

**A Class III Cultural Resources Survey  
of the U. S. Department of Energy  
Gasbuggy Stimulation Test Site  
Rio Arriba County,  
New Mexico**

**December 1993**

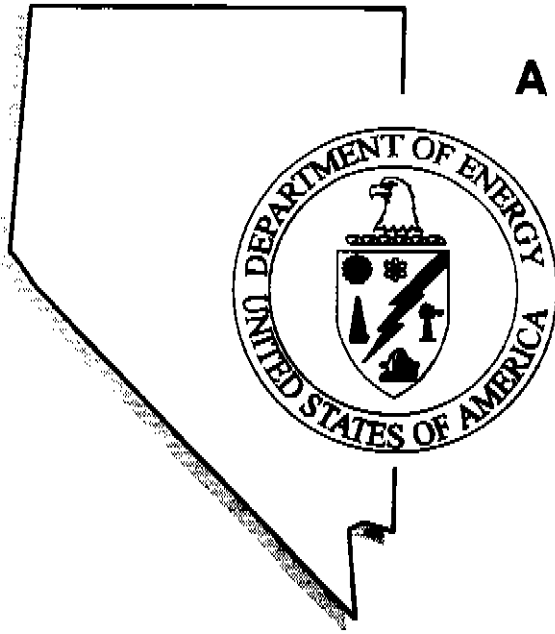
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U.S. Department of Energy  
Nuclear Operations Office

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Rio Arriba County, New Mexico**

Prepared Under Contract for:  
DOE Nevada Operations Office  
Las Vegas, Nevada 89193-8518

Prepared by:  
IT Corporation  
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Las Vegas, Nevada 89103

and

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USDA Forest Service  
Special Use Permit (442)

Work Performed Under Contract No.:  
DOE-AC08-92NV10972

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## **Abstract**

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The following report summarizes the results of a Class III (100-percent pedestrian) cultural resource survey of 160 acres at the U.S. Department of Energy (DOE) Gasbuggy Gas Stimulation Test Site in Rio Arriba County, north-central New Mexico. The cultural resource survey was conducted as part of compliance with the National Environmental Policy Act (NEPA).

Cultural resources observed during the survey include three newly recorded sites, three previously recorded sites, and four isolated occurrences. One of the newly recorded sites, LA 100872, is a prehistoric scatter located just outside of the project area.

Of the five sites within the project area, four are prehistoric artifact scatters, and one is historic. Three sites (LA 16429, LA 100871, and LA 81355) are recommended as eligible for inclusion in the National Register of Historic Places (NRHP) under Title 36 C.F.R. §60.4 criterion "d" of the National Historic Preservation Act of 1966, as amended. One site (LA 100870) is not considered eligible to the NRHP. The Gasbuggy Gas Stimulation Test Site (LA 81356) is recommended as eligible to the NRHP under Title 36 C.F.R. §60.4 criterion "a" of the National Historic Preservation Act of 1966, as amended, because Gasbuggy represents the first peaceful use of nuclear devices oriented towards commercial and domestic efforts.

Archaeological clearance is recommended for the isolated occurrences and LA 100870. The other sites (LA 16429, LA 100871, LA 81355, and LA 81356) may be impacted by any proposed activities. If possible these sites should be avoided. If avoidance is not possible, a testing and mitigation plan should be implemented to document existing cultural resources. The isolated occurrences consist of prehistoric chipped stone artifacts and a modern campfire ring associated with a tent pad. No additional scientifically useful information can be collected from these isolated occurrences, and, therefore, no further work is recommended.

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## ***List of Acronyms and Abbreviations***

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ARMS	Archaeological Records Management System
BLM	Bureau of Land Management
C.F.R.	Code of Federal Regulations
cm	centimeters
DCA	Division of Conservation Archaeology
DOE	U.S. Department of Energy
ft	feet
in.	inches
IO	isolated occurrence
IT	IT Corporation
km <sup>2</sup>	square kilometers
m	meters
m <sup>2</sup>	square meters
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NMSRCP	New Mexico State Register of Cultural Properties
SHPO	State Historic Preservation Officer
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
UTM	Universal Transverse Mercator

## **1.0 Project Description**

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### **1.1 Project Background**

Mariah Associates, Inc. (Mariah), recently conducted a Class I site files check and a Class III (100-percent pedestrian) cultural resource survey of 160 acres of land at the Gasbuggy Gas Stimulation Test Site located in Rio Arriba County, north-central New Mexico. This survey was requested by Lucy Hackett Bambrey of IT Corporation (IT). The U.S. Department of Energy (DOE) proposes to conduct site investigations to determine the extent of any necessary environmental remediation activities at the Gasbuggy Site. The cultural resource survey was conducted as part of compliance with the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA). Several types of environmental reconnaissance activities were performed to ascertain the resources present and the activities required as a part of environmental restoration at the site. The survey was conducted June 21 through 23, 1993, by Deni Seymour, Wendy Jones Poague, Grace Hawkins, and Brandy Gunderson of Mariah and Lucy Hackett Bambrey of IT, who served as the client contact for the project. Deni Seymour, Ph.D., served as Principal Investigator for Mariah. Field notes, maps, background information, and the final report are on file at Mariah's Albuquerque, New Mexico, office under Project 1015. The survey was conducted from June 21 to June 23, 1993, in compliance with applicable federal legislation and procedures designed to identify and record nonrenewable cultural resources, including the NHPA of 1966, as amended, the NEPA of 1969, and Executive Order 11593. The survey was conducted under a U.S. Department of Agriculture Forest Service Special Use Permit for Nondisturbing Use (No. 442).

### **1.2 Project Location**

The project area encompasses 160 acres located in the SW ¼ of Township 29 North (T29N), Range 4 West (R4W), Section 36 in Rio Arriba County, New Mexico (Figures 1-1 and 1-2). The Gasbuggy Test Site is situated on U.S. Forest Service (USFS) land withdrawn by the DOE (previously, the Atomic Energy Commission). The survey area encompasses the entire quarter-section and is bisected by Forest Road J10. The corresponding U.S. Geological Survey (USGS) 7.5' quad map is Leandro Canyon, New Mexico (1963, photorevised 1982). Table 1-1 presents the Universal Transverse Mercator (UTM) coordinates for the project area.

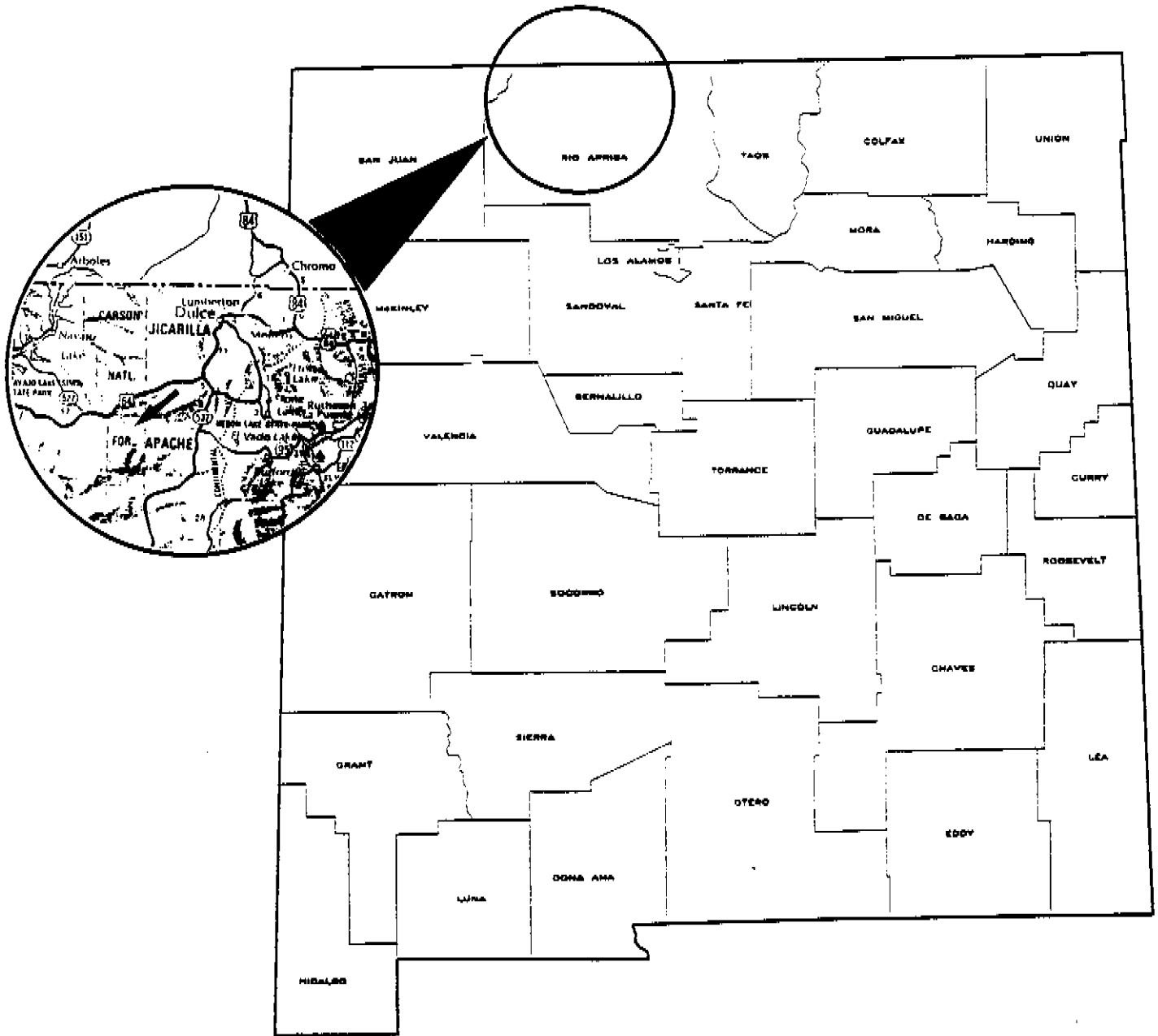


Figure 1-1 Location of Project Area.

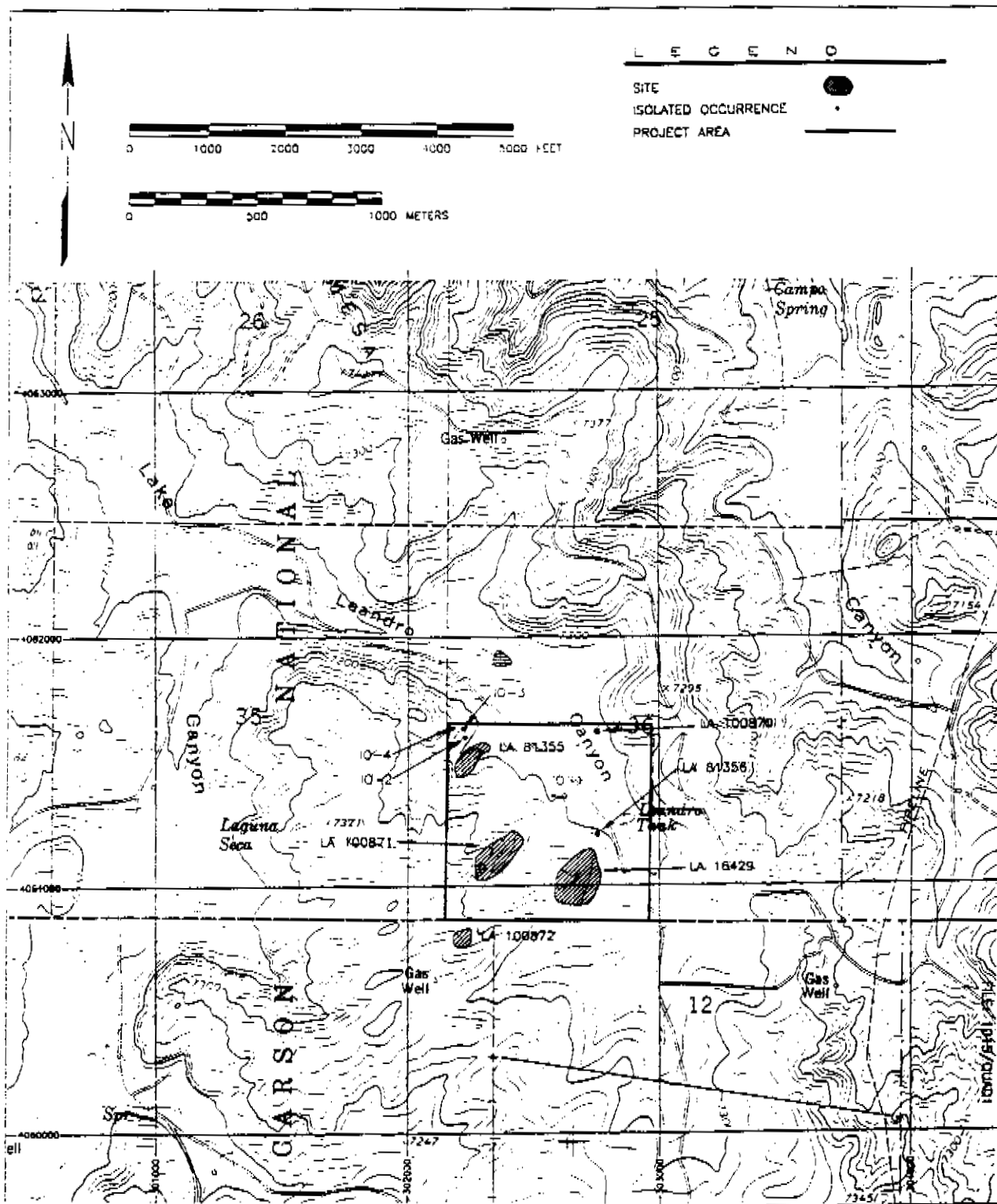


Figure 1-2 USGS Map Showing Location of Inventoried Area and Cultural Resources. Taken from Leandro Canyon, New Mexico Quadrangle (1963, photorevised 1982), 7.5' Series (1:24,000 Scale). UTM Zone 13.

**Table 1-1  
Project Area Location**

Points	UTM (Zone 13)	
	E	N
Northwest corner	302150	4061680
Northeast corner	302950	4061650
<del>Southeast</del> corner <i>Southwest</i>	302140	4060870
<del>Southwest</del> corner <i>Southwest</i>	302930	4060850

*JAD*  
*6-1-06*

## 2.0 Environmental Setting

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The project area is located in the northeastern part of the San Juan Basin, east of the community of Gobernador, New Mexico. It is situated on the Carson National Forest, Jicarilla Ranger District, immediately west of the Jicarilla Apache Reservation. Located on the western slope of the Continental Divide, the elevation of the area ranges from 7,160 feet (ft) (2,170 meters [m]) to 7,345 ft (2,226 m). The study area is bisected by Leandro Canyon. This region has been known since the early 1900s as an archaeologically rich zone for early Anasazi and Navajo occupation (Kidder 1920, Carlson 1965). Modern settlement in the area today is quite sparse, consisting mainly of ranchers of Hispanic descent. The Jicarilla Apache Reservation is located to the east. Energy development is now the dominant economic activity in much of the region. Coalbed methane gas exploitation of underground reserves in the Fruitland Formation is presently undergoing a boom (Brown and Evaskovich 1993).

This area lies in the northeastern corner of the San Juan Basin of the Colorado Plateau. Most of the San Juan Basin lies within the Upper Sonoran Life Zone. The Carson National Forest, where the parcel is located, is characterized by high mesas and plateaus. Average annual precipitation is 13 inches (in.), and the growing season averages 150 days. Three vegetative communities, forest, scrubland, and grassland, are present in the Gasbuggy Test Site area (DOE 1993a). The Rocky Mountain Conifer Forest type is dominated by ponderosa pine (*Pinus ponderosa*), piñon pine (*Pinus edulis*), and Rocky Mountain juniper (*Juniperus scopularum*). This community is found on the steep slopes of the area and is sometimes dense as understory shrubs, including Gambel's oak (*Quercus gambelii*) and big sagebrush (*Artemisia tridentata*). On the hilltops of the area, the soils are shallow, rocky, and drier. Few conifers exist here due to the dryness; instead, a Great Basin Montane Scrub community type thrives. Dominant species are similar to the understory shrubs of the previous community. Along the lower margins of the forest, a grassland community dominates. Big sagebrush and wheatgrasses (*Agropyron*, spp.) thrive in the Great Basin Shrub-Grassland, Sagebrush Series. Apparently, as a result of range developments, sagebrush has been removed, and wheatgrasses have been seeded (DOE, 1993a). The area directly around the Leandro Canyon drainage is an open meadow and comprises 30 percent of the study area. The area has been heavily grazed by cattle, and an unknown portion of the area was disturbed by activities associated with the Gasbuggy Test Site.

### **3.0 Cultural Overview**

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The following cultural overview is based largely on previous work by Stuart and Gauthier (1984) and Hogan et al. (1991). These authors provide a detailed cultural resource overview for the San Juan Basin area in general and for the Fruitland area, which straddles the San Juan and Rio Arriba Counties, in particular.

#### **3.1 Paleoindian/Early Archaic (pre-1800 B.C.)**

Early Paleoindian traditions (Clovis and Folsom) employed a hunter/gatherer strategy geared primarily towards big game hunting (Stuart and Gauthier 1984:28-29). The Paleoindian period is characterized by skilled stone working. Whereas the entire Paleoindian temporal span documented in the Great Plains is known to occur in the San Juan Basin, Paleoindian remains are relatively rare, especially within the Fruitland area where only four Paleoindian components have been documented (Hogan et al. 1991).

The Archaic period is characterized by a shift in subsistence techniques, which is typified by a less specialized economy in which large game played a much smaller role in subsistence. Archaic peoples depended to a much greater degree on small and medium-sized game and the gathering of wild and domesticated plants, a trend which became increasingly more pronounced throughout the Archaic (Hogan et al. 1991:3-36). Although Archaic sites are quite common in the San Juan Basin, no definite Early or Middle Archaic sites occur in the Gobernador district according to the Archaeological Records Management System (ARMS) (Kearns 1992).

#### **3.2 Late Archaic/Early Basketmaker Periods (1800 B.C.- A.D. 400)**

Studies of Archaic sites in the San Juan Basin (cf. Reher 1977; Moore and Winter 1980) have concentrated primarily on the areas south of the San Juan River. Due to the density and visibility of Archaic sites in the southern San Juan Basin, coupled with a low frequency of pueblo sites, the south has been viewed as the center of Archaic use (Hancock et al. 1988). During the Late Archaic, slowly increasing population density led to the gradual adoption of a more sedentary existence. This co-occurred with a growing dependency on agriculture and eventually culminated in the transition to early Basketmaker (Stuart and Gauthier 1984:36). Several sites classifiable as Late Archaic and Basketmaker II have been identified in the Fruitland vicinity (Hogan et al. 1991).

### **3.3 Basketmaker III/Pueblo I Periods (A.D. 400-900)**

Dates for the Basketmaker III/Pueblo I transition are not well defined in the project area. The Anasazi tradition in the San Juan Basin area is described as beginning with the Basketmaker II period at approximately A.D. 1 and ending with the Pueblo III period at A.D. 1300.

Traditionally, the beginning of the early Basketmaker period has been placed at A.D. 1, although samples taken from recent excavations at Basketmaker-like pithouses that contained no ceramics have produced dates within the last millennium B.C.

Basketmaker III sites in the San Juan Basin area are often overlain by masonry structures. These sites typically consist of shallow pithouses, wattle-and-daub surface rooms, numerous intramural and extramural storage pits, hearths, and, at some sites, a large, detached, presumably ceremonial, structure. Artifacts generally consist of Lino Gray; small projectile points suggestive of bow and arrow technology; various strains of corn, beans, and domestic turkeys; and the first occurrence of trough metates. Sites are generally located on alluvial terraces, on the first bench above rivers, or on ridges and bluffs overlooking drainages. The widespread association of villages with drainages and the abundance of associated storage pits are generally taken as indicative of an increasing emphasis on agriculture and agricultural surplus for subsistence. In the northern San Juan Basin, Basketmaker III populations appear to have been concentrated at Chaco Canyon, in the Chuska Valley, and in the Navajo Reservoir area.

Pueblo I sites are distinguished from Basketmaker III sites by the presence of consistent cranial deformation of burials, neckbanded ceramics, deeper pit structures, and contiguously-walled true masonry rooms. Villages typically consist of arcs of jacal surface rooms with masonry footings fronted by pithouses. Some pithouses have architectural features transitional to kivas. In the San Juan Basin area, Pueblo I sites are uncommon and small when compared to southwestern Colorado. This pattern may reflect the undesirability of basin lowlands for agriculture during this period (Cordell 1982). Alternately, it may reflect an unsuccessful attempt by Pueblo I peoples to expand into this area in the face of Basketmaker resistance (Stuart and Gauthier 1984:38-40). Pueblo I site density is greatest along the northern periphery of the San Juan Basin, in the upper La Plata River Valley, Navajo Reservoir, and Gobernador areas. Other areas of higher site density are the Nageezi-Carrizo area on the eastern edge of the basin, the Chuska Valley on the western edge, and Chaco Canyon (Hogan 1986:14-15).



### **3.4 Pueblo II Period (A.D. 900-1150)**

Pueblo II sites are characterized by both pithouses and surface structures. Masonry generally replaced jacal construction on surface structures. Kivas appear, as well as Red Mesa black-on-white pottery, associated with neckbanded grayware during the beginning of Pueblo II and corrugated grayware by the end of that period. Anasazi populations cover their largest geographic area in the San Juan Basin during this period. The greatest site density is located at Chaco Canyon, in the Chuska Valley and elsewhere in the northwest, and in the Red Mesa Valley in the southeastern basin (Hogan 1986:15-16).

Pueblo Bonito, Peñasco Blanco, and Una Vida, all of which consisted of a line of large circular pit structures in the plaza backed by large arc-shaped multistoried structures, were constructed in Chaco Canyon in the Pueblo II period. The multistoried structures contain a row of ramada-living rooms on the plaza, an interior row of featureless rooms, and an outer row of smaller storage rooms. At Pueblo Bonito, each pit structure is associated with two or three surface room units, suggesting that the large sites were massive scaled-up versions of the smaller, more common Pueblo II sites in the basin. The nature of the relationship between the large town sites at the confluences of major canyon drainages with the Chaco River and smaller sites remains murky.

The second period of construction dates between A.D. 1020 and A.D. 1050. At Pueblo Bonito, enclosures with storage rooms occur. Towns were constructed at Chetro Ketl and Pueblo Alto. These new towns share a common rectangular, rather than arched, pattern. Neither Chetro Ketl nor Pueblo Alto has associated small sites. Between A.D. 900-975, outlying villages were characterized by a great house structure with Chacoan masonry, kiva, and surrounding community of eight or more small residential sites within 8 square kilometers (km<sup>2</sup>). Outlying villages appear earlier in the Cibola region on the southern edge of the basin, and Red Mesa ceramics dominate in Pueblo II deposits at Chaco Canyon. For these reasons, it is believed that the Chacoan people seem to have focused more of their attention towards the south between A.D. 920 and 1020. After A.D. 1020, Chuska Valley materials dominate at Chaco Canyon (Hogan 1986:15-16). Pueblo II sites are notably rare in the project vicinity.

### **3.5 Pueblo III Period (A.D. 1150-1300)**

Pueblo III sites are dispersed evenly throughout the basin, with dense concentrations in Chaco Canyon, Lobo Mesa, and the Chuska Valley. The Pueblo III period is characterized by a concentration of populations in a few localities with the consequent abandonment of the Four Corners region after the failure of the Chacoan system. During this period nomadic and seminomadic peoples may have filtered into the San Juan Basin area (Stuart and Gauthier 1981:42). By Pueblo III times, there is no permanent settlement apparent anywhere in the Navajo Reservoir or Gobernador districts.

### **3.6 Protohistoric Period (A.D. 1500-1780)**

A substantial hiatus has long been assumed between the Anasazi and Navajo occupations of the San Juan Basin. Pueblito and other Navajo sites in the Gobernador district reflect a fairly intensive occupation during the 1700s. Recently, however, work in the Navajo Reservoir area and the La Plata district has produced evidence of the Dinetah phase (1550-1700), a period which predates the Pueblo Revolt. Dinetah-phase sites exhibit evidence of agriculture, pottery, and other traits that might be attributable to Puebloan influence. Dinetah- and succeeding Gobernador-phase sites (1650-1775) are difficult to differentiate; however, Gobernador-phase sites tend to cluster around streams and perennial drainages as opposed to Dinetah sites, which tend to occur near drainages and in upland areas. Protohistoric Navajo occupation after A.D. 1700 became focused on the Largo and Gobernador areas, continuing to shift toward the west and south during the 1700s. By 1800, Navajo occupation occurred mainly in the present-day Navajo Indian Reservation (Dittert et al. 1961:245).

### **3.7 Historic Period (A.D. 1780-1940)**

In the east, the Jicarilla Apache Reservation was established in 1874, and in the north, the Southern Ute Agency was formed in 1877 (Brown and Evaskovich 1993). Although a lack of historical records exists from 1870-1940, it appears that the Navajo had largely abandoned the region during this time period as Hispanic families moved in. This time period is known as the Lucero phase and is characterized by homesteading, ranching, and sheepherding by Hispanic families. Herding began to replace farming as the central focus of the Navajo (Bailey and Bailey 1986). These extensive and mobile land-use practices are characteristic of the occupation of the Historic period (Brown and Evaskovich 1993).

## **4.0 Research Design**

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The research design for this project is cultural ecological in orientation. It is based on the research design proposed by the Bureau of Land Management (BLM) and the State Historic Preservation Officer (SHPO) for the Fruitland area. This design (Hogan et al. 1991) provides a coherent research framework that can be applied to any cultural resource studies in the San Juan Basin. Research for the region can be organized around five problem domains: environment, chronology, subsistence, settlement patterns, and social organization.

Environmental research (changes in the modern and paleo-environment) is necessary as a means of understanding adaptive strategies of past inhabitants of the region. Adaptive strategies of prehistoric and modern groups include settlement and subsistence systems along with other aspects of cultural development and change (Hogan et al. 1991). The research design advocates reconnaissance for packrat middens, alluvial stratigraphic research, and dendroclimatology.

Chronological control of the archaeological database is crucial to most useful archaeological studies. Artifact typologies in the area are not rigorously defined and, therefore, do not provide conclusive information. The addition of chronometric dates from a precisely defined cultural context should help to identify and establish an absolute chronology encompassing the Archaic, Anasazi, and early Navajo occupations in the San Juan Basin. The refined chronology provides a basis for investigating site structure, subsistence, and settlement patterns at specific sites.

Analysis of changes in subsistence patterns over time can indicate a great deal about native groups, including their culture and behavior. Variation in the intensity of agricultural production can be contrasted with paleo-environmental reconstructions and aggregation models. Subsistence can be documented through macrobotanical and palynological studies and the documentation and analysis of artifactual assemblages and features.

Settlement patterns can be reconstructed by examining site types and distributions. Traditionally, sites were typed by site location rather than site function. A combination of data from site-structure analyses, artifacts, and archaeobiological studies can be used to

accurately classify sites as to function and then to reconstruct settlement patterns. Subsistence and seasonality data are a large component for determining site function.

Social organization is one of the more difficult questions for archaeologists to address as it involves the identification and organization of social units. This problem can be partially solved by initially identifying habitation structures and to chronologically associate features located on the site with these structures. Social aggregation of multiple households may be identified by utilizing spatial patterning analyses of settlements. Economic and exchange relationships are intertwined with social interaction and may be exhibited through the distribution of nonlocal and stylistic goods (Brown and Evaskovich 1993). Thus, economic organization is more accessible to archaeological analysis than social organization.

## **5.0 Project Methods**

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### **5.1 Records Search**

A Class I archaeological survey (site records check) was conducted to determine the presence and nature of known cultural resources in the project area. On June 15, 1993, Jon Young, Forest Archaeologist for the Carson National Forest, was contacted for pre-field notification and a records check. The archaeological crew visited the Jicarilla Ranger Station on June 21, 1993, to check in with Ranger Phil Settle and to review the maps and site forms for the project area. A search of the Forest Services records revealed two previously recorded sites in the project area (AR 03-02-03-386 and AR 03-02-03-387). Three surveys have been previously conducted in the general area, and nine sites have been recorded.

A search of the ARMS revealed the presence of 23 archaeological sites within a one-mile radius of Section 36, which encompasses the project area. Three of these sites are located within the project area, LA 16429 (AR 03-02-03-78), LA 81355 (AR 03-02-03-00386), and LA 81356 (AR 03-02-03-00387).

A search of the National Register of Historic Places (NRHP) and the New Mexico State Register of Cultural Properties (NMSRCP) revealed no sites located within the project area. The Jicarilla Apache Tribe and Navajo Nation were contacted to determine that there were no sites of religious or ceremonial significance within the project area (Appendix A). No such sites are known to exist.

### **5.2 Field Methods**

Field work and travel were completed in a single three-day session lasting from June 21, 1993, through June 23, 1993 (9.3 person days). A total of 160 acres was surveyed. The survey area was composed of a single contiguous quarter-section.

The project area is located in a mixed woodland region with several intermittent drainages. Transects were spaced at 15-m intervals or less. Areas of dense vegetation around drainages caused minor variation in survey intervals. Parallel transect lines were marked with biodegradable flagging by the outside surveyor. At the end of a transect, surveyors reversed orientation and followed the flag line back in the opposite direction. Transects were oriented north-south. By this method, the project area was systematically examined.

### **5.3 Field Conditions**

Weather during the field session was warm and sunny with occasional clouds. Ground visibility in the project area ranged between 0 and 90 percent, depending on vegetation. Ground surface was generally fairly clear, although visibility was poor near drainages and under dense tree cover.

### **5.4 Field Recording**

All cultural materials more than 50 years old or less than 50 years old with significant cultural importance were recorded as sites or isolated occurrences (IOs), depending on their size and extent. All sites and IOs encountered were recorded and plotted on the USGS quadrangle map. Five sites and four IOs were recorded.

Sites were evaluated in accordance with the USFS classification system. Sites are defined as loci containing one or more of the following:

- (1) One or more features (including "isolated" hearths, cairns, or mine prospects).
- (2) One formal tool if associated with other cultural materials, or more than one formal tool.
- (3) An occurrence of cultural materials that contains one or more of the following:
  - (a) Three or more types of artifacts or materials
  - (b) Two types of artifacts or materials in a density of at least 10 items per 100 square meters (m<sup>2</sup>)
  - (c) A single type of artifact or material in a density of at least 25 items per 100 m<sup>2</sup>.

When cultural materials were discovered, they were assessed in accordance with the above criteria. Site boundaries were defined by a total lack of observable artifacts.

Each site was plotted on a USGS quadrangle map and recorded. Recordation consisted of an intensive survey of the site to locate boundaries, features, and diagnostic artifacts. No subsurface testing or collection occurred (see rationale below). A USFS site form was completed, a sketch map was prepared, black and white prints and color slides were taken, and an aluminum tag impressed with the site number was attached to a metal datum stake that

was driven into the ground. The datum served as a primary reference point during mapping of the site, as well as a means of relocating and identifying the site. A sample of artifacts at each site was analyzed in the field. Attributes recorded included artifact type, material, counts, and descriptions.

The IOs consist of associated cultural materials with limited information potential beyond that recorded in the field. Isolates consist of cultural materials 50 years of age or more that did not meet the site definition. Recordation consisted of analysis and descriptions of these materials, including type, material, size, sketches of diagnostic artifacts, and plotting of isolate location on a USGS quadrangle map. The flakes were analyzed by size using a 0.5-cm graduated square template. Each flake was placed on the template so that one edge fit into the corner. The farthest edge of the flake from that corner was then noted as the flake size. This is a quick and accurate method of measuring general flake size (Appendix B).

Analysis and documentation of cultural materials in the field were important aspects of recordation. Attributes recorded for lithic artifacts included artifact type, material, and evidence of utilization or retouch. Attributes recorded for ground stone artifacts included material, condition, and number of ground surfaces. Attributes recorded for ceramic artifacts included type, color, and presence of a rim segment or drilling.

Due to the past activities conducted by the DOE at the Gasbuggy Test Site, project-specific restrictions were written into the health and safety plan and followed by the Mariah crews. Previous activities at the Gasbuggy Site consisted of the use of radioactive materials and various hazardous chemicals. Presently, there is no evidence that surface activities on the site pose a threat to human health; however, Occupational Safety and Health Act regulations in Title 29 C.F.R. §1910.120 were followed.

Consequently, no surface collections were made, no artifacts were extracted from the ground, and no subsurface testing occurred in the present survey. The recordation of the sites was as complete as possible given these restrictions. Enough data were collected from this surface examination to enable the DOE to make primary recommendations for the significance and eligibility of the sites for inclusion in the National Register under Section 106 of the National Historic Preservation Act.

## **6.0 Results**

---

Three previously recorded sites, three previously unrecorded sites, and four previously unrecorded IOs were recorded during the Gasbuggy survey. Five sites were prehistoric ceramic and lithic scatters, some with associated features. One site was a post-World War II Euro-American site. Three IOs were lithic isolates, and one was a modern campfire ring and tent pad with an associated modern can. Site and IO locations are presented in Figure 1-2. Site forms and notes are located in Appendix C.

### **6.1 Sites**

#### **6.1.1 LA 100870/AR 03-02-03-644**

Field Number: MAI 1015-1  
Site Type: Prehistoric Artifact Scatter  
Cultural Affiliation: Lithic unknown  
Size: 10 x 15 m

Site LA 100870/AR 03-02-03-644 is a prehistoric use area consisting of a single fragment of ground sandstone associated with a single white chalcedony flake fragment. The site lies at the southwest-facing edge of a valley in Leandro Canyon a couple of hundred meters northeast of the main drainage (Figure 6-1). The site measures 10 m N/S by 15 m E/W with an approximate area of 115 m<sup>2</sup> at an elevation of 7,260 ft (2,200 m). No artifact concentrations or features were noted on this site.

This site is a limited activity artifact scatter with minimal potential for depth. Low density and diversity of artifacts indicates that this site is probably surficial. Also, the area appears to have been disturbed by grazing and by vegetation clearing, suggesting the site possesses no additional information.

#### **6.1.2 LA 16429/AR 03-02-03-78**

Field Number: MAI 1015-2  
Site Type: Prehistoric Habitation Site  
Cultural Affiliation: Pueblo I  
Size: 112 x 157 m



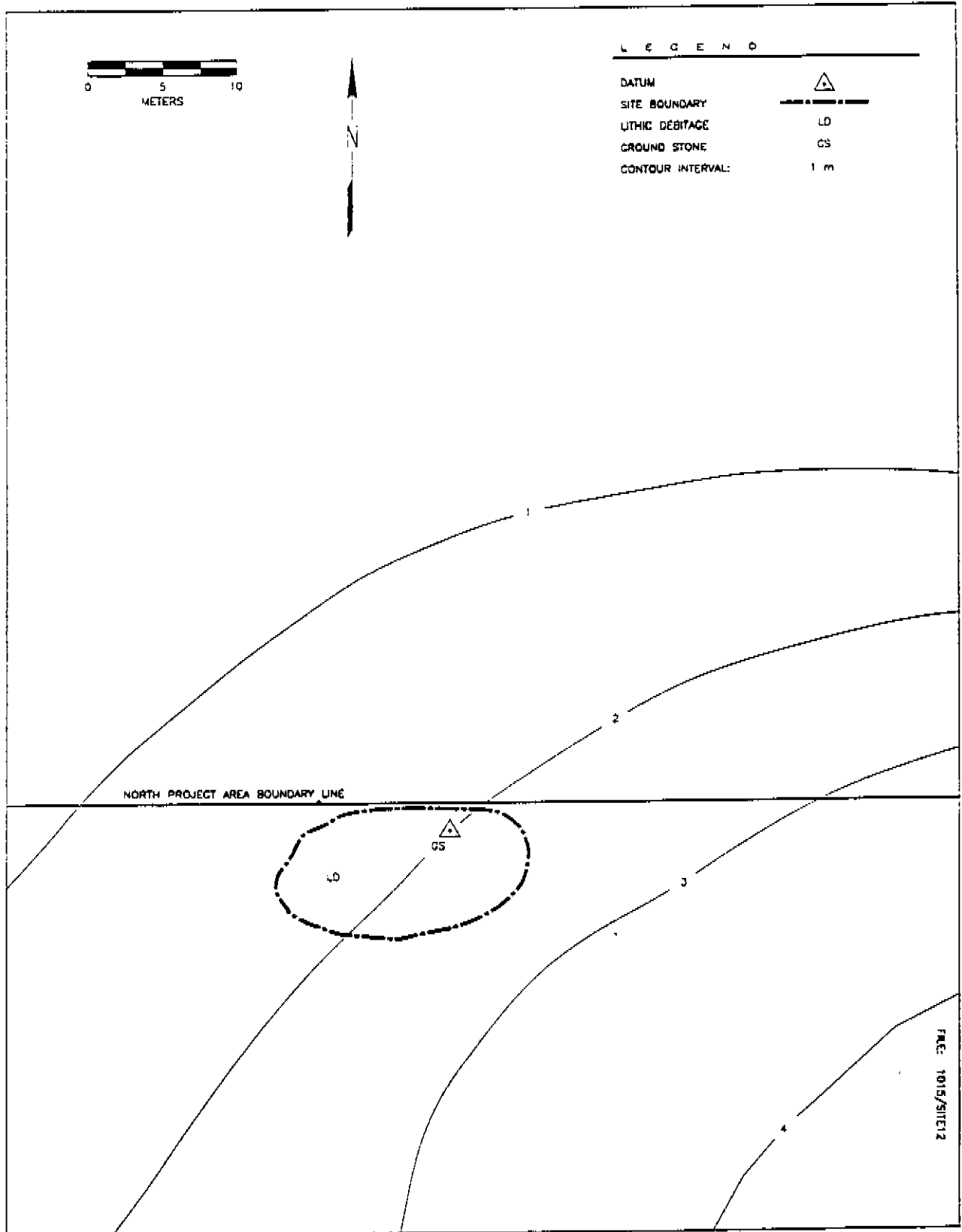


Figure 6-1 Site Plan for Site LA 100870.

Site LA 16429/AR 03-02-03-78 is a large prehistoric habitation site consisting of a depression indicative of a pit structure, human remains, a moderate artifact scatter, and other associated features. The site is located on the top and northeast slope of a small hill on the southwest edge of Leandro Canyon (Figure 6-2). The site measures 112 m NE/SW by 157 m SE/NW with an approximate area of 17,000 m<sup>2</sup> at an elevation of 7,300 ft (2,212 m).

In July of 1975, this site was originally recorded by the San Juan County Museum Association, Eastern New Mexico University, Division of Conservation Archaeology (DCA). According to Jim Tensfield of the Carson National Forest, the site was discovered when a burial was exposed by a road grader. Mr. Tensfield confirmed that this was the site where the human burial was removed. Field inspection revealed evidence of bone in the road, verifying the approximate location of the burial. This site, however, was misplotted by the DCA in T28N, R4W, Section 12. The proper legals are T29N, R4W, Section 36. Site information was updated during the present project.

The site includes a widely dispersed artifact assemblage with two loci consisting of artifact concentrations. Artifacts include cortical and non-cortical flakes, shatter and retouched flakes, brownware, orangeware, redware, grayware, and black-on-white ceramics, ground sandstone (primarily unifacially worked, both shaped and unshaped), and human bone. Sandstone building material is scattered throughout the site. Seven features were also observed. These features include a probable pithouse depression, a rock alignment, and five ash or charcoal stains. Road construction has impacted the central portion of the site. The site also suffers from some water erosion.

Feature 1 is an alignment of five small sandstone cobbles in a 1-m by 1-m area. These stones may represent part of a structure. This feature is located within 10 m of Forest Road 357I.

Feature 2 is a small charcoal stain in the middle of Forest Road 357I. The feature, a possible hearth or burned post, is approximately 1 m by 1 m with some scattering of charcoal and ash due to vehicle traffic.

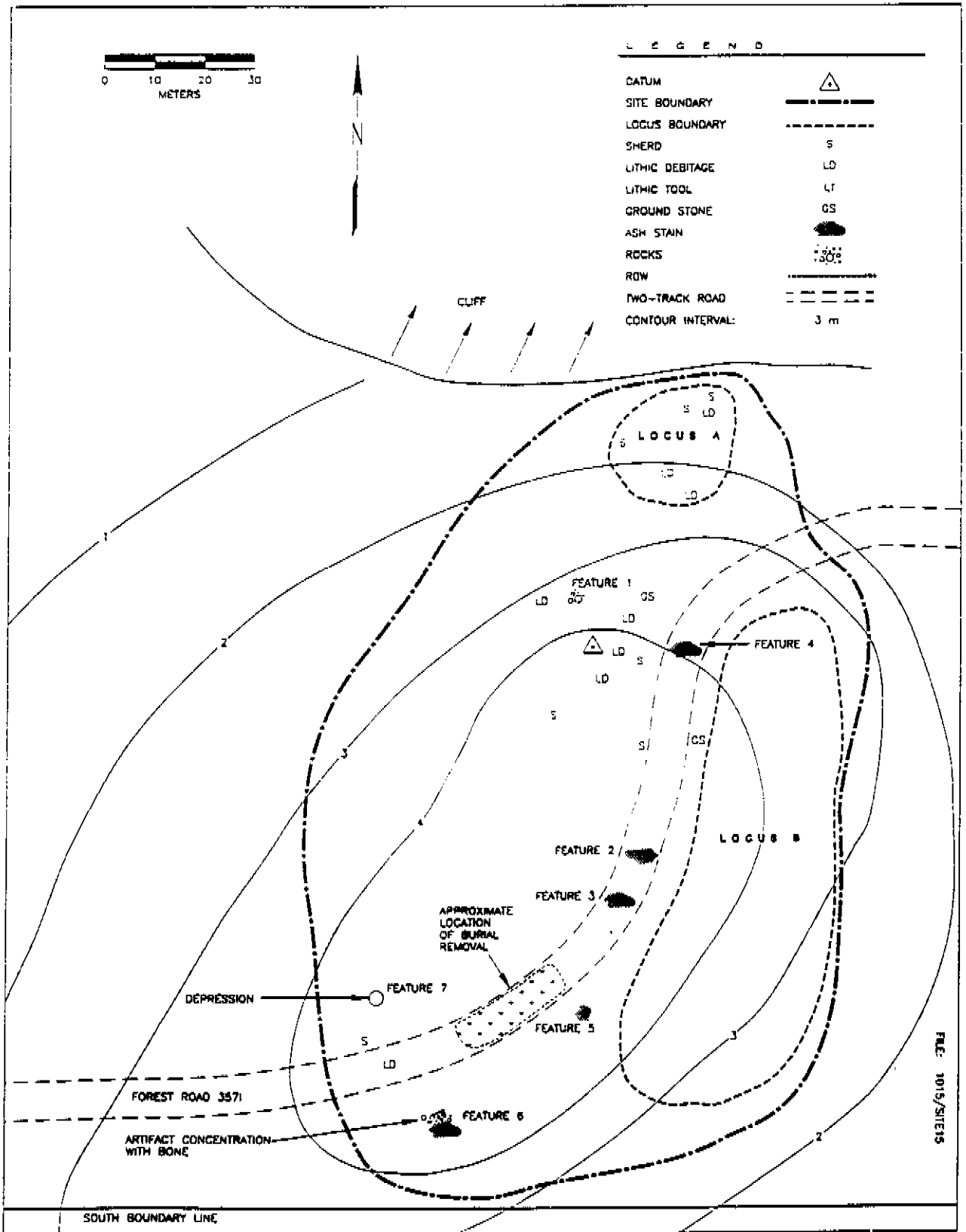


Figure 6-2 Site Plan for Site LA 16429.

Feature 3 is a large, discontinuous area of irregularly shaped ash and charcoal staining in Forest Road 357I. The feature, a possible hearth or midden area, is approximately 8 m N/S by 5 m E/W. Vehicle traffic has scattered some material.

Feature 4 is a discontinuous area of irregularly shaped ash and charcoal staining in Forest Road 357I. The feature, a possible midden or hearth area, is approximately 5 m N/S by 4 m E/W. Vehicle traffic has scattered some material.

Feature 5 is an ash and artifact scatter in an ephemeral drainage adjacent to Forest Road 357I and in close proximity to Feature 3. The feature, a possible midden, is approximately 20 m E/W by 15 m N/S. Associated artifacts include grayware, orangeware, and brownware ceramics, as well as chert and chalcedony non-cortical flakes.

Feature 6 is a small area of ash staining with a high concentration of chipped stone artifacts and ceramics. The feature, a possible midden, is approximately 5 m by 5 m. A 1-m by 1-m area within this feature contains some burned sandstone and associated unburned human (?) bone. Artifacts include grayware, brownware, and black-on-white ceramics, as well as obsidian, chalcedony, and chert non-cortical flakes and a chert retouched flake.

Feature 7 is a possible pithouse depression approximately 9 m in diameter. A few fragments of fire-cracked rock and a quartzite biface were found in association with the depression. The eastern edge of the pithouse was removed during construction of Forest Road 357I.

Artifact and feature assemblages at the site indicate that activities carried out include a wide range of activities associated with habitation. Potentially arable land is located in a meadow a few dozen meters northeast of the site. This site probably dates to the Pueblo I occupation of the area based on the pithouse feature noted and the artifacts observed in the field. A high potential for intact subsurface deposits exist for the site. Road grading activities continue to adversely affect the site, and avoidance or mitigative measures are recommended to minimize the impact to this cultural resource.

### **6.1.3 LA 100871/AR 03-02-03-645**

Field Number: MAI 1015-3  
Site Type: Prehistoric Artifact Scatter  
Cultural Affiliation: Ceramic unknown  
Size: 260 x 120 m

Site LA 100871/AR 03-02-03-645 is a large ceramic, chipped stone, and ground stone scatter located on the top and southeast slope of a ridge (Figure 6-3). The site measures 260 m NE/SW by 120 m SE/NW with an approximate area of 23,200 m<sup>2</sup> at an elevation of 7,250 ft (2,197 m). It is bounded on both sides by drainages.

Three loci of artifact concentrations were recorded. These loci were recorded on the gentle southeast slope of the ridge. A flat area along the southeastern edge of the site has been cleared mechanically. Consequently, two of these loci have become exposed and are beginning to erode downslope. Locus A has been severely eroded by this clearing and by cattle grazing in the area. Locus B has been slightly eroded by the clearing and cattle grazing. Locus C has been slightly eroded by cattle grazing. There is still a high potential for subsurface deposits in all of these loci despite erosion.

Locus A is a 50-m NE/SW by 30-m SE/NW scatter of approximately 300 artifacts. The artifacts consist of ceramics and flakes. Ceramics include grayware, brownware, and black-on-white. Lithic material types include chalcedony, chert, and quartzite. Some sandstone building material occurs in the locus, but may be naturally eroded.

Locus B is a 20-m NE/SW by 15-m SE/NW scatter of approximately 100 artifacts. The artifacts consist of ceramics and flakes. Ceramics include grayware, brownware, and black-on-white. Lithic materials include chalcedony, quartzite, and obsidian.

Locus C is a 5-m by 5-m scatter of approximately 25 artifacts. Ceramics include grayware, cord-impressed grayware, and brownware. Lithic flakes are manufactured from chalcedony. Several fragments of ground sandstone are also present.

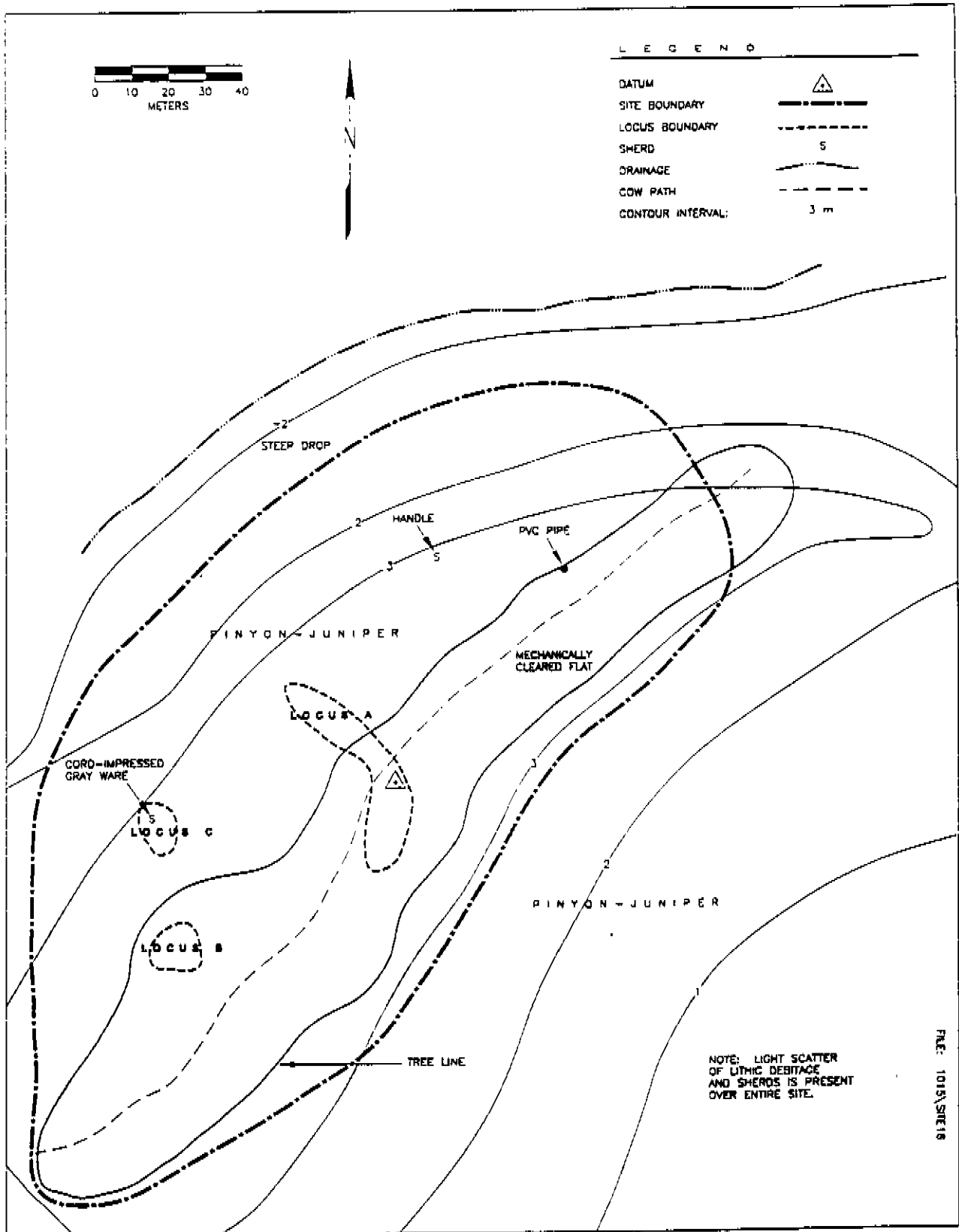


Figure 6-3 Site Plan for Site LA 100871.

The artifact inventory at the site indicates that food preparation activities and habitation occurred at the site. The large density and diversity of artifacts on this site indicate a high potential for significant subsurface deposits.

#### **6.1.4 LA 81355/AR 03-02-03-386**

Field Number: MAI 1015-4  
Site Type: Prehistoric Artifact Scatter  
Cultural Affiliation: Ceramic unknown  
Size: 165 x 60 m

Site LA 81355/AR 03-02-03-386 is a previously recorded ceramic, chipped stone, and ground stone scatter of approximately 50 to 100 artifacts located on the top of a ridge overlooking Leandro Canyon (Figure 6-4). The site measures 165 m NE/SW by 60 m SE/NW with an approximate area of 9,000 m<sup>2</sup> at an elevation of 7,160 ft (2,197 m). Mariah's update of the site consisted of remapping, extending the boundaries of the site, and compiling additional artifact information.

The site includes two small ceramic and chipped stone concentrations in an otherwise diffuse artifact scatter. Ceramics include brownware and grayware. Lithic material types include chert, chalcedony, quartzite, and obsidian. Ground stone includes a vesicular basalt metate fragment and a possible shaped sandstone mano.

Locus A is a concentration of artifacts containing ceramics and flakes. Ceramics include grayware and brownware. Lithic materials include quartzite, obsidian, and chert. A dark soil stain, possibly the originally recorded hearth, is present in this locus. The sandstone mortar, which was originally recorded in this area, could not be relocated.

Locus B is a concentration of ceramics and flakes containing brownware and grayware ceramics, and chalcedony, chert, and obsidian flakes.

Activities carried out at this site likely included food preparation and short-term habitation. This site is fairly extensive, and the overall artifact assemblage is diverse. The high density of artifacts in the concentration areas suggests that there is potential for undisturbed subsurface deposits.

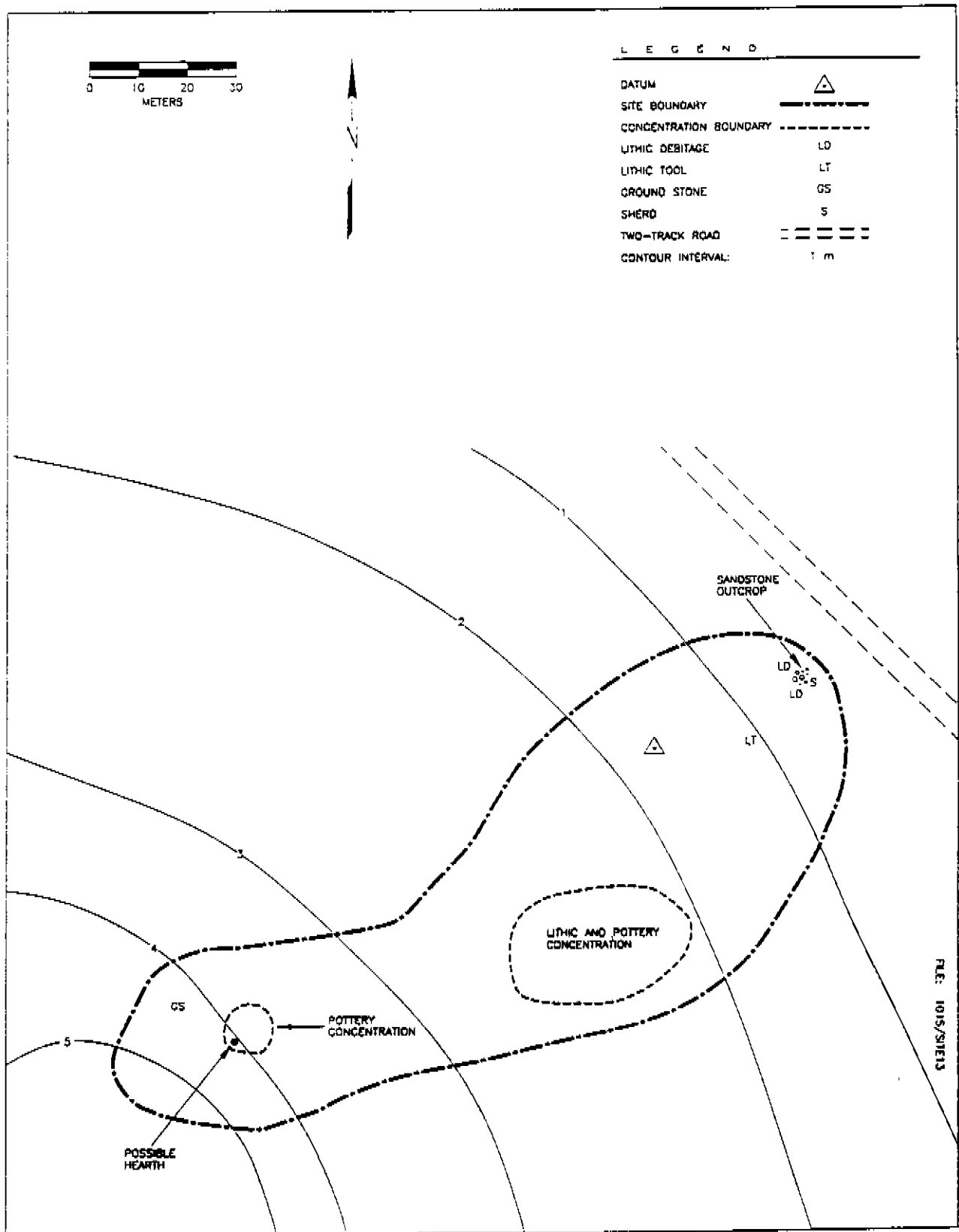


Figure 6-4 Site Plan for Site LA 81355.



### **6.1.5 LA 100872/AR 03-02-03-646**

Field Number: MAI 1015-5  
Site Type: Prehistoric Artifact Scatter with Features  
Cultural Affiliation: Ceramic unknown  
Size: 75 x 60 m

Site LA 100872/AR 03-02-03-646 is a ceramic, chipped stone, and ground stone scatter of approximately 200 artifacts located on the top and southeast slope of a hill (Figure 6-5). The site measures 75 m NW/SE by 60 m SW/NE with an approximate area of 4,000 m<sup>2</sup> at an elevation of 7,320 ft (2,218). This site was discovered during the present survey although it is located outside of the project area.

The site includes one feature and one artifact concentration in an otherwise diffuse artifact scatter. Ceramics include grayware, brownware, corrugated brownware, cord-impressed brownware, and black-on-white. Lithics include chalcedony, chert, quartzite, and obsidian flakes and a gray chert thumbnail scraper.

Feature 1 is a rock ring/circle approximately 110 centimeters (cm) N/S by 80 cm E/W composed of shaped sandstone slabs. There is a possible area of grinding/use wear on one slab suggesting that this may be a shaped metate.

Locus A consists of a dense concentration of flakes and ceramics in a 15-m by 12-m area. Ceramics include brownware, grayware, and black-on-white sherds. Lithic material types include chalcedony, chert, and quartzite.

The artifact assemblage suggests that activities carried out at this site include food preparation and short-term habitation. Density and diversity of artifacts suggest that there is a good potential for significant subsurface deposits.

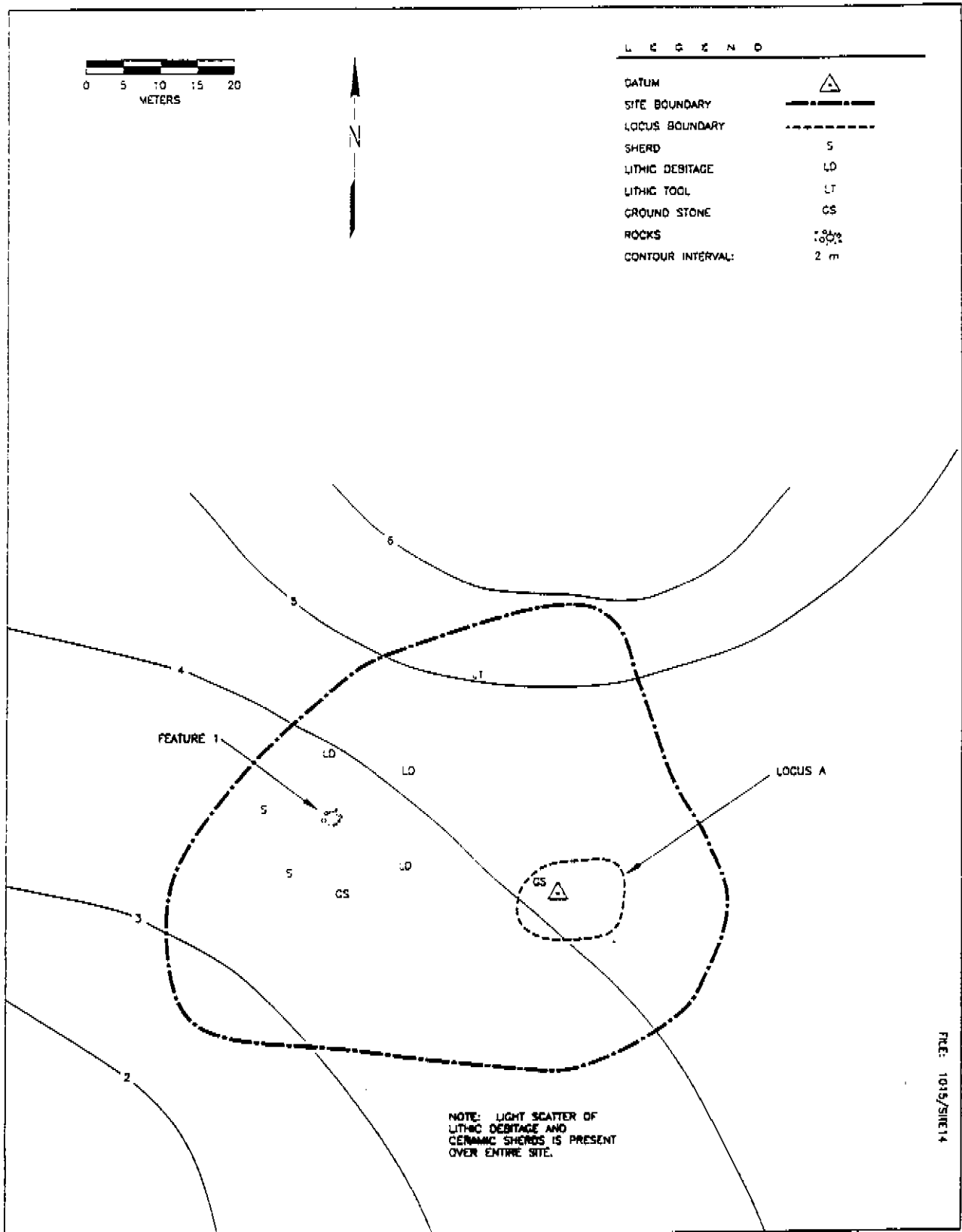


Figure 6-5 Site Plan for Site LA 100872.

### **6.1.6 LA 81356/AR 03-02-03-387**

Field Number: None  
Site Type: Nuclear test site, Gasbuggy Gas Stimulation Test Site  
Cultural Affiliation: Recent historic  
Size: Monument: Approximately 40 cm (L) x 30 cm (W) x 20 cm (H)  
Total Site: 160 acres

Site LA 81356/AR 03-02-03-387 is the Gasbuggy Gas Stimulation Test Site. It is a 160-acre site located on USFS (Carson National Forest) land that is withdrawn by the DOE in Rio Arriba County, north-central New Mexico. Gasbuggy is situated on the edge of a meadow in Leandro Canyon at an elevation of 7,200 ft, approximately 200 m southwest of the main drainage. The DOE (previously the Atomic Energy Commission), as well as other parties, have conducted activities on the 160-acre parcel since the early 1960s. Gasbuggy was one of four joint government-industry experiments under the Plowshare Program designed to develop peaceful uses for nuclear explosions. Experiments were carried out to ascertain the economic feasibility of using nuclear explosions to fracture underground rock formations and stimulate the flow of natural gas. On December 10, 1967, a nuclear device was detonated underground (4,400 ft [1,333 m] below ground surface) at Gasbuggy with the hope of fracturing the bedrock and releasing natural gas for commercial and domestic use. Subsequent tests were performed in 1968, 1969, and 1973. During the 1960s and 1970s, grading, filling, and other types of ground disturbing activities were carried out. Site demobilization was conducted during August and September of 1978. The land is currently being leased out for cattle grazing and oil and gas operations (DOE 1993b).

A small concrete pedestal monument containing a bronze plaque marks the location of the test shaft. The title of the monument reads: "Project Gasbuggy Nuclear Explosive Emplacement/Reentry Well (GB-ER)." The site is also marked by a USFS sign as a "point of interest."

### **6.2 Isolated Occurrences**

Four isolated occurrences were recorded during the Gasbuggy survey. These IOs are described and legal descriptions are provided in Table 6-1.

**Table 6-1**  
**Isolated Occurrences**

No.	Isolated Occurrences	UTM Location (Zone 13)	
		Easting	Northing
1	White chalcedony core fragment, size class 3.	302570	4061360
2	Obsidian non-cortical flake, size class 4.	302220	4061610
3	Obsidian non-cortical flake, size class 3, and obsidian bifacially flaked core flake, size class 4.	302230	4061660
4	Hearth/campfire ring, 1-m diameter, with an associated steel Miller Beer can, church key opened. A duff-covered 3.5-m <sup>2</sup> by 2-m <sup>2</sup> tent base 0.25 m high is located on a slight slope nearby. Dates to late 1950s, early 1960s.	302170	4061660

## **7.0 Recommendations**

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Three previously recorded sites, three previously unrecorded sites, and four previously unrecorded IOs were discovered and documented during the 160-acre Gasbuggy survey. Five sites were prehistoric artifact scatters, three with associated features. Occupation of these sites appears to date to the early Pueblo I period. One site was a post-World War II Euro-American site. Three IOs included one or two chipped stone artifacts, and one IO was a modern campfire ring and tent pad with an associated modern can.

The data potential of the IOs is considered to have been fully recorded by field documentation. Eligibility recommendations for sites are provided in Table 7-1. One of the newly recorded sites, LA 100870/AR 03-02-03-644, is considered to be sufficiently documented by in-field recordation, and no further investigation is required. This site is not considered to be eligible to the NRHP. Archaeological clearance is recommended for LA 100870/AR 03-02-03-644 and the IOs. One newly recorded site, LA 100872/AR 03-02-03-646, was not located within the project area and will have no bearing on the proposed project. However, it is considered eligible for inclusion in the NRHP.

Three of the remaining sites contain additional information not fully documented through surface recording. These sites retain sufficient integrity or information to address pertinent research design issues. Therefore, these three prehistoric sites, LA 16429/AR 03-02-03-78, LA 100871/AR 03-02-03-645, and LA 81355/AR 03-02-03-386, are recommended as significant cultural resources eligible for inclusion in the NRHP under Title 36 C.F.R. §60.4 criterion "d" of the National Historic Preservation Act of 1966 and the NMSRCP since they may yield information important to prehistory and history.

Preservation plans for these sites include avoidance of the site areas in the event of any ground-disturbing activities. Prior to any disturbance, the site boundaries should be clearly marked. If avoidance is not possible, testing and data recovery are recommended to recover information on these valuable cultural resources.

The Gasbuggy Site, LA 81356/AR 03-02-03-387, is recommended as a significant cultural resource eligible to the NRHP under Title 36 C.F.R. §60.4 criterion "a" of the NHPA of 1966

**Table 7-1  
Eligibility Recommendations**

LA No.	USFS No.	UTM Location (Zone 13)		NHRP Recommendation
		Easting	Northing	
→ LA 100870	AR 03-02-03-644	302740	4061630	Not eligible
LA 16429	AR 03-02-03-78	302680	4061040	Eligible
LA 100871	AR 03-02-03-645	302360	4061140	Eligible
LA 81355	AR 03-02-03-386	302240	4061530	Eligible
LA 100872	AR 03-02-03-646	<del>302220</del> 302243	<del>4064790</del> 4060817	Eligible
LA 81356	AR 03-02-03-387	302740	4061210	Eligible

and the NMSRCP as it pertains to a significant event in American history. We recommend that this site, along with the other three Plowshare Program sites (Rio Blanco Gas Stimulation Test Site [5RB2307] and Rulison Gas Stimulation Test Site [5GF1656] in Colorado and Gnome-Coach Test Site [LA 43281] in New Mexico) be nominated as a group under criterion "a." Although each of these sites is less than 50 years old, the use of nuclear explosions for peaceful purposes is an important component of Cold War Era research. The Plowshare Program represents a unique event in history, thereby making it important for understanding the broad patterns of history. As a result, each of these four joint government-industry experiments under the Plowshare Program should be considered significant and nominated as a group to the NRHP. However, only the actual monument marking the test location with a 100-ft (30-m) radius buffer should be considered as part of the nomination and be avoided.

\* Changes per phone conv. w/ John Acklen, TRC on 7/12/00 with TR. Boehlecke. See Gasbuggy 4 project file.  
↳ new name of Mariah Associates

## **8.0 References**

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Bailey, Garrick A., and Roberta Glenn Bailey, 1986, *A History of the Navajos: The Reservation Years*, School of American Research Press, Santa Fe.

Brown, Gary M., and John A. Evaskovich, 1993. *Cultural Resource Inventory of Williams Field Services Trunk "D" Loop Natural Gas Pipeline, Rio Arriba County, New Mexico*, MAI Report 809, Mariah Associates, Inc., Albuquerque.

Carlson, R.L., 1965, Eighteenth Century Fortresses of the Gobernador District (the Earl Morris Paper No. 2) University of Colorado *Series in Anthropology* 10, Boulder.

Code of Federal Regulations. *Title 36, "Parks, Forests, and Public Property," Part 60.4, "National Park Service, Department of Interior,"* Washington, DC.

Cordell, Linda, 1982, The Pueblo Period in the San Juan Basin: An Overview and Some Research Problems. In *The San Juan Tomorrow: Planning for the Conservation of Cultural Resources in the San Juan Basin*, edited by Fred Plog & Walter Wait, pp. 59-83. National Park Service, Albuquerque, and School of American Research, Santa Fe.

Dittert, A.E., J.J. Hester, and F.W. Eddy, 1961, *An Archeological Survey of the Navajo Reservoir District*, Northwestern New Mexico Monographs of the School of American Research and the Museum of New Mexico 23, Santa Fe.

Executive Order 11593, "Protection and Enhancement of the Cultural Environment," 36 *Federal Register* 8921, May 13, 1971, Washington, DC.

Hancock, Patricia M., Timothy M. Kearns, Roger A. Moore, Margaret A. Powers, Alan C. Reed, Linda Wheelbarger, and Penelope A. Whitten, 1988, *Excavations in the Middle La Plata Valley for San Juan Coal Company*. Studies in Archaeology No. 6, Division of Conservation Archaeology, Farmington.

Hogan, Patrick, 1986, *Overview, Research Design, and Data Recovery Program for Cultural Resources Within the Bolack Exchange Lands*. Submitted to Bureau of Land Management, Albuquerque, Office of Contract Archaeology, University of New Mexico, Albuquerque.

Hogan, Patrick, Jannette M. Elgea, and Peter N. Eschman, 1991, *Overview and Research Design for the Fruitland Coal Gas Development Area*. Proposed for the Bureau of Land Management, Albuquerque District, Office of Contract Archeology, University of New Mexico, Albuquerque.

Kearns, Timothy M., 1992, The Preceramic Archaeology of the Upper San Juan River in Northwest New Mexico and Southwest Colorado. In *Cultural Diversity and Adaptation. The*

*Archaic, Anasazi, and Navajo Occupation of the Upper San Juan Basin*, edited by Lori Stephens Reed and Paul F. Reed, Bureau of Land Management. Santa Fe.

Kidder, Alfred V., 1920, Ruins of the Historic Period in the Upper San Juan Valley, New Mexico, *American Anthropologist* 22(4):322-329.

Moore, James L., and Joseph C. Winter (editors), 1980. *Human Adaptations in a Marginal Environment*, The UII Mitigation Project, Office of Contract Archaeology, University of New Mexico, Albuquerque.

National Environmental Policy Act of 1969, Public Law No. 91-190; 83 Stat. 852, 42 E.S.C. 4321, Washington, DC.

National Historic Preservation Act of October 15, 1966, Public Law No. 89-665; 80 Stat. 915; 16 U.S.C. 470, Washington, D.C.

Reher, C.A. (editor), 1977, *Settlement and Subsistence Along the Lower Chaco River: The CGP Survey*, University of New Mexico Press, Albuquerque.

Stuart, David E., and Rory P. Gauthier, 1984, *Prehistoric New Mexico: Background for Survey*, State of New Mexico office of Cultural Affairs, Historic Preservation Division, Santa Fe.

U.S. Department of Energy, Nevada Operations Office, 1993a, *Sensitive Species Survey results for DOE/NV Off-Sites in New Mexico*, DOE/NV 10972--54, Las Vegas Nevada.

U.S. Department of Energy, Nevada Operations Office, 1993b, *Survey Plans for DOE/NV Sites Outside of Nevada*, Las Vegas, Nevada.



**Appendix A**

**Correspondence with the  
Jicarilla Apache Tribe and Navajo Nation**



## Department of Energy

Nevada Operations Office

P.O. Box 98518

Las Vegas, NV 89193-8518

Allen Downer, Director  
Historic Preservation Program  
Navajo Nation  
P.O. Box 2798  
Window Rock, Arizona 86515

### REQUEST FOR COMMENTS ON CULTURAL RESOURCES PROJECT

The U.S. Department of Energy (DOE) continues to monitor the Gasbuggy Gas Stimulation Test Site in a portion of Rio Arriba County, New Mexico and, in the future, will be conducting characterization activities to determine what remediation, if any, may be required at the site. In June 1993, in preparation for these activities which may involve drilling, geophysical surveys, and the collection of environmental samples, DOE commissioned a cultural resources survey. The area, which is near the homeland of the Navajo Nation, is located in the Carson National Forest approximately 20 miles southwest of Dulce, New Mexico, in Township 29 North, Range 4 West, Section 36 (Los Medanos and Remuda Basin, 7.5' U.S. Geological Survey quad maps).

The survey was conducted by Mariah Associates, Inc. and IT Corporation (under a U.S. Department of Agriculture Forest Service Special Use Permit). Six sites and four isolated occurrences (IOs) were located during the survey. Three of these sites were newly identified and three had been previously recorded. Five of the sites occur within the 160 acre project area. The sixth site was located near, but outside the project area. Four are prehistoric and one was recent historic. Four of the sites contain lithic debitage while three contain ceramics. One site is a large habitation site of the Pueblo I cultural affiliation. The IOs consist of two flakes and a core fragment. The fourth IO is a campsite dating to the 1950s or 1960s. No materials were collected during the surveys.

Preliminary recommendations are that five of the sites are eligible for nomination to the National Register of Historic Places and the New Mexico State Register of Cultural Properties under (36 C.F.R. 60.4) Criterion "d" of the National Historic Preservation Act of 1966, as amended. DOE's preferred option is to avoid disturbing cultural resources sites whenever possible. If scientific or technical requirements do not permit avoidance, then data recovery would be commenced following the appropriate consultations.

DOE requests the comments of the Navajo Nation regarding the significance to the people of the project area surveyed. If there are any potential sites of historic, religious, or ceremonial significance that might be adversely affected by future alteration of the present

Allen Downer

-2-

ground surface, please contact me by November 29, 1993, so that this information can be included in our report.

If you have any questions, please contact Frank R. Maxwell, of my staff, at (702) 295-1050. Thank you for your consideration of this request.

  
Stephen A. Mellington, Acting Director  
Environmental Restoration Division

ERD:FRM

cc:

Jon Young, USFS, Taos, NM

David Cushman, HPD, Santa Fe, NM

L. H. Bambrey, IT, Denver, CO

M. L. Brown, IT, Las Vegas, NV



**Department of Energy**

Nevada Operations Office

P.O. Box 98518

Las Vegas, NV 89193-8518

NOV 02 1993

Leonard Atole, President  
Jicarilla Apache Tribe  
P.O. Box 507  
Dulce, New Mexico 87528

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Leonard Atole

-2-

NOV 02 1993

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for Stephen A. Mellington, Acting Director  
Environmental Restoration Division

ERD:FRM

cc:

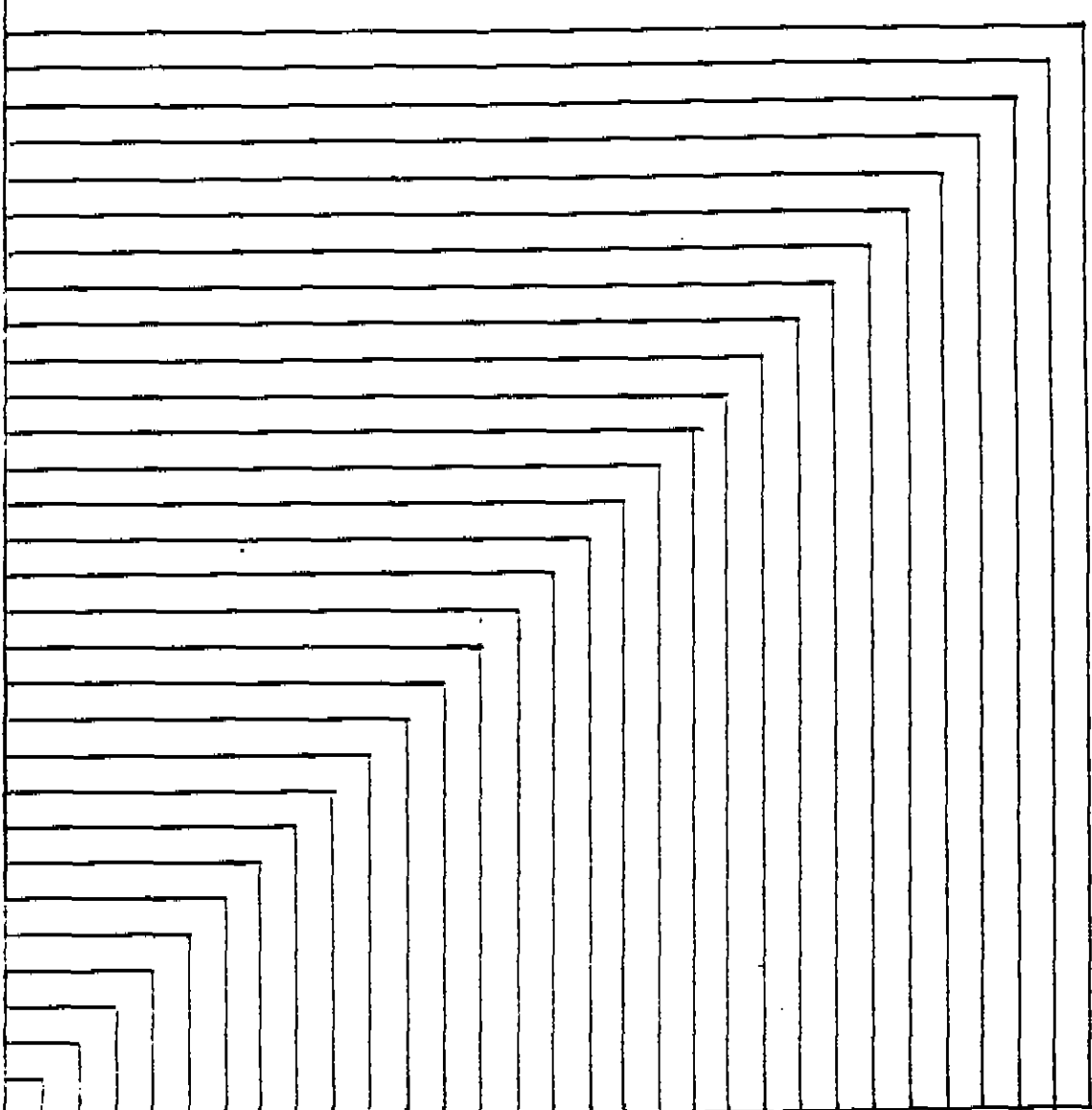
Jon Young, USFS, Taos, NM

David Cushman, HPD, Santa Fe, NM

L. H. Bambrey, IT, Denver, CO

M. L. Brown, IT, Las Vegas, NV

**Appendix B**  
**Flake Size Template**



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30

**Appendix C**  
**USFS Site Forms and Notes**



ARCHEOLOGICAL AND  
HISTORICAL SITE INVENTORY  
(Ref: FSM 2361)  
(Instructions: Cultural Resources Coding Guide)

160 Acres at Goshoggy Gas Stimula  
FORM COMPLETED BY: site CIT COP

DJ Seymour, WJ Pasque, G.E. Hawkins  
B. G. Anderson, L.H. Blackberry

LEGAL: NW 1/4 NE 1/4 SW 1/4

TOWNSHIP				N/S		RANGE			E/W		SECTION	
T	2	9			N	R	0	4		W		36
2	3	4		5	6	7	8	9	10	11	12	13

Locational and CRM Information (Card #1) 1

Forest Carson 02 District Jicarilla 03  
14 15 16 17

State New Mexico 35 County Rio Arriba 039  
18 19 20 21 22

Universal Transverse Mercator Location

ZONE		NORTHING				EASTING								
1	3	4	0	6	1	6	1	5	3	0	2	7	3	0
23	24	25	26	27	28	29	30	31	32	33	34	35	36	37

USFS Site Number Other names and/or numbers:

		6	4	4
38	39	40	41	42

MAI 1015-1  
LA 100870

RIM Number (Class 1 Sites):

43	44	45	46	47	48	49

Site Evaluation (FSM 2361.1) By □  
Professional Cultural Resource Specialist Only.

Map/Aerial 50 Photo:

Site Condition K Percent of Disturbance 100  
51 52 53 54

Site File Check Y Collection Made 00 Collection Type N Site Marked on Ground C Hours Expended on Site 01  
55 56 57 58 59 61

Cultural Resources Report Number: Date Site Inventoried: Recorded By:

YEAR				FOREST		NUMBER			MONTH		DAY		YEAR					
1	9	9	3	0	2	0	6	4	0	6	2	2	1	9	9	3	9	8
62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

Environmental and Site Descriptive Information (Card #2)

Vegetation of Site Area: Soils: T E S

Reg. Fm.	Series	Association	Great Group	Subgroup	T E S													
22	12	006																
2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

LANDFORM OF AREA ON SITE TOPOGRAPHY ASPECT OF SITE AVERAGE SLOPE (IN DEGREES) ELEVATION (IN FEET)

HS	N E S W	M A	05	7260										
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

Nearest Water: TYPE W A DIRECTION W DISTANCE (IN KM) 01  
36 37 38 39 40 41 42 43

Nearest Agricultural Land: TYPE V F DIRECTION W DISTANCE (IN KM) 01  
44 45 46 47 48 49 50 51

CONTINUED



Completed by DJ Seymour Date 6/22/93

Additional remarks, observations or comments. The listed categories must be addressed when completing this form. The back of this page may also be used.

1) Ceramics

None noted.

2) Lithics

1 chertedony core flake fragment, white, with edge damage (5' x 5')

1 sandstone groundstone fragment; bifacial facets most pronounced on one side

3) Architecture

None noted.

4) Features

No features noted. A few misc cobbles of sandstone (as elsewhere in the project area) may indicate highly disturbed feature, however, not likely

5) Site Condition

Grazed and possibly pushed.

6) General Artifactual

Two artifacts identified (see map)

7) Settlement Characteristics

None noted

8) Research Potential of Site

Information value of site recorded in field.

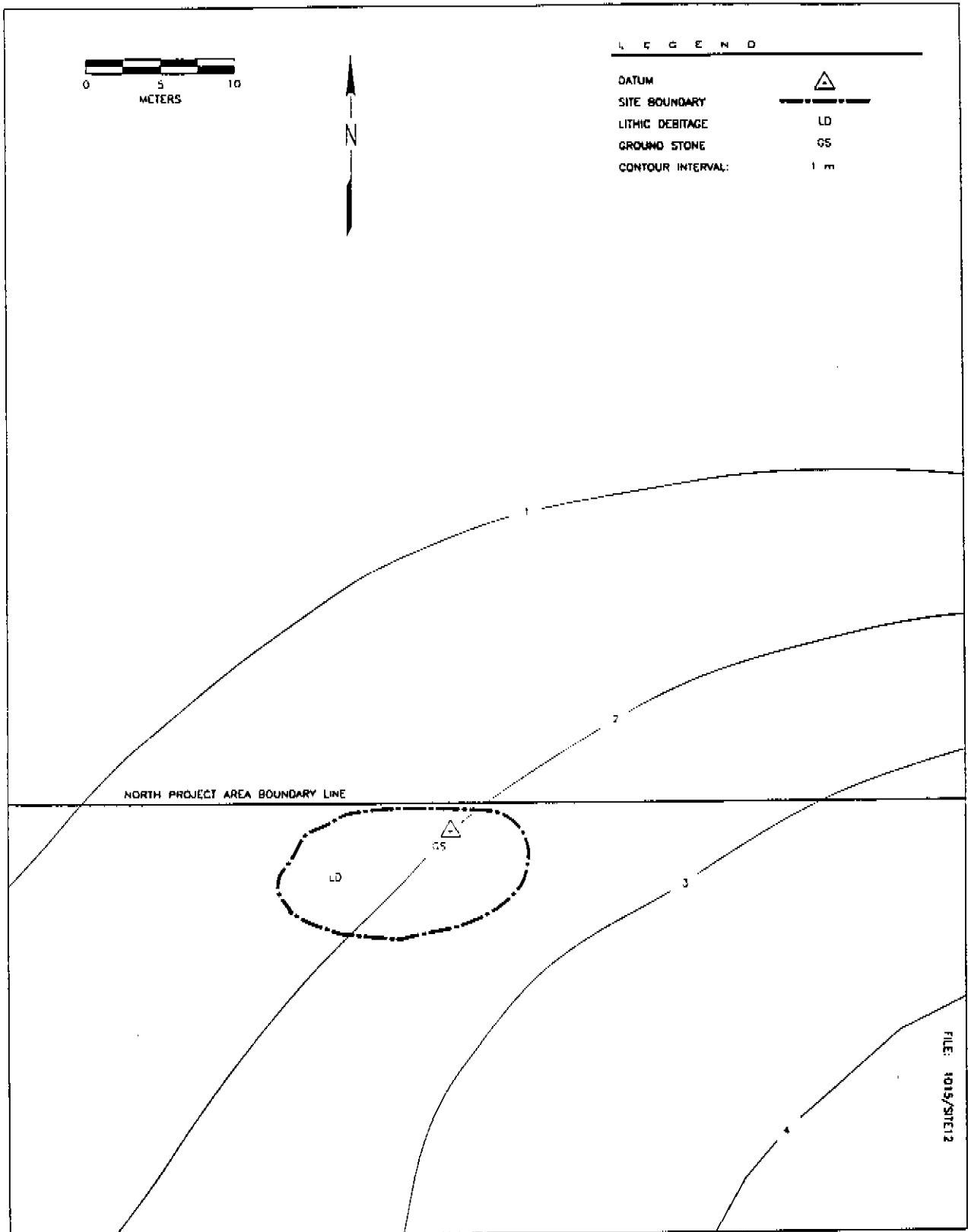
Photographs taken Yes - site overview

C/BW

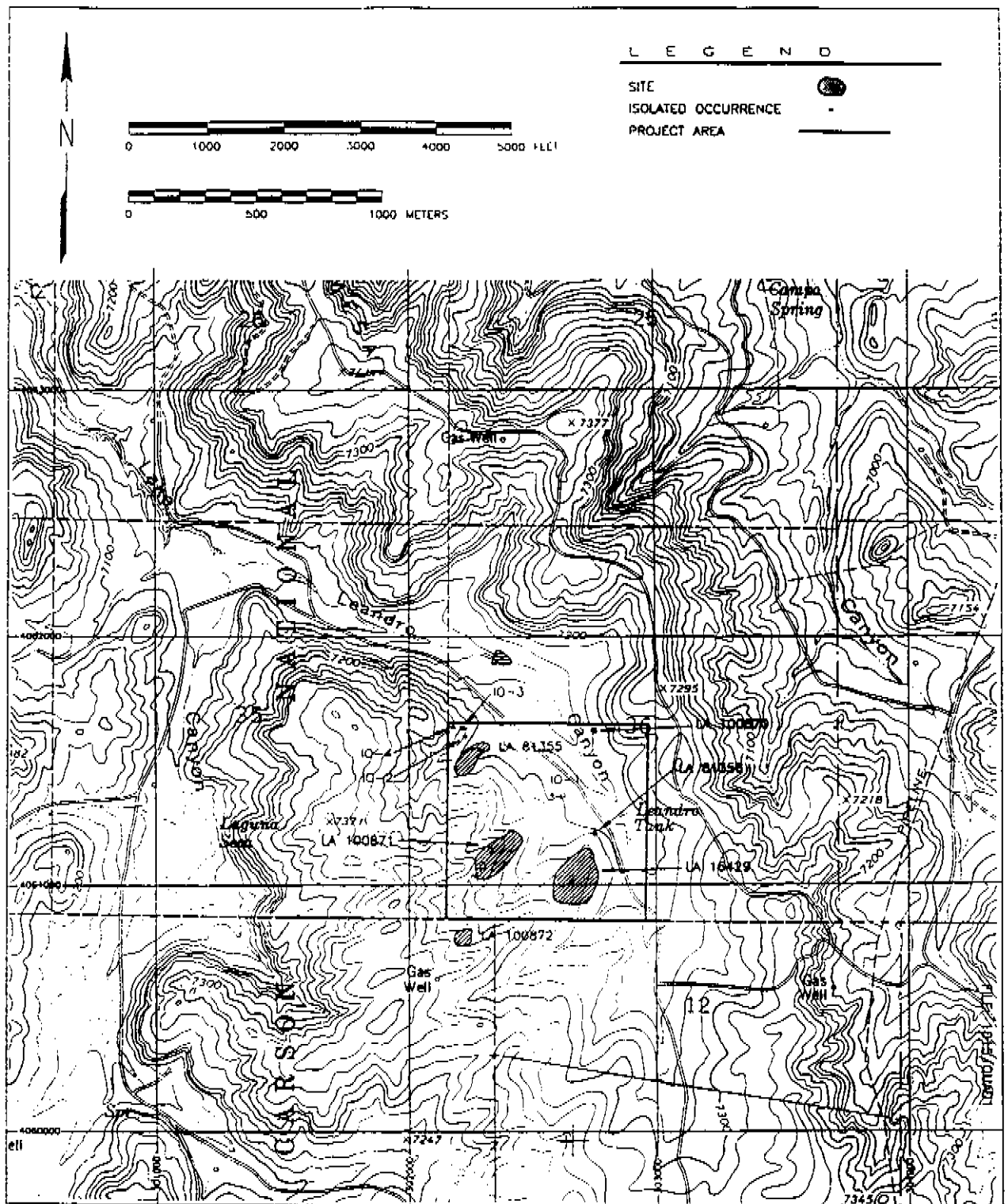
Located where Marish Associates

Albuquerque, NM

[see report narrative]



Site Plan for Site LA 100870.  
AR # 03-02-644



USGS Map Showing Location of Inventoried Area and Cultural Resources.  
 Taken from Leandro Canyon, New Mexico Quadrangle (1963, photorevised  
 1982), 7.5' Series (1:24,000 Scale). UTM Zone 13.

Forest Service # / LA #

- AR# 03-02-644 = LA 100870
- 03-02-78 = LA 16429
- 03-02-645 = LA 100871
- 03-02-386 = LA 81355
- 03-02-646 = LA 100872

ARCHEOLOGICAL AND  
HISTORICAL SITE INVENTORY  
(Ref: FSM 2361)  
(Instructions: Cultural Resources Coding Guide)

160 Acres at Gasbuggy Gas Stimul  
FORM COMPLETED BY: Site CIT corp  
DJ Seimont WJ Poague GE Hawking  
H. Ramsey, R. Anderson

LEGAL: W  $\frac{1}{2}$  SE  $\frac{1}{4}$  SW  $\frac{1}{4}$

TOWNSHIP	N/S	RANGE	E/W	SECTION
T 2 9	N	R 0 4	W	3 6
2 3 4	5 6	7 8 9	10 11	12 13

Locational and CRM Information (Card #1)

1

Forest Carson

0 2

District Jicarilla

0 3

State New Mexico

3 5

County Rio Arriba

0 3 9

Universal Transverse  
Mercator Location

ZONE NORTHING  
1 3 - 4 0 6 1

EASTING  
0 0 0 - 3 0 2 6 5 0

USFS  
Site Number

7 8

Other names and/or numbers: MAI 1015-2  
LA 16429

RIM Number (Class 1 Sites):

43 44 45 46 47 48 49

Site Evaluation (FSM 2361.1) By  
Professional Cultural Resource  
Specialist Only.

Map/Aerial <sup>50</sup> Photo:

Site Condition

A

Percent of Disturbance

3 0

Leandro Canyon 75

Site File Check

Y

Collection  
Made

0 0

Collection  
Type

N

Site Marked  
on Ground

C

Hours  
Expended  
on Site.

8

Cultural Resources Report Number:

YEAR FOREST NUMBER  
1 4 9 3 0 2 0 6 4

Date Site Inventoried:

MONTH DAY  
0 6 2 2

Recorded By:

YEAR  
1 9 9 3 9 8

Environmental and Site Descriptive Information (Card #2)

2

Vegetation of Site Area:

Reg. Fm. Series Association  
2 2 1 2 0 0 5

Soils:

Great Group

Subgroup

T E S

LANDFORM  
OF AREA

H L

ON SITE  
TOPOGRAPHY

N E S W  
- - + -

ASPECT  
OF SITE

M A

AVERAGE SLOPE  
(IN DEGREES)

0 3

ELEVATION  
(IN FEET)

7 2 5 0

Nearest Water:

TYPE S R

DIRECTION

S E

DISTANCE  
(IN KM)

0 1

Nearest Agricultural Land:

TYPE V E

DIRECTION

N E

DISTANCE  
(IN KM)

0 1

CONTINUED

Site Description: CLASS  52 USE  53 TYPE    54 55 56

Site Size CORE AREA     57 58 59 60 61 62  
 DISPERSED AREA      63 64 65 66 67 68 IN SQUARE METERS  
 Dimensions: Length 175 m. Width 15 m.  
 Height \_\_\_\_\_ m. Depth \_\_\_\_\_ m.

ARTIFACTS OBSERVED: Flaked Stone  69 Ground Stone  70 Ceramics  71

Bone  72 Shell  73 Other Prehist.  74 Hist. Ceramics  75

Glass  76 Cans  77 Other Metal  78 Other Historic  79 Construction Material(s)  80

Site Specific Information (Card #3)  1

Range of Site Occupation in Years B.P. (1950)     2 3 4 5 6 to     7 8 9 10 11

Date Based On:  ceramics 12

FEATURES: Subsurface Rooms    13 14 15 Surface Rooms    16 17 18

Non-room Walls  19 Partial Shelters  20 Middens   21 22 Hearth   23 24

Storage Cist.   25 26 Roasting Pit   27 28 Bounded, Non-Roofed Area  29 Modified Cave    30 31 32

Large Depression  33 Water/Soil Control   34 35 Mound, Non-Midden  36

Bedrock Grinding  37 Quarry/Mine  38 Buildings    39 40 41 Rock Art  42

Miscellaneous Features   43 44

ARTIFACTS/MATERIAL COLLECTED: Flaked Stone  45 Ground Stone  46

Ceramics  47 Bone  48 Shell  49 Other Prehist.  50 Hist. Ceramics  51

Glass  52 Cans  53 Other Metal  54 Other Historic  55 Soil Sample  56

Pollen  57 Floatation  58 Charcoal  59 Veg. Samples  60

Multi Components:  61

CULTURAL CLASSIFICATION:     \_\_\_\_\_ 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

Completed by Dr. Seymour, W.T. Pongue Date 6/22/1993

Additional remarks, observations or comments. The listed categories must be addressed when completing this form. The back of this page may also be used.

## 1) Ceramics

100+ ceramics. Types include plain grayware, plain brown ware, polished brownware, black-on-white, redware. Approx. 70% sherds grayware. Jar + bowl sherds observed. Jar was the predominant vessel type observed.

## 2) Lithics

chipped stone includes cortical and non-cortical flakes, angular debris, and retouch flakes. One unifacial and one bifacial noted. Material types include obsidian, gray chert, white chert, chalcedony, quartzite. Ground stone includes unifacial and bifacial ground stone, shaped and unshaped, approx. 9-20 pieces estimated.

## 3) Architecture

Two possible subterranean pithouses noted. Fea 7 represent a 9m diameter depression - probable pithouse depression. Fea 2 consists of an alignment of 5 small sandstone cobbles in a 1m x 2m area. May represent remains of a structure.

## 4) Features (See Fea 2 and 7 above)

Fea 2 is a small charcoal grain in Forest Road 3571, measures 1x1m, ash and charcoal observed. Possible hearth or burned post. Fea 3 is 2x5 m area of ash + charcoal staining. Possible hearth or midden area. Located in Forest Road 3571. Fea 4 is a discolored 8x4 m ash/charcoal stain also in Forest Road 3571. Fea 5 is an ash + artifact scatter in ephemeral drainage, possible midden. Fea 6 is a 5x5 m area ash staining w/ concentrations of artifacts. Burned sandstone and possible human bone in Fea 7.

## 5) Site Condition

Site is slightly eroded with washing downslope. Site has been significantly impacted by Forest Road 3571. Ephemeral drainage in road cut area.

## 6) General Artifacts

Artifacts include sherds, chipped stone and ground stone. (See ceramics and lithics above). Ground stone consists of shaped and unshaped, unifacial ground, manos, fragments, all of sandstone.

## 7) Settlement Characteristics

Features 2 and 7 may represent remains of subterranean pithouses. Fea 7 is a 9m diameter possible pithouse depression. Fea 2 is a sandstone alignment which may represent the remains of a structure.

## 8) Research Potential of Site

The large number and diversity of artifacts, the presence of features, and the evidence of subsurface deposits indicates that additional information may be collected from this site.

Photographs taken yes (overviews + photos) (C/BW) Located where Mariah Associates, Albuquerque

[See narrative/notes on back]



MAI 1015-2 (LA 16429, FS# <sup>AK</sup> 03-02-78)

Brief narrative (see report for full description)

MAI 1015-2 consists of a moderate sherd, lithic, ground stone, and bone scatter with seven associated features. The site is situated on the top and NE slope of a small hill which rises above a valley floor drainage. Forest Road 3571 cuts through the site. Dimensions of the site are approx 175 x 115 m.

The artifact assemblage on the site consists of ceramics, chipped stone, ground stone, and bone. (see opposite side)  
Artifacts are dispersed evenly across the site with 2 artifact concentrations noted. Locus A and Locus B (on map) consist of denser concentrations of artifacts. Total artifacts number in the 100's. Seven features were identified. (see opposite side)

Site relatively intact. Impacts to the site include water erosion and the construction of Forest Road 3571, which bisects the site. Features are exposed in the road cut, indicating the presence of subsurface deposits. Site contains additional research potential and is therefore eligible to the NRHP.

MA1-1615-2

2 Ings - Shaped unifacial mand

1 jar shard black/white

Shaped unifacial rounded stone

cortical obsidian flake

bone

chert core flake

1 jar shard fragment IIII

1 bowl shard pink

1 jar shard rounded mand

chert core flake

gray chert non-core flake

obsidian non-core flake II

chert non-core flake II

gray ware jar shard

pink chert core flake

chert shatter

brownware jar shard XII

obsidian core flake

unifacial shaped mand

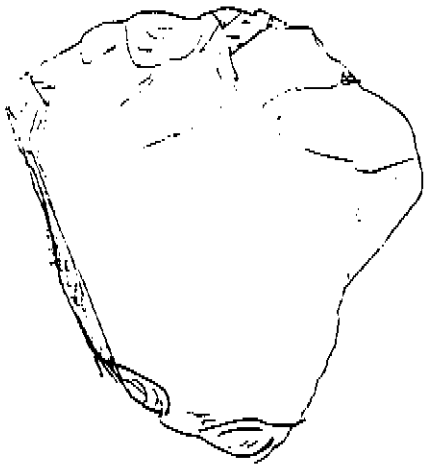
grayware indet 1

grayware cortical flake - III

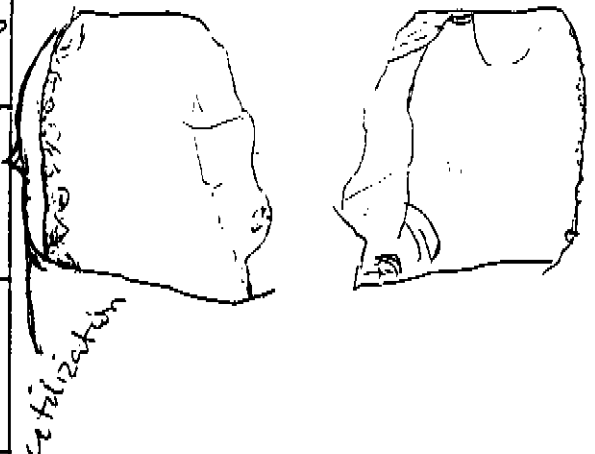


# FLAKED/BATTERED/GROUNDSTONE TOOL DATA FORM

Site No. MA1-1015-2 Provenience: Surface Initials, Date UMP 6/22/93

Provenience/Site Map Reference: <i>South of feature 7</i>	
Tool Type: <i>Crude bifacial fragment</i>	
Material Type: <i>gray quartzite</i>	
Use/Wear: <i>none noted</i>	
Drawing: Show scale if not 1:1 => (Use back of form if too big)	

Scale 1:1

Provenience/Site Map Reference: <i>associated with feature 6</i>	
Tool Type: <i>Unifacial flake</i>	
Material Type: <i>gray/white chert</i>	
Use/Wear: <i>utilization scars along one edge; unifacial wear</i>	
Drawing: Show scale if not 1:1 => (Use back of form if too big)	

utilization

MAI 1015-2

one unshaped groundstone, unifacial  
brownware shards IIII IIII  
feature 1

unifacial ~~sh~~ shaped groundstone fragment  
feature 1

fragments:

shaped	ground stone, unifacial	- IIII
shaped	ground stone, circular	- I
shaped	ground stone, bifacial	- II

irrigation ditch related to test site

bone fragments at rock puteros/ feature - DAT II  
(primarily long bones)

Features

MAI-1015-8

Feature 1: a small rock alignment consisting of  $\approx 5$  stones in a  $1m \times 1m$  area

Feature 2: a small charcoal stain in the middle of road 3571. Feature is  $1m \times 1m$ , mainly due to associated ash + charcoal being scattered by vehicle traffic.

Feature 3 - a large, patchy, irregularly shaped area of charcoal/ash staining in road 3571. Feature is  $\approx 8m N/S \times 5m E/W$ . Some scattering of material by vehicle traffic.

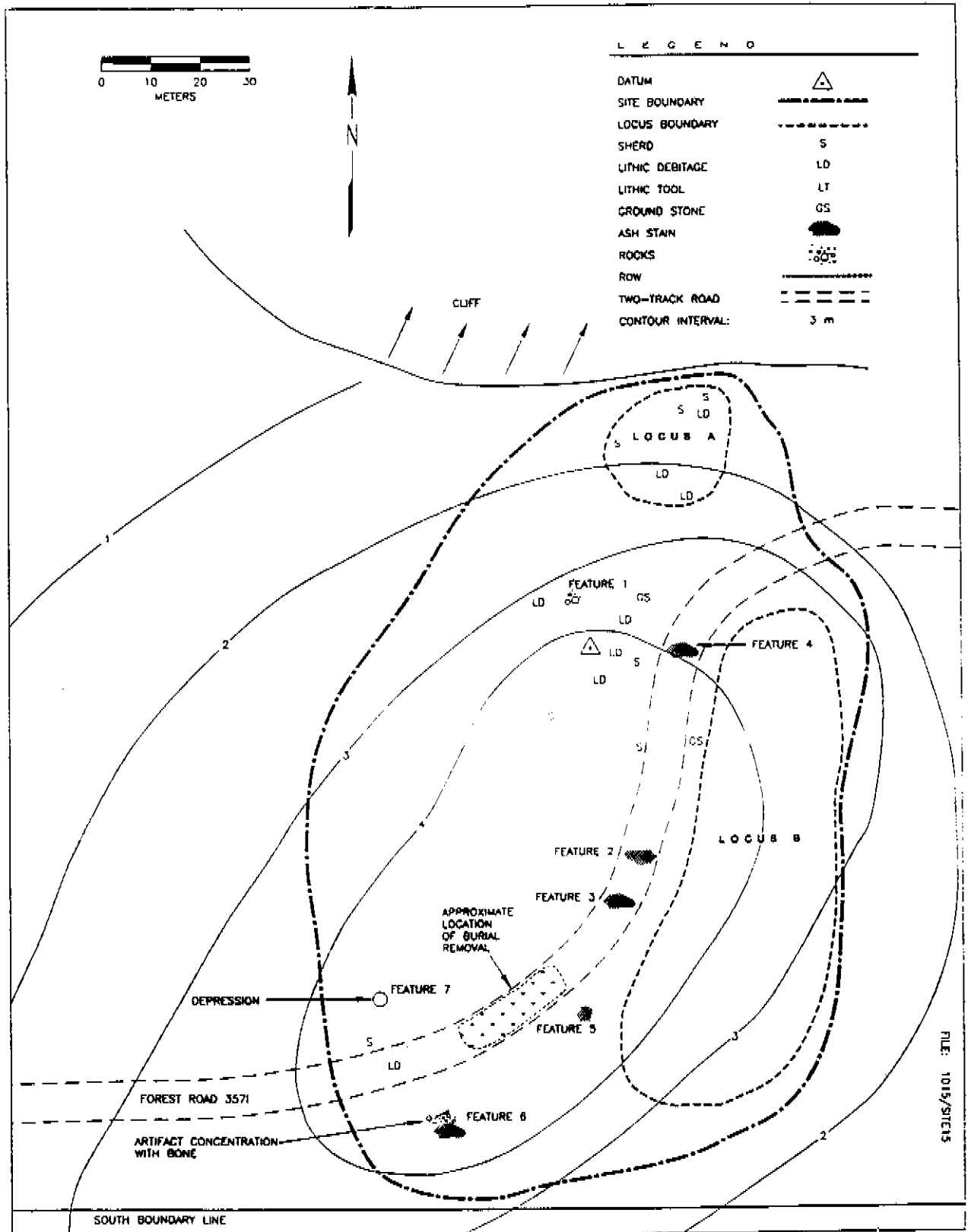
Feature 4: Discontinuous, irregularly shaped patches of charcoal/ash in road 3571. Feature is  $\approx 5m N/S \times 4m E/W$ . Some scattering of material by vehicle traffic.

Feature 5 - a large charcoal/ash scatter - an ephemeral drainage (adjacent to road 3571), in close proximity to Feature 3. Feature is  $\approx 20m E/W \times 15m N/S$ . Associated artifacts include grayware, brownware and orangeware as well as chert and chalcedony non-cortical lithics.

Feature 6 - a small area of ash-stained soils with a high concentration of lithics and ceramics. Feature is  $\approx 5m \times 5m$ . A small  $1m \times 1m$  area within contains some burned sandstone and associated unfired human (?) bone.

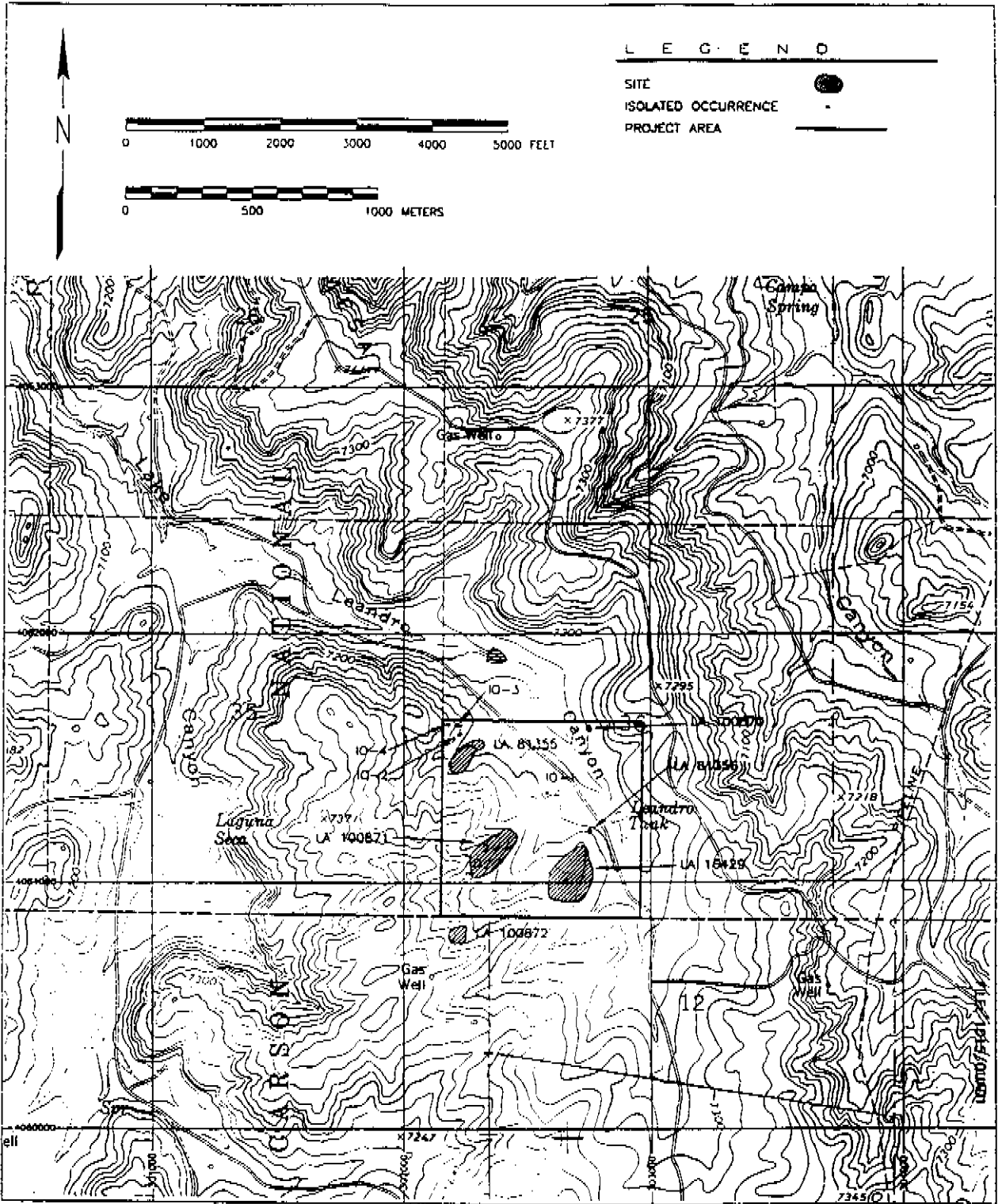
Artifacts include grayware, brownware, black + white ceramics and obsidian, chalcedony and chert non-cortical lithics.

Feature 7 - a pit house depression ~ 9' in diameter. A few fragments of FCR and a quartzite knife were associated with it. The east edge of the pit house was removed during construction of road 3571.



Site Plan for Site LA 16429.  
AR 03-02-78





USGS Map Showing Location of Inventoried Area and Cultural Resources.  
 Taken from Leandro Canyon, New Mexico Quadrangle (1963, photorevised 1982), 7.5' Series (1:24,000 Scale). UTM Zone 13.

- AR # 03-02-644 = LA 100870
- 03-02-78 = LA 16429
- 03-02-645 = LA 100871
- 03-02-376 = LA 81355
- 03-02-646 = LA 100872

ARCHEOLOGICAL AND  
HISTORICAL SITE INVENTORY  
(Ref: FSM 2361)  
(Instructions: Cultural Resources Coding Guide)

160 ACRES at Gasbuggy Gap Stimulus  
FORM COMPLETED BY: Site (JIT Co),  
WJ Proque, GE Hawkins, LH Bembrey  
Ganderson

LEGAL:

N 1/2 SW 1/4 SW 1/4

TOWNSHIP				N/S		RANGE			E/W		SECTION	
T	2	9			N	R	0	4		W	3	6
2	3	4		5	6	7	8	9	10	11	12	13

Locational and CRM Information (Card #1)

1

Forest Carson

0 2  
14 15

District Jicarilla

0 3  
16 17

State New Mexico

3 5  
18 19

County Rio Arriba

0 3 9  
20 21 22

Universal Transverse  
Mercator Location

ZONE		NORTHING		EASTING		
1	3	4	0	1	1	5
23	24	25	26	27	28	29
		6	1	3	0	2
				32	33	34
						3
						4
						5
						35
						36
						37

USFS  
Site Number

6 4 5  
38 39 40 41 42

Other names and/or numbers: MAI 1016-3  
LA 100871

RIM Number (Class 1 Sites):

43 44 45 46 47 48 49

Site Evaluation (FSM 2361.1) By  
Professional Cultural Resource  
Specialist Only.

Map/Aerial <sup>50</sup> Photo:

Site Condition F Percent of Disturbance 30

51 52 53 54

Leandro Canyon, 7.5'

Site File Check Y Collection Made 00 Collection Type N Site Marked on Ground C Hours Expended on Site 8

55 56 57 58 59 61

Cultural Resources Report Number:

Date Site Inventoried:

Recorded By:

YEAR				FOREST		NUMBER			MONTH		DAY		YEAR					
1	9	9	3	0	2	0	6	4	0	6	2	5	1	9	9	3	9	8
62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

Environmental and Site Descriptive Information (Card #2)

2

Vegetation of Site Area:

Soils:

Reg. Fm.	Series	Association	Great Group	Subgroup	T E S
2 2	1 2	0 0 6			
2 3	4 5	6 7 8	9 10 11 12 13	14 15 16 17	18 19 20

LANDFORM  
OF AREA

ON SITE  
TOPOGRAPHY

ASPECT  
OF SITE

AVERAGE SLOPE  
(IN DEGREES)

ELEVATION  
(IN FEET)

R D	- - - +	M A	0 5	7 3 0 0
21 22	23 24 25 26	27 28	29 30	31 32 33 34 35

Nearest Water: TYPE WA DIRECTION N DISTANCE (IN KM) 0 0 4

36 37 38 39 40 41 42 43

Nearest Agricultural Land: TYPE VF DIRECTION E DISTANCE (IN KM) 1 0 0

44 45 46 47 48 49 50 51

CONTINUED

Site Description: CLASS  USE  TYPE

Site Size: CORE AREA    DISPERSED AREA      IN SQUARE METERS

Dimensions: Length 250 m. NE/SW Width 160 m. E/W  
Height \_\_\_\_\_ m. Depth \_\_\_\_\_ m.

ARTIFACTS OBSERVED: Flaked Stone  Ground Stone  Ceramics

Bone  Shell  Other Prehist.  Hist. Ceramics

Glass  Cans  Other Metal  Other Historic  Construction Material(s)

Site Specific Information (Card #3)

Range of Site Occupation in Years B.P. (1950)      to

Date Based On:  ceramics

FEATURES: Subsurface Rooms    Surface Rooms

Non-room Walls  Partial Shelters  Middens   Hearth

Storage Cist.   Roasting Pit   Bounded, Non-Roofed Area  Modified Cave

Large Depression  Water/Soil Control   Mound, Non-Midden

Bedrock Grinding  Quarry/Mine  Buildings    Rock Art

Miscellaneous Features

ARTIFACTS/MATERIAL COLLECTED: Flaked Stone  Ground Stone

Ceramics  Bone  Shell  Other Prehist.  Hist. Ceramics

Glass  Cans  Other Metal  Other Historic  Soil Sample

Pollen  Floatation  Charcoal  Veg. Samples

Multi Components:

CULTURAL CLASSIFICATION:

Completed by WJ Poague, GE Hawkins Date 6/23/1993

Additional remarks, observations or comments. The listed categories must be addressed when completing this form. The back of this page may also be used.

## 1) Ceramics

200+ sherds include grayware brownware black on white. Jars, bowls, and unidentified sherds observed. Artifact assemblage consists of predominantly sherds. Concentrated in locus A, B, and C. Scattered moderately across rest of site.

## 2) Lithics

100+ lithics. Chipped stone includes cortical + non-cortical flakes. No formal tools noted. Material types include obsidian, chalcedony, and quartzite. Ground stone consists of sandstone shaped and whetted pieces. Approx 26-50 identified.

## 3) Architecture

No structures observed. Unshaped sandstone cobbles litter the site may suggest possible building material.

## 4) Features

No features identified. Three artifact concentration loci; A, B, C were identified.

## 5) Site Condition

Site is eroded; especially on the southeast portion of the site. Erosion is apparent as though some of the loci A, B, C have been partially cleared. Erosion has adversely affected the site. Erosion will continue to impact the site.

## 6) General Artifacts

200+ sherds 100+ lithics (chipped stone and ground stone) scattered across the site. 3 artifact concentrations locus A, B, and C identified. (See map)

## 7) Settlement Characteristics

No habitations or structures identified. However due to density and diversity of artifacts it appears that the site was occupied over an extensive period. Structural remains may exist subsurface or in the area.

## 8) Research Potential of Site

Due to the density and diversity of the site assemblage this site is considered to contain additional information, and is therefore considered eligible to the NRHP.

Photographs taken yes (site overviews) (CABW) Located where Mariah Associates  
Albuquerque

[ see opposite page (back.) for narrative/notes ]

MAI 1015-3 (LA 100871, FS # AR 03-02-345)

Brief Narrative (see report for full description)

MAI 1015-3 consists of a moderate artifact scatter with 3 concentrated artifact loci. The site is situated on the top and SE slope of a ridge which is bounded by drainages. An area running through the site has been mechanically cleared, exposing artifacts and eroding the site. Locus A has been severely eroded by this clearing and by cattle grazing, but still contains potential for subsurface deposits.

Artifacts are described on the reverse side. The assemblage is dispersed across the ridge top and SE slope. One handle fragment, one mend-hole sherd and one cord-impressed sherd identified. No formal lithic tools noted.

Site integrity appears to be fairly good with an excellent potential for information and subsurface deposits. The site appears to represent an early Anasazi site with fairly substantial ~~substantial~~ cultural deposits.

#### LOC 1 NOTES

1015-3

##### Locus A

approximately 40 x 60 m area consisting ~90% of ceramics w/ some lithics. Grayware, brownware and black-on-white observed. 100+ sherds. Slight ephemeral drainage exposed sherds. The area heavily eroded due to clearing disturbance. Potential for subsurface deposits.

##### Locus B

approximately 20 x 15 m concentration of 80% ceramics w/ some lithics. 100+ sherds and ~20 lithics. Grayware, brownware, black on white sherds observed. Lithic types include chalcedony, obsidian, and quartzite. Dark soils indicate possible subsurface deposits.

##### Locus C

approximately 10 x 10 m area consisting of 80% ceramics with lithics and ground stone. Sherds include brownware, cord-impressed grayware, grayware and black-on-white. Potential for buried deposits.

AAI-1015-3

Locus A: Area is approximately 45m E/W by 60m N/S. Locus consists primarily (~90%) ceramics with some lithics. Ceramics include grayware, black on white brownware. There are several hundred shards in this locus. The majority of visible shards occur in an ephemeral N/S drainage which runs the length of the locus. A tractor disturbance south ~ 10-15m wide bisects the locus running E/W. The area is heavily eroded due to tractor disturbance. Some bedding erosion occurs in the locus, but may be naturally eroded. There is potential for subsurface deposits at this locus. Vegetation includes grasses, ponderosa pine, sagebrush, juniper. Lithics include white chert, quartz, & various chert, quartz.

Locus B - Locus is approximately 20m N/S by 15m E/W locus contains primarily (80%) ceramics with some lithics. There are approximately 100+ shards ~ a 20 lithics in this locus. Ceramics include grayware, brownware & black on white. Lithics include <sup>white</sup> chert, quartz & <sup>obsidian</sup> greenish quartz. Locus lies primarily N of tractor disturbance in a fairly open area containing primarily grasses & shrubs. Some erosion on locus. Dark soils indicate possible subsurface deposit.

condensed leaf grasses

black & white leaf

MAI-1015-3

Locus C is approximately 10m x 10m. It contains primarily (80%) condensed leaf grasses & grasses.

There are ~ 50 shrubs including hawthorn, condensed leaf grasses, grasses & brambles. Litchies are white today.

There are a few grasses scattered. A large tree is in a small opening in a wooded area. Vegetation is primarily pasture grass at some stage, small oaks & grasses. There is a slight chance of subsoil deposits.

# CERAMIC AND LITHIC DEBITAGE DATA FORM

Site No. MAI 1015-3 Provenience: Surface Initials: LHS (I, Corp)

\* DOES NOT INCLUDE LOCI A+B COUNTS  
**SHERDS BY TYPE**

6/23/93

TYPE	BOWL	JAR	INDET/OTHE R
gray ware			
brown ware		1	
red ware			1
black on white			
cord-impressed			1

handle - 1  
 rim - (|||||)  
 rim - 1  
 rim - 1 (w/ mend)



## LITHIC DEBITAGE Provenience: Surface

Material Type	Core Red. Flakes		Tool Prod. Flakes		Ang. Debris	Core
	Cortical	Noncort.	Biface	Retouch		
Obsidian			1			
Quartzite						
Chalcedony/Chert					1	

grayware handle

black on white (?)  
 rim sherd  
 with mend hole  
 exterior





MAI 1015-3

6/23/93

PHS (IT Corp.)

groundstone fragment, shaped, bifacial - 1111

groundstone fragment, shaped, unifacial - 1

Loam A rough count

grayware - 100

rim - 5-6

brownware - 50

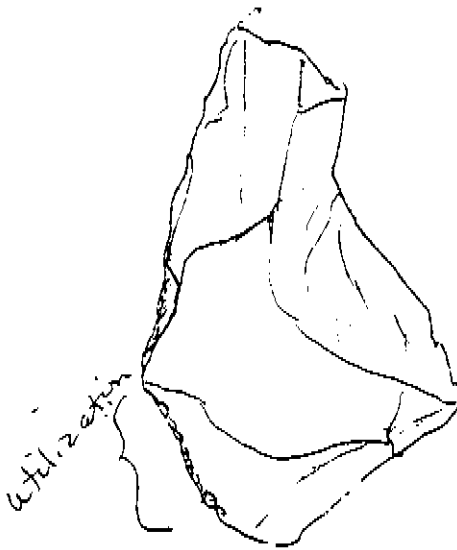
black-on-white - 5

chert - a non-critical flake

groundstone - bifacial shaped - 3-4

# FLAKED/BATTERED/GROUNDSTONE TOOL DATA FORM


Site No. MAT 1015-3 Provenience: Surface Initials: LHB (JF Cope) Date: 6/23/93

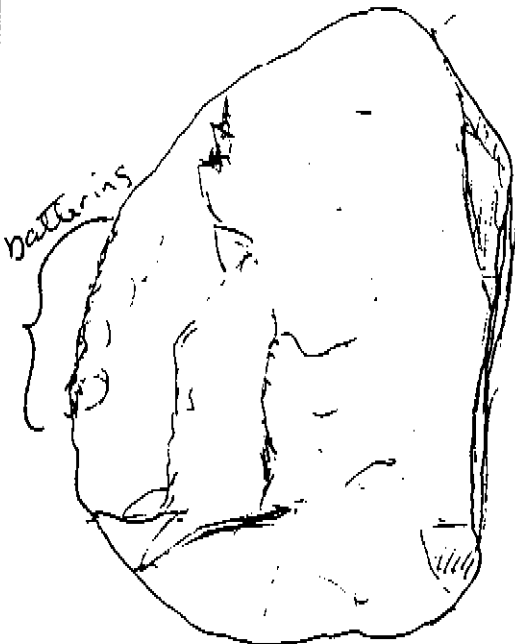
Provenience/Site Map Reference: <p style="text-align: center;"><u>Locus C</u></p>	
Tool Type: <p style="text-align: center;"><u>unifacial scraper/ chopper</u></p>	
Material Type: <p style="text-align: center;"><u>white chalcedony</u></p>	
Use/Wear: <p style="text-align: center;"><u>usewear on ledge (unifacial)</u></p>	
Drawing: Show scale if not 1:1 => (Use back of form if too big)	
SCALE 1:1	

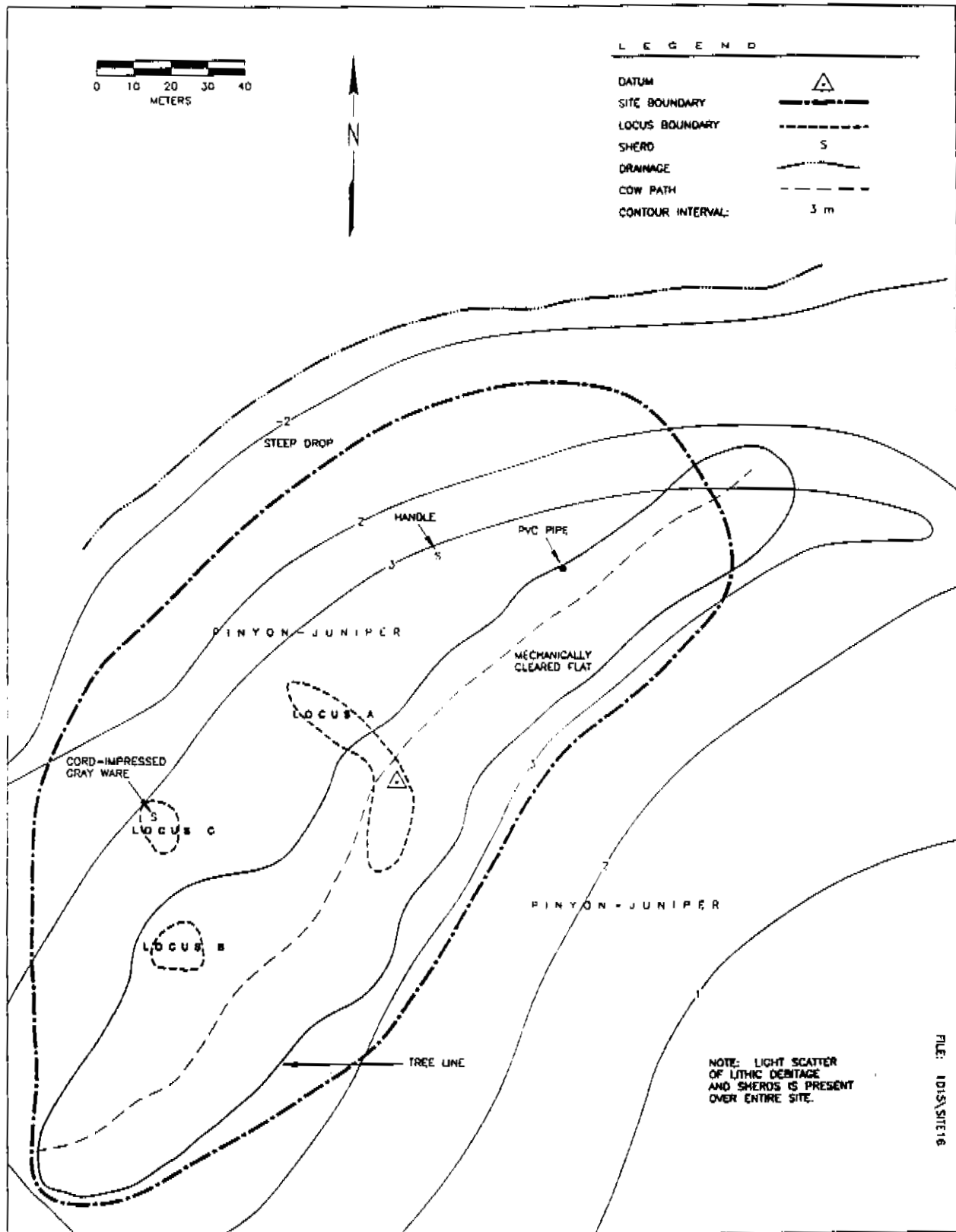
Provenience/Site Map Reference:	
Tool Type:	
Material Type:	
Use/Wear:	
Drawing: Show scale if not 1:1 => (Use back of form if too big)	

# FLAKED/BATTERED/GROUNDSTONE TOOL DATA FORM

Site No. MAI 1015-3 Provenience: Surface Initials, Date Photo (T. Carr) 6/23/93

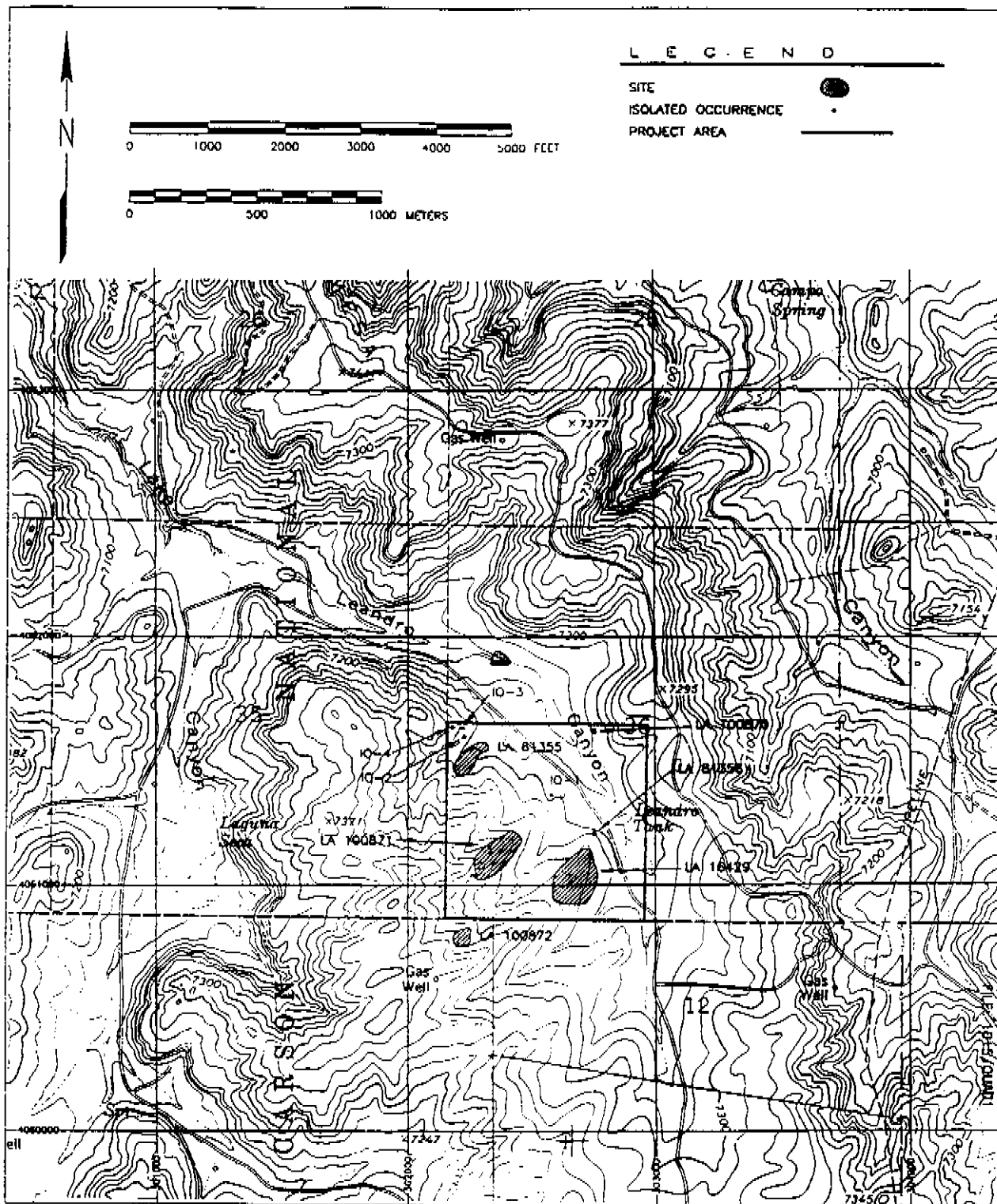
Provenience/Site Map Reference:	
Tool Type: <u>ctude biface fragment</u>	
Material Type: <u>Obsidian (black)</u>	
Use/Wear: <u>none observed</u>	
Drawing: Show scale if not 1:1 => (Use back of form if too big)	

Provenience/Site Map Reference: <u>Locus C</u>	
Tool Type: <u>Chopper</u>	
Material Type: <u>gray quartzite</u>	
Use/Wear: <u>battering on 1 edge</u>	
Drawing: Show scale if not 1:1 => (Use back of form if too big)	



Site Plan for Site LA 100871.

AR 03-02-645



USGS Map Showing Location of Inventoried Area and Cultural Resources.  
 Taken from Leandro Canyon, New Mexico Quadrangle (1963, photorevised  
 1982), 7.5' Series (1:24,000 Scale). UTM Zone 13.

AR# SERVICE # / LA #

- AR# 03-02-644 = LA 100870
- 03-02-78 = LA 16429
- 03-02-645 = LA 100871
- 03-02-336 = LA 81355
- 03-02-646 = LA 100872

Arch Associates in 1993. ARCHEOLOGICAL AND  
 THE SITE WAS REMAPPED HISTORICAL SITE INVENTORY  
 AND DESCRIBED. ONLY CHANGES (Ref: FSM 2361)  
 FORM ARE INDICATED (Instructions: Cultural Resources Coding Guide)  
 NOW IN REP FOR.

000 ACRES at Gasbuggy Gas Stimula  
 FORM COMPLETED BY: Site CITO  
 WJ Poague, G.E. Hartman

LEGAL: \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4

TOWNSHIP				N/S		RANGE			E/W		SECTION	
T						R						
2	3	4		5	6	7	8	9	10	11	12	13

Locational and CRM Information (Card #1)

1

Forest \_\_\_\_\_ District \_\_\_\_\_

State \_\_\_\_\_ County \_\_\_\_\_

Universal Transverse Mercator Location

ZONE				NORTHING				EASTING						
1	3	4	0	6	1	5	4	0	3	0	2	2	7	0
21	24	25	26	27	28	29	30	31	32	33	34	35	36	37

USFS Site Number \_\_\_\_\_ Other names and/or numbers: MAI 1015-4  
LA 81355

RIM Number (Class 1 Sites):

43	44	45	46	47	48	49

Site Evaluation (FSM 2361.1) By \_\_\_\_\_  
 Professional Cultural Resource Specialist Only. Map/Aerial  Photo:

Site Condition  Percent of Disturbance \_\_\_\_\_  
 Site File Check  Collection Made \_\_\_\_\_  
 Collection Type  Site Marked on Ground  Hours Expended on Site \_\_\_\_\_

Cultural Resources Report Number:

YEAR				FOREST		NUMBER		
1	7	7	3	0	2	0	0	4
62	63	64	65	66	67	68	69	70

Date Site Inventoried:

MONTH		DAY		YEAR		
0	6	0	3	1	9	9
71	72	73	74	75	76	77

Recorded By:

9	8
79	80

Environmental and Site Descriptive Information (Card #2)

2

Vegetation of Site Area:

Reg. Fm.		Series		Association		
2	3	4	5	6	7	8

Soils:

Great Group					Subgroup			T E S			
9	10	11	12	13	14	15	16	17	18	19	20

LANDFORM OF AREA

21	22

ON SITE TOPOGRAPHY

N E S W			
23	24	25	26

ASPECT OF SITE

27	28

AVERAGE SLOPE (IN DEGREES)

29	30

ELEVATION (IN FEET)

31	32	33	34	35

Nearest Water: TYPE \_\_\_\_\_ DIRECTION \_\_\_\_\_  
 DISTANCE (IN KM) \_\_\_\_\_

Nearest Agricultural Land: TYPE \_\_\_\_\_ DIRECTION \_\_\_\_\_  
 DISTANCE (IN KM) \_\_\_\_\_

DIRECTION \_\_\_\_\_ DISTANCE (IN KM) \_\_\_\_\_

DIRECTION \_\_\_\_\_ DISTANCE (IN KM) \_\_\_\_\_

Site Description: CLASS  52 USE  53 TYPE  54  55  56

Site Size: CORE AREA  57  58  59  60  61  62  63  64  65  66  67  68 DISPERSED AREA  63  64  65  66  67  68 IN SQUARE METERS

Dimensions: Length 160 m. Width 50 m.  
 Height \_\_\_\_\_ m. Depth \_\_\_\_\_ m.

ARTIFACTS OBSERVED: Flaked Stone  69 Ground Stone  70 Ceramics  71

Bone  72 Shell  73 Other Prehist.  74 Hist. Ceramics  75

Glass  76 Cans  77 Other Metal  78 Other Historic  79 Construction Material(s)  80

Site Specific Information (Card #3)  1

Range of Site Occupation in Years B.P. (1950)  2  3  4  5  6 to  7  8  9  10  11

Date Based On:  12 C ceramics

FEATURES: Subsurface Rooms  13  14  15 Surface Rooms  16  17  18 (one possible)

Non-room Walls  19 Partial Shelters  20 Middens  21  22 Hearth  23  24

Storage Cist.  25  26 Roasting Pit  27  28 Bounded, Non-Roofed Area  29 Modified Cave  30  31  32

Large Depression  33 Water/Soil Control  34  35 Mound, Non-Midden  36

Bedrock Grinding  37 Quarry/Mine  38 Buildings  39  40  41 Rock Art  42

Miscellaneous Features  43  44

ARTIFACTS/MATERIAL COLLECTED: Flaked Stone  45 Ground Stone  46

Ceramics  47 Bone  48 Shell  49 Other Prehist.  50 Hist. Ceramics  51

Glass  52 Cans  53 Other Metal  54 Other Historic  55 Soil Sample  56

Pollen  57 Floatation  58 Charcoal  59 Veg. Samples  60

Multi Components:  61

CULTURAL CLASSIFICATION:  62  63  64  65  66  67  68  69  70  71  72  73  74  75  76  77  78  79  80

A N A 7

# ARCHEOLOGICAL AND HISTORICAL SITE INVENTORY

Instructions in "Cultural Resources Automated Information System"

PROJECT NAME:

(Ref: FSM 2361.7)

4

1990 PARA UPDATE

FORM COMPLETED BY:

D. LETTERMAN

TOWNSHIP	N/S	RANGE	EW	SECTION
T 29	N	R 04	W	36
2 3 4	5 6	7 8 9	10 11	12 13

Locational and CRM Information (Card #1)

1

NW 1/4 NW 1/4 SW 1/4

Forest CARSON

02
14 15

District Jicarilla

03
16 17

State NEW MEXICO

35
18 19

County RIO ARriba

039
20 21 22

Universal Transverse Mercator Location

ZONE	NORTHING	EASTING
13 - 40	61	560 - 302
23 24 25 26	27 28	29 30 31 32 33 34

3000

USFS Site Number

386
38 39 40 41 42

Other names and/or numbers: SITE E

MAI 1015-4  
LA 81355

initial:

Site Evaluation (FSM 2361.1) By P  
Professional Cultural Resource Specialist Only.

RIM Number (Class 1 Sites):

43 44 45 46 47 48 49
----------------------

Site Condition A Percent of Disturbance 10

51	52 53 54
----	----------

USGS: DEANADA CANYON

Site File Check Y Collection Made 00 Collection Type N Site Marked on Ground A Hours Expended on Site 25

55	56 57	58	59	61
----	-------	----	----	----

Cultural Resources Report Number:

YEAR	FOREST	NUMBER
1990	02	046
62 63 64 65	66 67	68 69 70

Date Site Inventoried: Recorded By

MONTH	DAY	YEAR	RECORDED BY
04	17	1990	97
71 72	73 74	75 76 77 78	79 80

Environmental and Site Descriptive Information (Card #2)

2

Vegetation of Site Area: Soils: Yes

Reg. Fm.	Series	Association	Great-Group	Subgroup	Depth in cm
22	12	006	ABDEU	AA	721
2 3	4 5	6 7 8	9 10 11 12 13	14 15 16 17	18 19 20

LANDFORM OF AREA: ON SITE TOPOGRAPHY: ASPECT OF SITE: AVERAGE SLOPE (IN DEGREES): ELEVATION (IN FEET):

HL	0- - +	E	10	07160
21 22	23 24 25 26	27 28	29 30	31 32 33 34 35

Nearest Water: TYPE WA DIRECTION E DISTANCE (IN KM): 10

36 37	38 39	40 41	42 43
-------	-------	-------	-------

Nearest Agricultural Land: TYPE CB DIRECTION N DISTANCE (IN KM): 30

44 45	46 47	48 49	50 51
-------	-------	-------	-------



Environmental and Site Descriptive Information (Card #2) - Continued

Site Description: CLASS  USE  TYPE

Site Size: CORE AREA      DISPERSED AREA     IN SQUARE METERS

Dimensions: Length 37 m. Width 13.5 m.  
Height 2.2 m. Depth 2.0 m.

ARTIFACTS OBSERVED: Flaked Stone  Ground Stone  Ceramics

Bone  Shell  Other Prehist.  Hist. Ceramics   
Glass  Cars  Other Metal  Other Historic  Construction Material(s)

Site Specific Information (Card #3)

Range of Site Occupation in Years B.P. (1950)     to

Date Based On:  Ceramics

FEATURES: Subsurface Rooms    Surface Rooms

Non-room Walls  Partial Shelters  Middens   Hearth

Storage Cst.   Roasting Pit   Bounded, Non-Roofed Area  Modified Cave

Large Depression  Water/Soil Control   Mound, Non-Midden

Bedrock Grinding  Quarry/Mine  Buildings    Rock Art

Miscellaneous Features

ARTIFACTS/MATERIAL COLLECTED: Flaked Stone  Ground Stone

Ceramics  Bone  Shell  Other Prehist.  Hist. Ceramics   
Glass  Cars  Other Metal  Other Historic  Soil Sample   
Pollen  Floatation  Charcoal  Veg. Samples   
Multi Components:

CULTURAL CLASSIFICATION:

Completed by WS Paquin Date 6/23/93

Additional remarks, observations or comments. The listed categories must be addressed when completing this form. The back of this page may also be used.

## 1) Ceramics

Grayware, brownware sherds identified

## 2) Lithics

chipped stone includes chalcedony, obsidian, chert flakes. Ground stone includes one vesicular basalt metate fragment and one possibly shaped sandstone mano. Redrock mortar and hearth (w/ks not relocated). One obsidian tool fragment identified.

## 3) Architecture

none identified

## 4) Features

A 10 x 5 m area on top of small sandstone cliff (6-8 foot high) consists of dark soil and an artifact concentration. Artifacts include c. 10 brownware and 400+ ware sherds and obsidian, quartzite and white chert flakes. ~~There is also a small area of dark soil on the cliff face.~~

## 5) Site Condition

excavated.

## 6) General Artifactual

Excavation revealed a concentration of chipped stone artifacts and a small concentration of ground stone artifacts.

## 7) Settlement Characteristics

None identified.

## 8) Research Potential of Site

Density and diversity of artifacts suggests additional information may be collected. Potential for subsurface deposits exists.

Photographs taken

yes (overhead)

C/BW

Located where

Narival Associates,  
Albuquerque

AR-03-02-386

Completed by: Lorri Ketterman

Date: 4/17/90

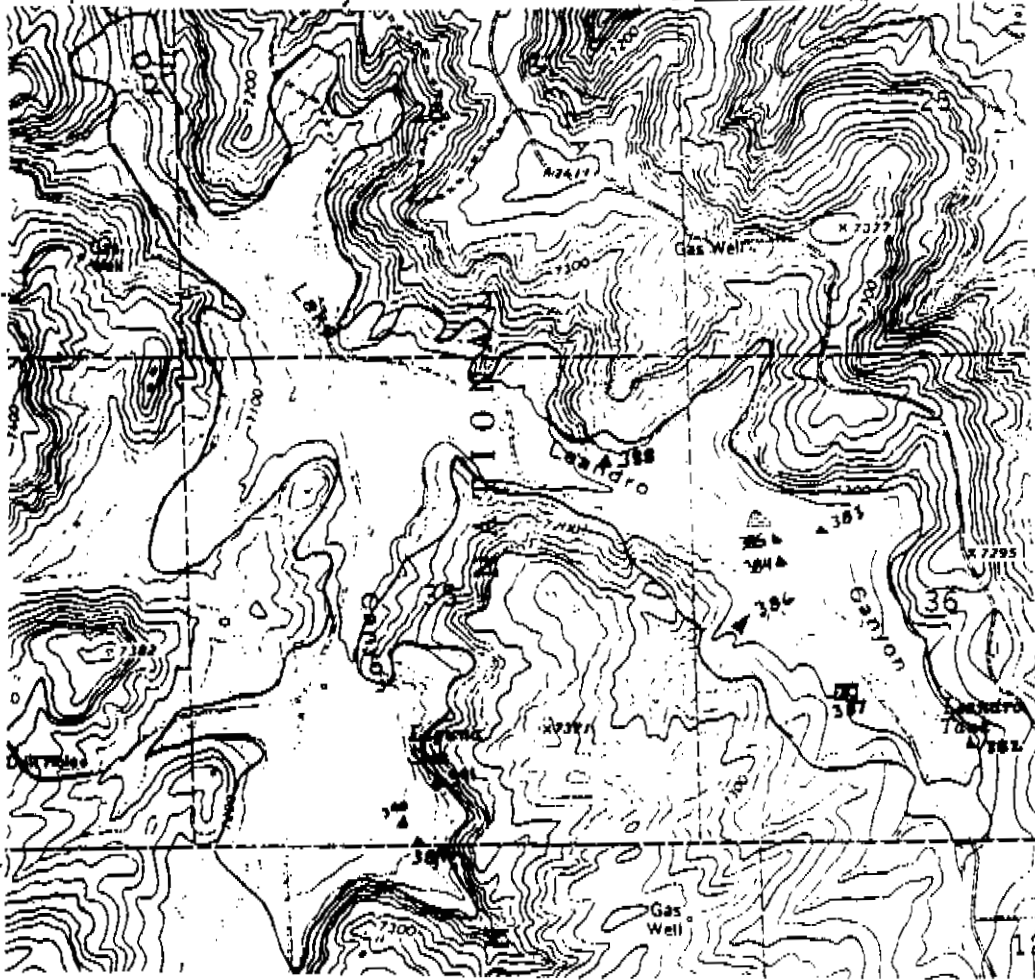
Additional remarks, observations or comments. The listed categories must be addressed when completing this form. The back of this page may also be used.

- 1) Ceramics: Mostly greyware, black-on-white with a trace of what appears to be white on red.
  
- 2) Lithics: Chalcedony, fine-grained igneous rock, obsidian, trace of jasper. *One possible sandstone mortar.*
  
- 3) Architecture: None noted
  
- 4) Features: one hearth, possibly 2
  
- 5) Site Condition: Slightly eroded, appears to be undisturbed by man, site may be more extensive, but duff hampered view outside of mapped boundaries
  
- 6) General Artifactual: See 1 and 2 above
  
- 7) Settlement Characteristics: Site AR-03-02-03-384 is approximately .40 kilometers and Site AR-03-02-03-385 is approximately .50 kilometers in a northeasterly direction. Site AR-03-02-03-78 is approximately 1 kilometer to the southeast.
  
- 8) Research Potential of Site:

Photographs taken \_\_\_\_\_ C/BW Located \_\_\_\_\_

SKETCH OF SITE SETTING

Section 36 Township 29N  
Range 4W N.M.P.M. Meridian  
Subdivision N1/2; NW1/4; SW1/4



SITE NO. - AR - 03 - 02 - 03-386

Give location with respect to roads and natural landmarks so that this site could be located again. Include key, north arrow, nearby sites, reference points, drainages, etc.

CONTINUATION SPACE:

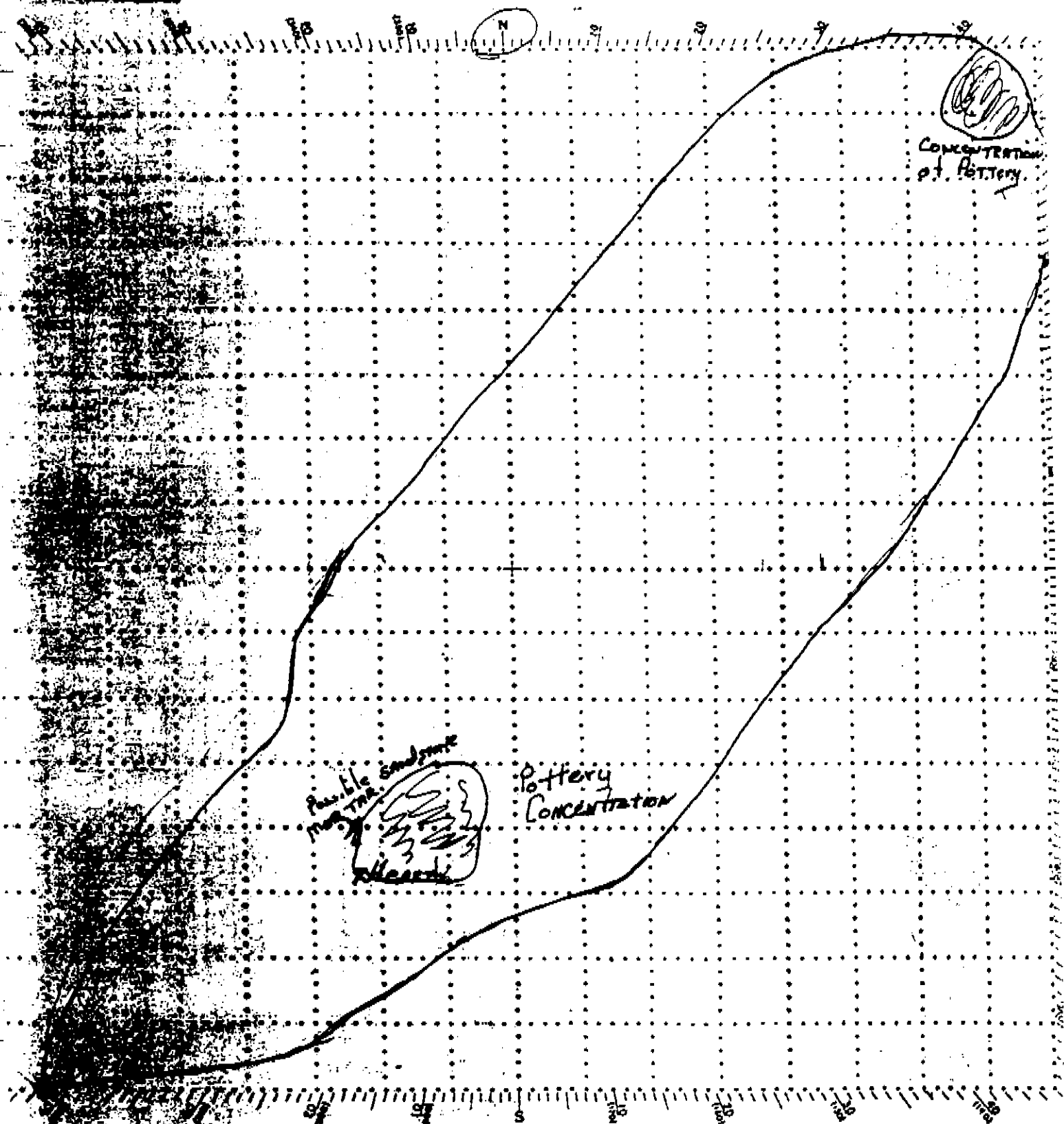
DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
FIELD MAP SHEET

Scale  $\frac{1}{2}'' = 50'$  inches = 1 mile <sup>5.86</sup>

T. 29N R. 4W Sec. 36

Unit \_\_\_\_\_ Mag. Dec. \_\_\_\_\_ Acres \_\_\_\_\_

03-02-03-386



Field work by \_\_\_\_\_ Date \_\_\_\_\_ Platted by \_\_\_\_\_

Remarks \_\_\_\_\_

Approved \_\_\_\_\_, 19\_\_\_\_

MAI-1015-21

Update for FS 386

This site was visited as planned. New map quick descriptions of artifacts.

Site consists of a short/1 line of scatter 50-100 artifacts scatter fairly diffuse except scatter in low of rocks.

Artifacts noted include grayware, redware, chert, obsidian, chert flakes, vesicular basalt, white frag, possible shaped sandstone mano.

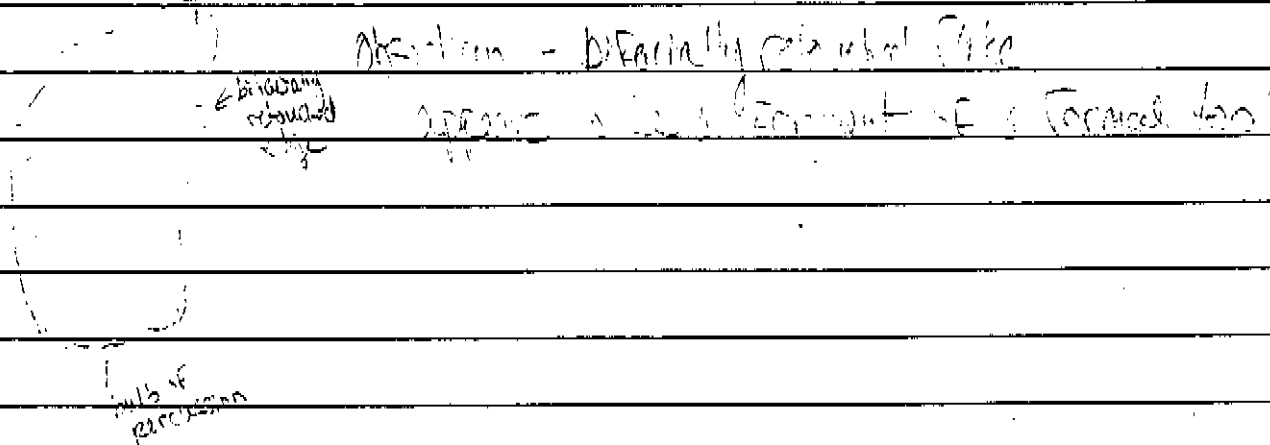
We could not relocate bedrock mortar or hearth.

Site boundaries are greater than previously recorded.

Bedrock was covered in search of mortar and none was observed.

A darker soil was observed in the artifact concentration noted on

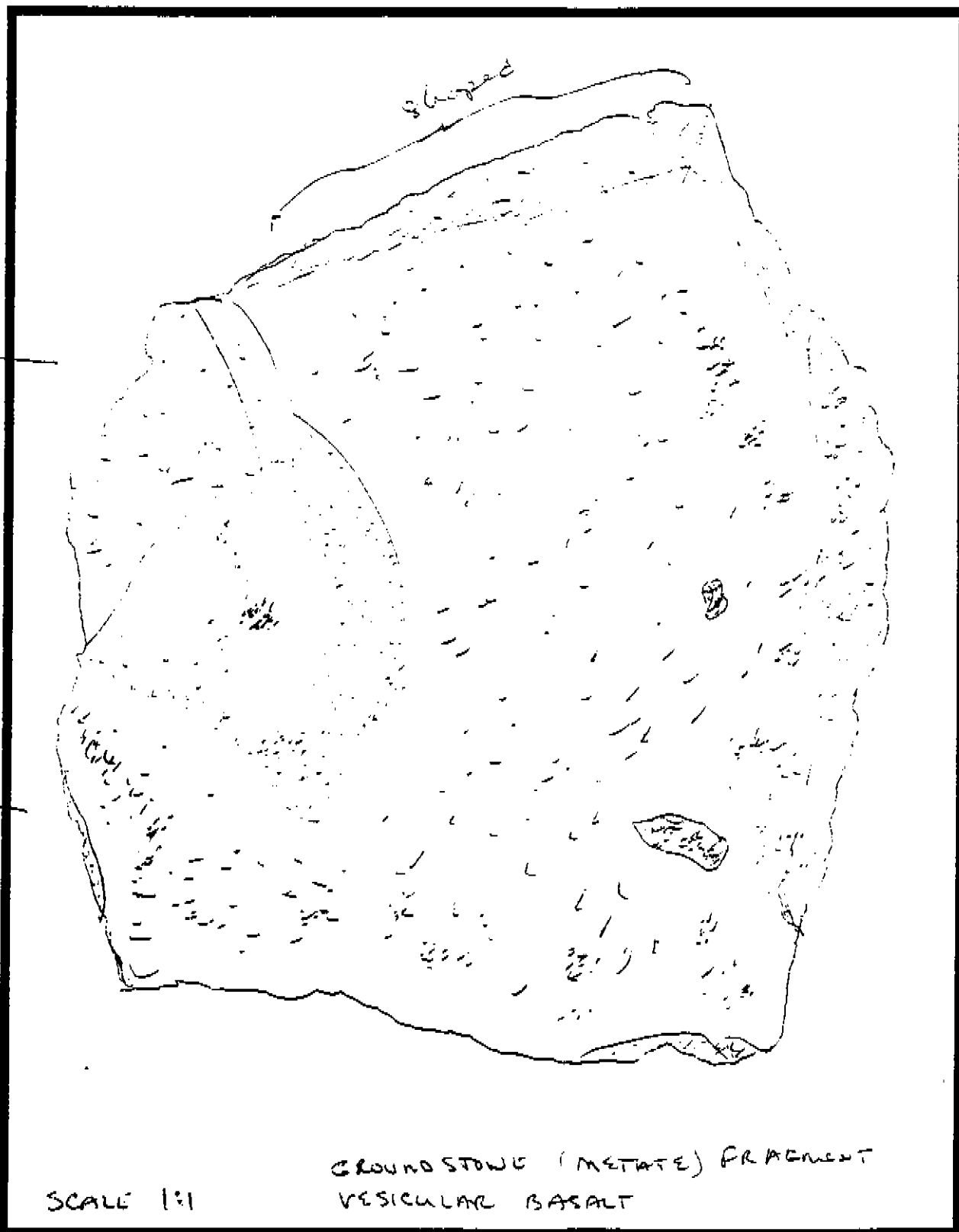
the previous map however it did not have any ECR or distinct burn evidence to identify it as a hearth.



160m x 50m

MAI-1015-4

Heard Area - brownish gray (10), <sup>non-core flakes</sup> obsidian (2), quartzite (3), white chert (4) in  
10 x 5 cm area on top of small sandstone (16 - 8 ft high)



SCALE 1:1

GROUNDSTONE (METATE) FRAGMENT  
VESICULAR BASALT

Figure 6.3 LA 32703 Site Plan Map.

MAY 1015-4

SAB (IT corp)

(previously recorded site)

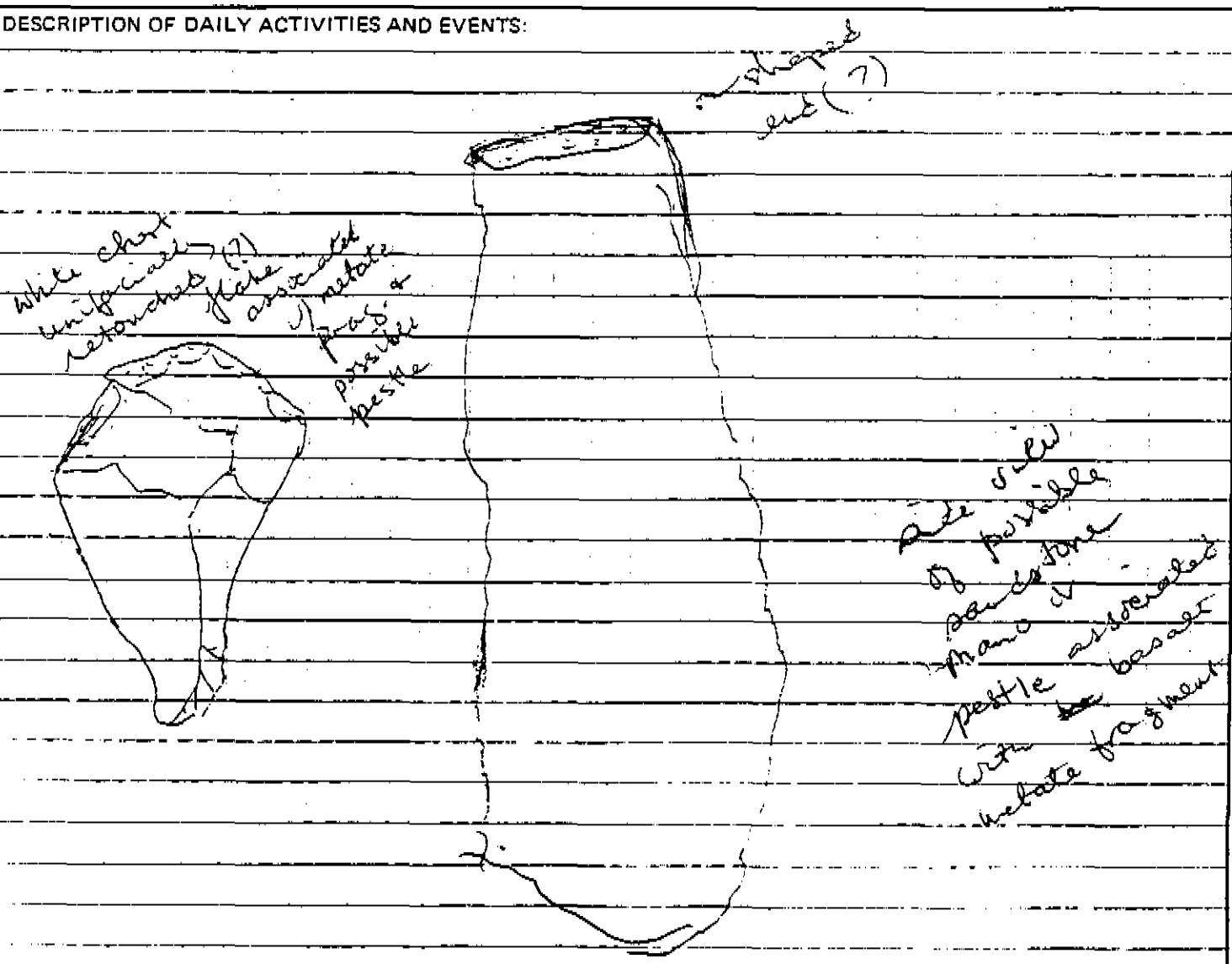


## FIELD ACTIVITY DAILY LOG

PROJECT NAME \_\_\_\_\_ PROJECT NO. \_\_\_\_\_

FIELD ACTIVITY SUBJECT: \_\_\_\_\_

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:



side view of possible pebble in mano with associated pebble fragment

SCALE 1:1

L.H.B. (I.T. Corp)  
MFI 1015-4

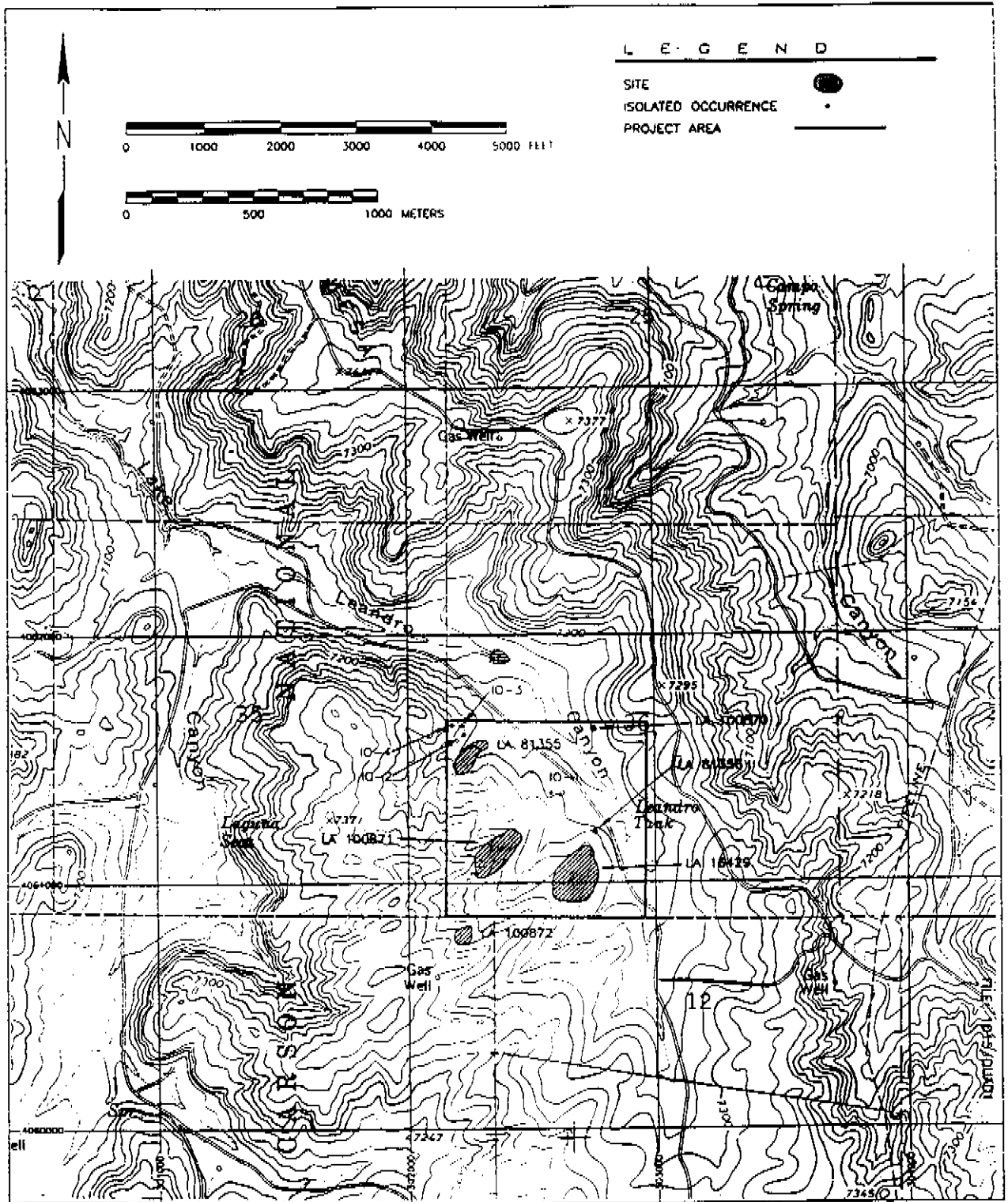
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.
-------------------	--

WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
---------------------	----------------------------

IT PERSONNEL ON SITE: \_\_\_\_\_

SIGNATURE \_\_\_\_\_ DATE: APR 10 1964





USGS Map Showing Location of Inventoried Area and Cultural Resources. Taken from Leandro Canyon, New Mexico Quadrangle (1963, photorevised 1982), 7.5' Series (1:24,000 Scale). UTM Zone 13.

Forest Service # / LA #

- AR# 03-02-644 = LA 100870
- 03-02-78 = LA 16429
- 03-02-645 = LA 100871
- 03-02-386 = LA 81355
- 03-02-646 = LA 100872

ARCHEOLOGICAL AND HISTORICAL SITE INVENTORY

(Ref: FSM 2361)

(Instructions: Cultural Resources Coding Guide)

160 acres at Garbugon, Box Stimula  
FORM COMPLETED BY: Site CRT

WT Poague, GE Hawkins, LH Bant  
Cunds

LEGAL:

E  $\frac{1}{2}$  NE  $\frac{1}{4}$  NE  $\frac{1}{4}$

TOWNSHIP				N/S		RANGE			E/W		SECTION	
T	2	8			N	R	0	4		W	1	1
2	3	4		5	6	7	8	9	10	11	12	13

Locational and CRM Information (Card #1)

1

Forest Carson

0 2  
14 15

District Jicarilla

0 3  
16 17

State New Mexico

3 5  
18 19

County Rio Arriba

0 3 9  
20 21 22

Universal Transverse Mercator Location

ZONE				NORTHING				EASTING						
1	3	4	0	6	0	2	3	0	3	0	2	8	1	0
23	24	25	26	27	28	29	30	31	32	33	34	35	36	37

USFS Site Number

6 4 6  
38 39 40 41 42

Other names and/or numbers: MAI 1015-5  
LA 100872

RIM Number (Class 1 Sites):

43 44 45 46 47 48 49

Site Evaluation (FSM 2361.1) By Professional Cultural Resource Specialist Only.

Map/Aerial <sup>50</sup> Photo:

Site Condition A Percent of Disturbance 0 1 0  
51 52 53 54

Leandro Canyon, 7.5'

Site File Check Y Collection Made 0 0 Collection Type N Site Marked on Ground 0 Hours Expended on Site 5  
55 56 57 58 59 61

Cultural Resources Report Number:

YEAR				FOREST		NUMBER		
1	9	9	3	0	2	0	6	4
62	63	64	65	66	67	68	69	70

Date Site Inventoried:

MONTH	DAY		
0 6	2 3		
71	72	73	74

Recorded By:

YEAR			
1	9	9	3
75	76	77	78

9 8  
79 80

Environmental and Site Descriptive Information (Card #2)

2

Vegetation of Site Area:

Reg. Fm.	Series	Association
2 2	1 2	0 0 6
2 3	4 5	6 7 8

Soils:

Great Group	Subgroup	T E S
9 10 11 12 13	14 15 16 17	18 19 20

LANDFORM OF AREA

H S  
21 22

ON SITE TOPOGRAPHY

N E S W  
- - - +  
23 24 25 26

ASPECT OF SITE

M A  
27 28

AVERAGE SLOPE (IN DEGREES)

0 6  
29 30

ELEVATION (IN FEET)

7 3 2 0  
31 32 33 34 35

Nearest Water: TYPE W A

36 37

DIRECTION S E

38 39

DISTANCE (IN KM)

0 2  
40 41 42 43

Nearest Agricultural Land: TYPE V E

44 45

DIRECTION N E

46 47

DISTANCE (IN KM)

1 0 0  
48 49 50 51

CONTINUED



Completed by WJ Pragne Date 6/23/93

Additional remarks, observations or comments. The listed categories must be addressed when completing this form. The back of this page may also be used.

## 1) Ceramics

100+ ceramics include grayware, plain brown ware, corrugated brownware, cord-impressed grayware, black-on-white.

## 2) Lithics

50-100 pieces of chipped stone including one scraper, cortical and noncortical flakes, and angular debris. Material types include obsidian, chalcedony, chert and quartzite. Ground stone consists of 2-10 pieces/fragments of ground sandstone.

## 3) Architecture

None observed. Sandstone cobbles may represent possible architectural material. One metaite fragment observed.

## 4) Features

One feature observed. Feature 1 is a rock ring with possible-shaped sandstone slabs. The rocks are arranged in a circle. The function and type of feature is not known.

## 5) Site Condition

Site is slightly eroded by water (10%). other-  
wise flat.

## 6) General Artifactual

100's - ceramics, chipped stone, and ground stone moderately scattered.

## 7) Settlement Characteristics

none noted.

## 8) Research Potential of Site

Site appears fairly intact with potential for buried cultural deposits. Additional information can be collected. Site is eligible to NHP.

Photographs taken yes (overviews) (C/BW) located where Mariah Associates,  
Albuquerque

Additional remarks, observations or comments. The listed categories must be addressed when completing this form. The back of this page may also be used.

- 1) Ceramics 100+ fragments include majolica, dark brownware, unusual brownware  
good impressed majolica, black majolica
- 2) Lithics 50-100 lithics include 1 scraper, cortical + non-cortical flakes, shatter  
obsidian, chert, quartzite
- 3) Architecture none observed - possible architectural material - sandstone cobbles  
scattered around
- 4) Features 1 feature - a rock rim with possible shaped sandstone slabs  
arranged in a circle (diffused) - function and type of feature unknown
- 5) Site Condition site is slightly eroded by water - less than 10%  
structure intact
- 6) General Artifacts 1-10 obs. groundstone including a metal fragment
- 7) Settlement Characteristics
- 8) Research Potential of Site site appears to be fairly intact with a good  
potential for subsequent reports. Artifact density and diversity indicate  
a potentially important site. Eligible for NHP. Key site

Photographs taken 1/1/73

(C/BW) Located where Area 109  
Feature A

# CERAMIC AND LITHIC DEBITAGE DATA FORM

Site No. MAI-1015-5 Provenience: Surface Initials, Date: BG, 6/23/93

## SHERDS BY TYPE

TYPE	BOWL	JAR	INDET/OTHE R
Gray ware	1		11 <del>11</del>
Brown ware	1		11 <del>11</del>
Coarsest brown ware			
White ware			
Reddish-brown ware			

## LITHIC DEBITAGE Provenience Surface

Material Type	Core Red. Flakes		Tool Prod. Flakes		Ang. Debris	Core
	Cortical	Noncort.	Biface	Retouch		
Red-brown chert					1	
White chert		1 <del>11</del>				11
Gray quartzite		11				
Basalt		11				
Brown chert		1				
Gray chert		1				
Obsidian		1				
Pink/red chert		1				



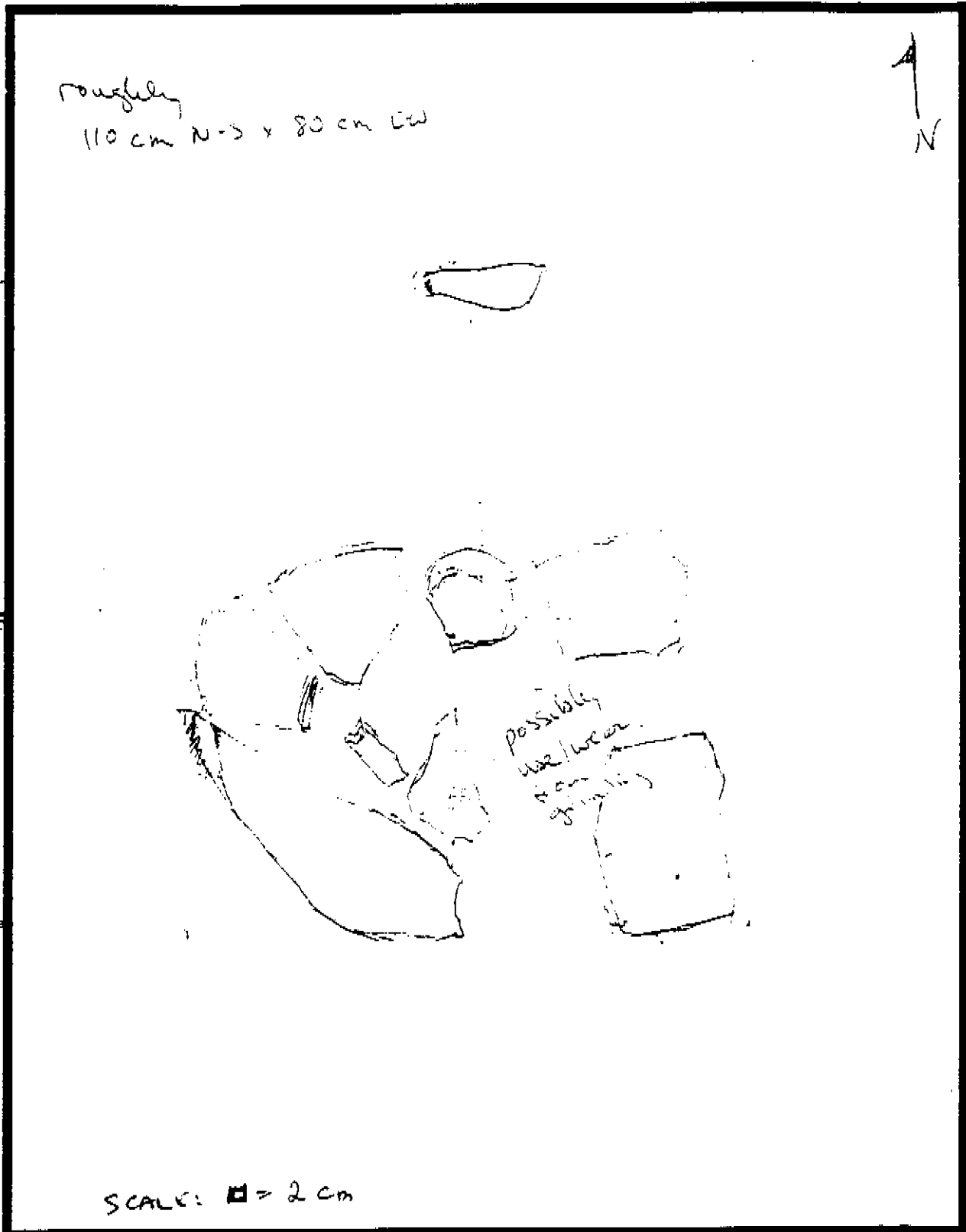


Figure 6.3 LA 32703 Site Plan Map.

MAI 1015-5

UHO (IT Corp)

MAI-105-5

Gray steel thumb nail suspension



Livestock has altered original vegetation

Better product no rush - 2 samples done like OK  
schedule?

draft 3rd & 4th

final - end of month

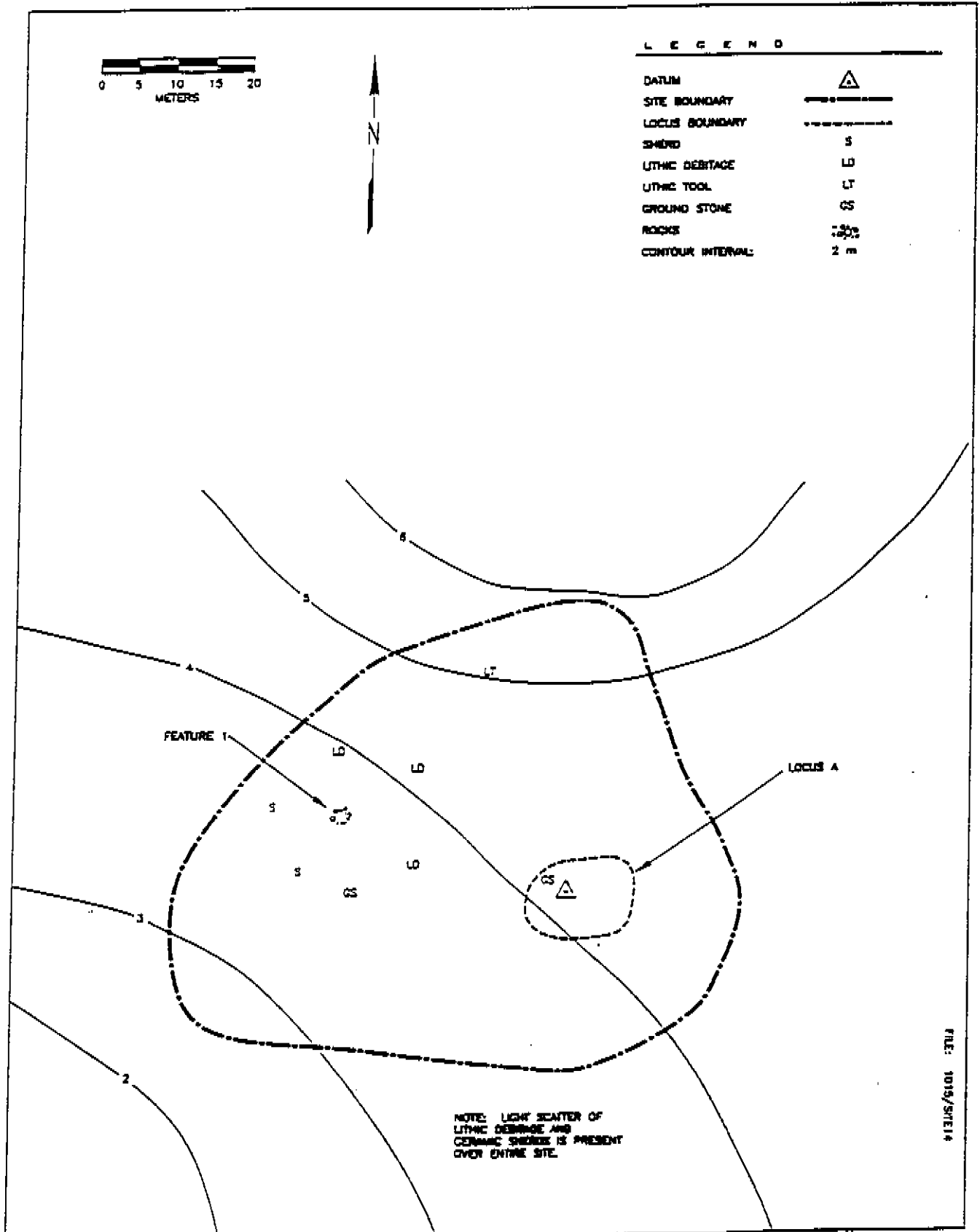
surface survey report

recommendation for digital

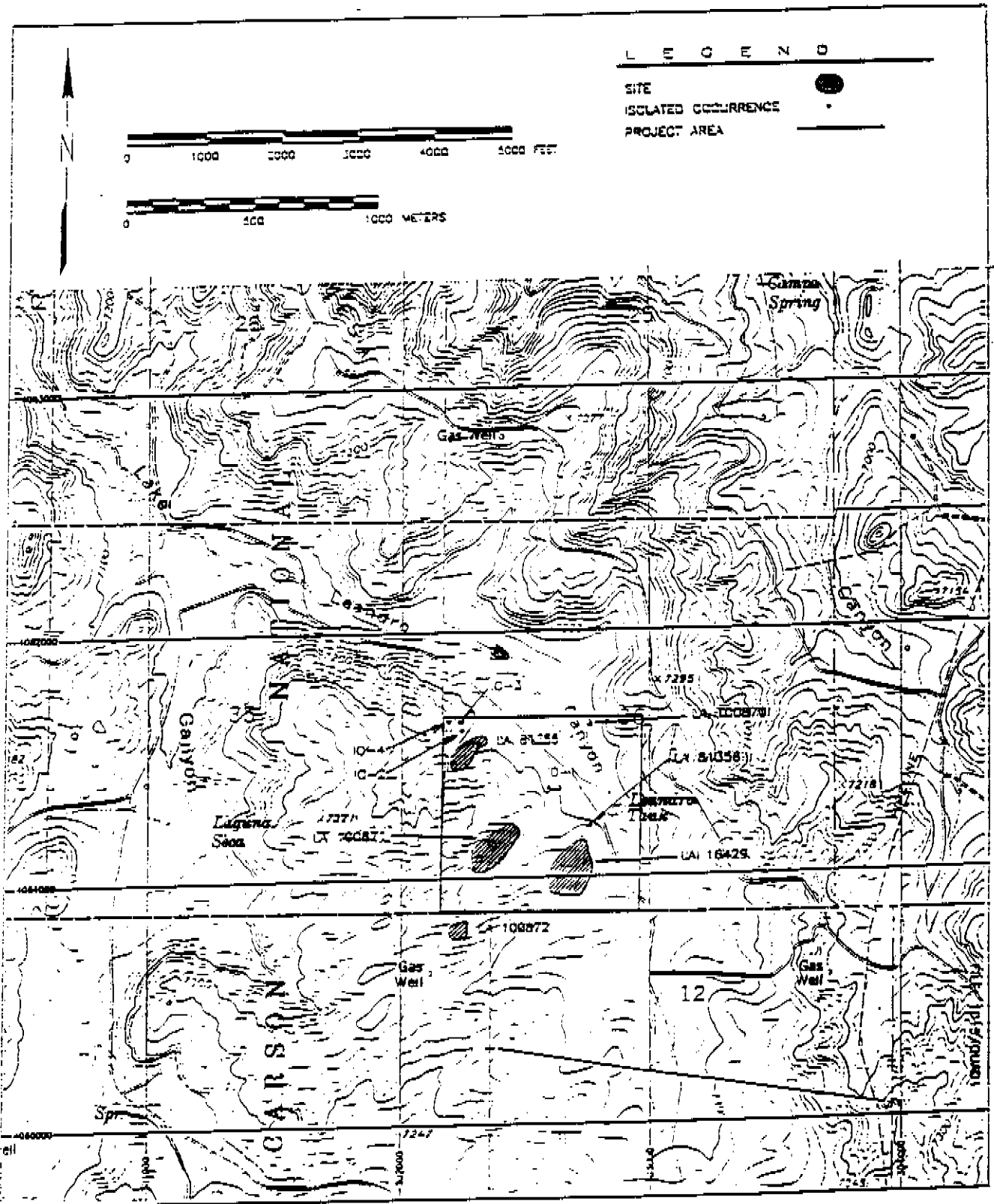
→ monitoring / maintenance ← 15  
mitigation testing for impact

Wells to put in - ??

potential for more work



**Figure 6-5**  
**Site Plan for Site LA 100872**  
 AR 03-02-646



Forest Service # / LA #  
 AR # 03-02-644 = LA 100870  
 03-02-78 = LA 16429  
 03-02-645 = LA 100871  
 03-02-386 = LA 91355  
 03-02-646 = LA 100872

**Figure 1-2**  
**USGS Map Showing Location**  
**of Inventoried Area and Cultural Resources**