

**FINDING OF NO SIGNIFICANT IMPACT  
and  
DECISION RECORD  
for  
North Mail Trail 3D Seismic Survey**

**Canyons of the Ancients National Monument, Colorado  
EA# CO-SJFO-01-081EA**

**Finding of No Significant Impact** Based on the analysis of projected environmental impacts contained in Environmental Assessment CO-SJFO-01-081EA (EA) for the Western GECO North Mail Trail 3D Seismic Survey and considering comments received during a 30-day public review of the above document and upon review of previous 3D seismic activity near the project area, I have determined that the proposed project will not have significant impacts on the human environment and an Environmental Impact Statement (EIS) is not required. My determination relies on and adopts the BLM standard practices applied to surface-disturbing activities, and the additional environmental protection measures identified in the EA Appendix 1. I have also determined that the proposed project is in conformance with the 1984 San Juan Resource Management Plan (RMP), the June 9, 2000 Canyon of the Ancients National Monument (CANM) Presidential Proclamation, and the CANM Interim Management Guidance for Oil and Gas Leasing and Development.

The Proposed Action described in the EA is to conduct a vibroseis three-dimensional (3D) geophysical seismic survey on a project size of 19.9 square miles (12,736 acres), of which BLM surface ownership comprises about 15.0 square miles (9600 acres). The project area is in the North Mail Trail Mesa area of the CANM.

The EA addresses four other alternatives to the applicant's proposal: Shot Hole/Helicopter, Shot Hole/Buggy, Existing Roads and Trails, and No Action. None of the alternatives would significantly alter the physical or human environment. However, the alternatives do vary in cost of implementation and quality of the data collected.

**Decision** It is my decision to authorize the North Mail Trail Creek 3-D Seismic Survey, as proposed. I am also incorporating as a condition of approval, the BLM standard practices applied to surface-disturbing activities and the additional environmental protection measures presented in Appendix 1 of the EA. Per 43 CFR 3151(b), this decision is in full force and effect.

**Rationale For Decision** The decision to implement the Proposed Action, with the BLM standard practices applied to surface-disturbing activities and the additional environmental protection measures described in Appendix 1 of the EA, will not result in unnecessary or undue environmental degradation, is in conformance with the 1984 San Juan RMP, and will not create any new impacts that interfere with the proper care and management of the objects protected by

the June 2000 Presidential proclamation. The proclamation for the CANM allows for oil and gas exploration and development. In reaching this decision and in my determination of the Finding of No Significant Impact, I considered the above referenced EA, the errata sheet of that EA found in Appendix 1 of this Decision Record/FONSI, a nearby 3D seismic survey done in 1995, and public comments received during the 30-day public review period.

One issue presented through public comment and not specifically addressed in the EA is the legality and/or conformance to the CAMN Proclamation of conducting geophysical operations on unleased Public Lands. The CANM Proclamation allows new leases to be issued, but only for the purpose of either protecting against drainage, or promoting conservation of oil and gas resources in a common reservoir now being produced under existing leases. There are approximately 1,870 acres of unleased Public Mineral Estate in the project area (all but about 80 acres of which are on surface Public Lands), located in the northern portion of the area. A large portion of these unleased lands with surface Public ownership (55%) are intermixed with private surface and mineral ownership. Development of oil and gas resources on the private lands could lead to drainage of the neighboring, presently unleased, Public Lands. An additional 15% of the unleased lands are lands along the northwestern border of the project area, within a ¼-mile of existing leases. The remaining 30% is located in the northeastern corner with existing leases on the western and southern borders of the block.

Because all of these unleased lands have the potential to encounter drainage of oil and gas resources due to development of neighboring leases, I conclude that a geophysical survey of these lands is appropriate and conforms with the CANM proclamation and the Interim Management Guidance. The Proposed Action will provide information needed to determine if drainage is occurring or if there is a common reservoir. If additional leasing were needed to address these drainage or oil and gas resource conservation issues, additional NEPA documentation would be required prior to issuing a lease. The need to achieve good data quality is another reason for considering survey work on unleased lands. To obtain good information on subsurface geologic features requires placing source points out a distance from the actual area of interest to get the 3D picture. Preventing the geophysical survey work off lease would compromise the quality of data for areas that are leased.

The EA addresses the area of potential effect and analyzes the anticipated impacts of conducting an intensive seismograph project. While the project area involves over 12,700 acres of land, a total of 85 to 243 acres (less than 2%) would have any level of surface disturbance. The vibroseis buggies will mostly travel in single file, not in a staggered pattern, to reduce surface disturbance. If this pattern is carried out over the entire project area, the total surface disturbance will equal 85 acres. However, there may be situations where the vibroseis buggies spread into a staggered pattern to actually reduce impacts, depending on vegetation and terrain features, in which case the number of trips over any given area would be reduced, but the overall area of impact increases beyond 85 acres. The environmental impact would primarily be soil compression (but not compaction) and the crushing of vegetation. Some vegetation and small wildlife species mortality (including some on the State Director's Sensitive Species List) is anticipated, but would not reach the level of significant impact. Recovery of the soil, vegetation, and wildlife resources is anticipated within a few years. Additionally, the operator will reseed all

disturbed areas where the BLM has determined that the site will not naturally revegetate in a reasonable time, or that soil stability is threatened.

Other potential impacts include impacts to archeological resources and soil biological crusts. Potential impacts to archeological resources are considered insignificant because intensive archeological surveys have already been conducted and source lines have been rerouted to completely avoid known sites. Additionally, the operator will be required to have archeological monitors on site while the work is in progress, which will allow for the identification of presently undiscovered cultural sites. Consultation with the Colorado State Historic Preservation Office has been completed and the SHPO agrees with the archaeological mitigation approach. Tribal consultation presented no specific issues regarding traditional cultural properties.

Some damage to soil biological crusts is anticipated. However, only insignificant impacts are anticipated, because field surveys (EA, p.32-3) show that only a small percentage of land actually has these crusts (5 – 12 % depending on soil type). If it were assumed that cover was 12% for all soil types, the Proposed Action might affect 0.6% of existing biologic crusts in the Project Area.

The Proposed Action alternative reduces the amount of soil and vegetation loss associated with drilling non-producing oil or gas wells, does not result in unnecessary or undue degradation of the environment, nor does it contribute to significant cumulative effects. The Proposed Action does provide for the most effective, and cost-efficient, method of obtaining needed geologic information for the BLM's minerals resource management and for the oil and gas lessees, while minimizing impacts to the environment.

The Shot Hole/Helicopter alternative would provide the needed geologic information but at a lower quality and at a cost up to 4 times greater than the Proposed Action. The reduction in anticipated environmental impacts, as compared to the Proposed Action, is not to an extent that justifies selection of this alternative. The Shot Hole/Buggy alternative would also provide the geologic information of the same quality as the Shot Hole/Helicopter alternative, but also at a higher cost than the Proposed Action and with environmental impacts similar to the Proposed Action. The Existing Roads and Trails alternative would have the fewest environmental impacts, but would not provide the needed geologic information because there would be large gaps in the data collected and the data quality would be poorer.

The No Action Alternative was not selected because it deprives the leaseholders and BLM the opportunity to obtain subsurface geological information. Without geophysical data, oil companies would have a higher probability of drilling non-productive wells, thus resulting in unnecessary surface disturbance, new roads, and vegetation loss. Additionally the Federal Government could lose potential oil and gas royalty revenue through drainage of unleased oil and gas reservoirs. The No Action Alternative would also forgo the opportunity to use the subsurface knowledge to help place wells in less environmentally sensitive areas and, additionally, denies the leaseholder of prior existing rights that are consistent with the Monument Proclamation.

The EA also addressed, but dropped from consideration, an alternative to conduct exploratory

drilling in lieu of any geophysical seismic activity. This alternative was determined to be unreasonable to implement due to cost and greater environmental impacts (estimated surface disturbance provided in the EA [p.16] could exceed 800 acres). The selection of the No Action Alternative could result in similar environmental effects over time.

**Mitigation** The environmental project measures identified as Project Design Features in Appendix 1 of the EA were identified through the environmental analysis and will be applied to the Proposed Action.

**Monitoring** The geophysical project will be inspected, at minimum, 40 hours weekly on a random basis. The inspections will be designed to monitor environmental effects of the project and to insure that the operator complies with the mitigation measures. Compliance actions are to insure that these operations are conducted in accordance with the terms and conditions of the approval and associated stipulations, the elements of the Proposed Action (applicant committed practices), BLM standard practices applied to surface-disturbing activities, and the mitigation measures otherwise listed in the EA. A cultural resource monitor will continuously monitor operations to assure site avoidance and compliance with other protective conditions for cultural resources.

**Public Involvement** The EA prepared for this proposal was placed on the Colorado BLM CANM web site on May 2, 2002, with a 30-day public comment period. A news release was provided to approximately 38 contacts, including newspapers, radio stations, a national park, a national monument, two county and three town administrators, a congressman, two senators and two state representatives. The availability of the EA was announced in the Cortez Journal on May 4, 2002. Additionally, 437 letters were mailed out to individuals on the CANM mailing list announcing the availability of the EA. Approximately 5,657 responses were received; of which about 97 % were in the form of an Internet message. The BLM received about 195 responses in the form of a “hard copy” letter, some of which were also sent through the Internet, so there may be some double counting in the above numbers.

All electronic messages were printed off and are included with the “hard copy” letters in the administrative record for this project. BLM staffers reviewed all comment letters and electronic messages. Issues provided by the public are summarized and addressed in Appendix 2. While there were a very high number of responses considering the scale of this proposed project; particularly expressing differences of opinion regarding the conclusions reached by the BLM, the

responses provided no substantive comments that necessitated the BLM to revisit the proposed project through additional NEPA procedures.

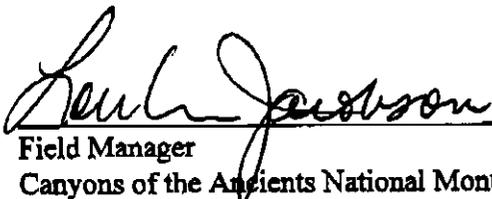
**Administrative Appeal** – This decision may be appealed to the Interior Board of Land Appeals, Office of the Secretary, in accordance with the regulations contained in 43 CFR, Part 4, 43 CFR 3151 and Colorado BLM Form CSO 1840-6. If an appeal is taken, your notice of appeal must be filed in this office (at the above address) within 30 days from receipt of this decision. The appellant has the burden of showing that the decision appealed from is in error.

If you wish to file a petition (pursuant to regulation 43 CFR 4.21) (request) for a stay (suspension) of the effectiveness of this decision during the time your appeal is being reviewed by the Board, the petition for a stay must accompany your notice of appeal. A petition for a stay is required to show sufficient justification based on the standards listed below. Copies of the notice of appeal and petition for a stay must also be submitted to each party named in this decision and to the Interior Board of Land Appeals and to the appropriate Office of the Solicitor (see CFR 4.413) at the same time the original documents are filed with this office. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

**Standards for Obtaining a Stay**

Except as otherwise provided by law or other pertinent regulation, a petition for a stay of a decision pending appeal shall show sufficient justification based on the following standards:

- (1) The relative harm to the parties if the stay is granted or denied,
- (2) The likelihood of the appellant's success on the merits,
- (3) The likelihood of irreparable harm to the appellant or resources if the stay is not granted, and
- (4) Whether the public interest favors granting the stay.

  
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Field Manager  
Canyons of the Ancients National Monument

08.09.02  
Date

## **Appendix 1**

### **Errata Sheet**

#### **Corrections to EA# CO-SJFO-01-081EA**

P.7 - The EA described the use of one ATV as a support vehicle to the vibroseis operations (p. 7 and 11). The operator has since identified the need to use up to 4 ATVs. The purpose of the additional ATV would be to support geophone repairs by providing rapid access. They would only travel on existing roads or source lines as identified in the EA. Travel from the road or seismic line to the geophone would be continued by foot. The presence of several ATVs would allow two or more repairs to occur concurrently, thus minimizing total project time. There would be no increase in acres of surface disturbance as ATVs would drive in buggy tracks or buggies would drive over ATV tracks. There is no need to modify the NEPA analysis.

P.7 – The estimated surface disturbance acreage of 243 acres assumed a staggered driving formation for the vibroseis buggies, where the vehicles would not follow in the tracks of the preceding vehicles. If the vehicles drive in single-file, the acres of surface disturbance would be 85 acres (or less than 0.8%) of the project area or 0.05% of the Monument. In all estimates, disturbance associated with vehicular travel were increased by 20% to account for minor variations in tire tracks when driving in-line, weaving, any extraneous ATV tracks, and to ensure disturbance was not under estimated.

P.24 – A resource protection offset of 300 feet for vibroseis testing has been determined for standing structures and a 100-foot offset for rock art.

P.53 – Forestry Section. The vibroseis equipment is an approximate 30 ton AHV-IV vibroseis buggy not an 18 ton HVII-351.

p.67 – COA #29 - A biological monitor is required to monitor the vibroseis buggies from May 1 through August 14, from Rincon Canyon north to the edge of the Project boundary for the purpose of monitoring and avoiding desert spiny and long-nosed leopard lizards.

## Appendix 2

### Response to Public Comments on EA # CO-SJFO-01-081EA

Issues raised during the 30-day public review of the above EA and the BLM's response are found below.

#### 1. Consistency with the CANM Proclamation

Comments were received that the proposed seismic activity was not consistent with the requirements under which the CANM is to be managed. The Proclamation language as well as the Interim Management Guidance for oil and gas activities in this area was carefully reviewed to ensure consistency with this proposal. The Proclamation recognized oil and gas development as a legitimate use of the lands. Geophysical surveys provide information essential to the proper management of those resources, while minimize impacts to other resource values. More specific detail concerning consistency with the Proclamation can be found in Section I.B of the EA, sections of the FONSI/Decision Record, and in the discussions of the below issues.

#### 2. Conducting geophysical operations on lands that are not already leased.

Comments were received concerning geophysical surveys on lands not already leased within the project area and that conducting a survey would violate the CANM proclamation and Interim Management Guidance.

The CANM Proclamation allows new leases to be issued, but only for the purpose of either protecting against drainage, or promoting conservation of oil and gas resources in a common reservoir now being produced under existing leases. There are approximately 1,870 acres unleased Public Mineral Estate in the project area (all but about 80 acres of which are on surface Public Lands), located in the northern portion of the area. A large portion of these unleased lands with surface Public ownership (55%) are intermixed with private surface and mineral ownership. Development of oil and gas resources on the private lands could lead to drainage of the neighboring, presently unleased, Public Lands. An additional 15% of the unleased lands are lands along the northwestern border of the project area, within a ¼-mile of existing leases. The remaining 30% is located in the northeastern corner with existing leases on the western and southern borders of the block.

Because all of these unleased lands have the potential to encounter drainage of oil and gas resources due to development of neighboring leases, the BLM believes that a geophysical survey is appropriate and conforms to the CANM proclamation and the Interim Management Guidance. The Proposed Action will provide the information needed to determine if drainage is occurring or if there is a common reservoir. If additional leasing is needed to address these drainage or oil and gas resource conservation issues, additional NEPA documentation

would be required prior to issuing a lease. Another reason for the survey work on unleased lands relates to data quality. To obtain good information on subsurface geologic features requires source points out a distance from the actual area of interest to get the 3D picture. Preventing the geophysical survey work off lease would compromise the quality of data for areas that are leased.

### **3. The Role the CANM plays within the National Landscape Conservation System**

The BLM established the National Landscape Conservation System to help protect some of the nation's most remarkable and rugged landscapes. The system includes BLM National Conservation Areas, National Monuments, wilderness areas, wilderness study areas, Wild and Scenic Rivers, and National Scenic and Historic Trails. The values that CANM add to this system (specifically archeological, geology, and habitat for several unique reptile species) will not be compromised by the proposed project. More detail about these specific CANM values is discussed below.

### **4. Use of "Thumper" trucks**

Public comments were received concerning the use of "thumper trucks" to conduct the geophysical survey. Thumper trucks are obsolete technology that generate a greater shock wave through the ground and have the potential for greater impact to undiscovered cultural sites (due to the fact that they operated by dropping a 6,000 pound weight). However, thumper trucks were never a part of this project's Proposed Action or alternatives. With the exception of a quoted reference material, the word "thumper" was never used in the EA.

### **5. Protection of archeological sites**

Another issue in the public comments was the concern over protection of archeological sites. The protection of archeological sites was the highest priority in the project design and the development of the EA and associated analysis, as well as a major determinant in my decision. The entire area of projected disturbance has already had an intensive ground inventory and review of previously recorded sites, which identified all known cultural sites. Additionally the BLM is requiring that an archeologist be present on site to monitor surface disturbing activities to ensure that known sites are avoided and, if previously undiscovered sites are found during activities, they are also protected. All consultation required under Section 106 of the National Historic Preservation Act has been completed.

### **6. Protection of fauna**

Public comments were expressed about protection of wildlife species in the project area; particularly relating to lizards that are found in the area. Two lizard species (desert spiny and longnose leopard lizards) probably occur in the project area and are on the State Director's Sensitive Species List. The EA discusses possible impacts to these species on p. 48-9, including the potential of mortality from vehicular traffic as well as the potential for crushing burrows. This potential impact is considered insignificant due to the low percentage of land

disturbed (2%) by vehicles and the requirement of having a wildlife monitor accompany vehicles from May 1 to August 14 to reduce the likelihood of mortality by crushing.

One issue raised during the public comment period was the potential reptile mortality from increased vehicular traffic on existing roads. While not specifically addressed in the EA, this impact is also considered insignificant. These lizard species have relatively small home ranges of 1.6 to 6 acres (EA p. 47). Because of the relatively low percentage of the landscape (0.5%) that is existing roads (approximately 3 acres of road per 640 acres of land; refer to Cumulative Impacts Section of EA [p.57 – 58] 60 acres of road over 12,700 acres), there is a low likelihood that lizards would have an existing road within their home range and therefore, vulnerable to crushing.

While many people voiced concerns, no one provided information that necessitated the need to reevaluate our conclusion that potential mortality of any species on the State Director's Sensitive Species List would not reach the level leading to placement of that species on the Threatened and Endangered Species List.

## **7. Protection of ecological features**

Comments were received related to impacts to special ecological features found in CANM, particularly the biological soil crusts and the Sheppard soil sand dunes. Biological soil crusts are discussed below. Impacts to the Sheppard soil sand dunes are discussed in the EA on p. 23-6.

## **8. Cumulative Impacts**

Cumulative Impacts were discussed on p. 51-2 of the EA. While comments were received related to our analysis of cumulative impacts, the BLM feels that the discussion of these impacts is appropriate to reach the finding that this project would not cumulatively create a significant impact to the environment.

## **9. Biological Soil Crusts**

Impacts to biological soil crusts are discussed on p. 32-34 of the EA and in the FONSI/Decision Record. In summary, the BLM anticipates only minor impacts to biological soil crusts. The crust's scattered distribution and predominately early successional stage of development coupled with the small percentage of land impacted will only affect a relatively small population of the crusts. Recovery of these impacted areas will take between 7 and 50 years.

## **10. Alternatives not considered**

Some comments were received recommending other alternatives to consider, such as use of renewable energy, more energy conservation, having the Federal government buy out the oil and leases, and just allowing the seismic activity on private lands. The first three suggested alternatives do not address the purpose and need for the proposed action, which is to identify

geologic targets of oil and gas reservoirs in order to proceed with orderly development of the oil and gas resources (EA, p.1). The fourth alternative would also not address the purpose and need, because the reduction in source points would provide inadequate data for analysis. Therefore, none of these alternatives are considered reasonable, and therefore are not analyzed in this NEPA document.

## **11. Need for an EIS**

Comments were received stating that the project requires an Environmental Impact Statement (EIS) because potential impacts were of significance. The BLM followed the NEPA requirements of 43 CFR 1500-1508 in the preparation of the EA. The conclusion reached in that analysis, and in consideration of the public comments of that EA, is that there would be no significant impact to the environment. The commentors requesting an EIS provided no specific substantive issues that were not already studied by the BLM in the EA. Therefore, an EIS is not required.

## **12. Adequacy of Mitigation Measures**

Comments were received concerning the effectiveness of mitigation measures; specifically that these measures were just listed with no evaluation of their effectiveness. These comments hinge on the presumption that the EA should be developed by first discussing impacts devoid of the environmental protection stipulations (as a form of “worst case scenario”). Then possible mitigation measures are developed and analyzed as to their effectiveness in reducing these impacts. The approach the BLM often takes in preparing NEPA documents is to make these environmental protection stipulations a part of the Proposed Action. This approach is taken to reduce unnecessary discussions about “theoretical” environmental impacts that aren’t going to occur because the BLM fully intends to implement these stipulations. To have a discussion about potential impacts as if these stipulations won’t be implemented is an unnecessary academic exercise and does not provide the concise information the decision maker needs, which is the intent of an EA 40 CFR 1508.9(a). If an impact is avoided through project design, it does not need to be discussed.

## **13. Off-road travel**

Comments were received concerning the impact of off-road travel. Off-road travel of the geophysical equipment is a necessary part of the Proposed Action in order to obtain quality data. While general off-road travel is prohibited in the Project Area, it can be authorized on a case-by-case basis, such as this project, provided safeguards are in place to protect the resources threatened by the off-road travel. In this area, concerns over soil and vegetation damage as well as the threat of vandalism of cultural site were the reason for off-road travel provision. Safeguards are in place to protect those features, such as cultural resource surveys to avoid archeological sites, and preventing travel on steep slopes. Therefore, the BLM is authorizing off-road travel by the operator.

Commentors also expressed concerns of the potential of future illegal off-road use due to the

presence of the geophysical vehicle tracks. In addition to the discussion of this issue on p.19 of the EA, the BLM feels that this impact is insignificant based on experience from the previous 3D operation that occurred in 1995 and located just south of the project area. No unauthorized off-road travel problems have been noted in that project area.

#### **14. Damage to tourism**

Comments were received concerning damage to local tourism if the Proposed Action were approved. Because of the short duration of the project (about 3 weeks), and the minimal impacts anticipated to visual (EA, p.49) and recreation (EA, p.50) resources, impacts to the local tourism industry are projected to also be minimal.

#### **15. Cumulative effect with Livestock Grazing**

Livestock grazing and the proposed seismic project would both cumulatively contribute to vegetation impacts. The existing vegetation condition for the project area is quite different than potential (ea, p.40). Site conditions are not achieving nor are they moving toward public land health standards for healthy and productive plant communities (ibid). Both loam and shale derived sites are now dominated by annual grasses and weedy alien annuals (60 to 75 percent of the vegetative cover. Bare soil is typically high on all sites, averaging 45%. This existing condition is the result of livestock grazing. To address this issue, changes in livestock grazing are currently being analyzed in an environmental assessment for the affected livestock allotment. From a cumulative effects standpoint, when the effects of the seismic project are added to livestock grazing effects, there should be no measurable change in existing vegetation. For perennial bunchgrasses, some individuals may be impacted with repeated vehicle passes, which would disturb root masses. Overall, these species, would slightly decline in the analysis area. Perennial rhizomatous grass species would be impacted for one growing season, but would probably survive the impact because of the spreading root structure. Alien annuals, such as cheatgrass and filagree are invasive on these sites and after the project would probably increase in response to disturbance. Conditions of approval require the operator to reseed all disturbed areas where the BLM has determined that the site will not naturally revegetate in a reasonable time, or where soil stability is threatened. The seed mix is a combination of four native grasses.

#### **16. Impacts to Specific Areas**

Comments were received concerning impacts to some specific areas, namely Cannon Ball Mesa, Hamilton Mesa, Bowdish Canyon, and the Bridge Canyon (McElmo) Research Natural Area. While some activity may occur in these areas, areas such as the top of Cannon Ball Mesa and the RNA would not have vibroseis buggies operating. The only activity would be foot travel laying and retrieving the receiver phones. Concerns for Hamilton Mesa and Bowdish Canyon relate to cultural resources and are discussed in the EA on p.21.

#### **17. Length of comment period**

Comments were received concerning the adequacy of the length of time provided for public comments and included requests for up to 60 days of additional time to review the EA and submit comments. The BLM encourages public involvement in its decision-making, and believes there was adequate public review time. While the BLM wants to maximize the opportunities for public involvement, we must balance that desire with the requirement to issue timely decisions. An additional 60-day comment period would result in a total of 90 days of public review, which is more than double the Council of Environmental Quality require of a minimum of 45 days for Draft EISs. Therefore, the BLM feels that granting an extension to the public involvement period is unwarranted.