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ADDENDUM TO AERC'S DATA RECOVERY PROGRAM FOR THE

**BOX CANYON ARCHAEOLOGICAL SITES:
42SV 896, 2386, 2387, 2388, 2389**

Reference: Manti-LaSal National Forest letter requesting additional information pertinent to project adjustments -- dated April 23, 1997

To: Janette S. Kaiser, Forest Supervisor

Info: J. Dykman, SHPO
W. Sorenson, SUFCo

I concur with the Forest's recommendations concerning the scope of work relative to the proposed excavation program, i.e., testing within sites 42SV 896, 2387, and 2389 and monitoring the results of SUFCo's mining program relative to sites 42SV 2386 and 42SV 2388. AERC's data recovery program was prepared to deal with the potential for salvage operations on one or all of the sites addressed in that program. I submitted a comprehensive and a flexible research program in order to address any contingency that might develop either during the consultation process or during excavations in the field.

I will discuss our present assessment of the excavation program relative to these three sites, hopefully, answering the various questions addressed in reference.

SITE 42SV 896 (CRAZY BIRD SHELTER)

At the present, ca. 750 square meters is our best assessment regarding the size of this shelter. Its rough interior measurements are 50 meters wide across the entrance by 20 meters

deep. It's rear wall tends to be semi-circular, however, so until we have completed mapping the floor and can provide a more accurate assessment, we will work with a base of 750 square meters.

SUFCo has advised me that cribbing for roof support can be placed at 5 meter intervals (15 feet apart) within the structure. Each support is ca. 1 meter square (3 feet) and a total of ca. 25 supports will be needed probably in three rows involving 10 in the outer row followed by a row of 8 and a final row of 7. This support pattern will be formally addressed during an on-site scheduled for May 15 and may differ from this initial assessment.

AERC will conduct the testing program by excavating a 2 x 2 meter plot centered on the locality of each support structure. Thus, each one meter square support location will have a .5 meter buffer area on all four sides. This space is necessary for the excavation crews because of the amount of roof fall and associated subsurface irregularities within the shelter.

The anticipated ± 25 support units at 4 meters each will therefore involve the excavation of 100 square meters or ca. 13% of the shelter's interior. Should the Forest require a 20% or 30% excavated area, the additional zones would be defined after the completion of the 25 support units. Additional excavation units would be placed within the 3 x 3 meter area flanked by the 2 x 2 meter support test units. Additional excavation units would be placed to provide maximum identification and recovery within high density cultural strata loci or among buried features partially identified during the original sampling program.

Depth of excavation of each 2 x 2 in the shelter will be determined by presence or absence of cultural material, features, and/or cultural strata. The bedrock lip under the fill in the shelter is probably between two and three meters below present surface. In portions of the shelter the bedrock may be within a meter of the surface. The two excavation teams (four persons each) will be breaking and extracting roof fall in each 4 x 4 meter plot. When probes demonstrate that no potential for buried cultural contexts exist in any given plot, the excavation in that unit will be terminated allowing the cribbing to be constructed on a flat surface within the center of each plot. If cultural contexts persist to bedrock, we will identify and recover those contexts for processing.

GENERAL FOR SITES 42SV 896, 2387 & 2389

AERC will be photographing the rock art on 42SV 896 and 2387 using both a digital camera and a 35 mm conventional camera. We will use color and infra-red films with various lighting situations. Hopefully, the infra-red film will provide additional resolution and definition to the 42SV 2387 pictographs to clarify those motifs. The final report will provide photography and graphics of these panels in color, and, if requested, additional color photographs and graphics can be generated for the Forest and SUFCo. Disks and negatives containing these photographs and graphics will be retained by AERC with copies provided to the curatorial museum (Prehistory Museum at CEU in Price -- see attached curatorial agreement) at the time we transfer the artifacts to that institution.

The reference requests clarification pertaining to the amount of materials or samples extracted from excavation units for lab processing. There is not a simple formula that I can cite in response. During context excavation, we may expose a complete feature such as an Archaic storage pit. As stated in the research design, the entire contents of that pit will be collected if we have to proceed through the feature to identify and expose cultural contexts that are under the feature. Although we collect the entire contents of such a feature as a field specimen, we usually only process and analyze one or two liters of its contents in our laboratory. The remaining material is stored and can be curated at CEU's Prehistory Museum (where AERC has a current curatorial agreement) or discarded in consultation with the Forest.

If, on the other hand, a feature is partially exposed in the remaining wall of the excavation, we use only the excavated material for analysis. Should the material recovered from the excavated portions of the feature be insufficient for analysis, then we would extract one or two liters of material from the remaining feature for processing. This would allow us to have sufficient material for both flotation and for pollen assessments relative to that feature.

AERC usually extracts both natural and cultural soils for pollen analysis. We may extract from "clean" contexts in an exposed excavation profile a ladder of pollen samples beginning from the lowest culturally sterile stratum and proceeding upwards through the various strata and features to the surface. I prefer extracting these samples in cup-full amounts after we have had a chance to understand the various stratigraphic sequences in the

specific profile; errors frequently occur when samples are extracted during the course of the excavation prior to the assessment of stratigraphic associations. It is not always possible to refrain from collection prior to definition of stratigraphic associations, e.g., limited contexts contained within an excavation unit must be sampled at the time of exposure, but it is my preferred method for dealing with remnant contexts, i.e., exposed strata contained within a residual profile wall.

AERC does not use the Cartesian Grid to point-plot all artifacts. This system is used to define and control the excavation program and to accurately map features within their 3 dimensional associations. Diagnostic artifacts recovered *in situ* are point-plotted as a means of establishing accurate provenience.

Excavation at Crazy Bird and the other sites will be conducted using hand tools. Roof fall will be broken using a jack hammer and removed by hand. We will make every effort to preserve bedrock metates existing in roof fall boulders and rock art (if existing) on the underside of roof fall. The screens used for sifting soils vary in size. Our standard screens are 1/4". We use insets containing much smaller apertures for the recovery of microliths and seed beads. AERC also occasionally uses 1/2" screens for course sorting.

The requests for clarification contain several questions concerning our sampling procedures. For one thing, I can not state at this point the number of samples needed to address the research questions; the site(s) may be bereft of certain types of material that could be used to address specific research questions. In addition, there is evidently some confusion among reviewers concerning sampling terminology employed in the data recovery program. Perhaps the following discussion will help alleviate this problem: AERC collects soils for flotation analysis from all cultural features and cultural strata as *field specimens* (fs). We also collect soils for pollen sampling from noncultural controlled associations to facilitate our understanding of vegetation patterns and climate factors at a specific locus. These too are identified as *field specimens* (fs) (in addition, artifacts are all provided an fs number for identification purposes). Obviously, many cultural and noncultural contexts are collected but we do not process all the soils that are extracted as *field specimens*. AERC usually begins analyses by focusing on the general cultural and environmental associations pertinent both to the site and to the research questions. And then, based on the results of the initial

studies, we select additional *field specimen* soils for assessment as needed. Soils are thus extracted in the field from all features and cultural strata as *fs* or *field specimens* but are only partially studied in reduced amounts we might refer to as *laboratory samples*. This means that any given *field specimen* may contain x liters of soil and from that x liters of soil, one or two liters may be extracted in the laboratory for analysis as *laboratory samples*. Then, if we have surprises or doubt the accuracy of the initial results, we will either draw another liter (*laboratory sample*) from that entity (*fs* or *field specimen*) for analysis, or process a *laboratory sample* from another entity within that same context. Hopefully, during this procedure, we process enough laboratory samples to facilitate the assessment of all pertinent research questions. If a given research question has not been addressed during the preceding assessments, we still should have retained sufficient material within pertinent field specimens to complete the study.

Concerning pollen washes of ground stone artifacts, I can stipulate that representative samples of buried ground stone artifacts within specific features or contexts will be subjected to pollen wash analysis. This will include bedrock metates that have been excavated from viable contexts. Exposed bedrock metates probably can not be associated with any specific cultural context and are considered to be too contaminated for this type of analysis, although microscopic examinations may still facilitate the recovery of flour particles embedded within the sandstone voids.

Representative samples of obsidian recovered from datable contexts will be submitted for xrf analysis. If only five fragments of obsidian should be recovered from five separate contexts on a site, then 100% would be submitted for analysis. On the other hand, should five specimens of obsidian be recovered from one context, and three of these specimens are a set, ie., clearly related to a singular event and a common core, while the two additional specimens are spatially discrete and not identifiable with each other and the set specimens, then 60% of the total including the two discrete specimens and one flake from the set would be submitted for trace analysis.

The assessment of chemical constitutions among common chert materials is a separate ARI study not proposed for the Crazy Bird excavations. During the course of numerous field programs in the general Old Woman/Box Canyon region, we have identified five different varieties of Flagstaff Chert. These varieties will be

documented with the coding program but AERC has no plans for subjecting any of the specimens or varieties to chemical analysis.

Concerning organic residue analysis, here again we cannot state what numbers or percentage of artifacts to be analyzed. I suspect that a representative sample from specific proveniences will be studied for serum and DNA but first we need the recovery results.

In regard to organic remains, most studies would be descriptive, unless analytical evaluations are already established, e.g., basketry, shell, cordage, seeds, insects, textiles. In addition, should a number of coprolites be recovered from datable contexts, we would have appropriate analyses conducted on those materials to facilitate our understanding of subsistence patterns.

The date for final report completion and submission will depend on the amount and diversity of data recovered during the excavations in the Box Canyon site complex. If Crazy Bird Shelter yields two buried features and a dozen artifacts, the final report could be completed within a month or so. The Forest's suggestion of 18 to 24 months appears to be a more likely scenario.

A handwritten signature in cursive script, reading "F. Richard Hauck". The signature is written in dark ink and is positioned above the typed name.

F. Richard Hauck, Ph.D.