

EXECUTIVE SUMMARY

INTRODUCTION

Newfield Exploration Company (Newfield) has notified the United States (U.S.) Bureau of Land Management's (BLM) Vernal Field Office (VFO) of its need to expand their ongoing oil and natural gas development within and in the vicinity of the Greater Monument Butte Unit (GMBU). Newfield has derived a plan that it proposes to implement in order to fulfill its obligations and responsibilities under federal leases to explore, develop, and produce commercial quantities of oil and natural gas. The Monument Butte Project Area (MBPA) is located in southeastern Duchesne County and southwestern Uintah County. The MBPA consists of approximately 119,743 acres located in Township 4 South, Range 1 East; Township 4 South, Range 1-3 West; Township 5 South, Range 1 and 2 East; Township 5 South, Range 3 West; Township 8 South, Range 15-19 East; Township 9 South, Range 15-19 East; and Township 10 South, Range 15-18 East.

Surface ownership in the MBPA is approximately 87 percent federal (managed by the BLM), approximately 11 percent State of Utah (managed by State Institutional Trust Lands Administration [SITLA]), and approximately two percent private. Mineral interests are owned by the BLM (89 percent), the State of Utah (10 percent), and private interests (less than one percent). Lands with separate surface and mineral ownership, also known as "split estate lands," comprise approximately 18 percent of land within the MBPA.

Federal lands in the MBPA are under the jurisdiction of the BLM VFO. The VFO has determined that implementing the proposed development constitutes a federal action requiring the development of an Environmental Impact Statement (EIS). The EIS serves the purpose of disclosing and analyzing impacts from the Proposed Action, the No Action alternative, and the other developed alternatives.

Newfield's objective is to develop their leases and efficiently produce commercial and economic quantities of oil and gas in the MBPA. Newfield estimates that its plan could yield over 334.9 million barrels of oil (MMBO), 540,669 million cubic feet (MMCF) of natural gas, and 10,085 million barrels (Mbbbl) of natural gas liquids (NGLs) from the Green River formation, and 6.9 trillion cubic feet (Tcf) of natural gas from the deep gas development through 2035.

Purpose and Need

The BLM's purpose is to prevent undue and unnecessary environmental degradation while allowing development of the valid existing leases. The Federal Land Policy and Management Act (FLPMA) mandates that the BLM manage public lands on the basis of multiple use (43 United States Code [U.S.C.] 1701(a) (7)). Under Section 103 of FLPMA, multiple use is defined as meaning "a combination of balanced and diverse resources uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historic values". Minerals are identified as one of the principal uses of public lands (43 U.S.C. 1702(c)). The EIS is intended to facilitate the BLM decision-making process based on an evaluation of the anticipated impacts.

Newfield holds federal, state, and private oil and gas leases within the MBPA. The leases have created contractual rights and obligations between Newfield and the U.S., the State of Utah, and private mineral

owners. Newfield's purpose for the Proposed Action is to develop these leases and produce commercial quantities of oil and gas by expanding their ongoing oil and natural gas development and secondary recovery efforts within the MBPA.

The BLM's need is to fulfill its responsibilities under the 1920 Mineral Leasing Act (MLA) to permit the development of mineral resources. The intent of the MLA and its implementing regulations are to allow and encourage lessees, or potential lessees, to explore for oil and gas underlying public lands. The mineral leases underlying the MBPA grant certain rights and obligations to the lessee to explore, develop, and produce oil and gas resources, allow ingress and egress, and identify a royalty interest to be paid to the federal and state governments on any production obtained. Private production from federal oil and gas leases are an integral component of the BLM's oil and gas leasing program under the authority of the MLA, as amended by FLPMA, and the Federal Onshore Oil and Gas Leasing Reform Act of 1987 (FOOGLRA).

Newfield's need for the project is to fulfill its obligations and responsibilities under federal leases to explore, develop, and produce commercial quantities of oil and natural gas.

EIS Decision Framework

This EIS is prepared in accordance with the National Environmental Policy Act (NEPA) and in compliance with the Council of Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] Parts 1500-1508), U.S. Department of Interior NEPA implementation regulations (40 CFR Part 36), and guidelines listed in the BLM NEPA Handbook (H-1790-1, BLM 2008). The BLM is the lead federal agency tasked with the preparation of the EIS.

This EIS evaluates four alternatives; the Proposed Action (Alternative A), No Action Alternative (Alternative B), Field-wide Electrification Alternative (Alternative C), and the Resource Protection Alternative (Alternative D). It is notable that the proposed surface locations for well pads, pipeline corridors, utility corridors, access roads, and other surface facilities under each alternative are conceptual at this point. These locations have been illustrated on the alternative-specific maps for analytical and impact evaluation purposes only in this EIS. Actual locations for well pads, access roads, ROWs, and other surface facilities would be determined at the Project implementation phase.

The Record of Decision (ROD) associated with this EIS will approve an overall development plan for federal surface and minerals within the MBPA. The ROD could approve one of the alternatives or a combination of the alternatives.

Conformance with BLM Management Plans and Other Laws and Policy Considerations

Management objectives for lands under the authority of the VFO are contained within the Vernal ROD and approved Resource Management Plan (RMP) (BLM 2008a). The RMP allows for the exploration and development of oil and gas resources while protecting or mitigating impacts to other resource values. The Proposed Action and related alternatives are deemed in conformance with management decisions made in the Vernal ROD and Approved RMP where applicable.

Utah Code 63J-80105.5 established the Uinta Basin Energy Zone which includes the MBPA. The highest management priority for these lands is responsible development of energy resources. SITLA has leased

all of the state lands within the MBPA and permits on-going oil and gas production. These actions are consistent with SITLA's primary objective to fund the state school system. The Proposed Action and Alternatives C and D would allow for oil and gas production on federal leases and would be consistent with the objectives of Uinta Basin Energy Zone.

The Proposed Action and Alternatives C and D would be in compliance with the *Duchesne County General Plan*, as amended (Duchesne County 2005, 2007, 2012, 2013). The Plan supports responsible natural resource use and development and emphasizes the need to keep public lands open for oil and gas exploration and development under multiple-use and sustained yield principles.

The Proposed Action and Alternatives C and D would be in compliance with the *Uintah County General Plan 2005*, as amended (Uintah County 2005, 2012). The Plan supports oil and gas development, emphasizes responsible multiple-use of public lands, and optimizes utilization of public resources.

The Proposed Action and Alternatives C and D would be in compliance with Federal, State, and local laws and regulations. Increased development of oil and gas resources on public lands is consistent with FOOGLRA, Comprehensive National Energy Strategy announced by the U.S. Department of Energy in April 2008, the Energy Policy and Conservation Act (42 U.S.C. 6201), and the Energy Policy Act of 2005.

Newfield must obtain federal, state, and local permits and ROW grants, licenses, easement agreements, and other authorizing actions to proceed with all project-related development. Federal, state, county, and local regulatory and permitting actions required to implement any of the alternatives would generally be the same, regardless of which alternative is selected.

Internal Scoping and Issue Identification

A BLM interdisciplinary team (IDT) reviewed the Proposed Action and identified a list of resources potentially impacted by implementation of the proposed Project. These resources represent issues considered in all EAs and EISs and are discussed and analyzed in Chapters 3, 4, and 5 of this EIS. A listing of these resources and their status within the MBPA is presented in **Appendix A**. The resources and issues identified in this appendix documents all resources considered, including those resources which were determined to be "Not Present" (NP) or "Not Impacted" (NI), with a rationale for that determination. Resources that would not be affected by the proposed Project are not carried forward for detailed analysis in Chapters 3, 4, and 5 of this EIS.

BLM also conducted public scoping to solicit input and identify environmental issues and concerns associated with the proposed project, which was used to help craft the alternatives. The public scoping process was initiated on August 25, 2010, with the publication of a Notice of Intent (NOI) in the Federal Register. The BLM prepared a scoping information notice and provided copies to the public, other government agencies, and Tribes. These announcements included information on a public scoping meeting and open house, which was held at the County Commissioner's Office in Duchesne, Utah, on September 13, 2010, and at the Western Park Convention Center in Vernal, Utah, on September 20, 2010. The scoping meetings included participants from the BLM, Ashley National Forest, Uintah County Public Lands, Newfield, El Paso County, consultants, as well as local landowners and other stakeholders. The official scoping period ended October 9, 2010. Issues raised during public scoping are summarized in **Sections 1.7** and **6.4** of this Draft EIS.

ALTERNATIVES

Development Activities Common to All Alternatives

Newfield is proposing to expand their ongoing oil and natural gas development and secondary recovery within the MBPA using waterflood methods and deep gas operations. Waterflood methods involve the injection of produced water and freshwater (through formerly producing or new wells) into the oil-producing geologic formation. Nearby actively producing wells extract the fluids through the formation as the water displaces the oil. In addition, portions of the MBPA along the northwest and southern Project boundaries would be subject to expansion away from existing development.

Newfield proposes to drill new wells as infill to all productive formations, including but not limited to, the middle and lower members of the Green River formation and upper member of the Colton Formation. The Green River oil wells would be drilled to a total depth of between 4,500 and 6,500 feet below ground surface (bgs), and the proposed deep gas wells would be drilled to a total depth of between 13,000 and 18,000 feet bgs.

Well density in the MBPA would vary based on geologic characteristics of the formation being targeted for development. The range of downhole well densities expected at this time is one well per 20 acres (i.e., middle member of the Green River Formation) to one well per 40 acres (i.e., middle and lower members of the Green River Formation). The ultimate number and density of wells would be defined through future drilling and would vary by alternative. Newfield would use directional drilling and multiple well pad drilling techniques to develop these resources in a manner that would limit the number of well pads or surface locations (i.e., surface density) to a maximum of one well pad per 40 acres.

The number of wells per well pad would vary based on downhole spacing, technical feasibility, and the geologic characteristics of the targeted formation. Some well pad locations would host a single well and others may have multiple wells drilled from a single well pad.

The life cycle of an individual well and its associated facilities/required infrastructure (e.g., roads, pipelines, and compressor stations) is composed of seven primary phases: (1) preconstruction, (2) construction, (3) drilling, (4) completion, (5) interim reclamation, (6) production and maintenance, and (7) final reclamation and abandonment. Section 2.2 of the Draft EIS describes in more detail these project design features that are common to all alternatives. A brief description of each alternative is provided in the following sections. Detailed, alternative-specific information is provided in Sections 2.3 through 2.6 of the Draft EIS.

Alternative A – The Proposed Action

The Proposed Action is derived from Newfield's proposed plan for oil and gas development. The Proposed Action includes the following primary components:

- Development of up to 750 Green River oil wells on 40-acre surface and downhole spacing drilled from new 2-acre well pads, all of which would be converted into waterflood injection wells after approximately 3 years of production;

- Development of up to 2,500 Green River oil wells on 20-acre downhole spacing that would be vertically, directionally, or horizontally drilled from existing and/or proposed 40-acre surface spaced Green River oil well pads, consistent with current State spacing requirements;
- Development of up to 2,500 vertical deep gas wells on 40-acre surface and downhole spacing drilled from new 3-acre well pads, which would be constructed adjacent to Green River oil well pads to reduce new surface disturbance and use existing utility infrastructure and access roads;
- Construction of approximately 243 miles of new 100-foot wide ROW that would be used for new road construction (40-foot width) and pipeline installation (60-foot width). Up to 70-foot wide expansion along approximately 363 miles of existing access road ROW that would be used for road upgrade (10-foot width) and pipeline installation (60-foot width);
- Construction of 20 new compressor stations for deep gas well development;
- Expansion of three existing Green River oil well compressor stations and construction of one new compressor station for gas associated with Green River oil well development;
- Construction of a 50 MMscf/d centralized gas processing plant;
- Construction of seven new and expansion of six existing water treatment and injection facilities for management and distribution and injection of produced water;
- Construction of up to 12 GOSPs for oil and produced water collection;
- Development of one fresh water collector well for waterflood operations; and
- Construction of six water pump stations.

Newfield currently operates approximately 3,395 oil and gas wells in the MBPA and proposes to drill associated wells at an average rate of 360 wells per year until the resource base is fully developed. Under this drilling scenario, construction, drilling, and completion of up to 5,750 wells would occur for approximately 16 years. The total number of wells drilled would depend largely on outside factors such as production success, engineering technology, reservoir characteristics, economic factors, commodity prices, rig availability, and lease stipulations. The anticipated life of an individual well is 20 to 30 years, and the anticipated time it would take for field abandonment and final reclamation is 5 years. Therefore, the anticipated life of project (LOP) under the Proposed Action would be from 41 to 51 years.

Alternative B – No Action

Under the No Action Alternative, the proposed oil and gas infill development project on public land surface and/or federal mineral estates as described in the Proposed Action would not be implemented. However, proposed oil well development would likely continue on State and private lands or minerals within the MBPA, subject to the approval of UDOGM and/or the appropriate private land owner. This EIS evaluates proposed development on State and private lands or minerals under the No Action alternative (and all alternatives) but the BLM does not have jurisdiction over State and private land or minerals. Therefore, the ROD for this EIS will not include decisions specific to State and private lands or minerals. Reasonable access across BLM-administered surface to proposed well pads and facilities on State and private lands or minerals could also occur under the No Action Alternative, as allowed by Federal regulations. Development, production, and maintenance activities for wells approved under the

August 2005 ROD for the Castle Peak and Eight Mile Flat Oil and Gas Expansion EIS would also continue on BLM-administered lands.

It is estimated that approximately 241 previously approved or planned wells remain to be drilled on BLM-administered lands in addition to the 3,395 existing wells within the MBPA (as of December 31, 2011).

In addition to the approved 241 wells that have not yet been drilled, an additional approximately 547 oil and gas wells would be developed on State and private lands or minerals in the MBPA under the No Action Alternative, for a total of 788 producing wells. Newfield proposes to drill wells at an average rate of up to 360 wells per year. Under this drilling scenario, construction, drilling, and completion of all 788 wells would occur over an approximately 2.2-year period. The total number of wells drilled would depend largely on outside factors such as production success, engineering technology, reservoir characteristics, economic factors, commodity prices, rig availability, and lease stipulations. The anticipated life of an individual well is 20 to 30 years, and the anticipated time it would take for field abandonment and final reclamation is 5 years. Therefore, the anticipated LOP under the No Action Alternative would be approximately 28 to 38 years.

Key components of the No Action Alternative include the following:

- Development of up to 128 Green River oil wells on 40-acre surface and downhole spacing drilled from new 2-acre well pads, all of which would eventually be converted into waterflood injection wells;
- Development of up to 419 Green River oil wells and/or deep gas wells on 20-acre downhole spacing that would be vertically, directionally, or horizontally drilled from existing and/or proposed 40-acre surface spaced Green River oil well pads with average surface disturbance of about 0.2 acres per pad;
- Development of up to 241 additional Green River oil wells from other previously approved and planned Newfield oil and natural gas development projects. For purposes of analysis, approximately half of the wells are assumed to be vertical wells drilled on existing well pads and half are assumed to be vertical wells with average surface disturbance of about 0.2 acres per pad;
- Construction of approximately 23 miles of new 70-foot wide ROW that would be used for new road construction (40-foot width) and pipeline installation (30-foot width).
- Construction of approximately 45 miles of 70-foot wide ROW that would be used for up to 40-foot wide expansion of existing access road ROW for co-located road upgrade (10-foot width) and pipeline installation (30-foot width); ;
- Construction of up to two (2) new 8,000 hp compressor stations;
- Construction of a 50 MMscf/d centralized Green River oil well gas processing plant;
- Construction of one new water treatment and injection facilities for management and distribution and injection of produced water;
- Construction of one new GOSP for oil and produced water collection; and
- Construction of one water pump station.

Alternative C – Field-wide Electrification

Alternative C was developed in response to air quality issues raised during the public and agency scoping process. The principal component of this alternative entails a phased field-wide electrification system that would be integrated in the MBPA over an estimated 7-year period. This alternative would incorporate the same construction and operational components described in **Section 2.2** of the Draft EIS (Development Activities Common to all Alternatives), except that gas-driven motors would be converted to electric motors as field electrification is phased into the MBPA.

Under Alternative C, the same number of oil and gas wells (5,750) would be developed on BLM, State, and private lands as described under the Proposed Action. Under this drilling scenario, construction, drilling, and completion of all 5,750 wells would occur for approximately 16 years. The total number of wells drilled would depend largely on outside factors such as production success, engineering technology, reservoir characteristics, economic factors, commodity prices, rig availability, and lease stipulations. The anticipated life of an individual well is 20 to 30 years, and the anticipated time it would take for field abandonment and final reclamation is 5 years. Therefore, the anticipated LOP under Alternative C would be 41 to 51 years.

Alternative C includes the following primary components:

- Development of up to 750 Green River oil wells on 40-acre surface and downhole spacing drilled from new 2-acre well pads, all of which would be converted into waterflood injection wells after approximately 3 years of production;
- Development of up to 2,500 Green River oil wells on 20-acre downhole spacing that would be vertically, directionally, or horizontally drilled from existing and/or proposed 40-acre surface spaced Green River oil well pads, consistent with current State spacing requirements;
- Development of up to 2,500 vertical deep gas wells on 40-acre surface and downhole spacing drilled from new 3-acre well pads, which would be constructed adjacent to Green River oil well pads to reduce new surface disturbance and use existing utility infrastructure and access roads;
- Construction of approximately 243 miles of new 100-foot wide ROW that would be used for new road construction (40-foot width) and pipeline installation (60-foot width). Up to 70-foot wide expansion along approximately 363 miles of existing access road ROW that would be used for road upgrade (10-foot width) and pipeline installation (60-foot width);
- Construction of 20 new compressor stations for deep gas well development;
- Expansion of three existing Green River oil well compressor stations and construction of one new compressor station for gas associated with Green River oil well development;
- Construction of a 50 MMscf/d centralized gas processing plant;
- Construction of seven new and expansion of six existing water treatment and injection facilities for management and distribution and injection of produced water;
- Construction of up to 12 GOSPs for oil and produced water collection;
- Development of one fresh water collector well for waterflood operations;

- Construction of six water pump stations; and
- Phased field-wide electrification consisting of construction of approximately 34 miles of overhead, cross-country 69kV transmission line (pole line), 156 miles of distribution lines, and construction of 11 generating stations (also known as substations).

Alternative D – Resource Protection (Agency Preferred Alternative)

In accordance with CEQ regulations, the BLM is required to identify a preferred alternative in the EIS if one or more exists. Alternative D, the Resource Protection Alternative, is the Agency Preferred Alternative. Alternative D was developed to respond to issues raised during scoping about reducing potential impacts to sensitive resource and land uses. For the MBPA, the primary objective of the Resource Protection Alternative is to meet the purpose and need for the Project while minimizing impacts to floodplain, riparian, and wetland habitats and threatened and endangered species by 1) avoiding new surface disturbance within the Pariette Wetlands Area of Environmental Concern (ACEC); 2) minimizing the amount of new surface within USFWS proposed Level 1 and 2 Core Conservation Areas (for two federally-listed plant species: the Uinta Basin hookless cactus [*Sclerocactus wetlandicus*] and the Pariette cactus [*Sclerocactus brevispinus*]); 3) precluding surface disturbance (with the exception of Newfield's proposed water collector well) within 100-year floodplain and riparian habitats; and 4) adjusting new development based on existing well density in other portions of the MBPA through the use of directional drilling technology.

Pariette Wetlands ACEC

Under Alternative D, the most restrictive conditions for oil and gas development would occur within the Pariette Wetlands ACEC as follows: 1) No new surface disturbance or well pad expansions would be allowed on federal lands; and 2) SITLA and private lands would follow UDOGM and SMA requirements. In order to access the natural gas reserves beneath the Pariette ACEC, directional wells would be drilled from both new multi-well pads and existing well pads located adjacent to, but outside of, the ACEC. Recent advancements in horizontal drilling technology have increased the maximum horizontal displacement to distances of up to 2,500 feet without significant technical and economic challenges. While a substantial portion of the hydrocarbon reserves could be recovered under the Pariette Wetlands ACEC as a result of directional drilling, it is estimated that approximately 6,605 acres of natural gas reserves beneath the Pariette ACEC (or approximately 62 percent of the total area of the Pariette ACEC) would be inaccessible because of limitations on drilling locations.

Cactus Core Conservation Areas

Another principal component of Alternative D entails environmental protection measures proposed for *Sclerocactus* species. Under Alternative D, BLM would adopt enhanced USFWS management guidelines and recommended protection of Core Conservation Areas to minimize the effects of energy development on *Sclerocactus* habitat. As proposed under Alternative D, two levels of core conservation areas would be used to manage development in relation to cactus habitat. Areas where cactus numbers are known to be highly concentrated (most dense per unit area) are classified as Level 1 Core Conservation Areas. The most restrictive conditions for oil and gas development would occur in Level 1 areas, where no new surface disturbance or well pad expansions would be allowed. The majority of these areas are located within the Pariette ACEC. The total size of the Level 1 Core Conservation Areas located within the Pariette Wetlands ACEC is 4,337 acres.

In Level 2 areas located outside the Pariette ACEC, surface disturbance would be minimized to the greatest extent practicable by using existing infrastructure (i.e., access roads and pipelines) and directional drilling from multi-well pads that would either require the expansion of existing well pads or the construction of a limited number of new multi-well pads. Under Alternative D, approximately 155 fewer well locations would be drilled and 766 fewer acres of surface disturbance would occur within Level 1 and 2 Core Conservation Areas than would occur under the Proposed Action. Additionally, with an increased number of Green River oil wells that would be converted to injection wells (discussed below), Alternative D would further reduce surface disturbance in Level 2 Core Conservation Areas by reducing existing infrastructure to smaller disturbance areas. This would help reduce the disturbance in Level 2 Core Conservation Areas that already exceed the 5 percent surface disturbance density ceiling.

New Development Based on Existing Well Density

An additional goal of Alternative D is to reduce the amount of surface disturbance from the proposed project by reducing the number of new wells pads, reclaiming areas of existing disturbance, and increasing the use of multi-well pads. Numerous existing single-well pads would be converted to a complex of multi-well, directional drilling pads and waterflood injection wells, which would have a lower overall disturbance in comparison to the Proposed Action and Alternative C.

Figure 2.6-1 of the Draft EIS (Attachment 1) shows the existing high and low-density development areas within the MBPA. High-density development areas are those areas that have from 6- to 16-well pads per 640-acre section (i.e., one [1] well pad per 40 to 106 acres). Low-density development areas are defined as those areas that have had no gas development at all or contain up to five well pads per section.

Of the 197 sections (or portions of sections) within the MBPA, 115 sections (or portions of sections [about 58 percent]) are within the high-density development areas. Average existing surface disturbance within the high-density development areas is 39.0 acres per section and the average number of well pads per section is 14.3. Approximately 82 sections (or portions of sections) occur within the low-density development areas. The average existing disturbance within the low-density development areas is 11.9 acres per section and the average number of existing well pads per section is 2.8.

Within high-density development areas that contain 16 well pads per section, four of the 16 existing wells pads within each section would be expanded by about 0.2 acres for directional drilling (up to four wells from each pad) and the remaining 12 well pads within each section would be converted to waterflood injection wells. In sections that contain fewer than 16 well pads, three or fewer of the existing wells pads within each section would be expanded by about 0.2 acres for directional drilling and the remaining well pads within each section would be converted to waterflood injection wells resulting in the reclamation of 1.74 acres per pad. This would result in a substantial decrease in the residual or long-term amount of surface disturbance within the MBPA compared to the other action alternatives.

For low-density development areas with no existing oil and gas development, the proposed surface density would be no more than four new well pads per 640-acre section (i.e., one well pad per 160 acres). In sections with previous existing oil and gas development, one new multi-well pad would be permitted and one or more existing well pads would be used as multi-well pad(s). However, there would be no restriction on the number of wells that could be drilled from those well pads provided that the wells conform to UDOGM downhole spacing requirements, which is currently 20 acres.

This alternative would incorporate the same construction and operational components as the Proposed Action and Alternative C, but with fewer new well pad locations and a substantially greater number of multiple directional wells drilled. The volume of water needed and number of water injection wells would be higher under Alternative D because the number of oil wells requiring secondary recovery would be higher. Under Alternative D, approximately 5,058 oil and gas wells would be developed on BLM, State, and private lands in the MBPA. Newfield would drill associated wells at an average rate of 360 wells per year. Under this drilling scenario, construction, drilling, and completion of all 5,058 wells would occur for approximately 14 years. The total number of wells drilled and would depend largely on outside factors such as production success, engineering technology, reservoir characteristics, economic factors, commodity prices, rig availability, and lease stipulations. The anticipated life of an individual well is 20 to 30 years, and the anticipated time it would take for field abandonment and final reclamation is 5 years. Therefore, the anticipated LOP under Alternative D would be 39 to 49 years.

Alternative D includes the following primary components:

- Development of up to 204 Green River oil wells with a 160-acre surface density drilled from new 2-acre well pads, all of which would eventually be converted into waterflood injection wells;
- Development of up to 1,539 vertical deep gas wells on 40-acre spacing drilled from new 3-acre well pads;
- Development of up to 3,315 Green River oil wells on 20-acre spacing that would be vertically, directionally, or horizontally drilled from existing and/or proposed 40-acre spaced Green River oil well pads, of which, 940 would eventually be converted to waterflood injection wells. This would occur over an approximate 10-year period.
- Construction of approximately 73 miles of new 100-foot wide ROW that would be used for new road construction (40-foot width) and pipeline installation (60-foot width). Up to 70-foot wide expansion along approximately 331 miles of existing access road ROW that would be used for road upgrade (10-foot width) and pipeline installation (60-foot width);
- Construction of up to 17 new compressor stations for deep gas well development;
- Construction of up to one 50-MMscf/d centralized Green River oil well gas processing plant;
- Construction of up to nine gas driven water treatment and injection facilities for management and distribution and injection of produced water;
- Construction of up to eight GOSPs for oil and produced water collection;
- Development of one fresh water collector well for waterflood operations; and
- Construction of four water pump stations.

Comparison Summary of Design Features Among Alternatives

Table ES-1 summarizes the number of well pads, miles of access road, miles of pipeline, production facilities, and other design or project features that would occur under each alternative.

Table ES-1 Design Feature Summary Comparison among Alternatives

ALTERNATIVE		ALTERNATIVE A - PROPOSED ACTION			ALTERNATIVE B - NO ACTION ALTERNATIVE			ALTERNATIVE C - FIELD-WIDE ELECTRIFICATION			ALTERNATIVE D - AGENCY PREFERRED ALTERNATIVE		
Project Feature	Size (disturbance width [feet] or acres/facility)	Number or Miles	Initial (short-term) Surface Disturbance (acres)	Residual (long-term) Surface Disturbance (acres) ¹	Number or Miles	Initial (short-term) Surface Disturbance (acres)	Residual (long-term) Surface Disturbance (acres) ¹	Number or Miles	Initial (short-term) Surface Disturbance (acres)	Residual (long-term) Surface Disturbance (acres) ¹	Number or Miles	Initial (short-term) Surface Disturbance (acres)	Residual (long-term) Surface Disturbance (acres) ¹
Well Pads													
New Green River Oil Well Pads on 40-acre Surface and Downhole Spacing	2.0 acres	750	1,500	750	128	256	128	750	1,500	750	--	--	--
New Green River Oil Well Pads on 20-acre Spacing on Existing and/or Proposed 40-acre Spaced Green River Oil Well Pads	0.2 acre	2,500	500	500	419	84	84	2,500	500	500	3,315	663	663
New Deep Gas Well Pads on 40-acre Surface and Downhole Spacing	3.0 acres	2,500	7,500	2,500	--	--	--	2,500	7,500	2,500	--	--	--
New Green River Oil and/or Gas Well Pads with 160-Acre Surface Density	2.0 acres	--	--	--	--	--	--	--	--	--	204	408	204
Wells Remaining to be Drilled under other Approved or Proposed Newfield Projects	2.0 acres ²	--	--	--	241	48	48	--	--	--	--	--	--
Expansion of Existing Well Pads to Accommodate Deep Gas on 40-Acre Surface and Downhole Spacing	3.0 acres	--	--	--	--	--	--	--	--	--	1,539	4,617	1,539
Subtotal	--	5,750	9,500	3,750	788	388	260	5,750	9,500	3,750	5,058	5,688	2,406
Well Pad Conversions													
Existing Well Pads Converted to Water Injection Wells	-1.74 acres	--	--	--	--	--	--	--	--	--	1,144	--	-1,991
Subtotal Well Pad Conversions	--	--	--	--	--	--	--	--	--	--	--	--	-1,991
Subtotal New Well Pads	--	--	--	--	--	--	--	--	--	--	5,058	5,688	2,406
Net Total	--	--	--	--	--	--	--	--	--	--	--	5,688	415³
Access Roads													

ALTERNATIVE		ALTERNATIVE A - PROPOSED ACTION			ALTERNATIVE B - NO ACTION ALTERNATIVE			ALTERNATIVE C - FIELD-WIDE ELECTRIFICATION			ALTERNATIVE D - AGENCY PREFERRED ALTERNATIVE		
Project Feature	Size (disturbance width [feet] or acres/facility)	Number or Miles	Initial (short-term) Surface Disturbance (acres)	Residual (long-term) Surface Disturbance (acres) ¹	Number or Miles	Initial (short-term) Surface Disturbance (acres)	Residual (long-term) Surface Disturbance (acres) ¹	Number or Miles	Initial (short-term) Surface Disturbance (acres)	Residual (long-term) Surface Disturbance (acres) ¹	Number or Miles	Initial (short-term) Surface Disturbance (acres)	Residual (long-term) Surface Disturbance (acres) ¹
New Roads Co-located with Pipelines	40 feet ⁴	243 miles	1,178	1,178	23.5 miles	114	114	243 miles	1,178	1,178	73 miles	354	354
Existing Roads with New Pipelines	10 feet ⁵	363 miles	440	440	45 miles	55	55	363 miles	440	440	331 miles	401	401
New Roads Remaining to be Constructed under other Approved or Proposed Newfield Projects	40 feet	--	--	--	--	--	--	--	--	--	--	--	--
Existing Roads Remaining to be Upgraded under other Approved or Proposed Newfield Projects	10 feet	--	--	--	--	--	--	--	--	--	--	--	--
Subtotal	--	606 miles	1,618	1,618	68 miles	169	169	606 miles	1,618	1,618	404 miles	755	755
Pipelines and Utility Lines													
Pipelines Co-located with New Roads	60 feet ⁶	243 miles	1,767	736 ⁷	--	--	--	243 miles	1,767	736	73 miles	531	221
Pipelines Co-located with Existing Roads	60 feet ⁶	363 miles	2,640	1,100 ⁷	--	--	--	363 miles	2,640	1,100	331 miles	2,407	1,003
Pipelines Co-located with New Roads	30 feet ⁸				23.5 miles	85	57 ⁹		--	--	--	--	--
Pipelines Co-located with Existing Roads	30 feet ⁸	--	--	--	45 miles	164	109 ⁹	--	--	--	--	--	--
Proposed Transmission Lines	30 feet	--	--	--	--	--	--	34 miles	124	62	--	--	--
Proposed Distribution Lines	20 feet	--	--	--	--	--	--	156 miles	N/A ¹⁰	N/A	--	--	--
Subtotal	--	606 miles	4,407	1,836	68 miles	249	166	796	4,531	1,898	401	2,938	1,224
Central Facilities													
Compressor Stations (New/Upgrades)	10 acres	24	226	226	2	20	20	24	226	226	17	160	160
Gas Processing Plants	10.0 acres	1	10	10	1	10	10	1	10	10	1	10	10
Water Treatment and Injection Facilities	8/5 acres ¹¹	13	86	86	1	7	7	13	86	86	10	65	65
Gas and Oil Separation Plants (GOSPs)	22.0 acres	12	264	264	1	22	22	12	264	264	8	176	176

ALTERNATIVE		ALTERNATIVE A - PROPOSED ACTION			ALTERNATIVE B - NO ACTION ALTERNATIVE			ALTERNATIVE C - FIELD-WIDE ELECTRIFICATION			ALTERNATIVE D - AGENCY PREFERRED ALTERNATIVE		
Project Feature	Size (disturbance width [feet] or acres/facility)	Number or Miles	Initial (short-term) Surface Disturbance (acres)	Residual (long-term) Surface Disturbance (acres) ¹	Number or Miles	Initial (short-term) Surface Disturbance (acres)	Residual (long-term) Surface Disturbance (acres) ¹	Number or Miles	Initial (short-term) Surface Disturbance (acres)	Residual (long-term) Surface Disturbance (acres) ¹	Number or Miles	Initial (short-term) Surface Disturbance (acres)	Residual (long-term) Surface Disturbance (acres) ¹
Fresh Water Collector Well	1.7 acres	1	1.7	.7	1	1.7	.7	1	1.7	.7	1	1.7	.7
Pump Stations	3/5 acres ¹²	6	18	18	1	5	5	6	18	18	4	12	12
Generating Stations	5.0 acres	--	--	--	--	--	--	11	55	55	--	--	--
Subtotal	--	57	604	604	7	64	64	68	659	659	41	423	423
Total New Disturbance	--	--	16,129	7,808	--	870	659	--	16,308	7,925	--	9,805	2,818
Life of Project (LOP)		41 to 51 Years			28 to 38 Years			41 to 51 Years			39 to 49 Years		
Water Requirements													
Drilling and Completion		1,150 acre-feet per year			322 acre-feet per year			1,150 acre-feet per year			908 acre-feet per year		
Dust Suppression during Construction		3 acre-feet per year			4 acre-feet per year			3 acre-feet per year			3 acre-feet per year		
Dust Suppression during Operations		75 acre-feet per year			10 acre-feet per year			75 acre-feet per year			66 acre-feet per year		
Waterflooding Infrastructure and Operations		2,738 acre-feet per year			548 acre-feet per year			2,738 acre-feet per year			4,176 acre-feet per year		
Total Water Requirement for Project		74,731 – 102,861 acre-feet			11,868 – 17,444 acre-feet			74,731 – 102,861 acre-feet			97,590– 140,010 acre-feet		
Workforce Requirements													
Workdays for Project		2,326,448			404,668			2,360,628			2,164,136		
Average Workdays per Year		125,651			116,810			127,447			124,036		
Average Number of Workers per Day		524			492			532			516		

¹ Residual disturbance calculations are based on the assumption that interim reclamation would be initiated and successful.

² For purposes of analysis, approximately half of the wells are assumed to be vertical wells drilled on existing well pads and half are assumed to be vertical wells drilled on new 2-acre well pads.

³ The net total includes the 1991 acre decrease in surface disturbance as a result of well pad conversion.

⁴ Initial disturbance assumes that a 100-foot wide disturbance corridor would be needed for construction, 40 feet of which would be utilized for new road construction, and 60 feet of which would be utilized for pipeline/utility line installation.

⁵ Initial disturbance assumes that a 70-foot wide disturbance corridor would be needed for construction, 10 feet of which would be utilized for general road improvements, and 60 feet of which would be utilized for pipeline/utility line installation.

⁶ Initial disturbance assumes that a 60-foot wide disturbance corridor would be needed for pipeline/utility line installation within new and existing road ROWs.

⁷ Residual disturbance assumes that 35 foot wide portion of the original 60-foot wide disturbance corridor would be reclaimed leaving a 25-foot wide corridor for the long-term pipeline/utility corridor.

⁸ Initial disturbance assumes that a 30-foot wide disturbance corridor would be needed for pipeline installation within new and existing road ROWs because fewer would be needed.

⁹ Residual disturbance assumes that a 10-foot wide portion of the original 30-foot wide disturbance corridor would be reclaimed leaving a 20-foot wide corridor for the long-term pipeline corridor.

¹⁰ Proposed distribution lines would be co-located within road and pipeline ROWs, so no additional disturbance would be associated with these facilities.

¹¹ Each new water treatment and injection facility would occupy a site approximately 8 acres in size. Existing water treatment and injection facility locations proposed for expansion would be increased in size by approximately 5 acres each.

¹² Each new pump station would occupy a site approximately 3 acres or 5 acres in size.

AFFECTED ENVIRONMENT

The MBPA is located within the Uinta Basin of the Colorado Plateau physiographic province. The basin is a bowl-shaped structural and sedimentary feature that trends roughly east to west, has a maximum width of about 115 miles, and covers an area of approximately 10,890 square miles. The basin is bounded on the north by the Uinta Mountains and on the east by the Douglas Creek Arch, with portions of the Wasatch Range and the Roan Cliffs forming its southern and western boundaries.

Elevations within the MBPA ranges from approximately 4,632 feet above mean sea level (amsl) in the eastern portion near the Green River, to approximately 6,867 feet amsl in the southwestern portion near Gilsonite Draw. Numerous drainages transect the MBPA, including Wells Draw, Castle Peak Draw, Petes Wash, Sheep Wash, Big Wash, and a number of other unnamed ephemeral features. These drainages, in combination with the plateaus of Pariette Bench and Eightmile Flat, create a pattern of uplands and lowlands oriented southwest to northeast.

The vegetation within the MBPA and surrounding region consists of typical Intermountain Basin shrubland associations. This region mixes an array of geographic substrates, topographic features, climatic regimes, soil types, and other physical factors to produce a mosaic of floristic components and associated natural habitats. These communities are often mixed, transitional, or widely distributed.

The MBPA encompasses approximately 119,743 acres of land within southeast Duchesne County and southwest Uintah County. The MBPA spans a distance of approximately 25 miles east to west and 9 miles north to south. The Town of Vernal is approximately 33 miles northeast of the MBPA boundary, and Myton, Utah, is located approximately 5.5 miles to the north. Land ownership in the MBPA is approximately 87 percent Federal (managed by the BLM), approximately 11 percent State of Utah (managed SITLA), and approximately 2 percent private. Mineral interests are owned by the BLM (89 percent), the State of Utah (10 percent), and private interests (less than 1 percent). Lands with separate surface and mineral ownership, also known as “split estate lands,” comprise approximately 18 percent of land within the MBPA.

Chapter 3 of the Draft EIS describes the affected environment of the MBPA. Resources and resource uses described in this chapter include those identified by the BLM’s IDT as being potentially affected by the project, as well as the substantive issues of concern brought forward during internal and public scoping. Affected environment information within Chapter 3 is intended to establish a baseline for comparison of the direct, indirect, and cumulative impacts of each of the alternatives.

ENVIRONMENTAL CONSEQUENCES

Chapter 4 describes the direct and indirect effects of implementing the alternatives on the affected environment as described in Chapter 3. The resource-specific effects of the alternatives are evaluated both quantitatively and qualitatively, depending on available data and the nature of the resource being analyzed. A summary of the Chapter 4 impact analyses is provided in **Table ES-2**.

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TABLE ES-2 SUMMARY OF ANTICIPATED IMPACTS BY ALTERNATIVE

Resource	Alternative A – Proposed Action Impacts	Alternative B – No Action Alternative Impacts	Alternative C – Field-wide Electrification	Alternative D – Resource Protection Alternative
Air Quality	<p>The Proposed Action would result in concentrations of criteria pollutants below the NAAQS. Project specific ozone impacts were not modeled due the pending BLM air resource management strategy model. Ozone emissions would be mitigated according to the BLM adaptive management strategy. Non-carcinogenic REL, RfC, and State of Utah TSL impacts would be below all applicable significance criteria for Acrolein, Benzene and Formaldehyde. All other HAPs are expected to be below the significance thresholds as well. Increases in pollutant concentrations are not expected to exceed PSD Criteria. Acid deposition is not expected to exceed impact thresholds at Class I or Class II areas; however the deposition analysis threshold was exceeded at the closest Class I and II areas for nitrogen. Predicted impacts at all lakes would be a less than 10 percent change in acid neutralizing capacity. One day exceeded a 1.0 deciview change in visibility at the closest Class I area; however the 98th percentile was less than the 1.0 limit of acceptable change.</p>	<p>Qualitative air quality impacts under the No Action Alternative would be less than or similar in nature to those described for the Proposed Action. Near-field impacts are expected to be similar to the Proposed Action given similar equipment at individual facilities, although there is an overall reduction in the number of facilities. However, it is possible that near-field impacts under Alternative B would be greater than those for Alternative A because not all of the ACEPMs for Alternative A would be implemented under the No Action Alternative. Since the emissions are less under Alternative B than those for the Proposed Action, the overall visual air quality and AQRV impacts would be the same or less than those for the Proposed Action.</p>	<p>Alternative C would result in concentrations of criteria pollutants below the NAAQS. Ozone emissions would be mitigated according to the BLM adaptive management strategy. Non-carcinogenic REL, RfC, and State of Utah TSL impacts would be below all applicable significance criteria for Acrolein, Benzene and Formaldehyde. All other HAPs are expected to be below the significance thresholds as well. Since the emissions are less under Alternative C than those for the Proposed Action, the overall visual air quality and AQRV impacts would be the same or less than those for the Proposed Action.</p>	<p>Qualitative near-field air quality impacts would be similar to those described under the Proposed Action given similar equipment at individual facilities although there is an overall reduction in the number of facilities. Since the emissions are less under Alternative D than those for the Proposed Action, the overall visual air quality and AQRV impacts would be the same or less than those for the Proposed Action.</p>
Geology and Minerals	<p>Potential impacts to geologic and mineral resources from the Proposed Action (and alternatives) include changes to local physiography and topography; decreased slope stability;</p>	<p>Impacts to geological and mineral resources under the No Action Alternative would be similar in nature to those described for the Proposed Action. However,</p>	<p>Impacts to geological and mineral resources Alternative C would be nearly identical in nature and scope to those described for the Proposed Action, except that Alternative C</p>	<p>Impacts to geological and mineral resources under Alternative D would be similar in nature to those described for the Proposed Action. However, potential impacts would be less under</p>

Resource	Alternative A – Proposed Action Impacts	Alternative B – No Action Alternative Impacts	Alternative C – Field-wide Electrification	Alternative D – Resource Protection Alternative
	<p>depletion of oil and natural gas resources; and interference with potential mining of gilsonite, tar sands, oil shale, and other leasable, locatable, and salable minerals within the MBPA.</p> <p>Potential impacts to oil and natural gas resources include the depletion of these resources due to active extraction. While the ultimate recovery of oil and natural gas from the MBPA at full development is unknown, it is estimated that the maximum development of the 5,750 wells under the Proposed Action would result in a potential recovery of over 335 MMBO, 540,669 MMCF of natural gas, and 10,085 Mbbl of NGLs from the Green River Formation over the LOP. In addition, development of deep gas wells could yield an additional estimated 6.9 Tcf of natural gas. These oil and gas resources would be removed from the subsurface and no longer would be available for extraction.</p>	<p>potential impacts would be considerably less under the No Action Alternative because only 788 new oil and gas wells would be developed on BLM, State and private lands in the MBPA.</p> <p>Development of the 788 wells proposed under the No Action Alternative would result in a potential recovery of an estimated 64 MMBO over the LOP, decreasing the presumed total available oil reserves in the Uinta Basin by approximately 1.2 percent. In addition, implementation of the No Action Alternative would yield approximately 1.2 Tcf of natural gas over the LOP, thus decreasing the total estimated reserves of natural gas in the Uinta Basin by approximately 4.6 percent.</p> <p>Correspondingly, impacts to physiography and topography; geologic hazards; and gilsonite, tar sands, and oil shale; and other leasable, locatable, and salable minerals within the MBPA would be proportionately less under Alternative B. Under the No Action Alternative, approximately 54 acres (0.2 percent) of KOSLAs and 38 acres (0.3 percent) STSAs within the MBPA would be impacted by surface disturbance.</p>	<p>would have an additional 179 acres of surface disturbance due to the installation of transmission lines and substations.</p> <p>Correspondingly, impacts to physiography and topography; geologic hazards; oil and gas resources; and gilsonite, tar sands, and oil shale; and other leasable, locatable, and salable minerals within the MBPA would be identical to those described for the Proposed Action.</p>	<p>the Alternative D, as 5,058 new oil and gas wells would be developed on BLM, State and private lands or minerals in the MBPA.</p> <p>Development of the 5,058 wells proposed under the Alternative D would result in a potential recovery of an estimated 294 MMBO over the LOP, decreasing the presumed total available oil reserves in the Uinta Basin by approximately 5.4 percent. In addition, implementation of Alternative D would yield approximately 6.4 Tcf of natural gas over the LOP, thus decreasing the total estimated reserves of natural gas in the Uinta Basin by approximately 25 percent.</p> <p>Correspondingly, impacts to physiography and topography; geologic hazards; and gilsonite, tar sands, and oil shale; and other leasable, locatable, and salable minerals within the MBPA would be proportionately less under Alternative D. Under this alternative, approximately 1,207 acres (5 percent) of KOSLAs and 1,179 acres (8 percent) STSAs within the MBPA would be impacted by surface disturbance.</p>
Paleontology	Potential indirect adverse impacts on paleontological resource (under any	Impacts to paleontological resources under the No Action Alternative	Impacts similar in nature and scope to the Proposed Action.	Impacts to geological and mineral resources under Alternative D would

Resource	Alternative A – Proposed Action Impacts	Alternative B – No Action Alternative Impacts	Alternative C – Field-wide Electrification	Alternative D – Resource Protection Alternative
	<p>alternative) are most likely to occur where maintenance or future-proposed actions occur in areas containing the bedrock strata of the Green River and Uinta formations. These activities include the grading of access roads, the blading of production-related areas of well pads and infrastructure components (i.e., compressor stations, gas processing plant, pump stations, etc.).</p> <p>For the Proposed Action, a total of 10,066 acres of Potential Fossil Yield Classification System (PFYC) Class 2, 3, and 5 lands (approximately 8 percent of the MBPA) would be involved in surface-disturbing activities. Approximately 67 percent (6,691 acres) of the disturbance from the Proposed Action would occur on Class 5 land (i.e., land having the highest potential for fossil material). In addition, approximately 23 percent of the proposed disturbance would occur on Class 2 land (i.e., land having the lowest potential for fossil material), and approximately 10 percent would occur on Class 3 land (i.e., land having moderate or unknown potential for fossil material). The Proposed Action would result in the second highest total surface disturbance in paleontological sensitive land (10,066 acres), second to Alternative C, which would involve a total of approximately 10,621 acres.</p>	<p>would be similar in nature and scope to those described for the Proposed Action. However, potential impacts would be considerably less under the No Action Alternative because only 788 new oil and gas wells would be developed on BLM, State, and private lands in the MBPA. The overall surface disturbance would be approximately 870 acres.</p> <p>Under Alternative B, impacts to fossil resources would result in approximately 465 acres of surface disturbance on PFYC Class 2, 3, and 5 lands. Approximately 243 acres (52 percent) of the potential disturbance for Alternative B would occur on Class 5 land. Indirect adverse impacts to paleontological resources associated with an expanded road network would result from 23 miles of new roads.</p>		<p>be similar in nature to those described for the Proposed Action. However, potential impacts would be less because only 5,058 new oil and gas wells would be developed on BLM, State, and private lands or minerals in the MBPA. Overall surface disturbance would be approximately 9,805 acres. Under the Alternative D, approximately 73 miles of new roads would be constructed, which would increase the potential for illegal fossil collection above existing conditions. However, as this is approximately 170 fewer miles of road than the Proposed Action, the increase in risk of illegally fossil collections is smaller in comparison.</p> <p>For Alternative D, a total of 6,872 acres of PFYC-classified areas would be disturbed</p>

Resource	Alternative A – Proposed Action Impacts	Alternative B – No Action Alternative Impacts	Alternative C – Field-wide Electrification	Alternative D – Resource Protection Alternative
Soils	Under the Proposed Action impacts include to soil resources include soil exposure and compaction, loss of soil productivity and topsoil, increased susceptibility of soil to erosion, and increased sediment yield. An estimated annual sediment load of 254 tons (above the natural background erosion) is expected to be delivered to the drainages in the MBPA over the long-term (production phase).	Under the No Action Alternative, impacts would be similar to the Proposed Action but reduced in scope. An estimated annual sediment load of 189 tons (above the natural background erosion) is expected to be delivered to the drainages over the long-term (production phase).	Under Alternative C, impacts are similar to the Proposed Action. An estimated annual sediment load of 254 tons (above the natural background erosion) is expected to be delivered to the drainages over the long-term (production phase).	Under Alternative D, impacts are similar to the Proposed Action but slightly reduce in scope. An estimated annual sediment load of 205 tons (above the natural background erosion) is expected to be delivered to the drainages over the long-term (production phase).
Water Resources	Under the Proposed Action impacts to water resources would include reductions in available surface water and groundwater resources and increased TDS, selenium, and boron concentrations in surface waters. During the Production Phase, this alternative would increase surface water use, ground water use, and sediment yield by 382 acre-feet/year, 1,063 acre-feet, year, and 7 tons/year, respectively, over existing conditions.	Under the No Action Alternative, impacts to water resources would be similar to the Proposed Action but reduced in scale. During the Production Phase, this alternative would increase surface water use, ground water use, and sediment yield by 369 acre-feet/year, 0 acre-feet, year, and 0 tons/year, respectively, over existing conditions.	Under Alternative C impacts to water resources would be similar to the Proposed Action. During the Production Phase, this alternative would increase surface water use, ground water use, and sediment yield by 382 acre-feet/year, 1,063 acre-feet, year, and 7 tons/year, respectively, over existing conditions.	Under Alternative D impacts would be similar to the Proposed Action. During the Production Phase, this alternative would increase surface water use, ground water use, and sediment yield by 382 acre-feet/year, 2,646 acre-feet, year, and 4 tons/year, respectively, over existing conditions.
Vegetation	The Proposed Action would result in the direct, short-term loss of approximately 16,129 acres of vegetation; increased potential for noxious weed invasion; exposure of soils to elevated erosion and soil compaction; shifts in overall species composition and/or changes in plant density; potential loss of productive agricultural land for the LOP; increased potential for wildfires; increased fugitive dust which if	The No Action Alternative would result in the direct, short-term loss of approximately 870 acres of vegetation; increased potential for noxious weed invasion; exposure of soils to elevated erosion and soil compaction; shifts in overall species composition and/or changes in plant density; potential loss of productive agricultural land for the LOP; increased potential for wildfires; increased fugitive dust which if	Alternative C would result in the direct, short-term loss of approximately 16,308 acres of vegetation; increased potential for noxious weed invasion; exposure of soils to elevated erosion and soil compaction; shifts in overall species composition and/or changes in plant density; potential loss of productive agricultural land for the LOP; increased potential for wildfires; increased fugitive dust	Alternative D would result in the direct, short-term loss of approximately 349 acres of vegetation; increased potential for noxious weed invasion; exposure of soils to elevated erosion and soil compaction; shifts in overall species composition and/or changes in plant density; potential loss of productive agricultural land for the LOP; increased potential for wildfires; increased fugitive dust which if

Resource	Alternative A – Proposed Action Impacts	Alternative B – No Action Alternative Impacts	Alternative C – Field-wide Electrification	Alternative D – Resource Protection Alternative
	<p>deposited on plants could inhibit photosynthesis and transpiration; and the short-term loss of 677 acres of wetland vegetation. Potential impacts to wetland areas would result from increased sediment loads and potential for contamination from accidental spills.</p>	<p>deposited on plants could inhibit photosynthesis and transpiration; and the short-term loss of 32 acres of wetland vegetation. Potential impacts to wetland areas would result from increased sediment loads and potential for contamination from accidental spills.</p> <p>Indirect impacts to vegetation communities would be lowest under the No Action Alternative as substantially lower level of development would occur when compared to the action alternatives.</p>	<p>which if deposited on plants could inhibit photosynthesis and transpiration; and the short-term loss of 687 acres of wetland vegetation. Potential impacts to wetland areas would result from increased sediment loads and potential for contamination from accidental spills.</p> <p>Disturbance and project activity within the ROW for the proposed transmission lines would represent an increased potential for the spread of noxious weeds over other alternatives.</p>	<p>deposited on plants could inhibit photosynthesis and transpiration; and the short-term loss of 687 acres of wetland vegetation. Potential impacts to wetland areas would result from increased sediment loads and potential for contamination from accidental spills.</p> <p>Alternative D would result in the lowest direct and indirect impacts to vegetation of all action alternatives.</p>
Range	<p>Under all alternatives, the primary direct impact to livestock use in the MBPA would be the amount of available forage lost as a result of proposed ground-disturbing actions.</p> <p>Under the Proposed Action, approximately 16,129 acres of vegetation would be removed within the MBPA as a result of new surface disturbance-related activities, 15,137 acres of which would occur within portions of the six grazing allotments contained wholly or partially within the MBPA. This would result in a total loss of approximately 1,682 AUMs.</p>	<p>Under the No Action Alternative, approximately 870 acres of vegetation would be removed within the MBPA as a result of new surface disturbance-related activities, 792 acres of which would occur within portions of the six grazing allotments contained wholly or partially within the MBPA. This would result in a total loss of approximately 88 AUMs, which is approximately 95 percent less than what would be expected under the Proposed Action.</p>	<p>Direct and indirect impacts to range resources under Alternative C would be nearly identical to those as the Proposed Action, except that Alternative C would have an additional 179 acres of surface disturbance due to the installation of transmission lines and substations. Implementation of Alternative C would result in the direct disturbance of 16,308 acres of vegetation, 15,383 acres of which would occur within portions of the six grazing allotments contained wholly or partially within the MBPA. This would result in a total loss of approximately 1,709 AUMs, which is approximately 2 percent greater than what would be expected under the Proposed Action.</p>	<p>Direct and indirect impacts to vegetation resources under Alternative D would be similar in nature and scale to those described for the Proposed Action. However, the magnitude of potential impacts would be less under Alternative D because 692 fewer oil and gas wells would be drilled; fewer new well pads would be constructed; and the amount of new surface disturbance would be minimized through the increased use of multi-well pads and directional drilling technology.</p> <p>Implementation of Alternative D would result in the direct disturbance of 9,805 acres of vegetation, 9,080 acres of which would occur within portions of the six grazing allotments contained wholly or partially within the MBPA. This would result in a</p>

Resource	Alternative A – Proposed Action Impacts	Alternative B – No Action Alternative Impacts	Alternative C – Field-wide Electrification	Alternative D – Resource Protection Alternative
				total loss of approximately 1,009 AUMs, which is approximately 40 percent less than that of the Proposed Action.
Fish and Wildlife	<p>Under the Proposed Action potential impacts include the disturbance of approximately 11,163 acres of suitable wildlife habitat. Habitat loss and fragmentation would result from the disturbance of approximately 14,403 acres of year-long crucial and 273 acres of year-long substantial pronghorn habitats; 700 acres of substantial winter, 232 acres of substantial year-long and 89 acres of crucial year-long mule deer habitats; and 1,511 acres of substantial winter and 1,011 acres of crucial year-long elk habitats.</p> <p>Indirect impacts would include decreased value and degradation of habitat adjacent to disturbed areas and roadways; increased potential for wildlife harassment and poaching; increased potential for vehicle collisions; potential for additional stress from noise and human activity during the reproductive period resulting lowered fecundity or nest abandonment; increased intra- and inter-specific competition for resources; and exposure to contaminants located in reserve pits.</p> <p>Wetland and aquatic habitats could be impacted by increased soil erosion, sediment yield, degradation of surface</p>	<p>Under the No Action Alternative potential impacts include the disturbance of approximately 683 acres of suitable wildlife habitat. Habitat loss and fragmentation would result from the disturbance of approximately 656 of year-long crucial pronghorn habitat; 55 acres of substantial winter, 66 acres of substantial year-long and <1 acre of crucial year-long mule deer habitats; and 61 acres of substantial winter and 104 acres of crucial year-long elk habitats.</p> <p>Indirect impacts would include decreased value and degradation of habitat adjacent to disturbed areas and roadways; increased potential for wildlife harassment and poaching; increased potential for vehicle collisions; potential for additional stress from noise and human activity during the reproductive period resulting lowered fecundity or nest abandonment; increased intra- and inter-specific competition for resources; and exposure to contaminants located in reserve pits. Indirect impacts would be smallest in magnitude when compared to the action alternatives as the No Action Alternative represents the smallest degree of disturbance and human</p>	<p>Under Alternative C potential impacts include the disturbance of approximately 11,338 acres of suitable wildlife habitat. Habitat loss and fragmentation would result from the disturbance of approximately 14,967 acres of year-long crucial and 287 acres of year-long substantial pronghorn habitats; 720 acres of substantial winter, 244 acres of substantial year-long and 109 acres of crucial year-long mule deer habitats; and 1,714 acres of substantial winter and 1,012 acres of crucial year-long elk habitats.</p> <p>Indirect impacts would include decreased value and degradation of habitat adjacent to disturbed areas and roadways; increased potential for wildlife harassment and poaching; increased potential for vehicle collisions; potential for additional stress from noise and human activity during the reproductive period resulting lowered fecundity or nest abandonment; increased intra- and inter-specific competition for resources; and exposure to contaminants located in reserve pits. The installation of above ground power lines would increase the potential for bird and raptor</p>	<p>Under Alternative D potential impacts include the disturbance of approximately 6,103 acres of suitable wildlife habitat. Habitat loss and fragmentation would result from the disturbance of approximately 8,960 acres of year-long crucial and 181 acres of year-long substantial pronghorn habitats; 396 acres of substantial winter, 121 acres of substantial year-long and 14 acres of crucial year-long mule deer habitats; and 1,278 acres of substantial winter and 553 acres of crucial year-long elk habitats.</p> <p>Indirect impacts would include decreased value and degradation of habitat adjacent to disturbed areas and roadways; increased potential for wildlife harassment and poaching; increased potential for vehicle collisions; potential for additional stress from noise and human activity during the reproductive period resulting lowered fecundity or nest abandonment; increased intra- and inter-specific competition for resources; and exposure to contaminants located in reserve pits. Indirect impacts under Alternative D would be lower in magnitude than those described under Alternative D as this alternative has the lowest</p>

Resource	Alternative A – Proposed Action Impacts	Alternative B – No Action Alternative Impacts	Alternative C – Field-wide Electrification	Alternative D – Resource Protection Alternative
	water quality, and potential for spills and leaks.	activity. Wetland and aquatic habitats could be impacted by increased soil erosion, sediment yield, degradation of surface water quality, and potential for spills and leaks.	electrocution. Wetland and aquatic habitats could be impacted by increased soil erosion, sediment yield, degradation of surface water quality, and potential for spills and leaks.	surface disturbance. Wetland and aquatic habitats could be impacted by increased soil erosion, sediment yield, degradation of surface water quality, and potential for spills and leaks.
Special Status Plant Species	<p>The Proposed Action would result in the initial disturbance of approximately 7,762 acres of USFWS-designated <i>Sclerocactus</i> habitat, of which 946 acres would occur in Level 1 Core Conservation Areas and 1,853 acres would occur in Level 2 Core Conservation Areas. Under the Proposed Action approximately 35 acres of wetland vegetation that maybe utilized by the Ute ladies' -tresses would be disturbed. The Proposed Action would also result in the loss of habitat for other state listed special status species within the MBPA.</p> <p>Indirect impacts to special status plant species include the increased potential for noxious weed invasion; increased risk of wildfire; increased fugitive dust, which may inhibit photosynthesis; increased risk of herbicide exposure; fragmentation of habitat and seed dispersion channels; and increased risk of illegal collection.</p> <p>The Proposed Action <i>may affect, is likely to adversely affect</i> the Uinta Basin hookless cactus, Pariette</p>	<p>The No Action Alternative would result in the initial disturbance of approximately 172 acres of USFWS-designated <i>Sclerocactus</i> habitat, of which 6 acres would occur in Level 1 Core Conservation Areas and 69 acres would occur in Level 2 Core Conservation Areas. The No Action Alternative would also result in the loss of habitat for other state listed special status species within the MBPA.</p> <p>Indirect impacts to special status plant species include the increased potential for noxious weed invasion; increased risk of wildfire; increased fugitive dust, which may inhibit photosynthesis; increased risk of herbicide exposure; fragmentation of habitat and seed dispersion channels; and increased risk of illegal collection.</p> <p>The No Action Alternative <i>may affect, is likely to adversely affect</i> the Uinta Basin hookless cactus, Pariette cactus, and their habitats.</p> <p>The No Action Alternative <i>may affect, is not likely to adversely</i></p>	<p>Alternative C would result in the initial disturbance of approximately 7,846 acres of USFWS-designated <i>Sclerocactus</i> habitat, of which 951 acres would occur in Level 1 Core Conservation Areas and 1,889 acres would occur in Level 2 Core Conservation Areas. Approximately 35 acres of wetland vegetation that maybe utilized by the Ute ladies -tresses would be disturbed. Alternative C would also result in the loss of habitat for other state listed special status species within the MBPA.</p> <p>Indirect impacts to special status plant species include the increased potential for noxious weed invasion; increased risk of wildfire; increased fugitive dust, which may inhibit photosynthesis; increased risk of herbicide exposure; fragmentation of habitat and seed dispersion channels; and increased risk of illegal collection. Indirect impacts would be similar in scope and magnitude to those under the Proposed Action.</p> <p>Alternative C <i>may affect, is likely</i></p>	<p>Alternative D would result in the initial disturbance of approximately 4,307 acres of USFWS-designated <i>Sclerocactus</i> habitat, of which 1,093 acres would occur in Level 2 Core Conservation Areas. Disturbance within Level 2 Areas would be limited to expanding existing infrastructure. No loss of Ute ladies' tresses habitat is anticipated. Alternative D would also result in the loss of habitat for other state listed special status species within the MBPA.</p> <p>Indirect impacts to special status plant species include the increased potential for noxious weed invasion; increased risk of wildfire; increased fugitive dust, which may inhibit photosynthesis; increased risk of herbicide exposure; fragmentation of habitat and seed dispersion channels; and increased risk of illegal collection.</p> <p>Alternative D <i>may affect, is likely to adversely affect</i> the Uinta Basin hookless cactus, Pariette cactus, and their habitats.</p>

Resource	Alternative A – Proposed Action Impacts	Alternative B – No Action Alternative Impacts	Alternative C – Field-wide Electrification	Alternative D – Resource Protection Alternative
	<p>cactus, and their habitats.</p> <p>The Proposed Action <i>may affect, is not likely to adversely affect</i> the Ute ladies'-tresses.</p>	<p><i>affect</i> the Ute ladies'-tresses.</p>	<p><i>to adversely affect</i> the Uinta Basin hookless cactus, Pariette cactus, and their habitats.</p> <p>Alternative C <i>may affect, is not likely to adversely affect</i> the Ute ladies'-tresses.</p>	<p>Alternative D <i>may affect, is not likely to adversely affect</i> the Ute ladies'-tresses.</p>
<p>Special Status Animal Species</p>	<p>The Proposed Action would result in the loss of approximately 19 acres of western yellow-billed cuckoo nesting and foraging habitat. The withdrawal of approximately 3,966 acre-feet of water annually for construction and operation would directly impact habitat for the Colorado River fish via depletion. Increased erosion in the MBPA would increase sediment yields into the Green River by 62 tons annually. Approximately 71 acres of mountain plover concentration areas would be disturbed. The Proposed Action would also result in the loss of habitat that could be utilized for nesting and foraging by other state listed special status species within the MBPA.</p> <p>Disturbance in nesting habitats during the nesting season could result in the direct loss of eggs, nests, and young.</p> <p>Potential indirect impacts to special status animal species could include displacement from adjacent habitats and nesting areas due to increased noise, light, traffic, dust, and human presence; habitat fragmentation; loss of suitable habitat from noxious weed</p>	<p>The No Action Alternative would result in the loss of approximately 1 acre of western yellow-billed cuckoo nesting and foraging habitat. The withdrawal of approximately 884 acre-feet of water annually for construction and operation would directly impact habitat for the Colorado River fish via depletion. Increased erosion in the MBPA would increase sediment yields into the Green River by 49 tons annually. The No Action Alternative would also result in the loss of habitat that could be utilized for nesting and foraging by other state listed special status species within the MBPA.</p> <p>Disturbance in nesting habitats during the nesting season could result in the direct loss of eggs, nests, and young.</p> <p>Potential indirect impacts to special status animal species could include displacement from adjacent habitats and nesting areas due to increased noise, light, traffic, dust, and human presence; habitat fragmentation; loss of suitable habitat from noxious weed invasion; decreased water</p>	<p>Alternative C would result in the loss of approximately 20 acres of western yellow-billed cuckoo nesting and foraging habitat. The withdrawal of approximately 3,966 acre-feet of water annually for construction and operation would directly impact habitat for the Colorado River fish via depletion. Increased erosion in the MBPA would increase sediment yields into the Green River by 62 tons annually. Approximately 79 acres of mountain plover concentration areas would be disturbed. Alternative C would also result in the loss of habitat that could be utilized for nesting and foraging by other state listed special status species within the MBPA.</p> <p>Disturbance in nesting habitats during the nesting season could result in the direct loss of eggs, nests, and young.</p> <p>Potential indirect impacts to special status animal species could include displacement from adjacent habitats and nesting areas due to increased noise, light, traffic, dust, and human</p>	<p>Alternative D would result in the loss of approximately 1 acre of western yellow-billed cuckoo nesting and foraging habitat. The withdrawal of approximately 5,153 acre-feet of water annually for construction and operation would directly impact habitat for the Colorado River fish via depletion. Alternative D requires the largest water withdrawal as it has the most underground injection wells. Increased erosion in the MBPA would increase sediment yields into the Green River by 56 tons annually. Approximately 71 acres of mountain plover concentration areas would be disturbed. Alternative D would also result in the loss of habitat that could be utilized for nesting and foraging by other state listed special status species within the MBPA. Impacts to wetland and riparian habitat would be lowest as no disturbance would be allowed in the Pariette ACEC.</p> <p>Disturbance in nesting habitats during the nesting season could result in the direct loss of eggs, nests, and young.</p> <p>Potential indirect impacts to special status animal species include</p>

Resource	Alternative A – Proposed Action Impacts	Alternative B – No Action Alternative Impacts	Alternative C – Field-wide Electrification	Alternative D – Resource Protection Alternative
	<p>invasion; decreased water quality; increased erosion and sedimentation; depleted flow within the Colorado River Basin; increased potential for accidental spills exposure to hazardous chemicals that may be present in reserve pits; increased potential for vehicle collision; alteration of surface water drainages; decreased physical health of individual animals due to anthropogenic stresses; increased potential for poaching; and loss of prey habitat.</p> <p>The Proposed Action is <i>likely to result in a trend towards federal listing</i> of the western yellow-billed cuckoo.</p> <p>The Proposed Action <i>may affect, is likely to adversely affect</i> the Colorado River fish species.</p>	<p>quality; increased erosion and sedimentation; depleted flow within the Colorado River Basin; increased potential for accidental spills exposure to hazardous chemicals that may be present in reserve pits; increased potential for vehicle collision; alteration of surface water drainages; decreased physical health of individual animals due to anthropogenic stresses; increased potential for poaching; loss of prey habitat. Indirect impacts would be lowest under the No Action Alternative as the least amount of development is proposed.</p> <p>The No Action Alternative is <i>likely to result in a trend towards federal listing</i> of the western yellow-billed cuckoo.</p> <p>The No Action Alternative <i>may affect, is likely to adversely affect</i> the Colorado River fish species.</p>	<p>presence; habitat fragmentation; loss of suitable habitat from noxious weed invasion; decreased water quality; increased erosion and sedimentation; depleted flow within the Colorado River Basin; increased potential for accidental spills exposure to hazardous chemicals that may be present in reserve pits; increased potential for vehicle collision; alteration of surface water drainages; decreased physical health of individual animals due to anthropogenic stresses; increased potential for poaching; loss of prey habitat. Indirect impacts would be similar in scope and magnitude to those under the Proposed Action. New power lines would create an increased risk for electrocution of avian species.</p> <p>Alternative C is <i>likely to result in a trend towards federal listing</i> of the western yellow-billed cuckoo.</p> <p>Alternative C <i>may affect, is likely to adversely affect</i> the Colorado River fish species.</p>	<p>displacement from adjacent habitats and nesting areas due to increased noise, light, traffic, dust, and human presence; habitat fragmentation; loss of suitable habitat from noxious weed invasion; decreased water quality; increased erosion and sedimentation; depleted flow within the Colorado River Basin; increased potential for accidental spills exposure to hazardous chemicals that may be present in reserve pits; increased potential for vehicle collision; alteration of surface water drainages; decreased physical health of individual animals due to anthropogenic stresses; increased potential for poaching; loss of prey habitat. Indirect impacts would be the least intense of all the action alternatives.</p> <p>Alternative D is <i>likely to result in a trend towards federal listing</i> of the western yellow-billed cuckoo.</p> <p>Alternative D <i>may affect, is likely to adversely affect</i> the Colorado River fish species.</p>
Land Use and Transportation	<p>Implementation of the Proposed Action would result in the initial disturbance of approximately 16,129 acres, which would be reduced to approximately 7,808 acres following interim reclamation. Infill development under the Proposed Action would increase the levels of construction, drilling, completion,</p>	<p>Implementation of the No Action Alternative would result in the initial disturbance of approximately 870 acres, which would be reduced to approximately 659 acres following interim reclamation. Land use impacts would be similar to those under the Proposed Action, but would be substantially less due to</p>	<p>Implementation of Alternative C would result in the initial disturbance of approximately 16,308 acres, which would be reduced to approximately 7,925 acres following interim reclamation. Land use impacts would be similar to those under the Proposed Action.</p>	<p>Implementation of Alternative D would result in the initial disturbance of approximately 9,805 acres, which would be reduced to approximately 2,818 acres following interim reclamation. Land use impacts would be similar to those under the Proposed Action, but would be less due to fewer wells being drilled.</p>

Resource	Alternative A – Proposed Action Impacts	Alternative B – No Action Alternative Impacts	Alternative C – Field-wide Electrification	Alternative D – Resource Protection Alternative
	<p>and production activities already occurring in the MBPA and would contribute to the general semi-industrial setting. Construction of additional pipelines and increased traffic on roads co-located with pipelines may potentially impact the integrity of existing ROWs within the MBPA.</p> <p>An estimated 243 miles of new roads would be necessary under the Proposed Action. The projected maximum daily increase in trips per day for the Proposed Action would be 25 heavy truck trips and 10 light truck trips per well during well drilling and completion, and approximately 1,725 trips per day during well production, routine well maintenance, and periodic well stimulation and removal of produced water.</p> <p>Increased traffic would increase the risk of vehicle accidents that could result in damage or rupture to surface pipelines adjacent to roads.</p>	<p>fewer wells being drilled.</p> <p>An estimated 23 miles of new roads would be necessary under this alternative. The projected maximum daily increase in trips would be approximately 233 trips per day and 25 heavy truck trips and 10 light truck trips per well. Transportation impacts would be similar to those under the Proposed Action, but would be substantially less due to fewer wells being drilled.</p>	<p>An estimated 243 miles of new roads would be necessary under this alternative. The projected maximum daily increase in trips per day would be approximately 1,735 trips and 25 heavy truck trips and 10 light truck trips per well. Transportation impacts would be similar to those under the Proposed Action.</p>	<p>An estimated 73 miles of new roads would be necessary under this alternative. The projected maximum daily increase in trips would be approximately 1,517 trips per day and 25 heavy truck trips and 10 light truck trips per well. Transportation impacts would be similar to those under the Proposed Action, but would be less due to fewer wells being drilled.</p>
Cultural Resources	<p>Implementation of any of the alternatives could result in adverse effects to cultural resources. An adverse effect is found when an undertaking may alter (directly or indirectly) any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the</p>	<p>Under the No Action Alternative, developments could directly affect at least 870 acres in the MBPA Given the average site density of six sites per square mile, approximately 8 potential sites could be located in proposed new disturbance areas. Surface-disturbing activities including construction of well pads, access roads, pipelines, and central</p>	<p>Under Alternative C, direct and indirect effects due to surface disturbance would be similar to those described under the Proposed Action. However, developments under Alternative C would directly affect approximately 16,308 acres, which include 55 additional acres for 11 new substations and 124 acres for the installation of the</p>	<p>Under Alternative D, development of well pads, access roads, pipelines, and central facilities would result in approximately 9,805 acres of surface disturbance, which is 6,324 fewer acres than what is included in the Proposed Action. Given the average site density of six sites per square mile, approximately 60 potential sites could be located in proposed new</p>

Resource	Alternative A – Proposed Action Impacts	Alternative B – No Action Alternative Impacts	Alternative C – Field-wide Electrification	Alternative D – Resource Protection Alternative
	<p>property’s location, design, setting, materials, workmanship, feeling, or association (36 CFR 800.5[a][1]).</p> <p>Adverse effects include:</p> <ul style="list-style-type: none"> • Physical destruction of or damage to all or part of the property; • Alteration or removal of a property from its historic location; • Change in the character of the property’s use or the physical features within the property’s setting; • Introduction of visible, audible, or atmospheric elements out of character with the significant historic features of the property; • Neglect leading to deterioration or vandalism; and • Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property’s historic significance (36 CFR 800.5[a][2]). <p>However, the above-mentioned effects are unlikely to be adverse because of implementation of the ACEPMs identified in Section 2.2.12.8 of the EIS and compliance with Section 106 of the NHPA. Dust control ACEPMs outlined in Section 2.2.12.1 would also be implemented to reduce indirect effects to cultural resources.</p>	<p>facilities could directly affect cultural resources. Above-ground facilities, secondary surface activities, and operation and maintenance activities could indirectly affect cultural resources and contribute to an alteration of the overall setting and feeling of the MBPA.</p> <p>The direct and indirect effects of the No Action Alternative would be similar to those outlined under the Proposed Action but their extent would be reduced.</p>	<p>proposed transmission lines. Therefore, initial surface disturbance would be nearly identical to that of the Proposed Action, except that Alternative C would have an additional 179 acres of total surface disturbance due to the installation of transmission lines and substations. Given the average site density of six sites per square mile, approximately 153 potential sites could be located in proposed new disturbance areas under Alternative C.</p> <p>However, the above-mentioned effects are unlikely to be adverse because of implementation of the ACEPMs identified in Section 2.2.12.8 of the EIS and compliance with Section 106 of the NHPA. Dust control ACEPMs outlined in Section 2.2.12.1 would also be implemented to reduce indirect effects to cultural resources.</p>	<p>disturbance areas.</p> <p>Under Alternative D, direct and indirect effects due to surface disturbance would be similar to those described under the Proposed Action. However, under Alternative D, the extent of direct and indirect effects would be reduced and are unlikely to be adverse.</p> <p>However, adverse effects are unlikely because of implementation of the ACEPMs identified in Section 2.2.12.8 of the EIS and compliance with Section 106 of the NHPA. Dust control ACEPMs outlined in Section 2.2.12.1 would also be implemented to reduce indirect effects to cultural resources.</p>
Recreation	The Proposed Action could result in short-term impacts to recreation due	Under the No Action Alternative, both short-term and long-term	Under Alternative C, short-term impacts would be similar to those	Under Alternative D short-term and long-term impacts would be similar

Resource	Alternative A – Proposed Action Impacts	Alternative B – No Action Alternative Impacts	Alternative C – Field-wide Electrification	Alternative D – Resource Protection Alternative
	<p>to project-related construction, operation and maintenance activities, which would include increased noise, dust, traffic, visual intrusions, and increased industrial presence. Long-term adverse effects would include a decrease in some recreational opportunities due to the direct conversion of 7,808 acres of land to well field facilities, adverse visual impacts for river recreationists, and disturbance of wetland areas. Potential long-term beneficial effects on recreation under the Proposed Action would include increased access to recreational opportunities due to 243 miles of new roads. Motorized and mechanized users would receive the greatest benefits from the increased access.</p>	<p>impacts would be similar to those described for the Proposed Action, but would be substantially less due to less well development. There would be a decrease in recreational opportunities due to the direct conversion of 659 acres of land to well-drilling facilities, but increased access to recreational opportunities due to 23 miles of new roads.</p>	<p>described for the Proposed Action. Long-term impacts would be similar to those described for the Proposed Action; however, field-wide electrification would result in additional visual impacts and intrusions that could further diminish the recreational experience for visitors to the MBPA, particularly those visiting the Pariette Wetlands ACEC. There would be a decrease in recreational opportunities due to the direct conversion of 7,925 acres of land to well-drilling facilities, but increased access to recreational opportunities due to 243 miles of new roads.</p>	<p>to those described for the Proposed Action, but would be less due to reduced well development. There would be a decrease in recreational opportunities due to the direct conversion of 2,818 acres of land to well-drilling facilities, but increased access to recreational opportunities due to 73 miles of new roads.</p>
<p>Visual Resources</p>	<p>Under the Proposed Action, approximately 2,452 acres of initial surface disturbance would occur in VRM Class III designated areas, and about 11,270 acres of initial disturbance would occur in VRM Class IV designated areas. Proposed development within the designated VRM Class III and Class IV areas would be consistent with management objectives for these visual classes. Only one acre of VRM Class II land would be disturbed, due to existing roads that would require improvement or upgrade.</p> <p>Short-term effects on visual resources</p>	<p>Under the No Action Alternative, approximately 7 acres of initial surface disturbance would occur in VRM Class III designated areas, and about 69 acres of initial disturbance would occur in VRM Class IV designated areas. No VRM Class II land would be disturbed. Both short-term and long-term impacts would be similar to those described for the Proposed Action, but would be substantially less due to less well development.</p>	<p>Under Alternative C, approximately 2,496 acres of initial surface disturbance would occur in VRM Class III designated areas, and about 11,463 acres of initial disturbance would occur in VRM Class IV designated areas. Only one acre of VRM Class II land would be disturbed, due to existing roads that would require improvement or upgrade.</p> <p>Both short-term and long-term impacts would be similar to those described for the Proposed Action. However, with the installation of power lines and substations to support well operations, this</p>	<p>Under Alternative D, approximately 964 acres of initial surface disturbance would occur in VRM Class III designated areas, and about 7,282 acres of initial disturbance would occur in VRM Class IV designated areas. Approximately 14 acres of VRM Class II land would be disturbed.</p> <p>Both short-term and long-term impacts would be similar to those described for the Proposed Action. More VRM Class II lands would be disturbed under this alternative than under any other alternative; however, some of the initially disturbed area would be reclaimed after completion</p>

Resource	Alternative A – Proposed Action Impacts	Alternative B – No Action Alternative Impacts	Alternative C – Field-wide Electrification	Alternative D – Resource Protection Alternative
	<p>would be related to surface disturbance reclamation, and would diminish as vegetation becomes reestablished. However, the potential establishment of invasive species in surface-disturbed areas would increase the risks of wildland fire, and potentially alter short- and long-term scenic quality because of the visual contrasts created by fire. Long-term impacts could occur within relatively slow-growing shrub or woodland areas, where regrowth could take more than 5 years.</p> <p>Short-term impacts also would include drilling rig visibility at drilling locations. Long-term impacts would include pipeline, infrastructure and well pad visibility, as well as surface disturbances from well pad and access road construction.</p> <p>Other direct impacts associated with the Proposed Action would include artificial light and related light pollution (e.g., sky glow) from night lighting required for night-time drilling. Indirect visual effects would include vehicle-related fugitive dust, which could adversely impact long-distance scenic quality.</p>		<p>alternative would likely have greater visual impacts than the Proposed Action.</p>	<p>of well development, so the long-term disturbance would be less.</p>
Special Designations	<p>The relevant and important (R&I) values for which the Pariette Wetlands ACEC is designated include special-status bird and plant species habitat and wetland ecological systems and processes.</p>	<p>Under the No Action Alternative, no development would occur in the Pariette Wetlands ACEC. Therefore, the No Action Alternative would have no impact on special-status species habitat or wetland ecological</p>	<p>Under Alternative C, approximately 1,211 acres would be initially disturbed in the Pariette Wetlands ACEC. Impacts of Alternative C on wetland ecological processes and special-status species habitat</p>	<p>Under Alternative D, no new surface disturbance would occur within the Pariette Wetlands ACEC. Impacts of Alternative D on wetland ecological processes and special-status species habitat would be similar to those</p>

Resource	Alternative A – Proposed Action Impacts	Alternative B – No Action Alternative Impacts	Alternative C – Field-wide Electrification	Alternative D – Resource Protection Alternative
	<p>Under the Proposed Action, up to approximately 1,209 acres would be initially disturbed in the Pariette Wetlands ACEC.</p> <p>The R&I values for which the Lower Green River Corridor ACEC include riparian habitat and high-quality scenic values. Under the Proposed Action, approximately 0.02 acres would be disturbed within the Lower Green River Corridor ACEC, due to an existing ROW that would require improvement or upgrade. Impacts to riparian habitat in this ACEC are not anticipated.</p> <p>Well infrastructure would be visible from certain portions of the Lower Green River Corridor ACEC, thereby having an effect on scenic values</p> <p>Approximately 1.5 acres would be initially disturbed within the proposed Lower Green River WSR.</p> <p>Indirect impacts to the ORVs for which the Lower Green River was found eligible for designation could include possible auditory disturbance to recreational users on the river; potential visual intrusions in the middleground distance; and potential increases in sedimentation and depletion of the river.</p>	<p>processes within the ACEC.</p> <p>No development would occur within the Lower Green River Corridor ACEC. Therefore, there would be no substantial impact to the relevant and important values for which the ACEC was designated.</p> <p>No development would occur within the proposed Lower Green River WSR. Therefore, there would be no direct impacts to the ORVs in the immediate environment. Indirect impacts to the ORVs for which the Green River was found eligible for designation would be minimal, because no development would occur in the proposed WSR area.</p>	<p>would be similar to those described under the Proposed Action.</p> <p>Approximately 0.02 acres would be disturbed within the Lower Green River Corridor ACEC. Impacts on riparian habitat and high-quality scenic values would be similar to those described under the Proposed Action.</p> <p>Approximately 1.5 acres would be initially disturbed within the proposed Lower Green River WSR. Therefore, there would be no substantial direct impacts to the ORVs in the immediate environment, similar to conditions under the Proposed Action. Indirect impacts to the ORVs for which the Green River was found eligible for designation would be similar to those described under the Proposed Action</p>	<p>described under the Proposed Action, but would be less extensive due to the lack of surface disturbance within the ACEC.</p> <p>No development would occur within the Lower Green River Corridor ACEC. Impacts on riparian habitat and high-quality scenic values within this ACEC would be similar to those described under the No Action Alternative.</p> <p>Development of less than 6 acres would occur within the proposed Lower Green River WSR. Indirect impacts to the ORVs for which the Lower Green River was found eligible for designation could include possible auditory disturbance to recreational users on the river; potential visual intrusions in the middleground distance; and potential increases in sedimentation and depletion of the river.</p>
Socio-Economics	Because Duchesne and Uintah Counties have resource-based economies, the Proposed Action	Implementation of the No Action Alternative would employ approximately 468 workers on	Implementation of Alternative C would employ approximately 486 workers on average per day during	Implementation of Alternative D would employ approximately 473 workers on average per day during

Resource	Alternative A – Proposed Action Impacts	Alternative B – No Action Alternative Impacts	Alternative C – Field-wide Electrification	Alternative D – Resource Protection Alternative
	<p>would contribute to the population growth that is driven by the recent increase in oil and gas development. The Proposed Action would employ approximately 478 people on average per day throughout the construction phase, and 46 people on average per day throughout the operation and maintenance phase. In addition, jobs in the mining, construction, and services industries would increase to serve the people employed in well construction and operations.</p> <p>Based on a total of 5,750 wells proposed under the Proposed Action, net local revenue annually would total a maximum of approximately \$162.2 million to the combined Uintah County and Duchesne County economies.</p> <p>Duchesne and Uintah Counties would also expect increased property tax revenues from existing levels as more oil and gas wells become productive.</p> <p>The anticipated increase in population would increase the need for social services and infrastructure. Increased revenues from well construction and production would provide affected jurisdictions with additional funding for their services; however, it is not known if the additional funds would adequately cover the costs for providing additional services.</p> <p>Immigrants who would work under the Proposed Action would find</p>	<p>average per day during the construction phase, and 24 workers on average per day during the operation and maintenance phase. Based on a total of 778 wells proposed under this alternative, net local revenue annually would total a maximum of approximately \$21.8 million to the combined Uintah County and Duchesne County economies. Impacts would be similar to those described for the Proposed Action, but would be substantially less due to less well development.</p>	<p>the construction phase, and 46 workers on average per day during the operation and maintenance phase. Based on a total of 5,750 wells proposed under this alternative, net local revenue annually would total a maximum of approximately \$162.2 million to the combined Uintah County and Duchesne County economies. Impacts would be similar to those described for the Proposed Action.</p>	<p>the construction phase, and 44 workers on average per day during the operation and maintenance phase. Based on a total of 5,058 wells proposed under this alternative, net local revenue annually would total a maximum of approximately \$142.6 million to the combined Uintah County and Duchesne County economies. Impacts would be similar to those described for the Proposed Action, but would be less due to less well development.</p>

Resource	Alternative A – Proposed Action Impacts	Alternative B – No Action Alternative Impacts	Alternative C – Field-wide Electrification	Alternative D – Resource Protection Alternative
	housing that is available and affordable.			
Environmental Justice	No disproportionately high or adverse human health or environmental impacts on low-income, minority, or Tribal populations would occur as a result of the Proposed Action. An increase in direct and indirect employment opportunities for members of the EJ communities could be provided as a result of the Proposed Action.	Impacts would be similar to the Proposed Action, but would be substantially less due to less well development, including the potential employment impacts.	Impacts would be similar to the Proposed Action.	Impacts would be similar to the Proposed Action, but would be less due to less well development, including the potential employment impacts.

CUMULATIVE IMPACTS

Chapter 5 of the Draft EIS analyzes the cumulative impacts to specific resource values and uses that could occur from implementation of the Proposed Action and the other alternatives, in conjunction with other impacts from past, ongoing, and reasonably foreseeable future actions. In addition to the evaluation of direct impacts, NEPA regulations require an assessment of cumulative impacts (40 C.F.R § 1508.7, 1508.25). CEQ regulations implementing NEPA define a cumulative impact as:

“... The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”

The following sections identify the time frame for effects; the past, present, and reasonably foreseeable future projects to be analyzed; and the cumulative impacts for each resource. The primary human influences in the area have been oil and gas development, historic and current gilsonite mining, and livestock grazing. The compilation of these actions provides the basis for estimating future environmental changes that may affect the extent and quality of the natural and human environment.

The geographic scope of each specific Cumulative Impact Analysis Area (CIAA) varies by resource and is larger for resources that are mobile or migrate as compared to those that are stationary. The CIAA for many of the resources discussed in this section includes the watersheds that intersect the MBPA. For some resources, the CIAA is smaller due to the geographically confined nature of cumulative impacts (e.g., areas of special designation), while for others (e.g., socioeconomics) the CIAA is much larger and includes both Duchesne and Uintah Counties. **Table ES-3** identifies the CIAAs for individual resources and resource issues as well as the rationale for the selection of each area.

In general, the timeframe of the analysis is the 41 to 51-year anticipated life of project (LOP) anticipated under the Proposed Action and Alternative C. However, the timeframe of cumulative impacts may vary from one resource value or use to another, depending on variations in the duration of different actions.

Although much of the analysis focuses on adverse cumulative impacts, it should be noted that cumulative impacts may also be beneficial. For example, there are significant positive cumulative economic effects of oil and gas development, including additional employment opportunities in the region, additional tax revenues to local governments, increased royalties to the federal government, and reduced dependence on foreign sources of energy.

Table ES-3 Cumulative Impact Analysis Areas

Resource	Cumulative Impacts Analysis Area	Study Area Rationale
Air Quality	Uinta Basin, nearby Class I areas	Construction, development, and production activities from implementation of the alternatives would cumulatively contribute to changes in air quality occurring immediately adjacent to the MBPA and within the greater Uinta Basin.

Resource	Cumulative Impacts Analysis Area	Study Area Rationale
Geology and Minerals – Topography, Physiography, Oil and Gas Resources, and Other Leasable, Locatable, and Saleable Minerals	MBPA	Oil and gas operations would have an impact on subsurface resource uses located within the MBPA and underlying the MPBA either by contaminating other possible mineral resources or preventing access to those sources.
Geology and Minerals – Tar Sands	Special Tar Sand Areas Entirely or Partially within the MBPA	Oil and gas operations would have an impact on the commercial extraction of tar sands within STSAs by impeding the development of tar sand extraction facilities and operations.
Geology and Minerals – Oil Shale	Known Oil Shale Lease Areas Entirely or Partially within the MBPA	Oil and gas operations would have an impact on oil shale extraction activities within KOSLAs by impeding the development of oil shale extraction facilities and operations.
Paleontological Resources	MBPA	Project activities impacting paleontological resources would only affect those present in the MBPA and would not cause additive affects to those occurring elsewhere.
Soil Resources	All Watersheds within the MBPA	Project activities impacting soils would only affect soil types present in the Greater Monument Butte watersheds and would not cause additive affects to those occurring elsewhere.
Water Resources ¹	All Watersheds within the MBPA	Because all project activities would occur in the Greater Monument Butte watersheds, impacts associated with these activities would only affect these watersheds and would not cause additive affects to those occurring elsewhere.
Vegetation ²	All Watersheds within the MBPA	Project activities impacting vegetation would only affect species present in the watersheds of the MBPA and would not cause additive affects to those occurring elsewhere.
Range Resources	All Grazing Allotments within the MBPA	Because all project activities on BLM-administered lands would occur on these allotments, impacts associated with these activities would only affect these areas and would not cause additive effects to those occurring elsewhere.
Fish and Wildlife	All Watersheds within the MBPA	Besides neotropical migratory birds, the home ranges of wildlife species analyzed in this document are located within the Greater Monument Butte watersheds.

Resource	Cumulative Impacts Analysis Area	Study Area Rationale
Special Status Plant, Fish, and Wildlife Species	Extent of Potential Habitat for the Uinta Basin hookless cactus and Pariette cactus; all Watersheds within the MBPA for all other special status plant, fish, and wildlife species	Only activities occurring within potential habitat or near individual special status plant, fish, and wildlife species would contribute to impacts.
Cultural Resources	MBPA	Construction activities impacting cultural resources would only affect those present in the MBPA and would not cause additive affects to those occurring elsewhere.
Land Use and Transportation	MBPA	Impacts to land use and transportation would be limited to the MBPA because all construction and land disturbance occurs within the MBPA and would have no additive impacts on the surrounding lands and roads.
Recreation Resources	MBPA and a 2-mile Buffer Surrounding the MBPA	Impacts to recreation resources would be limited to a 2-mile buffer surrounding and including the MBPA from which public users may hear industrial noise, increased traffic, etc. from oil and gas operations. Impacts associated with these activities would only affect these areas and would not cause additive effects to those occurring elsewhere.
Visual Resources	Lower Green River ACEC and the Wild and Scenic Green River Corridor within a 2-mile Buffer Surrounding the MBPA	Project activities impacting visual resources would only affect those present in the MBPA and would not cause additive affects to those occurring elsewhere.
Special Designations	Special Designation Areas within a 2-mile Buffer Surrounding the MBPA	Direct effect would only come from those ground disturbing activities that occur directly within these special designation areas.
Socioeconomics	Uintah and Duchesne Counties	This spatial boundary was selected because oil and gas development within the Uinta Basin has had substantial impact on taxes and royalties collected by the State of Utah, a portion of which has been reallocated to Duchesne and Uintah Counties. Because minority, low-income, and Tribal populations currently reside in these counties, they would all be considered when evaluating environmental justice concerns for oil and gas projects.

¹ Includes floodplains.

² Includes noxious and invasive weeds, and wetland/riparian zones.

CONSULTATION AND COORDINATION

The following list contains agencies, organizations, and individuals that were contacted and consulted, and/or responded to the public scoping process and/or preparation of this Draft EIS:

Federal Offices

- Ashley National Forest
- United States Environmental Protection Agency (EPA), Region 8
- United States Fish and Wildlife Service (USFWS)

Tribes

- Northern Ute Indian Tribe

State Offices

- Utah Division of Air Quality (UDAQ)
- Utah Division of Wildlife Resources (UDWR)
- Utah Governor's Office
- Utah Governor's Public Lands Policy Coordination Office (PLPCO)
- Utah School and Institutional Trust Lands Administration (SITLA)
- Utah State Office
- Utah State Office of Energy Development
- Utah State Historical Preservation Office (SHPO)

Local Offices

- Duchesne County
- Duchesne County Commissioner's Office
- Uintah County
- Uintah County Commissioner's Office
- Uintah County Public Lands

Private Sector Organizations

- Beatty & Wozniak, P.C.
- Kleinfelder, Inc.
- El Paso Corporation
- Ziegler Chemical and Mineral Corp.

Individuals

- Dale M. Rasmussen

Cooperating Agencies

The EPA, PLPCO, Duchesne County, and Uintah County agreed to participate as CAs and have signed related memorandums of understanding (MOUs). The U.S. Fish and Wildlife Service (USFWS) and the U.S. Army Corps of Engineers (USACE) have been on-going cooperators under the BLM Energy Pilot Office program authorized by the Energy Policy Act of 2005. The remaining agencies have yet to participate as formal CAs, but would likely participate as informal cooperators in a review capacity.

In addition, there was extensive coordination with the BLM Utah Air Resource Technical Advisory Group (RTAG). As required by the *NEPA Air Quality MOU for Federal Oil and Gas Decisions* (signed June 23, 2011), the RTAG met January 16, 2013 to discuss the air quality analysis for this EIS. Input was sought and received from EPA, National Park Service, US Forest Service, US Fish and Wildlife Service, and Utah Department of Environmental Quality, all of whom participated in the RTAG meeting.

Summary of Public Participation

The BLM conducted public and internal scoping to solicit input and identify environmental issues and concerns associated with the proposed project. The public scoping process was initiated on August 25, 2010, with the publication of a Notice of Intent (NOI) in the Federal Register. The BLM prepared a scoping information notice and provided copies to the public, other government agencies, and Tribes. These announcements included information on a public scoping meeting and open house, which was held at the County Commissioner's Office in Duchesne, Utah, on September 13, 2010, and at the Western Park Convention Center in Vernal, Utah, on September 20, 2010. The scoping meetings included participants from the BLM, Ashley National Forest, Uintah County Public Lands, Newfield, El Paso County, consultants, as well as local landowners. The official scoping period ended October 9, 2010.

Public response to the NOI and meetings included seven letters: two from federal agencies; one from a state agency; one from a county agency; and three from industry or private individuals. The following concerns were identified:

- Comprehensive air-quality analyses and region-wide air-quality modeling;
- Direct and indirect effects of water injection and hydrogen sulfide on gilsonite mining operations;
- Incorporation of operational flexibility into the Record of Decision and Final EIS;
- Recognition of valid existing lease rights within the Project Area by BLM;
- Explanation of the positive air quality impacts and reduction in emissions that would result from electrification;
- Limited BLM statutory or regulatory authority to regulate air quality or enforce air quality laws;
- Economic benefits to the local and state economies and SITLA;
- Conformance of the proposed project to the Vernal RMP;
- Direct, indirect, and cumulative impacts to Waters of the U.S.;
- Direct, indirect, and cumulative air quality impacts with an emphasis on fine particulate matter (PM_{2.5}), nitrogen dioxide (NO₂), volatile organic compounds (VOC), and ozone;

- Protection of wetland, stream, and riparian resources;
- Alternatives for water treatment and produced water management;
- Protection of groundwater, drinking water, and irrigation water;
- Impacts of fugitive dust from construction and travel on unpaved roads;
- Impacts of noise from central facilities located near residences and wildlife in the MBPA;
- Analysis of proposed project development on water quality within Pariette Draw; and
- Potential introduction and expansion of noxious weeds in the MBPA.