United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Little Snake Field Office
455 Emerson Street
Craig, Colorado 81625-1129
http://www.blm.gov/co/st/en/fo/lsfo.html

In Reply Refer To:
9230 (CON010)
COC77226
DRMS Permit M-2015-027

December 21, 2015

Colorado Division of Reclamation, Mining and Safety
Environmental Protection Specialist
Attn: Amy Yeldell
101 South Third Street
Suite 301
Grand Junction, Colorado 81501

Dear Ms. Yeldell:

Per your request, please find attached the BLM stipulations for the reclamation of the Vermillion Creek Barrow Area, DRMS File No. M-2015-027. Please include BLM serial number COC77226 in any correspondence.

If you have any questions, please contact Jennifer Maiolo at (970) 826-5077.

Sincerely,

Wendy Reynolds
Field Manager

Enclosures (1)
DRMS Permit No. M-2015-027, Vermillion Creek Barrow Area reclamation stipulations

COC77226 Federal Case File Number

DRMS Permit Number M-2015-027, Vermillion Creek Barrow Area

I. Reclamation Objectives:

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, visual resources, and wildlife habitats.

Reclamation objectives are provided to promote an understanding of performance standards and Best Management Practices (BMPs), so that operators may implement them in effective, cost efficient manners. Objectives and standards also inform and facilitate understanding of BLM Inspection and Enforcement strategies.

II. Reclamation Performance Standards

- Operators are required to meet the following reclamation performance standards. Successful compliance with standards is determined by the BLM Authorized Officer. If revegetation is unsuccessful, subsequent treatments and reseedings will be required until standards are met.

General Reclamation Standards:

- Erosional features are equal to or less than those in the surrounding area, i.e., no gullying, head-cutting, slumping, and deep or excessive rilling (greater than 3 inches). Water naturally infiltrates into the soil rather than running off the surface.

- Sites are free of all State, county, or locally-listed A and B weed species.

- In areas where C-listed or locally undesirable weeds are documented, operators will develop a site specific treatment plan to meet the local objectives for management of those species.

Final Reclamation will be judged successful by the BLM, when:

- All recontoured disturbance has been stabilized and re-vegetated with a self-sustaining, vigorous, diverse, native (or otherwise approved) plant community sufficient to minimize visual impacts, reestablish wildlife habitat or forage production, stabilize soils and impede the invasion of noxious weeds.

- No seeding will occur prior to September 15. Seeding will be conducted after September 15 and prior to ground freezing. The seed mix to be used is as follows:

  Drill seed rate; broadcast rate is double the amount per acre.

  Basin wildrye @ 2 lbs./ac
  Western wheatgrass @1 lb./ac
  Alkali sacaton @ 1 lb./ac
  Scarlet globemallow @ 0.5 lb./ac
  Winterfat @ 1lb./ac

  No mulching is required.

- At a minimum, the established plant community will consist of species included in the seed mix and/or desirable species which occur in the surrounding natural vegetation.

  - Permanent vegetative cover will be determined successful when the basal cover of desirable perennial species is at least 80 percent of the basal cover of the undisturbed site or, of a reference area, or, if available, of the potential basal cover as defined in the National Resource Conservation Service (NRCS) Range/Ecological Site(s) for the area.

  - The resulting plant community (in a healthy early seral state) must contain at least 80 percent desirable plant species, preferably one of which is a forb or shrub. Plants must be resilient, as demonstrated by vigor, well-developed root systems and flowers. Shrubs must be well established and at least in a "young" age class, rather than comprised mainly of seedlings that might not survive.

  - No one species may exceed 70 percent basal cover in the resulting plant community, to achieve species diversity on the site. Desirable species include those defined in the BLM-approved seed mix, other desired species found in the reference area, or potential species in the NRCS range/ecological site.

III. Reclamation Plan

A Reclamation Plan should include the following, to ensure reclamation designs support objectives and standards. Even well-designed and implemented Plans will occasionally require additional work. This Reclamation Plan Template provides an example of the minimum Plan likely to work for most sites and ecological communities. In areas with low reclamation potential or site-specific challenges, plans may include additional information, to achieve the standards and objectives of reclamation. Examples include: detailed reclamation plats with irregular re-contours to support visual and ecological benefits; soil test results and/or a soil profile description; soil amendments; soil treatment

techniques such as roughening, pocking, and terracing; erosion control techniques such as hydromulch, blankets/matting; and visual mitigations.

Over the lifetime of a site, if changes or additions to a Reclamation Plan are appropriate, operators will propose them in writing, since BLM pre-approval is required before implementation.

Vegetation Monitoring and Reporting

- Pre- and post-disturbance vegetation monitoring data should be collected using the sampling methods described below. Any time 20% or more of a successfully reclaimed area is re-disturbed, vegetative monitoring will be reinitiated.

- Reclamation status reports, with monitoring reports, will be submitted to the BLM in order to monitor progress. The report will document compliance with all aspects of the reclamation objectives and standards, identify whether the reclamation objectives and standards are likely to be achieved in the near future without additional actions, and identify actions that have been or will be taken to meet the objectives and standards (see Appendix for outline of components to include in report).

- In addition to determining whether performance standards have been met, the reclamation status report will provide a clear record of the techniques used for reclamation and monitoring (see Appendix for components to include in report). Vegetation monitoring must also be completed and reported in conjunction with the bond release request.

- Monitoring of reclaimed areas should occur within the growing season, begin by the second year after reclamation efforts are initiated and continue every third year until bond release is approved. The BLM may require more frequent monitoring, if necessary.

- At any time in the lifetime of a site, the BLM will be informed when reclamation is planned, has been completed, is reported to be successful or when the site is ready for final bond release inspection.

- Reclamation (and pre-disturbance, if applicable) monitoring reports should be submitted with reclamation status reports and include at least the following components:

    - The sample size in each reclaimed area as well as the monitoring method used.
    - Measure and quantify:
        i. Bare ground - include rocks, woody debris, biotic soils and litter
        ii. Plant cover
        iii. Vegetation composition
        iv. Plant species of management concern
        v. Species richness over entire reclaimed area

vi. Non-native invasive plant species
vii. Vegetation height
viii. Proportion of soil surface in large intercanopy gaps

- Gather data using approved quantitative methods such as those in:
  - BLM Tech Note 440 (BLM Core TerrCore Terrestrial Indicators and Methods 2011.
  - Monitoring Manual for Grassland, Shrubland, and Savanna Ecosystems, Volumes I and II: Quick Start for guidance regarding quantitatively assessing vegetative species composition and cover.
  - BLM Technical Reference 1730-1 (Measuring an Monitoring Plant Populations, 1998) or
  - BLM Technical Reference 1734-4 (Sampling: Vegetation Attributes, 1996).

Reclamation Timeline

- Reclamation Plans are to include timeline(s) for activities that meet the purposes below:

  Reclamation Plans are to contain a Reclamation Plat that includes acres to be reclaimed, earthwork reshaping plans, stormwater BMPs, details of specific seeding plans, e.g., soil testing or planned amendments (mulch, fertilizer), soil roughening techniques and other seedbed preparation methods.

- Before reclamation occurs, contact the designated BLM staff at least 72 hours beforehand.

Stabilization and Stormwater

- Storm Water Management. A General Construction Permit from the Colorado Department of Public Health and Environment (CDPHE) is required of any operator proposing surface disturbance of one acre or more. Permit compliance requires the design and implementation of a Stormwater Management Plan to systematically monitor the site, establish directed run-on/off management and implement site-specific adaptive Best Management Practices (BMPs) that reduce erosion and sediment transport. Measures must remain current and functional.
- Plats will provide details of the Storm Water plans that would be implemented on federal actions to ensure that all actions off locations are addressed and analyzed.
- Stabilization Methods. Evaluating site specific factors will help determine combinations of BMPs to apply during various project stages and construction activities, based on monitored conditions. BMPs may include measures such as run-on/off protections (berms/culverts/diversions, etc.), sediment catchments, anchored weed-free straw

bales/wattles and revegetated surface. Other BMPs could include well-roughened seedbeds, crimped-in or hydrologically applied mulches or gently contoured slopes and swales.

- Mulch. Mulch may be used to control erosion, create ecologic micro-sites for vegetation success and retain soil moisture. It may include native hay, small-grain straw, wood fiber, live mulch, cotton, jute, or synthetic netting such as erosion control blanketing. Mulch will be free from mold/fungi and be certified free of noxious or invasive weed seeds. Straw mulch fibers must be long enough to facilitate crimping and provide maximum cover.
- Fencing. Reclaimed areas may require fencing to BLM livestock or wildlife standards to exclude livestock grazing until seeded species have stabilized soils and met percent cover requirements.

Dust Abatement

- Fugitive dust will be prevented and abated as needed, whether created by vehicular traffic, equipment operations or wind events. The BLM may direct the operator to change the level and type of treatment if dust abatement is insufficient. BLM approval is required before application of surfactants, binding agents, or other dust-suppression chemicals on roadways within public lands. Speed control measures on all project-related unpaved roads will also be required. More stringent dust control may be required in areas adjacent to Federal- or State-listed threatened, endangered, or sensitive plant species.

Topsoil Application, Seedbed Prep and Seeding

- Following recontouring, salvaged topsoil will be evenly redistributed in locations as close as possible to those from which it was removed (i.e., last out, first in). Topsoil will also be replaced on its respective slopes, i.e., oak brush soil and piñon woodland soils will not be mixed.
- Before reseeding, all surfaces will be scarified and left rough. If more than one season has elapsed between final seedbed preparation and seeding, and if the area is to be broadcast-seeded or hydroseeded, this step will be repeated within 24 hours before seeding to break up any soil crust.
- In areas of challenge or low reclamation potential, seedbed prep techniques may include pocking/pitting to form microbasins scaled to the site and materials. These microbasins will be constructed in irregularly spaced, irregularly aligned rows oriented perpendicular to the natural flow of runoff down a slope. Other than such depressions created to support reclamation success, no depressions will be left where water could pond, with the following exceptions: terminal stormwater containments designed to silt in over time;

other stormwater/snow storage basins. BMPs such as hydromulch, blankets/matting, wattles, etc. may also be required.

- Seed mixes and planting techniques to be applied on all BLM lands affected by the project must be approved in advance. No seeding will occur until seed tags and/or other official documentation of the correct seed mix are submitted and approved by the BLM. Within 30 days after seeding, the operator will provide written notice to the BLM describing the completed work.

- Seed will contain no noxious, prohibited, or restricted weed seeds and no more than 0.5 percent by weight of other weed seeds. Seed may contain up to 2.0 percent of "other crop" seed by weight, but a lower percentage is recommended.

- To maintain quality, purity, germination, and yield, only tested, certified seed for the current year, with a minimum germination rate of 80% and a minimum purity of 90% will be used unless otherwise approved by BLM in advance of purchase. Seed will be viability-tested in accordance with State law(s) and within 9 months before purchase.

Invasive, Noxious, and Non-Native Species

- The operator will integrate into the Reclamation Plan a weed management and control strategy in compliance with the BLM/Forest Service *Noxious and Invasive Weed Management Plan for Oil and Gas Operators*.

- Beginning the first growing season after any reclamation, an intensive weed monitoring and control program will be implemented.

- Operators will regularly monitor and promptly control noxious weeds and other undesirable plant species. Annual weed monitoring reports will be submitted to the BLM officer by December 1 (may be combined with reclamation reports).

- Pre-disturbance surveys will be conducted to identify and quantify weeds and undesirable plant species within 200 feet of the project area, including all access roads, pipelines, or other associated surface disturbance.

- A Pesticide Use Proposal (PUP) must be approved by the BLM prior to the use of herbicides.

- All heavy equipment brought onto public lands will be cleaned prior to use to reduce the potential for introduction of noxious weeds or other undesirable non-native species. If field wash stations will be used, a plan for the collection, containment and disposal of wash fluids will be provided to the BLM.

Final Reclamation Procedures

- Prior to bond release, an inspection will be held with the BLM and DRMS to review the existing reclamation plan or agree to an updated plan.

- All equipment and materials will be removed from the area.
- Compacted areas will be ripped to a depth of 18 to 24 inches, on 18 to 24 inch centers.
- Salvaged topsoil will be evenly spread over the location, prepped and seeded according to approved methods and seed mix. No depressions may be left where water could pond, with the following exceptions: micro-depressions created to support reclamation success (e.g. pitting or pocking); terminal stormwater containments designed to silt in over time; other stormwater/snow storage basins.
- In areas where mitigation of visual contrasts is needed, or to create irregularly shaped openings or mosaic patterns for wildlife, additional tree removal and "feathering" may be appropriate.
- Woody debris, such as cleared trees, slash and large rocks will be redistributed in natural looking patterns onto reclaimed areas to imitate colors and textures closer to the natural landscape and to help create microclimates to encourage vegetation growth.
- Water breaks and terraces will not be included in final reclamation, and will only be approved as absolutely necessary to prevent erosion of fill material. Removal, seedbed prep and reseeding will be required when the rest of the site is successfully revegetated and stabilized.

APPENDIX A

Reclamation Status Report Format

The reclamation report should contain the following information, as applicable:

- The project feature of interest, including federal case file number and DRMS permit number
- Vegetative attributes for seeded surfaces. The size of each sampled reclaimed area must be specified as well as the number of transects and points hit along the intercept. Measure and quantify:
    i. Bare ground including rock fragment, woody debris, biotic soils (if applicable), and litter estimates
    ii. Plant cover
    iii. Vegetation composition
    iv. Plant species of management concern
    v. Species richness over entire reclaimed area
    vi. Nonnative invasive plant species
    vii. Vegetation height
    viii. Proportion of soil surface in large intercanopy gaps
- Initial Disturbed Acres; Successful Interim Reclaimed Acres; Successful Final Reclaimed Acres.
- Inspection dates, surveyors/monitors, contact information for the person responsible for developing the report.
- Legal description and UTM coordinates for each discrete point feature associated with the report. A shapefile of the project along marking the extent of disturbance.
- Reclamation diagrams of reclaimed areas, locations of permanent photo points, GIS inventory features such as points, lines and polygons with the report, and shapefiles.
- NRCS range site(s) or associated reference area(s) (identified and mapped).
- Reclamation status (e.g., Interim, Final, etc.).
- Re-contouring status, including areas returned to final contours.
- Date(s) seeded, an estimate of the total area seeded (in acres), seed mixture applied, and seeding method (e.g., broadcast, drilled, hydro-mulched, etc.), if applicable.
- Additional notes pertaining to overall site conditions, including whether attainment of reclamation objectives appears likely. If objectives appear unlikely to be achieved, appropriate corrective actions will be described.
- Weed survey reports and Pesticide Application Reports (PAR).

- Photos taken at each photo point, noting the date the photo was taken. (Refer to BLM Technical Reference 1730-1 for specific guidance regarding establishing photo points.)
- Operator proposed monitoring and inventory methods.