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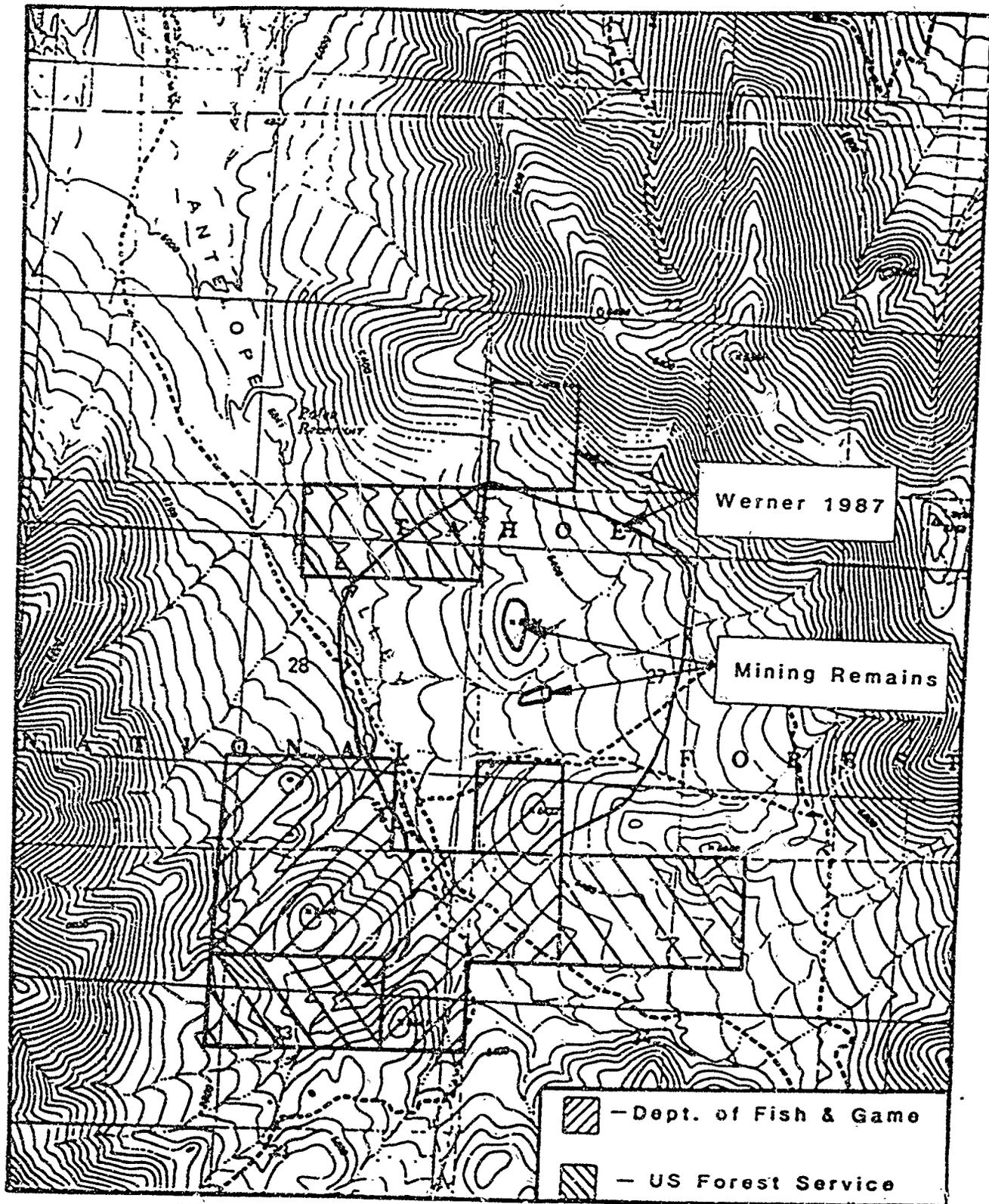
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TENNECO MINERALS GOLDEN DOME PROJECT

SIERRA COUNTY, CALIFORNIA



Quadrangle Location



CALENDAR DATE: NOV 25 1987
 MINUTE PAGE: 250

Archaeological Services, Inc.

8110 Lorraine Avenue, Suite 408 • Stockton, California 95210 • (209) 474-3121

CULTURAL RESOURCES INVENTORY TENNECO MINERALS GOLDEN DOME EXPLORATORY DRILLING PROJECT ANTELOPE VALLEY, SIERRA COUNTY, CALIFORNIA

Submitted by

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Submitted to

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Prepared for

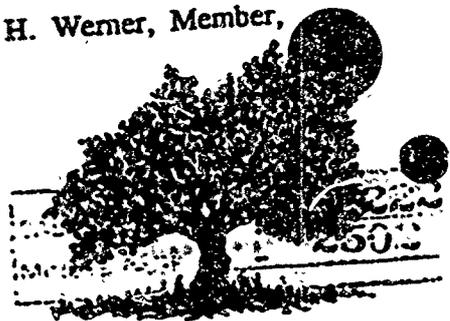
Tahoe National Forest
and
State Lands Commission

19 June 1991

Project conducted under the auspices of Principal Investigator Roger H. Werner, Member,
Society of Professional Archaeologists.

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INTRODUCTION

Description of Undertaking

Tenneco Minerals of Loyalton, California, proposes to conduct exploratory drilling in and adjacent to Antelope Valley, Sierra County, California, on lands situated in portions of Sections 27, 28, 33, and 34 of Township 21 North, Range 15 East, Mount Diablo Base and Meridian, approximately 3 air miles southwest of the town of Loyalton (see Map 1). Project-area lands are controlled by the California State Department of Fish and Game (approximately 320 acres) and the U.S. Department of Agriculture, Tahoe National Forest (approximately 140 acres). Also included in the exploratory drilling project are Federal, State, and private lands that were studied in 1987 by Roger Werner of Archaeological Services, Inc.

Tenneco proposes to use a four-wheel drive drilling rig to excavate drill holes; thus construction of new access roads will not be required. Only minimal surface preparation will be necessary at each drill pad, and no explosives will be used. The maximum Area of Potential Effect at each drill site will be approximately .25 acre.

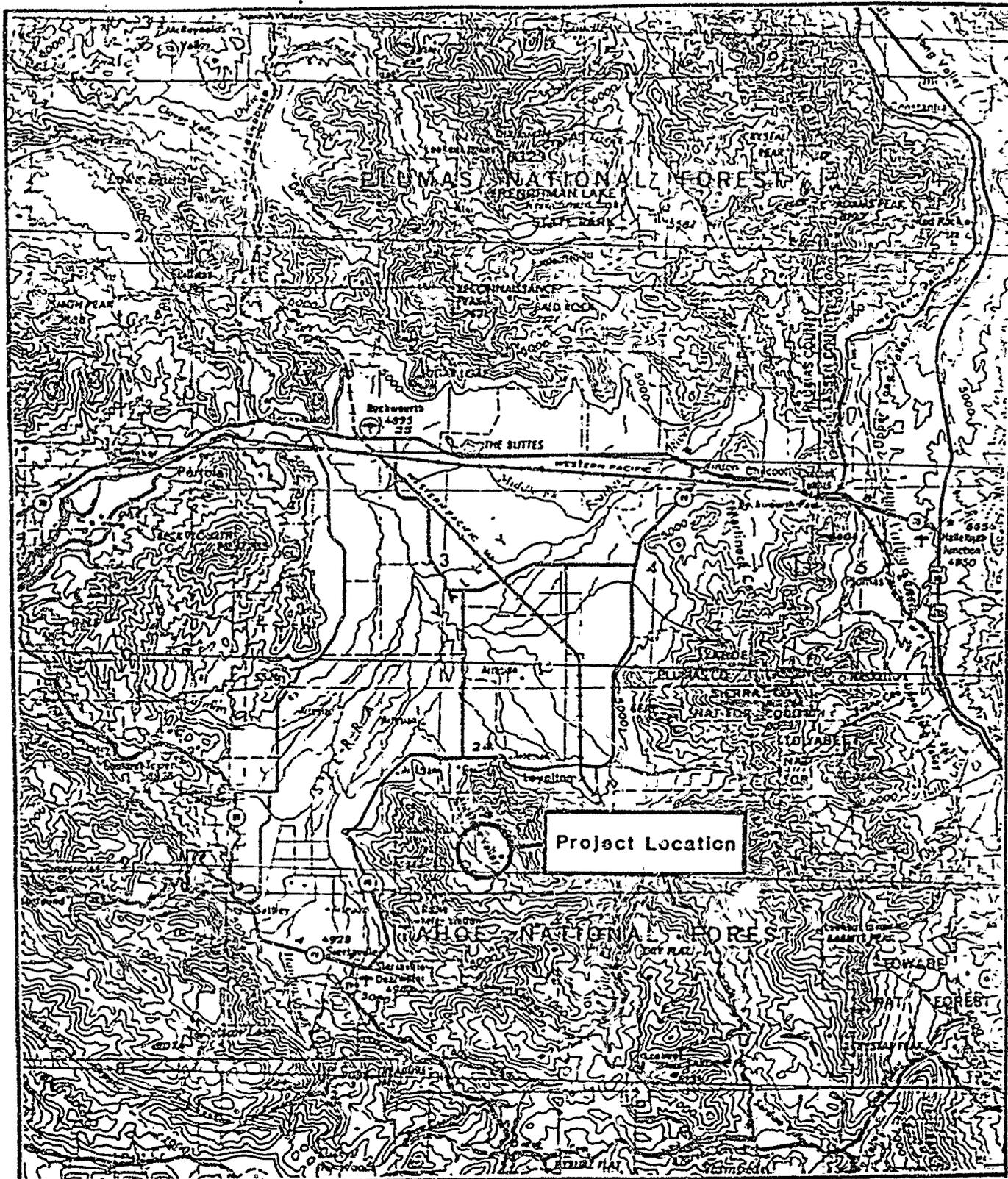
Summary of Findings

Under a contract with Tenneco Minerals, Archaeological Services, Inc., agreed to conduct a cultural resources investigation of the above-mentioned lands prior to ground-disturbing activity. Field work was conducted in approximately 12 person days between 15 May and 1 June 1991. As a result of the cultural resources inventory, three previously unrecorded archaeological sites were identified and recorded and two previously recorded archaeological sites were found to be located within the project area. Several isolated finds were also identified. Recommendations for the protection of identified archaeological sites are given in this report.

PROJECT BACKGROUND

Project-Area Description

The project area is in varied terrain adjacent to the floor of Antelope Valley, a small valley extending north into the southeastern end of Sierra Valley, California, in the eastern Sierra Nevada (Maps 1 and 2). Elevations range from 5200 to more than 5500 feet above mean sea level. Terrain is level to gently sloping around the margins of the valley and at the summits of the several small mountains (locally called "domes") surrounding it; moderately steep to steep slopes lead to the summits, but few very steep slopes are present. The climate of the greater Sierra Valley area is characterized by warm dry summers and cold wet winters. Mid-summer temperatures range from 30 degrees to the upper 80s; mid-winter temperatures, from below freezing to the 40s. Frost can occur at any time of the year. Annual precipitation in the



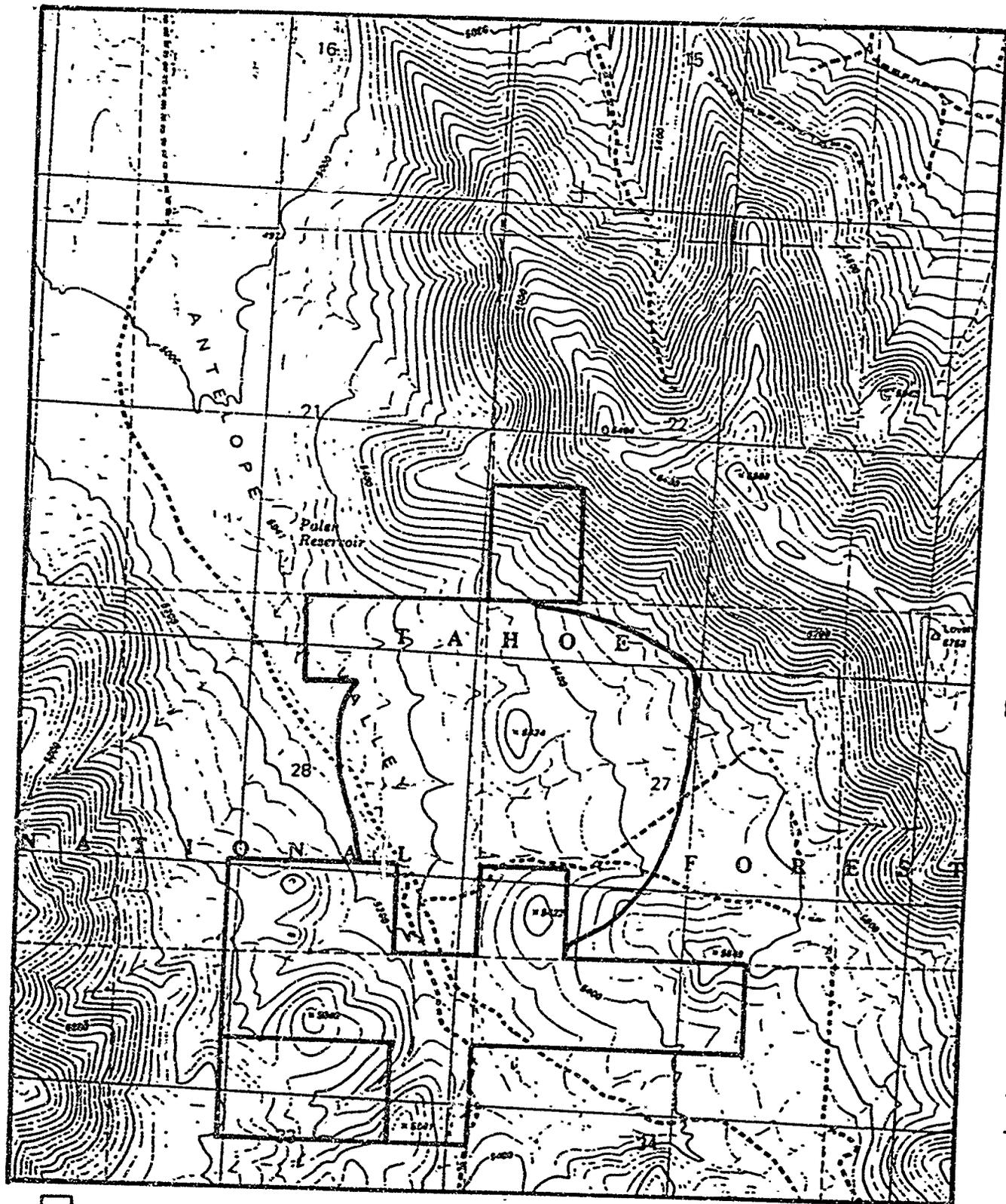
Map 1 Tenneco Minerals Golden Dome Project Vicinity

Sierra County, California

Project Location

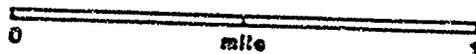


True North Magnetic North 225
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MAP 2 TENNECO MINERALS GOLDEN DOME PROJECT AREA

SIERRA COUNTY, CALIFORNIA



CALENDAR PAGE	200
True North Magnetic North	
DATE	2505

Antelope Valley area ranges from 18 to 25 inches, mostly occurring in the winter as snow. A variety of soils are present; most are gravelly to rocky silty clay loams. The geologic base consists of Tertiary volcanics, dominated by basalt, andesite, and latite (Gunderson 1990:3). Large rhyolitic tuff outcrops, some containing apparently noncultural rock shelters, are present at the summits of the project area's domes.

The project area contains numerous intermittent tributaries of Antelope Valley Creek, a perennial watercourse. Most of these drainages were dry at the time of survey despite recent and on-going rains and snowfall. Watercourses in the valley are highly eroded, apparently the result of logging and overgrazing; comparison of the 1939 and 1986 aerial photographs of Antelope Valley indicate that most erosion has occurred since the earlier date. The area containing Paien Reservoir, within private lands adjacent to the northernmost portion of the project area, was a large undeveloped freshwater marsh in 1939.

Around the margins of the valley, a sagebrush vegetation community is present, consisting of Big Sagebrush, scattered juniper trees, and sparse grasses and forbs. On the slopes and upper elevations, yellow pine occurs in dense stands, and some cedar and thick patches of Wyethia are present at the dome summits. The project area lies within key winter range for the Truckee-Loyalton mule deer herd, while antelope were once common in the valley.

Historic activities that have altered the project area include intensive early 20th-century residential use of at least three locations (recorded as archaeological sites, see below); logging and milling; sheep and cattle grazing; and sporadic mining since the 1860s. Current use includes cattle grazing, camping and hunting, and preliminary mining activities.

Prefield Research

Prefield research included a records search conducted by the California Archaeological Inventory, a review of Forest Service records at the Sierraville Ranger District, and a general literature and environmental review by the author. The purposes of this prefield research were to identify: (1) all reported field or archival studies of the project area and immediate vicinity; (2) the nature of any recorded or otherwise known prehistoric or historic-period cultural resources within or adjacent to the project-area boundaries; and (3) the potential for the presence of unrecorded archaeological sites based on the project area's history and environmental setting.

Research Methods

The records search was conducted by the staff of the Northeast Information Center of the California Archaeological Inventory, California State University, Chico (IC# D91-19). The records search included review of pertinent archaeological base maps, site records, and reports on file at the Information Center. Also consulted were the National Register of Historic Places (1988) showing Listed Properties and Determined Eligible Properties; historic resource inventories (Department of Parks and Recreation 1976, 1982); Clark (1970); and Hoover,

Rensch, and Rensch (1966). The Information Center's letter documenting their records search, dated 10 May 1991, is included in Appendix A.

Additional archaeological, ethnographic, and historic sources were consulted by the author to place the project area in cultural context. Among the works consulted were various cultural resources overviews and reports prepared by the Tahoe National Forest (Carlson 1986; Jackson, Herbert, and Wee 1982; Markley and Henton 1985; Payen 1976), as well as more general references (e.g., D'Azevedo 1986; Kowta 1988; Kroeber 1925; Moratto 1984; and Riddell 1978). Environmental information was found in these reports as well as in Durrell (1987). Pertinent sections of the history of Sierra Valley by Sinnot (1976) were also perused, and the 1877 General Land Office survey plat of T21 North/R15 East was examined.

In order to identify any Native American concerns regarding the project, the Native American Heritage Commission was contacted regarding their Sacred Lands File, and the Washoe Tribe of California and Nevada was contacted to learn of their concerns regarding the project area (see Appendix A).

On 15 May 1991, prior to commencement of field work, the files of the Sierraville Ranger District were reviewed with the aid of Michael Baldrice, District Archaeologist, who provided copies of pertinent archaeological reports and site records.

Results of this prefield research are summarized below.

Prehistoric/Ethnographic Context

Although no Paleoindian finds have been encountered in the region, a major attraction for early human use of the area would have been the presence of a Pleistocene lake covering Sierra Valley, called Lake Sierra by Payen (1976) and Lake Beckwourth by Durrell (1987:253-257). The maximum ancient shoreline, which appears at an elevation of approximately 5100 feet, can be clearly seen as a horizontal line on the prominent hill at the head of Antelope Valley, with shorelines representing the lowering of the lake below that elevation (Durrell 1987:Fig. 143). Thus the lake would have extended well into Antelope Valley past Palen Reservoir, making even the most southerly portions of the project area within 1 mile of this resource.

Payen (1976) located finds suggestive of early use of Sierra Valley in the form of crude, possibly culturally flaked tools. The earliest confirmed human use of the northeastern Sierra dates to approximately 6000-7000 B.C. according to studies along the Truckee River (Elston et al. 1977 and Rondeau 1982, cited in Markley and Henton 1985). Evidence for the Martis Complex, an archaeological culture dating from 2000 B.C. to A.D. 500, is apparent throughout the eastern Sierra. The Martis peoples favored the edges of montane stringer meadows and valleys, such as Antelope Valley, for temporary camp sites (Gunderson 1990:3).

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At the time of historic contact, the project area and nearby Sierra Valley were within territory controlled by the Washoe, whose lands extended well south of Lake Tahoe and covered much of the eastern slopes of the Sierra. Some researchers contend that the valley and surroundings were held jointly by the Washoe and the Northeastern Maidu, with the former group exploiting the drier eastern and southern portions of the area and the latter group focusing on the well-watered land in the north and northwest (Payen 1976:4). For the Maidu, Sierra Valley was occupied only in warmer months (Riddell 1978:370), while Washoe maintained year-round settlements in the eastern valley (D'Azevedo 1986:467). No ethnographic villages are shown in or near the project area on Kroeber's (1925:plate 37) map; several 19th-century Native American settlements are shown in the vicinity of the project area on D'Azevedo's (1986:468) map, all apparently near the southern and eastern margins of Sierra Valley. Attractions in and near Antelope Valley would have been the abundant deer and antelope of the valley itself, and the many hot springs in and adjacent to Sierra Valley, which would have promoted year-round living (Baldrice, personal communication 1991).

No locations designated Sacred Lands are listed within the project area according to the Native American Heritage Commission (see Appendix A). Linda Shoshone of the Washoe Tribal Council commented that Washoe people lived and travelled throughout Sierra Valley and environs; she expressed concern that Native American archaeological sites identified in the project area be protected wherever possible. At her request, a copy of this report will be sent to the Tribal Council.

Historic Context

According to Gunderson (1990:3), historic use of Antelope Valley was primarily for intensive seasonal grazing by sheep and cattle from the late 1800s to the 1940s. Mining, logging, and lumber milling, however, have left more tangible archaeological evidence in the project area.

The description below of mining in Antelope Valley is summarized from the more detailed information in Sinnot (1976:129-130, 232). Mining, primarily for copper, was first undertaken in the Antelope Valley area in 1862-63, when a mining district was formed. A settlement named Antelope City was established, and limited mining continued until 1866. In 1870 further examination of the claims indicated that the ledges had been improperly developed, and the Sierra Valley Mining District was formed. Ledges on each side of the valley, about 1/2 mile apart, were worked, while the site for a town called Altan (an amalgamation of the names of the prospectors) was surveyed. Although assays in 1871 encouraged further development, these did not prove out and operations ceased. Another unsuccessful attempt to develop the mines was made in 1882. In 1906 the Antelope Gold Mining and Milling Company of Loyaltan prospected "another ledge across the hill from the original locations," a venture that also was abandoned. No other mining activities are noted by Sinnot until 1971, when some exploratory work was done. A deed for the mineral rights to the Antelope Mine, however, was recorded in 1921 (Sierra County Deeds Book 2:203-204), but no information has been acquired about this early 20th-century operation. More recently, Hecla Mining Company conducted exploratory work in 1987.

The historic Winnie Smith Mill apparently operated in the early 1900s and ceased production in the 1920s or early 1930s (Gunderson 1990:3). Further information on the mill is presented below under the description of identified archaeological sites.

The 1877 General Land Office plat map indicates "Wilson's House" in the center of Section 28, just outside the project boundaries. The lack of other cultural indicators mapped within the project area suggests that any residential use associated with the early 1870s mining activity had ceased along with the abandonment of mining operations.

Previous Cultural Resources Studies

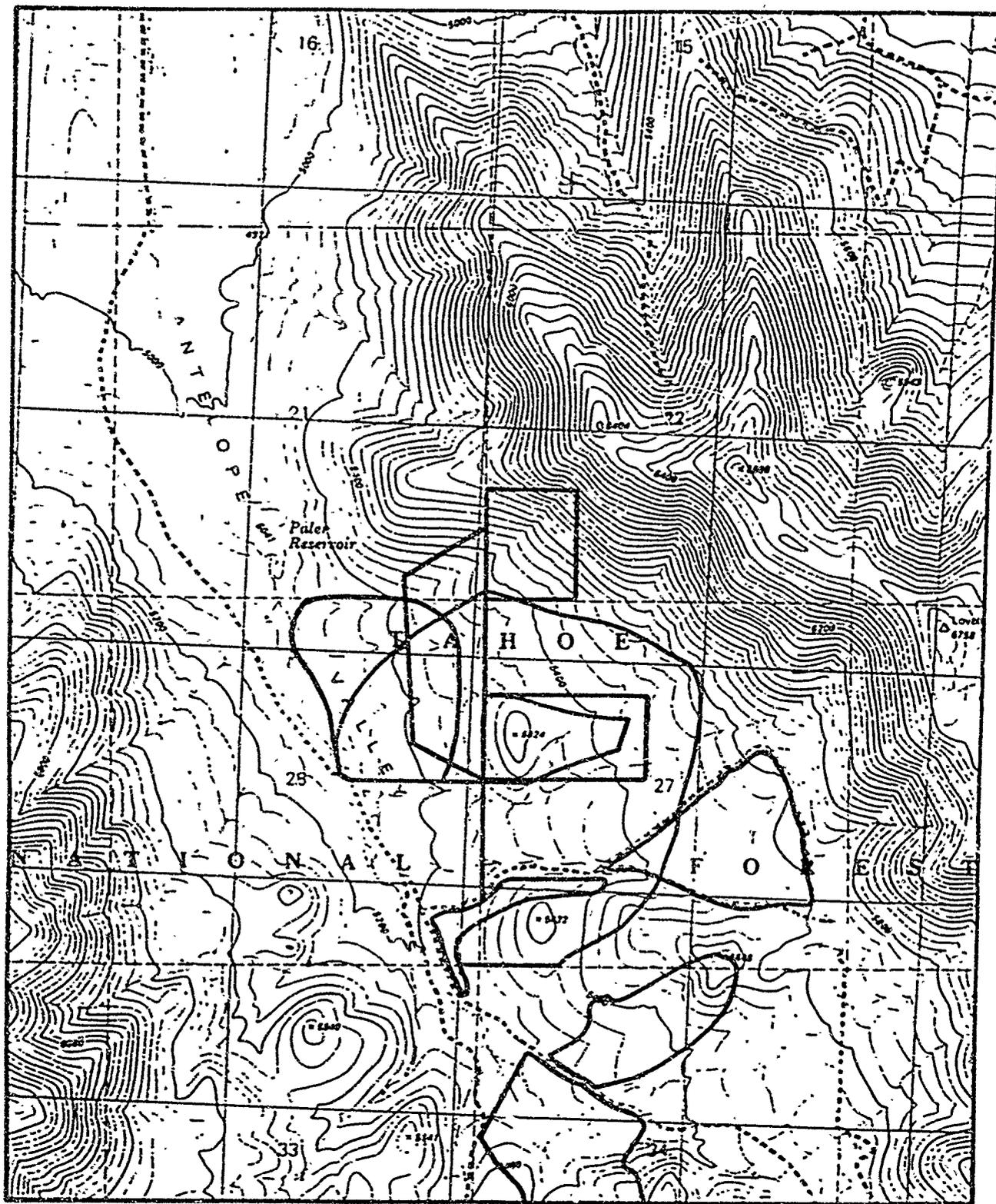
While numerous cultural resource studies have been completed in the project area and vicinity, the Northeast Information Center has no record of them. Most of these studies, beginning in 1983, were conducted by Forest Service personnel on both Federal and State lands in conjunction with mineral exploration (ARR #05-17-385, -772, -899) and California Department of Forestry controlled burns (ARR #05-17-786, -786A). For ease of mapping, these areas are shown on Map 3 without differentiation as to ARR or level of coverage; ARR maps are included as Appendix B. (Some of these project areas received only general coverage and required reinspection for this project.)

In 1987, Roger Werner of Archaeological Services surveyed 180 acres of land to be explored for the Hecla Mining Company's Golden Dome project. Note that the project map included with Werner's report inadvertently shows additional lands as intensively surveyed (for a total of approximately 340 acres).

As a result of the above studies, one historical archaeological site was recorded within the current project area (FS #05-17-56-19, "Shotgun Village"), in the southwest quarter of Section 27. One additional historical archaeological site (FS #05-17-56-287, "Winnie's Annex") and one prehistoric site (FS #05-17-56-289, "Aldeberon Hill") are plotted just outside the current project area in Section 34; a prehistoric quarry (FS #05-17-56-772, "Hecla Quarry") is shown just outside the northern boundary of the project area in Section 21. Numerous isolated finds, both historic and prehistoric, have been reported within and adjacent to the project area.

A recent Forest Service survey approximately 2 miles northwest of the project area (Gunderson 1989, ARR #05-17-786A) recorded six prehistoric sites--some of which represent intensive, long-term occupation--near the interface of Antelope Valley and Sierra Valley.

Few subsurface investigations have been undertaken in eastern Sierra County. The nearest such investigation was conducted by Archaeological Services in 1989, at CA-STC-692, a prehistoric site situated on a finger of land extending into Sierra Valley at the mouth of Antelope Valley. The site was found to be primarily a disturbed surface phenomenon that did not meet CEQA criteria for importance (Werner 1989).



Project Location

Base Map: USGS Antelope Valley, Calif.
1:24,000 Contour Interval 40' 1981

MAP 3 TENNECO MINERALS GOLDEN DOME

PREVIOUS SURVEYS

SIERRA COUNTY, CALIFORNIA



True North Magnetic North
CALENDAR PAGE 251
SITE PAGE 251
See Appendix B

Survey Expectations

Based on the information gathered in prefield research, several unrecorded cultural resources were anticipated on the Golden Dome survey. Forest Service personnel and Tom Young of Tenneco confirmed that archaeological remains were present at the mapped location of the Winnie Smith Mill. Additional evidence of logging and milling was also anticipated. Other evidence of industrial and/or residential remains relating to the mining history of the project area was also expected, as were possible remains of small-scale residential activity or isolated features related to ranching or independent mining and logging. Very large, long-term prehistoric occupation sites were not predicted for the project area due to the relatively limited water resources in the area and the presence of more advantageous settings nearby at the edge of Sierra Valley. Light to moderately dense lithic scatters were anticipated near watercourses, on saddles or ridges, particularly toward the north end of the valley where access to the Palen Reservoir marsh and ancient Lake Sierra would have been most direct. Bedrock mortars, petroglyphs, and rock shelters have all been recorded in the vicinity, suggesting that large rock outcrops in the project area might exhibit these features.

FIELD INVESTIGATION METHODS

Survey Strategy

Field survey of the Tenneco Minerals Golden Dome Project area and site recording were conducted during two field sessions from 15 through 17 May 1991 and 29 May through 1 June 1991. The survey was conducted by Suzanne Stewart, Senior Staff Archaeologist, and Michael Stoyka, Archaeological Technician, of Archaeological Services, Inc., Stockton. Ms. Stewart has a B.A. in Anthropology and is currently an advanced graduate student in Cultural Resources Management at Sonoma State University; she has more than 12 years of archaeological field experience in central and northern California. Mr. Stoyka has 9 years of archaeological experience in several areas of the United States, including more than 2 years experience in California.

Field strategy varied according to archaeological sensitivity, surface visibility, and level of previous archaeological coverage. In areas of relatively gentle terrain and locations near streams or other distinctive natural features such as rock outcrops, the land was surveyed intensively in approximately 8- to 20-meter-wide transects. In less archaeologically sensitive areas (e.g., steep terrain, dense forests, or sloping land covered with rock cobbles), where cultural resources were considered unlikely, the land was surveyed intuitively; here maps were examined to assure that any sensitive-appearing mapped locations within such areas were visited, while the rest of the location was cursorily surveyed in transects of 40 to 100 meters or more to check for unmapped archaeologically sensitive areas. Areas falling between these two extremes of archaeological sensitivity (e.g., featureless gently sloping terrain) were surveyed in a general fashion, in transects up to approximately 20 to 40 meters in width. Visibility was fair to excellent in all

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non-forested land, but wooded areas were often covered with dense duff. In potentially sensitive forested areas, duff was periodically cleared with a hand trowel to observe surface soils.

Access routes and drill sites were well flagged and mapped, and most were easily identified in the field (see Appendix C for Tenneco's Drill Site and Access Route Location Maps). With the exception of a few locations noted below, each mapped drill site was found on the ground, and the surrounding area was examined. In sensitive areas, the drill sites were surveyed intensively within an area of up to 1/4 acre; smaller areas were surveyed at drill sites on hillsides or in other less sensitive areas. The following drill sites could not be located: BLM DS # 1; F&G DS # 3, 4; and FS III DS #10, 11, 12, 13, and 17. In each case, the mapped locations of these drill sites were given broad coverage in an attempt to locate the stakes, and the areas can be considered adequately surveyed. Because the level of previous survey coverage is often uncertain, most drill sites on previously surveyed lands were re-examined.

The areas surveyed on the current project are indicated on Map 4.

Areas Not Surveyed

The following locations within the project area were omitted from survey:

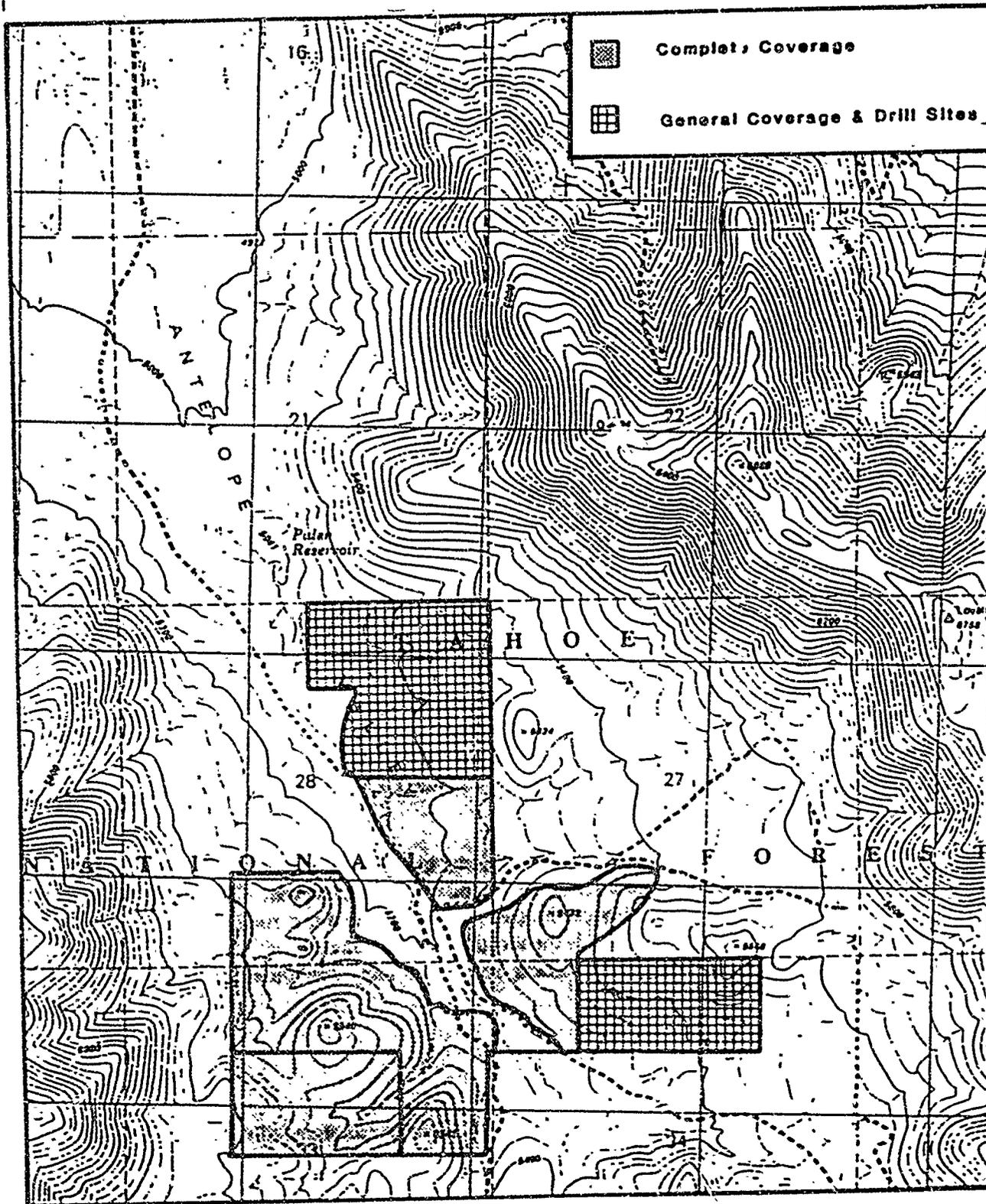
Drill sites #6 through 9 in the NW 1/4 of Section 27 were not examined since they are situated in an area that has been subject to three previous intensive archaeological studies.

In the SE 1/4 of Section 21, DS #15 and 16 were examined but the surrounding land marked off on Tenneco's Drill Site and Access Route Location Map was not. This area was omitted because it was not listed in any correspondence concerning project-area location, on the project area map initially presented by Tenneco, or in Tenneco's Notice of Intent.

In the interests of time and costs, Fish & Game lands in the center of the valley, which will not be subject to exploration by Tenneco, were not surveyed. This excluded area is bounded by Antelope Valley on the east and an unnamed dirt road at the base of the hills on the west. (An exception is the location of the Winnie Smith Mill, which extends onto both sides of the western access road; this area was intensively surveyed to determine site boundaries.)

Survey Conditions

Several hindrances to the survey were encountered. Unexpected snowfall did not allow field work scheduled for the morning of 18 May, and snow, sleet, and/or rain interrupted work on 29 and 30 May 1991. (Light snow flurries throughout the day on 17 May did not impede survey.) During the first field session, only Fish & Game lands were surveyed due to a then-



Project Location

Base Map: USGS Antelope Valley, Calif.
1:74,000 Contour Interval 40' 1961

MAP 4 TENNECO MINERALS GOLDEN DOME
ASI SURVEY COVERAGE 1991
SIERRA COUNTY, CALIFORNIA



From North Magnetic 251
251

eminent deadline for a report to the State Lands Commission. Return trips to adjacent Federal land were necessary during the second session—after the report deadline had been relaxed—resulting in complex logistics. Time was also spent working out discrepancies between various project maps (USGS, USFS, and Tenneco adaptations); orientation in the field was made difficult by the presence of unmapped streams and roads, mapped roads not readily apparent in the field, and the USGS use of 40-foot contours in relatively gentle terrain.

INVESTIGATION RESULTS

Coverage

As a result of the above-described survey, approximately 280 acres of previously unsurveyed State land and 80 acres of previously unsurveyed Federal land were surveyed; approximately 400 acres of State and Federal land that had received previous coverage were resurveyed using general coverage methods. A total of 64 drill sites and associated flagged access routes were examined.

Five archaeological sites were identified within the Tenneco Minerals Golden Dome project area: two newly recorded prehistoric lithic scatters; two historical archaeological sites previously recorded by Forest Service personnel (Shotgun Village and Winnie's Annex); and one known historical archaeological site (The Winnie Smith Mill), which was recorded as a part of this study. A total of 15 isolated finds were identified and their locations mapped.

Identified Cultural Resources

The five archaeological sites and 15 isolated finds identified in the project area are described below; a site location map (Map 5) and site records are included as Appendix E. In addition, three cultural resources were noted on land outside the current project area; they are briefly mentioned below.

Prehistoric Site FS #05-17-56-317 (ASI 1) - U.S. Forest Service

This newly recorded prehistoric site consists of a light scatter of lithic debitage in the SE 1/4 of the SE 1/4 of Section 28. The site is located on the north bank of a small intermittent stream, a short distance northeast from the intersection of Antelope Valley Road and an unnamed road leading to Shotgun Village (see below). Site vegetation is dominated by sagebrush and scattered junipers. A variety of basalt and chert flakes were found in two concentrations approximately 70 meters apart. Three formed artifacts were noted: the basal end of a thin, crudely flaked basalt biface; an exhausted chert core with use wear evident on one pointed end; and a small, obsidian, corner-notched projectile point (probable Rose Spring series). On the advice of the Sierraville District Archaeologist, the latter was collected; the point has been accessioned with

the Forest under accession #17-3526. The formed artifacts were found at some distance (15 to 30 meters) from the westernmost concentration of flakes, suggesting broad--perhaps sporadic--use of the area. Additional cultural materials are undoubtedly present, obscured by relatively dense stands of sagebrush. A large rock outcrop adjacent to the streambed contains numerous holes and depressions in its vertical face; two of these--a basinlike depression and a cupule--may be cultural.

Prehistoric Site FS #05-17-56-318 (ASI 2) - U.S. Forest Service

This newly recorded prehistoric site consists of a moderate scatter of lithic debitage and formed/utilized tools in the NE 1/4 of the SE 1/4 of Section 28, approximately 150 meters north of Site 1. The site is on the south bank of a small intermittent stream, extending south over a slight rise towards a broader, gentler drainage. Site vegetation consists of sagebrush, small junipers, and a single large yellow pine. At least 50 cultural items were identified. Debitage consists of a variety of basalt and chert flakes, from large reduction pieces to minute retouch items. A single obsidian blade flake was noted. Tools include a chert plano-convex scraper; a thin, finely flaked basalt biface midsection; some possibly utilized flakes; and a small finely flaked quartz midsection with a roundish cross-section suggestive of a drill.

Historical Site ASI 3 ("The Winnie Smith Mill") - Department of Fish & Game

This newly recorded historical archaeological site has long been known to local residents. It appears on the Sierraville NE 7.5-minute topographic quadrangle (1955) as "Winnie Smith Mill (Ruins)." The site is located in the southwest portion of Antelope Valley adjacent to the confluence of two intermittent creeks at the base of gentle to steep slopes. The site extends out onto the valley floor in the east and up the lower slopes of the hill to the west, covering an area of more than 20 acres. The site includes both residential and industrial features. The former include an isolated three-tiered building pad in the south; several dense trash deposits dominated by hole-in-top and sanitary cans but including ceramic and glass; and an intensive scatter of wooden structural remains with associated domestic and personal artifacts on the first and second terraces in the wooded area above the valley floor. Industrial features include an extensive area of deep sawdust; the partially intact wooden and brick/stone foundations of large industrial buildings (presumably the main mill buildings); a series of wooden posts with elevated cables suggesting transport of logs across the valley floor; some partially buried pipes representing a water transport system; and various debris throughout this portion of the valley and surrounding slopes (dominated by broken wooden barrel staves and metal hoops). Two basalt flakes, indicating a possible prehistoric component, were found within the mill site.

Relatively little information was obtained regarding the Winnie Smith Mill. According to Gunderson (1990:3), who cites personal communications with Doc Payen and Julio Genasci, the mill was the first of four separate mills owned and operated by Winnie Smith. It was established in the early 1900s and probably operated in support of the Antelope Valley mining efforts. The mill ceased operation in the 1920s or early 1930s. There was no railroad logging in Antelope

Valley; according to Gunderson's sources, the mill was serviced entirely by steam tractor. Gunderson states that the mill was one of many small (15-20 man) steam-powered mills operating in the Sierra Valley area from the late 19th century to the early 1930s.

Historical Site FS #05-17-56-19: "Shotgun Village" - Department of Fish and Game

This historical archaeological site, located on State lands, was recorded by Forest Service personnel as a part of the Antelope Burn project in 1988-89 (ARR #05-17-56-786 and -786A). It is located in the NW 1/4 of the SW 1/4 of Section 27 on an unnamed dirt road approximately 1/3 mile east of Antelope Valley Road. The site consists of extensive remains of an early 20th-century occupation site. At least six framed residences are represented in the debris; at the east end of the site, the foundations and lower walls of a log cabin (visible on the 1939 aerial photograph) are present. Gunderson (1989) states that "the site may be related in some fashion to the Winnie Smith Mill or the historic mining town of Antelope City or the historic Antelope Mine." Tom Young of Tenneco Minerals states that long-time Sierra Valley residents have referred to this locale as Antelope City, an early 20th-century "town" associated with the mine.

A prehistoric component is indicated for this site on the basis of a metate and mano/pestle found on the site by Forest Service personnel.

Historical Site FS #05-17-56-287, "Winnie's Annex" - U.S. Forest Service/Department of Fish & Game

This historical archaeological site is plotted outside the current project area on Forest Service base maps and on the site record location map. Field examination, however, showed the northwest-southeast dimension of the site to be about 2.5 times greater than mapped, for a total linear distance of nearly 1/2 mile; thus the site extends into the current project area, in the NW 1/4 of Section 34, and includes both State and Federal lands. "Winnie's Annex" consists of a broad scatter of historic debris and milled lumber, probably representing extensive early 20th-century residential use. The association with the Winnie Smith Mill was made by Forest Service personnel on the basis of the co-occurrence of white earthenware at both sites and the presence of the left front fender of a Ford Model "T" at the "Annex" and the right front fender at the mill site. More compelling evidence of a connection between the two sites is suggested by the hypothesized log-transport system across this portion of the valley noted at the mill site. No documentation of an association was noted in our brief historical research.

Isolated Finds/Features

Numerous isolated finds have been noted within project-area lands in the course of the several surveys of this acreage; see the various ARR's for their locations. Isolated finds noted on this survey, plotted on Map 5, are as follows:

- 1 - Basalt flake and possible rhyolite core on north bank of creek
- 2 - Basalt flake on south bank of creek

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- 3 - Pile of unmarked bricks, approximately 1.5 by 3.0 meters in diameter, approximately 4 meters east of Drill Site #5.
- 4 - Mining waste-rock dump
- 5 - Prospect pit with tree growing out of it adjacent to F&G DS #2
- 6 - "J"-shaped (facing south), straight-sided feature (3 x 3 meters by 5 meters east/west) consisting of small, well-sorted rhyolitic tuff cobbles
- 7 - Stone-supported fenceline extending between prehistoric sites FS #05-17-56-317 and -318, with hole-in-top can and other fencing debris at the latter site
- 8 - Collapsed corral, with 12' long boards, some nailed to tree with cut and wire nails; two-strand barbed wire; and adjacent sanitary can and bucket lid adjacent to FS III DS #3)
- 9 - Prospect pit near FS III DS #2, south of creek from prehistoric site FS #05-17-56-317
- 10 - Old fence line, apparently following section line (at 354 degrees), consisting of old wood posts (10 to 18 inches high) reinforced by more recent, 4-foot high posts; begins 45 meters north of road and continues for approximately 70 meters.
- 11 - Prospect pit near F&G DS #46, with sanitary can and tobacco can, approximately 6 x 6.5 meters.
- 12 - Group of four prospect pits, roughly 25 meters apart, located about 12.5 meters east of F&G DS #45; pits measure 5 x 7 x 3 meters; 4 x 3 x 1 meter, and 3.5 x 2.5 x 1.5 meters, with a small, shallow pit not measured.
- 13 - Small prospect pit located about 29 meters northwest of F&G DS #43; adjacent is a small crushed metal pail with an enamel cup inside.
- 14 - Prospect pit, 5 meters in diameter and 1.5 meters deep, approximately 45 meters northeast of F&G DS #30
- 15 - Prospect pit on steeply sloping hill between BLM DS #4 and 5.

In addition to the mapped isolated finds, numerous high-cut (more than 30") tree stumps--indicative of historic logging--were noted in several locations, particularly on the east-facing slopes of the domes in Fish & Game land. Barrel staves and metal barrel hoops were found for some distance up drainages adjacent to the Winnie Smith Mill. Individual tin cans, fence posts, and modern debris, found primarily adjacent to Antelope Valley Road, were not mapped or described.

Cultural Resources Outside Project Boundaries

Three cultural resources were noted during our field work that are outside the limits of the present study. They were encountered while gaining access to lands to be surveyed or when attempting to find the recorded site "Aldeberon Hill" at the beginning of survey for comparative purposes. The resources are briefly described here and are plotted by letter on Map 5.

A: Prehistoric Lithic Scatter. Downslope from and northwest of the plotted location of Aldeberon Hill (FS #05-17-56-289) is a light scatter of basalt and chert flakes and the base

of a thin, finely flaked, basalt projectile point--a possible Martis stemmed point. The point's location was flagged and the Sierraville District Archaeologist notified of the site and the presence of the point.

B: Historical Structural Debris. Near the center of Section 28, in the approximate location of "Wilson's House" shown on the 1877 GLO plat map, is a light scatter of structural remains and a few personal and domestic artifacts.

C: Historical Bridge Remains. At the confluence of Valley Antelope Creek and an intermittent tributary are the remains of a large concrete/conglomerate bridge with metal fittings and a concrete spillway, partially hidden by dense riparian plants. The bridge leads from Antelope Valley Road toward the general direction of Antelope Mine.

MANAGEMENT CONSIDERATIONS

Some of the cultural resources identified in the project area could be directly affected by Tenneco Minerals' current drilling site and access route plans. Tenneco has agreed to redesign the exploratory drilling project in order to avoid direct impacts to identified archaeological sites. Preliminary site evaluations are therefore not appropriate at this time. Our recommendations below assume that all identified sites are potentially significant or important and therefore warrant protection. Should avoidance of these cultural resources be unfeasible, evaluations would be required for both State and Federal properties to assure appropriate mitigation of any impacts to important/significant resources.

Given the low intensity of the proposed activity during exploration, indirect impacts to archaeological sites are unlikely during this phase of the Tenneco project: no more than two drilling rigs will be used, for a total of four to six workers. Rig drivers must be instructed to stay on access roads and not drill in unauthorized locations. They should also be advised of the presence of archaeological sites and the need to preserve the remains; they should be explicitly informed that removal of artifacts or other disturbance to the remains would be in violation of the permit and cannot be allowed. It is recommended that the potential for indirect impacts to archaeological sites be reassessed if the project continues into a development stage.

Potential Project Impacts and Recommendations

Impacts to cultural resources that could occur under Tenneco's currently proposed exploration plans are discussed below. Drill site and access route locations referred to below are those found staked/flagged in the field; mapped locations cannot be relied on due to the imprecision of the 40-foot contour interval of the USGS topographic quadrangle. Recommendations for avoidance of impacts are given here and are summarized in Table 1 and in the conclusions below.

Prehistoric Site FS #05-17-56-317 (ASI 1). Tenneco's proposed access route to drill sites in this USFS area (Tenneco's FS III) utilizes an existing road through the site. Prehistoric cultural materials found at DS #5 have been included in the recorded site boundaries. Use of an existing road through an archaeological site is in keeping with Forest Service policy and will not likely create new impacts to the cultural resource. Exploration of DS #5, however, could compromise the integrity of the archaeological site. Recommendation: Access through the site on existing roadbed only is acceptable to ASI and to the USFS (Baldrice, personal communication); DS #5 should be deleted from the proposed exploration or moved at least 30 meters (ca. 100 feet) north of the site boundaries.

Prehistoric Site FS #05-17-56-318 (ASI 2). No exploration is currently planned for this area, and the access route (existing road) is well outside the site boundaries. Recommendation: No recommendations are necessary under current project plans. Future exploration/development should not take place within 30 meters (ca. 100 feet) of the boundaries of the site.

Historical Site ASI 3 - The Winnie Smith Mill. Tenneco currently proposes two drill sites immediately adjacent to Winnie Smith Mill site boundaries: F&G DS #33 in the north and DS #34 in the south. An access route leading to #34 and additional drill sites further southwest (FS I) is currently flagged through the densest area of residential structural debris. Use of this portion of the access route would result in severe damage to these fragile remains, while exploration of DS #33 could compromise the historical setting of this site. Recommendation: Drill Site #33 should be deleted from the proposed exploration or moved at least 30 meters (ca. 100 feet) northwest of its current location. Access to DS #34 should be re-routed to follow the existing historical road, northwest of and downslope from the current flagged route. Exploration of DS #34, which is approximately 30 meters (approx. 100 feet) southwest of the site's southern boundary, should not result in impacts to the site.

Historical Site FS #05-56-17-19 - Shotgun Village. Tenneco currently proposes two access routes through the Shotgun Village site: one leading to F&G DS #46 through an area with few visible cultural remains; and one utilizing an existing road that leads to proposed drill sites on the dome in the site. Use of the currently flagged access route to DS #46 could lead to damage to undetected cultural remains in this portion of the site; the drill site itself is close to or within current site boundaries, and exploration might compromise site integrity. Recommendation: Drill Site #46 should be moved at least 30 meters (100 feet) south of its current location to avoid impacts to the site. The currently proposed access route to this drill site should be deleted from plans, and the drill site accessed from the east, via the existing north/south road and a new east/west access road outside site boundaries.

Historical Site FS #05-56-17-287 - Winnie's Annex. Tenneco does not propose exploration within or adjacent to this site. Recommendation: No recommendations are necessary under current project plans. Future exploration/development should not take place within 30 meters (ca. 100 feet) of the boundaries of the site.

Boundary Staking and Project Follow-up

To assure that archaeological sites are not inadvertently damaged during the proposed undertaking, we recommend that the boundaries of all sites within exploration areas be clearly marked in the field by an archaeologist. Well-flagged wooden stakes should be left in place until the Tenneco exploratory drilling project has been completed. To assure that these cultural resource management recommendations have been adhered to, it is further recommended that an archaeologist visit each archaeological site recorded in the project area after the conclusion of the drilling program.

Table 1: Potential Project Impact Summary
Tenneco Minerals Golden Dome Project

Site No./Name	Land Status	Project Impacts	Recommendations
FS #05-17-56-317 (ASI 1)	U.S.F.S.	Access route through arch. site. DS #5 on site.	Use existing road only. Move DS #5 north at least 30 meters. Stake.
FS #05-17-56-318 (ASI 2)	U.S.F.S.	No impacts proposed. Access route nearby.	Stake. No other recommendations now necessary.
FS #05-17-56-319 (ASI 3) The Winnie Smith Mill	State Fish & Game	DS #33 & 34 adjacent. Access route through arch. site.	Delete DS #33. Change access route to follow existing road. Stake.
FS #05-56-17-19 Shotgun Village	State Fish & Game	DS #46 on site. Access route through site.	Move DS #46 south at least 30 meters. Access DS via existing road. Stake.
FS #05-56-17-289 Winnie's Annex	State and U.S.	No impacts proposed.	None necessary.

Cultural Resources Not Warranting Protection

Isolated Finds/Features. The information potential of isolated finds on this survey has been realized through their description and the plotting of their locations (see Map 5). No protection measures are necessary.

Previously Reported Mining Remains. Mining remains identified in the S 1/2 of the NW 1/4 of Section 27 consisting of two trenches and two exploratory holes, were not considered significant by Sprowl (1983, ARR #05-17-56-385, Addendum) or by Werner (1987); this area was considered to have had sufficient coverage and was not visited on this survey. The mining remains noted by Werner (1987) at the location of the former Antelope Mine on current Tenneco property (NW 1/4 of the SW 1/4 of Section 27) were visited during this investigation. They were found to consist of a number of pits and trenches of varying age, with modern exploration

often cutting into older features; a few cans and pieces of milled lumber were the only artifacts noted. These remains have very low integrity and are therefore of limited information potential. Recommendation: The information potential of the mining remains in this location has been realized by mapping their location. Description of the remains was considered unwarranted due to their temporal ambiguity.

General Recommendations

No exploration or other development should take place in unsurveyed areas. Note especially that areas adjoining Antelope Valley Creek were not surveyed, and that the northwest half of that portion of the project area in Section 21 has not received coverage by previous Forest Service surveys or by the current study (see Areas not Surveyed under Field Investigation Methods above). The environmental setting of the latter area (adjacent to the large historic marsh and containing Pleistocene lake shorelines) suggests a relatively high likelihood that potentially significant prehistoric archaeological sites are present. Any future exploration in this area should be preceded by an intensive archaeological survey.

The archaeological study for the Tenneco Minerals Golden Dome exploration project involved surface examination only. Additional cultural resources may be present, buried by soil or obscured by vegetation or duff. It is therefore possible that excavation during this or future ground-disturbing activities will unearth archaeological deposits. If concentrations of prehistoric or historic-period materials are encountered, it is recommended that all work in the vicinity halt until an archaeologist can evaluate the finds and make recommendations for further action. Prehistoric materials might include flaked-stone tools (projectile points, knives, scraping tools or obsidian or chert toolmaking debris, culturally darkened soil ("midden") containing heat-altered rock and cultural materials, and stone milling equipment (mortars, pestles, handstones, and milling slabs). Historic materials might include stone footings or walls, or deposits of metal, glass, and/or ceramic refuse.

If human remains are encountered, all work should halt in the vicinity and the County Coroner notified immediately. At the same time, a qualified archaeologist should be contacted to evaluate the finds. Appendix K of the California Environmental Quality Act Guidelines details steps to be taken if human burials are found to be of Native American origin.

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