

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.*
 - i. 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.
 - 1) 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.
 - 2) 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.
 - 3) Crested wheatgrass species and forage kochia should not account for more than 30% of the total measured basal cover.

- ii. 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.
- iii. 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.
- iv. As determined by the Authorized Officer, temporary fencing may be required to exclude livestock/big game grazing until seeded species have become established.
- v. As determined by the Authorized Officer, mulching may be required.
 - 1) 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.
 - 2) 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.*

- i. Reconstruct the landscape to approximate the original contour and topographic diversity.
- ii. Implement necessary erosion controls designed to prevent sediment transport from the reclaimed area.

3. *Reconstruct and stabilize altered water courses and drainage features.*

- i. 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.
- ii. 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.*

- i. Implement appropriate BMP's designed to minimize and prevent erosion, compaction, and contamination of the topsoil resource.
- ii. Segregate topsoil from subsoil without mixing them.
- iii. Where possible, integrate stored topsoil into existing production landscape.
- iv. Stabilize all stored topsoil against erosion. Seed topsoil stored beyond one growing season with an approved seed mixture.
- v. Identify topsoil storage with appropriate signage, to prevent improper use of the stored topsoil.
- vi. Redistribute the topsoil to pre-disturbance depth.

5. *Re-establish the visual composition and characteristics to blend with the natural surroundings.*

- i. 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.***
 - i. Inventory and document noxious and invasive plant infestations before reclamation actions begin.
 - 1) 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).
 - 2) 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. A GPS location recorded in North American Datum 1983,
 - b. Species,
 - c. Canopy cover or number of plants, and
 - d. Size of infestation (estimate of square feet or acres).
 - ii. Control and manage invasive and noxious weed infestations using principles of integrated weed management including chemical, mechanical, and biological control methods.
 - 1) If herbicides are planned for use, an approved Pesticide Use Proposal (PUP) by the BLM is required.
 - 2) Herbicides must be applied by a certified applicator with a current Utah Pesticide Applicators License.
 - 3) A Biological Use Proposal is required for new bio-control agents in each Field Office.
7. ***Manage all waste materials.***
 - i. Segregate all waste materials from the subsoil and topsoil.
 - ii. 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.***
 - i. Monitoring methodology will be an accepted BLM method designed to monitor basal vegetative cover. Monitoring criteria include the following:
 - 1) Qualitative monitoring data should be collected after the 2nd growing season following reclamation actions.
 - 2) 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.
 - ii. 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.

- 1) Reference sites shall be permanently marked, and the location recorded by Global Positioning System (GPS) North American Datum 1983.
 - 2) A photograph consisting of a general view of the marked reference site should be submitted with the Reference site data.
 - 3) 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.
- iii. Each applicant will submit all reclamation efforts annually to the Green River District Data management System (GRDMS) by March 1st. Reclamation efforts will include:
- 1) Document compliance with all aspects of the reclamation goals, objectives, and actions and describe the reclamation accomplished.
 - 2) Document the results of the noxious weed inventory (see 6.i.1); and
 - 3) Recommend revised reclamation strategies, if necessary.
- iv. Implement revised reclamation strategies as needed.
- i. Repeat the process of monitoring, evaluating, documenting/reporting, and implementing, until reclamation goals are achieved, as determined by the Authorized Officer.

C. RECOMMENDED PRACTICES

1. Drill Seeding

- i. 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.
 - 2) Some plant seeds should not be drilled. If those species are used, the application method should fit the seed type requirements.
 - 3) 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.
- ii. 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.

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

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 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