BLM Northwest Colorado District
Recommended Outline for Surface Reclamation Planning for Oil and Gas Operations Including
Objectives, Performance and Monitoring Standards

In 2007, the Bureau of Land Management revised Onshore Order Number 1. One of the requirements of this revision is the requirement to have an approved reclamation plan on file, and if one isn't on file the operator is required to file one at the request for Final Abandonment.

This Outline provides an operator a template as well as some of the guidance necessary to complete a reclamation plan, in accordance with Onshore Order #1, within the Bureau of Land Management's Northwest Colorado District. The outline is written in such a manner that if an operator provides answers to these questions in accordance with their plans that they will have a reclamation plan that addresses all of the requirements of the Onshore Order #1.

The Reclamation Plan, is a permit holder's opportunity to provide plans or analyses that support how it anticipates meeting the overall achievement of reclamation objectives.

I. Reclamation Objectives:

The objectives of interim reclamation (IR), which reestablishes vegetation, ecological function and other natural resource values during the productive life of an energy facility (e.g. well pad), are to restore vegetative cover and a portion of the landform sufficient to maintain healthy, biologically active topsoil; to control erosion and sediment transport; and to minimize loss of habitat, forage, and visual resources throughout the project life. IR will be judged successful when disturbed areas not needed for long-term production operations have been recontoured, stabilized, and 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.

The long-term objective of final reclamation is to return the land, following use for energy development, 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 and holders of rights-of-way 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:

- In agricultural areas, irrigation systems and soil conditions are reestablished in ways that ensure successful cultivation and harvesting of crops.

  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.
- After a well is drilled and completed, the well location and surrounding areas(s) are cleared of and maintained free of all debris, materials, trash and equipment not required for production.
- No hazardous substances, trash or litter are to be buried or placed in pits. Hydrocarbons in pits will be remediated or removed.
- Upon well completion, pits will be dry prior to soil testing, then backfilled and closed per COGCC standards**.**

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

- Disturbed areas not needed for long-term production operations have been recontoured, stabilized, and revegetated 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 invasion by noxious weeds.

- 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 by those in the BLM-approved seed mix, other desired species found in the reference area, or potential species in the NRCS range/ecological site.
    - Reference areas may be identified when areas near the disturbance do not reflect the appropriate plant community. Prior to BLM approval for use as a reference area, an operator may provide quantitative site measurements of vegetation cover, vegetation composition, woody plant density, and percent bare ground.

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

- All disturbed areas, including well pads, production facilities, roads, pipelines, and utility corridors, have been recontoured to approximate the original landforms.
- All recontoured disturbance has been stabilized and revegetated 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.

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    - Reference areas may be identified when areas near the disturbance do not reflect the appropriate plant community. Prior to BLM approval for use as a reference area, an operator may provide quantitative site measurements of vegetation cover, vegetation composition, woody plant density, and percent bare ground.

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.

Pre-disturbance Recommendations

Site-specific actions should be considered when planning for the best possible reclamation results:

- Baseline soil testing results and soil profiles. Soil testing is useful in areas of low reclamation potential and/or prior to the use of soil amendments. If soil is tested, provide the results of the testing to BLM for use in analysis and planning. Soil testing may include texture, pH, organic matter, sodium absorption ratio (SAR), cation exchange capacity (CEC), alkalinity/salinity, and basic nutrients (nitrogen, phosphorus, potassium [NPK]).

- Baseline vegetation inventories, including weed, and threatened and endangered plant inventories, inform planning and evaluation of reclamation success. A thorough inventory includes all affected areas such as roads, pipelines and pads.

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 at all disturbed sites across the field offices. 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 at a particular site, 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 Final Abandonment Notice.

- 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 Final Abandonment 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 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

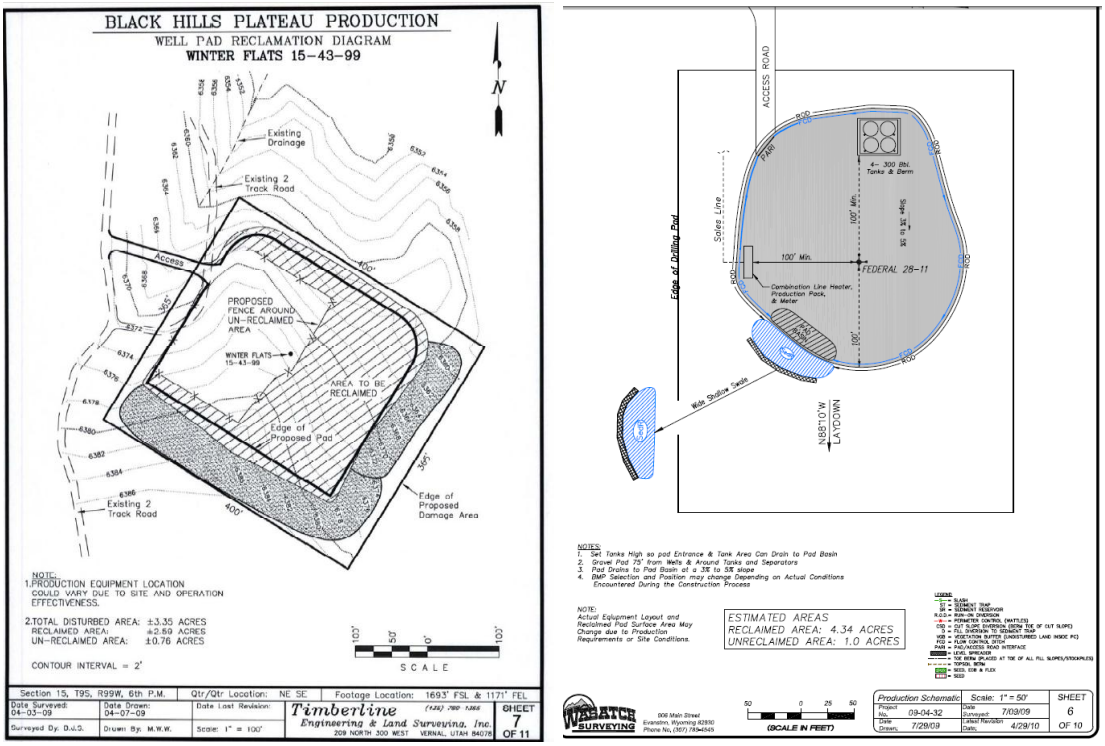
- Gather data using approved quantitative methods such as those in:
    - BLM Tech Note 440 (BLM Core TerrCore Terrestrial Indicators and Methods 2011.
    - Monitoring Manual for Grassland, Shrubland, and Savanna Ecosystems, Volumes I and II: Quick Start for guidance regarding quantitatively assessing 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:

- Initial Construction: Reclamation Plans submitted with APDs are to contain a Reclamation Plat (Figures 1, 2) that includes acres to be reclaimed, earthwork

reshaping plans, stormwater BMPs, changes agreed to at the onsite inspection and details of specific seeding plans, e.g., soil testing or planned amendments (mulch, fertilizer), soil roughening techniques and other seedbed preparation methods.



Figures 1 and 2

- The Plan should include stabilization measures to be implemented in disturbed areas, including pipelines and roads, at the time of initial site construction (within 72 hours after initial surface disturbance) e.g., pre- and post-construction BMPs, contouring, texturing, mulching, temporary seeding, topsoil berming/ tracking/ storage and controls for stormwater and spills. Weed monitoring/ control may also be needed. I

- Interim Reclamation: Within 6 months after completion of the last well planned for a pad, or after a year has passed with no new wells drilled, interim reclamation will reduce well pads and roads to the minimum size needed for production and reshape disturbed lands to approximately natural contours.

  OR

  In cases when BLM permits periods of inactivity of a year or more on a given location, (e.g., phased drilling timed to coincide with wildlife considerations), all or part of the interim reclamation program will take place at the time of construction. Slopes will be recontoured and textured to accommodate

stability, stormwater/spill controls and visual resource benefits. Temporary seeding or other components of the reclamation plan may be required to stabilize the materials, maintain biotic soil activities, and minimize weed infestations.

- In any case, before reclamation occurs, permit holders will contact the designated BLM staff at least 72 hours beforehand, to schedule a field visit to inspect the disturbed area, review the existing reclamation plan and agree upon any revisions to the plan.

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.

Vegetation Clearing

Before construction or other surface disturbance-disturbing activities, well pad, access road and pipeline alignment will be cleared of brush and trees. Vegetation removal and will be minimized. All trees directly outside the staked limit of disturbance are to remain undamaged and left standing unless removal is specifically directed by the BLM.

Notify BLM before using machinery such as a track-mounted forestry mulcher/hydro-ax that removes woody vegetation while leaving root systems intact.

- Methods:
    - Chip in place all woody materials (with forestry mulcher or hydro-ax), then salvage and store with topsoil. *(Adds organic material; Increases topsoil volume/complexity)*

      OR
    - Purchase a wood-cutting permit from BLM before clearing. Cut and evenly scatter woody materials smaller than 4 inches in diameter. Cut larger woody material in pieces, salvage and store with topsoil. At the time of reclamation, scatter to create micro-sites supporting seed germination/establishment. OR Stack near existing BLM roads for removal from public land (firewood, fence posts). No stump over 6 inches in height will be left in place. Stumps may be buried or scattered in an area designated by the BLM, such as a toe slope, perimeter berm for stormwater or topsoil protection, or as a reclamation BMP.

Topsoil Management

- General. Topsoil salvage, management and use will be specifically detailed in Plans. At the time of construction, topsoil and vegetation smaller than 4 inches in diameter will be stripped following vegetation removal, be stored separately from subsoil or other excavated material and be replaced prior to final seedbed preparation. No topsoil will be stripped when soils are saturated or are frozen below stripping depth. Topsoil will include all suitable growth medium present at

a site, as indicated by color or texture. In areas of thin soil, site specific topsoil management may be appropriate. Reclamation Plan may need soil profile descriptions to inform stripping depths or seeding details.

- Whenever topography allows, topsoil will be wind-rowed to shallowest practical depth around the entire perimeter of a well pad to create a berm that infiltrates/ redirects/ manages stormwater while extending the viability of the topsoil and the seedbank. Along pipelines and roads, topsoil will be wind-rowed, segregated and stored for later spreading across the disturbed corridor as part of reclamation. Topsoil berms will be promptly seeded to maintain soil microbial activity, reduce erosion, and minimize weed establishment. The 2009 BLM PowerPoint presentation regarding BLM's Topsoil Best Management Practices is available upon request.

Pit Closure

- Pit remediation and reclamation will be completed upon compliance with the concentrations as per COGCC Table 910-1 standards.

- Reclamation of well sites, including pits, will be in compliances with Onshore Order 1.

- Immediately upon well drilling/completion, hydrocarbons or trash in the pit will be removed. Pits will be left to dry, be pumped dry or solidified in-situ with a BLM-approved method prior to backfilling. When dry, the pit will be backfilled in compacted lifts no deeper than 4 feet, to prevent subsidence under any surface pressures.

'Short Term' Interim Reclamation

Pads/ facilities may occasionally be left in place for longer-than-usual periods, to manage resource impacts during exploration/development. In situations where disturbances will not be recontoured and reclaimed within a year, 'short-term' reclamation is required to be included in the Reclamation Plan.

- Stabilization measures would begin at the time of construction, or at least within 72 hours after initial surface disturbing activities, in order to stabilize materials, maintain biotic soil activities and minimize weed infestations.

- Seeding of topsoil berms/windrows, cut/fill slopes, and temporarily disturbed areas along roads/ and pipelines will be done at the time of disturbance/ construction. Seedbed prep is not generally required for topsoil storage piles or

other areas of temporary seeding, if seeding is immediate. BLM pre-approval of seed mix is required.

- Other stabilization measures to be implemented in disturbed areas at the time of initial site construction may include pre- and post-construction BMPs, contouring, texturing, mulching, slash/brush berming/storage, and weed monitoring/ control.

Facility Installation and Recontouring – Interim Reclamation

- Installed facilities will be planned and placed to facilitate safety and maximize areas available for reclamation, e.g., clustered at the access end of the pad with tanks in cut. (Figure 2). Equipment installed in a manner that interferes with the proper interim reclamation of disturbed areas will be appropriately relocated. Centralized/co-located facilities to serve multiple pads will further minimize long-term disturbance.

- Access to facilities may be provided by a teardrop-shaped road through the production area (if not needed as a work area), so the driving area may be clearly defined and the teardrop center seeded.

- Unnecessary equipment and materials, including gravel/road base, will be removed from areas to be reclaimed.

- Compacted soils will be ripped in two passes at perpendicular directions to a minimum depth of 18-24 inches, at a furrow spacing of no more than 2 feet.

- Portions of a site not needed for operational/safety purposes will be reshaped to as near pre-disturbed condition as reasonably possible, to blend with natural topography. Recontoured cut and fill slopes will be no steeper than 3:1, unless adjacent native topography is steeper. Fill slopes will be restored to cuts and blended or contoured into large ‘natural’ berms that provide visual and stormwater benefits.

- If damage to reclaimed areas occurs as a result of well operations and maintenance, including workover operations, affected areas will be reclaimed again. As appropriate to avoid soil compaction and to protect topsoil and seedbed, vegetation and topsoil will be removed prior to workover operations, then restored and reclaimed following operations.

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

- Final reclamation will be completed within 6 months of well plugging (weather permitting). Prior to reclamation or abandonment, an inspection will be held with the BLM to review the existing reclamation plan or agree to an updated plan.
- Dry hole marker will be sub-surface, to prevent raptor predation upon small game, including sage grouse.
- All equipment and materials, including gravel/road base and sub-surface anchors, will be removed from areas to be reclaimed.
- Topsoil and vegetation will be salvaged and stored for redistribution following recontouring.
- Compacted areas will be ripped to a depth of 18 to 24 inches, on 18 to 24 inch centers. The access road and location will be recontoured to blend with natural topography, with fill materials returned to cuts and pushed up over the backslopes.
- All disturbed areas, including roads, pipelines, pads, production facilities, and interim reclaimed areas will be recontoured to those existing prior to initial construction or to contours that blend with the surrounding landscape.
- 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 tin 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.

- Final abandonment of pipelines and flowlines will include purging, proper disposal of fluids, then plugging at specific intervals. All surface lines and any lines e that may be exposed in the foreseeable future due to water or wind erosion, soil movement, or anticipated subsequent use, must be removed. Deeply buried lines may remain in place unless otherwise directed by the BLM.

Additional BMPs for Consideration

Site Protection. When appropriate, a reclaimed area will be fenced to BLM standards to exclude livestock grazing until seeded species are firmly established.

- In deer and elk habitat, fences for livestock exclusion will not exceed 40 inches. The four strand fence will have smooth top and bottom wires. Distance from the ground to the bottom smooth wire will be no less than 16 inches. Distance from the top wire to the second wire will be no less than 12 inches. Middle wires will be barbed, with 6 inch spacing.

- Livestock fencing standards may be found on page 18 of the Gold Book, 4th Edition, in BLM Manual Handbook H-1741-1, p. 16, or electric fencing may be approved.

Visual Resource Management BMPs

- To blend with the natural environment, all permanent above-ground facilities will be painted in a non-reflective finish to blend with the environment. Colors will be selected in the field at the proposed project location, considering viewers' likely observation points and the time of year with the greatest number of viewers.

Selected colors will be one to two shades darker than those naturally occurring in the background landscape.

- To provide visual screening, projects will be located to take advantage of existing vertical and natural features, such as landforms or existing stands of vegetation and not be located on exposed locations like ridgelines and hilltops.

- Linear disturbances (roads and pipelines) will follow the natural contours of the landscape as much as possible.

References

Ecological Site Description (ESD) System for Rangeland and Forestland. United States Department of Agriculture Natural Resources Conservation Service. 2011. http://esis.sc.egov.usda.gov/Welcome/pgESDWelcome.aspx

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MacKinnon, W.C., J.W. Karl, G.R. Toevs, J.J. Taylor, M. Karl, C.S. Spurrier, and J.E. Herrick. 2011. BLM Core Terrestrial Indicators and Methods. Bureau of Land Management, U.S. Department of the Interior, Technical Note 440. www.blm.gov/nstc/library/pdf/TN440.pdf

Noxious and Invasive Weed Management Plan for Oil and Gas Operators, Grand Junction Field Office and Grand Valley Ranger District. 2007. Field Office-specific versions available on request from BLM Field Offices.

APPENDIX Reclamation Status Report Format

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

- The project feature of interest, including federal lease number, well name and number, right-of-way/ Realty case file number, the American Petroleum Institute (API) well number and the number of the original National Environmental Policy Act (NEPA) document.
- 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.