

## **APPENDIX G. PLAN FOR SURFACE RECLAMATION AND MONITORING**



## **G.1 GENERAL RECLAMATION OBJECTIVES**

The objective of interim reclamation is to restore vegetative cover and a portion of the landform sufficient to maintain healthy, biologically active topsoil; control erosion; and minimize habitat and forage loss during the life of the well or facilities.

The long-term objective of final reclamation is to return the land to a condition approximating that which existed prior to disturbance. This includes restoration of the landform and natural vegetative community, hydrologic systems, and wildlife habitats. To ensure that the long-term objective would be reached through human and natural processes, actions would be taken to ensure standards are met for site stability, hydrological functioning, and vegetative productivity.

## **G.2 RECLAMATION ACTIONS**

The following minimum reclamation actions would be taken to ensure that the reclamation objectives and standards are met. It may be necessary to take additional reclamation actions beyond the minimum in order to achieve Reclamation Objectives and Standards.

- The Bureau of Land Management (BLM) would be notified 24 hours prior to commencement of any reclamation operations.
- All best management practices (BMPs) and design features described in Chapter 2 (including sections 2.1, 2.2.6, 2.3.6, 2.4.6, 2.5.6, 2.6.6, and 2.7.6) would apply to reclamation sites.
- Earthwork for interim reclamation would be completed as soon as it is a fully completed; producing well and earthwork for final reclamation would be completed within 6 months of well plugging (weather permitting).
- Water breaks and terracing of the site would only be installed when absolutely necessary to prevent erosion of fill material. Water breaks and terracing are not permanent features and would be removed and reseeded when the rest of the site is successfully revegetated and stabilized.
- Exceptions to reclamation standards would be considered on a site-specific basis.
- The requirements and stipulations of the Vernal Field Office Reclamation Guidelines (IM VE-2009-002) and the Green River District Reclamation Guidelines would be adhered to, except where the methods in this document are more stringent.
- All requirements and stipulations of the Vernal Field Office Surface Disturbing Weed Policy (IM UTG010-2010-001) would be adhered to.

## **G.3 SITE RECLAMATION OBJECTIVES AND STANDARDS**

The site reclamation objectives and standards outlined below would be met.

### ***SITE STABILITY***

#### Objectives:

Interim: Disturbed areas not needed for long-term production operations or vehicle travel would be recontoured and reseeded. Unneeded equipment would be removed.

Final: The original landform would be reclaimed and production/drilling equipment and facilities removed for all disturbed areas including well pads, production facilities, roads, pipelines, and utility corridors.

Standards:

Interim: Disturbed areas not needed for long-term production operations or vehicle travel would be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Sufficient level area would remain for setup of a workover rig and to park equipment.

Final: The original landform would be reclaimed to the contour existing prior to initial construction or a contour that blends with the surrounding landscape for all disturbed areas including well pads, production facilities, roads, pipelines, and utility corridors. The site also would be free of oil field debris, equipment, and facilities.

### ***VEGETATIVE PRODUCTIVITY***

Objectives:

Interim: Disturbed areas not needed for long-term production operations or vehicle travel would be revegetated with a self-sustaining, vigorous, diverse, native (or otherwise approved) plant community sufficient to minimize visual impacts, provide forage, stabilize soils, and impede the invasion of noxious weeds.

Final: A self-sustaining, vigorous, diverse, native (or otherwise approved) plant community would be established on the site, with a density sufficient to control erosion and non-native plant invasion and reestablish wildlife habitat or forage production.

Standards (both interim and final):

Initial seedbed preparation would consist of backfilling, leveling, and ripping all compacted areas to a minimum depth of 12 inches with a minimum furrow spacing of 18 inches.

Prior to seeding, the seedbed would be scarified and left with a rough surface

Final seedbed preparation would consist of contour cultivating to a depth of 4–6 inches within 24 hours prior to seeding.

No single species would account for the majority of total vegetative composition unless it is evident at high levels in the adjacent landscape. The allowable percentage of total vegetation occupied by a single species would be determined by the authorizing officer (AO).

Permanent vegetative cover would be determined successful by the AO, as assessed by the basal cover of desirable perennial species relative to the basal cover of the adjacent undisturbed area or potential basal cover as defined in the National Resource Conservation Service Ecological Site(s) for the area.

Plants must be resilient as evidenced by well-developed root systems. Shrubs must be well established and at a minimum, in a “young” age class (therefore, not comprised mainly of seedlings that may not survive the following year).

The site would be free of state- or county-listed noxious weeds. The site would also be reasonably free of invasive species. However, given that cheatgrass is common in portions of the project area, it may not be possible to totally eliminate this invasive species from the reclaimed area. In the case of cheatgrass, interim reclamation would be considered acceptable as determined by the AO and according to BLM standards.

If necessary to ensure timely revegetation, the pad will be fenced to BLM standards to exclude livestock grazing for the first two growing seasons or until seeded species become firmly established, whichever comes later. Fencing will meet standards found on page 18 of the BLM's Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (the Gold Book), Fourth Edition, or will be fenced with operational electric fencing.

### **SOILS AND HYDROLOGICAL FUNCTIONING:**

#### Objectives:

Interim: Disturbed areas not needed for long-term production operations or vehicle travel would be respread with topsoil and protected from erosion.

Final: All disturbed areas would be covered with topsoil removed and reserved during construction. Measures would be taken to control erosion and allow natural water infiltration into the soil.

#### Standards (both interim and final):

Topsoil removed during construction would be spread over all disturbed areas to depth of removal (around 6 inches), as feasible. Salvaging and spreading topsoil would not be performed when the ground or topsoil is frozen or too wet to adequately support construction equipment. If such equipment creates ruts in excess of 4 inches deep, the soil would be deemed too wet.

After topsoil spreading, no erosion features, such as gullying, headcutting, slumping, and deep or excessive rilling (greater than 3 inches) would be allowed to persist.

No major depressions would be left on the site that could trap water and cause ponding.

### **G.4 MONITORING AND FINAL ABANDONMENT APPROVAL**

- Reclaimed areas would be monitored annually by the operator. Actions will be taken to ensure that reclamation standards are met as quickly as reasonably practical.
- An intensive weed monitoring and control program would be implemented beginning the first growing season after interim and final reclamation. Monitoring would be conducted at least annually by the operator during the growing season to determine the presence of any state-listed noxious weeds. Noxious weeds identified during monitoring would be promptly treated and controlled by the operator. On public lands, a Pesticide Use Proposal (PUP) would be submitted to the BLM for approval prior to the use of herbicides.
- The AO would be informed when reclamation has been completed, is successful, and the site is ready for final inspection.
- If the reclamation area is not successfully reclaimed or otherwise requires further management activities to establish vegetation, the actions prescribed will be implemented as planned and further monitoring will occur as detailed above.

### G.5 SAMPLE FINAL RECLAMATION REPORT

Final Reclamation Inspection/Monitoring—Environmental					
		<b>Case #:</b> <b>Lease #:</b> <b>Operator:</b>	<b>Well Name:</b> <b>Well #:</b> <b>API #:</b>		
<b>Twn: Rng:</b> <b>Sec: Qtr:</b> <b>N/S Foot: E/W Foot:</b>	<b>County: State:</b> <b>Latitude:</b> <b>Longitude:</b>	<b>Facility ID:</b> <b>Facility Name:</b> <b>H2S: Yes ( ) No ( )</b>			
<b>Surface Owner:</b>		<b>Present at Onsite: Yes ( ) No ( )</b>		<b>Inspection Activity: ES / SA</b>	
<b>Office Time:</b>	<b>Travel Time:</b>	<b>Inspection Time:</b>		<b>Trips:</b>	
<b>Inspection Open Date:</b>		<b>Inspection Close Date:</b>		<b>Inspector:</b>	
Inspection Items					
	Met	Not Met	N/A	Order/INC	Photo # Direc.
All Reclamation Work According to the Reclamation Plan?					
All Facilities Removed for Final Reclamation? (Including surface and shallow pipes, risers, markers, signs, fences, trash, etc.)					
Rock Surfacing Material Removed?					
Treatment of Oil or Salt Contaminated Soil Needed? Yes ( ) No ( )					
Treatment of Oil or Salt Contaminated Soil Occurring or Occurred? Yes ( ) No ( )					
Recontoured Back to Original Contour?					
Pad?					
Road?					
Pipeline?					
Topsoil Replaced?					
Pad?					
Road?					
Pipeline?					
Seeding: Broadcast? Drill? (circle one)					
Erosion Control?					
Reclamation Fence?					
Dry-hole Marker: Surface Monumented? [ ] Legal Description? [ ] Weep Hole [ ] Subsurface Monumented? [ ] Unknown? [ ]					
Noxious or Invasive Weeds Present? Treatment Needed? [ ] Species?					
Revegetation Success? Density? Species?					
Site Stability?					
<b>Final Reclamation Approved? Yes ( ) No ( )</b>					

Comments, Measurements, Inspection/Monitoring Results, and Additional Actions?			
<b>Initial Disturbed Acres:</b>		<b>Final Reclaimed Acres:</b>	
<b>Follow-up Requirements:</b> (circle any that apply) NONE    VERBAL    LETTER    INC    NOTIFY PET			
DRAFT 07-13-07	<b>Correct problem by:</b>	<b>Next inspection date:</b>	<b>Date AFMSS updated:</b>

*This page intentionally left blank.*