Use Standard Conditions of Approval
Pipeline construction shall not block nor change the natural course of any drainage. Pipelines shall cross perpendicular to drainages. Pipelines shall not be ran parallel in drainage bottoms. Suspended pipelines shall provide adequate clearance for maximum runoff.
Pipeline trenches shall be compacted during backfilling. Pipeline trenches shall be routinely inspected and maintained to ensure proper settling, stabilization, and reclamation.
During construction, emissions of particulate matter from well pad and road construction would be minimized by application of water or other dust suppressants with at least 50 percent control efficiency. Dust inhibitors (surfacing materials, non-saline dust suppressants, and water) will be used as necessary on unpaved roads that present a fugitive dust problem. The use of chemical dust suppressants on public surface will require prior approval from the BLM AO.
The operator shall submit a Sundry Notice (Form 3160-5) to BLM for approval prior to construction of any new surface disturbing activities that are not specifically addressed in the approved APD.
Drilling/Operations/Maintenance
If in the process of air drilling the wells there is a need to utilize mud, all circulating fluids will be contained either in an approved pit or in an aboveground containment tank. The pit or containment tank will be large enough to safely contain the capacity of all expected fluids without danger of overflow. Fluid and cuttings will not be squeezed out of the pit, and the pit will be reclaimed in an expedient manner.
All waste, other than human waste and drilling fluids, will be contained in a portable trash cage. This waste will be transported to a State approved waste disposal site immediately upon completion of drilling operations. No trash or empty barrels will be placed in the reserve pit or buried on location. All State and local laws and regulations pertaining to disposal of human and solid waste will be complied with.
Rat and mouse holes shall be filled and compacted from the bottom to the top immediately upon release of the drilling rig from the location.
The operator will be responsible for prevention and control of noxious weeds and weeds of concern on all areas of surface disturbance associated with this project (well locations, roads, water management facilities, etc.) Use of pesticides shall comply with the applicable Federal and State laws. Pesticides shall be used only in accordance with their registered uses and within limitations imposed by the Secretary of Interior. Prior to the use of pesticides on public land, the holder shall obtain from the BLM AO written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the AO to such use.
Sewage shall be placed in a self-contained, chemically treated porta-potty on location.
The operator and their contractors shall ensure that all use, production, storage, transport and disposal of hazardous and extremely hazardous materials associated with the drilling, completion and production of these wells will be in accordance with all applicable existing or hereafter promulgated Federal, State and local government rules, regulations and guidelines. All project-related activities involving hazardous materials will be conducted in a manner to minimize potential environmental impacts. In accordance with OSHA requirements, a file will be maintained onsite containing current Material Safety Data Sheets (MSDS) for all chemicals, compounds and/or substances which are used in the course of construction, drilling, completion and production operations.
Produced fluids shall be put in test tanks on location during completion work. Produced water will be put in the reserve pit during completion work per Onshore Order #7.
The only fluids/waste materials which are authorized to go into the reserve pit are Resource Conservation and Recovery Act (RCRA) exempt exploration and production wastes. These include: <ul style="list-style-type: none"> ● drilling muds and cuttings; ● rigwash; and ● excess cement and certain completion & stimulation fluids defined by EPA as exempt. <p>It does not include drilling rig waste, such as:</p> <ul style="list-style-type: none"> ● spent hydraulic fluids; ● used engine oil; ● used oil filter; ● empty cement, drilling mud, or other product sacks; ● empty paint, pipe dope, chemical or other product containers; and ● excess chemicals or chemical rinsate.

Surface Use Standard Conditions of Approval						
Any evidence of non-exempt wastes being put into the reserve pit may result in the BLM AO requiring specific testing and closure requirements.						
Reserve pits will be closed as soon as possible, but no later than 90 days from time of drilling/well completion, unless the BLM AO gives an extension. Squeezing of pit fluids and cuttings is prohibited. Pits must be dry of fluids or they must be removed via vac-truck or other environmentally acceptable method prior to backfilling, re-contouring and replacement of topsoil. Mud and cuttings left in pit must be buried at least 3-feet below re-contoured grade. The operator will be responsible for re-contouring any subsidence areas that develop from closing a pit before it is sufficiently dry.						
If this well is drilled during the fire season (June-October), the operator shall institute all necessary precautions to ensure that fire hazard is minimized, including but not limited to mowing vegetation on the access route(s) and well location(s), keeping firefighting equipment readily available when drilling, etc.						
Dry Hole/Reclamation						
All disturbed lands associated with this project, including the pipelines, access roads, water management facilities, etc., will be expediently reclaimed and reseeded in accordance with the surface use plan and any pertinent site-specific COAs.						
Disturbed lands will be re-contoured back to conform with existing undisturbed topography. No depressions will be left that trap water or form ponds.						
Phased reclamation plans will be submitted to BLM for approval prior to individual POD facility abandonment via a Notice of Intent (NOI) Sundry Notice. Individual facilities, such as well locations, pipelines, discharge points, impoundments, etc., need to be addressed in these plans as they are no longer needed. Individual items that will need to be addressed in reclamation plans include: <ul style="list-style-type: none"> • pit closure (close ASAP after suitably dry, but no later than 90 days from time of drilling unless an extension is given by BLM AO); • BLM may require closure prior to 90 days in some cases due to land use or environmental concerns; • configuration of reshaped topography, drainage systems, and other surface manipulations; • waste disposal; • revegetation methods, including specific seed mix (pounds pure live seed/acre) and soil treatments (seedbed preparation, fertilization, mulching, etc.); On private surface, the landowner should be consulted for the specific seed mix; • other practices that will be used to reclaim and stabilize all disturbed areas, such as water bars, erosion fabric, hydro-mulching, etc.; • an estimate of the timetables for beginning and completing various reclamation operations relative to weather and local land uses; • methods and measures that will be used to control noxious weeds, addressing both ingress and egress to the individual well or POD; and • decommissioning/removal of all surface facilities. 						
BLM will not release the performance bond until all disturbed areas associated with the APD/POD have been successfully revegetated (evaluation will be made after the second complete growing season) and has met all other reclamation goals of the surface owner and SMA.						
A NOI to Abandon and a Subsequent Report of Abandonment must be submitted for abandonment approval.						
Soil fertility testing and the addition of soil amendments may be required to stabilize some disturbed lands.						
Any mulch utilized for reclamation needs to be certified weed free.						
Water bars are to be constructed at least one (1) foot deep, on the contour with approximately two (2) feet of drop per 100 feet of water bar to ensure drainage, and extended into established vegetation. All water bars are to be constructed with the berm on the downhill side to prevent the soft material from silting in the trench. The initial water bar should be constructed at the top of the backslope. Subsequent water bars should follow the following general spacing guidelines: <div style="text-align: center; margin-top: 20px;"> <table style="margin: auto;"> <tr> <td style="padding: 0 10px;">Slope</td> <td style="padding: 0 10px;">Spacing Interval</td> </tr> <tr> <td style="padding: 0 10px;"><u>(percent)</u></td> <td style="padding: 0 10px;"><u>(feet)</u></td> </tr> <tr> <td style="padding: 0 10px;">≤ 2</td> <td style="padding: 0 10px;">200</td> </tr> </table> </div>	Slope	Spacing Interval	<u>(percent)</u>	<u>(feet)</u>	≤ 2	200
Slope	Spacing Interval					
<u>(percent)</u>	<u>(feet)</u>					
≤ 2	200					

Surface Use Standard Conditions of Approval	
2 – 4	100
	75
4 – 5	50
≥ 5	
Producing Well	
Landscape those areas not required for production to the surrounding topography as soon as possible. The fluids and mud must be dry in the reserve pit before re-contouring pit area. The operator will be responsible for re-contouring and reseeding of any subsidence areas that develop from closing a pit before it is completely dry.	
Reduce the backslope to 2:1 and the foreslope to 3:1, unless otherwise directed by the BLM AO. Reduce slopes by pulling fill material up from foreslope into the toe-of-cut slopes.	
Production facilities (including dikes) must be placed on the cut portion of the location and a minimum of 15 feet from the toe of the back cut unless otherwise approved by the BLM AO.	
Any spilled or leaked oil, produced water or treatment chemicals must be reported in accordance with NTL-3A and immediately cleaned up in accordance with BLM requirements. This includes clean-up and proper disposition of soils contaminated as a result of such spills/leaks.	
Distribute stockpiled topsoil evenly over those areas not required for production and reseed as recommended.	
Upgrade and maintain access roads and drainage control (e.g., culverts, drainage dips, ditching, crowning, surfacing, etc.) as necessary and as directed by the BLM AO to prevent soil erosion and accommodate safe, environmentally-sound access.	
Prior to construction of production facilities not specifically addressed in the APD, the operator shall submit a Sundry Notice to the BLM AO for approval.	
If not already required prior to constructing and drilling the well location, the operator shall immediately upgrade the entire access road to BLM standards (including topsoiling, crowning, ditching, drainage culverts, surfacing, etc.) to ensure safe, environmentally-sound, year-round access. This requirement does not supersede or apply where specific road requirements are addressed in the APD/POD surface use plan (e.g., two track road, spot upgrade, etc.).	
Water bars shall be installed on all reclaimed pipeline corridors.	

APPENDIX D: PETER’S POINT LOOP ALTERNATE ROUTE ANALYSIS

Peter's Point Loop Alternate Route Analysis

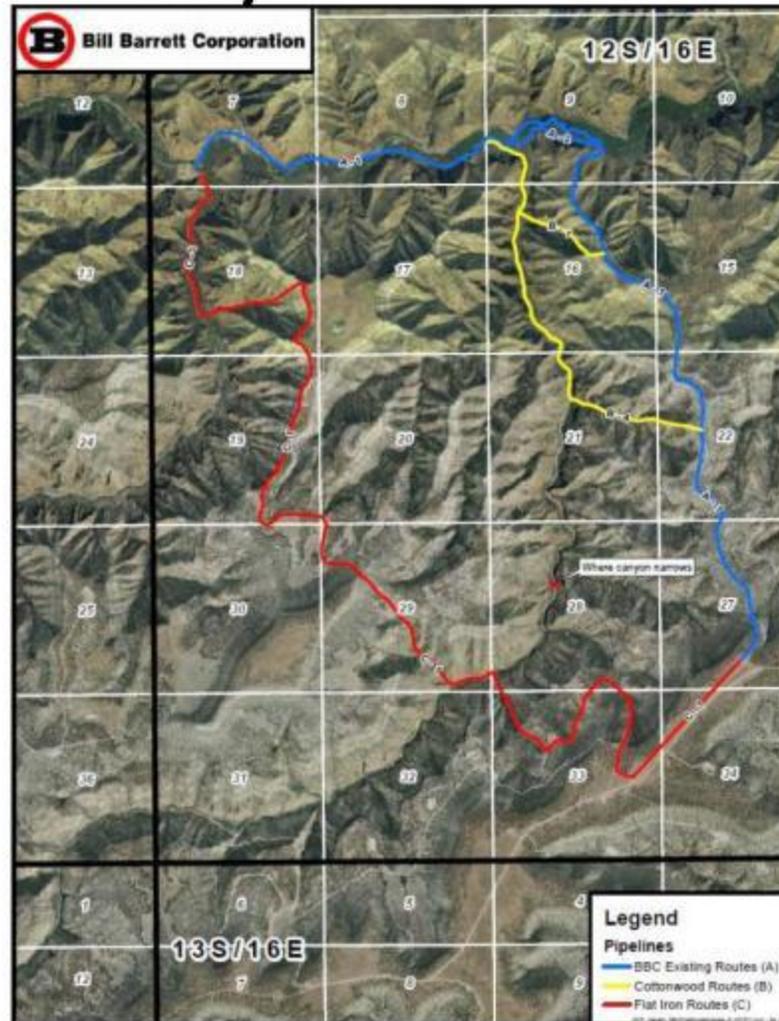


*Peter's Point ROW onto Sekani



*West edge of existing ROW along Sekani

Analyzed Routes



Construction Decision Matrix

Peter's Point Loop Alternative Route Analysis					
Construction	Score*				
Route Option	Engineering _{1,2,3}	Operation ₂	Constructability ₄	Safety	New Footage (feet)
A1	1	2	1	3	3,458'
B1	4	3	3	2	6,142'
B4	3	4	5	5	11,752'
C1	5	5	2	1	31,145'

* Rank 1 through 5 with 1 being the best

References-

- 1-GWD Design
- 2-Pipeline Strategies and Integrity
- 3-Windmill Energy Services
- 4-Energy Management & Construction

Construction Factors

- Engineering
 - Expansion/Contraction
 - Larger Pipe
 - Liquid Dropout
 - Buckling
 - Expansion Joints
- Operation
 - Back Pressure
 - Liquid Holdup
 - Methanol Injection
 - Maintenance

Construction Factors

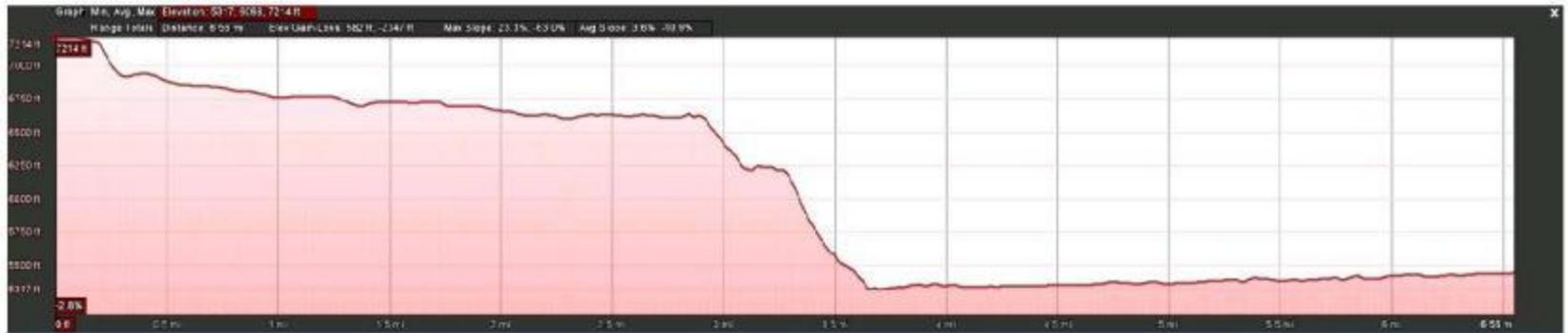
- Constructability
 - Traffic
 - Environmental
 - Creek Crossings
 - Erosion
 - Length
 - Slope
- Safety
 - Time
- Cost

Group A



Picture From Mcnamee of line from bottom up

*Peter's Point ROW onto Sekani



*Elevation Profile



Group C



*Down Peter's Point



*Up Flat Iron Mesa



Elevation Profile



Environmental Decision Matrix

Peter's Point Loop Alternative Route Analysis						
Environmental	Score*					
Route Option	New Disturbance (Acres)	Viewshed ₅	Archaeological ₅₆	Wildlife ₅₇	Reclamation ₅	Total Score
A1	3.97	2	2	1	2	14
B1	7.05	5	5	3	3	28
B4	13.49	3	4	4	4	32
C1	35.75	4	1	5	5	28

* Rank 1 through 5 with 1 being the best

References-

- 5-Buys & Associates
- 6-Montgomery Archeology
- 7-Environmental Industrial Services

Construction Factors

- Viewshed
 - Canyon Faces from Roads
 - Area (Length)
 - Existing vs. New Disturbance
- Archeology
 - Known Cultural Sites
 - Potential Cultural Sites
 - Existing vs. New Disturbance
- Wildlife
 - Wildhorses
 - Sage Grouse
 - Big Game
 - Raptors
- Reclamation Potential
 - Steep Faces
 - Creek Crossings
 - Total Area
 - Existing vs. New Disturbance

Conclusion

- Following the existing route with the exception of short re-route in Nine Mile Canyon
 - Easily reclaimable
 - Quicker Construction
 - Minimize Viewshed Impacts
 - Least Traffic Concerns
 - Cost Efficient
 - Similar Hydraulics
 - Low Disturbance
 - Consistent with EIS

APPENDIX E: VRM ANALYSIS & CONTRAST RATING TECHNICAL REPORT

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

PETER'S POINT LOOP LINE
CARBON COUNTY, UTAH

VISUAL RESOURCES MANAGEMENT ANALYSIS
AND CONTRAST RATING
TECHNICAL REPORT



October, 2011

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1.0 INTRODUCTION

1.1 SCOPE OF WORK

On October 25, 2011, Bill Barrett Corporation (BBC) retained Kleinfelder, Inc. to conduct professional visual resource management and analysis work on the Peter's Point Loop Line Project (Project) in Visual Resource Management (VRM) Class III and Visual Resource Inventory (VRI) Class II areas (see **Appendix A, Figure 1**). The scope of work included the following tasks:

- Apply the BLM VRM system for visual resource management and analysis and visual resource impact mitigation to Alternative A and B;
- Conduct necessary site visits, and investigations;
- Conduct site photography as necessary to document visual resource conditions for illustrative uses in documents, and for VRM analysis;
- Occupy and photograph appropriate views from BLM established Key Observation Points (KOPs)
- Conduct VRM contrast rating analysis from selected KOPs;
- Make recommendations for visual resource impact mitigation strategies, techniques, and procedures as necessary;
- Author Technical Support Document on Visual Resource Management and Analysis; and
- Author Environmental Assessment (EA), including sections pertinent to visual resources.

2.0 METHODOLOGY

2.1 THE BLM VRM PROCESS

The BLM has applied VRM on the lands under their management throughout the Peter's Point Loop Line Project Area, with the overall objective being to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape. The VRM inventory process considers the scenic quality of the landscape, the sensitivity of the viewer, and the distance from the viewer to the landscape. Based on these three factors, BLM-administered lands are placed into one of four visual resource inventory classes (see **Table 1.2-1**).

Visual resources management classes are established through the Resource Management Plan (RMP) development process for all BLM-administered lands. These management classes carry the same designations and relative values as inventory classes.

The Peter's Point Loop Line Project Area designated as VRM Class III by BLM. An existing pipeline is within the Project Area. VRM designations are defined in **Table 1.2-1** below (BLM Handbook 11-8410-1 *Visual Resource Inventory*).

Table 1.2-1 VRM Class Objectives

VRM Class	Objective
I	To preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
II	To retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
III	To partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
IV	To provide for management activities that requires major modification to the existing character of the landscape. The level of change to the characteristic landscape can be high. These 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 elements.

The landscape visual resources within the Project Area are described by identifying forms, lines, colors, and textures that are characteristic of the region. They are the primary elements making up how the landscape is perceived. Scale and spatial definition are described as well as human use and influence. This description, found in the EA, Chapter 3 - Affected Environment, Section 3.6, is referred to as the “characteristic landscape”.

2.2 THE BLM VRI PROCESS

The Draft BLM Price Field Office Visual Resource Management Inventory (BLM 2011) establishes visual resource inventory (VRI) classes, which are used to assess visual values for RMPs. Visual management objectives are developed through the BLM’s resource management planning process and reflect the resource-allocation decisions made in the RMP. According to BLM Manual H-1601-1, Land Use Planning, implementation decisions must be designed to achieve VRM objectives within each VRM class. VRM classes may reflect VRI classes, but they may not necessarily do so since management objectives for other resources as determined in the planning process may require different visual management needs. While the VRM system was used to inventory and classify the scenic (visual) resources for the Project Area, the VRI identifies the scenic quality, sensitivity levels, and distance zones and determines the VRI class, according to the VRM manual. The Peter’s Point

Loop Line Project Area has been classified as a VRI Class II, which serves as baseline information for assessing potential effects to visual resources.

2.3 THE CONTRAST RATING PROCESS

The following is a general description of the “contrast rating” process specified in BLM VRM. The specifics of the application of the process as implemented in the Project Area are found in Section 3.0 of this report.

Through the contrast rating process, proposed changes to the landscape (i.e., pipeline installations) is analyzed in terms of their contrast with the characteristic landscape in form, line, color, texture, and scale. The degree of contrast is considered the major factor in the project’s potential to affect the visual quality of the landscape.

The steps in the contrast rating process are:

- Obtain a complete project description;
- Identify VRM objectives from land use plans;
- Obtain KOP locations from the BLM;
- Prepare visual simulations (this was not done as there is an existing pipeline to serve as simulations)
- Complete contrast rating (BLM Form 8400-4 contrast rating worksheet is most often employed (see **Appendix B**).

Factors that should be considered by the BLM in selecting KOPs include:

- Angle of observation,
- Number of viewer,
- Length of time project is in view,
- Relative project size,
- Season of use,
- Light conditions,
- Time frame for analysis (short-term is usually considered zero to five years or ten years; long-term is more than five or ten years).

The result of the contrast rating is the determination of whether the project as proposed meets the VRM Class description, visual mitigation should be proposed to bring the project into compliance if possible. If compliance through visual mitigation is not possible, this is noted. Since the contrast rating analysis is usually done from multiple KOPs, the final determination of the project compliance with the VRM Class must take this into account.

2.4 FINAL STEP IN THE VRM PROCESS AND POST-ANALYSIS TASKS

The final step in the VRM analysis process is to input the contrast rating results along with conclusions and recommendations (mitigation) into the National Environmental Policy Act (NEPA) document, in this case, the Environmental Assessment for the Peter’s Point Loop Line.

Post-analysis tasks often include development of design guidelines (based on recommended mitigation strategies), and visual resource protection and mitigation monitoring by qualified professional, usually BLM staff, during project construction and implementation.

3.0 PROJECT RECORD

3.1 SITE RECONNAISSANCE

Study of the visual impacts associated with the Peter’s Point Loop Line Project required in-depth field study. Field work associated with this project included orientation to the site; understanding of the proposed action and alternatives, including locations and types of existing and proposed facilities; understanding and familiarity with the characteristic landscape; BLM establishment of Key Observation Points (KOPs); significant photography of KOPs and characteristic landscape; and meetings and correspondence with the BLM. During each site visit field notes were logged and site conditions recorded. The site reconnaissance date and details are listed below:

October 25, 2011 – Site visit conducted by Kleinfelder, Inc. and the BLM (Sweeten, Stephens, et al) to conduct site reconnaissance and to visit KOP locations. During site visit, discussions of visual impacts of pipeline installation; and onsite contrast rating of selected KOPs. Conditions were overcast with full to part sun throughout the day. The project team members present during onsite are included in **Table 3.1-1**.

Table 3.1-1 Contrast Rating Project Team

Name	Agency/Company/Organization
Rob Sweeten	BLM – State Office
Don Stephens	BLM – Price Field Office
Connie Leschin	BLM – Price Field Office
Kyle Beasley	BLM – Price Field Office
Josh Winkler	BLM – Price Field Office
Chrissy Lawson	Kleinfelder, Inc.
Ashley Hawes	Kleinfelder, Inc.

3.2 CHARACTERISTIC LANDSCAPE DESCRIPTION

The characteristic forms within the Project Area consist of a network of plateaus, ridges, and rugged canyons that divide the landscape. Bands of red rock cliffs are ubiquitous throughout and extend along the majority of the ridges. Many ridges extend downward off the plateaus creating a sequence and layering of ridges that add much visual variety and spatial definition to the project area. Cliffs are often broken up and of varying heights. Many scattered boulders have cascaded down the ridges after breaking off the face leaving the lower canyon walls peppered with boulders of various sizes. Form of the vegetation in the project area consists of clumps of pinyon pines, junipers, and firs; intermixed with sage and greases on the upper ridges and plateaus. These plant groupings are scattered across the tops of the plateaus transitioning into more sagebrush,

rabbitbrush, greasewood, and grasses with groupings of aspens, cottonwoods, willows, tamarisks, and associated riparian species.

Many prominent lines occur repeatedly throughout the project area including strong silhouettes of ridgelines against the sky, diffuse edges as vegetative cover transitions from species to species, meandering drainages, roadways, pipelines, and fences as well as edges where rock faces protrude through a pattern of horizontal and vertical lines created by cracks and fissures in the rock.

Color of the cliff faces remains constant throughout the seasons with some variations occurring on more steeply sloped and vegetated faces. These sloped areas change from winter snow-cover to early fall tans, ochers and browns in the grassland, green in the juniper and pine stands, light green and grays in the sage and greasewood, and yellows of the aspen and cottonwood.

Texture in the characteristic landscape includes rock faces and exposed landform that ranges from fine, medium to coarse grain depending upon age, makeup, and orientation of the faces as well as distance of the observer. Texture is highly influenced by the seasonal change that occurs in this region; many vegetative textures change from season to season. Vegetative textures vary within the project area, with uneven clumping in the valley floor and consistent gradation of evergreens up the ridges, from sparse to more dense. The viewing distance and sense of scale in the landscape are dependent upon the location of the viewer and vary from longer unobstructed views from the ridge tops, to limited abrupt views and longer framed views associated with moving through a narrow canyon corridor. Elevations in the project area vary from 8,200 feet on the plateau to 5,000 feet in the canyon bottoms. This dramatic elevation change has a strong influence on the perceived scale and impacts of the views and is dependent upon the width of the canyon at the valley floor. Widths of canyons vary throughout the project, creating areas within the canyon floor of various spatial proportions, some narrow and constricting with very focal and framed views, some open with broad views of expansive ridges.

Human influence is evident in the landscape such as remnants of rock art and dwellings from early inhabitants, some agricultural fields in the canyon bottoms with associated dwellings, roads, fences, and some residential dwellings and associated structures. There are pipelines and related landscape disturbances from oil and gas development.

3.3 ESTABLISHED KOPs

During the site reconnaissance, KOPs were established by the BLM based on important representative and significant views that would likely be seen by the casual observer. These included roadside views typical for automobile travelers at 15-25 miles per hour, and pedestrians viewing rock art from the Nine Mile Canyon to Cottonwood Canyon dropdown pipeline site (KOP 1), from the Great Hunt Panel cultural site (KOP 2), from Cottonwood Canyon (KOP 3), and from the Cottonwood Canyon dropdown pipeline site (KOP 4) (see **Appendix A, Figure 2**). The established KOPs are as follows:

- Corridor 1: Nine Mile Canyon to Cottonwood Canyon Dropdown
 - KOP 1 (Nine Mile Canyon Dropdown)
- Corridor 2: Great Hunt Panel Cultural Site to Cotton Wood Canyon Dropdown

- KOP 2 (pedestrian view looking northwest)
 - KOP 3 (road view)
- Corridor 3: Cottonwood Canyon Dropdown
 - KOP 4 (Cottonwood Canyon Dropdown)

4.0 CONCLUSIONS

4.1 ALTERNATIVE A

Installation of a larger diameter pipeline along the existing pipeline from Cottonwood Canyon into Nine Mile Canyon along the existing pipeline route would contrast in form, line, color, and texture with the characteristic landscape. However, the project area is managed by the BLM Price Field Office as a VRM Class III area for which this project meets the class objectives.

More specifically, it is likely that the following aspects of the Peter's Point Proposed Action would not meet VRI Class II standards.

- Installation of a larger diameter pipeline along the existing pipeline from Cottonwood Canyon into Nine Mile Canyon along the existing pipeline route would not meet Class II standards due to the increase in structure that would contrast in form, line, and texture with the characteristic landscape.

However, the aforementioned aspect of the Proposed Action would meet VRI Class II standards by using proper siting so that existing vegetation/topography is used for screening to the extent possible, and by implementing the following mitigation strategies:

- proper and successful revegetation, introduction of screening vegetation where the corridor allows;
- careful initial placement of the larger pipeline to take advantage of existing vegetation for screening;
- visual resource BMPs and mitigation measures including placement of the pipe to adhere to the route visually simulated for purposes of preparing a contrast rating;
- existing topography and vegetation used to screen the line wherever possible; and
- painting or allowed the pipeline to rust to eliminate any residual glare from the metal casing.

As previously stated, the Peter's Point Loop Line Project Area is managed as a VRM Class III area, and as such, installation of the Peter's Point Loop Line would be consistent with the BLM's VRM Objective for the Project Area. In addition, the ROD for the approved RMP states that BLM will manage the Nine Mile Canyon ACEC as a VRM Class III to allow for the infrastructure needed for oil and gas development, as well as to properly develop the cultural sites for the enjoyment of the public while protecting the landscape. The VRM Class III management continues to protect the area from visual impacts because other surface disturbing activities can be blended in with vegetative

screening. Impacts to the visual resources would also be temporary and would consist of reduced scenic value because of the visibility of pipeline construction equipment and personnel, and the temporary linear scar that would be partially visible from the byway until such time as reclamation is successful. As the majority of the pipeline would be installed adjacent to an existing pipeline, new linear visual disturbance would be minimized. Based on peak visitation occurring from the spring through the fall, construction activities occurring during the late fall or winter months would further reduce temporary visual impacts.

4.2 ALTERNATIVE B

The following conclusions are derived from analysis of Alternative B – Cottonwood Canyon Route.

The following aspect of Alternative B would not meet VRI Class II standards:

- The visual impacts associated with the installation of pipeline in Cottonwood Canyon traveling north along Cottonwood Canyon Road to its confluence with Nine Mile Canyon Road in the extreme NW¼SW¼ of Section 9, T12S, R16E just below the Sekani, LLC property line would establish new disturbance and create moderate contrast in the landform and the vegetation. In Cottonwood Canyon, these impacts are more visually prevalent to the casual observer due to the new disturbance and narrow travel corridor.

However, the aspects of Alternative B would meet VRM Class II standards by using proper siting so that existing vegetation/topography is used for screening to the extent possible, and by implementing the following mitigation strategies:

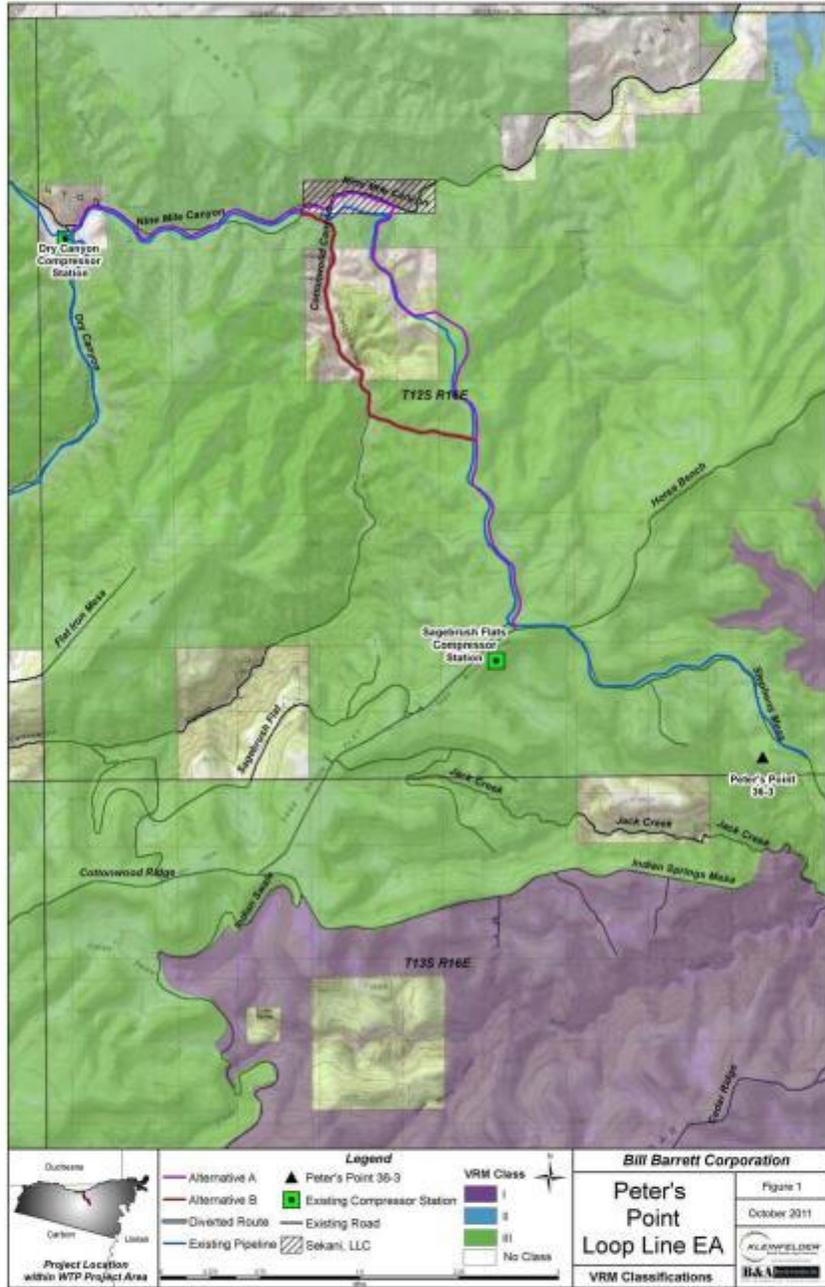
- proper and successful revegetation, introduction of screening vegetation where the corridor allows;
- careful initial placement of the larger pipeline to take advantage of existing vegetation for screening;
- visual resource BMPs and mitigation measures including placement of the pipe to adhere to the route visually simulated for purposes of preparing a contrast rating;
- existing topography and vegetation used to screen the line wherever possible; and
- painting or allowed the pipeline to rust to eliminate any residual glare from the metal casing.

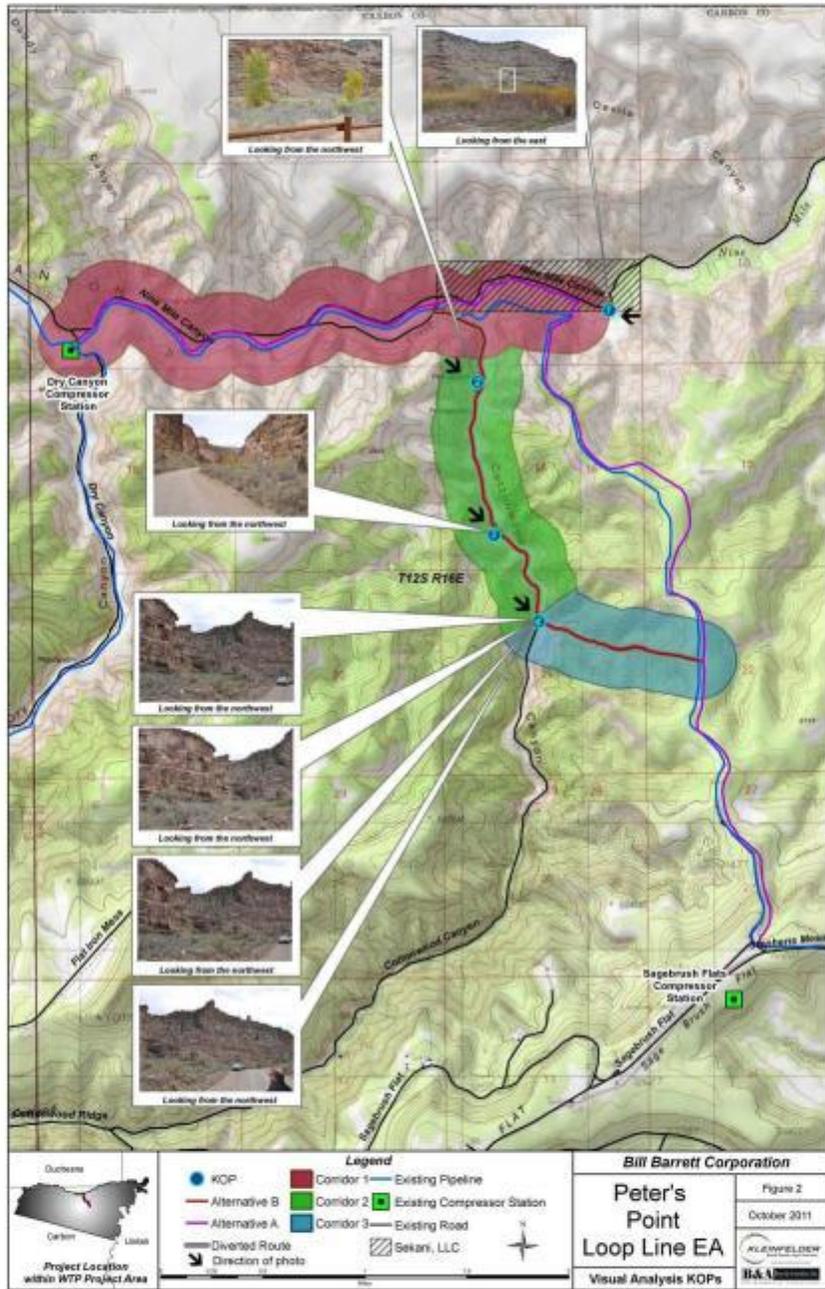
4.3 MITIGATION MEASURES

- Use trenching equipment for pipe burial (where proposed) to reduce the overall impact to existing vegetation and landform. Limit excavation to a narrow trench to install the pipe thus reducing the width of disturbance to a narrow as possible. This may be especially appropriate in riparian areas and areas where equipment can be brought in with minimal damage to the landscape.
- Where appropriate, use brush-hog or similar equipment to minimize impact to vegetation and enhance regrowth and revegetation potential.

- Feather the edges of disturbed areas by creating a vertical transition from taller to shorter vegetation along disturbed edges. Vary width of disturbance and preserve some plant masses to create a more naturally appearing edge and thereby avoid straight, sweeping, and converging lines in the landscape.
- Reduce overall width of surface disturbance by working with equipment on the road, and taking advantage of the access already provided by the roadway.
- Implement an effective revegetation plan, including installation of shrubs and tubelings, thus establishing larger caliper plants early.
- Use rocks and downed vegetation to “break up” new textures created by disturbance and exposure of soils, and to provide “planting pockets” for the establishment of new plant materials.
- At stream crossings, keep all equipment away from edge of escarpments and stream banks thereby minimizing impacts to escarpment edges, and stabilize these edges pre-construction using vegetative or mechanical methods.
- Specify easily established and fast-growing shrubs in seed mix and as tubelings.
- Recontour all disturbed surfaces to more natural-appearing landform, similar in topography to pre-disturbance and surrounding landscape. Prepare the soils for proper revegetation and implement best management practices for revegetation and erosion control.

APPENDIX A: FIGURES





APPENDIX B: CONTRAST RATINGS WORKSHEETS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Date October 25, 2011

District Price, Utah

Resource Area

Activity(program) BBC: Peter's Point Loop Line

VISUAL CONTRAST RATING WORKSHEET

SECTION A. PROJECT INFORMATION

1. Project Name BBC, Peter's Point Loop Line, Alternative A	4. Location Township <u>12S</u> Range <u>16E</u> Section <u>9</u>	5. Location Sketch See Figure 2, KOP I
2. Key Observation Point Corridor 1, KOP1, Alternative A		
3. VRM Class Class III		

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Jumbled boulders, 45 degree angular drainages, steep slopes, exposed rock	Rounded junipers (spotty); revegetated	None
LINE	broken horizontal lines of rock beds; implied lines in drainages at 45 deg.; pyramidal alluvial lines; relatively flat horizontal lines; strong horizontal line with vertical pinnacles	Indistinct; somewhat diagonal along drainage edges; weak lines	None
COLOR	Light to dark tan, shades of dark brown, some reddish-dark; some light areas	Tans, yellow-tans, juniper green (dark); most dominant color is grasses (yellow-tan today)	None
TEXTURE	Rough, rugged shadows cast from horizontal planes of rock	Grasses smooth, with spotty junipers almost medium texture especially near top; sage on lower slopes gives some medium texture	None

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	No change	No change	16' round cylindrical pipe running down slope face; larger
LINE	No change	No change	60 deg. Diagonal changing to 30 deg; 45 deg. At top
COLOR	No change	No change	Dark brown to rust color.
TEXTURE	No change	No change	Smooth

SECTION D. CONTRAST RATING SHORT TERM LONG TERM

ELEMENTS	DEGREE OF CONTRAST	FEATURES												2. Does project design meet visual resources management objectives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Explain on reverse side)	3. Additional mitigation measures recommended <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverse side)
		LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)					
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None		
Form				X				X				X		Evaluator's Names R. Sweeten D. Stephens C. Leschin K. Beasley J. Winkler C. Lawson	Date October 25, 2011
Line				X			X		X						
Color				X			X		X						
Texture				X			X				X				

SECTION D. (Continued)

Comments from item 2.

Additional Mitigation Measures (See item 3)

- Move behind ridge, parallel to existing pipeline. Let the pipe oxidize naturally to match existing pipe.
- Mitigate the lower section of pipe in the short-term.
- Duplicate the same texture as the reclamation done for the existing pipeline with reseeding and rock.
- Let the pipe oxidize naturally to match existing pipe. Color will match existing pipeline structure in 1 to 2 years.

Standard Mitigation Measures:

- Use trenching equipment for pipe burial (where proposed) to reduce the overall impact to existing vegetation and landform. Limit excavation to a narrow trench to install the pipe thus reducing the width of disturbance to a narrow as possible. This may be especially appropriate in riparian areas and areas where equipment can be brought in with minimal damage to the landscape.
- Where appropriate, use brush-hog or similar equipment to minimize impact to vegetation and enhance regrowth and revegetation potential.
- Feather the edges of disturbed areas by creating a vertical transition from taller to shorter vegetation along disturbed edges. Vary width of disturbance and preserve some plant masses to create a more naturally appearing edge and thereby avoid straight, sweeping, and converging lines in the landscape.
- Reduce overall width of surface disturbance by working with equipment on the road, and taking advantage of the access already provided by the roadway.
- Implement an effective revegetation plan, including installation of shrubs and tubelings, thus establishing larger caliber plants early.
- Use rocks and downed vegetation to "break up" new textures created by disturbance and exposure of soils, and to provide "planting pockets" for the establishment of new plant materials.
- At stream crossings, keep all equipment away from edge of escarpments and stream banks thereby minimizing impacts to escarpment edges, and stabilize these edges pre-construction using vegetative or mechanical methods.
- Specify easily established and fast-growing shrubs in seed mix and as tubelings.
- Recontour all disturbed surfaces to more natural-appearing landform, similar in topography to pre-disturbance and surrounding landscape. Prepare the soils for proper revegetation and implement best management practices for revegetation and erosion control.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Date October 25, 2011

District Price, Utah

Resource Area

Activity(program) BBC: Peter's Point Loop Line

VISUAL CONTRAST RATING WORKSHEET

SECTION A. PROJECT INFORMATION

1. Project Name BBC, Peter's Point Loop Line, Alternative B	4. Location Township <u>12S</u> Range <u>16E</u> Section <u>16</u>	5. Location Sketch See Figure 2, KOP 2
2. Key Observation Point Corridor 2, KOP2, Alternative B		
3. VRM Class Class III		

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Bold, rugged rock faces, steep slope from top of ridge to canyon floor, horizontal bands of rock.	Indistinct, scattered, rounded clumps of vegetation.	Rail wood fence in foreground, and other designated cultural site structures (i.e. bench and kiosk. No structures in focal area.
LINE	broken horizontal lines of rock beds; implied lines in drainages at 45 deg.; pyramidal alluvial lines; relatively flat horizontal lines; strong horizontal line with vertical pinnacles	Indistinct; interacting with stone and various vegetation, transitioning from top to bottom of ridge.	None in focal area.
COLOR	Light to dark tan, shades of dark brown, some reddish-dark; some light areas	Tans, yellow-tans, juniper green (dark); most dominant color is grasses (yellow-tan today)	None in focal area.
TEXTURE	Course and dense where visible (on rock faces) rough with some directionality (horizontal). Rock is dominant	Grasses smooth, with spotty junipers almost medium texture especially near top; sage on lower slopes gives some medium texture	None in focal area.

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	No change	No change	20' round cylindrical pipe running down slope face
LINE	No change	No change	60 deg. Diagonal changing to 30 deg; 45 deg. At top
COLOR	No change	No change	Dark brown to rust color.
TEXTURE	No change	No change	Smooth and matte, Very uniform a texture across entire structure

SECTION D. CONTRAST RATING SHORT TERM LONG TERM

ELEMENTS	DEGREE OF CONTRAST	FEATURES												2. Does project design meet visual resources management objectives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Explain on reverse side)	3. Additional mitigation measures recommended <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverse side)
		LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)					
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None		
Form				X				X				X	Evaluator's Names R. Sweeten D. Stephens C. Leschin K. Beasley J. Winkler C. Lawson	Date October 25, 2011	
Line				X				X		X					
Color				X				X		X					
Texture				X				X				X			

SECTION D. (Continued)

Comments from item 2.

Additional Mitigation Measures (See item 3)

Standard Mitigation Measures:

- Use trenching equipment for pipe burial (where proposed) to reduce the overall impact to existing vegetation and landform. Limit excavation to a narrow trench to install the pipe thus reducing the width of disturbance to a narrow as possible. This may be especially appropriate in riparian areas and areas where equipment can be brought in with minimal damage to the landscape.
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- At stream crossings, keep all equipment away from edge of escarpments and stream banks thereby minimizing impacts to escarpment edges, and stabilize these edges pre-construction using vegetative or mechanical methods.
- Specify easily established and fast-growing shrubs in seed mix and as tubelings.
- Recontour all disturbed surfaces to more natural-appearing landform, similar in topography to pre-disturbance and surrounding landscape. Prepare the soils for proper revegetation and implement best management practices for revegetation and erosion control.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Date October 25, 2011

District Price, Utah

Resource Area

Activity(program) BBC: Peter's Point Loop Line

VISUAL CONTRAST RATING WORKSHEET

SECTION A. PROJECT INFORMATION

1. Project Name BBC, Peter's Point Loop Line, Alternative B	4. Location Township <u>12S</u> Range <u>16E</u> Section <u>16</u>	5. Location Sketch See Figure 2, KOP 3
2. Key Observation Point Corridor 2, KOP3, Alternative B		
3. VRM Class Class III		

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Bold, rugged rock faces, steep slope from top of ridge to canyon floor, horizontal blocks and bands of rock, undulations	Indistinct, scattered, conical forms on rock faces, shrubs, rounded, somewhat indistinct and semi-transparent, amorphous short trees, scattered tall compact trees.	None
LINE	Vertical steep slope, curving ridgeline, edge is continuous, undulations	Complex, intricate in masses, silhouette vegetation line along ridge, soft	None
COLOR	Light gray, tans, reddish browns, and dark browns	Gray-greens, matte, some light gray to almost white. Occasional burst of yellow from fall season.	None
TEXTURE	Course and dense (on rock faces) rough with strong vertical and horizontal directionality Rock is dominant	Fine to medium to coarse; dense, layered, clumped, matte	None

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	No change	No change	20' round cylindrical pipe running horizontal, and set back from road.
LINE	No change	No change	Horizontal structure paralleling, but set back from road.
COLOR	No change	No change	Dark brown to rust color.
TEXTURE	No change	No change	Smooth and matte. Very uniform a texture across entire structure

SECTION D. CONTRAST RATING SHORT TERM LONG TERM

ELEMENTS	DEGREE OF CONTRAST	FEATURES												2. Does project design meet visual resources management objectives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Explain on reverse side)	
		LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)					3. Additional mitigation measures recommended <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverse side)
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None		
Form				X				X				X		Evaluator's Names R. Sweeten D. Stephens C. Leschin K. Beasley J. Winkler C. Lawson Date October 25, 2011	
Line				X			X				X				
Color				X			X				X				
Texture				X			X				X				

SECTION D. (Continued)

Comments from item 2.

Additional Mitigation Measures (See item 3)

Standard Mitigation Measures:

- Use trenching equipment for pipe burial (where proposed) to reduce the overall impact to existing vegetation and landform. Limit excavation to a narrow trench to install the pipe thus reducing the width of disturbance to a narrow as possible. This may be especially appropriate in riparian areas and areas where equipment can be brought in with minimal damage to the landscape.
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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Date October 25, 2011

District Price, Utah

Resource Area

Activity(program) BBC: Peter's Point Loop Line

VISUAL CONTRAST RATING WORKSHEET

SECTION A. PROJECT INFORMATION

1. Project Name BBC, Peter's Point Loop Line, Alternative B	4. Location Township <u>12S</u> Range <u>16E</u> Section <u>21</u>	5. Location Sketch See Figure 2, KOP 4
2. Key Observation Point Corridor 3, KOP4, Alternative B		
3. VRM Class Class III		

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Bold, rugged rock faces, steep slope from top of ridge to canyon floor, horizontal blocks and bands of rock	Indistinct, scattered, conical forms most prominent with scattered rounded clumps of vegetation intermixed	None
LINE	Complex but definite edge along rock faces, jagged rugged lines extend horizontal with the defined vertical edges of the canyon bends. Prominent ridgeline.	Many complex edges, indistinct; interacting with stone and various vegetation, transitioning from top to bottom of ridge.	None
COLOR	Brown to reddish tan. Dark to light values across faces. Warm colors.	Dark green evergreens. Light green to grayish brown understory vegetation. Defined by value change from light to dark. Subtle mixtures of color blending harmoniously	None
TEXTURE	Course and dense (on rock faces) rough with some directionality (horizontal). Rock is dominant	Gradation from bottom to top of ridge, medium to coarse grain, and medium to coarse density. Clumped and scattered vegetation texture.	None

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	No change	No change	20' round cylindrical pipe running down slope face, and set back from road.
LINE	No change	No change	60 deg. Diagonal changing to 30 deg; 45 deg. At top and then transitioning into horizontal structure paralleling, but set back from road.
COLOR	No change	No change	Dark brown to rust color.
TEXTURE	No change	No change	Smooth and matte. Very uniform a texture across entire structure.

SECTION D. CONTRAST RATING SHORT TERM LONG TERM

ELEMENTS	DEGREE OF CONTRAST	FEATURES												2. Does project design meet visual resources management objectives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Explain on reverse side)	
		LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)					3. Additional mitigation measures recommended <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverse side)
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None		
Form				X				X				X	Evaluator's Names R. Sweeten D. Stephens C. Leschin K. Beasley J. Winkler C. Lawson	Date October 25, 2011	
Line				X				X		X					
Color				X				X				X			
Texture				X				X				X			

Visual Resource Management Analysis and Contrast Rating Technical Report

BB

SECTION D. (Continued)

Comments from item 2.

Additional Mitigation Measures (See item 3)

Standard Mitigation Measures:

- Use trenching equipment for pipe burial (where proposed) to reduce the overall impact to existing vegetation and landform. Limit excavation to a narrow trench to install the pipe thus reducing the width of disturbance to a narrow as possible. This may be especially appropriate in riparian areas and areas where equipment can be brought in with minimal damage to the landscape.
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- Specify easily established and fast-growing shrubs in seed mix and as tubelings.
- Recontour all disturbed surfaces to more natural-appearing landform, similar in topography to pre-disturbance and surrounding landscape. Prepare the soils for proper revegetation and implement best management practices for revegetation and erosion control.

**APPENDIX F: PRECONSTRUCTION CULTURAL RESOURCE
IDENTIFICATION PLAN**

IDENTIFICATION AND MITIGATION OF KNOWN AND ANTICIPATED IMPACTS-PRECONSTRUCTION CULTURAL RESOURCE IDENTIFICATION PLAN

As noted above, the conceptual designs for the various alternatives conflict directly and indirectly with numerous known and potential cultural resources. However, as previously stated, while the locations of proposed well pads, access roads, pipelines, and other surface facilities (**Figures 2.2-1 – 2.6-1**) have not been individually inspected, they have been conceptually identified considering topography, land features, vegetation, and operational constraints. Onsite inspections of individual well pads, access roads, pipelines, and other surface facility locations by the BLM and operator personnel would occur during the permitting process for individual wells or ROWs, and site-specific adjustments to location and orientation would be made at that time. The individual APD and ROW permitting processes incorporate measures for protecting, documenting, evaluating, and mitigating cultural resources through the Section 106 process, applicable State law, and numerous Federal and State regulations.

This Preconstruction Cultural Resource Identification Plan outlines the procedures for the identification, evaluation, management, monitoring, and mitigation (if necessary) of cultural resources within the WTP Project Area for each disturbance. It also provides guidelines for adherence to findings from studies currently being conducted on dust, TCPs, continuing archaeological research, as well as previous cultural resource recommendations.

Because the nature of the proposed alternatives is conceptual, this plan refers to the entire WTP Project Area. The area of potential effect (APE), however, refers to each specific project component such as well pads, access roads, pipelines, and other surface facilities. Therefore, only those resources within an individual APE would need consideration for identification, monitoring, evaluation, or mitigation of cultural resources. Indirect and cumulative impacts, such as the effect of dust and vibration on rock art, are considered at the level of the entire WTP Project Area.

INVENTORY

Prior to any surface disturbance, all areas within an individual APE would be inventoried for cultural resources. Prior to conducting the field inventory, the archaeological contractor would obtain a project number from the SHPO, conduct a file search for previous cultural resource inventories and previously-documented sites at either the Price Field Office, SHPO, or both, and submit the necessary fieldwork authorization forms. If an area within an individual APE has been previously inventoried and the BLM or SITLA find the existing inventories adequate, no new survey would be required in the area. If unevaluated cultural resources occur in a

previously inventoried area, they would be evaluated by the archaeological contractor and eligibility and management recommendations would be provided to the land managing agency.

Numerous procedures and protocols are already established for cultural resource inventories on the BLM and State lands in general (BLM 2002c), and in the Price Field Office specifically (e.g., Spath 1999). The inventory procedures identified in the Cultural Resource Plan for the Ferron Natural Gas Development project (Spath 1999) have been adopted throughout the Price Field Office area. These procedures, with some modification due to the increased size of well pads used for directional drilling, are reiterated below. In most regards, these inventory standards are more stringent than in many other parts of Utah. These standards would be implemented for all cultural resource inventories related to the Proposed Action and its alternatives because most companies, including BBC, already adhere to these standards, which have resulted in a very effective protection record of cultural resources in the WTP Project Area.

Survey Standards and Protocols

- A. Well Pads: At minimum, survey of a 10-acre block, centered on the staked drill location (center stake) would be required for pads containing a single drill hole. Depending on the amount of surface disturbance proposed at drill locations that contain multiple drill holes, a larger area (up to 40 acres) would be surveyed around each proposed well pad. In most instances, surveying this size of an area would allow for identifying cultural resources in the vicinity of a particular location. In many instances, it would also be large enough to allow for avoidance of most sites while keeping the well in the same general location, which may be geologically important.
- B. Other Facilities: A minimum 5-acre area would be surveyed for all other surface facilities. If the surface disturbance exceeds 3 acres, a minimum 10-acre block surrounding the center of the facility would be inventoried for cultural resources. If the surface disturbance of a facility exceeds 5 acres, the inventory area would include the facility disturbance footprint plus a reasonable buffer.
- C. New Roads and Pipelines: A corridor width of 300 feet; 150 feet on either side of the ROW centerline would be inventoried for cultural resources. This corridor width allows for adjustment of the project ROW to easily avoid most cultural resources.
- D. Existing Roads Requiring Extensive Upgrades: Existing roads that would require extensive modifications would be inventoried in a similar fashion to new roads and pipelines.
- E. Regular Maintenance, Reroutes, and Minor Upgrades: New surface disturbances related to maintenance, reroutes, and minor upgrades would be inventoried for cultural resources. Fifty feet on either side of the road center would be surveyed for road maintenance requiring more than blading and small reroutes. Larger reroutes longer than 200 feet would be surveyed to a width of 150 feet on either side of the reroute center. Minor upgrades, such as culverts and drainage control channels would be inventoried

based on the extent of the disturbance. At a minimum, a buffer of 100 feet around the maximum area of disturbance would be inventoried for cultural resources.

- F. Inventory Procedures: Cultural resource inventories would follow the guidelines established in the Guidelines for Identifying Cultural Resources (BLM 2002c).
- G. All necessary efforts to avoid eligible cultural resources would be made during the planning phases of a particular undertaking. These efforts include, but are not limited to, rerouting pipelines or road corridors and moving well locations or other facilities to ensure the avoidance of important resources during the design phase.

EVALUATION

All sites identified in an individual APE would be evaluated for eligibility for inclusion on the NRHP. The NRHP criteria for evaluation and procedures for nominating cultural resources to the NRHP are outlined in 36 CFR 60.1 as follows:

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, material, workmanship, feeling and association, and that they:

- a) ...are associated with events that have made a significant contribution to the broad patterns of our history; or
- b) ...are associated with the lives of persons significant to our past; or
- c) ...embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d) ...have yielded or may be likely to yield information important in prehistory or history.

In addition, 36 CFR 60.4 states those cultural resources that meet the above criteria but have achieved significance within the last 50 years shall not be considered eligible for nomination to the NRHP unless they are integral parts of districts that do meet the criteria, or if they meet additional exceptional criteria outlined therein.

REPORTING, RECOMMENDATIONS, AND AGENCY AND TRIBAL CONSULTATION

Cultural resources reports, specific to APD or ROW applications, would be submitted prior to or at the time these documents are submitted to the land management agencies. Through their archaeological contractor, BBC would initiate and prepare these documents for the land

management agency. The cultural resource reports would adhere to the requirements and recommendation specified in the *BLM Cultural Resources Management 8110 and 8120 Manuals* and the *Secretary of the Interior's Standards and Guidelines for Archaeological and Historic Preservation*. As such, the reports would include a description of previous work in the vicinity of the undertaking, a cultural history overview, a summary of the findings of the inventory, eligibility recommendations, and management recommendations. Upon receiving and reviewing the cultural resource reports, the BLM or SITLA would initiate the Section 106 consultation with the SHPO. In addition, as requested by the Ute Tribe, the BLM would send all archaeological reports as they are completed to the Uintah and Ouray Ute Indian Tribe Cultural Rights and Protection Office and a notification to the Ute Business Committee, which would allow the Tribe an opportunity to comment on the cultural report. If the Tribe determines the need for additional consultation, they will request participation in the pre-drill onsite inspections.

CONSTRUCTION MONITORING

Monitoring of construction activities involving surface disturbance serves to verify that recommendations concerning resource avoidance are met, to ensure that cultural resources are properly avoided, and to identify discoveries in areas deemed to have a high potential for containing buried cultural resources. Cultural resource monitoring would be required in areas with high cultural resource densities, areas with high geomorphological potential for containing cultural resources, or as recommended in the approved APD or ROW permit. If a discovery is made during construction monitoring, the Discovery Plan, presented in the following sections would be followed.

DISCOVERY PLAN

In the case that an unanticipated buried cultural resource (referred to hereafter as a discovery) is identified during surface-disturbing activities, the following protocol would be followed to ensure the proper identification, evaluation, and mitigation of adverse impacts to the resource.

Discovery Protocol Overview

In general, all activity within 100 feet of the discovery would cease immediately. Work may not resume until the resource can be identified and evaluated by the archaeological contractor and the appropriate government archaeologist. In direct consultation with the BLM, SITLA or other appropriate surface management agency, SHPO, BBC, and the archaeological contractor would develop an emergency treatment strategy. Efforts would be made to expedite resumption of construction without further adverse impacts to the cultural resource. Briefly, the following six steps must be completed before work can resume in the vicinity of the discovery.

1. Cease all activity within 100 feet of the discovery. Work can continue outside the 100-foot buffer if an archaeological monitor is present and has determined that no additional impacts to the discovery would occur.
2. Notification
 - a. If the discovery is on the BLM lands, notify the appropriate BLM Field Office, and SHPO of the discovery within 24 hours.
 - b. If the discovery is on State or private land, notify SITLA and SHPO of the discovery within 24 hours.
3. Site documentation and evaluation by an archaeological consultant, and government representatives, if warranted.
4. Determination of eligibility.
5. Action Plan/Mitigation.
6. Resumption of work upon receipt of written permission from the appropriate land management agency or SHPO.

Mitigation Efforts for Unanticipated Discoveries of Cultural Resources

If unanticipated cultural resources are encountered during the course of surface disturbance, the following procedures shall be followed before work can resume.

1. Determine Extent of Discovery/Site Recordation

In order to understand the nature and extent of the discovery, an archaeologist would document the discovery following the BLM guidelines for site documentation as stated in the 8100 manuals. This can include, but is not limited to, documenting exposed artifacts and features; mapping the extent of artifacts, features, and cultural horizons; and documenting natural and cultural stratigraphy in open trenches or pits.

2. Evaluation of Eligibility

The discovery would be evaluated, based on the eligibility criteria outlined above, to determine if it is a property that is eligible for inclusion on the NRHP. The contract archaeologist would make eligibility recommendations to the appropriate government entity. The government archaeologist would either concur or not concur with the eligibility recommendation. If needed or required, the government archaeologist would consult with the SHPO or seek concurrence on the preliminary eligibility determination. Findings of eligibility can include *ineligible*, *eligible*, and in rare cases, *insignificant data* to make a determination (e.g., *unevaluated*).

- a. If the site is determined to be ineligible for inclusion to the NRHP, and there is SHPO concurrence on this eligibility recommendation, work may resume and no further action need be taken.

- b. If the site is determined to be eligible for inclusion on the NRHP, the appropriate government officials, BBC, and their contractors, would determine an appropriate action plan to mitigate any adverse effects to the resource so work can continue.
- c. If a determination cannot be made based on the data collected during recordation, additional testing may be required to further delineate the nature, extent, and significance of the discovery.

If the site is determined to be eligible for inclusion on the NRHP, then an assessment of the disturbance to the resource would be made. If there is a finding of “no adverse effect,” work may resume after adequate documentation is completed, and BBC or its contractors receive permission to proceed from the appropriate government representative.

If the site is determined to be eligible and there is a finding of “adverse effect” to the resource, then procedures to mitigate the adverse effects must be completed before work can continue. Mitigation efforts would be contingent upon several factors. These include the type and extent of the disturbed resource, the extent of the adverse effect, and whether or not it is possible to avoid any further impact to the resource.

Mitigation efforts can be considered either non-destructive or destructive, and can include:

- a. Collection of additional information from the disturbed portion of the resource using non-destructive methods.
- b. Collection of additional information from undisturbed portions of the resource using non-destructive methods.
- c. Collection of additional information from disturbed portions of the resource using destructive methods.

Non-destructive methods include narrative descriptions, scaled drawings and profiles, mapping, and noninvasive procedures such as photography and the use of remote sensing technologies. Destructive methods include artifact collection, testing, excavation, and the recovery of samples for environmental analysis and dating (e.g., charcoal or soil samples for radiocarbon or macrobotanical analysis). It is recommended that any destructive methods used in mitigation be restricted to areas where adverse effects have occurred.

Unanticipated Discovery of Human Remains and Associated Materials

Human Remains on the BLM Land

A. Discovery Notification

If human remains, remains thought to be human, associated or unassociated funerary objects, or objects of cultural patrimony are discovered, work within 100 feet of the discovery would stop immediately. Verbal notification of the discovery would be made to the BLM and the SHPO by BBC or its contractors immediately. Upon notification, the

BLM would notify the appropriate law enforcement authorities, the county coroner, and appropriate Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) coordinator. If the remains are determined to not be of forensic importance, an assessment of the remains would be made.

B. Assessment of the Remains

An in-situ assessment of the remains would be made to determine the cultural affiliation of the remains to aid in determining required actions as defined in a written NAGPRA Plan of Action (POA) prepared by the BLM. The BLM would meet all requirements of NAGPRA for all discoveries of human remains and associated objects in accordance with 43 CFR 10 and BLM IM 2007-002, which allows for reburial of human remains and associated funerary objects excavated on BLM land. All reasonable measures would be taken by the involved parties to resolve issues regarding affiliation and disposition of human remains within 30 days as required by law.

C. Protection of Human Remains

BBC is responsible for the security and protection of human remains during NAGPRA consultations, at least until disposition of the remains is determined.

D. Resumption of Work

Work in the immediate vicinity of the human remains may not resume until after the disposition of the human remains is determined. Permission to proceed would come from the BLM, after consultation with SHPO and appropriate Tribal representatives. This permission can only be given after a written binding agreement is executed between the necessary parties. This agreement adopts a recovery plan for removal, treatment, and disposition of the human remains or associated objects in accordance with 43 CFR Part 10.4(e).

Human Remains on State and Private Land

Treatment of human remains discovered on State or private land would be treated as defined by State law, State of Utah Code Annotated 9-9-401 et. seq., 7-9-704, 9-9-305, 9-8-176. Human remains discovered on lands managed by SITLA would be treated as defined in its Trustees' Board Policy 97-04.

A. Discovery Notification

If human remains, remains thought to be human, associated or unassociated funerary objects, or objects of cultural patrimony are discovered, work within 100 feet of the discovery would stop immediately. BBC, or their contractors, would make notification, either verbal or written, of the discovery to the SITLA, SHPO, and the appropriate law enforcement agency. If the remains are determined to not be of forensic importance, an assessment of the remains would be made.

B. Assessment of the Remains

An in-situ assessment of the remains would be made to determine the cultural affiliation of the remains to aid in determining required actions as defined in a written Action Plan prepared by the SHPO. SHPO would meet all requirements of applicable State and Federal laws for all discoveries of human remains and associated objects on State lands and private property. All reasonable measures would be taken by the involved parties to resolve issues regarding affiliation and disposition of human remains within 30 days as required by law.

C. Protection of Human Remains

BBC is responsible for the security and protection of human remains during consultations if the remains are located on State or private lands.

D. Resumption of Work

Work in the immediate vicinity of the human remains may not resume until after the disposition of the human remains. Permission to proceed would come from the SITLA or SHPO in consultation the appropriate Tribal representatives, depending on property ownership. This permission can only be given after a written binding agreement is executed between the necessary parties. This agreement adopts a recovery plan for removal, treatment, and disposition of the human remains or associated objects. Removal of human remains from State and private lands can only be executed by special permit issued by the SHPO and after consultation with the Native American Remains Committee and affiliated Tribes.