

APPENDIX E

Performance Based Objectives



Performance Based Objectives

Development under Alternative C has been designed to confine year-round development to specific areas of the PAPA, while stabilizing development sites, reclaiming disturbance, and reducing human presence to the maximum extent possible through the use of BMP's and the following Performance Based Objectives.

These objectives are provided to mitigate impacts associated with development under Alternative C. For each objective, the performance, or outcome, is the basis for judging the effectiveness the measures. If the outcome is achieved, then the objective is met.

Performance based objectives have been adopted to provide BLM greater flexibility in protection of physical, environmental, and cultural resources. Successful application of performance or outcome-based resource management objectives require implementation of adaptive management principles, specifically requiring implementation of monitoring and subsequent evaluation to determine whether or not the requirements and/or standards (or use of new techniques and/or practices) have been applied and whether the desired objective has been achieved in a timely and efficient manner.

Best Management Practices from *Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development* - a joint effort by the United States Department of the Interior and United States Department of Agriculture (2006) also known as the Gold Book – would be attached to APD's, where applicable.

Planning Process. The objectives and operating standards identified in the following sections would be presented, reviewed, and implemented in the following steps:

- **Perform Preapplication Consultation.** The Operators would present preliminary plans to BLM on about January 1 of each year for activities that would occur during the following field season. During the preapplication consultation, the Operators would be informed of BLM procedures and operating requirements, including any other federal, state, or local permit requirements so that inadequacies and deficiencies in the verbal proposal can be addressed with the submittal of the application. The BLM, the Operators, and other affected parties may visit the proposed site to identify unknown issues during the preapplication consultation.
- **Evaluate Application.** BLM would review the proposal to:
 - Determine if the proposal complies with the Outcome and Operating Standards; this may be accomplished by adhering to the recommended requirements/standards or by the use of new techniques/practices that meet the objective(s).
 - Based on additional analysis (e.g., environmental assessment - EA, or environmental impact statement - EIS), identify any new mitigation that may be required based on site and project specific information, including new issues identified throughout this process.
 - Identify appropriate monitoring levels to determine the effectiveness of the mitigation.

- **Review Written Application for Completeness.** Operators and BLM would meet again about March 1 to finalize plans for implementation. Based upon an initial review of the written application, additional information may be requested, or the application may be rejected. At this time, Operators would present annual reports (from November 15 to November 15 of the following year). The March 1 implementation plan would incorporate any conclusions from the annual report.
- **Issue Authorization.** BLM would issue authorizations with appropriate terms and conditions of approval identified or attached.

Outcomes and operating standards are requirements, procedures, management practices, or design features that the BLM, through the Record of Decision (ROD), could adopt as operational requirements. These requirements would be addressed through the permitting process. Seismic operations, well pad construction, drilling, pipeline construction, and other development activities require land use authorizations in addition to the oil and gas lease, which does not authorize subsequent surface disturbing activity as described above. Any applicant requesting such authorization must address the outcomes and operating standards either before submitting the application or as part of the application proposal. Requirements that are met before submission of the application, as well as procedures, practices, and design features that are an integral part of a proposal, do not need to be stipulated in a permit or lease. Because mitigating operating standards would be identified in the ROD as operational requirements and not a general lease stipulation, their applicability goes beyond the oil and gas lease to any permitted activity where the requirement is relevant.

Outcomes Related to Full Wellfield Development and Production.

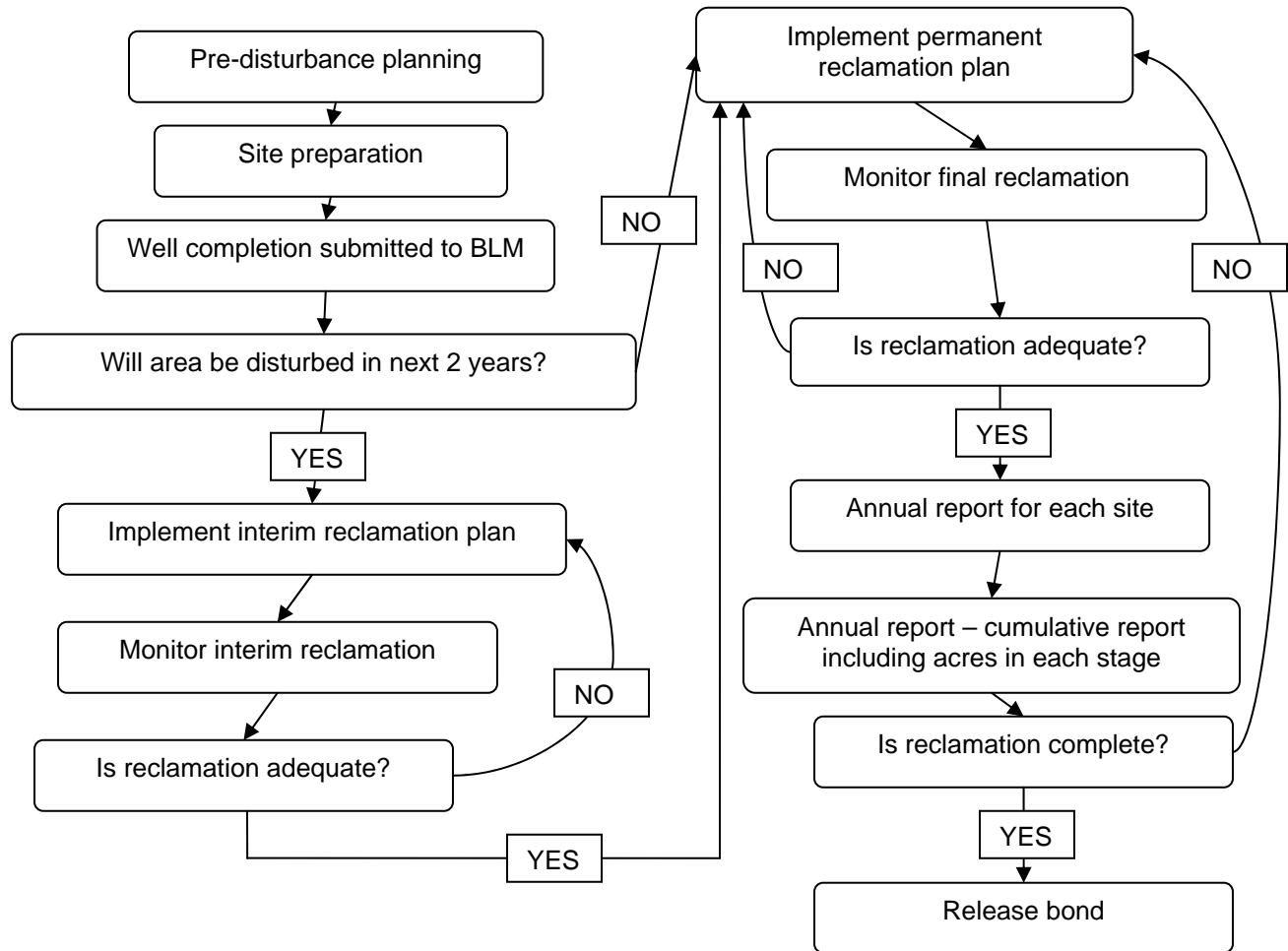
All past and present development has proceeded under authority of the PAPA ROD. Implementation of Alternative C would require integrating new wellfield components and other permitted actions with existing wellfield disturbances. For example, BLM would issue APDs for new wells, some of which would be on existing well pads and some, if not all, existing well pads would have to be expanded. Some well pads would have to be expanded by 21 or more acres, to accommodate additional wells. Expansion of existing well pads is an action permitted by BLM. Consequently, BLM has authority to require the Operators to increase mitigation over the measures in Appendix A of the PAPA ROD that may or may not have been explicitly attached to permits as conditions of approval.

Planning

Submit a Plan of Development within each Development Area that has been designated by BLM for year-round drilling. The plan would address Operator(s) actions for the annual cycle beginning (May or April or June) 2007 following authorization by BLM in the SEIS ROD. A new plan would be submitted in May each year thereafter until the Operator(s) lease has been fully developed. The plan would indicate which pads within the Operators' leases would be drilled and which pads would not be drilled during the upcoming annual cycle. The plan would clearly indicate locations of new access roads and pipelines.

Operators would fully develop each existing and/or new well pad within a Development Area that has been designated by BLM for year-round drilling during a single, continuous time span for as long as necessary to drill and complete all wells on the pad. Once an Operator has determined that a pad has been fully developed, Operator(s) would not reinitiate development on the pad.

Performance Based Objectives specific to Reclamation and Monitoring described in items 1 through 26, below, follow the general sequence in the following schematic diagram:



Temporary Site Stabilization

Achieving these objectives would, in part, mitigate impact to Land Use/Land Cover, Recreation Resources, Visual Resources, Surface Water, Soil Resources, Vegetation Resources, Grazing Resources, Riparian Resources, Threatened and Endangered Species and Special Status Species, and Wildlife and Aquatic Resources.

1. On existing well pads that would not be fully developed within the upcoming annual cycle, all bare ground would have at least a 75 percent protective cover that may include but not be limited to organic mulch, herbaceous vegetation, jute matting, or other erosion-preventative fabric. Protective cover may be excluded on active work sites (up to the wellhead with production equipment) if justified by the Operator and with concurrence of BLM.
2. During the period when an existing well pad is not being fully developed, there would be no runoff of water or sediment from the existing pad. Operators would modify all existing well

pads to achieve zero sediment discharge for a 25-year storm or snowmelt event within 1 year of following authorization by BLM in the SEIS ROD.

3. During the period when an existing well pad is not being fully developed, the well pad would be vegetated prior to the first winter after the ROD to achieve at least 50 percent vegetative cover of desirable herbaceous species by the following spring.
4. If an existing well pad would not be fully developed in 2 or more years after the ROD, desirable vegetation growth on the well pad would be at least 80 percent cover within three growing seasons.
5. Reserve pits on existing pads that would not be fully developed in 2 or more years after the ROD would be reclaimed prior to the first winter after the ROD.
6. Access road(s) leading to the temporarily stabilized well pad would be revegetated to the same levels required on the well pad.
7. Vehicular access on the revegetated road(s) would be on two-tracks established during road revegetation. Two-track access would be sufficient for use by only one vehicle at a time.
8. Pipeline corridor(s) leading to the temporarily stabilized well pad would be revegetated immediately after construction.
9. Vehicular access on the reclaimed, revegetated pipeline corridors would be on two-tracks only if there is no adjacent road. No vehicular access would be allowed along reclaimed, revegetated pipeline corridors. Two-track access, if allowed, would be sufficient for use by only one vehicle at a time.

Full Site Reclamation

Achieving these objectives would, in part, mitigate impact to Land Use/Land Cover, Recreation Resources, Visual Resources, Surface Water, Soil Resources, Vegetation Resources, Grazing Resources, Riparian Resources, Threatened and Endangered Species and Special Status Species, and Wildlife and Aquatic Resources.

10. Once a well pad has been fully developed, full site restoration and reclamation would begin as soon as the ground is not frozen and would be completed before the onset of winter.
11. Full site restoration would require re-grading the pad to conform to the original contours.
12. Full site restoration would require redistributing the original topsoil or transfer and distribution of topsoil from a newly cleared well pad in the same geographic area with similar slope and soil characteristics.
13. Full site restoration would require protection of vegetation until herbivory by wildlife and livestock can be sustained.
14. Access road(s) leading to the fully restored well pad would be reclaimed to conform to the original corridor contours.

15. Access road(s) leading to the fully restored well pad would be revegetated to the same levels required on fully reclaimed well pads.
16. Vehicular access on the reclaimed, revegetated road(s) would be on two-tracks established during road revegetation. Two-track access would be sufficient for use by only one vehicle at a time.
17. Pipeline corridor(s) leading from the fully restored well pad would be reclaimed to conform to the original corridor contours.
18. Pipeline corridor(s) leading from the fully restored well pad would be revegetated to the same levels required on fully reclaimed well pads.
19. Vehicular access on the reclaimed, revegetated pipeline corridors would be on two-tracks only if there is no adjacent road. No vehicular access would be allowed along reclaimed, revegetated pipeline corridors. Two-track access, if allowed, would be sufficient for use by only one vehicle at a time.

Reclamation Monitoring

Monitoring Responsibilities

20. It is the responsibility of the Operator to monitor reclaimed areas, determine if reclamation criteria are being met, develop and implement remedial actions if success standards are not being met, provide resulting data to the BLM annually, and request concurrence from BLM that success standards have been met and monitoring is no longer required.
21. It is the responsibility of the BLM to evaluate the annual monitoring reports, provide concurrence (or not) with the reclamation assessments as to whether or not success standards are being met and the rationale for the determination.
22. It is the responsibility of the BLM to provide Operators with remedial actions when reclamation success criteria are not being met. The remedial actions may include such things as soil testing, soil amendments, irrigation, and seeding.

Monitoring Methods

23. Monitoring methods provide the basis for consistent, uniform, and standard vegetation attribute sampling that is economical, repeatable, statistically reliable, and technically adequate. Vegetative monitoring would be conducted using BLM approved monitoring methods. The following guidelines would be used to determine if the site has met final reclamation criteria. Specific guidelines can be found at the BLM Library Sampling Vegetation Attributes, Interagency Technical Reference 1734-4, 1996
<http://www.blm.gov/nstc/library/techref.htm>
 - a. Location of data collection:
 - i. A sample representation of the vegetative population would be used to collect the vegetative data on the reclamation and reference sites.
 - ii. The reference site location would represent the ecological characteristics described in the reclamation criteria.

- iii. The sites would be permanently marked with a GPS unit for accuracy of future analysis. Precise locations of the site would be noted on a detailed map or aerial photo. The exact location of the study site and the directions for relocating it would also be noted.
 - iv. See Sampling Vegetation Attributes, Study Design and Analysis for statistical considerations to be used.
- b. Timing of data collection.
- i. If at all possible, baseline data should be collected prior to disturbance.
 - ii. Monitoring will occur during the growing season post seeding to determine if seeds have germinated. It is crucial to understand if a viable seed source exists on the reclamation site. If seeds germinate but seedlings do not survive due to weather conditions, the site must be reseeded.
 - iii. Monitoring may require multiple visits to a site within a given year to capture presence of species (especially forbs) that grow at various times during the growing season. In general, most plants are at their peak in June.
24. Data Collection Methods: For accuracy and time effectiveness, systematic sampling would be used to decrease personal bias. A standard procedure would be identified and used in all data collection methods.
- a. Ground cover and species composition would be evaluated using line-point intercept by plant species method. At a minimum, 200 data points should be collected on each site.
 - b. Line-point intercept techniques result in smaller non-sampling errors than the use of quadrants.
 - c. Nested Frequency Quadrants would be used to measure frequency. At a minimum, 200 frame plots on each site should be used to calculate data.
 - d. The density method as described in Sampling Vegetation Attributes Interagency Technical Reference would be used to measure density. At a minimum, 200 frame plots on each site should be used to calculate data.
 - e. Production measurements would be made using the double sampling method. Data should be collected from a minimum of 20 plots on each site.
 - f. To measure erosion control, a soil surface factor of 1 to 20 percent must be achieved.
25. Photo Points. Permanent photo points would be established on both the pre-disturbed site and the reference site. Photo points should be permanently marked with a GPS. Photos should be taken yearly (preferably in June) as close to the same time of year previous photos were taken to reduce difference in plant growth characteristics.
- a. Close-up pictures show the soil surface characteristics and the amount of ground surface covered by vegetation and litter. Close-ups would be taken at permanently located photo plots. A 1-meter x 1-meter photo plot is recommended.
 - b. General view pictures present a broad view of a site. Pictures depicting north, south, east, and west would also be established and monitored.
26. Stages of reclamation. After evaluating the monitoring data, each site would be categorized into one of four stages to determine landscape trends and reclamation status of the PAPA.
- a. Contouring, soil preparation, seeding (may be different between grasses and forbs/shrubs)

- b. Preliminary evaluation in 1 to 3 years – some criteria could be developed to aid in determining whether or not the seeding is successful so a determination can be made as to whether or not to reseed.
- c. Criteria met or not met – identification of potential plant community in early successional stage that is specific to range site (number of shrubs and forbs important here).
- d. Final Reclamation and bond release – similar composition as above but with greater structure and shrub abundance.

Limitation of Human Presence

27. During the period when an existing well pad is not being fully developed and is subject to temporary site stabilization measures, all existing producing wells on the pad would be connected to the Operator's liquid gathering system.
28. During the period when an existing well pad is not being fully developed and is subject to Temporary Site Stabilization measures, all existing producing wells on the pad would be connected to the Operators' remote telemetry monitoring system to track wellhead production information and downtime alarms from wells.
29. Operators would minimize traffic to the maximum extent possible:
30. Operators would require all well maintenance personnel to maintain a daily travel log of visits to each production well for 1 year following installation of the liquids gathering system and remote telemetry monitoring system for all producing wells on each existing well pad. The logs would be submitted to BLM at the end of the 1-year period along with a summary account of recorded visits.
31. Motor vehicle traffic in Operators' leaseholds would be limited to BLM approved roads and trails during all times of year.
32. Operators would limit all noise associated with production activities to less than 10 decibels above background noise levels, measured 250 feet from the outer edge of each well pad.
33. Operators would utilize flareless completions for all wells within their leasehold unless proven on a case-by-case basis that flareless completions would be unsafe.
34. Operators would require all vehicles used, including those of all sub-contractors and vendors, to have fully functional hospital-grade mufflers.
35. Operators would remove all unnecessary aboveground structures from well pads, principally liquids storage tanks, within 3 months after installing liquids gathering systems.

Citation

United States Department of the Interior and United States Department of Agriculture. 2006. Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. BLM/WO/ST-06/021+3071. Bureau of Land Management. Denver, Colorado. 84 pp.