

**U.S. Department of the Interior  
Bureau of Land Management**

---

**Finding of No Significant Impact, Decision Record  
and Environmental Assessment**

**DOI-BLM-UT-G010-2015-0124-EA**

**GMBU East 2015-3**

**Infill Development within the  
Greater Monument Butte Unit**

**June, 2015**

**16 Directional Wells Proposed to be Drilled from 11 Existing Pads in  
Duchesne and Uintah Counties, Utah**

*Location:*

**Sections 26 and 31, Township 8 South, Range 17 East  
Sections 29 and 30, Township 8 South, Range 18 East  
Sections 1 and 13, Township 9 South, Range 17 East  
Section 3, Township 9 South Range 18 East.**

*Applicant/Address:*

**Newfield Production Company  
10530 South County Road #33  
Myton, Utah 84052**

**PREPARING OFFICE**

U.S. Department of the Interior  
Bureau of Land Management  
Vernal Field Office  
170 S 500 East  
Vernal, UT 84078  
(435) 781-4400  
(435) 781-4410





# **Finding of No Significant Impact, Decision Record and Environmental Assessment**

**DOI-BLM-UT-G010-2015-0124-EA**

***GMBU East 2015-3***

**Infill Development within the  
Greater Monument Butte Unit**

**Prepared by  
U.S. Department of the Interior  
Bureau of Land Management**

**June, 2015**

This page intentionally  
left blank

# Table of Contents

<b>Finding of No Significant Impact .....</b>	<b>ix</b>
Finding of No Significant Impact: .....	ix
Mitigation Measures .....	ix
Signature: .....	xii
<b>Decision Record - Memorandum .....</b>	<b>xiii</b>
Selected Action: .....	xiii
Conditions of Approval: .....	xiii
Rationale: .....	xvi
Land Use Plan Conformance: .....	xvi
Public Involvement: .....	xvii
Signature: .....	xvii
Appeal or Protest Opportunities: .....	xvii
<b>1. Introduction .....</b>	<b>1</b>
1.1. Purpose and Need for Action: .....	1
1.2. Identification of Issues .....	2
1.2.1. Air Quality Including Greenhouse Gas Emissions .....	2
1.2.2. Areas of Critical Environmental Concern .....	2
1.2.3. Livestock Grazing and Rangeland Health Standards .....	2
1.2.4. USFWS Threatened, Endangered or Proposed Plant Species .....	2
1.2.5. Water: .....	2
1.2.6. Fish and Wildlife; Threatened or Endangered Animal Species and Migratory Birds .....	2
<b>2. Proposed Action and Alternatives .....</b>	<b>5</b>
2.1. Description of the Proposed Action .....	7
2.1.1. Well Pad Construction and Expansion .....	7
2.1.2. Access Roads .....	8
2.1.3. Drilling Operations .....	8
2.1.4. Well Completion and Production .....	9
2.1.5. Water .....	9
2.1.6. Noxious Weeds .....	10
2.1.7. Waste Management .....	10
2.1.8. Spill Procedures .....	11
2.1.9. Reclamation .....	11
2.1.10. Applicant Committed Environmental Protection Measures .....	12
2.1.10.1. Cultural Resources .....	12
2.1.11. Standard Stipulations Added to All APDs .....	12
2.2. Alternative B — No Action Alternative .....	13
2.3. Alternatives Considered but Eliminated from Further Analysis .....	13
2.4. Conformance .....	13

<b>3. Affected Environment:</b>	<b>15</b>
3.1. Air Quality Including Greenhouse Gas Emissions	17
3.2. ACECs	20
3.3. Livestock Grazing & Rangeland Health Standards	21
3.4. USFWS Threatened, Endangered, Candidate or Proposed (TECP) Plant Species	22
3.5. Water:	23
3.6. Fish and Wildlife; Threatened, Endangered, or Candidate Species; and Migratory Birds	23
3.6.1. Fish and Wildlife Excluding USFWS Designated Species	23
3.6.2. Threatened, Endangered, or Candidate Animal Species	23
3.6.3. Migratory Birds	24
<b>4. Environmental Effects:</b>	<b>27</b>
4.1. Proposed Action	29
4.1.1. Air Quality Including Greenhouse Gas Emissions	29
4.1.2. Areas of Critical Environmental Concern	30
4.1.3. Livestock Grazing & Rangeland Health Standards	31
4.1.4. USFWS Threatened, Endangered Candidate and Proposed Plant Species	31
4.1.5. Water	33
4.1.6. Fish and Wildlife; Threatened, Endangered, or Candidate Animal Species; and Migratory Birds	34
4.1.6.1. Fish and Wildlife Excluding USFWS Designated Species	34
4.1.6.2. Threatened, Endangered, or Candidate Animal Species	34
4.1.6.3. Migratory Birds	36
4.2. No Action Alternative	37
4.2.1. Air Quality and Greenhouse Gas Emissions	37
4.2.2. Areas of Critical Environmental Concern	37
4.2.3. Livestock Grazing & Rangeland Health Standards	37
4.2.4. USFWS Threatened, Endangered, Candidate and Proposed Plant Species	37
4.2.5. Water:	37
4.2.6. Fish and Wildlife; Threatened, Endangered, or Candidate Species; and Migratory Birds	37
<b>5. Cumulative Impacts</b>	<b>39</b>
5.1. Air Quality Including Greenhouse Gas Emissions	41
5.2. Areas of Critical Environmental Concern	43
5.3. Livestock Grazing & Rangeland Health Standards	43
5.4. USFWS Threatened, Endangered, Proposed or Candidate Plant Species	44
5.5. Water:	47
5.6. Fish and Wildlife; Threatened, Endangered, or Candidate Species; and Migratory Birds	48
<b>6. Consultation and Coordination:</b>	<b>49</b>
6.1. Section 7 Consultation Under the ESA	51

6.1.1. Consultation for Water Depletion .....	51
6.1.2. Consultation for Pumping Water from the Green River .....	51
6.1.3. Consultation for Threatened and Endangered Plants .....	51
6.2. Section 106 Consultation Under the NHPA .....	51
6.3. Summary of Tribal Consultation .....	52
6.4. Summary of Public Participation .....	52
6.5. List of Preparers .....	52
<b>References .....</b>	<b>53</b>
<b>Appendix A. Interdisciplinary Team Checklist .....</b>	<b>55</b>
<b>Appendix B. Green River District Reclamation Guidelines .....</b>	<b>63</b>

This page intentionally  
left blank

**List of Tables**

Table 2.1. ....	8
Table 2.2. Seed Mix .....	12
Table 3.1. Ambient Air Quality Background Values .....	17
Table 3.2. Castlepeak-Eightmile Flat EIS Emissions vs. Current Emissions .....	19
Table 3.3. Grazing Allotments and Livestock Use .....	21
Table 3.4. Project Components within <i>Sclerocactus ssp.</i> habitat .....	22
Table 4.1. New Wells Annual Emissions (tons/year) .....	29
Table 4.2. <i>Sclerocactus sp.</i> and total New Surface Disturbance in Core Conservation Areas .....	32
Table 5.1. Cumulative Disturbance for Livestock Grazing & Rangeland Health .....	44
Table 5.2. Cumulative Impacts Analysis for Pariette Cactus. ....	45
Table 5.3. Cumulative Impacts Analysis for Uinta Basin Hookless Cactus .....	46
Table 6.1. Document Preparers .....	52

This page intentionally  
left blank

# Finding of No Significant Impact

## Finding of No Significant Impact:

Based on the analysis of potential environmental impacts contained in the attached environmental assessment, and considering the significance criteria in 40 CFR 1508.27, I have determined that, with implementation of the mitigation measures listed below, Newfield Production Company's proposal to directionally drill 16 wells from 11 existing well pads in the Greater Monument Butte Unit, Duchesne and Uintah Counties, Utah, as described in the proposed action alternative of DOI-BLM-UT-G010-2015-0124-EA will not have a significant effect on the human environment. An environmental impact statement is therefore not required.

## Mitigation Measures

### Air Quality

1. All internal combustion equipment shall be kept in good working order.
2. Water or other approved dust suppressants will be used at construction sites and along roads, as determined appropriate by the Authorized Officer. Dust suppressant such as magnesium chloride or fresh water may be used, as needed, during the drilling phase.
3. Open burning of garbage or refuse shall not occur at well sites or other facilities.
4. Drill rigs shall be equipped with Tier II or better diesel engines.
5. Low bleed pneumatics will be installed on separator dump valves and other controllers.
6. During completion, no venting can occur, and flaring will be limited as much as possible. Production equipment and gathering lines will be installed as soon as possible.
7. Telemetry will be installed to remotely monitor and control production.
8. All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horse power must not emit more than 2 grams of  $x$  per horsepower-hour. This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower-hour.
9. All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horse power must not emit more than 1.0 grams of  $NO_x$  per horsepower-hour.
10. Green completions will be used for all well completion activities where technically feasible.
11. Enhanced VOC emission controls with 95% control efficiency would be employed on production equipment having a potential to emit greater than 5 tons per year.

### Threatened and Endangered Plants

- Documented cactus within the 300 foot survey buffers would be flagged for avoidance during construction and drilling activities.
- A qualified biological monitor would be present during construction and drilling activities to ensure that documented individual cactus are not disturbed.
- Monitoring of known cactus individuals and populations within the 300-foot survey buffer around the host locations would occur yearly for 2 years following completion of construction and drilling activities. The health of the cactus would be documented and a yearly report would be submitted to the BLM Authorized Officer (AO). The report would be submitted to the BLM by December 31st of the year the monitoring took place. This report would also be submitted to USFWS, if requested.

- Newfield will perform ground disturbing activities in *Sclerocactus ssp.* Core Conservation Areas (CCAs) outside of the flowering period, (April 1 through May 30) for all three well pads. This applies to all ground disturbance, including previously disturbed areas on existing well pads.
- Only water (no chemicals, reclaimed production water or oil field brine) will be used for dust abatement measures within all cactus habitats.
- Dust abatement will be employed in suitable *Sclerocactus ssp.* habitat over the life of the project during the time of the year when *Sclerocactus ssp.* species are most vulnerable to dust-related impacts (March through August) within all cactus habitats.
- No non-native species will be included in the seed mix to be used for interim and final reclamation. The seed mix submitted with the applications will be amended to exclude Siberian wheatgrass (introduced), and Snake River wheatgrass (non-native to Utah) for reclamation seeding on this project.
- Erosion control measures (i.e. silt fencing) will be implemented to minimize sedimentation to *Sclerocactus ssp.* plants and populations located down slope of proposed surface disturbance activities when working in all cactus habitats.
- Application for Pesticide Use Permit will include provisions for mechanical removal, as opposed to chemical removal, for Utah Class A, B and C noxious weeds within 50 feet of individual/populations of *Sclerocactus*.
- From one year of the date forward of 100% *Sclerocactus* clearance survey for this project, spot checks will be conducted and approved for all planned disturbance areas on an annual basis. (The *S. brevispinus* survey period is defined as mid-March to June 30, and the *S. wetlandicus* survey period is defined as anytime without snow cover.) Results of spot checks may require additional pre-construction plant surveys as directed by the BLM. If the proposed action or parts thereof have not occurred within four years of the original survey, 100% clearance re-survey will be required prior to ground disturbing activities.

*Discovery Stipulation:* Re-initiation of Section 7 consultation with the USFWS will be sought immediately if any loss of plants or occupied habitat for Pariette cactus or Uinta Basin hookless cactus is anticipated as a result of project activities.

## Water

During reconstruction of the L-26-8-17 pad, it should be built in a manner to divert water around it.

## Fish and Wildlife; Threatened, Endangered, or Candidate Species; and Migratory Birds

### **Colorado River Fish Species**

For protection of T&E Fish if drawing water from the Green River

1. The best method to avoid entrainment is to pump from an off-channel location – one that does not connect to the river during high spring flows. An infiltration gallery constructed in a service approved location is best.
2. If the pump head is located in the river channel the following stipulations apply:
  - a. Do not situate the pump in a low-flow or no-flow area as these habitats tend to concentrate larval fishes.

- b. Limit the amount of pumping, to the greatest extent possible, during that period of the year when larval fish may be present (April 1 to August 1).
  - c. Limit the amount of pumping, to the greatest extent possible, during the midnight hours (10pm to 2 am), as larval drift studies indicate that this is a period of greatest daily activity. Dusk is the preferred pumping time, as larval drift abundance is lowest during this time.
3. Screen all pump intakes with 3/32” mesh material.
  4. Approach velocities for intake structures should follow the National Marine Fisheries Service's document "fish screening criteria for anadromous salmonids". For projects with an in-stream intake that operate in stream reaches where larval fish may be present, the approach velocity should not exceed 0.33 feet per second (ft/s).
  5. Report any fish impinged on the intake screen or entrained into irrigation canals to the service (801.975.3330) or the Utah Division of Wildlife Resources:

Northeastern Region  
318 N Vernal Ave,  
Vernal, UT 84078  
Phone: (435)781-9453

## **Migratory Birds**

If construction and drilling is anticipated during any of the following wildlife seasonal spatial restrictions, a BLM biologist or a qualified consulting firm biologist must conduct applicable surveys using an accepted protocol prior to any ground disturbing activities.

### **Mountain Plover (*Charadrius montanus*)**

If it is anticipated that construction or drilling will occur during mountain plover nesting season (May 1 – June 15), a BLM biologist would be notified to determine if surveys are necessary prior to beginning operations. If surveys are deemed necessary, depending on the results permission to proceed may or may not, be granted by the BLM Authorized Officer. This timing restriction applies to the 2-1-9-17, 12-13-9-17, 2-31-8-17 and 8-31-8-17 host locations.

### **Golden Eagle (*Aquila chrysaetos*)**

If the surface disturbing activities are planned during the current timing restrictions for the Golden Eagle (January 1st through August 31st) a survey for nesting Golden eagle would be required. Based on the results of the survey, permission to proceed may or may not be granted by the BLM Authorized Officer. This timing restriction applies to the 12-13-9-17 host locations.

### **Ferruginous Hawk (*Buteo regalis*)**

If the surface disturbing activities are planned during the current timing restrictions for the ferruginous hawk (March 1st through August 1st) a survey for nesting ferruginous hawk would be required. Based on the results of the survey, permission to proceed may or may not be granted by the BLM Authorized Officer. This restriction applies to the 2-1-9-17, 2-31-8-17 and 8-31-8-17 host locations.

**Signature:**

Approved by:

Jerry Kenczka  
Authorized Officer  
AFM for Minerals

7/6/2015  
Date

# Decision Record - Memorandum

## Selected Action:

It is my decision to authorize Newfield Production Company's proposal to directionally drill 16 wells from 11 existing well pads in the Greater Monument Butte Unit, Duchesne and Uintah Counties, Utah, as described in the proposed action alternative of DOI-BLM-UT-G010-2015-0124-EA.

This decision is contingent on the implementation of the applicant committed measures listed in the EA and the conditions of approval, listed below.

## Summary of the Selected Alternative:

Directional drilling of up to 16 directional oil wells from 11 existing locations. About 1.6 acres would be redisturbed by reopening the fluids pits, for a total of 2.58 acres of surface disturbance. 1.6 acres would be reclaimed upon closing the fluids pits.

All other components of the proposed action as described in Section 2.1, "Description of the Proposed Action" (p. 7) of DOI-BLM-UT-G010-2015-0124-EA.

## Conditions of Approval:

### Air Quality

1. All internal combustion equipment shall be kept in good working order.
2. Water or other approved dust suppressants will be used at construction sites and along roads, as determined appropriate by the Authorized Officer. Dust suppressant such as magnesium chloride or fresh water may be used, as needed, during the drilling phase.
3. Open burning of garbage or refuse shall not occur at well sites or other facilities.
4. Drill rigs shall be equipped with Tier II or better diesel engines.
5. Low bleed pneumatics will be installed on separator dump valves and other controllers.
6. During completion, no venting can occur, and flaring will be limited as much as possible. Production equipment and gathering lines will be installed as soon as possible.
7. Telemetry will be installed to remotely monitor and control production.
8. All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horse power must not emit more than 2 grams of  $\chi$  per horsepower-hour. This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower-hour.
9. All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horse power must not emit more than 1.0 grams of  $\text{NO}_x$  per horsepower-hour.
10. Green completions will be used for all well completion activities where technically feasible.
11. Enhanced VOC emission controls with 95% control efficiency would be employed on production equipment having a potential to emit greater than 5 tons per year.

## **Threatened and Endangered Plants**

- Documented cactus within the 300 foot survey buffers will be flagged for avoidance during construction and drilling activities.
- A qualified biological monitor will be present during construction and drilling activities to ensure that documented individual cactus are not disturbed.
- Newfield will perform ground disturbing activities in *Sclerocactus ssp.* Core Conservation Areas (CCAs) outside of the flowering period, (April 1 through May 30) for all locations in CCAs. This applies to all ground disturbance, including previously disturbed areas on existing well pads.
- Only water (no chemicals, reclaimed production water or oil field brine) will be used for dust abatement measures within all cactus habitats.
- Dust abatement will be employed in suitable *Sclerocactus ssp.* habitat over the life of the project during the time of the year when *Sclerocactus ssp.* species are most vulnerable to dust-related impacts (March through August) within all cactus habitats.
- No non-native species will be included in the seed mix to be used for interim and final reclamation. The seed mix submitted with the applications will be amended to exclude Siberian wheatgrass (introduced), and Snake River wheatgrass (non-native to Utah) for reclamation seeding on this project.
- Erosion control measures (i.e. silt fencing) will be implemented to minimize sedimentation to *Sclerocactus ssp.* plants and populations located down slope of proposed surface disturbance activities when working in all cactus habitats.
- Application for Pesticide Use Permit will include provisions for mechanical removal, as opposed to chemical removal, for Utah Class A, B and C noxious weeds within 50 feet of individual/populations of *Sclerocactus*.
- From one year of the date forward of 100% *Sclerocactus* clearance survey for this project, spot checks will be conducted and approved for all planned disturbance areas on an annual basis. (The *S. brevispinus* survey period is defined as mid-March to June 30, and the *S. wetlandicus* survey period is defined as anytime without snow cover.) Results of spot checks may require additional pre-construction plant surveys as directed by the BLM. If the proposed action or parts thereof have not occurred within four years of the original survey, 100% clearance re-survey will be required prior to ground disturbing activities.

*Discovery Stipulation:* Re-initiation of Section 7 consultation with the USFWS will be sought immediately if any loss of plants or occupied habitat for Pariette cactus or Uinta Basin hookless cactus is anticipated as a result of project activities.

## **Water**

During reconstruction of the L-26–8–17 pad, it will be built in a manner to divert water around it.

## **Fish and Wildlife; Threatened, Endangered, or Candidate Species; and Migratory Birds**

### **Wildlife COAs from the Castle Peak, Eight Mile flat EIS**

- On level or gently sloping ground (5 percent slope or less) Newfield will elevate surface pipelines (4 inches or greater in diameter) a minimum of 6 inches above the ground to allow passage of small animals beneath the pipe. This ground clearance will be achieved by placing the pipeline on blocks at intervals of 150 to 200 feet.

- Newfield will install noise reduction devices on all pump jacks to reduce intermittent noise to 45 dBA at 660 feet from the source.

## Colorado River Fish Species

For protection of T&E Fish if drawing water from the Green River

1. The best method to avoid entrainment is to pump from an off-channel location – one that does not connect to the river during high spring flows. An infiltration gallery constructed in a service approved location is best.
2. If the pump head is located in the river channel the following stipulations apply:
  - a. Do not situate the pump in a low-flow or no-flow area as these habitats tend to concentrate larval fishes.
  - b. Limit the amount of pumping, to the greatest extent possible, during that period of the year when larval fish may be present (April 1 to August 1).
  - c. Limit the amount of pumping, to the greatest extent possible, during the midnight hours (10pm to 2 am), as larval drift studies indicate that this is a period of greatest daily activity. Dusk is the preferred pumping time, as larval drift abundance is lowest during this time.
3. Screen all pump intakes with 3/32” mesh material.
4. Approach velocities for intake structures should follow the National Marine Fisheries Service's document "fish screening criteria for anadromous salmonids". For projects with an in-stream intake that operate in stream reaches where larval fish may be present, the approach velocity should not exceed 0.33 feet per second (ft/s).
5. Report any fish impinged on the intake screen or entrained into irrigation canals to the service (801.975.3330) or the Utah Division of Wildlife Resources:

Northeastern Region  
318 N Vernal Ave,  
Vernal, UT 84078  
Phone: (435)781-9453

## Migratory Birds

If construction and drilling is anticipated during any of the following wildlife seasonal spatial restrictions, a BLM biologist or a qualified consulting firm biologist must conduct applicable surveys using an accepted protocol prior to any ground disturbing activities.

Mountain Plover (*Charadrius montanus*)

If it is anticipated that construction or drilling will occur during mountain plover nesting season (May 1 – June 15), a BLM biologist will be notified to determine if surveys are necessary prior to beginning operations. If surveys are deemed necessary, depending on the results permission to proceed may or may not, be granted by the BLM Authorized Officer. This timing restriction applies to the 2-1-9-17, 12-13-9-17, 2-31-8-17 and 8-31-8-17 host locations.

### Golden Eagle (*Aquila chrysaetos*)

If the surface disturbing activities are planned during the current timing restrictions for the golden eagle (January 1st through August 31st) a survey for nesting golden eagle will be required. Based on the results of the survey, permission to proceed may or may not be granted by the BLM Authorized Officer. This timing restriction applies to the 12-13-9-17 host locations.

### Ferruginous Hawk (*Buteo regalis*)

If the surface disturbing activities are planned during the current timing restrictions for the ferruginous hawk (March 1st through August 1st) a survey for nesting ferruginous hawk is required. Based on the results of the survey, permission to proceed may or may not be granted by the BLM Authorized Officer. This restriction applies to the 2-1-9-17, 2-31-8-17 and 8-31-8-17 host locations.

## **Rationale:**

The subject lands were leased for oil or gas development under authority of the Mineral Leasing Act of 1920, as modified by the Federal Land Policy and Management Act of 1976, and the Federal Onshore Oil and Gas Leasing Reform Act of 1987. The lessee/operator has the right to explore for oil and gas on the lease as specified in 43 CFR 3103.1-2, and if a discovery is made, to produce oil and/or natural gas for economic gain.

The selected alternative meets the BLM's need to acknowledge and allow development of valid existing leases. The BLM objective to reduce impacts is met by the imposing of resource protection measures to protect other resource values.

Onsite visits were conducted by Vernal Field Office Personnel. The onsite inspection reports do not indicate that any other locations be proposed for analysis.

Endangered Species Act Section 7 consultation, National Historic Preservation Act consultation, and Native American Tribes consultation were completed as described in Chapter 6, *Consultation and Coordination*: (p. 49) of the EA.

## **Land Use Plan Conformance:**

The selected alternative is in conformance with the BLM Utah Vernal Field Office Approved Resource Management Plan and Record of Decision [BLM 2008 (p. 53)] and the terms of the applicable leases.

The selected alternative is consistent with the 2005 Uintah County General Plan, as amended [Uintah County 2005 (p. 54)], that encompasses the location of the proposed project. In general, the County Plan indicates support for development proposals such as the selected alternative through the plan's emphasis on multiple-use public land management practices, responsible use, and optimum utilization.

The Proposed Action is consistent with the Duchesne County General Plan [Duchesne County 1997 (p. 53)] which encompasses the Project Area. The county's plans contain specific policy statements addressing public lands (i.e. multiple-use, resource use and development, access, and wildlife management). In general, the county's plan indicate support for development

proposals, such as the Proposed Action, through its emphasis of multiple-use of public land management practices, responsible use, and optimum utilization of public land resources. The county, through its plan, supports the development of natural resources as they become available or as new technology allows.

here are no comprehensive State of Utah plans for the vicinity of the selected alternative. However, the State of Utah School and Institutional Trust Lands Administration (SITLA) have leased much of the nearby state land for oil and gas production. Because the objectives of SITLA are to produce funding for the state school system, and because production on federal leases could further interest in drilling on state leases in the area, it is assumed that the selected alternative is consistent with the objectives of the State.

## **Public Involvement:**

The proposed project was posted on BLM's National Land Use Planning and NEPA Register on May 29, 2015. No public requests for information on the project or public comments were received.

## **Signature:**

Authorizing Official:

Jerry Kenczka  
Authorized Officer  
AFM for Minerals

7/6/2015  
Date

## **Appeal or Protest Opportunities:**

This decision is effective upon the date it is signed by the authorized officer. The decision is subject to appeal. Under BLM regulation, this decision is subject to administrative review in accordance with 43 CFR 3165. Any request for administrative review of this decision must include information required under 43 CFR 3165.3(b) (State Director Review), including all supporting documentation. Such a request must be filed in writing with the State Director, Bureau of Land Management, Utah State Office, P.O. Box 45155, Salt Lake City, Utah, 84145-0155, within 20 business days of the date this Decision is received or considered to have been received.

If you wish to file a petition for stay, the petition for stay should accompany your notice of appeal and shall show sufficient justification based on the following standards:

1. The relative harm to the parties if the stay is granted or denied;
2. The likelihood of the appellant's success on the merits;
3. The likelihood of irreparable harm to the appellant or resources if the stay is not granted; and,
4. Whether the public interest favors granting the stay.

This page intentionally  
left blank

# **Chapter 1. Introduction**

This page intentionally  
left blank

## 1.0 Introduction

This Environmental Assessment (EA) has been prepared to analyze Newfield Production Company's (Newfield) proposed 20-acre infill development and water flood projects within the Greater Monument Butte Unit (GMBU). The EA is a site-specific analysis of potential impacts that could result from the implementation of the Proposed Action or alternatives to the Proposed Action. The EA assists the Bureau of Land Management (BLM) in ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any "significant" impacts could result from the analyzed actions. "Significance" is defined by NEPA and is found in regulation 40 CFR (Code of Federal Register) 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of Finding of No Significant Impact (FONSI). A FONSI statement documents the reasons why implementation of the selected alternative would not result in "significant" environmental impacts (effects). If the decision maker determines that this project has "significant" impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a Decision Record (DR) would be signed for the EA approving the selected alternative, whether the Proposed Action or another alternative.

During past development of the GMBU, wells were distributed on 40-acre downhole spacing with one well being analyzed per pad. But, since oil and gas reservoirs in the GMBU are contained in low permeability, tight sand formations, production from these reservoirs is hindered by the formations' capability to allow oil and gas to flow to the wellbore. Therefore, to cost-effectively drain a reservoir, additional infill wells must be drilled to increase access to the formation and water must be injected into the older unproductive wells to "push" the oil and gas towards the producing wells in order to optimize recovery of oil and gas from these reservoirs. Newfield has applied to directionally drill 16 wells from 11 existing well pads located in:

Sections 26 and 31, Township 8 South, Range 17 East  
Sections 29 and 30, Township 8 South, Range 18 East  
Sections 1 and 13, Township 9 South, Range 17 East  
Section 3, Township 9 South Range 18 East.

The wells would be located within Newfield's GMBU, approximately 7 miles southeast of Myton, Utah. The objective for this project is to increase oil recovery from their leases by attaining 20-acre downhole spacing in the GMBU, while minimizing or mitigating to the extent feasible the environmental impacts associated with such development.

### 1.1. Purpose and Need for Action:

BLM's need is to respond to the applicant's proposal. BLM's purpose is to allow Newfield to develop its existing Federal leases in order to meet domestic demands for oil while also preventing undue and unnecessary degradation to public land. Development of oil and gas resources is consistent with the mission of the BLM. The Mineral Leasing Act of 1920 (MLA), as amended and its implementing regulations are to allow lessees or potential lessees to explore for oil and gas or other mineral reserves on Federally-administered lands. The Federal Land Policy and Management Act of 1976 (FLPMA) mandates that the BLM manage public lands on the basis of multiple use [43 U.S.C. § 1701(a)(7)], and that lease rights must be permitted in a manner that assures adequate protection of other resource values. Minerals are identified as one of the principal uses of public lands in Section 103 of FLPMA [43 U.S.C. § 1702(c)].

## **1.2. Identification of Issues**

A BLM interdisciplinary team reviewed the proposed action and identified the following resources as being potentially impacted by implementation of the proposed action. Appendix A, *Interdisciplinary Team Checklist* (p. 55) 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.

### **1.2.1. Air Quality Including Greenhouse Gas Emissions**

Issue 1: Emissions from earth-moving equipment, vehicle traffic, drilling and completion activities, separators, oil storage tanks, dehydration units, and daily tailpipe and fugitive dust emissions would adversely affect air quality.

Issue 2: Emissions associated with the proposed action may contribute greenhouse gases to the atmosphere.

### **1.2.2. Areas of Critical Environmental Concern**

Issue: One well is within the Pariette Wetlands Area of Critical Environmental Concern (ACEC).

### **1.2.3. Livestock Grazing and Rangeland Health Standards**

Issue: The proposed project will create additional ground disturbance and fragmentation of the allotments which may impact both the livestock operation as well as rangeland health.

### **1.2.4. USFWS Threatened, Endangered or Proposed Plant Species**

Issue: All the wells are located within the Sclerocactus habitat polygon.

### **1.2.5. Water:**

Issue: Water flow onto the west end of the 7–26–8–17 well pad .

### **1.2.6. Fish and Wildlife; Threatened or Endangered Animal Species and Migratory Birds**

Issue 1: Drilling and completion activities could result in disturbance of habitat, and temporary or long-term displacement of the white-tailed prairie dog, and, if it were to occur in crucial habitat during the elk calving season could disrupt calving.

Issue 2: Some wells sites are within 0.25 to 0.5 mile of known golden eagle and ferruginous hawk, and drilling activity could disrupt nesting.

Issue 3: Some well sites are within historic mountain plover habitat.

Issue 4: Pumping water from the Green River results in a potential for entrapment of larval fish, both of which could adversely affect listed fish species.

This page intentionally  
left blank

# **Chapter 2. Proposed Action and Alternatives**

This page intentionally  
left blank

## 2.0 Proposed Action and Alternatives

BLM resource specialists reviewed Newfield's Proposed Action and assessed the type and magnitude of potential impacts to the Project Area. Based on this review, the following alternatives were developed for analysis in this EA:

- Alternative A – Proposed Action: This alternative outlines the action Newfield proposes to take in order to drill 16 directional wells from 11 existing well pads.
- Alternative B – No Action Alternative: Analysis of this alternative provides a baseline for the impact analysis.

These alternatives are discussed in detail in this chapter.

### 2.1. Description of the Proposed Action

Due to the extensive amount of pre-existing development via vertical drilling in the Project Area, Newfield has gained an intricate understanding of the sub-surface formations and associated pay zones. Based upon this knowledge, Newfield is able to target additional pay zones via directional drilling in a technically and economically feasible manner, with lower risks for missing these targets.

Specifically, Newfield's Proposed Action includes the following primary components:

- Directional drilling of up to 16 directional oil wells from 11 existing locations.
- About 1.6 acres would be redisturbed by reopening the fluids pits, for a total of 2.58 acres of surface disturbance.
- 1.6 acres would be reclaimed upon closing the fluids pits.

Construction activities would follow guidelines described in the Surface Operating Standards for Oil and Gas Extraction and Development 4th Edition (Gold Book)[BLM and USFS 2007 (p. 53)], as appropriate. **Table 2.1** summarizes the proposed wells.

#### 2.1.1. Well Pad Construction and Expansion

As mentioned previously, Newfield plans to utilize 11 existing well pads in order to drill 16 wells. Approximately 0.15 acre per pad would be redisturbed to reopen the pit area except for one pad in which a smaller area would be redisturbed to accommodate a closed loop drilling system. The existing topsoil and any existing vegetation would be cleared and topsoil would be stockpiled at predetermined storage sites (i.e., areas where original soil piles were located).

**Table 2.1.**

Well Number	Host Location	Pit Redisturbance (acres)	New Disturbance	Well Pad Expansion (acres)	Total Surface Disturbance (acres)*
I-1-9-17	2-1-9-17	0.15	0		0.15
7-30-8-18	10-30-8-18	0.15	0	0	0.15
L-30-8-18					
L-29-8-18	10-29-8-18	0.15	0	0	0.15
S-29-8-18					
O-28-8-18	43-29-8-18	0.15	0	0	0.15
F-28-8-18	1-29-8-18	0.15	0	0.1*	0.37
I-29-8-18					
V-34-8-18	1-3-9-18	0.15	0	0.1*	0.15
I-26-8-17	2-26-8-17	0.15	0	0	0.15
L-26-8-17	7-26-8-17	0.10 (CL)	0	0	0.1
T-14-9-17	12-13-9-17	0.15	0	0.04	0.19
K-14-9-17					
110-31-8-17	2-31-8-17	0.15	0.12	0.25	0.52
109-31-8-17	8-31-8-17	0.15	0.1	0.25	0.5
117-31-8-17					
<b>Totals</b>		<b>1.6</b>	<b>0.22</b>	<b>0.74</b>	<b>2.58</b>

\*Pad Expansion is within the existing disturbance.

## 2.1.2. Access Roads

Existing roads would be utilized to access the proposed drilling locations and no upgrades would be required. All County road maintenance activities implemented by Newfield would be coordinated with Duchesne and Uintah Counties, as appropriate. Utilized roads would be maintained in good repair during all drilling, completion, and production operations. All required road upgrades would follow guidelines described in the Gold Book [BLM and USFS 2007 (p. 53)].

## 2.1.3. Drilling Operations

Wells would be drilled utilizing a conventional, mechanically-powered mobile drilling rig. The exact type and size of drilling rig would be dependent upon rig availability at the time of project implementation. Newfield anticipates that no more than one drilling rig would be operating in the Project Area at any one time. Each well would take approximately 3 days to drill.

The proposed wells would target sandstone intervals within the Green River Formation and the average depth of each well would be approximately 6,300 feet. Any shallow water zones encountered during drilling would be isolated by both casing and cement. All potentially productive hydrocarbon zones would be cemented and tested. The casing and cementing program would be designed to isolate and protect the shallower formations encountered in the well bore and to prohibit pressure communication or fluid migration between zones. In addition, the cement would protect the well by preventing formation pressure from damaging the casing and retarding corrosion by minimizing contact between the casing and formation fluids. The type of casing used and the depth to which it is set would depend upon the physical characteristics

of the formations that are drilled. Surface casing would be installed to protect near-surface aquifers. Production casing would subsequently be installed to the total depth. All casing would be new or reconditioned and tested in accordance with applicable regulations. Site-specific descriptions of drilling procedures are included in the Applications for Permits to Drill (APDs) previously submitted to the BLM.

### **2.1.4. Well Completion and Production**

If drilled wells indicate economic potential, completion operations would commence. Completion operations would involve setting production casing to the total drilled depth and perforating the casing in target production zones, followed by hydraulically fracturing (fracing) the productive formation under high pressure. The fracing material would likely contain sand or other proppant material to keep the fractures open, thereby allowing hydrocarbons to flow more freely into the casing. The next phase would be to flow and test the well to determine rates of production. Completion and testing would take approximately 18 days per well.

Should testing suggest the potential for commercial production, facilities including a wellhead, pumping unit, separator, dehydrator, and condensate tanks would be installed at each location. All permanent (on site for 6 months or longer) structures constructed or installed would be painted Covert Green. All facilities would be painted within 6 months of installation.

Periodically, a workover or recompletion on a well may be required to ensure that efficient production is maintained. Workovers can include repairs to the well bore equipment (casing, tubing, rods, or pump), the wellhead, or the production facilities. These repairs would usually be completed in 7 days per well, during daylight hours. The frequency for this type of work cannot be accurately projected because workovers vary by well; however, an average work time may be one workover per well per year after about five years of production. In the case of a recompletion, where the wellbore casing is worked on or valves and fittings are replaced to stimulate production, all byproducts would be stored in tanks and hauled from the location. For workover operations, it may be necessary to rework the existing surface location to accommodate equipment. At the completion of the work, the surface location would be re-graded to pre-work contours and reclaimed.

### **2.1.5. Water**

#### ***Water Supply***

Fresh water used for drilling, dust control and injection comes from various sources, including the Green River (Newfield Collector Well - Water Right 47-1817). Two of the sources have historic water rights attached to them, and depletion fees have been paid for the use of water from non-historic sources (see Section 4.1.6.2, “Threatened, Endangered, or Candidate Animal Species” (p. 34) and Section 6.1.1, “Consultation for Water Depletion” (p. 51)). Water would be hauled by a licensed trucking company. Water wells would not be drilled on the leases.

Newfield anticipates that water would be used for dust suppression during construction and operational activities for a small percentage of the proposed project. Use of water for dust suppression would typically be performed under hot, windy, and/or dry conditions, and would depend on soil types and the moisture content of soils where activities are taking place. Dust suppression would most commonly be implemented during the summer months. Water-based

dust abatement would be implemented using standard commercial water trucks, which hold approximately 130 barrels (bbls) of water (0.017 acre-feet).

### ***Produced Water Disposal***

Upon completion of a productive well, all produced water would be confined to a steel storage tank. If the production water meets water quality standards, it would then be transported to the Ashley, Monument Butte, Jonah, South Wells Draw, or Beluga water injection facilities by company or contract trucks unless and until the well is serviced by a waterline. The produced water would then be supplemented by fresh water (an approximate 1:1 ratio) and injected into approved Class II wells to enhance Newfield's secondary recovery water flood project. Water not meeting water quality standards would be disposed of at Newfield's Pariette No. 4 disposal well (Section 7, T9S R19E). Federally approved surface disposal facilities or at State of Utah approved surface disposal facilities [Newfield 2008 (p. 53)].

### **2.1.6. Noxious Weeds**

Newfield will control noxious weeds along access roads, pipelines, well sites, or other applicable facilities. Any invasive or noxious weed outbreaks directly attributed to the activities of Newfield will be the responsibility of Newfield to control. On BLM administered lands, a Pesticide Use Proposal (PUP) will be submitted and approved prior to the application of herbicides or other pesticides or possibly hazardous chemicals. [Newfield 2008 (p. 53)]

### **2.1.7. Waste Management**

Drill cuttings would be contained and buried in the reserve pit. Drilling fluids, including salts and chemicals, would be contained in the reserve pit. In accordance with Onshore Order No. 7, the surface of the pit will be kept reasonably free from surface accumulation of liquid hydrocarbons and immediately upon well completion, any hydrocarbons would be removed [Newfield 2008 (p. 53)]. Any oil that accumulates in the pit will be handled in accordance with 43 CFR 3160.7-1(b). Drilling fluids would be removed from the pit within 120 days of completion [Newfield 2008 (p. 53)] .

No hazardous wastes (as defined in 40 CFR 355 or subject to reporting under SARA Title III) would be used, produced, stored, transported, or disposed of annually in association with the drilling, testing, or completing of this well [Newfield 2008 (p. 53)].

Self-contained, chemical portable toilets would be provided for human waste disposal. Upon completion of operations, or as needed, the toilet holding tanks would be pumped and the contents disposed of in the nearest, approved, sewage disposal facility.

Garbage, trash, and other waste materials would be collected in portable, self-contained, fully enclosed trash cages during operations. Accumulated trash would be disposed of at an authorized sanitary landfill. Trash would not be burned on location.

All debris and other waste materials not contained in the trash cage would be cleaned up and removed from the location promptly after removal of the completion rig, weather permitting.

## **2.1.8. Spill Procedures**

As each new well is completed, Newfield would update their field-wide existing Spill Prevention Control and Countermeasure (SPCC) Plans. If spills of condensate, produced water, or other fluids were to occur in reportable amounts, as defined in BLM Notice to Lessees (NTL) 3A, Newfield or their contractors or sub-contractors would immediately contact the BLM and any other regulatory agencies (e.g., EPA National Response Center, State of Utah) as required by law or regulation. Strict cleanup efforts would be initiated immediately.

## **2.1.9. Reclamation**

### ***Interim Reclamation***

Interim reclamation will begin within 6 months of well completion. Interim reclamation activities will consist of spreading the stockpiled topsile around the perimeter and areas of the well not needed for active operations. The topsoil seed will be broadcast and harrowed or drilled into the soil in the fall time period of August 1 to ground freezing. The well pad will not be ripped or recontoured as part of interim reclamation.

Interim reclamation monitoring will be conducted as directed by the authorized office with the objective of restoring a sufficient vegetative cover to maintain active topsoil and control erosion.

### ***Reserve Pit Reclamation***

Reserve pits shall be reclaimed within 120 days for the date of well completion, weather permitting. Before any dirt work occurs the pit shall be as dry as possible. If a synthetic, nylon-reinforced liner is used, the excess liner will be cut and removed and the remaining liner torn and perforated while backfilling the reserve pit. Alternatively, the pit will be pumped dry, the liner folded into the pit and buried to a minimum of four (4) feet deep.

Reclamation will be completed by 1) recontouring the surface to the approximate natural contours and spreading topsoil over the disturbed areas; 2) seeding the topsoil. The topsoil seed will be broadcast and harrowed into the soil or drilled into the soil in the fall time of August 1 to ground freezing.

### ***Final Reclamation of Well Locations at the End of Project Life***

Final reclamation of well locations and roads would take place within 180 days after the last well on the pad is plugged and abandoned. All production equipment and surface pipeline would be removed and the well locations, access roads, and other disturbed areas would be restored to their approximate original condition. All well casings would be cut off and capped according to BLM requirements. The cap would be welded in place and the well location and identity would be permanently inscribed on the cap. The cap would also be constructed with a weep hole. If requested, GPS coordinates of the cap would be provided to the BLM. Well locations, associated roads that would no longer be used, and other disturbed areas would be restored as near as practical to their original condition. All disturbed areas would be re-contoured to the approximate natural contours.

*Reseeding:* Reclaimed areas would be seeded with the following stock seed mixture obtained from Utah Seed. The mix is certified free of noxious weeds. [Foote, 2013 (p. 53)]

**Table 2.2. Seed Mix**

Common Name	Latin Name	Lbs/acre
<b>Grasses</b>		
Squirreltail Bottlebrush	<i>Elymus elymoides</i>	2.44
Snake River Wheatgrass	<i>Elymus wawawaiensis</i>	2.22
Siberian Wheatgrass	<i>Agropyron fragile</i>	2.13
Indian Ricegrass	<i>Oryzopsis hymenoides</i>	2.07
Galleta Grass	<i>Pleuraphis jamesii</i>	1.56
Needle & Threadgrass	<i>Hesperostipa comata</i>	1.20
<b>Forbs</b>		
Blue Flax	<i>Linum Lewisii</i>	0.27
Munro Globemallow	<i>Sphaeralcea munroana</i>	0.27
<b>Shrubs</b>		
Mat Saltbrush	<i>Atriplex corrugata</i>	4.76
Fourwing Saltbrush	<i>Atriplex canescens</i>	4.55
Shadscale Saltbrush	<i>Atriplex confertifolia</i>	4.35
Gardner Saltbrush	<i>Atriplex gardnerii</i>	4.35
Greasewood	<i>Sarcobatus vermiculatus</i>	0.56
Black Sagebrush	<i>Artemisia nova</i>	0.30
Rubber Rabbitbrush	<i>Chrysothamnus nauseosus</i>	0.28
<b>Total</b>		<b>31.31</b>

In addition, if reclamation occurs in the spring or summer sterile barley is planted to compete with weeds, stabilize the soil and act as a mulch for the emerging perennials.

## 2.1.10. Applicant Committed Environmental Protection Measures

### 2.1.10.1. Cultural Resources

- Newfield is responsible for informing all persons in the area who are associated with this project that they may be subject to prosecution for knowingly disturbing historic or archaeological sites or for collecting artifacts.

## 2.1.11. Standard Stipulations Added to All APDs

### Minerals and Paleontology

- If there is an active Gilsonite mining operation within 2 miles of the well location, operator shall notify the Gilsonite operator at least 48 hours prior to any blasting during construction.
- If paleontological materials are uncovered during construction, the operator is to immediately stop work and contact the Authorized Officer (AO). A determination will be made by the AO as to what mitigation may be necessary for the discovered paleontologic material before construction can continue.

## **Green River District Reclamation Guidelines**

The Operator will comply with the requirements of the Appendix B, *Green River District Reclamation Guidelines* (p. 63) formalized by Green River District Instructional Memo UTG000-2014-004 on May 21, 2014.

### **2.2. Alternative B — No Action Alternative**

Under the No Action Alternative, the proposed infill project would not be approved. Selection of this alternative would not preclude other oil and gas activities or proposals within the Project Area. The host well pads would continue to exist until the wells on those pads are plugged.

### **2.3. Alternatives Considered but Eliminated from Further Analysis**

No other alternatives were identified by the BLM.

### **2.4. Conformance**

#### ***Land Use Plan***

The management of BLM public lands and resources within the Project Area is directed and guided by the UT - Vernal RMP Resource Management Plan Record of Decision (RMP/ROD) [BLM 2008 (p. 53)]. Although the proposed action is not specifically mentioned in the RMP, it is consistent with its goals and objectives, particularly the following:

- Meet local and national non-renewable and renewable energy and other public mineral needs. (p. 97)
- The BLM recognizes that not all activities authorized by implementation of the Approved RMP will comply with *BLM Utah Standards for Rangeland Health and Guidelines for Grazing Management*. All authorized activities will require reclamation and rehabilitation to ensure sustainability and productivity of the site. (p. 65)

The RMP/ROD recognizes the valid existing rights connected with oil and gas leases that were issued prior to approval of the existing RMP (RMP/ROD p. 21), such as leases in the GMBU. Also, under the no action alternative, oil and gas development within the Castle Peak and Eightmile Flat project area would still be permitted as authorized in the *Record of Decision for the Final Environmental Impact Statement for the Castle Peak and Eightmile Flat Oil and Gas Expansion Project* [BLM 2005. (p. 53)]. The no action alternative is also consistent with the objectives and goals of the RMP.

#### ***Relation to Statutes, Regulations, and Other Plans***

The Project Area lands were leased for oil or gas development under authority of the MLA, as modified by the FLMPA, the Federal Onshore Oil and Gas Leasing Reform Act of 1987, and the Energy Policy Act of 2005. A lessee/operator has the right to explore for oil and gas on its leases as specified in 43 CFR §3101.1-2, and if a discovery is made, to produce oil and/or natural gas

for economic gain, so long as those operations are conducted in conformance with the lease terms and 43 CFR §3160.

There is no comprehensive State of Utah plan for the vicinity of the Proposed Action. The State of Utah School and Institutional Trust Lands Administration (SITLA) have leased much of the nearby State land for oil and gas production. Because the objectives of SITLA are to produce funding for the State school system, and because production on Federal leases could further interest in drilling on state leases in the area, it is assumed that the alternatives analyzed, except the No Action Alternative, are consistent with the objectives of the State.

The Proposed Action is consistent with the both the 1997 Duchesne County General Plan, as amended, [Duchesne County 1997 (p. 53)] and the 2005 Uintah County General Plan, as amended, [Uintah County 2005 (p. 54)], which encompass the Project Area. The county plans contain specific policy statements addressing public lands (i.e. multiple-use, resource use and development, access, and wildlife management). In general, the county plans indicate support for development proposals, such as the Proposed Action, through its emphasis of multiple-use of public land management practices, responsible use, and optimum utilization of public land resources. The counties, through their plans, support the development of natural resources as they become available or as new technology allows.

Threatened, endangered, and sensitive species in or near the Project Area are managed in accordance with the Endangered Species Act of 1973, the Migratory Bird Act of 1918, and the BLM Special Status Species Manual 6840. The Proposed Action and alternatives carried through in this assessment are in compliance with these Acts, and Manual.

The proposed action is also consistent with the Record of Decision of the *Environmental Impact Statement Castle Peak and Eightmile Flat Oil and Gas Expansion Project Newfield Rocky Mountains Inc.* [BLM 2005. (p. 53)] , which analyzed a well field development scenario similar to the proposed. After drilling approximately half the wells approved, in 2009 Newfield began concentrating the remaining undrilled wells into already developed areas using existing well pads, thereby reducing impacts to resources of concern. This analysis is tiered to the 2005 EIS.

The Proposed Action is also consistent with the Record of Decision of the Final Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (Veg-EIS) [BLM 2007 (p. 53)] . Action 6A of Objective 6 of the Veg-EIS is to: “Control and manage invasive and noxious weed infestations using principles of integrated weed management including chemical, mechanical, and biological control methods. An approved Pesticide Use Proposal (PUP) is required for all planned herbicide applications (on BLM managed lands).” Section 12.4 of Newfield’s Standard Operating Practices for the Greater Monument Butte Green River Development Program (Newfield GMBU SOP) [Newfield 2008 (p. 53)] states that “A Pesticide Use Proposal will be submitted and approved prior to the application of herbicides or pesticides. Since the Veg-EIS constitutes “national guidance”, herbicides used in any approved PUP will be limited to the 14 active ingredients; at or below the maximum rates analyzed within the Veg-EIS or label maximum, whichever is less; listed in Table 1 of the Veg-EIS Record of Decision.

## **Chapter 3. Affected Environment:**

This page intentionally  
left blank

### 3.0 Affected Environment

This section discusses the physical, biological, and social factors, as they currently exist within the Project Area. All resources considered during preparation of this EA are listed in Appendix A, *Interdisciplinary Team Checklist* (p. 55), the Interdisciplinary Team Analysis Record Checklist. Resources that were considered but dismissed from further analysis are also listed **Appendix A**. This chapter provides the baseline for comparison of impacts/consequences described in Chapter 4, *Environmental Effects*: (p. 27).

Mineral extraction activities, transportation corridors, agricultural and ranching activities, livestock grazing, and erosion have historically affected the project area. The geology of the Project Area consists of Tertiary Eocene member B of the Uinta formation and some Quaternary Holocene undivided Piedmont alluvium. The soils range from fine sandy loam to extremely channery loam that is shallow to moderately deep and well drained, with rocky material on the surface and with a number of rocky outcrops in some locations. The vegetation community types of the proposed well locations include desert shrub, black sagebrush, Wyoming big sagebrush, and badland. Terrain is generally flat, with rolling hills and drainages in some locations. Average annual precipitation ranges from 8 to 12 inches.

#### 3.1. Air Quality Including Greenhouse Gas Emissions

The Project Area is located in the Uinta Basin, a semiarid, mid-continental climate regime typified by dry, windy conditions, limited precipitation and wide seasonal temperature variations subject to abundant sunshine and rapid nighttime cooling. The Uinta Basin is designated as unclassified/attainment by the EPA under the Clean Air Act. This classification indicates that the concentration of criteria pollutants in the ambient air is below National Ambient Air Quality Standards (NAAQS), or that adequate air monitoring is not available to determine attainment.

NAAQS are standards that have been set for the purpose of protecting human health and welfare with an adequate margin of safety. Pollutants for which standards have been set include ground level ozone, (O<sub>3</sub>), sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), and carbon monoxide (CO), and particulate matter less than 10 microns in diameter (PM<sub>10</sub>) or 2.5 microns in diameter (PM<sub>2.5</sub>). Airborne particulate matter consists of tiny coarse-mode (PM<sub>10</sub>) or fine-mode (PM<sub>2.5</sub>) particles or aerosols combined with dust, dirt, smoke, and liquid droplets. PM<sub>2.5</sub> is derived primarily from the incomplete combustion of fuel sources and secondarily formed aerosols, whereas PM<sub>10</sub> is primarily from crushing, grinding, or abrasion of surfaces. **Table 3-1** lists ambient air quality background values for the Uinta Basin and NAAQS standards.

**Table 3.1. Ambient Air Quality Background Values**

Pollutant	Averaging Period(s)	Uinta Basin Background Concentration (µg/m <sup>3</sup> )	NAAQS (µg/m <sup>3</sup> )
SO <sub>2</sub>	Annual	0.8 <sup>2</sup>	-- <sup>1</sup>
	24-hour	3.9 <sup>2</sup>	-- <sup>1</sup>
	3-hour	10.1 <sup>2</sup>	1,300
	1-hour	19.0 <sup>2</sup>	197
NO <sub>2</sub>	Annual	8.1 <sup>3</sup>	100
	1-hour	60.2 <sup>3</sup>	188
PM <sub>10</sub>	Annual	7.0 <sup>4</sup>	-- <sup>6</sup>
	24-hour	16.0 <sup>4</sup>	150

Pollutant	Averaging Period(s)	Uinta Basin Background Concentration ( $\mu\text{g}/\text{m}^3$ )	NAAQS ( $\mu\text{g}/\text{m}^3$ )
PM <sub>2.5</sub>	Annual	9.4 <sup>3</sup>	15
	24-hour	17.8 <sup>3</sup>	35
CO	8-hour	3,450 <sup>4</sup>	10,000
	1-hour	6,325 <sup>4</sup>	40,000
O <sub>3</sub>	8-hour	100.0 <sup>3,5</sup>	75

1– The 24-hour and annual SO<sub>2</sub> NAAQS have been revoked by USEPA  
2– Based on 2009 data from Wamsutter Monitoring Station Data (USEPA AQS Database)  
3– Based on 2010/2011 data from Redwash Monitoring Station (USEPA AQS Database)  
4– Based on 2006 data disclosed in the Greater Natural Buttes FEIS. [BLM 2012 (p. 53)](BLM, 2012)  
5– Ozone is measured in parts per billion (ppb)  
6– The annual PM<sub>10</sub> NAAQS has been revoked by USEPA

Existing point and area sources of air pollution within the Uinta Basin include the following:

- Exhaust emissions (primarily CO, NO<sub>x</sub>, PM<sub>2.5</sub>, and HAPs) from existing natural gas fired compressor engines used in transportation of natural gas in pipelines;
- Natural gas dehydrator still-vent emissions of CO, NO<sub>x</sub>, PM<sub>2.5</sub>, and HAPs;
- Gasoline and diesel-fueled vehicle tailpipe emissions of VOCs, NO<sub>x</sub>, CO, SO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>;
- Oxides of sulfur (SO<sub>x</sub>), NO<sub>x</sub>, fugitive dust emissions from coal-fired power plants, and coal mining/ processing;
- Fugitive dust (in the form of PM<sub>10</sub> and PM<sub>2.5</sub>) from vehicle traffic on unpaved roads, wind erosion in areas of soil disturbance, and road sanding during winter months; and,
- Long-range transport of pollutants from distant sources.

Two year-round air quality monitoring sites were established in summer 2009 near Red Wash (southeast of Vernal, Utah) and Ouray (southwest of Vernal). The monitors were certified as Federal Reference Monitors in fall of 2011. These monitors can be used to make NAAQS compliance determinations. The complete EPA Ouray and Redwash monitoring data can be found at: <http://www.epa.gov/airexplorer/index.htm>.

Both monitoring sites have recorded numerous exceedences of the 8-hour ozone standard during the winter months (January through March 2010, 2011, 2013 and 2014). It is thought that high concentrations of ozone are being formed under a “cold pool” process. This process occurs when stagnate air conditions form with very low mixing heights under clear skies, with snow-covered ground, and abundant sunlight. These conditions, combined with area precursor emissions (NO<sub>x</sub> and VOCs), can create intense episodes of ozone. These episodes didn’t occur in January through March 2012 due to lack of snow cover. This phenomenon has also been observed in similar locations in Wyoming. Winter ozone formation is a newly recognized issue, and the methods of analyzing and managing this problem are still being developed. Existing photochemical models are currently unable to reliably replicate winter ozone formation. This is due to the very low mixing heights associated with unique meteorology of the ambient conditions. Further research is needed to definitively identify ozone precursor sources that contribute to observed ozone concentrations.

The Castlepeak-Eightmile Flat EIS [BLM 2005. (p. 53)] analyzed air quality impacts, including estimates of VOC and NO<sub>x</sub> emissions, for existing and future activities in the Greater Monument

Butte Unit. A VOC and NO<sub>x</sub> emissions inventory of Newfield's existing operations was completed to determine if emissions associated with current and near future infrastructure, drilling, and production is within the scope of the Castlepeak-Eightmile Flat EIS. As shown in **Table 3.2**, and due to changing technology, the current emissions for the Greater Monument Butte Unit are within the scope of the referenced EIS.

**Table 3.2. Castlepeak-Eightmile Flat EIS Emissions vs. Current Emissions**

Source	Source Subset	VOC Emissions (tons per year)	NO <sub>x</sub> Emissions (tons per year)
<b>EIS Predicted Emissions</b>	Existing Permitted Infrastructure	108	230
	Drilling <sup>1</sup>	45	568
	Production	1,037	4,311
	<b>Total</b>	<b>1,190</b>	<b>5,109</b>
<b>Infrastructure Emissions</b>	Current	57	202
	Proposed to 2014	18	80
	<b>Total</b>	<b>75</b>	<b>282</b>
<b>Drill Rig Emissions</b>	<b>Total</b>	<b>29</b>	<b>129<sup>2</sup></b>
<b>Production Emissions</b>	Pumpjack Engines <sup>3</sup>	125	1,003
	Natural Gas Fueled Burners	59	488
	Stock Tanks	557	--
	<b>Total</b>	<b>741</b>	<b>1,491</b>
<b>Total Current Emissions</b>		<b>845</b>	<b>1,902</b>
1 - Assumed six Tier 0 rigs drilling 130 wells per year at an engine load factor of 0.47			
2 - Assumes three Tier II rigs drilling 200 wells per year at an engine load factor of 0.47.			
3 - Based upon 1.8 tons per year NO <sub>x</sub> and 0.58 tons per year VOC per engine.			

The UDAQ conducted limited monitoring of PM<sub>2.5</sub> in Vernal, Utah in December 2006. During the 2006-2007 winter season, PM<sub>2.5</sub> levels were higher than the PM<sub>2.5</sub> health standards that became effective in December 2006. The PM<sub>2.5</sub> levels recorded in Vernal were similar to other areas in northern Utah that experience wintertime inversions. The most likely causes of elevated PM<sub>2.5</sub> at the Vernal monitoring station are those common to other areas of the western U.S. (combustion and dust) plus nitrates and organics from oil and gas activities in the Basin. PM<sub>2.5</sub> monitoring that has been conducted in the vicinity of oil and gas operations in the Uinta Basin by the Red Wash and Ouray monitors beginning in summer 2009 have not recorded any exceedences of either the 24 hour or annual NAAQS.

HAPs are pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental impacts. The EPA has classified 187 air pollutants as HAPs. Examples of listed HAPs associated with the oil and gas industry include formaldehyde, benzene, toluene, ethylbenzene, isomers of xylene (BTEX) compounds, and normal-hexane (n-hexane). There are no applicable Federal or State of Utah ambient air quality standards for assessing potential HAP impacts to human health.

## Greenhouse Gases

Greenhouse gases keep the planet's surface warmer than it otherwise would be. However, as concentrations of these gases increase the Earth's temperature is climbing above past levels. According to NOAA and NASA data, the Earth's average surface temperature has increased by about 1.2 to 1.4° F in the last 100 years. The eight warmest years on record (since 1850) have all occurred since 1998, with the warmest year being 1998. However, according to the British

Meteorological Office's Hadley Centre [BMO 2009 (p. 53)], the United Kingdom's foremost climate change research center, the mean global temperature has been relatively constant for the past nine years after the warming trend from 1950 through 2000. Predictions of the ultimate outcome of global warming remain to be seen.

The analysis of the Regional Climate Impacts prepared by the U.S. Global Change Research Program (USGCRP) [USGCRP 2009 (p. 54)] suggests that recent warming in the region (including the project area) was nationally among the most rapid. Past records and future projections predict an overall increase in regional temperatures, largely in the form of warmer nights and effectively higher average daily minimum temperatures. They conclude that this warming is causing a decline in spring snowpack and reduced flows in the Colorado River. The USGCRP projects a region-wide decrease in precipitation, although with substantial variability in interannual conditions. For eastern Utah, the projections range from an approximate 5 percent decrease in annual precipitation to decreases as high as 40 percent of annual precipitation.

Equilibrium climate sensitivity quantifies the response of the climate system to constant radiative forcing on multicentury time scales. It is defined as the change in global mean surface temperature at equilibrium that is caused by a doubling of the atmospheric CO<sub>2</sub> concentration. Equilibrium climate sensitivity is likely in the range 1.5°C to 4.5°C (high confidence), extremely unlikely less than 1°C (high confidence), and very unlikely greater than 6°C (medium confidence). The lower temperature limit of the assessed likely range is thus less than the 2°C in the AR4, but the upper limit is the same. This assessment reflects improved understanding, the extended temperature record in the atmosphere and ocean, and new estimates of radiative forcing. No best estimate for equilibrium climate sensitivity can now be given because of a lack of agreement on values across assessed lines of evidence and studies [IPCC, 2013 (p. 53)](IPCC, 2013).

## 3.2. ACECs

The Pariette Wetlands ACEC was designated in 1994 to “Enhance and protect the wetlands community and associated habitat adjacent to Pariette and Castle Peak Washes, ensuring continued waterfowl production and no long-term deterioration of the water quality in Pariette Wash; reduce sedimentation to the Green River by stabilizing streambanks and water channels, while meeting the management objectives of the final recovery plans for the special status species associated with the area.” (BLM 1994). The 2008 Final EIS for the Vernal Field Office RMP described the relevance criteria as being “special status bird and plant species habitat, wetlands ecosystem, (and a) significant population of the federally threatened plant species *Sclerocactus glaucus*.” All of the 10,437 Federal acres within the ACEC have been leased for oil and gas development. Many of these leases predate the ACEC designation.

Designation of an ACEC is usually undertaken to preclude development that could cause harm or damage to the resources the designation was meant to protect. However, by the time the Pariette ACEC was designated in 1994, much of it was already under lease, giving the lease holders the right to develop. The remaining unleased area was to be leased under No Surface Occupancy (NSO) or Highly Restrictive terms. However, several leases issued subsequent to the decision did not stipulate NSO, and almost the entire area has essentially the same terms for development as outside the ACEC boundary.

### 3.3. Livestock Grazing & Rangeland Health Standards

#### LIVESTOCK GRAZING

The proposed project is located in the Antelope Powers, Castle Peak and Eight Mile Flat Allotments; used for cattle grazing (see table below).

**Table 3.3. Grazing Allotments and Livestock Use**

Allotment Number	Allotment Name	Livestock Number	Livestock Kind	Begin	End	Type Use	Type Use
15879	Antelope Powers	220	CATTLE	10/01	5/01	ACTIVE	1541
15879	Antelope Powers	2207	SHEEP	10/01	5/01	ACTIVE	3091
05886	Castle Peak	461	CATTLE	11/01	04/15	83 Active	2088
05887	Eight Mile Flat	166	CATTLE	11/01	04/01	91 Active	760

The allotments are primarily located within the semi-arid saltshrub ecosystem; undisturbed areas are characterized by native low-lying shrubs, grasses and forbs. Disturbed areas of the allotments are currently characterized by invasive weeds such as halogeton (*Halogeton glomeratus*) and cheat grass (*Bromus tectorum*) as well as bare ground. The allotments are currently dissected by hundreds, possibly thousands, of miles of pipelines, roads and road spurs, as well as other infrastructure such as compressor stations, which characterize dense oil and gas development.

The current livestock operator of the Antelope Powers, Castle Peak and Eight-Mile Flat allotments have been unable to utilize their full permitted AUMs within the allotments due to the current level of disturbance, fragmentation, daily traffic, development, and most recently, drought.

#### RANGELAND HEALTH STANDARDS:

Rangeland Health Standards were assessed for the Antelope Powers Allotment in 2008; the Determination of Rangeland Health was signed in 2010 and the allotment was considered to be meeting rangeland health standards throughout the interspaces of oil and gas development areas. Large portions of the vegetative surface have been removed and/or disturbed as a result of the development of oil and gas resources in the area.

Rangeland Health Standards were assessed for the Castle Peak and Eight Mile Flat allotments in 2008. Both allotments met Rangeland Health requirements, although location # Eight Mile 2 (EM2) did not meet all criteria for biotic integrity, and invasive encroachment was determined to be moderate to extreme for Halogeton (*Halogeton glomeratus*). Both allotments are scheduled to be re-evaluated for rangeland health standards during the 2013-14 field season.

### 3.4. USFWS Threatened, Endangered, Candidate or Proposed (TECP) Plant Species

#### Uinta Basin Hookless Cactus (*Sclerocactus wetlandicus*) and Pariette Cactus (*Sclerocactus brevispinus*)

Two cactus species listed as threatened under the Endangered Species Act, *Sclerocactus wetlandicus* and *Sclerocactus brevispinus*, have potential habitat and individuals and populations of *Sclerocactus ssp.* have been previously documented in the Project Area. The proposed wells and infrastructure are within the 2013 polygon established by U.S. Fish and Wildlife Service (USFWS) as potential habitat for *Sclerocactus ssp.* In addition, the proposed wells 7-30-8-18, L-30-8-18, I-26-8-17, and L-26-8-17 are within Core Conservation Area (CCA) Level 2, and the proposed wells S-29-8-18, L-29-8-18, F-28-8-18, and I-29-8-18 are within CCA Level 1.

Surveys were conducted in April and November 2013, and April, August, September and October 2014, for the proposed wells and infrastructure. The surveys documented listed *Sclerocactus ssp.* within the survey buffers (within 300 feet of the proposed water line) of the proposed O-28-8-18, S-29-8-18, L-29-8-18, L-26-8-17, and 110-31-8-17 locations, with the closest plants located approximately 50 feet from the centerline. Some of the locations where no new surface disturbance is proposed were not surveyed (1-1-9-17, 7-30-8-18, L-30-8-18, and I-26-8-17) since all project activities would occur within existing disturbed areas. Existing disturbance is considered unsuitable habitat for *Sclerocactus ssp.* Total surface disturbance associated with the proposal is located in the table below.

**Table 3.4. Project Components within *Sclerocactus ssp.* habitat**

Well Number	Host Location	Pit Redisturbance (acres)	New Disturbance (acres)	Well Pad Expansion (acres)	Total Surface Disturbance (acres)*	Core Level	Cacti w/in 300'?	Nearest cacti (feet)
1-1-9-17	2-1-9-17	0.15	--	--	0.15	Poly	No*	2,531**
7-30-8-18	10-30-8-18	0.15	--	--	0.15	2	No*	1,289**
L-30-8-18								
L-29-8-18	10-29-8-18	0.15	--	--	0.15	1	Yes	148 feet SE, 226 feet E
S-29-8-18								
O-28-8-18	43-29-8-18	0.15	--	--	0.15	1	Yes	66 feet NE
F-28-8-18	1-29-8-18	0.15	--	0.1***	0.25	1&2	No	N/A
I-29-8-18								
V-34-8-18	1-3-9-18	0.15	--	0.1***	0.25	1&2	No	N/A
I-26-8-17	2-26-8-17	0.15	--	--	0.15	2	No*	809**
L-26-8-17	7-26-8-17	0.10 (CL)	--	--	0.10	2	Yes	125 feet N
T-14-9-17	12-13-9-17	0.15	--	0.04	0.19	Poly	No	N/A
K-14-9-17								
110-31-8-17	2-31-8-17	0.15	0.12	0.25	0.52	Poly	No	N/A
109-31-8-17	8-31-8-17	0.15	0.10	0.25	0.50	Poly	No	N/A
117-31-8-17								

<b>Total</b>	--	<b>1.60</b>	<b>0.22</b>	<b>0.74</b>	<b>2.56</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
*No survey conducted for proposed well because no new surface disturbance is proposed (all project activities would occur within existing well pad footprint).								
**Historic point, since location was not surveyed								
***Well pad expansion would be located entirely within the existing disturbance boundary of the pad, and would not be considered new surface disturbance.								

## Other TECP Plant Species

Green River shale-derived soils are not shown on VFO GIS database layers for these wellpads and VFO NAIP do not reveal soils suitable for additional TECP species. Additional non-Green River shale TECP plant species are precluded based on GIS soil, elevation, BLM and UNHP known location data and will not be analyzed in this EA.

## 3.5. Water:

Surface water on the GMBU consists mostly of runoff into ephemeral streams that eventually empty into the Green River.

## 3.6. Fish and Wildlife; Threatened, Endangered, or Candidate Species; and Migratory Birds

### 3.6.1. Fish and Wildlife Excluding USFWS Designated Species

White-tailed Prairie Dog (*Cynomys leucurus*)

The white-tailed prairie dog is listed as a Utah State sensitive species. Comprehensive prairie dog colony surveys and burrow density estimates have not been completed within the Project Area.

### 3.6.2. Threatened, Endangered, or Candidate Animal Species

#### Colorado River Fish Species

The USFWS has identified four Federally listed fish species historically associated with the Upper Colorado River Basin, including the Green River: Colorado pikeminnow (*Ptychocheilus lucius*), humpback chub (*Gila cypha*), bonytail (*Gila elegans*), and razorback sucker (*Xyrauchen texanus*). These fish are Federally and State-listed as endangered and have experienced severe population declines due to flow alterations, habitat loss or alteration, and introduction of non-native fish species. Portions of the Green River and its 100-year floodplain have been designated Critical Habitat for these four endangered fish species [USFWS 1994 (p. 54)]. The Project Area does not occur within critical habitat for the Colorado endangered fish species. The average downstream distance (following natural washes and drainages) from the Project Area to razorback sucker and Colorado pikeminnow habitat within the Green River is approximately 16 miles, and to humpback chub and bonytail chub habitat within the Green River is 51 miles. Three additional species are endemic to the Colorado River Basin, including the Green River: roundtail chub (*Gila robusta*), flannelmouth sucker (*Catostomus latipinnis*), and bluehead sucker (*Catostomus discobolus*). The

roundtail chub is a State-listed threatened species, while the two suckers are species of special concern due to declining population numbers and distribution.

### 3.6.3. Migratory Birds

The Migratory Bird Treaty Act (MBTA) was implemented for the protection of migratory birds. Unless permitted by regulations, the MBTA makes it unlawful to pursue, hunt, kill, capture, possess, buy, sell, purchase, or barter any migratory bird, including the feathers or other parts, nests, eggs, or migratory bird products. In addition to the MBTA, Executive Order 13186 sets forth the responsibilities of Federal agencies to further implement the provisions of the MBTA by integrating bird conservation principles and practices into agency activities and by ensuring that Federal actions evaluate the effects of actions and agency plans on migratory birds.

This section identifies migratory birds that may inhabit the Project Area, including those species classified as High-Priority birds by Utah Partners in Flight [Parrish et. al. 2002 (p. 54)]. High-Priority species are denoted by an asterisk (\*). Without conducting comprehensive migratory bird surveys, it is not known if these species are present or not. Species listed below are based on GIS reviews, and a field review during on-site inspections.

Migratory bird species commonly associated with the sagebrush-steppe community within the Project Area include: the mountain bluebird\* (*Sialia currocooides*), grasshopper sparrow\* (*Ammodramus savannarum*), Brewer's sparrow\* (*Spizella breweri*), sage sparrow\* (*Amphispiza belli*), sage thrasher\* (*Oreoscoptes montanus*), green-tailed towhee\* (*Pipilo chlorurus*), horned lark (*Eremophila alpestris*), loggerhead shrike (*Lanius ludovicianus*), western kingbird (*Tyrannus verticalis*), northern mockingbird (*Mimus polyglottos*), vesper sparrow (*Pooecetes gramineus*) and western meadowlark (*Sturnella neglecta*)[Parrish et. al. 2002 (p. 54)] .

#### Mountain Plover (*Charadrius montanus*)

The mountain plover is currently a Utah State species of concern. The only known breeding population of mountain plover in Utah is located on Myton Bench. The following proposed host pad locations are within habitat for mountain plover: 2-1-9-17, 12-13-9-17, 2-31-8-17 and 8-31-8-17

### **Raptors**

Some of the more common and visible birds within the Project Area include raptors, or birds of prey. The Project Area provides diverse breeding and foraging habitat for raptors: mixed desert shrub communities, rocky outcrops, and pinyon-juniper woodlands. All raptor species and their nests are protected from take or disturbance under the MBTA. However, burrowing owls, ferruginous hawks, and golden eagles are also considered to be special status wildlife species.

Through a review of BLM and UDWR data, it was concluded that individuals or their potential nesting habitat may occur within the vicinity of the Project Area. These species are discussed in more detail below. Nests of known and unknown raptor species were identified within 0.5 mile of four host locations.

### Golden Eagle (*Aquila chrysaetos*)

The golden eagle is considered a permanent resident of Utah. Habitat includes open country, in prairies, arctic and alpine tundra, open wooded country, and barren areas, especially in hilly or mountainous regions. Nests can be found on rock ledges on cliffs or in large trees. Pairs may have several alternate nests, or may use the same nest in consecutive years or shift to alternate nest used in different years. There is potential for golden eagle nests to occur within 0.5 mile of host location 12-13-9-17.

### Ferruginous Hawk (*Buteo regalis*)

This species is considered a permanent resident of Utah. Ferruginous hawks inhabit dry, open country of the plains, prairies, grassland, shrub-steppe, and deserts, especially in those areas with native bunchgrasses. They winter in open areas as well, especially in agricultural fields. There are documented ferruginous hawk nests within 0.5 mile of host locations 2-1-9-17, 2-31-8-17 and 8-31-8-17.

This page intentionally  
left blank

# **Chapter 4. Environmental Effects:**

This page intentionally  
left blank

## 4.0 Environmental Effects

This chapter describes the impacts that are anticipated to occur upon implementation of the Proposed Action and No Action alternatives to the resources described in Chapter 3.

### 4.1. Proposed Action

#### 4.1.1. Air Quality Including Greenhouse Gas Emissions

This Proposed Action is considered to be a minor source under the Clean Air Act and is not controlled by regulatory agencies. At present, control technology is not required by regulatory agencies since the Uinta Basin is designated as unclassified/attainment. The Proposed Action would result in different emission sources associated with two project phases: well development and well production. Annual estimated emissions from the Proposed Action are summarized in **Table 4.1**.

**Table 4.1. New Wells Annual Emissions (tons/year)**

Pollutant	Development	Production	Total
NO <sub>x</sub>	55.55	15.57	71.12
CO	17.62	29.34	46.96
VOC	5.31	29.33	34.64
SO <sub>2</sub>	0.29	0.06	0.35
PM <sub>10</sub>	6.50	86.88	93.38
PM <sub>2.5</sub>	1.63	9.60	11.23
Benzene	0.02	0.07	0.09
Toluene	0.01	0.04	0.06
Ethylbenzene	0.00	0.00	0.00
Xylene	0.01	0.01	0.01
n-Hexane	0.00	0.03	0.03
Formaldehyde	0.00	0.64	0.64

Emissions include development and production from 16 wells and associated operations traffic during the year in which the project is developed.

Well development includes NO<sub>x</sub>, SO<sub>2</sub>, and CO tailpipe emissions from earth-moving equipment, vehicle traffic, drilling, and completion activities. Fugitive dust concentrations would occur from vehicle traffic on unpaved roads and from wind erosion where soils are disturbed. Drill rig and fracturing engine operations would result mainly in NO<sub>x</sub> and CO emissions, with lesser amounts of SO<sub>2</sub>. These emissions would be short-term during the drilling and completion phases.

During well production, continuous NO<sub>x</sub>, CO, VOC, and HAP emissions would originate from well pad separators, condensate storage tank vents, and daily tailpipe and fugitive dust emissions from operations traffic. Road dust (PM<sub>10</sub> and PM<sub>2.5</sub>) would also be produced by vehicles servicing the wells.

Under the proposed action, emissions of NO<sub>x</sub> and VOC, ozone precursors from the producing wells would be 15.57 tons/yr for NO<sub>x</sub>, and 29.33 tons/yr of VOC (**Table 4.1**). Emissions would be dispersed and/ or diluted to the extent where any local ozone impacts from the Proposed Action would be indistinguishable from background conditions.

The primary sources of HAPs are from oil storage tanks and smaller amounts from other production equipment. Small amounts of HAPs are emitted by construction equipment. These emissions are estimated to be minor and less than 1 ton per year.

## Greenhouse Gases

It is not currently possible to determine a climate change impact from project specific GHG emissions, nor is it possible to assign a significance value to project specific GHG emissions. GHG emissions will be reported per guidance established by CEQ and the Interagency Air Quality MOU (USDA/USDOJ, 2011). Drilling and development activities from the Proposed Action are anticipated to release a negligible amount of greenhouse gases, into the local airshed, resulting in a negligible cumulative impact. The No Action Alternative would not result in an accumulation of impacts.

### Mitigation:

1. All internal combustion equipment shall be kept in good working order.
2. Water or other approved dust suppressants will be used at construction sites and along roads, as determined appropriate by the Authorized Officer. Dust suppressant such as magnesium chloride or fresh water may be used, as needed, during the drilling phase.
3. Open burning of garbage or refuse shall not occur at well sites or other facilities.
4. Drill rigs shall be equipped with Tier II or better diesel engines.
5. Low bleed pneumatics will be installed on separator dump valves and other controllers.
6. During completion, no venting can occur, and flaring will be limited as much as possible. Production equipment and gathering lines will be installed as soon as possible.
7. Telemetry will be installed to remotely monitor and control production.
8. All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horse power must not emit more than 2 grams of  $\chi$  per horsepower-hour. This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower-hour.
9. All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horse power must not emit more than 1.0 grams of  $\text{NO}_x$  per horsepower-hour.
10. Green completions will be used for all well completion activities where technically feasible.
11. Enhanced VOC emission controls with 95% control efficiency would be employed on production equipment having a potential to emit greater than 5 tons per year.

## 4.1.2. Areas of Critical Environmental Concern

Since the Pariette Wetlands ACEC is largely comprised of Core 1 and Core 2 *Sclerocactus* habitat and Housing and Urban Development mapped floodplains, development has been restricted by measures taken to protect the *Sclerocactus* and, to a lesser extent, the floodplains. Development impacts the watershed of the Pariette wetlands, however less than 5% of that watershed is within the ACEC, with much of the remaining area being highly developed either for agriculture and/or oil and gas. Therefore, precluding development inside the portion of the ACEC upstream of the wetlands has little positive impact upon them.

The proposed action could impact the relevant and important values discussed in Chapter 3.2, however measures taken to directly protect *Sclerocactus* and the watershed, whether part of the Proposed Action or Conditions of Approval would preclude any need for mitigation for the ACEC itself.

### 4.1.3. Livestock Grazing & Rangeland Health Standards

#### LIVESTOCK GRAZING

The Castle Peak and Eight Mile Allotments have been impacted by full field energy development. Past reclamation within the allotments has been relatively unsuccessful. The large amount of fragmentation, disturbance and forage loss throughout the allotments has led to multiple years of moderate to minimal use by the current grazing permittees.

Under the Proposed Action, approximately 2.58 acres of surface disturbance would occur. The allotments would continue to be used below authorized levels due to the increase in the amount of disturbance. The increase in disturbance and development activity, although slated for ancillary reclamation usually increases weed vegetation and general fragmentation of the landscape, which continues to hinder livestock operations. Therefore, both direct (loss of forage, invasive weeds, etc.) and indirect (increase in vehicle traffic, landscape fragmentation, etc.) impacts affect the livestock grazing operation on the allotments.

#### RANGELAND HEALTH

Rangeland Health assessments have been done on the allotments. Throughout the last few years energy development has continued to boom in the area through the implementation of the Castlepeak-Eightmile Flat EIS ROD. There has been a large increase in the level of disturbance as a result of oil and gas development in the area. Impacts from large amounts of disturbance and fragmentation contribute to factors (weeds, bare ground, shifts in ecological community structure, erosion, etc.) that often lead to areas not meeting rangeland health.

Under the Proposed Action approximately 2.58 acres of new surface disturbance would occur. This would contribute to soil loss, weed invasion, and continued fragmentation of grazing allotments, affecting livestock movement patterns and forage availability.

Although, much of the disturbed landscape is slated for reclamation; those efforts have not proven to be highly successful within the area for rangeland forage. Therefore, it is assumed that ecological impacts are continuing to occur which has the potential to directly and indirectly affect rangeland health standards.

### 4.1.4. USFWS Threatened, Endangered Candidate and Proposed Plant Species

Uinta Basin Hookless Cactus (*Sclerocactus wetlandicus*) and Pariette Cactus (*Sclerocactus brevispinus*)

The entire Project Area is within the 2013 polygon established by U.S. Fish and Wildlife Service (USFWS) as potential habitat for *Sclerocactus ssp.* In addition, the proposed wells 7-30-8-18, L-30-8-18, I-26-8-17, and L-26-8-17 are within Core Conservation Area (CCA) Level 2, and the proposed wells S-29-8-18, L-29-8-18, F-28-8-18, and I-29-8-18 are within CCA Level 1. New surface disturbance proposed in the CCAs as part of the Proposed Action is shown in the table below.

**Table 4.2. *Sclerocactus sp.* and total New Surface Disturbance in Core Conservation Areas**

Host Well	Cacti within 300 feet?	Total acres of NEW disturbance in core conservation areas.		BLM-added COA
		Level 1	Level 2	
10-30-8-18	No	0	0	See Mitigation Measures in Chapter 4
10-29-8-18	Yes	0	0	See Mitigation Measures in Chapter 4
43-29-8-18	Yes	0	0	See Mitigation Measures in Chapter 4
1-29-8-18	No	0	0	See Mitigation Measures in Chapter 4
1-3-9-18	No	0	0	See Mitigation Measures in Chapter 4
2-26-8-17	No	0	0	See Mitigation Measures in Chapter 4
7-26-8-17	Yes	0	0	See Mitigation Measures in Chapter 4
<b>Total Acres in Core Habitat</b>		0	0	

Surveys were conducted in April and November 2013, and April, August, September and October 2014, for the proposed wells and infrastructure. The surveys documented listed *Sclerocactus ssp.* within the survey buffers (within 300 feet of the proposed water line) of the proposed O-28-8-18, S-29-8-18, L-29-8-18, L-26-8-17, and 110-31-8-17 locations, with the closest plants located approximately 50 feet from the centerline. Some of the locations where no new surface disturbance is proposed were not surveyed (1-1-9-17, 7-30-8-18, L-30-8-18, and I-26-8-17) since all project activities would occur within existing disturbed areas. Existing disturbance is considered unsuitable habitat for *Sclerocactus ssp.*

As there are plants present within the survey buffer, additional mitigation measures would be required in order to reduce the potential for direct and indirect impacts to *Sclerocactus ssp.* plants and habitat. However, no new surface disturbance would occur within 300 feet of plants. As long as the proposed mitigation measures are implemented, no direct physical damage would occur to *Sclerocactus wetlandicus* or *Sclerocactus brevispinus* individuals as a result of the Proposed Action.

Possible dispersed direct and indirect negative impacts which may result from implementation of the Proposed Action include: loss of suitable habitat, habitat modification by invasive weed species which may compete with individuals, accidental spray or drift of herbicides used during invasive plant control, and deposition of fugitive dust from construction activities and vehicle traffic on unpaved roads. Although no new surface disturbance is proposed, fugitive dust and other secondary pollinator effects could also occur from re-disturbance on the existing well pad, increased vehicle traffic, spoil stockpiling, and drilling on site.

Due to these indirect and direct negative impacts the Proposed Action warrants a “*may affect, is not likely to adversely affect*” determination for *Sclerocactus wetlandicus* and *S. brevispinus*. Informal Section 7 consultation with the USFWS was completed in November 2011, and clarifying discussions between the BLM and USFWS, including a recently released matrix, and management prescription guidance for use in Core areas (based on recent concurrence documents) occurred from March-May 2014. These discussions and applications were specific to Newfield development, within the scope of the 2011 BO continued use, up to and until the Monument Butte EIS consultation or other programmatic NEPA supplants the document.

### *Mitigation*

The following mitigation measures will be applied as either part of the Proposed Action or a Condition of Approval (COA):

*Chapter 4 Environmental Effects:  
USFWS Threatened, Endangered Candidate and  
Proposed Plant Species*

*June, 2015*

- Documented cactus within the 300 foot survey buffers would be flagged for avoidance during construction and drilling activities.
- A qualified biological monitor would be present during construction and drilling activities to ensure that documented individual cactus are not disturbed.
- Newfield will perform ground disturbing activities in *Sclerocactus ssp.* Core Conservation Areas (CCAs) outside of the flowering period (April 1 through May 30). This applies to all ground disturbance, including previously disturbed areas on existing well pads.
- Only water (no chemicals, reclaimed production water or oil field brine) will be used for dust abatement measures within all cactus habitats.
- Dust abatement will be employed in suitable *Sclerocactus ssp.* habitat over the life of the project during the time of the year when *Sclerocactus ssp.* species are most vulnerable to dust-related impacts (March through August) within all cactus habitats.
- The seed mix will be amended to exclude all introduced and non-native species for reclamation seeding on this project.
- Erosion control measures (i.e. silt fencing) will be implemented to minimize sedimentation to *Sclerocactus ssp.* plants and populations located down slope of proposed surface disturbance activities when working in all cactus habitats.
- Application for Pesticide Use Permit will include provisions for mechanical removal, as opposed to chemical removal, for Utah Class A, B and C noxious weeds within 50 feet of individual/populations of *Sclerocactus*.
- From one year of the date forward of 100% *Sclerocactus* clearance survey for this project, spot checks will be conducted and approved for all planned disturbance areas on an annual basis. (The *S. brevispinus* survey period is defined as mid-March to June 30, and the *S. wetlandicus* survey period is defined as anytime without snow cover prior.) Results of spot checks may require additional pre-construction plant surveys as directed by the BLM. If the proposed action or parts thereof have not occurred within four years of the original survey, 100% clearance re-survey will be required prior to ground disturbing activities.

*Discovery Stipulation:* Re-initiation of Section 7 consultation with the USFWS will be sought immediately if any loss of plants or occupied habitat for Pariette cactus or Uinta Basin hookless cactus is anticipated as a result of project activities.

#### 4.1.5. Water

Water flowing onto the pad diverts it from replenishing the downstream system and flood the pad.

##### **Mitigation:**

During reconstruction of the L-26-8-17 pad, it should be built in a manner to divert water around it.

## **4.1.6. Fish and Wildlife; Threatened, Endangered, or Candidate Animal Species; and Migratory Birds**

### **4.1.6.1. Fish and Wildlife Excluding USFWS Designated Species**

#### *White-tailed Prairie Dog (Cynomys leucurus)*

The Proposed Action would increase prairie dog habitat loss by up to 2.58 acres. This disturbance would contribute to the loss of prairie dog habitat and could contribute to the loss of prairie dog burrows if the proposed action occurs within a prairie dog colony. The majority of disturbance would be restricted to existing well locations. Direct impacts to prairie dogs from the Proposed Action could include increased mortality due to prairie dog-vehicle collisions caused by vehicles traveling in/near colonies. As traffic volumes and/or project-related activities increase, adjacent habitats may be avoided due to human presence and noise. Increased traffic volumes in the Project Area would be temporary and restricted to the drilling and construction of the new wells. After drilling and construction are complete, traffic volumes would most likely return to pre-project levels. Habitat quality for these species would also be degraded by the introduction of noxious and invasive weeds. Weed invasions may lead to a decrease in the amount of native perennials and bare ground, thereby degrading habitat for prairie dogs by decreasing visibility, forage quality, and burrow development. However, because the requirements of the Green River District Reclamation Guidelines and VFO Weed Policy would deter the spread of invasive plants or noxious weeds in the Project Area; weed invasions should be minimal and should not adversely impact prairie dog colonies.

### **4.1.6.2. Threatened, Endangered, or Candidate Animal Species**

#### **Colorado River Fish Species**

Food supply, predation, and competition are important elements of the biological environment. Food supply is a function of nutrient supply and productivity, which could be limited by reduction of high spring flows brought about by water depletions. Water depletions also contribute to alterations in flow regimes that favor nonnative species. Predation and competition from nonnative fish species have been identified as factors in the decline of the endangered fishes. Depletions from the Upper Colorado River Drainage System, along with a number of other factors, have resulted in such drastic reductions in the populations of the Colorado pikeminnow, humpback chub, bonytail, and razorback sucker that the USFWS has listed these species as endangered and has implemented programs to prevent them from becoming extinct.

On January 21-22, 1988, the Secretary of the Interior; the Governors of Wyoming, Colorado, and Utah; and the Administrator of the Western Area Power Administration were cosigners of a Cooperative Agreement to implement the "Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin" (Recovery Program) (Service 1987). An objective of the Recovery Program is to recover the listed species while providing for new water development in the Upper Colorado River Basin. Under the Section 7 agreement of March 11, 1993, users of water rights granted after the signing of the Cooperative Agreement pay a depletion fee to the Fish and Wildlife Service to fund the Recovery Program. The depletion from the current action was considered under previous consultations and depletion fees previously paid,

(see Section 6.1.1, “Consultation for Water Depletion” (p. 51)) therefore no water depletion is considered to occur under the proposed action.

However, the potential exists for water intake structures placed in the Upper Colorado River Drainage System (flowing rivers and streams) to result in mortality to eggs, larvae, young-of-the-year, and juvenile life stages. Key habitat components for foraging or cover may be removed or altered due to equipment, including decreased water quantity for aquatic species from dewatering during low flow periods.

Therefore, the Proposed Action would have a “*may affect, likely to adversely affect*” determination for the endangered Colorado pikeminnow, humpback chub, bonytail, and razorback sucker. The Proposed Action would also adversely affect the bluehead sucker, flannelmouth sucker, and the roundtail chub, but it is not likely to result in a trend toward the listing of the species. However, upon implementation of the following mitigation measures from the Final Biological Opinion for the Newfield Productions’s 20–acre Infield Development Project [USFWS 2011 (p. 54)] the impacts would be minimized, and consultation precluded.

## Mitigation

For protection of T&E Fish if drawing water from the Green River

1. The best method to avoid entrainment is to pump from an off-channel location – one that does not connect to the river during high spring flows. An infiltration gallery constructed in a service approved location is best.
2. If the pump head is located in the river channel the following stipulations apply:
  - a. Do not situate the pump in a low-flow or no-flow area as these habitats tend to concentrate larval fishes.
  - b. Limit the amount of pumping, to the greatest extent possible, during that period of the year when larval fish may be present (April 1 to August 1).
  - c. Limit the amount of pumping, to the greatest extent possible, during the midnight hours (10pm to 2 am), as larval drift studies indicate that this is a period of greatest daily activity. Dusk is the preferred pumping time, as larval drift abundance is lowest during this time.
3. Screen all pump intakes with 3/32” mesh material.
4. Approach velocities for intake structures should follow the National Marine Fisheries Service's document "fish screening criteria for anadromous salmonids". For projects with an in-stream intake that operate in stream reaches where larval fish may be present, the approach velocity should not exceed 0.33 feet per second (ft/s).
5. Report any fish impinged on the intake screen or entrained into irrigation canals to the service (801.975.3330) or the Utah Division of Wildlife Resources:

Northeastern Region  
318 N Vernal Ave,  
Vernal, UT 84078  
Phone: (435)781-9453

### 4.1.6.3. Migratory Birds

Under the Proposed Action, 2.58 acres would be disturbed. These activities would contribute to a loss of migratory bird habitat. The potential impacts also include an increased risk of direct mortality from vehicle strikes and nest disruption. However, since all the activity will occur within or adjacent to existing disturbance, current activities and lack of vegetation suitable to nest in makes it less likely birds will be nesting in the affected area.

#### *Mitigation:*

#### Mountain Plover (*Charadrius montanus*)

If it is anticipated that construction or drilling will occur during mountain plover nesting season (May 1 – June 15), a BLM biologist will be notified to determine if surveys are necessary prior to beginning operations. If surveys are deemed necessary, depending on the results permission to proceed may or may not, be granted by the BLM Authorized Officer. This timing restriction applies to the 2-1-9-17, 12-13-9-17, 2-31-8-17 and 8-31-8-17 host locations.

#### *Raptors*

Implementation of the Proposed Action could affect nesting and breeding golden eagle and ferruginous hawk which utilize the Project Area. Impacts to these species could occur. Some impacts include displacement from suitable nesting habitats during the breeding season due to increased noise levels and visual disturbances on the landscape, nest abandonment, reduced habitat values in foraging areas due to prey displacement, potential loss of prey habitat, and an increased potential for collisions with vehicles traveling in the project area.

#### *Mitigation*

#### Golden Eagle (*Aquila chrysaetos*)

If the surface disturbing activities are planned during the current timing restrictions for the Golden Eagle (January 1st through August 31st) a survey for nesting Golden eagle would be required. Based on the results of the survey, permission to proceed may or may not be granted by the BLM Authorized Officer. This timing restriction applies to the 12-13-9-17 host location.

#### Ferruginous Hawk (*Buteo regalis*)

If the surface disturbing activities are planned for during the current timing restrictions for the ferruginous hawk (March 1st through August 1st) a survey for nesting ferruginous hawk would be required. Based on the results of the survey, permission to proceed may or may not be granted by the BLM Authorized Officer. This restriction applies to the 2-1-9-17, 2-31-8-17 and 8-31-8-17 host locations.

## **4.2. No Action Alternative**

### **4.2.1. Air Quality and Greenhouse Gas Emissions**

Under the No Action Alternative, the proposed gas wells would not be drilled and the existing wells would not be converted to injection. There would be no emissions increases or reductions to air quality. Effects on ambient air quality would continue at present levels from existing oil and gas development in the region and other emission producing sources. The host well pads would continue to exist until the wells on those pads are plugged. Dust and other emissions from the existing wells will continue at current higher levels because the liquids gathering system would not be installed.

### **4.2.2. Areas of Critical Environmental Concern**

Under the No Action Alternative, existing development within and without the ACEC would continue to impact watershed and cactus habitat inside the ACEC.

### **4.2.3. Livestock Grazing & Rangeland Health Standards**

Under the No Action alternative, there would be no additional contributions to the existing disturbance and fragmentation resulting in no change in impacts from the project to the allotments, to livestock grazing or Rangeland Health Standards.

### **4.2.4. USFWS Threatened, Endangered, Candidate and Proposed Plant Species**

Uinta Basin Hookless Cactus (*Sclerocactus wetlandicus*) and Pariette Cactus (*Sclerocactus brevispinus*)

Under the No Action Alternative, there would be no direct disturbance or indirect effects to *Sclerocactus ssp.* or associated habitat from surface-disturbing activities associated with the proposed project. Current land use trends in the area would continue, including increased industrial development, increased off-highway vehicles (OHV) traffic, and increased recreation use.

### **4.2.5. Water:**

Under the No Action Alternative, water would continue to flow onto the 7-26-8-17 pad.

### **4.2.6. Fish and Wildlife; Threatened, Endangered, or Candidate Species; and Migratory Birds**

Under the No Action alternative, there would be no direct disturbance and mortality or indirect effects to threatened, endangered, and proposed, candidate, or sensitive fish and wildlife species/habitat, migratory birds and non-listed wildlife from construction, drilling, and completion activities associated with the Proposed Action. However, the host well pads would

continue to exist until the wells on those pads are plugged. Surface disturbance, human activity, displacement, and weed impacts will continue as a result of the maintenance of the existing wells, pads, roads, and pipelines.

# **Chapter 5. Cumulative Impacts**

This page intentionally  
left blank

## 5.0 Cumulative Impacts

Cumulative impacts are those impacts that result from the incremental impact of an action when added to other past, present, and reasonably foreseeable actions, regardless of which agency or person undertakes such other actions.

Cumulative effects under the ESA include the effects of the future State, Tribal, local, or private actions that are reasonably certain to occur in the project area; future Federal actions that are unrelated to the Proposed Action are not required to be considered because they require separate consultation pursuant to Section 7 of the ESA. However, NEPA requires the full disclosure of all past, present, and reasonably foreseeable activities regardless of surface owner so this analysis includes future federal actions.

### 5.1. Air Quality Including Greenhouse Gas Emissions

The cumulative impact area for air quality is the Uinta Basin, plus all regional Class I areas and other environmentally sensitive areas (e.g., national parks and monuments, wilderness areas, etc.) near the Uinta Basin. The Air Resource Management Strategy (ARMS) Modeling Project is a cumulative assessment of potential future air quality impacts associated with predicted oil and gas activity in the Uinta Basin [BLM 2011(a) (p. 53)]. Consequently, past, present and reasonably foreseeable wells in the Uinta Basin are a part of the cumulative actions considered in this analysis. The ARMS is incorporated by reference and summarized below.

The ARMS Modeling Project predicted the following impacts to air quality and air quality related values for the 2010 typical year and four 2021 future year scenarios: 2021 on-the-books (OTB); 2021 Scenario 1 (NO<sub>x</sub> controls); 2021 Scenario 2 (VOC controls); and 2021 Scenario 3 (NO<sub>x</sub> and VOC controls).

- Ozone
  - The highest modeled ozone occurs in the Uinta Basin study area regardless of model scenario, and all scenarios predict exceedences of the ozone NAAQS and state AAQS in the Uinta Basin.
  - In the Uinta Basin, the ozone concentrations are highest during the winter period. In Class I and Class II areas outside the Uinta Basin study area, ozone concentrations are highest during the summer period.
  - During non-winter months in the Uinta Basin the model predicts that ozone may exceed the NAAQS and state AAQS (Ambient Air Quality Standards); however, model-adjusted results from the MATS tool (which accounts for model performance biases) indicate that non-winter ozone concentrations are below the NAAQS and state AAQS for all monitors and areas analyzed. Also, the 2021 scenarios have minimal effect on model-predicted ozone concentrations during non-winter months.
  - 2021 Scenario 2 tends to have the lowest 8-hour ozone concentration relative to all other 2021 scenarios (4th highest daily maximum is 3 ppb lower compared to the 2021 OTB Scenario). When comparing Scenario 2 to the OTB Scenario, a potential reduction in ozone concentrations occurs in the vicinity of the Ouray site (where the concentrations are already largest). There is no predicted ozone disbenefit associated with Scenario 2 mitigation

measures (i.e., there is no area with predicted ozone increases relative to the OTB Scenario). This supports the assessment that peak ozone impacts are in VOC-limited areas.

- 2021 Scenarios 1 and 3 are predicted to have higher ozone impacts than either the 2010 Typical year and the 2021 OTB Scenario. Both scenarios predict a relatively large increase in ozone concentrations within the vicinity of Ouray indicating potential ozone disbenefits associated with NO<sub>x</sub> control mitigation measures.
- NO<sub>2</sub>, CO, SO<sub>2</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub>
  - There are seven monitoring stations within the 4- km domain with daily PM<sub>2.5</sub> concentrations that exceed the NAAQS and state AAQS in the baseline emissions inventory.
  - All modeled NO<sub>2</sub>, CO, SO<sub>2</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub> values are well below the NAAQS and state AAQS in the Uinta Basin.
  - The model-predicted PM<sub>2.5</sub> and PM<sub>10</sub> concentrations may underestimate future impacts due to a negative model bias throughout the year in the 4-km domain with the largest bias occurring in summer [AECOM and STL (p. 53)].
  - Results from the MATS tool (which accounts for model performance biases) indicate that PM<sub>2.5</sub> concentrations may exceed the NAAQS and state AAQS for select monitors and assessment areas in the 2010 Typical year. All 2021 scenarios predict that only one of these monitoring station would continue to exceed the NAAQS and state AAQS.
  - No monitoring stations within the 4-km domain exceed the annual PM<sub>2.5</sub> NAAQS and state AAQS during the 2010 typical or 2021 Scenarios.
  - Two unmonitored areas within the Uinta Basin exceed the annual PM<sub>2.5</sub> NAAQS and state AAQS during the 2010 typical year, and impacts in these areas tend to increase under 2021 Scenarios 1 and 2. Under 2021 Scenario 3, the annual PM<sub>2.5</sub> impacts decrease in the Uinta Basin due to combustion control measures.
  - The 2021 scenarios generally have lower NO<sub>2</sub>, CO, SO<sub>2</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub> concentrations than the 2010 Typical Year scenario, except for within the Uinta Basin.
  - Under the 2021 scenarios, all assessment areas are within the PSD (Prevention of Significant Deterioration) increments for annual NO<sub>2</sub>, 3-hour SO<sub>2</sub>, annual SO<sub>2</sub>, and annual PM<sub>10</sub>.
  - Under the 2021 scenarios, most assessment areas exceed the 24-hour PM<sub>2.5</sub> PSD increment.
- Visibility
  - Visibility conditions in Class I and sensitive Class II areas generally show improvement in the 2021 Scenarios relative to the 2010 Typical Year.
  - There also are no substantial differences in the 20th percentile best and worst visibility days between the 2021 Scenarios.
- Deposition and Acid Neutralizing Capacity
  - Results generally show a decrease in deposition for the 2021 Scenarios relative to the 2010 Typical Year.

- The differences in estimated deposition between the 2021 Scenarios are generally very small.
- Acid Neutralizing Capacity change at all seven sensitive lakes exceeds the 10 percent limit of acceptable change for all model scenarios.

It is anticipated that the impact to ambient air quality and air quality related values associated with the Proposed Action would be indistinguishable from and dwarfed by the model and emission inventory scope and margin of error. The No Action alternative would not result in an accumulation of impacts.

### **Greenhouse Gases**

It is not currently possible to determine a climate change impact from project specific GHG emissions, nor is it possible to assign a significance value to project specific GHG emissions. GHG emissions will be reported per guidance established by CEQ and the Interagency Air Quality MOU [USDA/USDOI 2011 (p. 54)]. Drilling and development activities from the Proposed Action are anticipated to release a negligible amount of greenhouse gases, into the local airshed, resulting in a negligible cumulative impact. The No Action Alternative would not result in an accumulation of impacts

## **5.2. Areas of Critical Environmental Concern**

The CIAA is the entire Pariette Wetlands ACEC. Currently there are about 50 well pads with associated roads and pipelines within the ACEC. This proposal will add one well, but no new surface disturbance. Cumulative impacts to the relevant and important values of the ACEC would be increased sedimentation to the watershed and wind borne dust to listed cactus until interim reclamation was completed. The No Action alternative would not result in an accumulation of impacts.

## **5.3. Livestock Grazing & Rangeland Health Standards**

The cumulative impact analysis area (CIAA) for Rangeland Resources is the Antelope Powers, Castle Peak and Eight Mile Flat Allotments. The allotments include approximately 40,466, 51,824, 27,546 acres, respectively. Within the CIAA, negative impacts have occurred and continue to occur for grazing resources as a result of disturbance from oil and gas energy development. Invasive species such as: halogeton, tumbleweed, tumble mustard and cheatgrass usually dominate disturbed sites throughout the CIAA. The current landscape within the CIAA is heavily fragmented by hundreds of miles of surface pipelines, roads, well pads (abandoned and active), compressor stations, and other infrastructure typically associated with the oil and gas industry. **Table 5-1 (p. 44)** depicts existing disturbance. Cumulative existing disturbance for the CIAA is approximately 5,782 acres, including 453 miles of ancillary roads. The Proposed Action would contribute an additional 2.58 acres to the overall cumulative disturbance. The No Action alternative would not contribute additional disturbance impacts in the CIAA.

The amount of total surface disturbance reduces the available forage for livestock and wildlife within the allotments, and would continue to result in direct effects to grazing operation via probable AUM reductions as a direct result of forage loss and fragmentation. Surface impacts include increased traffic and landscape fragmentation and disturbance near water improvements that are specifically managed for livestock grazing.

**Table 5.1. Cumulative Disturbance for Livestock Grazing & Rangeland Health**

Type of Disturbance (11.10.2012)	Count	Acreage*	Other Metrics	Source
<b>Energy Development</b>				
Drilling Locations	54	270	NA	DOGM Data
Operations Center	6	39	NA	DOGM Data
Producing Wells	1237	6,185	NA	DOGM Data
Shut In Well Locations	91	455	NA	DOGM Data
Temporarily Abandoned	12	280	NA	DOGM Data
Newfield Major Pipelines (estimated 3.5 acres/mile)	Approx. 80	280	80 miles	Available Newfield GIS Data
<b>Reasonably Foreseeable Well Pads</b>				
Gasco	198	990	NA	DOGM Data
MBU	946	4730	NA	DOGM Data
<b>Other (County, Livestock, Etc.)</b>				
Ponds and/or Guzzlers recorded in RIPs	Approx. 33	Estimated 20		
Ancillary Roads		1,492	373 miles	Assumption for acreage is based on an average width of 30 feet/mile of road (approx. 4 acres/mile)
<b>Total Estimated Existing Cumulative Disturbance</b>		<b>5,782 acres</b>	<b>453 miles</b>	
*Acreage is based on GPS data and is a rough estimate				

## 5.4. USFWS Threatened, Endangered, Proposed or Candidate Plant Species

### Pariette cactus (*Sclerocactus brevispinus*)

The CIAA for Pariette cactus is the area delineated by the USFWS as potential habitat for the species. This area covers approximately 115,900 acres on BLM, Ute tribal, state of Utah, and privately held lands. Due to inclusions of areas of unsuitable habitat within the potential habitat area, the total acreage of suitable habitat is less than 115,900 acres. However, a complete survey of suitable habitat has not been performed and thus the amount of suitable habitat has not been quantified. Impacts to the species from past, current, and reasonably foreseeable actions may be greater or smaller than those described for the total area depending upon the exact distribution of actions relative to suitable habitat.

Within the CIAA, there are approximately 426 miles of roads. Past, present and reasonably foreseeable disturbance from oil and gas will affect 10,932 acres (9.43% of the CIAA), as shown in **Table 5.2 (p. 45)**. Cumulative impacts include dust impacts to plants, and plant and pollinator habitat destruction. Surface disturbance is a good indicator of the extent of these cumulative

impacts. The project consists of 16 wells being drilled from 11 existing well pads. Under the Proposed Action, approximately 0.96 acre of new surface disturbance is proposed. The No Action Alternative would not result in an accumulation of impacts.

**Table 5.2. Cumulative Impacts Analysis for Pariette Cactus.**

	Project Area Acreage	Surface Disturbance Analyzed	Project Area Acreage within the CIAA	Surface Disturbance within the CIAA <sup>1</sup>
<b>Ongoing Field Development</b>				
Gasco EIS	236,165	3,604	6,692	102 acres
Greater Natural Buttes Project EIS	162,911	8,147	17	0 acres
Rocky Point Exploration and Development Agreement Leasing and Exploratory Drilling EA	92,098	340	11,344	42 acres
<b>Past Developments and Current and Future Developments Not Covered by a Field Development NEPA Document</b>				
85 abandoned wells <sup>2,3</sup>	NA <sup>4</sup>	NA	NA	422 acres
1,082 existing wells <sup>2,3</sup>	NA	NA	NA	4,230 acres
85 proposed wells <sup>2,3</sup>	NA	NA	NA	422 acres
<b>Field Development Proposals</b>				
Monument Butte Area Oil and Gas Development Project EIS	119,850	15,612	36,308	4,730 acres
Randlett EDA Area Programmatic Leasing and Exploration Project	53,380	2,612	20,098	984 acres
<b>Total CIAA disturbance from oil and gas</b>				10,932 acres (9.43%)
<b>Current Project</b>				
Proposed Action	2.56	0.96	2.56	0.96
No Action	NA	NA	NA	0
<b>Total CIAA disturbance from oil and gas</b>				10,932.96 (9.43%)
1-Assumes surface disturbance was authorized evenly across the analysis area of the document.				
2-Uses the assumption contained within the Greater Uinta Basin Cumulative Impacts Technical Support Document.				
3-As of 4/10/2013				
4-NA = not applicable				

### Uinta Basin hookless cactus (*Sclerocactus wetlandicus*)

The CIAA for Uinta Basin hookless cactus is the area delineated by the USFWS as potential habitat for the species. This area covers approximately 537,564 acres on BLM, Ute tribal, state of Utah, and privately held lands. Due to inclusions of areas of unsuitable habitat within the potential habitat area, the total acreage of suitable habitat is less than 537,564 acres. However, a complete survey of suitable habitat has not been performed and thus the amount of suitable habitat

has not been quantified. Impacts to the species from past, current, and reasonably foreseeable actions may be greater or smaller than those described for the total area depending upon the exact distribution of actions relative to suitable habitat.

Within the CIAA, there are approximately 1,875 miles of roads. Past, present and reasonably foreseeable disturbance from oil and gas will affect 44,674 acres (8.3% of the CIAA), as shown in **Table 5.3 (p. 46)** Cumulative impacts include dust impacts to plants, and plant and pollinator habitat destruction. Surface disturbance is a good indicator of the extent of these cumulative impacts. The project consists of 16 wells being drilled from 11 existing well pads. Under the Proposed Action, approximately 0.96 acre of new surface disturbance is proposed. The No Action Alternative would not result in an accumulation of impacts.

**Table 5.3. Cumulative Impacts Analysis for Uinta Basin Hookless Cactus**

	Project Area Acreage	Surface Disturbance Analyzed	Project Area Acreage within the CIAA	Surface Disturbance within the CIAA <sup>1</sup>
<b>Ongoing Field Development</b>				
Chapita Wells-Stagecoach Area	32,872	1,735	22,678	1,235
Gasco Natural Gas Field Development EIS	236,165	3,604	73,339	1,180
Greater Deadman Bench Oil and Gas Producing Region EIS	98,785	1,239	22,444	282
Greater Natural Buttes Project EIS	162,911	8,147	97,529	4,877
North Alger Natural Gas Expansion Project EA	2,320	192	943	78
North Chapita Natural Gas Well Development Project EA	31,872	1,735	9,191	500
River Bend Unit Infill Development EA	17,719	924	14,892	823
Rock Point EDA Leasing and Exploratory Drilling EA	92,098	340	11,344	42
Saddletree Draw Leasing and Rock House Development EA	4,826	106	4,774	105
West Bonanza Area Natural Gas Well Development Project EA	24,813	608	1,070	26
West Tavaputs EIS	137,930	1,603	30,704	357
<b>Past Developments and Current and Future Developments Not Covered by a Field Development NEPA Document</b>				
729 abandoned wells <sup>3</sup>	NA <sup>4</sup>	NA	NA	3,565 acres

	<b>Project Area Acreage</b>	<b>Surface Disturbance Analyzed</b>	<b>Project Area Acreage within the CIAA</b>	<b>Surface Disturbance within the CIAA<sup>1</sup></b>
5,239 existing wells <sup>3</sup>	NA	NA	NA	19,158 acres
752 proposed well <sup>3</sup>	NA	NA	NA	2,377 acres
<b>Field Development Proposals</b>				
Greater Chapita Wells Natural Gas Infill Project EIS	40,027	3,696	31,741	2,931
Monument Butte Area Oil and Gas Development Project EIS	119,850	15,612	43,964	5,727
Randlett EDA Area Programmatic Leasing and Exploration Project	53,380	2,613	28,817	1,411
<b>Total CIAA disturbance from oil and gas</b>				
				44,674 acres (8.3%)
<b>Current Project</b>				
Proposed Action	2.56	0.96	2.56	0.96
No Action	NA	0	NA	0
<b>Total CIAA disturbance from oil and gas</b>				
				44,674.96 acres (8.31%)
<sup>1</sup> Assumes surface disturbance was authorized evenly across the analysis area of the document. <sup>2</sup> Uses the assumption contained within the Greater Uinta Basin Cumulative Impacts Technical Support Document. <sup>3</sup> As of 10/2013 <sup>4</sup> NA = not applicable				

## 5.5. Water:

The cumulative impacts analysis area for this resource is defined as the boundary of the Greater Monument Butte EIS which is located in the Monument Butte/Myton Bench Oil and Gas Field in Duchesne and Uintah Counties, Utah, which contains approximately 119,850 acres. As disclosed in the Castle Peak Eight Mile Flat FEIS, past activity in the cumulative impact area includes 671 oil, gas, and waterflood wells. Present activity includes 778 oil gas, and waterflood wells. Assuming 1.3 acres of disturbance for well pads (after interim reclamation) and 2.5 acres of disturbance for ancillary facilities (per well), the past and present disturbance is approximately 5,506 acres. Reasonably foreseeable development includes the Newfield Greater Monument Butte Development Plan consisting of 5,750 wells including supporting facilities. Assuming 1.3 acres of disturbance per well including ancillary facilities, because there are multiple wells on most pads, the reasonably foreseeable development would result in approximately 7,404 acres of disturbance after interim reclamation. Total cumulative disturbance would be 12,910 acres.

Cumulative impacts include increased sedimentation and salts, including toxic metals, being washed down the watershed, ultimately reaching the Green River. The proposed action would contribute to this cumulative impact if the pads flooded and the berms failed. The No Action Alternative would not result in an accumulation of effects.

## 5.6. Fish and Wildlife; Threatened, Endangered, or Candidate Species; and Migratory Birds

The cumulative impacts analysis area for this resource is defined as the boundary of the Greater Monument butte Unit in Duchesne and Uintah Counties, Utah, which contains approximately 65,381 acres. As disclosed in the Castle Peak Eight Mile Flat FEIS, past activity in the cumulative impact area includes 671 oil, gas, and waterflood wells and present activity includes 778 oil gas, and waterflood wells. Assuming 1.3 acres of disturbance for well pads (after interim reclamation) and 2.5 acres of disturbance for ancillary facilities (per well), the past and present disturbance is approximately 5,506 acres. Reasonably foreseeable development includes the Newfield Greater Monument Butte Development Plan consisting of 5,750 wells including supporting facilities. Assuming 1.3 acres of disturbance per well including ancillary facilities, because there are multiple wells on most pads, the reasonably foreseeable development would result in approximately 7,404 acres of disturbance after interim reclamation. Total cumulative disturbance would be 12,910 acres.

Cumulative impacts resulting from the surface disturbance and other actions include decreased available cover, carrying capacity, foraging opportunities, breeding habitat, and habitat productivity for white-tailed prairie dog, mountain plover, burrowing owl, ferruginous hawk, and migratory birds. In general, the severity of the cumulative effects would depend on factors such as the sensitivity of the species affected, seasonal intensity of use, type of project activity, and physical parameters (e.g., topography, forage quality, cover availability, visibility, and noise presence). The proposed action would add 2.58 acres of disturbance/resdisturbance.

The No Action Alternative would not result in an accumulation of impacts.

### *Colorado River Fish Species*

The cumulative impacts analysis area for this resource is the Colorado River system. Cumulative impacts in this area include oil and gas exploration and development, irrigation, urban development, recreational activities, and activities associated with the Upper Colorado River Endangered Fish Recovery Program. Cumulative impacts such as decreased water quality and quantity, decreased habitat quality, habitat fragmentation, and mortality result from decreased stream flow, erosion, improperly placed culverts, elevated salinity, and contamination. Decreased stream-flows reduce or eliminate both the extent and quality of suitable habitat by increasing stream temperatures, and subsequently by reducing dissolved oxygen levels. Such impacts may be more pronounced during periods of natural cyclic flow reductions (fall and winter or periods of drought). A loss of streamflow can also reduce a stream's ability to transport sediment downstream. Sediment amount is influenced by the number of road/stream crossings, bank slope, amount of exposed soil, type of vegetation in the area, frequency and intensity of rainfall, soil type (amount of salinity), soil contamination, and the implementation and effectiveness of erosion control measures. Sediment loads above background levels can reduce pool depths, bury stream substrates and spawning gravels, adhere to aquatic insects and the gills of fish, alter channel form and function, and result in other forms of habitat degradation. Elevated salinity levels, over extended periods of time, may become toxic for aquatic ecosystems and fish species. In addition, improperly placed, shaped, and sized culverts in roads can act as fish barriers on key streams or exacerbate erosion and cause headcutting.

The No Action Alternative would not result in an accumulation of impacts.

# **Chapter 6. Consultation and Coordination:**

This page intentionally  
left blank

## **6.0 Consultation and Coordination**

### **6.1. Section 7 Consultation Under the ESA**

#### **6.1.1. Consultation for Water Depletion**

Newfield has undertaken consultation for water depletion four separate times, resulting in the issuance of the following Biological Opinions:

- The CP/EMF Original [USFWS 2005 (p. 54)] and the Rocky Point BOs which allowed for a total of 2823 acre feet per year (2081 and 742 acre feet respectively)
- The 2006 Castle Peak/Eight Mile Flat (CP/EMF) BO amendment [USFWS 2006 (p. 54)] which allowed for 819 acre feet per year
- The 2011 20 Acre Infill BO [USFWS 2011 (p. 54)] which allowed for a total of 428 acre feet per year

Consultation has taken place and depletion fees paid for the yearly depletion of 4,070 acre feet water. In addition, Newfield has secured 324 acre feet of historic rights for which consultation took place in 1993. In Fiscal Year (FY) 2014 (October 1, 2013–September 30, 2014) Newfield used an estimated 2,755 acre feet of fresh water for drilling, dust control and water injection. FY 2015 water use on the GMBU is expected to remain well under the 4,394 acre feet for which consultation has taken place and depletion fees paid, therefore consultation for depletion and depletion fees are not required for this project.

#### **6.1.2. Consultation for Pumping Water from the Green River**

The 2011 20 Acre Infill BO [USFWS 2011 (p. 54)] considered potential impacts to larval threatened and endangered fish from pumping water from the Newfield collector well and provided mitigation measures to minimize impacts. Those measures have been included in Section 4.1.6.2, “Threatened, Endangered, or Candidate Animal Species” (p. 34).

#### **6.1.3. Consultation for Threatened and Endangered Plants**

On October, 2011, BLM prepared a programmatic Biological Assessment (BA) for Newfield Production Company’s 20-acre Infield Program [BLM 2011(b) (p. 53)]. The United States Fish and Wildlife Service issued a Biological Opinion (BO) [USFWS 2011 (p. 54)] for threatened and endangered *Sclerocactus ssp*, whereby they concurred with BLM effects determinations on November 21, 2011. This project falls within the scope of this BO for *Sclerocactus ssp*.

### **6.2. Section 106 Consultation Under the NHPA**

A recommendation of “no historic properties affected” pursuant to Section 106 of 36 CFR 800 is proposed for this project based on the proposed mitigation measure and the results of a Class III survey. Copies of the cultural resource reports were provided by the BLM to the State Historical Preservation Office (SHPO), along with a request to consult under Section 106 of the National Historic Preservation Act. The BLM received a concurrence determination of “no historic properties affected” from the SHPO for all the reports associated with this project.

### 6.3. Summary of Tribal Consultation

A request for Tribal concurrence regarding Native American Religious Concerns was conducted for the entire Monument Butte EIS, which encompasses the Project Area, on December 22, 2010. No comments were received from the requisite tribes within the 30 days allotted.

### 6.4. Summary of Public Participation

This EA was posted on the BLM Land Use Planning and NEPA Register on May 29, 2015. No public interest has been expressed to date.

### 6.5. List of Preparers

**Table 6.1. Document Preparers**

NAME	TITLE	RESPONSIBLE FOR PREPARING THE FOLLOWING SECTION(S) OF THIS DOCUMENT
Sheri Wysong	Physical/Environmental Scientist	Team Lead
Stephanie Howard	Environmental Coordinator	Chapters 3, 4 & 5: Air Quality
Christine Cimiluca	Natural Resource Specialist	Chapters 3, 4 & 5 Threatened and Endangered Plants
Dan Emmett	Wildlife Biologist	Chapters 3, 4 & 5: Wildlife Including USFWS Designated Species; Threatened, Endangered, or Candidate Animal Species, Migratory birds
Craig Newman	Rangeland Management Specialist	Chapters 3, 4 and 5 Rangeland Resources - Livestock Grazing, Rangeland Health Standards

# References

- [AECOM and STL] AECOM and STI, 2014 Final Utah Air Resource Management Strategy Modeling Project Impact Assessment Report. [http://www.blm.gov/ut/st/en/prog/more/air\\_quality/airprojs.html](http://www.blm.gov/ut/st/en/prog/more/air_quality/airprojs.html).
- [BMO 2009] British Meteorological Office's Hadley Centre, 2009. Accessed January 2009 at <http://www.metoffice.gov.uk/climatechange/science/monitoring/>.
- [BLM 2005.] Bureau of Land Management *Final Environmental Impact Statement and Record of Decision for the Castle Peak and Eight Mile Flat Oil and Gas Expansion Project, Newfield Rocky Mountains, Inc., Uintah and Duchesne Counties, Utah*. U.S. Department of the Interior, Bureau of Land Management, Vernal District Office..
- [BLM and USFS 2007] *Bureau of Land Management (BLM) and United States Department of Agriculture Forest Service (USFS). 2007. Surface Operating Standards for Oil and Gas Exploration and Development 4th Edition-Revised 2007 (Gold Book)*..
- [BLM 2007] Bureau of Land Management *Final Vegetation Treatments Using Herbicides Programmatic Environmental Impact Statement* U.S. Department of the Interior, Bureau of Land Management, .
- [BLM 2008] Bureau of Land Management *Vernal Field Office Resource Management Plan*. U.S. Department of the Interior, Bureau of Land Management, Vernal District Office..
- [BLM 2011(a)] Bureau of Land Management, *Air Resource Management Strategy (ARMS)*. [http://www.blm.gov/style/medialib/blm/ut/natural\\_resources/airQuality.Par.48166.File.dat/BLMUtahARMS.pdf](http://www.blm.gov/style/medialib/blm/ut/natural_resources/airQuality.Par.48166.File.dat/BLMUtahARMS.pdf).
- [BLM 2011(b)] Bureau of Land Management *Newfield Production Company 20-acre Infill Development Program. Biological Assessment* U.S. Department of the Interior, Bureau of Land Management, Vernal District Office..
- [BLM 2012] BLM. 2012. Final Environmental Impact Statement for the Greater Natural Buttes.
- [Duchesne County 1997] *1997 Duchesne County Public Land Use Plan (County General Plan) as amended in 1998, 2005 and 2012*..
- [Foote, 2013] Foote, Brian, Regulatory Analyst, Newfield Production Company. Personal correspondence, February 27, 2013..
- [IPCC, 2013] IPCC, 2013: Summary for Policymakers. In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, Y. Xia, V. Bex, and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA..
- [Newfield 2008] *Standard Operating Procedures, Greater Monument Butte Green River Development Program*. Newfield Production Company..
- [Newfield. 2009] Newfield Exploration Company *Castle Peak and Eight Mile Flat Reclamation and Weed Management Plan*. .

- [Parrish et. al. 2002] Parrish, J.R., F.P. Howe and R.E. Norvell. *Utah Partners in Flight Avian Conservation Strategy Version 2.0. Utah Partners in Flight Program, Utah Division of Wildlife Resources, 1594 West North Temple, Salt Lake City, Utah 84116. UDWR Publication Number 02-27. i - xiv + 302 pp.*
- [Uintah County 2005] 2005 Uintah County General Plan, as amended in 2012..
- [USDA/USDOI 2011] USDA/USDOI. 2011 Memorandum of Understanding. <http://www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&pageid=251152>.
- [USGCRP 2009] U. S. Global Change Research Program *Global Climate Change Impacts in the United States*, Thomas R. Karl, Jerry M. Melillo, and Thomas C. Peterson, (eds.). Cambridge University Press, 2009..
- [USFWS 1994] U.S. Fish and Wildlife Service. *Final Rule: Determination of critical habitat for the Colorado River endangered fishes: Razorback sucker, Colorado squawfish, humpback chub, and bonytail chub*. Federal Register 59: 13375-13400..
- [USFWS 2005] U.S. Fish & Wildlife Service *Biological Opinion for the Castle Peak Eightmile Flat Oil and Gas Expansion Project* July 6, 2005.
- [USFWS 2006] U.S. Fish & Wildlife Service *Amendment to the Biological Opinion for the Castle Peak Eightmile Flat Oil and Gas Expansion Project* April 11, 2006.
- [USFWS 2011] U.S. Fish & Wildlife Service *Final Biological Opinion for the Newfield Production's 20 acre Infield Development Project*. November 21, 2011.

# Appendix A. Interdisciplinary Team Checklist

**Project Title:** GMBU East 2015-3

**NEPA Log Number:** DOI-BLM-UT-G010-2015-0124-EA

**File/Serial Number:**

**Project Leader:** Sheri Wysong

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

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

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

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

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

Determination	Resource/Issue	Rationale for Determination	Signature	Date
<b>RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)</b>				
PI	Air Quality & Greenhouse Gas Emissions	Emissions from construction, drilling, and production equipment could adversely affect air quality.  No standards have been set by EPA or other regulatory agencies for greenhouse gases. In addition, the assessment of greenhouse gas emissions and climate change is still in its earliest stages of formulation. Global scientific models are inconsistent, and regional or local scientific models are lacking so that it is not technically feasible to determine the net impacts to climate due to greenhouse gas emissions. It is anticipated that greenhouse gas emissions associated with this action and its alternative(s) would be negligible.	Stephanie Howard	5/29/2015
NP	BLM Natural Areas	None present as per 2008 Vernal RMP and ROD/GIS layer review.	Sheri Wysong	5/29/2015
NI	Cultural:  Archaeological Resources	No cultural resources were identified within the APE of the proposed project. No sites will be impacted or affected.	CJ Truesdale	5/29/2015
NP	Cultural:  Native American Religious Concerns	No Traditional Cultural Properties (TCPs) are identified within the APE. The proposed project will not hinder access to or use of Native American religious sites.	CJ Truesdale	5/29/2015

<b>Determination</b>	<b>Resource/Issue</b>	<b>Rationale for Determination</b>	<b>Signature</b>	<b>Date</b>
NP	Designated Areas:  Areas of Critical Environmental Concern	None present as per 2008 Vernal RMP and ROD/GIS layer review.	Sheri Wysong	5/29/2015
NP	Designated Areas:  Wild and Scenic Rivers	None present as per 2008 Vernal RMP/ROD and GIS layer review	Sheri Wysong	5/29/2015
NP	Designated Areas:  Wilderness Study Areas	None Present as per 2008 Vernal RMP/ROD and GIS layer review	Sheri Wysong	5/29/2015
NI	Environmental Justice	The Ute Tribe benefits financially from the oil and gas development in the region and is not disproportionately adversely affected by environmental impacts. There are no other minority or economically disadvantaged groups in the region that are positioned to be disproportionately adversely affected.	Sheri Wysong	5/29/2015
NP	Farmlands  (prime/unique)	Prime or unique farmlands must be irrigated to be designated as such. None of the lands in the project area are irrigated, therefore there are no prime or unique farmlands in the project area.	Sheri Wysong	5/29/2015
NI	Fuels/Fire Management	No fuel management activities are planned for the project area. The proposed project would not conflict with fire management activities due to the use of existing pads.	Sheri Wysong	5/29/2015
NI	Geology/Minerals/ Energy Production	Natural gas, oil, Gilsonite, oil shale and tar sand are the mineral resources that could be significantly impacted by the project, however, no adverse impact is expected based on the following: <ul style="list-style-type: none"> <li>● The production of natural gas and oil is allowed under the existing Federal lease.</li> <li>● The proposed new surface disturbance involves negligible economic impact to the resources listed above.</li> <li>● Compliance with Onshore Oil and Gas Order No. 2, <i>Drilling Operations</i> will assure that mineral resources such as gilsonite, oil shale or tar sand deposits are isolated and protected.</li> <li>● If there is an active Gilsonite mining operation within 2 miles of the well location, the operator shall notify the Gilsonite operator at least 48 hours prior to any blasting during</li> </ul>	Justin Snyder	6/15/2015

Determination	Resource/Issue	Rationale for Determination	Signature	Date
		construction (VFO standard condition of approval for APD's).		
NI	Invasive Plants/ Noxious Weeds, Soils & Vegetation	In accordance with the Green River Reclamation Guidelines, compliance with requirements of the Guidelines will be a COA for all BLM authorizations within the jurisdiction of the Green River District Office. Compliance with the COA will prevent impacts to soils and vegetation and prevent the spread of Invasive and noxious weeds to the extent that detailed analysis is not necessary.	Sheri Wysong	5/29/2015
NI	Lands/Access	Current land use within the area consists of existing oil and gas development, gilsonite mining, wildlife habitat, recreational use, and sheep and cattle ranching. No existing land uses would be changed or modified by the implementation of the Proposed Action; therefore there would be no impact.	Sheri Wysong	5/29/2015
NP	Lands with Wilderness Characteristics (LWC)	None present as per 2008 Vernal RMP and ROD/GIS layer review.	Sheri Wysong	5/29/2015
PI	Livestock Grazing & Rangeland Health Standards	The proposed project would create additional ground disturbance and fragmentation of the allotments of which may impact both the livestock operation as well as the fundamentals of rangeland health.	Craig Newman	
NI	Paleontology	No impact is expected based on the following: <ul style="list-style-type: none"> <li>• SWCA Environmental Consultants performed field surveys of proposed new surface disturbance for the expansion of well pads 2-31-8-17 and 8-31-8-17 (Reports dated October 21, 2014). Paleo clearance was recommended based on the fact that 1) no paleontological resources were discovered and 2) the geologic conditions did not indicate an elevated potential to yield fossils.</li> <li>• If paleontological resources are discovered during operations, all activities which would affect them will cease and the BLM Authorized Officer will be contacted (VFO standard condition of approval for APD's).</li> </ul>	Justin Snyder	6/15/2015

Determination	Resource/Issue	Rationale for Determination	Signature	Date
NI	Plants:  BLM Sensitive	<p>The following UT BLM Sensitive plant species are present or expected in the same or an adjacent subwatershed as the proposed project: <i>Yucca sterilis</i> and <i>Cryptantha grahamii</i>.</p> <ul style="list-style-type: none"> <li>• Sandy soils in the vicinity of the proposed project may provide suitable habitat for <i>Yucca sterilis</i>. However, no populations are present in the Project Area and none were documented during the surveys of the Project Area. Given the exclusively clonal nature of the species, the potential for future establishment is negligible.</li> <li>• Suitable habitat for Graham's catseye (<i>Cryptantha grahamii</i>) is on Green River shales in mixed desert shrub, sagebrush or mountain shrub vegetation elevations from 5,000 -7,400 feet. This habitat (Green River shale) is not present in the Project Area, and no populations or individuals have been documented in the Project Area per BLM GIS review.</li> </ul>	Christine Cimiluca	6/19/2015
PI	Plants:  Threatened, Endangered, Proposed, or Candidate	<p>The following Federally listed, proposed, or candidate plant species is present or expected in the same or an adjacent subwatershed as the proposed project: Pariette cactus (<i>Sclerocactus brevispinus</i>) and Uinta Basin hookless cactus (<i>Sclerocactus wetlandicus</i>). The proposed wells and associate infrastructure are within the 2013 polygon established by U.S. Fish and Wildlife Service (USFWS) as potential habitat for <i>Sclerocactus ssp.</i> In addition, the proposed wells 7-30-8-18, L-30-8-18, I-26-8-17, and L-26-8-17 are within Core Conservation Area (CCA) Level 2, and the proposed wells S-29-8-18, L-29-8-18, F-28-8-18, and I-29-8-18 are within CCA Level 1. Individuals/populations of cactus were found within 300 feet of some of the proposed infrastructure. Due to the presence of <i>Sclerocactus ssp.</i> plants and habitat in the Project Area, direct and indirect effects to <i>Sclerocactus ssp.</i> and habitat could potentially occur as a result of the Proposed Action.</p>	Christine Cimiluca	6/19/2015
NP	Plants:  Wetland/Riparian	No inventoried or observed riparian areas are located at or near the other well locations.	Sheri Wysong	5/29/2015

<b>Determination</b>	<b>Resource/Issue</b>	<b>Rationale for Determination</b>	<b>Signature</b>	<b>Date</b>
NI	Recreation	Proposed project takes place in the Vernal Extensive Recreation Management Area; currently the VFO does not track quantifiable visitor use data within the project area. Limited recreation has been observed within the project area during field visits, however; predominate recreational activity is based on driving to the Pariette wetlands or Sandwash Boat Ramp, but these are not within the project area.	Sheri Wysong	5/29/2015
NI	Socio-Economics	No impact to the social or economic status of the county or nearby communities would occur from this project due to its small size in relation to ongoing development throughout the basin.	Sheri Wysong	5/29/2015
NI	Visual Resources	The viewshed within the project area is characterized by landscape based high desert look consisting of natural browns and reds, rock outcrops, horizontal and vertical broken lines with sparse, low lying vegetation. Existing structures include abandoned well pads in various states of reclamation, existing drilling structures with associated movement, form, lines, textures, and colors.  Based on management objectives for the project area, the project meets VRM class III and IV requirements.	Sheri Wysong	5/29/2015
NI	Wastes (hazardous/solid)	No chemicals subject to reporting under SARA Title III in amounts greater than 10,000 pounds would be used, produced, stored, transported, or disposed of annually in association with the project. Trash and other waste materials would be cleaned up and removed immediately after completion of operations. The pit liner would be trimmed or folded and buried so that it will not reemerge at a later date.	Sheri Wysong	5/29/2015
NI	Water: Floodplains	GIS and onsite review indicates the proposed activities are not located within floodplains.	Sheri Wysong	5/29/2015

<b>Determination</b>	<b>Resource/Issue</b>	<b>Rationale for Determination</b>	<b>Signature</b>	<b>Date</b>
NI	Water: Groundwater Quality	No impact to groundwater is expected based on the following: <ul style="list-style-type: none"> <li>• Wells must be drilled in compliance with <i>Onshore Oil and Gas Order No. 2, Drilling Operations</i>, which requires that all useable groundwater be isolated and protected.</li> <li>• Impacts to shallow groundwater from surface activities will be similar to those for surface water (see NI determinations for Stormwater, Surface Water Quality and Wastes)</li> <li>• No underground sources of drinking water, as defined in 40 CFR 144.3, have been identified by the EPA or the State of Utah in the project area.</li> </ul>	Justin Snyder	6/15/2015
NI	Water: Hydrologic Conditions (stormwater)	The Monument Butte area is arid, with few storm events that result in drainage from the disturbed areas. BMPs and adherence to Gold Book Standards to control erosion would prevent transport of sediments from runoff.	Sheri Wysong	5/29/2015
NI	Water: Surface Water Quality	Surface water quality would be impacted to a small degree with surface disturbing development causing soil erosion and also potential chemical spills onto soils. However the project is consistent with other approved energy development and the VFORMP.	Sheri Wysong	5/29/2015
NP	Water: Waters of the U.S.	GIS and onsite review indicate no navigable waters or waters of the U.S. are within the project area.	Sheri Wysong	5/29/2015
NP	Wild Horses	No herd areas or herd management areas are present in the project area per BLM GIS database.	Sheri Wysong	5/29/2015
PI	Wildlife: Migratory Birds (including raptors)	Migratory birds and plover habitat are present. GIS data indicates that golden eagle and ferruginous hawk individuals or their potential nesting habitat may occur within the vicinity of the Project Area.	Dan Emmett	06/08/2015
PI	Wildlife: Non-USFWS Designated	Project area is not within any BLM designated big game habitat.	Dan Emmett	6/08/2015

<b>Determination</b>	<b>Resource/Issue</b>	<b>Rationale for Determination</b>	<b>Signature</b>	<b>Date</b>
PI	Wildlife:  Threatened, Endangered, Proposed or Candidate	GIS layers and field data was reviewed and found no federally listed species and / or habitat within the proposed project area.  Water depletion will occur for the proposed project; however, the consultation for the project has occurred under the four Biological Opinions referenced in Section 6.1.1, "Consultation for Water Depletion" (p. 51) of the document.  The proposed project is not in sage grouse PPH or PGH .	Dan Emmett	06/08/ 2015
NP	Woodlands/  Forestry	None Present as per 2008 Vernal RMP/ROD and GIS layer review	Sheri Wysong	5/29/2015

<b>FINAL REVIEW:</b>			
<b>Reviewer Title</b>	<b>Signature</b>	<b>Date</b>	<b>Comments</b>
Environmental Coordinator	Kelly Buckner	7/6/2015	
Authorized Officer	Jerry Kenczka	7/6/2015	

This page intentionally  
left blank

# Appendix B. Green River District Reclamation Guidelines

These guidelines apply to all surface disturbing activities upon BLM administered surface lands within the Green River District. These surface disturbing activities include all actions authorized, conducted, or funded by the BLM. Compliance with the requirements of this document will be the appropriate approval for the proposed action, which will vary by BLM programs. These guidelines are intended to be compatible with the requirements of the various BLM program objectives.

## RECLAMATION PLAN

A reclamation plan shall be provided for all proposed surface disturbing activities in accordance with BLM program directives and approved by the BLM Authorized Officer. The plan shall:

- Identify any program or regulatory specific requirements for reclamation;
- Comply with the Reclamation Goal and Reclamation Objectives described in A and B below; and
- Specify in detail how the Reclamation Objectives Actions are planned to be implemented. The plan should:
  - i. Reflect the complexity of the project;
  - ii. Consider the environmental concerns identified during project review; and
  - iii. Consider the reclamation potential for the site.

## A. RECLAMATION GOALS

1. The **short-term (interim) reclamation goal** is to immediately stabilize disturbed areas and to provide the necessary conditions to achieve the long term goal.
2. The **long-term (final) reclamation goal** is to facilitate eventual ecosystem reconstruction by returning the land to proper functioning condition.
3. Any incidental use on interim reclamation may require restoration of damage. This may require re-contouring and seeding of the damaged area along with consideration of controls of the incidental use of the land.

## B. RECLAMATION OBJECTIVES

1. ***Establish a desired self-perpetuating diverse plant community.***
  - a. Attain **75% basal cover** comprised of desired species and/or seeded species based on the standards in 1) below within 5 years of initial reclamation action.
    - a. Species diversity should approximate the surrounding undisturbed area or, for areas that are in poor range condition due to past land management practices, the species diversity should approximate the site as described in the NRCS Ecological Site Description.

- b. Use of non-native plant species is allowed, however, non-native species should be selected that will not displace or offer long-term competition to the native plants.
  - c. Crested wheatgrass species and forage kochia should not account for more than 30% of the total measured basal cover.
- b. If after three (3) growing seasons there is less than **30% of the basal cover** based on similar undisturbed native vegetative community, then the Authorized Officer may require additional reclamation efforts.
  - c. All seed utilized will be tested prior to application to ensure BLM and State of Utah specifications for PLS, purity, noxious weeds, etc. have been met.
  - d. As determined by the Authorized Officer, temporary fencing may be required to exclude livestock/big game grazing until seeded species have become established.
  - e. As determined by the Authorized Officer, mulching may be required.
    - a. If utilized, mulch should be applied within 24 hours following completion of seeding. Mulching should consist of crimping certified weed-free straw or certified weed-free native grass hay into the soil.
    - b. Hydro-mulching may be used in areas where crimping is impracticable, in areas of interim reclamation that were hydro-seeded, and in areas of temporary seeding regardless of seeding method.
2. ***Establish slope stability and desired topographic diversity.***
    - a. Reconstruct the landscape to approximate the original contour and topographic diversity.
    - b. Implement necessary erosion controls designed to prevent sediment transport from the reclaimed area.
  3. ***Reconstruct and stabilize altered water courses and drainage features.***
    - a. Reconstruct drainage basins to have similar features found in nearby properly functioning basins, including: basin relief ratios, valley gradients, sinuosity, and drainage densities for all reclaimed basins.
    - b. Reconstruct drainages to have similar hydraulic characteristics found in properly functioning drainages, including: flow depth, water surface top width, cross-section area of flow, water surface slope, mean channel velocity, desired vegetation, and channel roughness.
  4. ***Ensure the biological, chemical, and physical integrity of the topsoil resource during all phases of construction, operation, and reclamation.***
    - a. Implement appropriate BMP's designed to minimize and prevent erosion, compaction, and contamination of the topsoil resource.
    - b. Segregate topsoil from subsoil without mixing them.

- c. Where possible, integrate stored topsoil into existing production landscape.
  - d. Stabilize all stored topsoil against erosion. Seed topsoil stored beyond one growing season with an approved seed mixture.
  - e. Identify topsoil storage with appropriate signage, to prevent improper use of the stored topsoil.
  - f. Redistribute the topsoil to pre-disturbance depth.
5. ***Re-establish the visual composition and characteristics to blend with the natural surroundings.***
- a. Ensure the overall location, landform, scale, shape, color, and orientation of major landscape features blends into the adjacent area and meets the needs of the planned post disturbance land use.
6. ***Control the occurrences of noxious weeds and undesirable invasive species by utilizing principles of integrated weed management including prevention, mechanical, chemical, and/or biological control methods.***
- a. Inventory and document noxious and invasive plant infestations before reclamation actions begin.
    - a. A pre-disturbance noxious weed inventory shall be conducted on all surface disturbing projects to determine the presence of noxious weeds prior to beginning the project, and to determine whether treatment is needed prior to disturbance. Results of the inventory shall be documented in the annual reclamation report (see 8.iii).
    - b. If noxious weeds are found, an additional report including the following data shall be submitted to the BLM individual responsible for the Pesticide Use Proposal (PUP) prior to the disturbance occurring:
      - A GPS location recorded in North American Datum 1983,
      - Species,
      - Canopy cover or number of plants, and
      - Size of infestation (estimate of square feet or acres).
  - b. Control and manage invasive and noxious weed infestations using principles of integrated weed management including chemical, mechanical, and biological control methods.
    - a. If herbicides are planned for use, an approved Pesticide Use Proposal (PUP) by the BLM is required.
    - b. Herbicides must be applied by a certified applicator with a current Utah Pesticide Applicators License.
    - c. A Biological Use Proposal is required for new bio-control agents in each Field Office.

7. ***Manage all waste materials.***

- a. Segregate all waste materials from the subsoil and topsoil.
- b. All waste materials must be disposed in an authorized disposal facility in accordance with local, State and Federal requirements.

8. ***Conduct monitoring that is able to assess the success of reclamation actions and adaptively manage to correct failures.***

- a. Monitoring methodology will be an accepted BLM method designed to monitor basal vegetative cover. Monitoring criteria include the following:
  - a. Qualitative monitoring data should be collected after the 2nd growing season following reclamation actions.
  - b. Quantitative data should be collected after the 3rd and 5th growing seasons, and the year that the applicant determines that reclamation meets the long term objective of 75% basal cover as compared to the reference site. General view photographs of the reclaimed areas should be submitted with the quantitative data. Photographs should be taken at the same photo point each time, and as close to the same time of year as previous photos were taken to reduce differences in plant growth characteristics.
- b. An undisturbed reference site will be selected prior to monitoring. One reference site may be used for multiple reclamation sites as long as the site potentials are similar.
  - a. Reference sites shall be permanently marked, and the location recorded by Global Positioning System (GPS) North American Datum 1983.
  - b. A photograph consisting of a general view of the marked reference site should be submitted with the Reference site data.
  - c. All linear ROW's will have one monitoring transect per each NRCS ecological site that the ROW passes through for greater than 0.75 mile.
- c. Each applicant will submit all reclamation efforts annually to the Green River District Data management System (GRDMS) by March 1st. Reclamation efforts will include:
  - a. Document compliance with all aspects of the reclamation goals, objectives, and actions and describe the reclamation accomplished.
  - b. Document the results of the noxious weed inventory (see 6.i.1); and
  - c. Recommend revised reclamation strategies, if necessary.
- d. Implement revised reclamation strategies as needed.
- e. Repeat the process of monitoring, evaluating, documenting/reporting, and implementing, until reclamation goals are achieved, as determined by the Authorized Officer.

C. RECOMMENDED PRACTICES

*Appendix B Green River District Reclamation Guidelines*

*June, 2015*

## 1. Drill Seeding

- a. Drill Seeding is the preferred method of seed application unless site conditions preclude the use of drill seeding equipment. 1) Drill seeds at the minimum rate of 45 Pure Live Seeds (PLS) per linear foot. Seeds should be drilled to a depth of 0.25 to 0.5 inch.
  - a. Drill Seeding is the preferred method of seed application unless site conditions preclude the use of drill seeding equipment. 1) Drill seeds at the minimum rate of 45 Pure Live Seeds (PLS) per linear foot. Seeds should be drilled to a depth of 0.25 to 0.5 inch.
  - b. Some plant seeds should not be drilled. If those species are used, the application method should fit the seed type requirements.
  - c. Areas in excess of 40% slope or that are excessively rocky will be broadcast seeded at 80-90 PLS and covered to a maximum of 0.25 inch by harrowing, drag bar, or roller.
- b. Seeding efforts should be conducted between August 15 and prior to winter freezing of the soil.

## 2. Ensure the biological, chemical, and physical integrity of the topsoil resource during all phases of construction, operation, and reclamation.

- a. Reduce soil/subsoil compaction to the anticipated root depth of the desired plant species.
  - a. Compaction relief typically should be designed for 18-24 inches in depth.
  - b. Compaction relief should be designed to create a cross hatch pattern, and distance between furrows should not be greater than 2 feet.
- b. Re-spread the topsoil according to the following standards.
  - a. If the topsoil to be re-spread is greater than 6" in depth, then topsoil should be applied *before* compaction relief is implemented.
  - b. If the topsoil to be re-spread is less than 6", then topsoil should be applied *after* compaction relief is implemented.
  - c. If large clumps/clods occur, disking may be necessary.

## GLOSSARY

**Contamination** — : The presence of man-made chemicals or other alterations in the natural soil or water environment (pesticides, hazardous substances, petroleum, salts).[Adapted from various sources ]

**Interim Reclamation** – : Interim reclamation consists of minimizing the footprint of disturbance by reclaiming all portions of the well site not needed for safe production operations. The portions of the well site not needed for operational and safety purposes will be re-contoured to

*Appendix B Green River District Reclamation Guidelines*

a final appearance that blends with the surrounding topography. Topsoil will be spread over these areas. The operator will spread the topsoil over the entire location except where an all-weather surface, access route, or turnaround is needed. Production facilities should be clustered or placed offsite to maximize the opportunity for interim reclamation.

- Invasive Species –:** A species that is not native (or is alien) to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health.[Executive Order 13112 ]
- Noxious Species —:** In the United States, the legislation that defines a noxious weed is the Federal Noxious Weed Act, 1974. It defines a noxious weed as, any living stage (including seeds and reproductive parts) of a parasitic or other plant of a kind which is of foreign origin, is new to or not widely prevalent in the U.S., and can directly or indirectly injure crops, other useful plants, livestock, poultry or other interests of agriculture, including irrigation, navigation, fish and wildlife resources, or the public health (United States Congress 1974).[Executive Order 13112 ]
- Reclamation Plan – :** A written document that addresses the reconstruction of disturbed ecosystems to a condition approximate or equal to that which existed prior to disturbance or as described in the NRCS Ecological Site Description.
- Surface Disturbing Activities –:** An action whether authorized or taken in trespass that alters the mineral soil resource, and/or surface geologic features, beyond natural site conditions and on a scale that affects other Public Land values. Examples of surface disturbing activities may include: operation of heavy equipment to construct well pads, roads, pits and reservoirs; installation of pipelines and power lines; implementation of several types of vegetation treatments; sand and gravel pit use; commercial rock removal operations; trail construction, fire rehabilitation; range improvement projects; etc. Any Surface disturbing activity.
- Waste materials – :** Any material that can interfere with successful reclamation, safety, and long term stability of a site (contaminated soil or water, drilling muds, solid waste). [Adapted from various sources]