

Appendix M

Cultural Resource Definitions, Inventory Requirements, Planning and Evaluation Process

Canyons of the Ancients Cultural Resource Definitions, Inventory Requirements, Planning and Evaluation Process

Cultural Resources Objectives for Surface Disturbing Activities/Development Proposals

- Avoid direct, indirect, and cumulative impacts to historic properties (objects of the Monument) to the maximum extent possible.
- Ground disturbance must be kept to the smallest footprint possible.
- Prevent fragmentation of the landscape to the maximum extent possible.
- Maintain visual quality.

Definitions

Site: A site is a physical location containing the remains of past human activities or events with a collection of objects, features and/or structures that do not meet the criteria for an Isolated Find (IF). Cultural resource sites are extremely variable in size and can range from a cluster of **11 or more artifacts in a 30 meter diameter area**; to a feature with or without artifacts; to a large complex of features, structures, and associated artifacts.

In addition to a range of variability in size and complexity, attributes of sites **may** also include:

- secondarily deposited cultural resource remains;
- specific locations or areas that hold cultural and/or religious significance to living descendant cultural groups.

Isolated Find (IF): an IF is ten (10) or fewer artifacts in a 30 meter diameter area. The information potential of an IF can be realized through field recording of essential basic data, and the information preserved in an archival format.

Inventory Standards and Avoidance Buffers

The scope of the archaeological inventory would be determined by the BLM when the Fieldwork Authorization is submitted by the BLM cultural resource use permittee. The Fieldwork Authorization would include:

- A complete description of the undertaking (purpose, nature of activities/disturbance, equipment to be used, staging/stockpiling requirements, access, utilities, land status, etc) with corresponding dimensions, and drawings.
- The project area(s) plotted to scale on a 1:24,000 scale topographic map, labeled with the quadrangle name.

Single well pads: 40 acres.

Linear Survey: would include the width of the proposed undertaking (route or pipeline ROW) PLUS 100 meters (300 feet) on either side of the proposed undertaking; in order to insure that a 100 meter buffer between the undertaking and the site boundary is inventoried, per the Colorado BLM buffer guidelines. See Appendix R to distinguish between survey width and the Area of Potential Effect (APE).

Avoidance Buffer: 100 meters per the Colorado BLM buffer guidelines. The guidelines acknowledge that avoidance buffers can be modified, if necessary, by the BLM because of environmental and/or other factors.

National Register of Historic Places: Adverse Effects

The regulations implementing the National Historic Preservation Act (NHPA) state that

An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association... (36 CFR part 800.5(a)(1)).

Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.

Adverse effects on historic properties include but are not limited to:

- (i) Physical destruction, damage, or alteration of all or part of the property;*
- (ii) Alternation of a property...that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR part 68) and applicable guidelines;*
- (iii) Removal of the property from its historic location;*
- (iv) Changes to the character of the property's use or to physical features within the property's setting, which contribute to the property's historic significance;*
- (v) Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;*
- (vi) Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and*
- (vii) Transfer, lease, or sale of the property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions for ensuring long-term preservation of the property's historic significance (36 CFR part 800.5(a)(2)).*

There would be effects to cultural resources if undertakings:

- result in impacts on properties either listed or determined to be eligible for listing in the NRHP, or on properties that are considered important to Native American groups;
- cannot be satisfactorily mitigated as determined through consultation with the SHPO and other interested parties; and
- result in impacts on the viewshed of properties whose setting contributes to the importance of the site.

APD Planning Process

- Operators would be required to submit multi-year plans of development for potential or defined oil and gas field(s) or portions of fields on 1:24,000 scale topographic maps indicating all related aspects of the development.
- A geographic area would be identified by the BLM for completion of a Class III archaeological inventory by a BLM cultural resource use Permittee, at the expense of the proponent. The area of inventory would be specific to each multi-year plan.
- BLM would analyze the inventory results in terms of site density and spatial distribution and would then identify areas within the GADP that may be potentially suitable for development based on low site densities and scattered settlement patterns. Areas of high site density and settlement clusters in close proximity to each other that are not suitable for potential development would also be identified.
- This analysis, while considering Monument cultural resource management objectives and BMPs for development proposals, would form the basis for the GADP, which becomes a reference document for initial selection of potential well pad locations and associated developments by the proponent.
- The proponent would identify potential locations and initiate pre-APD interdisciplinary planning with the appropriate BLM personnel to consider and resolve natural and cultural resource concerns and to produce a viable APD proposal.
- Once suitable location(s) are agreed upon by the proponent and the BLM, field inspections by a BLM-permitted archaeologist would occur. Compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, would be completed for individual APDs and/or multiple APD packages.
- Proponents would submit written documentation of the pre-APD interdisciplinary planning process with the APD. This documentation would form the basis for the alternative development in the Environmental Assessment. APDs would not be accepted by the BLM without this documentation. At the time an APD is submitted to the BLM, the proposal would be expected to meet Monument management objectives.

- APD would then be processed.

If the geographic area analyzed includes no suitable development space, options include:

- Expand the area analyzed in the GADP, use reliable existing inventory and/or expand the cultural resource inventory area.
- Mitigate adverse effects only as a last resort (i.e. when all other strategies have been thoroughly analyzed, determined not to be feasible, and documented).
- Evaluate a range of mitigation options to minimize and/or to mitigate impacts of a site specific proposed development on historic properties.

Examples of Options to Minimize Ground Disturbance and Fragmentation

- Use and/or modify existing facilities, utility and transportation corridors.
- Use previously disturbed areas.
- Use directional or horizontal drilling.
- Co-locate wells on single well pads.
- Use buffers to minimize indirect and cumulative impacts.
- Use vegetative screening to preserve visual integrity of sites.

Mitigation treatments would follow guidance provided in the “Advisory Council on Historic Preservation Section 106 Archaeology Guidance.” All mitigation would be developed in consultation with the State Historic Preservation Officer and American Indian tribes.

Horizontal/Directional Drilling Analysis

Incorporating new technologies into fluid mineral development is included in the PRMP. These new technologies include horizontal and/or directional drilling methods which allow for greater flexibility in the placement of wells and, consequently, more opportunity to avoid sensitive resources. In general, these drilling methods allow for the placement of wells up to 2,200 feet away from the specific mineral resource to be tapped. Thus, multiple wells can be placed on a single well pad, existing disturbance areas can be used rather than creating new disturbance, and fluid mineral resources under the Monument may be reached from surface facilities off the Monument.

To demonstrate the application this technology may have on the Monument, a map was generated depicting minerals accessible within 2,200 feet of existing disturbed areas. Existing disturbed areas include fluid mineral facilities, wells, compressor sites, mine locations, powerline corridors, and routes of travel. This analysis did not consider restrictions due to topography, concerns with other resources, etc. However, it provides a basis for how valid existing rights may be exercised without further damage to cultural and natural resources in the Monument. Map 17 indicates that 77% of the Monument

can be reached from existing disturbed areas. Of the 127,895 acres currently leased for fluid mineral development, 79% (89,681 acres) fall within 2,200 feet of existing disturbance and may be accessible using directional/horizontal drilling methods.

Future Oil and Gas Leasing and Cultural Resources Management

Oil and gas leasing is considered an undertaking subject to Section 106 compliance. All new lease areas on the Monument would be offered for sale with a No Surface Occupancy (NSO) stipulation that prohibits physical occupancy and surface disturbance within the lease area in order to extract oil or gas. As a result, it is expected that lease sales with the NSO stipulation would be determined an Undertaking *"that does not have the potential to cause effects on historic properties"* per 36 CFR 800.3(a) and (a)(1).

Criteria for Waivers, Exceptions, and Modifications of Lease Terms for New Leases

Only waivers, exceptions, or modifications to lease terms that seek to minimize direct, indirect, and cumulative impacts to cultural resources would be considered by the Monument Manager. Should a waiver to the NSO stipulation on leases issued under the terms of the Monument RMP be proposed, the following special criteria would be applied to enable the Monument Manager to evaluate the proposal for a waiver, exception, or modification. No exceptions would be granted to the special criteria.

Special Criteria

A Class III archaeological inventory of the entire lease within which the exception is sought would be conducted by a BLM cultural resource use Permittee retained by the leasee. The inventory would comply with all BLM and Monument standards and requirements. The BLM would evaluate the results of the inventory to identify if areas without cultural resources exist that are suitable to grant a waiver, exception, or modification.