

15 March 2008

BLM Oil Shale and Tar Sands PEIS
Argonne National Laboratory EVS/900
9700 S. Cass Avenue
Argonne, Ill. 60439

**Comments: Draft Oil Shale and Tar Sands Resource Management Plan
Amendments to Address Land Use Allocations in Colorado, Utah and Wyoming and
Programmatic Environmental Impact Statement (DOI No. DES 07-60.)**

Introduction

Please accept and fully consider these comments on behalf of Jerry D. Spangler, a registered professional archaeologist and executive director of the Colorado Plateau Archaeological Alliance (CPAA). Founded in 2005, CPAA works to protect archaeological and historical properties on public lands throughout the West through sound scientific research into the causes of adverse effects, through public outreach and education, and through collaborative projects with conservation and governmental entities. Our goal is to ensure that cultural resources are protected for future generations, for their scientific as well as aesthetic qualities. We appreciate this opportunity to comment on the Draft Oil Shale and Tar Sands Resource Management Plan Amendments to Address Land Use Allocations in Colorado, Utah and Wyoming and Programmatic Environmental Impact Statement (hereafter PEIS). We believe the federal actions articulated in Alternatives B and C will adversely impact the integrity of cultural resources on more than 2 million acres of BLM-administered lands in the West, and that a more thoughtful consideration of potential adverse impacts to cultural resources is warranted.

FLPMA obligates the Bureau of Land Management (BLM) to protect cultural, geologic and paleontological resource values (43 U.S.C. §§ 1701(a)(8) 1702(c)), whereas the National Historic Preservation Act of 1966 (“NHPA”) (16 U.S.C. § 470 et seq.) provides for enhanced consideration of potential impacts to these resources through a cooperative federal-state program for the protection of historic and cultural resources. In particular, Section 106 (16 U.S.C. § 470f) obligates the BLM to consider the effects of management actions on historic and cultural resources listed or eligible for listing to the National Register of Historic Places, as provided under NHPA. Section 110 of the NHPA requires the BLM to assume responsibility for the preservation of historic properties it owns or controls (16 U.S.C. § 470h-2(a)(1)), and to manage and maintain those resources

in a way that gives “special consideration” to preserving their historic, archaeological and cultural values. Section 110 also requires the BLM to ensure that all historic properties under the jurisdiction or control of the agency are identified, evaluated, and nominated to the National Register of Historic Places. Id. § 470h-2(a)(2)(A).

As discussed throughout the PEIS, many other federal laws, regulations and executive orders have articulated the BLM’s responsibility to protect properties of cultural and religious significance. This responsibility was reaffirmed by President Bush’s “Preserve America” initiative (See Exec. Order 13287, March 3, 2003) that requires the BLM to advance the protection, enhancement, and contemporary use of its historic properties. It states the BLM must ensure that “the management of historic properties in its ownership is conducted in a manner that promotes the long-term preservation and use of those properties as Federal assets.” It is within that context that the BLM must carefully consider federal management actions designed to facilitate oil shale and tar sands leasing and the consequent effects of such decisions on archaeological and historic resources of significance to all Americans.

As a professional archaeologist, I am intimately familiar with the cultural resources of northeastern Utah and northwestern Colorado. My research in this region over most of the past 20 years, much of it conducted on behalf of the BLM, has been widely published in peer-reviewed monographs, journal articles and books (cf. Spangler 1993a; 1993b; 1995; 2000a; 2000b; 2001; 2002; 2003; 2004; 2006, 2007; Spangler, Barlow and Metcalfe 2004; see also attached vitae). Ongoing research in the Desolation Canyon, Range Creek Canyon and Nine Mile Canyon regions has been specifically focused on the direct, indirect and cumulative impacts of large-scale industrial development, road access and unmanaged recreation on cultural resources in a region renowned for its archaeological and historic sites (cf. Spangler, Arnold and Boomgarden 2006; Spangler, Aton and Spangler 2007; Spangler et al. 2007a, 2007b, 2008). Consequently, the following comments are directly applicable to management decisions that could adversely impact the cultural resources found in three specific areas considered by the PEIS: the Piceance Basin area, including contiguous areas of Rio Blanco County to the west; the White River and Hill-Willow Creek Extension of the Uintah and Ouray Ute Indian Reservation on the northern escarpment of the East Tavaputs Plateau; and the West Tavaputs Plateau, including Nine Mile Canyon and Desolation Canyon.

General Concerns

As stated throughout the PEIS, the BLM has already made a determination that any amendments to land-use plans to “designate lands as available for application for commercial leasing would have no impact on the environment,” and that such amendments “do not commit the BLM to a particular course of action since they merely allow the BLM to consider granting leases for oil shale or tar sands development in the future” (PEIS ES-5). The PEIS further maintains that “additional environmental analysis will be required to analyze the impacts of the proposed technology and of any reasonable known alternative technologies for development of the oil shale or tar sands resources. Another review under NEPA would be undertaken before approval of a plan of

development, which would include approval of particular activities at the specific locations where such development would take place” (PEIS 1-1).



CPAA disagrees with the basic premise that “cultural resources on federal and nonfederal lands would not be impacted by land use plan amendments” (PEIS 2-66). Amending BLM land-use plans to accommodate a particular use of public lands not anticipated at the time the plan was drafted is commonly a process initiated when the proposed activity is considered imminent and viable. Hence, the amendments to these specific land-use plans to allow for the leasing of selected and identified parcels/areas with oil shale or tar sands constitutes a *de facto* acknowledgement that these areas will be leased, even though the BLM readily admits that “uncertainty associated with the preliminary analyses indicated that BLM should defer approving the issuance of commercial leases until adequate information is available to define what the development will entail” (PEIS 2-51).

In effect, BLM admits there is “uncertainty” as to the nature and scope of the development, and that current information about that development is inadequate to make informed decisions at the current time. However, these inadequacies have not precluded the BLM from offering Alternative B (preferred) and Alternative C, each with the stated intent to *facilitate* commercial leasing. Both alternatives also come with the acknowledgment that leasing could lead to “construction and operation of commercial projects within the lease areas. Potential impacts [to cultural resources] may include

damage or destruction, and increased potential for vandalism or theft due to increased human access” (PEIS 2-66).

If the actual commercial leasing of public lands for oil shale and tar sands development constitutes a federal undertaking requiring thorough Section 106 review, as is acknowledged in the PEIS, then by logical extension any management decisions to amend the land-use plans (e.g., Alternatives B and C) to allow such leasing to occur is also an undertaking that requires full consideration of direct, indirect and cumulative impacts to cultural resources. No such consideration is offered in the PEIS. Rather, the PEIS states the “potential for future impacts on the environment have been analyzed at the programmatic level with the understanding that future leasing and development will require site-specific NEPA evaluation” (PEIS ES-5) and compliance with agency-specific processes for complying with Section 106 (PEIS 2-3).

CPAA contends that identifying lands for potential oil shale and tar sands leasing without critical analysis of the environmental suitability of those lands for leasing puts the cart before the horse. BLM has made very similar arguments in the past that the *sale* of oil and gas leases would have “no potential to affect” cultural resources, and that site-specific NEPA analysis at the time of the lease development is sufficient to comply with NEPA and NHPA. The Interior Board of Land Appeals has repeatedly rejected this assumption, emphasizing that appropriate NHPA compliance must be completed at each phase of a federal undertaking (cf. IBLA 2004-124, in SUWA v. UT 055, et al.). Furthermore, state protocol agreements specify the BLM will make reasonable efforts to identify all historic properties and sacred sites on BLM-administered lands where federal undertakings will occur.

We believe the modification of land-use plans to facilitate leasing is a federal undertaking as defined in 36CFR200.16(y) in that it is “a project, activity or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including ... those requiring a Federal permit, license or approval.” As such, we believe the BLM has not demonstrated “reasonable and good faith effort to identify all historic properties within the area potentially affected by the proposed undertaking, evaluate and determine whether identified properties are eligible for inclusion in the National Register, assess the adverse effects upon the identified properties deemed eligible, and develop and evaluate the means to mitigate or avoid such effects” (Save Medicine Lake Coalition, 156 IBLA 219,260 [2002]).

Also disconcerting is that Alternative B, with potential lease areas totaling about 2 million acres, is identified as the preferred alternative based on the rationale that “it would make the largest amount of potential oil resources available for leasing while still providing for an environmentally sound program and would provide the greatest flexibility in locating future development” (PEIS 2-1). This contrasts to Alternative C (830,000 acres of potential lease areas), which excludes those areas where there are already prohibitions on surface disturbance and/or seasonal limitations that have already been implemented by the BLM to protect known sensitive resources (PEIS 2-28).

In effect, the agency preference for Alternative B is based on maximum size of potential lease areas, not “an environmentally sound program.” Consequently, at-risk areas already analyzed in detail by the BLM and found worthy of enhanced environmental protection would not receive continued enhanced protection under Alternative B. Hence, Alternative B places at direct and imminent risk 1.17 million acres of public lands where at-risk resources have already been identified and where they are currently being managed by the BLM to protect those values. Alternative B appears to be in direct contrast to the stated intent of Congress that commercial development of oil shale and tar sands should “be conducted in an environmentally sound manner using management practices that will minimize potential impacts” (PEIS 1-1).

In light of these concerns, CPAA recommends:

- Any amendments to the relevant BLM land-use plans should be accompanied by full Section 106 compliance that includes, at a minimum, a more thorough Class I cultural resources analysis of all sites on lands identified for oil shale and tar sands leasing under Alternatives B and C. This should include the identification of highly sensitive areas where the densities of archaeological sites of National Register eligibility may make those areas unsuitable for leasing (see discussion and recommendations hereafter related to East Tavaputs and West Tavaputs Plateaus).
- Given that some areas in northwestern Colorado and northeastern Utah considered for oil shale and tar sands leasing also occur in zones with substantial ongoing oil and gas development, the PEIS should more carefully consider the cumulative effects of additional impacts to cultural resources in those areas already experiencing adverse effects. The consideration of cumulative effects should be considered at the earliest stages of a federal undertaking and continue through each phase.
- The PEIS proposes to amend land-use plans that are woefully out of date, and many of these plans are currently undergoing revision. The issue of oil shale and tar sands leasing should have been addressed within a more synergistic and holistic context of the new draft resource management plans, rather than amendments to outdated plans. It is recommended that oil shale and tar sands leasing be incorporated into the broader context of draft RMPs currently undergoing revisions, and that ongoing RMP revisions be delayed as necessary to accommodate proper planning for oil shale and tars sands leasing development.
- CPAA concurs that leasing should be excluded from all wilderness areas, wilderness study areas, national landscape conservation system areas, Wild and Scenic river sections (and eligible river segments), National Historic and Scenic Trails, and areas of critical environmental concern (ACECs) currently closed to mineral development (PEIS 1-7, PEIS 2-19). As discussed later, this list of excluded areas should be augmented to exclude leasing in National Register districts or districts deemed eligible for listing on the National Register of Historic Places, as well as proposed ACECs.

Piceance Basin

The PEIS acknowledges that five 160-acre parcels have been leased in the Piceance Basin for oil shale RD&D activities, one each from Chevron Shale Oil Company and EGL Resources Inc., and three from Shell Frontier Oil and Gas. The leases were issued for 10-year terms with a 5-year extension option. As part of the RD&D leases, each applicant has identified a contiguous 4,960 acres of “preference right lease” areas (PEIS 1-9). These preference lease areas constitute a small portion of the Piceance Basin under consideration for leasing.

It should be noted that the PEIS would appear to modify certain provisions in the current White River RMP that were implemented to protect certain environmental values. These modifications would eliminate surface occupancy restrictions, prohibitions on leasing in the Piceance Creek Dome area due to potential conflicts with oil and gas development; and lease stipulations subject specified carrying-capacity thresholds (PEIS 2-21), in particular the potential impacts on air quality, water quality, socioeconomic impacts and big game habitat (PEIS 2-53).

The PEIS indicates that about 18 percent public lands in the Piceance Basin have been surveyed for cultural resources, an exceptionally high percentage. These surveys have identified 1,161 sites as of 2006, of which only 51 have been determined eligible for listing on the National Register of Historic Places. This is an unusually small percentage of eligible sites, and it likely is not indicative of the actual number of significant sites. This low total may be reflective of traditional (but incorrect) assumptions that significance corresponds to visual architecture, rock art and rockshelters with deep cultural deposits. It is emphasized that visual appeal is not a definitive standard whereby National Register sites or districts are deemed appropriate for listing (see *National Register Bulletin 16A*). Many known archaeological sites are clearly eligible under Criterion A in that they are associated with broad patterns of human prehistory on the northern Colorado Plateau and northwestern Plains, and they are probably eligible under Criterion D in that they have yielded or are likely to yield important information about the prehistory of the region. Euroamerican historic sites in the Piceance lease area (86 sites) could also be eligible under Criterion B if they are associated with individuals of local, regional or national significance.

The PEIS bases its statistical data regarding eligible sites on GIS data provided by the Colorado SHPO (PEIS 3-193). CPAA did not reexamine these data, but we find the low percentage of sites deemed eligible (less than 5 percent) to be extremely suspect. A cursory review of previous research in the Piceance Basin reveals numerous surveys with a very high percentage of significant sites ranging from Paleoindian campsites to ancestral and historic Ute encampments. For example, Colorado State University initiated surveys of oil shale lands in 1976, documenting 86 archaeological sites (Weber et al. 1977). These surveys included study tracts along Piceance Creek, between Hunter and Willow Creeks, Yellow Creek drainage, Black Sulphur Creek and Ryan Creek. These surveys identified a Paleoindian encampment at 5Rb385, numerous encampments with temporally and spatially diagnostic Archaic artifacts, at least eight sites with Fremont and Ancestral

Puebloan potsherds that implied socioeconomic intercourse with the Colorado Plateau, and at least eight complex sites with ancestral Ute ceramics and architecture. The exceptionally high percentage of sites appear to be significant under one or more National Register criteria (ca. 15 to 20 percent) stands in decided contrast to the eligibility data listed in the PEIS (3-194).

Although admitted not visually spectacular, the cultural resources of the Piceance Basin are nonetheless of tremendous significance with a potential to contribute important understandings into the basin's role in the cultural interface between prehistoric groups living in the eastern Great Basin, northern Colorado Plateau and northwestern Plains. As such, prehistoric groups who utilized this region reflect adaptive and technological characteristics common to all three areas, with regional influences ebbing and flowing over thousands of years of prehistory. Of particular interest is the role of the Piceance Basin in the florescence of farmer-foragers in northwestern Colorado, commonly called the Fremont culture, and the ultimate demise of prehistoric agriculture in the region.



Although researchers had initially rejected the idea that Fremont-like horticulturalists had exploited the Piceance Basin, archaeologists now generally agree the region was subsumed within the Fremont Complex. Grady (1980) first argued the distinctions between “Fremont farmers” and “Archaic-like foragers” in the Piceance Basin was “in reality nothing more than differing sets of economic activities employed by the same people but at different times of the year.” He argued that deer hunting in the

Piceance Basin was critical to understanding Fremont adaptive diversity in which spring planting of corn in lowland areas was followed by the highland/summer deer harvest, followed by harvesting pinyon nuts and later harvesting of corn in the valleys (1980:247).

This distinction was more thoroughly articulated by Reed and Metcalf (1999), who defined the nonagricultural Aspen Tradition of hunters and gatherers residing in northwestern Colorado during Formative times, and the coexistent Fremont culture with its distinctive horticultural lifeways, ceramics technology, residential architecture and rock art. The PEIS accurately notes that “it is not expected that the prehistoric populations practiced horticulture in the Piceance Basin per se, because of the relatively short growing season and inadequate soil conditions. However, horticultural sites are found very near to the basin to the west and northwest” (PEIS 3-191). As discussed in greater detail by Spangler (2002), these labels are artificial constructs created by archaeologists to describe separate and distinct lifeways, but which may be applicable to Formative groups that were ethnically and linguistically identical or closely related. In effect, Formative groups in the Piceance Basin were Fremont who foraged, whereas those to the west and northwest were Fremont who farmed (most Fremont scholars now refer to Fremont people as “farmer-foragers”).

Although Grady’s research was focused on the contention that aboriginal exploitation of both regions was focused on migratory mule deer herds (1980:241), he clearly demonstrated that important archaeological insights can be derived from careful analyses of the environmental contexts and spatial distribution of seemingly insignificant sites. Randomly distributed sites, most located in the lowlands, were interpreted as representative of plant exploitation and the need for human groups to be widely dispersed over the landscape to more effectively exploit plant resources. The highly clustered sites, located primarily at higher elevations, were interpreted as faunal resource exploitation sites, perhaps reflecting a desire to minimize disturbance of the mule deer herd (1980:30). These data serve as a cautionary reminder that entire areas with seemingly insignificant lithic scatters and dispersed campsites cannot and should not be dismissed as culturally insignificant, but must be examined within broader macroregional contexts.

Grady’s hypothesis of a Fremont foraging presence in the region (see also Spangler 2002 for a synthesis of the relevant regional data) also presents an important issue regarding consultation. There is no clear indication in the PEIS that Puebloan tribes were explicitly informed that the Piceance Basin was probably an ancestral home of Fremont groups. Modern Puebloan groups, in particular the Hopi Tribe, have a significant interest in cultural resources related to the Fremont culture (*Motisinom*) that is considered ancestral to modern Puebloan groups (cf. Kuwanwisiwma 2008). Furthermore, the statement in the PEIS that the Hopi Tribe “has indicated it would be interested in the portion of the study area located in eastern Utah as far north as Price” (PEIS 7-3) is at odds with previous communications between the Hopi Tribe and the BLM indicating the Hopi have a direct interest in *all* Fremont cultural resources, including those located a considerable distance farther to the north and east (Kuwanwisiwma 2007, 2008).

CPAA acknowledges that an understanding of the cultural significance of the Piceance Basin has benefited greatly from past archaeological surveys, some of which

were directly associated with earlier economic interests in developing oil shale deposits. It is likely that Section 106 compliance in connection with future development of oil shale leases will identify additional cultural resources, and will contribute to a more complete understanding of prehistoric adaptations in the region. We concur with the PEIS that cultural resources in the Piceance Basin could be adversely impacted if leasing and future commercial development occur, that cultural resources could be damaged or destroyed, that there is an enhanced potential of loss due to looting or vandalism and that special lease stipulations may be necessary to protect cultural values (PEIS 6-61).

In light of these concerns, CPAA recommends:

- The surprisingly low numbers of National Register-eligible sites in the Piceance Basin (5 percent) warrants a more thorough re-examination of relevant site data on file with the Colorado SHPO to ascertain the accuracy of site eligibility data.
- The PEIS acknowledges the *intent* of the BLM to conduct more thorough NEPA and NHPA analyses at subsequent phases of the project, including leasing and development. This language should be modified to indicate that the BLM “shall” and “will” conduct more thorough analyses at each subsequent phase of the project.
- Compliance with Section 106 is only one component of the BLM’s responsibility under NHPA. The PEIS should clearly articulate the agency’s commitment to its Section 110 responsibilities, including its mandate to identify, evaluate *and* nominate appropriate properties in the Piceance Basin lease area to the National Register.
- The PEIS should more clearly state the nature and scope of consultation with Native American tribes, and this should clearly articulate the nature of information provided to the tribes (e.g., Puebloan groups were informed of possible Fremont affiliation of cultural resources in the Piceance Basin).

East Tavaputs Plateau

As articulated in the PEIS, the Uinta Basin area east of the Green River and north of the southern flank of the East Tavaputs Plateau are included as potential lease areas for both oil shale and tar sands. Oil Shale Exploration Company (OSEC) currently has one RD&D lease in the Evacuation Creek area just south of the White River in an area that has experienced previous NEPA and NHPA analysis related to oil shale. Most of this area is managed under the Book Cliffs RMP, although a small portion extends west of the Green River into the jurisdiction of the Diamond Mountain RMP. This area involves some split-estate with the Uintah and Ouray Utes.

CPAA is concerned that the PEIS does not adequately consider the potential impacts of leasing on unknown resources in areas with a potential for exceptionally high densities of significant sites. In particular, these areas include the White River corridor, the Hill-Willow Creek drainage, and the Green River, as well as tributaries with permanent water. In water-stressed environments, such as those found in the Uinta Basin

lease area, human populations were tethered to a greater or lesser degree to permanent water sources, in particular perennial and ephemeral streams, springs and rivers (Spangler 2001, 2002). Consequently, stream and river segments considered in the Uinta Basin lease area would also have been the focus of significant human adaptations throughout prehistory, although the nature of these resources here remains largely unknown due to the absence of baseline data.

It is unclear from the data represented and PEIS graphics made available to the public if the actual stream and river corridors under Alternative B (preferred) are excluded from potential leasing due to Wild and Scenic River eligibility or some other classification (PEIS 2-24). Alternative C maps clearly demarcate broad non-lease areas along stream and river corridors (PEIS 2-30) that are not clearly evident under Alternative B. It is emphasized these areas are expected to contain substantial evidence of human occupations throughout prehistory. However, very few systematic surveys have ever been conducted of the river corridors themselves (limited Class III surveys have been done only near the mouth of the White River, with a few isolated, narrowly focused surveys that overlapped river corridors elsewhere).

The PEIS is quite confusing on the issue of site location. The document indicates that 1,087 sites have been recorded in the Uinta Basin lease area, of which 266 were deemed eligible for the National Register (ca. 25 percent). The document further states the White River corridor is a zone of high sensitivity for cultural resources, whereas higher elevations to the south on the margins of the East Tavaputs Plateau are of moderate sensitivity (PEIS 3-196). CPAA concurs with this assessment. However, the document also states in Table 3.9.4-1 related to Hill Creek STSA that only 26 sites are known in the Hill Creek STSA area (PEIS 3-205), despite the fact that Hill Creek and its sister drainage Willow Creek are renowned for their exceptionally high density of Fremont architectural sites and Fremont and Ute rock art sites. In fact, this area may have the second or third highest concentration of Fremont sites anywhere in northeastern Utah, behind only Nine Mile Canyon and perhaps Range Creek Canyon.

This discrepancy suggests one of three possibilities: (1) areas of high cultural site density or sensitivity have been excluded from Hill Creek STSA lease areas, but these exclusions are not clearly evident on the maps provided to the public. (2) Because many of the archaeological sites in this area were recorded four decades ago or longer, these older site data were not available to planners who relied exclusively on GIS data provided by the Utah SHPO. Or (3) the data and predictive modeling (O'Rourke et al. 2007) misrepresents actual site density and significance.

Also relevant to this discussion, the PEIS indicates the Uintah and Ouray Utes desire additional consultation before leasing of split-estate parcels on tribal lands in the Hill Creek Extension (PEIS 7-4). As discussed above related to the Piceance Basin, the Hopi Tribe "has indicated it would be interested in the portion of the study area located in eastern Utah as far north as Price" (PEIS 7-4). However, previous communications between the Hopi Tribe and the BLM have indicated the Hopi have a direct interest in *all* Fremont cultural resources, including those located a considerable distance farther to the

north and east (Kuwanwisiwma 2007, 2008). This would be particularly relevant to Fremont cultural resources in the Hill Creek region.

In light of concerns related to the Uinta Basin lease area, CPAA recommends:

- The PEIS be modified to clearly articulate those areas that have been excluded from leasing and the rationale for the exclusions, including more detailed maps whereby the public can make informed comments. This should clearly state that the Green River, White River, Hill-Willow Creek and other perennial water sources are excluded from lease applications and the criteria by which they were excluded.
- The PEIS should more clearly state the nature and scope of consultation with Native American tribes, and this should clearly articulate the nature of information provided to the tribes (e.g., Puebloan groups were informed of the Fremont affiliation of cultural resources in the Hill and Willow Creek drainage).
- The PEIS should clearly acknowledge the exceptionally high density and high quality of known archaeological resources that could be impacted by federal management decisions resulting from amendments to the Book Cliffs RMP. The failure of the current document to even acknowledge these resources would appear to be a deliberate attempt to obfuscate the significance of cultural resources in the Hill and Willow Creek areas specifically, and in the White River and Green River areas generally.

West Tavaputs Plateau

Perhaps the PEIS is most confusing when it comes to cultural resources on the West Tavaputs Plateau, a region that encompasses Nine Mile Canyon, Range Creek Canyon and Desolation Canyon, all areas of international renown for the abundance and the quality of their archaeological and historic sites. The PEIS only occasionally makes direct references to the rich archaeological resources of the region, such as “Within Nine Mile Canyon is the greatest concentration of rock art sites in the United States” (PEIS 3-187). More often, the PEIS appears to dismiss impacts to cultural resources through the apparent misrepresentation of data that is clearly inconsistent with data on file with the Utah SHPO. For example, Table 3.9.4-1 (PEIS 3-205) indicates there are only 244 historic and prehistoric sites in the Argyle Canyon STSA and Sunnyside STSA where Nine Mile Canyon is located. Data on file with the SHPO indicate at least 830 prehistoric sites within 1 kilometer of either side of Nine Mile Creek, and at least 100 documented historic sites. Some of these sites (ca. 5 to 10 percent) are located in lower Nine Mile Canyon within the Nine Mile Canyon ACEC and are excluded from potential leasing. Even with that consideration, the data represented in the PEIS still understate the actual number of sites by 65 to 70 percent.

This discrepancy may be attributed to any one of three factors (or perhaps combinations of all three). First, a very large portion of the archaeological site data for Nine Mile Canyon is not digitally available through the Utah SHPO and site forms and maps with plotted sites must be examined manually. This would include most of the sites

documented prior to about 1995, which constitute the majority of sites documented in the canyon corridor. If PEIS planners relied exclusively on GIS data, sites recorded prior to about 1995 would have been excluded from the data set and could explain the low number of sites in the area. However, the failure of planners to personally examine site records at the Utah SHPO would constitute a remarkable failure that stands in contrast to the PEIS statement that the document is “based on available and credible scientific data” (PEIS 1-7). Non-GIS data is both available and credible.



Second, the discrepancy could also be attributed to the fact that Nine Mile Creek has been determined eligible as a Wild and Scenic River segment (PEIS 3-187). As such, all areas within a quarter mile of the creek would be excluded from leasing. The determination that there are only 244 sites in the Argyle Canyon STSA and Sunnyside STSA could reflect a careful calculation of only those sites outside of the WSR corridor. Given the paucity of GIS data on archaeological site location, such a calculation is considered unlikely. It should be noted that all of the 830 documented prehistoric sites in the Nine Mile Canyon corridor are located within 1 kilometer of the creek (or 0.8 miles). A WSR exclusion of 0.25 miles would not protect the vast majority of prehistoric sites in the canyon (CPAA has not yet examined the distribution of historic resources in the canyon to offer informed comments related to their site location).

A third possibility is that planners could have excluded most of Nine Mile Canyon from lease consideration because the lower third is a designated ACEC and the upper two thirds of the canyon is identified as a *potential* ACEC. Indeed, FLPMA directs the BLM to give priority to the designation of ACECs where “special management attention and direction are needed to protect and prevent irreparable damage to important

historic, cultural and scenic values, fish or wildlife resources or other natural systems of processes” (PEIS 2-7). Figure 3.1.1-8 indicates that all identified STSAs in the Nine Mile Canyon corridor are within *potential* ACECs (PEIS 3-23). However, if *potential* ACEC areas were excluded, this would seem to be in conflict with statements in the PEIS that indicate only “existing Areas of Critical Environmental Concern (ACECs) that are currently closed to mineral development” are excluded from leasing (PEIS 1-7).

A major source of confusion in this regard is the failure of the PEIS to clearly articulate whether Nine Mile Canyon is located in the Argyle Canyon STSA or the Sunnyside STSA. Poor resolution aside, the maps seem to indicate that the canyon is in the Argyle Canyon STSA (as indicated in Figure 1.2-2 and Figure 2.4-1, the Argyle Canyon label is placed directly over Nine Mile Canyon). Furthermore, Table 3.1.1-10 states that the Nine Mile Canyon ACEC, which is located only in lower Nine Mile Canyon, overlaps with the Argyle Canyon STSA (PEIS 3-34). Only after repeated readings of the document could it be ascertained with any confidence that most if not all of Nine Mile Canyon is actually in the Sunnyside STSA (PEIS 3-187).

The identification of “Argyle Canyon” and “Sunnyside” as a Special Tar Sands Areas (cf. Figure 2.4-1) is problematic in that PEIS discussion rarely mentions Nine Mile Canyon or its cultural resources, or that the area constitutes one of the richest archaeological districts on the northern Colorado Plateau. Even the nomenclature of “Argyle Canyon” and “Sunnyside” appears to be an intentional effort on the part of the BLM to disassociate the STSAs from the area’s reputation as a remarkable and internationally renowned archaeological region that includes not only Nine Mile Canyon, but portions of Range Creek Canyon and Desolation Canyon.

Based on the PEIS maps, both Alternative B and Alternative C appear to designate portions of Nine Mile Canyon as available for application for leasing. Under Alternative B (preferred), those parcels in upper Argyle Canyon would be available, as would all parcels in Nine Mile Canyon located in Carbon County (PEIS 2-44). Under Alternative C, the upper Argyle Canyon parcels are excluded from consideration, but the Nine Mile Canyon parcels in Carbon County would remain available for lease applications (PEIS 2-47).

The location of lease areas only in Carbon County is troubling in that appears that NEPA planning decisions are being made on the basis of political boundaries that have nothing whatsoever to do with environmental or cultural values. Nine Mile Canyon is a west-to-east flowing perennial stream that undulates back and forth along the boundary between Duchesne County on the north and Carbon County on the south. Yet the STSA blocks deemed suitable for lease applications are all located in Carbon County. Carbon County is noted for accommodating industrial development in Nine Mile Canyon, while at the same time it has been hostile to the protection of cultural resources there. Given the location of suitable blocks only in the Carbon County portion of the canyon, it would appear that special considerations were afforded to local officials from one county but not the neighboring county.

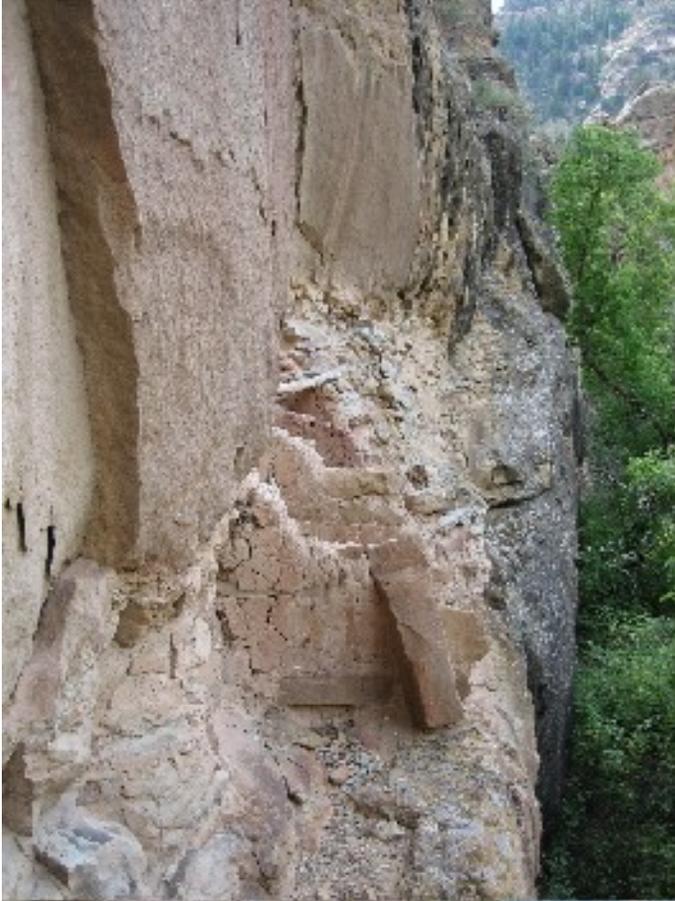
The PEIS also presents other issues that should be more fully considered. In particular, the PEIS does not recognize or consider that the nomination of the entire Nine Mile Canyon drainage to a distance of 1 kilometer on both sides of centerline of the creek to the National Register of Historic Places as an archaeological district of national significance was submitted to the Utah SHPO in late 2007. This nomination was prepared over a two-year period by CPAA in cooperation with the BLM, the National Trust for Historic Preservation and Nine Mile Canyon Coalition. In effect, the BLM was fully aware of the nomination, and these data should have been a factor in considerations of STSA boundaries (see nomination form on file with the Utah SHPO and Utah BLM State Office).

In summary, the proposed Nine Mile Canyon Archaeological District (NMCAD) reflects centuries of human experience, much of it indicative of Fremont farmer-foragers uniquely adapted to the harsh desert environment of the Tavaputs Plateau. This adaptation appears to have reached a florescence in late Formative times (A.D. 900 to 1300), as evidenced by population aggregation, the emergence of defensive responses and the development of extremely complex strategies for food storage. Although only a small portion of the canyon has been systematically surveyed, at least 830 prehistoric sites have been formally recorded within the district. It is estimated that these 830 sites represent *about 10 percent* of the prehistoric sites located within the canyon bottom. A large number of sites known to the public and archaeologists remain unrecorded.

The aboriginal cultural resources of Nine Mile Canyon include an unusually dense concentration of rock art sites containing thousands of images that have been painted on or pecked into the friable sandstone cliff faces. The copious rock art resources of the NMCAD are undeniably impressive, both in quality and quantity. These sites, largely accessible by road, attract thousands of recreational visitors to the canyon each year, earning the canyon the moniker “Worlds Longest Art Gallery.” Indeed, the sheer number of rock art sites tends to statistically overwhelm other archaeological manifestations in the canyon. Of the 830 documented sites, at least 583, or 70 percent, have rock art components. As discussed in the actual nomination, these sites are eligible for National Register listing under three of four criteria defined by the National Park Service (*Bulletin 16A*). The Nine Mile Canyon drainage is also a Traditional Cultural Property as identified by the Hope Tribe (Kuwanwisiwma 2007, 2008), something not mentioned in the PEIS.

It should also be noted that Nine Mile Canyon contains large numbers of historic ranch houses, telegraph poles, line shacks, fences, water control devices, trails, mining remnants, small hamlets, a saloon, historic signatures, and a 19th Century freight road that collectively are historic resources of tremendous significance to local and regional residents. Remnants of historic and modern Euroamerican activities are ubiquitous throughout the NMCAD, and these resources will be the subject of a future, overlapping National Register nomination. Neither the historic nor prehistoric resources were properly considered within the context of the PEIS. Instead, cultural resource concerns were generally dismissed with various statements to the effect that “If and when applications to lease are received and additional information becomes available, the BLM

will conduct NEPA analyses, including consideration of direct, indirect and cumulative effects, reasonable alternatives and possible mitigation measures, as well as what level of development may be anticipated” (PEIS 2-16).



Another concern is that the PEIS does not recognize or acknowledge the existence of a second major draft environmental impact statement that encompasses much of the same project area. The implementation of both projects at the same time would result in massive cumulative impacts not adequately considered under either EIS. The *West Tavaputs Plateau Natural Gas Full Field Development Plan West Tavaputs Plateau* would expand natural gas development in the area from about 100 wells currently to as many as 807 new natural gas wells on 538 locations over a period of approximately eight years. CPAA believes strongly that the PEIS considered here for potential tar sands leases should not be considered separately from the West Tavaputs Draft EIS, and that the cumulative impacts from two major and simultaneous developments must be considered within the context of potential leasing of the Argyle Canyon STSA and Sunnyside STSA.

It should also be noted that previous archaeological investigations in Argyle Canyon have focused only on the area around the mouth of the canyon. There remains a high potential that this major drainage contains significant cultural resources as do other major tributary canyons to Nine Mile Creek (e.g., Cottonwood Canyon, Dry Canyon). It should also be noted that Alternative B (preferred) calls for lease applications on 11,226

acres, of which the BLM administers only 1,022 acres of surface estate (PEIS 2-45). This suggests that the preferred alternative is to allow lease applications in an area where 91 percent of the surface estate is non-federal (e.g. private).

In light of these concerns, CPAA recommends:

- The PEIS should be modified throughout to clearly articulate that Nine Mile Canyon is located in the Sunnyside STSA, and to clarify exactly what portions of the canyon are available for lease applications in light of WSR eligibility, potential ACEC designation and other environmental factors that could limit or preclude leasing.
- The list of areas excluded from lease applications should be augmented to exclude from lease applications those areas within National Register districts or districts deemed eligible for listing on the National Register of Historic Places. In Nine Mile Canyon, this would exclude leasing within 1 kilometer of each side of the creek.
- The PEIS should clearly articulate those areas or portions of areas within designated STSAs (e.g., Nine Mile Canyon) are Traditional Cultural Properties as identified by Native American tribes.
- The PEIS should be modified to clearly state that leasing will be excluded in those areas of STSA overlap with the Range Creek ACEC and Desolation Canyon ACEC, both of which are noted for remarkable cultural values.
- Substantial inaccuracies in the archaeological database used to prepare the PEIS should be corrected through more thorough examination of SHPO records. The under-representation of site data by 65 to 70 percent is not acceptable in a planning document of such magnitude.
- The PEIS should be modified to more accurately reflect that (1) Nine Mile Canyon and the Green River corridor have the highest density of sites anywhere in the Diamond Mountain Resource Area, and (2) that only 1 percent of the Diamond Mountain Resource Area has been surveyed, with a potential of 150,000 sites (cf. IBLA 2004-124, in *SUWA v. UT 055 et al.*).

Conclusion

It appears from language in the PEIS the BLM fully intends to “facilitate” leasing of oil shale and tar sands resources, and that only Alternatives B and C are being seriously considered. The PEIS clearly states that the BLM is mandated by Section 369 of the Energy Policy Act of 2005 to evaluate commercial leasing programs for oil shale and tar sands, and that any alternative that does not make such evaluations would be inconsistent with Section 369 (PEIS 2-51).

CPAA concurs with the PEIS assessment that the BLM “does not have at this time adequate information on the (1) magnitude of commercial development and pace of that development (2) potential locations for commercial leases, (3) technologies that will be employed, (4) size of production level of individual commercial projects, and (5) development time lines for individual projects to support decisions about lease issuance”

(PEIS 2-50). Given those caveats, CPAA believes the only logical alternative is Alternative A (no action), which remands the issue to local field offices pending the BLM's acquisition of "adequate information." It is further recommended that planning for oil shale and tar sands development should be incorporated into the ongoing RMP revision process whereby planning can be considered synergistically and within the context of other environmental values.



Given the BLM is likely to choose an action alternative (or some combination of Alternative B and Alternative C), CPAA finds Alternative C much more palatable than the preferred Alternative B in that Alternative C clearly places "a priority on protecting known sensitive resources within each field office by excluding certain lands from application for leasing" (PEIS 2-46). Risks to these values have been identified by various field offices and have been managed accordingly for their protection. To strip these areas of protections already implemented cannot and should not be considered sound environmental policy.

CPAA appreciates the opportunity to comment on the issues articulated above, and we look forward to working cooperatively with the BLM to ameliorate these concerns at each stage of the planning process. The cultural resources of northeastern Utah and northwestern Colorado are indeed among the most remarkable anywhere in the American West. The preservation of cultural values during the course of expanding energy development will mandate creative and aggressive planning. This should include

more detailed planning at the RMP amendment stage, as well as each subsequent stage of planning as oil shale and tar sands leasing moves closer to actual development.

Please feel free to contact me directly if you have questions or seek additional clarification.

Best Regards,

Jerry D. Spangler, MA, RPA
Executive Director



References Cited

- Grady, James
1980 Environmental Factors in Archaeological Site Locations. *Colorado Bureau of Land Management Cultural Resource Management Series* No. 9. Denver.
- Kuwanwisiwma, Leigh
2007 Letter to William Stringer, Vernal Field Office Manager, dated Aug. 13, 2007, regarding Enduring Resources Saddletree Draw Leasing and Rock House Development Proposal.
2008 Letter to William Stringer, Vernal Field Office Manager, dated Jan. 15, 2008, regarding Kerr-McGee Oil and Gas Onshore LP Greater Natural Buttes Area Gas Development Project. Letter on file, Bureau of Land Management, Vernal.
- Reed, Alan D. and Michael D. Metcalf
1999 Colorado Prehistory: A Context for the Northern Colorado River Basin. Colorado Council of Professional Archaeologists, Denver.
- Spangler, Jerry D.
1993a Continuity and Change: A Cultural Resource Class I Inventory of the Price River Resource Area, Bureau of Land Management. Monograph prepared for the Price River
1993b Site Distribution and Settlement Patterns in Lower Nine Mile Canyon: The Brigham Young University Surveys of 1989-91. Master's thesis on file, Department of Anthropology, Brigham Young University, Provo, Utah.
1995 Paradigms and Perspectives: A Class I Overview of Cultural Resources in the Uinta Basin. Monograph prepared for the Bureau of Land Management, Vernal.
2000a Old Paradigms and New Perspectives: A Reinterpretation of Cultural Chronology in the Uinta Basin, in *Intermountain Archaeology*, edited by David B. Madsen and Michael D. Metcalf. University of Utah Anthropological Papers No. 122, Salt Lake City.
2000b One Pot Pithouses and Fremont Paradoxes: A Case for Itinerant Aceramic Fremont Horticultural in Northeastern Utah, in *Intermountain Archaeology*, edited by David B. Madsen and Michael D. Metcalf. University of Utah Anthropological Papers No. 122, Salt Lake City.
2001 Human Landscapes and Prehistoric Paradigms: A Class I Overview of Cultural Resources in the Grand Staircase-Escalante National Monument. Manuscript on file, Bureau of Land Management, Kanab, Utah.
2002 Paradigms and Perspectives Revisited: A Class I Overview of Cultural Resources in the Uinta Basin and Tavaputs Plateau. Revised manuscript on file, Bureau of Land Management, Vernal, Utah; edited manuscript to be published in the BLM CRM series.
2004 Categories and Conundrums: The Rock Art of Lower Nine Mile Canyon. In *New Dimensions in Rock Art Studies*, edited by Ray T. Matheny. Museum of Peoples and Cultures Occasional Papers Series No. 9. Provo, Utah.
2005 Paradigms and Perspectives Revisited: An Updated Class I Overview of Cultural Resources in the Uinta Basin. *Utah Bureau of Land Management Cultural Resource Series* (in press).
- Spangler, Jerry D, Shannon Arnold and Joel Boomgarden
2006 Chasing Ghosts: A GIS Analysis and Photographic Comparison of Vandalism and Site Degradation in Range Creek Canyon, Utah. *Utah Museum of Natural History Occasional Papers* 2006:1. Salt Lake City.
- Spangler, Jerry D., James Aton and Donna K. Spangler

- 2007 *Baseline Site Condition Assessment of Historic Properties Near the Bureau of Land Management Sand Wash Ranger Station, Uintah County*. CPAA manuscript on file, Price Field Office, Bureau of Land Management.
- Spangler, Jerry D., Joel Boomgarden, Rachelle Green and Jamie Clark
2007 *Desolation Canyon Baseline Site Condition and Vandalism Assessments: May 2007*. Colorado Plateau Archaeological Alliance, Ogden, Utah.
- Spangler, Jerry D., K. Renee Barlow and Duncan Metcalfe
2004 A Summary of the 2002-2003 Intuitive Surveys of the Wilcox Acquisition and Surroundings Lands, Range Creek Canyon, Utah. *Utah Museum of Natural History Occasional Papers 2004:1*. Salt Lake City.
- Spangler, Jerry D., William Davis, Kristen Jensen, Kevin T. Jones and Joel Boomgarden
2007 *An Intuitive Survey and Site Condition Assessment in the Desolation Canyon National Historic Landmark, Carbon County, Utah*. Colorado Plateau Archaeological Alliance, Ogden, Utah.
- Spangler, Jerry D., Kevin T. Jones, Andy Yentsch, Kristen Jensen, Joel Boomgarden and Shannon Arnold
2008 *Desolation Canyon Baseline Site Condition and Vandalism Assessments: October 2007*. Colorado Plateau Archaeological Alliance, Ogden, Utah.
- Spangler, Jerry D. and Donna K. Spangler
2003 *Horned Snakes and Axle Grease: A Roadside Guide to the Archaeology, History and Rock Art of Nine Mile Canyon*. Uinta Publishing, Salt Lake City.
2007 *Treasures of the Tavaputs: The Archaeology of Desolation Canyon, Nine Mile Canyon and Range Creek*. CPAA, Ogden, Utah.
- Weber, David A., Kevin T. Jones, Herbert Rodriguez, Calvin H. Jennings, and Daryl J. Daugherty.
1977 *Archaeological Reconnaissance of Nine In Situ Oil Shale Lease Tracts, Colorado-Utah*. Reports of the Laboratory of Public Archaeology No. 3. Fort Collins, Colorado.

Source: Bureau of Land Management, Draft Oil Shale and Tar Sands Resource Management Plan Amendments to Address Land Use Allocations in Colorado, Utah, and Wyoming and Programmatic Environmental Impact Statement, December 2007. CRS-4. Figure 2. Oil Shale Acreage. Figure 3. Shale Oil Volume. Source: DOE Office of Petroleum and Oil Shale Reserves, National Strategic Unconventional Resource Model, April 2006. The amount of shale oil recoverable depends on extraction technology and resource richness. The richest oil shales occur in the Mahogany zone of the Green River formation and could be expe