

NORTH-OF-THE-DELTA OFFSTREAM STORAGE PROJECT

DRAFT ARCHAEOLOGICAL INVENTORY REPORT

COLUSA AND GLENN COUNTIES, CALIFORNIA

Prepared for:



U.S. Bureau of Reclamation
Mid-Pacific Region
2800 Cottage Way
Sacramento, CA 95825

Prepared by:



URS Corporation
2870 Gateway Oaks Drive, Suite 150
Sacramento, CA 95833
Janis Offermann, MA, RPA
Senior Cultural Resources Specialist

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TABLE OF CONTENTS

ACRONYMS..... V

PREFACE..... VI

EXECUTIVE SUMMARY ES-1

CHAPTER 1: INTRODUCTION AND PROJECT DESCRIPTION..... 1-1

1.1 North-of-the-Delta Offstream Storage Investigation 1-1

1.2 Project Location 1-1

1.3 Project Study Area and Description 1-1

1.3.1 Greater Sites Reservoir 1-1

1.3.2 Holthouse Reservoir Complex 1-6

1.3.3 Delevan Pipeline Area 1-6

1.3.4 Pump Installation at the Red Bluff Pumping Plant 1-6

1.4 Regulatory Context 1-6

1.5 Confidentiality 1-7

CHAPTER 2: ENVIRONMENTAL CONTEXT..... 2-1

2.1 Geology 2-1

2.1.1 North Coast Ranges 2-1

2.1.2 Great Valley Sequence 2-1

2.1.3 Sacramento Valley Margin and Plains 2-2

2.2 Flora 2-3

2.2.1 California Prairie 2-3

2.2.2 Blue Oak Woodland 2-4

2.2.3 Chamise-Dominated Chaparral 2-4

2.2.4 Riparian Woodland 2-4

2.3 Fauna 2-5

2.3.1 Economically Significant Animals 2-5

2.3.2 Other Animals 2-6

CHAPTER 3: PREHISTORY CONTEXT..... 3-1

3.1 General Trends in Northern California Prehistory 3-1

3.1.1 Paleoindian Period: Western Clovis Tradition 3-1

3.1.2 Lower Archaic Period: Borax Lake Pattern 3-1

3.1.3 Middle Archaic Period: Windmiller and Mendocino Patterns 3-2

3.1.4 Upper Archaic Period: Berkeley Pattern 3-4

3.1.5 Emergent Period: Augustine Pattern 3-5

CHAPTER 4: ETHNOGRAPHIC CONTEXT..... 4-1

4.1 Introduction 4-1

4.2 Patwin 4-1

4.2.1 Hill Patwin Territory and Villages 4-1

4.2.2 River Patwin Territory and Villages 4-2

4.2.3 Structures 4-4

4.2.4 Social Organization 4-5

4.2.5 Conflict 4-5

4.3 Nomlaki 4-6

4.4 Contemporary Tribes 4-7

CHAPTER 5: HISTORIC-ERA CONTEXT	5-1
5.1 Early Exploration	5-1
5.1.1 Moraga, 1808	5-1
5.1.2 Arguello and Ordaz, 1821	5-1
5.1.3 Fur Trappers and Epidemic	5-2
5.2 Early Settlement	5-3
5.2.1 Mexican Land Grants	5-3
5.2.2 Development of the Livestock Industry	5-4
5.3 Development of Colusa County	5-5
5.3.1 River Travel	5-5
5.3.2 Roads and Ferries	5-6
5.3.3 Railroads	5-7
5.4 Antelope Valley and the Town of Sites	5-8
5.4.1 Initial Settlement	5-8
5.4.2 Establishment of Large Ranches	5-9
5.4.3 Mineral Exploration	5-10
5.4.4 Town of Sites	5-11
CHAPTER 6: ARCHAEOLOGICAL INVENTORY METHODS.....	6-1
6.1 Introduction.....	6-1
6.2 Results of Records Search and Document Review	6-1
6.2.1 Records Search Methods.....	6-1
6.2.2 Previous Archaeological Investigations in or near the Study Area.....	6-2
6.2.3 Archaeological Excavations in the Study Area.....	6-6
6.3 Archaeological Inventory Methods.....	6-8
6.3.1 Greater Sites Reservoir Area.....	6-8
6.3.2 Holthouse Reservoir Complex	6-13
6.3.3 Delevan Pipeline	6-13
CHAPTER 7: ARCHAEOLOGICAL INVENTORY RESULTS.....	7-1
7.1 Summary	7-1
7.2 Chronological Associations	7-5
7.2.1 Prehistoric Sites	7-5
7.2.2 Multicomponent Sites	7-7
7.2.3 Historic-era Sites.....	7-7
7.2.4 Isolated Finds	7-7
7.3 Study Area Archaeological Sites	7-8
7.3.1 2001 Sites (SR Series).....	7-8
7.3.2 2002-2003 Sites (SF Series).....	7-20
CHAPTER 8: SUMMARY	8-1
CHAPTER 9: REFERNCES	9-1

APPENDIX A: Summary Descriptions of Isolated Finds Identified by the 2001–2003 Proposed Sites Reservoir Archaeological Survey

LIST OF TABLES

1	Previous Archaeological Studies in the NODOS Study Area
2	Sites Recorded by Treganza et al. (1965) and Chartkoff (1969) In or Adjacent to the Study Area
3	Sites Recorded by DWR-DPR in 1998-1999
4	Summary of Project Survey Areas and Recorded Resources
5	Summary of Recorded Cultural Resources
6	Prehistoric Site Constituents at Prehistoric and Multicomponent Sites
7	Depression Features in Locus A, Site SR-001-A

LIST OF FIGURES

1	Project Vicinity
2	Project Location
3	Project Facilities
4	Wintuan Language Groups of Northern California (after Merriam 1967)
5	Greater Sites Reservoir Portion of the Study Area
6	Holthouse Reservoir Complex Portion of the Study Area
7	Delevan Pipeline Portion of the Study Area
8	Archaeological Site Locations in the Greater Sites Reservoir Portion of the Study Area
9	Archaeological Isolate Locations in the Greater Sites Reservoir Portion of the Study Area
10	Archaeological Isolate Locations in the Delevan Pipeline & Holthouse Reservoir Complex Portions of the Study Area

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ACRONYMS

ARP	Archaeological Research Program
BLM	Bureau of Land Management
BP	before present
calBP	calibrated before present
CD	compact disc
CEQA	California Environmental Quality Act
CHRIS	California Historical Resources Information System
C&LRR	Colusa & Lake Railroad
CSU	California State University
DPR	California Department of Parks and Recreation
DWR	California Department of Water Resources
GDIC	Glen-Colusa Irrigation District Canal
GPS	global positioning system
NAD-27	North American Datum–1927
NEIC	Northeast Information Center
NHPA	National Historic Preservation Act
NODOS	North-of-the-Delta Offstream Storage
NWIC	Northwest Information Center
pr.	Photorevised
Reclamation	U.S. Bureau of Reclamation
RPA	Registered Professional Archaeologist
study area	NODOS project study area
T-C	Tehama-Colusa
TRR	Terminal Regulating Reservoir
UCD	University of California, Davis
UCLA	University of California, Los Angeles
URS	URS Corporation
USGS	United States Geological Survey
UTM	Universal Transverse Mercator

PREFACE

This report documents archaeological studies conducted for the North-of-the-Delta Offstream Storage project during the years spanning 2001 through 2011. The bulk of the work was conducted by the Archaeological Research Program at California State University, Chico while under contract with the California Department of Water Resources (DWR). The work progressed under the direction of Dr. Gregory White. From 2001 through 2003, Dr. White's field crew investigated approximately 37,570 acres. The study area included nearly the entire proposed footprint for Sites Reservoir, a viewshed buffer, over 31 miles of proposed new access roads, and 10.5 miles of the proposed Delevan Pipeline route. Through this effort, 144 archaeological sites were recorded, along with an additional 429 isolated resources. Dr. White and his associates produced a draft survey report (White et al. 2009) documenting their studies; however, contract constraints prevented the report from being finalized.

In the meantime, the project description underwent various modifications, primarily with respect to appurtenant facilities (e.g., recreation areas, electrical and field maintenance yard locations, road relocations, etc.) and to Funks Reservoir. The original plan for Funks Reservoir was to expand its present footprint with a raise in elevation behind a heightened dam. The design later changed to include what is currently referred to as the Holthouse Reservoir Complex, which involves removing the existing Funks dam and enlarging the reservoir to the east of Funks Reservoir by constructing a new dam. In response to both of these scenarios, DWR embarked on conducting survey of, first, the expanded Funks Reservoir and, later, the Holthouse Reservoir footprint. The DWR survey covered 348 acres between 2009 and 2011; other than a single isolated chert flake, no cultural resources were recorded by these efforts.

URS Corporation (URS) was retained in 2011 to combine Dr. White's 2009 report with more recent DWR survey information in order to provide a complete synopsis of the archaeological work conducted for the NODOS project to date. This report combines much of Dr. White's original draft with additional text developed by Janis Offermann, Senior Cultural Resources Specialist, and Registered Professional Archeologist (RPA), of URS. Ms. Offermann was assisted in this task by URS Senior Archaeologist, Benjamin Elliott, RPA, and Archaeologist Chris Peske. This report describes the archaeological study area for NODOS, the methods and findings of document review, and the results of the archaeological field inventory of the study area. The evaluations of archaeological resources for potential inclusion in the National Register of Historic Places are not included in the current study. An inventory and evaluation of built environment resources has been prepared under separate cover (Jimenez 2013).

EXECUTIVE SUMMARY

The California Department of Water Resources (DWR) and U.S. Bureau of Reclamation are partnering with local, regional, State, and federal agencies and stakeholders to study potential offstream surface water storage projects in the upper Sacramento River Basin under the rubric North-of-the-Delta Offstream Storage (NODOS) investigations (CALFED Bay-Delta Program 2000). Numerous technical studies have been completed to support preparation of a combined environmental impact report/environmental impact statement to evaluate the proposed NODOS program. The archaeological studies reported herein were conducted as part of the NODOS environmental evaluation effort.

The study area for the NODOS archaeological investigations covers approximately 43,023 acres. The study area includes all elements of the project in Colusa and Glenn counties, from the location of the proposed Sites Reservoir in Antelope Valley at the east edge of the Coast Range, eastward to the Sacramento River to include the proposed Holthouse Reservoir Complex and Delevan Pipeline, and all other appurtenant facilities associated with the reservoir operations. This report summarizes survey efforts conducted between 2001 and 2011. The archaeological inventory was conducted primarily by the Archaeological Research Program at California State University, Chico under the guidance of Dr. Gregory White from 2001 through 2003. A much smaller portion of the study area was surveyed by DWR archaeologists from 2010 through 2011.

Archaeological survey of the NODOS study area covered 37,918 acres and resulted in the recordation of 144 sites, all of which are in and around the area of the proposed Sites Reservoir. Site totals include 69 prehistoric, 39 historic-era, and 36 multicomponent resources. Isolated finds included 231 historic-era items, 176 prehistoric artifacts, and 7 multicomponent resources. The temporal association of another 15 isolates could not be determined, for a total of 429 isolated finds within the study area.

Together, these resources reflect the extensive human presence within the study area over the millennia up until the recent past. A detailed analysis is beyond the scope of this report, nor have sites been evaluated for inclusion in the National Register of Historic Places or the California Register of Historical Resources.

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CHAPTER 1: INTRODUCTION AND PROJECT DESCRIPTION

1.1 North-of-the-Delta Offstream Storage Investigation

Pursuant to the CALFED Bay-Delta Program Programmatic Environmental Impact Statement (Federal Register, Volume 65, Number 140; 45104-45105), the California Department of Water Resources (DWR) and U.S. Bureau of Reclamation (Reclamation) are partnering with local, regional, State, and federal agencies and stakeholders to study potential offstream surface water storage projects in the upper Sacramento River Basin under the rubric North-of-the-Delta Offstream Storage (NODOS) investigations (CALFED Bay-Delta Program 2000). The purpose, goals, and key components of NODOS investigations are identified in Reclamation's Notice of Intent published in the Federal Register, Vol. 66, No. 218, November 9, 2001. NODOS investigations are focused on feasibility studies for potential projects in the Sacramento River watershed that could improve water supply and reliability, enhance anadromous fish survival, and provide high-quality water for agricultural, municipal, industrial, and environmental uses. The proposed Sites Reservoir was identified as a candidate for inclusion in NODOS investigations because of its potential to contribute to the restoration of ecological health and the improvement of water management in the Bay-Delta system (DWR 2000, 2002).

1.2 Project Location

The proposed NODOS project area is situated in north-central Colusa County and south-central Glenn County (Figure 1), California. The various facilities included in the project span from the first low ridge of the North Coast Range mountains west of Antelope Valley, and east across the Sacramento Valley to the Sacramento River, a distance of approximately 21 linear miles. These areas are depicted in the following United States Geological Survey (USGS) 7.5" topographic quadrangles: Rail Canyon, Lodoga, Leesville, Logan Ridge, Sites, Manor Slough, Maxwell, and Moulton Weir (Figure 2).

1.3 Project Study Area and Description

The entire NODOS project study area (study area) covers 43,023 acres and includes all of the project's proposed elements, as well as proposed roads (Figure 3) that since have been eliminated from the project (e.g., the Ridge Road and Creek Road alternatives). For the purposes of this report, the entire study area has been divided arbitrarily into three segments to help better describe project facilities and archaeological resource locations. These three segments include the Greater Sites Reservoir area, the Holthouse Reservoir Complex area, and the Delevan Pipeline area (Figure 2).

1.3.1 Greater Sites Reservoir

The Greater Sites Reservoir section of the study area is the largest of the three segments within the NODOS project and includes most of the area surveyed by the Archeological Research Program (ARP) at California State University (CSU), Chico. The Greater Sites Reservoir area covers all portions of the study area immediately west of Funks Reservoir to the western limits of the project (Figure 2), and contains the proposed Sites Reservoir footprint and appurtenant facilities, transportation alternatives, and a ridgeline buffer. Cumulatively, the Greater Sites Reservoir area covers approximately 39,444 acres.

The reservoir footprint would inundate the majority of Antelope Valley. At a mean pool elevation of 520 feet above mean sea level, the facility would impound up to 1.8 million acre-feet and would create a reservoir with a surface area of nearly 14,300 square acres. The reservoir footprint would require two main dams—one constructed on Funks Creek and one on Stone Corral Creek—and up to nine saddle

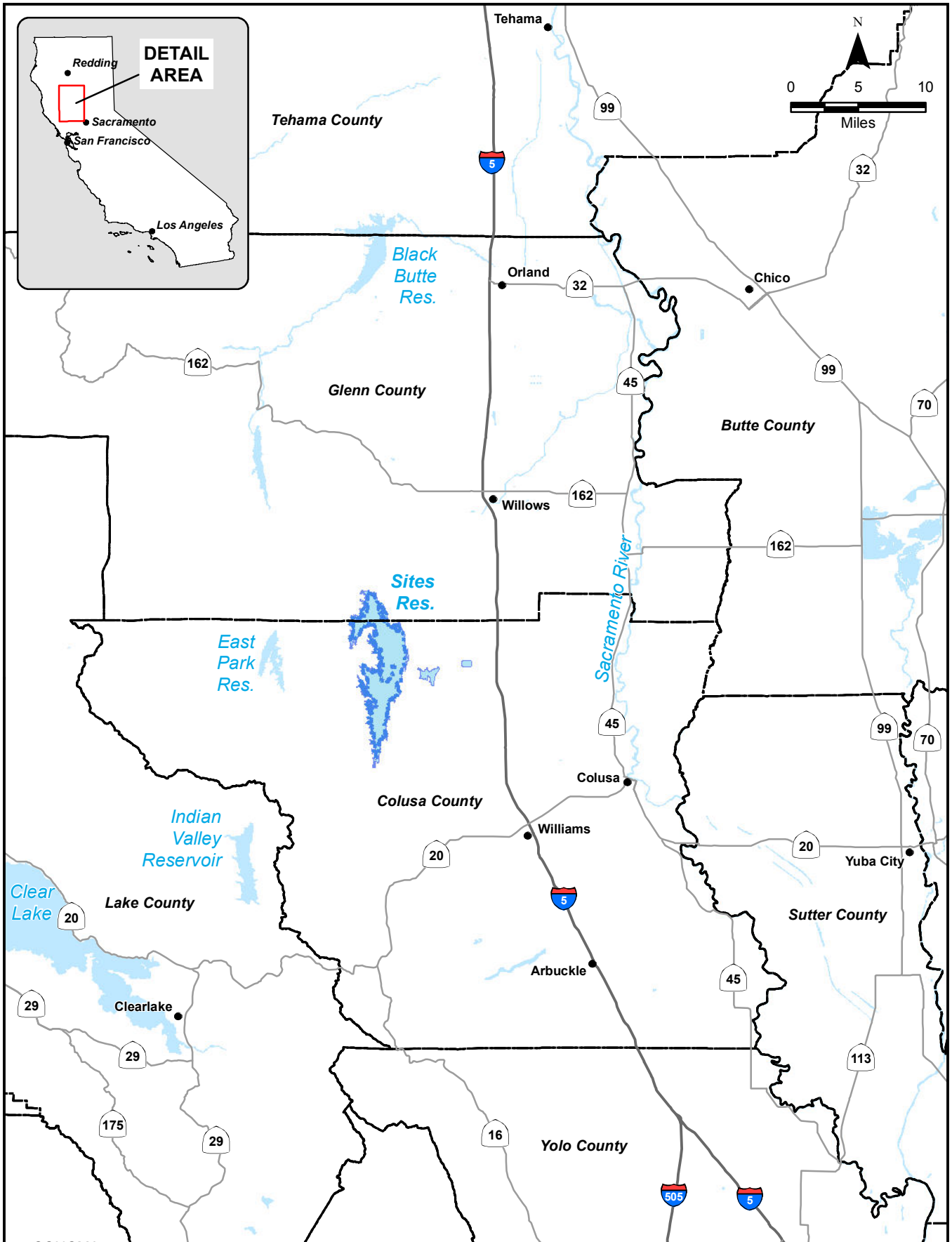
dams, the latter primarily on the northern reach of the impoundment. The footprint, as currently designed, includes the construction of up to five recreational facilities and related access roads. Operational facilities for the reservoir will be located on Logan Ridge just west of Funks Reservoir, and include the Sites Reservoir inlet/outlet, the Sites pump/generating plant, a field maintenance yard, and an electrical switchyard.

Several transportation alternatives are included in this portion of NODOS study area. The Sites-Lodoga Road is an important transportation route and an emergency connector for north-central Colusa County foothill residents. Because the proposed Sites Reservoir would cover a large section of the road in water, alternative connectors must be evaluated as part of the NODOS investigation. Four alternative road corridors are included in greater Sites Reservoir portion of the study area: (1) North Road alternative (as known as Northern Loop); (2) Southeast Road (as known as Mathis connector); (3) Southwest Ridge Road (as known as Ridgetop Loop); and (4) Southwest Creek Road (as known as Grapevine Loop). Transportation alternative corridors within the study area varied between approximately 1000 and 1500 feet in width. It is notable that the Southwest Ridge Road and Southwest Creek Road are no longer under consideration as part of the project, although they are included in the survey results presented here.

A ridgeline buffer zone representing a modified watershed boundary was identified for the Greater Sites Reservoir portion of the study area. The ridgeline buffer is defined as the highest point of perimeter ridges surrounding the proposed reservoir footprint and associated dams, recreation facilities, and planned access routes. The ridgeline buffer takes into account two possible categories of indirect impact: potential future development and viewshed impacts.

DWR and Reclamation initially determined that the ridgeline buffer was prudent and reasonable given the likelihood that, in response to construction of the new reservoir, either of two scenarios might occur: (1) the State of California might seek to purchase adjoining lands to prevent development adverse to CALFED Bay-Delta Program goals and thereby assume responsibility for inventory and management of extant historic properties, or (2) in the absence of State ownership, adjoining landowners might promote development of currently undeveloped lands, and therefore potentially cause alterations in the character or use of extant historic properties. In fact, a “take line” has recently been established for the Greater Sites Reservoir area and some of the Holthouse Reservoir Complex area that includes those lands the state would purchase as part of the project (Bogener 2012); the lands within the take line were covered by the ARP survey.

In addition, the project scoping team recognized the potential need to evaluate viewshed impacts, which are defined as the geographic spectrum viewed from one or more observer’s positions at a significant resource. The area of potential effects ultimately defined for NODOS may take into account indirect visual effects of a proposed undertaking if viewshed impacts may indirectly cause alterations in the character or use of historic properties, and if the viewshed may be an aspect of a historic property’s significance or its setting.



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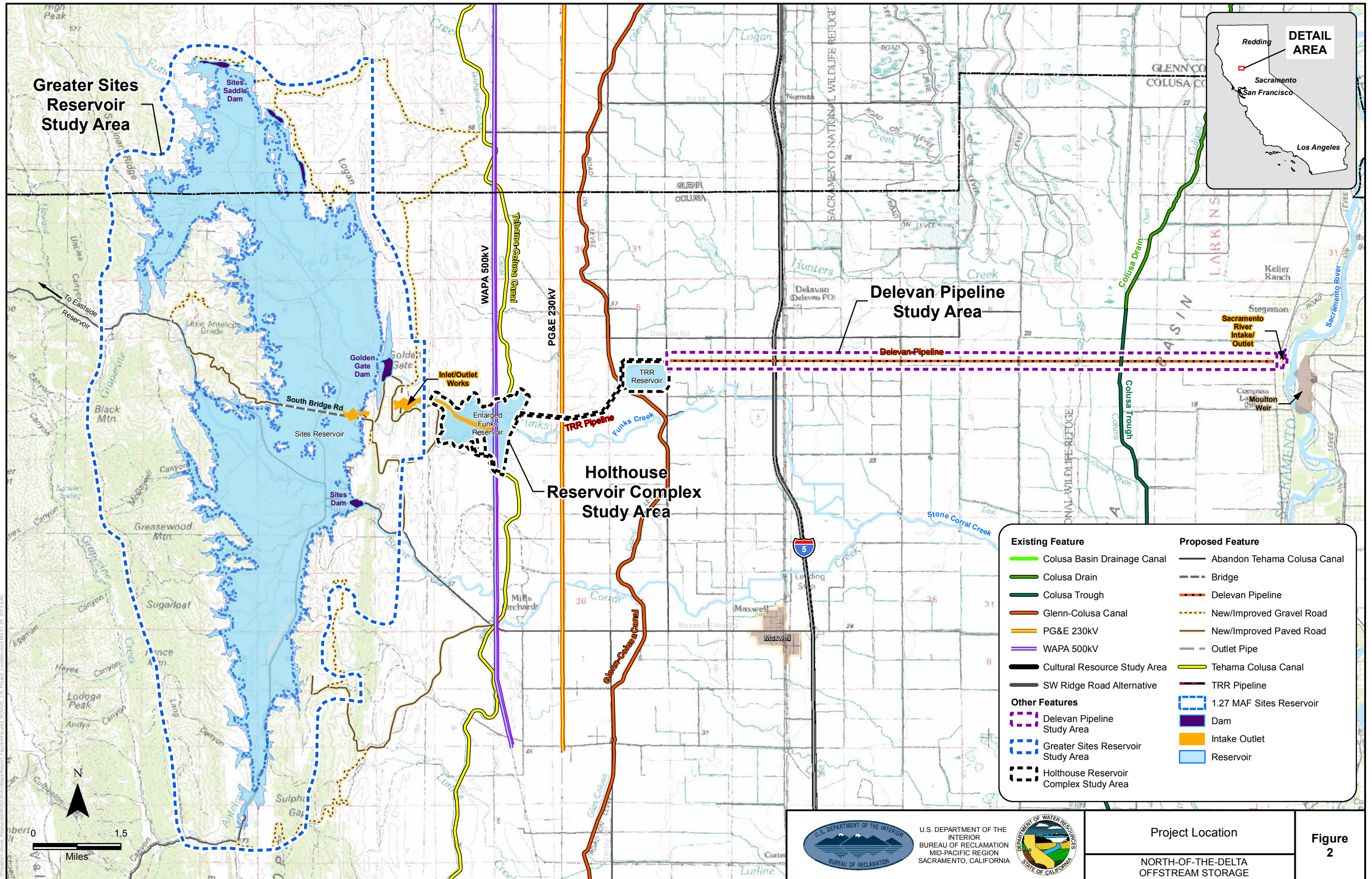


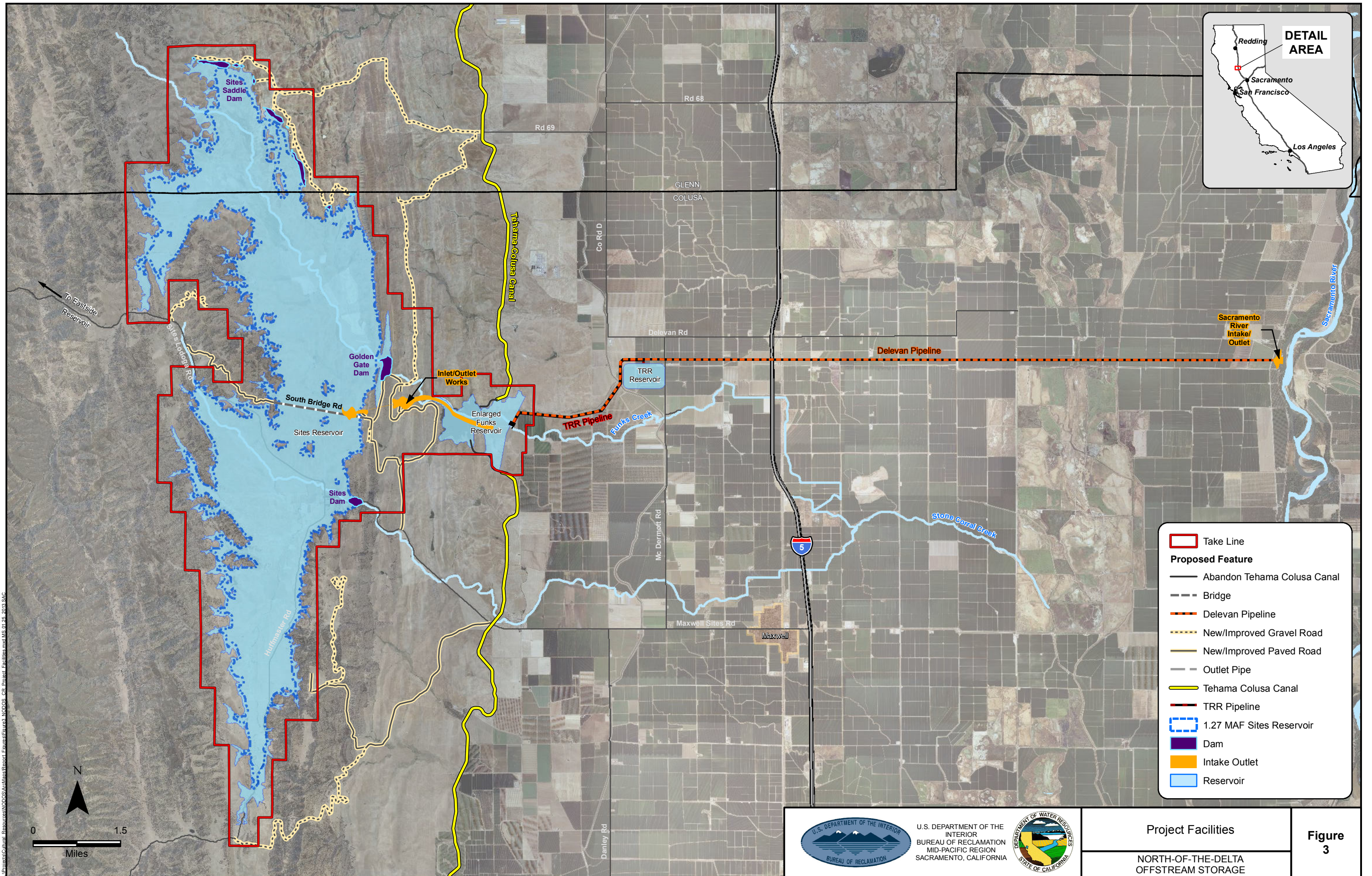
Project Vicinity

NORTH-OF-THE-DELTA
OFFSTREAM STORAGE

Figure 1

1





1.3.2 Holthouse Reservoir Complex

The Holthouse Reservoir Complex portion of the study area encompasses the area from the west end of existing Funks Reservoir east to include the proposed Terminal Regulating Reservoir (TRR), a distance of approximately 4 miles (Figure 2). This segment includes the aforementioned reservoirs, the proposed footprint for Holthouse Reservoir (which will encompass Funks Reservoir), the Holthouse Spillway and Stilling Basin, the Holthouse Pumping Plant, the Tehama-Colusa (T-C) Canal Discharge Dissipater, the Funks Bypass Pipeline, the Holthouse to T-C Canal Pipeline, the 3.5-mile-long TRR pipeline (to convey water from the TRR to Holthouse Reservoir), the TRR pumping/generating plant, and modifications to the existing Glen-Colusa Irrigation District Canal (GDIC). The study area in this section covers approximately 1,100 acres.

1.3.3 Delevan Pipeline Area

The proposed Delevan Pipeline Area extends for 10.5 miles, from the east end of the TRR east to the Sacramento River. In addition to the Delevan Pipeline, this section also includes a new power line that will parallel the pipeline directly adjacent to the north, and a new intake/outtake pump on the Sacramento River. This portion of the study area covers 2,479 acres (Figure 2). This area was partially surveyed for archaeological resources by the ARP and was reported under separate cover (Westwood and White 2005). However, the results of this survey are also included herein.

1.3.4 Pump Installation at the Red Bluff Pumping Plant

The proposed NODOS project also includes the installation of an additional pump at the Red Bluff Pumping Plant on the Sacramento River just south of the town of Red Bluff, nearly 60 miles north of the planned intake for the Delevan Pipeline. The additional pump would be required to meet the flow capacity needed to operate for NODOS project. This element of the project is not included in the study area covered in this document.

1.4 Regulatory Context

Planning for the proposed NODOS project requires extensive environmental review to comply with both federal and State law, including the National Environmental Policy Act, the National Clean Water Act, the National Historic Preservation Act (NHPA), and the California Environmental Quality Act (CEQA). Pursuant to the NODOS Record of Decision (CALFED Bay-Delta Program 2000), for the purpose of cultural resource investigations, Reclamation serves as the lead agency under NHPA and DWR, the lead agency under CEQA (DWR 2002). Reclamation and DWR have agreed to complete archaeological investigations and produce compliance documentation at a level designed to meet or exceed federal standards and guidelines.

This report presents the methods and findings of document review, historical research, and archaeological field inventory of the study area. The report closes with a preliminary evaluation of findings. This report does not evaluate resources for potential inclusion on the National Register of Historic Places or the California Register of Historical Resources.

The studies reported herein were conducted according to the Federal Secretary of the Interior's Standards and Guidelines for Archaeological Investigation and the Secretary of the Interior's Professional Qualifications Standards.

1.5 Confidentiality

Section 304 of the NHPA, as amended, along with Sections 6253, 6254, and 6254.10 of the California State Code, authorize exclusion of archaeological site information from public disclosure under the Public Records Act. Likewise, the Information Centers of the California Historical Resources Information System (CHRIS) maintained by the Office of Historic Preservation prohibit public dissemination of records search information. In compliance with these requirements, and those of the Code of Ethics of the Society for California Archaeology and the Register of Professional Archaeologists, results of this cultural resource investigation should be accessible only to authorized personnel.

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CHAPTER 2: ENVIRONMENTAL CONTEXT

The proposed Sites Reservoir resides in the foothills at the interface between the broad basin of the Sacramento Valley and the east slope of the North Coast Ranges. This region, contained in western Colusa and Glenn counties, has long been known in local lexicon as the “Westside” (west side of the valley and west of the Sacramento River). That term (Westside) is used in this chapter and others to describe the study area’s distinct climate, topography, and cultural and natural history. This section provides a summary of the Westside’s natural environment (including flora, fauna, and physical attributes) focusing on conditions that existed before the modern era. This chapter also discusses the Westside’s cultural context, including regional prehistoric patterns and cultures, ethnographic Native American cultures, and the broad outlines of Westside history.

2.1 Geology

The study area is situated on the boundary between the physiographic provinces of the North Coast Ranges and the Sacramento Valley. Antelope Valley is a fault-bounded alluvial basin carved out of relatively soft serpentinites, and bracketed by a series of pronounced, narrow, north-south-trending ridges, with Great Valley sequence sandstone ridges to the east and Franciscan Formation ophiolites to the west. Both the Great Valley sequence and the Franciscan Formation date between the Upper Jurassic to Upper Cretaceous (Bailey, ed. 1966; Bailey et al. 1964).

2.1.1 North Coast Ranges

The North Coast Ranges land mass originated between 60 and 100 million years ago. At that time, sections of seafloor were folded against the continental plate where they displaced the existing rocks. Deformed, sheared, and metamorphosed to varying degrees, these submarine deposits were ultimately uplifted to expose the erratic melange. Crustal warping and fault transformation provided openings for the ascent of magmas, which added new ridges and mountain chains (McLaughlin 1981). In the vicinity of the study area, the Coast Ranges are composed primarily of unaltered sandstone and shale incised by deep faults. Sedimentary in origin, these rocks consist primarily of Cretaceous deposits as well as marine sedimentary formations and conglomerates first deposited during the Mississippian and Pennsylvanian periods. Following the Cretaceous period, massive uplifting, folding, and erosion took place, and ultimately produced the Coast Ranges as they are known today. These geological processes caused extensive erosion of the mountains and foothills that promoted deposition in the valleys.

The older, and more uplifted and weathered, central and eastern belts of the Franciscan Formation underlie the mountains immediately west of the study area. From the standpoint of prehistoric industries, the signature rock of the central and eastern belts is Franciscan chert, a colorful, fine-grained silicate. Higher density and higher quality cherts occur in the nearby northern North Coast Ranges where the oldest, eastern belt Franciscan rocks are found. Other usable toolstone found in central and eastern belt rocks include the micascist, soapstone, slate, and metasandstones preferred for ground stone industries (White, ed. 2002:530–531).

2.1.2 Great Valley Sequence

Great Valley sequence rocks appear as orderly rows of north-south-trending ridges east of the North Coast Ranges and along the west edge of the Sacramento Valley. These rocks consist of bedded mudstone, sandstone, shale, and some conglomerates that formed in a littoral environment during the Upper Jurassic through Cretaceous periods (Bailey et al. 1964). The strata are derived from ancestral

Sierra and Klamath highlands materials that accumulated on the continental shelf to a thickness of more than 40,000 feet (Bailey et al. 1964). Except where disrupted by faults, Great Valley sequence materials are situated on top of Coast Range serpentine in the foothills zone: “Franciscan rocks were jammed onto the edge of the continental shelf while the Great Valley group rode undisturbed above them” (Alt and Hyndman 1975).

The Great Valley sequence rocks are folded at the axis of the Fruto syncline and Sites anticline. The Fruto syncline runs roughly north-south through Antelope Valley. The Sites anticline also runs north-south and is within the low-lying foothills that form the eastern boundary of Antelope Valley. The Sites anticline is one of the most conspicuous folds along the western foothills belt of the Sacramento Valley (Jenkins 1948). These sedimentary rocks are markedly less deformed and more coherent than sedimentary sections of the Franciscan. In this zone the Great Valley group appears as massive high-quality sandstone and interbedded mudstone erupting from the valley floor and ranging from 125 to 225 feet thick. The foothills were uplifted by the Sites anticline and the Coast Range Fault (Unruh et al. 2001). This thrust fault caused initial uplift of the Great Valley Group followed by wedging, which raised the foothills above the surrounding plain prior to the Quaternary (Unruh et al. 2001).

Only poor-quality and scattered chipped stone resources are found in the foothill thrust zone. Outcrops and nodules of hard and grainy greenstone and blueschist suitable for flaked stone tools are found in serpentinite outcrops scattered throughout this terrain; cherts are reported to occur in the earliest unit, which is generally consistent with the westernmost strip of foothills nearest the mountains (Bailey et al. 1964). However, the occasional tufas and other accretional silicates found in the foothill thrust are generally too brittle to be of service. Dense sandstone suitable for grinding tools is widespread. Shale suitable for ornaments is also found immediately west of Antelope Valley. Serpentine often signals the source terrains for minerals such as soapstone and micaschist used for ornaments and personal gear, and actinolite, hematite, and magnesite used for pigments, ornaments, and shamanistic pursuits (Heizer and Treganza 1972), but there are no known quarries in the immediate vicinity of the study area.

2.1.3 Sacramento Valley Margin and Plains

East of Antelope Valley, the landscape descends into low-lying foothills on the western margin of the Sacramento Valley. The hills, which represent early Tertiary river terraces and Quaternary alluvial fans, form highly weathered, bench-like deposits that step down toward the valley. These terrace remnants are interspersed with a series of Quaternary stream corridors, including Stone Corral, Willow, Funks, and Antelope creeks. The creeks have eroded canyons through the Great Valley thrust zone and Tertiary terraces, and deposited vast alluvial fans that spread out from the base of the foothills onto the Sacramento Valley plains. The upper 10 feet or so of the alluvial fans consist of recent sediments, below which lie thousands of feet of Tertiary sediments. Fossil remains of Pleistocene-age mammals have been found in portions of these alluvial fans.

East of the foothills, the study area includes the flat plains of the Sacramento Valley, the result of vast sedimentary processes that have been ongoing since the Jurassic Period. The upper sediments are relatively recent alluvial flood deposits left by the meandering Sacramento River over time, resulting in the deposition of well-sorted, sandy alluvium that is easily tilled and well-suited for agricultural use.

The project area includes the Colusa Sub-basin of the Sacramento Valley Groundwater Basin, which extends west from the Sacramento River to the Coast Range and foothills, south to Cache Creek, and north to Stony Creek (DWR 2003). A number of hydrogeologic formations are present in the Colusa Subbasin, two of which occurred within the last 10,000 years. Holocene Stream Channel Deposits are comprised of unconsolidated gravel, sand, silt, and clay derived from the erosion, reworking, and

deposition of the adjacent Tehama Formation and Quaternary stream terrace deposits. These deposits typically measure from 1 to 80 feet in thickness (DWR 2003; Helley and Harwood 1985). Holocene Basin deposits are the result of the transportation of sediment-laden floodwaters across the floodplain. These deposits range in thickness up to 150 feet, and consist primarily of silts, clays, and stream channel deposits (DWR 2003). Hence, evidence for prehistoric human utilization of the project area could lie undetected beneath extensive alluvial deposits.

2.2 Flora

Westside ecological communities are structured by the region's underlying geomorphic structure, with washboard-like north-south-trending ridges that are progressively higher and steeper to the crest zone of the North Coast Ranges approximately 20 miles west of Sites. Study area vegetation types are controlled by interrelationships between elevation, temperature, moisture, and soil that create environmental gradients and distinctive vegetation communities. Four vegetation communities dominate the Westside: (1) California prairie; (2) blue oak woodland; (3) chamise-dominated chaparral; and (4) riparian woodland. Generally, these four habitats sort themselves on the landscape laterally from the valley floor to the foothills, and co-associate with changes in landform and soil type.

2.2.1 California Prairie

Annual grasslands constitute approximately 85 percent of the proposed Sites Reservoir footprint, and occur primarily below 1,000 feet in elevation. These grasslands dominate the valley floor and the broad, flat to gently sloping alluvial fans and Tertiary terraces connecting the foothills and floodplains. Currently, the grasslands are dominated by introduced species, including foxtail (*Hordeum leporinum*), star thistle (*Centaurea solstitialis*), wild oats (*Avena fatua*), annual blue grass (*Poa annua*), tarweed (*Hemizonia congesta*), and clover (*Trifolium* spp.) (Crampton 1974).

Prior to 1850, annual grasslands covered all well-drained areas of the Great Central Valley, as well as the larger valleys of the Coast Ranges. After 1850, heavy stock grazing, agricultural development, clearing, and the introduction of many invasive plant species resulted in a rapid loss of native grassland species. Today, less than 1 percent of the region's annual grassland areas are considered pristine. Because pre-1850 soil and drainage conditions are largely unchanged in the region, it is assumed that the current distribution of annual grasslands in the study area mirrors the native distribution, although widespread single trees or occasional large, closed stands of valley oak or blue oak were probably cleared by farming and ranching interests in the historic period. Shallow soils, broad exposure, a deep water table, and the long dry season in the native grasslands probably combined in different ways to influence the type, density, and succession of species. Based on historical research, and an analysis of modern stands (Burcham 1981; Crosby 1986; Heady 1988; Schoenherr 1992), the dominant bunch grasses in Antelope Valley likely included needle grass (*Stipa pulchra*) and nodding needlegrass (*Stipa cernva*). Common perennial and annual grasses probably included California oatgrass (*Danthonia californica*), tufted hairgrass (*Dechampsia caespitosa*), three-awn (*Aristida* sp.), hairgrass (*Deschampsia danthonoides*), western and Idaho fescues (*Festuca occidentaus*, *F. idahoensis*, *F. megalura*, and *F. pacifica*), Pacific reedgrass (*Calamagrostis nuthaensis*), rye (*Elymus glaucus* and *E. triteoides*), junegrass (*Koeleria cristata*), melicgrass (*Melica californica* and *M. imperfecta*), and bluegrass (*Poa scabrella*). Common forbs probably included brodiaea (*Brodiaea* sp.), buttercup (*Ranunculus occidentalis* and *R. californicus*), blue-eyed grass (*Sisyrinchium bellum*), lupine (*Lupinus variicolor*), clover (*Trifolium* sp.), and vetch (*Vicia* sp.).

2.2.2 Blue Oak Woodland

Blue oak woodland represents approximately 10 percent of the current Sites Reservoir footprint vegetation, occurring primarily between 321 to 963 feet in elevation. Dense concentrations of blue oaks are now confined to ridges, knolls, and slopes, but probably once extended into the valley floor where they intermixed with valley oaks (*Quercus lobata*). The blue oak woodland vegetation community consists mainly of blue oak (*Quercus douglasii*) and other deciduous oaks, including Oregon oak (*Quercus garryana*), black oak (*Quercus agrifolia*), and interior live oak (*Quercus wislizenii*), and the occasional gray pine (*Pinus sabiniana*). Chaparral species, such as poison oak (*Toxicodendron diversiloba*) and birch-leaf mahogany (*Cercocarpus betuloides*), are often present in the understory. Patches of California juniper (*Juniperus californica*) are scattered throughout the blue oak woodland in the study area, and typically are associated with low-lying ridges with shallow mineral soils.

2.2.3 Chamise-Dominated Chaparral

Chamise-dominated chaparral represents approximately 5 percent of the current Sites Reservoir footprint vegetation. Chaparral patches tend to occur at an elevation of 642 to 1,605 feet on the western foothills of the study area, inter-fingering with blue oak woodland vegetation. Study area chaparral is a dense, interwoven vegetation community dominated by chamise (*Adenostoma fasciculatum*), with occasional manzanita (*Arctostaphylos* sp.), gray pine, buck brush (*Ceanothus* spp.), California buckwheat (*Erigonum fasciculatum*), and scrub oak (*Quercus dumosa*) (Hanes 1988). Chaparral occurring on the steep east-facing slopes also includes sporadic redbud (*Cercis occidentalis*) and California buckeye (*Aesculus californica*).

2.2.4 Riparian Woodland

Less than 1 percent of the study area can be classified as riparian woodland. Riparian woodland is confined to the deeply entrenched drainages of Antelope, Stone Corral, and Funks creeks, and along the Sacramento River. Based on examination of relict stands, Thompson (1961, 1980) and others (Barbour and Major 1988; Burcham 1981; Holland and Keil 1990; Ornduff 1974) have defined the basic species composition and ecology of the riparian woodland. According to these authors, riparian woodland had significant floral diversity and a complex architecture with woody upper and intermediate overstory species, and a dense understory of vines and herbaceous and shrubby plants. The overstory canopy was dominated by the California valley oak, Fremont cottonwood (*Populus fremontii*), and California sycamore (*Platanus racemosa*), all three representing deciduous, flood-tolerant species with deep tap roots capable of reaching the permanent water table. A distinct intermediate overstory zone was composed of Oregon ash (*Fraxinus latifolia*), walnut (*Juglans* sp.), cottonwood (*Populus* sp.), big leaf maple (*Acer macrophyllum*), California box elder (*Acer negundo sub californicum*), and willow (*Salix* sp.). In canyon lands around the study area, white alder (*Alnus rhombifolia*) and California bay (*Umbellularia californica*) also occur along stream corridors. Typical understory species included elderberry (*Sambucus mexicana*), mugwort (*Artemisia douglasiana*), mulefat (*Baccharis viminea*), wild rose (*Rosa californica*), button-willow (*Cephalanthus occidentalis*), and blackberry (*Rubus* sp.). Common vines and climbers included Dutchman's pipe vine (*Aristolochia californica*), poison oak, wild grape (*Vitis californica*), greenbrier (*Smilax californica*), and wild clematis (*Clematis* sp.). The parasitic big mistletoe (*Phoradendron tomentosum sub. macrophyllum*) is found growing on many overstory species (Katibah 1984; Ornduff 1974; Roberts et al. 1980).

2.3 Fauna

Animals now common to the study area include some native species and many introduced species. However, among the native species, present-day density, distribution, and behaviors are probably much different than those found in pre-contact times due to widespread changes in habitat availability. The investigation of faunal remains recovered by previous archaeological excavations in the region, described below, provides insight into the importance of various animal species to prehistoric diet, and biological studies have provided important baseline information on the behavior and environmental associations that may have prevailed in the past.

2.3.1 Economically Significant Animals

Based on their prevalence in the prehistoric archaeological record and widespread occurrence in archaeological sites in a variety of ecological zones, black-tailed deer (*Odocoileus hemionus columbianus*) were clearly the region's most important staple animal food. Recent studies of black-tailed deer behavior cite their dependence on cover provided by brush in canyons, wooded slopes, and riparian thickets. During the summer and fall, black-tailed deer primarily consume the leaves, stems, and shoots of woody plants (Taber 1956), while grasses and forbs compose the bulk of the diet in winter and spring. Mating season can begin in September for black-tailed deer, with a birthing season beginning in April (Snyder 1991). According to Taber (1956), "an area of about 360 acres would represent the maximum home range size occupied by an individual deer...[Further,]...home ranges are not mutually exclusive, so that the same 360 acres might be occupied, in part at least, by as many as 80 or 90 deer."

Exceptions might include yearling dispersal, buck travels during the rutting season, and wandering by old deer; however, an established animal would generally be found within a 500-yard radius of the center of its home range.

Tule elk (*Cervus elaphus nannodes*) are now locally extinct, but in prehistoric times may have served as a significant game animal. Tule elk lived in small, fluid herds whose movements changed "in response to local conditions" (McCullough 1969). By September, the elk probably accumulated near riparian woodlands within 1 mile of perennial water sources. The rut likely took place near the end of September, and was characterized by bull-dominated cow groups 30 to 50 individuals. Larger herds probably coalesced after the rut, feeding primarily on acorn mast until November when they shifted to small, dispersed grazing groups occupying mixed prairie and blue oak woodland (McCullough 1969; Phillips 1976; Smith 1973).

Pronghorn (*Antilocapra americana*) were common in the pre-contact California Prairie. By 1875, pronghorn were rare in Central Valley grassland areas and farmers actively destroyed animals found in wheat fields (Schoenerr 1992). Subsisting primarily on annual grasses and forbs, and relying on open ground and speed for defense from predation, the pronghorn was most likely a permanent resident of the prairie. The rut took place in October, characterized by small, buck-dominated doe groups of 5 to 15 individuals. Larger herds might gather in the late fall through spring, and disperse into smaller herds in the summer.

The California grizzly (*Ursus horribilus californicus*) has been extinct for more than 100 years; the last wild animal was killed in Shasta County in 1902. However, historical and ethnographic accounts indicate the prevalence of the animals in the Sacramento Valley and foothill grasslands (Storer and Tevis 1955). For example, in 1841 John Bidwell passed through what would later become Colusa and Glenn counties and saw many grizzlies, including 16 grizzly bears in a single group. Bidwell (1897) later recalled:

“Grizzly bears were almost an hourly sight, in the vicinity of streams, and it was not uncommon to see thirty to forty a day.”

Similarly, Wilkes (1958:74-75 [1841]) reports: “Bears were also in great numbers. It is reported that they will sometimes attack and eat the Indians...They will also ascend the oaks for the acorns, and break off branches so large as almost to ruin the tree. It has been generally supposed that they do not climb; but all the hunters bear testimony that they can do it, although slowly and clumsily...Three or four are usually seen feeding together. The cubs are remarkably small in proportion to the full-grown animal.”

Archaeological faunal records suggest the grizzly was not an important prehistoric food source. However, their predilection for human encounters (Storer and Tevis 1955) suggests that defense against grizzly bears may have been an important factor to the study area’s prehistoric populations.

2.3.2 Other Animals

Other animals common to the blue oak woodland and chaparral communities included predators/omnivores such as the black bear (*Euarctua americanus*), cougar (*Felis concolor*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), gray fox (*Urocyon cinereoargenteus*), and badger (*Taxidae taxus*). Common small game included the black-tailed hare (*Lepus californicus*), Audubon cottontail (*Sylvilagus audubonii*), brush rabbit (*Sylvilagus bachmani*), Beechey ground squirrel (*Spermophilis beecheyi*), gray squirrel (*Sciurus griseus*), kangaroo rat (*Dipodomys heermanni*), and pocket gopher (*Thomomys bottae*). Riparian animals likely present in the lower reaches of Stone Corral and Funks creeks, and along the Sacramento River include included beaver (*Caster canadensis*), Pacific pond turtle (*Clemmys marmorata*), molluscs (*Anodonta californiensis* and *Gonidea angulata*), and predators/omnivores such as raccoon (*Procyon lotor*), ringtail (*Bassariscus astutus*), weasel (*Mustela frenata*), and mink (*M. vison*). The western rattlesnake (*Crotalus viridis*) was common throughout the study area (Ingles 1965; Jameson and Peeters 2004; Stebbins 2003).

The economically most important bird was the valley quail (*Lophortix californicus*). Snares and traps were used to harvest valley quail for food, and their feathers were used in basketry and ceremonial regalia (Leopold 1977). Other economically significant birds common in the study area include the northern flicker (*Colaptes auratus*), meadowlark (*Sternella neglecta*), red-tailed hawk (*Buteo jamaicaiensis*), bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), and turkey vulture (*Cathartes aura*). Wading birds seasonally present in the lower reaches of Stone Corral and Funks creeks include great blue heron (*Ardea herodias*), green heron (*Butorides virescens*), snowy egret (*Egretta thula*), great egret (*Ardea alba*), and American bittern (*Botaurus lentiginosus*).

The project area also lies directly in the Central Valley path of the Pacific Flyway. Migratory waterfowl, including swans, geese, and ducks (*Anseriformes*) stop over between approximately November and February. Ethnographic accounts describe the valley thick with waterfowl during the winter season. In general, they favored open ground or shallow water of the basin areas on the valley floor (White 2003). Today, these migratory waterfowl species rest in flooded agricultural fields along the Sacramento River.

Moyle’s (2002) omnibus study of California’s inland fisheries places the study area in the Sacramento-San Joaquin Province, Central Valley Subprovince. The Funks, Antelope, and Stone Corral creeks were small but seasonally variable streams with minimal, slow-moving summer flow where resident species primarily belonged to the cyprinidae family, including splittail (*Pogonichthys macrolepidotus*), Sacramento blackfish (*Orthodon macrolepidotus*), hardhead (*Mylopharadon conocephalus*), and Sacramento pike-minnow (*Ptychocheilus grandis*). Resident species probably also included the Sacramento perch (*Archoplites interruptus*), western sucker (*Catostomus occidentalis*), California roach

(*Hesperoleucus symmetricus*), and three-spine stickleback (*Gasterosteus aculeatus*). These streams may once have supported small anadromous fish runs, probably featuring the cyprinids but perhaps also including salmon (*Oncorhynchus* spp.) and steelhead rainbow trout (*Oncorhynchus mykiss*).

At the east end of the study area, the Sacramento River supported an extraordinary fishery that featured a number of resident and anadromous fishes. The largest migratory fish was the white sturgeon (*Acipenser transmontanus*); however, the most common fishes belonged to the cyprinidae family, including hitch (*Lavinia exilicauda*), splittail, hardhead, and the western pike-minnow. Other common resident fish included the western sucker (*Catostomus occidentalis*), Sacramento perch (*Archoplites interruptus*), and tule perch (*Hysteroecarpus traskii*). Each of these species was widely dispersed most of the year, but during the spring season could be found clustered in side streams, sloughs, or shallow water habitats for nesting or spawning. Anadromous fishes primarily spawned in the late fall or winter, but also had spring runs. These included the Pacific lamprey (*Lampetra lethophaga*) and several salmonids, including the king salmon (*O. tshawytscha*), Coho salmon (*O. kisutch*), and steelhead rainbow trout (White 2003).

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CHAPTER 3: PREHISTORY CONTEXT

3.1 General Trends in Northern California Prehistory

The NODOS study area is like many parts of the state where archaeologists are still in the process of building a basic archaeological record. Much of the record is unknown, and evidence of the early occupations dating more than 3,000 years ago is especially lacking. The following discussion begins with the broad outlines of Northern California culture history and then focuses on what is known about the prehistoric cultures of adjoining regions. The broad outlines of California prehistory are best captured by D. A. Fredrickson's (Fredrickson 1994a, 1994b, 1994c) integrative scheme, which proposes three basic prehistoric periods: Paleoindian, Archaic, and Emergent, with the Archaic further subdivided into the Lower, Middle, and Upper periods, and the Emergent into Lower and Upper (sometimes referred to as Phase 1 and Phase 2) divisions. Each period is characterized by a generally prevailing economic, cultural, and environmental condition. However, each geographical region is expected to have a different pattern of prehistoric culture and culture change.

3.1.1 Paleoindian Period: Western Clovis Tradition

Recent sampling at Borax Lake near Clear Lake provides tentative obsidian hydration dating evidence of occasional obsidian quarrying activity as early as 16,000 years ago (White, ed. 2002:448–449). However, the find remains unconfirmed and no other archaeological traces this age have been identified in the northern part of California. The most reliable evidence indicates that the north State was first colonized at the end of the Pleistocene, approximately 13,000 years ago. Sparse evidence and equally sparse toolkits indicate that these earliest peoples were culturally conservative, low-density hunters and foragers who moved between widespread resource patches and practiced technological traditions that were similar from region to region. Contemporaneity with Pleistocene megafauna is suspected but not demonstrated. The most ancient confirmed cultural traces are associated with the Western Clovis Tradition (Willig and Aikens 1988), which dates between approximately 13,500 to 10,500 years before present (BP). The Western Clovis Tradition is represented by one site and a few scattered artifacts in northern California, and is marked by use of the distinctive Clovis fluted point. Diet and settlement patterns remain a matter of speculation (Fredrickson 1984:497; Fredrickson and White 1988).

No sites or components associated with the Western Clovis Tradition have been found in or adjacent to the study area. However, two isolated artifacts potentially indicative of the Western Clovis Tradition have been identified in northern California. Johnson et al. (1984:65) reports the discovery of a chert flaked stone crescent from site CA-GLE-306, in the vicinity of Black Butte Reservoir west of Orland in Glenn County, and Dillon and Murphy (1994) report a possible fluted point from the Thomes Creek area near Paskenta in southwest Tehama County.

3.1.2 Lower Archaic Period: Borax Lake Pattern

The Borax Lake Pattern is the northern California manifestation of the Western Stemmed Tradition (Willig and Aikens 1988), and dates between approximately 10,500 to 7,000 years BP. The marker artifact types are wide-stemmed projectile points, and handstones and millstones. Deep, flute-like basal thinning, large bladelet flakes, and well-worked unifacial tools are carry-overs from Paleoindian technology. A few sites have produced plant and animal remains that indicate the Borax Lake Pattern diet featured large nuts, and small and large game (White ed. 2002). No artifacts or sites this age have been identified in the Sacramento Valley proper, although Borax Lake Pattern sites have been documented in the western foothills of Colusa, Glenn, and Tehama counties.

Two excavated sites, CA-COL-76 and CA-COL-160, have yielded evidence of Borax Lake Pattern occupation in the foothills of Colusa County. In 1982, a crew from California Archaeological Consultants conducted test excavations at the Fouts Springs Recreation Area in the Stonyford District of the Mendocino National Forest (Slaymaker 1983). The two sites studied, CA-COL-76 and CA-COL-81, were both near the confluence of Mill Creek and the South Fork Stony Creek, approximately 7 miles west of Stonyford. CA-COL-76 was situated on an elevated bench above the creeks, in weathered, gravelly clay. Artifacts recovered included Borax Lake wide-stemmed points, handstones and millingstones, and cores and core tools, which are predominantly Borax Lake Pattern in attribution. Obsidian sourcing studies for 50 CA-COL-76 specimens found a preponderance of Borax Lake obsidian with some Napa Valley, Mt. Konocti, and Medicine Lake source group obsidian (Bouey in Slaymaker 1983). Obsidian hydration rim values on 50 specimens suggest an age range of between 8000 to 4500 BP for the assemblage and, thus, indicate the presence of a component consistent with the Borax Lake Pattern assignment.

Origer and Waechter (1990) conducted test excavations at CA-COL-160, on Little Stony Creek, in the Mendocino National Forest. The site consisted of a light midden and artifact scatter that occupied a gently sloping bench or terrace on the north side of the creek. Excavation in the midden area produced evidence of two components. The lower component, below 60 centimeters depth, yielded a Borax Lake wide-stemmed point, flake tools, a core tool, hammerstones, handstones, and millingstone fragments. Twenty-four hydration rim values on Borax Lake obsidian flakes and bifaces from the 60 to 160 centimeter levels indicated an age of around 8000 to 4500 BP, which is consistent with a Borax Lake Pattern assignment.

3.1.3 Middle Archaic Period: Windmill and Mendocino Patterns

The Middle Archaic Period corresponds roughly from 7000 to 2500 BP. The early part of the Middle Archaic (7550 to 4050 BP) witnessed wide-spread climatic instability that is widely documented in North America and is clearly established for northern California (Adam and West 1983; Benson et al. 2002). This climatic instability adversely affected the development of upland and lowland soils, which diminished the capacity of the landscape to store archaeological deposits. Consequently, Middle Archaic archaeology is uncommon and the available record problematic. In addition, the density and distribution of economically significant resources also appears to have been impacted by climatic and landscape instability, which led to cultural responses such as local depopulation, interregional population movements, and dietary change. In contrast, the later part of this period (post 4550 BP) is associated with relative climatic stability. As a result, sites attributed to this part of the Middle Archaic are relatively well represented.

A number of trends in prehistoric culture change first emerged during the Middle Holocene, including the development of settlement associated with ridgetops (Hildebrandt and Hayes 1993), rivers/marshes (Heizer 1949), and lake sides (Sampson 1985; White, ed. 2002), and dietary specializations focused on the acorn, deer, and freshwater and anadromous fisheries. These trends point to the development of distinct settlement-subsistence adaptations for the foothill and valley regions in northern California (Rosenthal et al. 2007:152-153).

The archetypal valley culture for this period is the Windmill Pattern, which, in its most elaborate form, is found in the Sacramento-San Joaquin River Delta and Mt. Diablo regions. Windmill material culture features artifacts made of varied stone materials such as quartz crystals, red ochre, chert, slate, obsidian, asbestos, biotite, and worked clay. Worked shell includes small *Olivella* beads, and red and black abalone (*Haliotis*) ornaments and square beads. Twined basketry is known from impressions left in baked clay. Other baked clay objects include cooking balls, perforated disks, and grooved net sinkers (Beardsley 1954:69; Heizer 1949:25; Moratto 1984:201). Based on the rarity of ground stone tools, abundant projectile points, and dietary bones from elk, pronghorn, deer, rabbit, coyote, beaver, lynx, bear, and

waterfowl, it is assumed that hunting was the focus of Windmill Pattern subsistence (Heizer 1949:20, 27; Moratto 1984:201). The Windmill Pattern is also characterized by distinctive burial patterns, with bodies typically buried fully extended, face down, with the head oriented toward the west, and the placement of funerary objects in the grave (Moratto 1984).

Foothill sites of the Middle Archaic Mendocino Pattern are often found in buried deposits, and are relatively common in comparison to those on the valley floor. Flaked and ground stone tools make up the bulk of the artifact assemblages from these sites. Projectile point styles include a variety of dart forms such as notched, stemmed, thick leaf or lozenge, and narrow concave. Cobble choppers and scrapers, along with handstones and millingstones, are also representative of the period. Bone or shell artifacts are rarely encountered (Rosenthal et al. 2007:152-153). The Mendocino Pattern is representative of the Middle Archaic in the North Coast Ranges, and associated materials have been discovered at numerous foothill sites in the vicinity of the NODOS study area.

Until recently, Middle Archaic sites were unknown in the Sacramento Valley in the study area vicinity. Excavations were conducted by White (2003) at CA-COL-247 in 2000. This site, approximately 4 miles south of Princeton on the west side of the Sacramento River, was discovered at the bottom of a trench excavated for a fiber optic cable. The site contained five discrete cultural components, including two that were assigned to the Middle Archaic. The earlier component, the *Cha'dehe* Phase (4385 to 3460 calibrated BP [calBP]), contained cultural constituents that indicate a "mix of widespread Middle Archaic technology and distinctive regional functional and stylistic types..." (White 2003:222). This was followed by the *Si'dehe* 1 Phase (3,222-2,750 calBP) with an artifact assemblage that reflected a combination of Windmill and Berkeley (see below) Pattern traits, as noted by the presence of diagnostic projectile point and bead styles accompanied by handstones and millingstones (White et al. 2003:222-223).

Unlike the valley, archaeological information, to date, indicates that Mendocino Pattern sites are widespread in the western foothills of the Sacramento Valley. These sites often exhibit many characteristics common to Middle Holocene "Millingstone Culture" sites in the South Coast Ranges, and include large inventories of coarse core tools, handstones, and deep-basin millingstones. Three excavated sites have yielded evidence of Mendocino Pattern occupation in the foothills that border the west side of the Sacramento Valley: CA-COL-81, CA-GLE-217, and CA-GLE-268.

The Fouts Springs CA-COL-81 excavation, mentioned above, found a dark, clayey midden attributable to the Mendocino Pattern. It contained Mendocino concave-based, lozenge-shaped, Mendocino corner-notched, and Willits side-notched projectile points; cores and core tools; and a mix of handstones and millingstones, and the mortar and pestle. Obsidian sourcing determinations for 62 CA-COL-81 specimens found a mix of Borax Lake, Napa Valley, and Mt. Konocti obsidian (Bouey in Slaymaker 1983). Obsidian hydration rim values on 50 specimens reflected an age of between 3500 to 2000 BP for the assemblage, and are consistent with the Mendocino Pattern assignment. This age estimate was further supported by a radiocarbon date of 3360±140 BP obtained for an aggregate of charcoal from Unit 8, at a depth of 80 to 120 centimeters (Slaymaker 1983).

The California Department of Transportation conducted a data recovery excavation at CA-GLE-217 in 1992. This site is at the junction of State Route 162 and County Road 403 just north of Elk Creek in Glenn County. The excavation found stratigraphic and dating evidence for two separate periods of occupation. The primary occupation at CA-GLE-217—Component B—was attributed to the Mendocino Pattern, and radiocarbon and obsidian hydration evidence fixed the age of the occupation at 4842 to 2685 calBP. Associated artifacts included blue schist and greenstone cores/core-tools, chert flake tools, projectile points and bifaces, small chert cores, and handstones and millingstones. Three burials were

found associated with Component B, and the Mendocino occupation was marked by a well-defined rock layer interpreted as a product of Middle Holocene deflation and soil loss (White et al. 2008).

Data recovery excavations were conducted in 1981 at CA-GLE-268, the ethnographic Hill Nomlaki village of *Kulachini*, located along County Road 403 halfway between Elk Creek and Stonyford in western Glenn County (Offermann and Orlins 1982). The excavation produced a corner-notched point, a concave-based point, handstones and millingstones, and shaped scrapers. Obsidian hydration results for Borax Lake obsidian specimens at the site produced an average date of approximately 1500 BP.

3.1.4 Upper Archaic Period: Berkeley Pattern

Regional climate stabilized at around 3000 BP, and by 2500 BP the widespread, generalized technological traditions of the Middle Archaic were replaced by distinct regional specializations. Archaeologists have also found evidence of an increase over time in the scope and distance of inter-group trade patterns, a widespread change from less to more complex social forms, and from low to high population density. The archetypal Upper Archaic culture is the Berkeley Pattern (2500 to 1000 BP), which reflects the basic Archaic adaptation of the rich alluvial basins of Central California. There was also considerable cultural diversity within the Berkeley Pattern, and local cultures have been identified in the central Sacramento Valley, central North Coast Ranges, Napa Valley, Solano County, and Sacramento Delta regions (Bennyhoff 1994; Rosenthal 1996; White 2003; White, ed. 2002). Certain traits are common to all Berkeley Pattern variants, including a highly developed bone tool industry, atlatl engaging hooks, and dart-sized, non-stemmed projectile points (Beardsley 1954:74; Fredrickson 1974; Lillard et al. 1939:77). Berkeley Pattern sites contain many features, especially fire-cracked rock piles, shallow hearths, rock-lined ovens, house floors, cairns, and graves. Complete house floors suggest that large, pole-framed houses between 4 to 6 meters in diameter were constructed, and clay daub with tule or bulrush impressions indicates that the houses were thatched and sod-packed. Berkeley Pattern economy varied regionally, and generally focused on seasonally structured resources that could be harvested and processed in bulk, such as acorns, salmon, shellfish, and deer. The high frequency of mortars and pestles relative to chipped stone implies a heavy reliance on acorn processing (Fredrickson 1974; Moratto 1984:209).

The Upper Archaic Period was a time of continued and increased cultural diversity in Central California. As a result, Berkeley Pattern sites occur contemporaneous with Windmill Pattern sites (Fredrickson 1974) in the Delta during this time. They are also contemporaneous with Mendocino Pattern sites in the North Coast Ranges (White ed. 2002), with the Berkeley Pattern endemic to alluvial basins and the Mendocino Pattern common to adjoining foothill and mountain terrains. To date, only two Berkeley Pattern components have been identified and excavated in the foothills of the western Sacramento Valley.

Data recovery excavations were conducted at CA-COL-61, on Salt Creek at the southern terminus of Antelope Valley, west of Williams in 1992 (Jackson and Shapiro 2001). CA-COL-61 consisted of a dark midden on a high bench overlooking the creek. Excavation was designed to completely remove the archaeological deposit, an area that covered approximately 24 meters by 16 meters. The site had evidence for horizontal and vertical stratigraphy, and two distinct components were identified. The predominant occupation was associated with the Augustine Pattern, Phase 1a. However, an Upper Berkeley component was marked by Excelsior series and Houx stemmed series points, *Olivella* F series saddle beads, slate tabular pendants, a soapstone bead, and a soapstone ear spool. One burial was attributed to this period due to the presence of two *Olivella* G series saucer and ring beads (Bennyhoff 1993 in Jackson and Shapiro 2001).

Salvage excavations took place at CA-COL-267, the Thompson Canyon site, in 2001. This site is in a small valley in the Bear Creek drainage, on the Bureau of Land Management (BLM) Paine Ranch acquisition in southwestern Colusa County. The site had been severely impacted by erosion and, in response to requests from BLM and Patwin descendants, the ARP worked at the site on weekends in October, 2001. The site consisted of a large midden-mound surrounded by smaller midden and non-midden loci on perimeter benches. The excavation found stratigraphic and dating evidence for two separate periods of occupation. The primary occupation at CA-COL-267–Component B–was attributable to the late Berkeley Pattern and dated around 1800 to 1200 BP. Associated artifacts included diamond-shaped and stemmed projectile points, *Olivella* saucer and saddle beads, and bone awls (White and Orbann 2004).

As with the Middle Archaic, the only site currently known in the Sacramento Valley in proximity to the study area to contain an Upper Archaic Period component is CA-COL-245. Materials from this period, the *Si'dehe* 2 Phase (2750 to 1550 calBP), indicate a continuum from the earlier *Si'dehe* 1 Phase, which reflects traits from both the Windmill and Berkeley Patterns. Distinctive artifacts include *Olivella* G series saucer and ring beads, *Haliotis* disk beads and *Haliotis* eccentric pendants, along with large contracting stemmed points and a wooden mortar pestle (White et al. 2003:223).

3.1.5 Emergent Period: Augustine Pattern

The relatively stable climatic regimes established at the outset of the Late Holocene continue through the modern period, although a “climatic anomaly” dating around 900 BP may have caused widespread disruption (comparable to the Mid-Holocene) (Jones et al. 1999). In northern California, after 1100 BP many Archaic technologies and cultural traditions disappeared, and were replaced by the onset of regional cultural patterns and behaviors similar to those existing locally at the time of culture contact with non-native peoples.

The archetypal Emergent Period culture is the Augustine Pattern (1250 to 200 BP), which is a widespread tradition marked by the coalescence of long-distance, integrative trade spheres, and the introduction of the bow and arrow that replaced the atlatl (a hand-thrown dart-like instrument) as the favored hunting implement. The Augustine Pattern has been divided into two phases common to most localities. Phase 1 temporal markers include *Olivella* whole and lipped beads. “Banjo” type abalone ornaments first appear with Phase 1 of the Augustine Pattern, as well as elaborately incised bird bone whistles and tubes, and “flanged” soapstone pipes. Phase 2 artifacts include small corner-notched and triangular points, clam disc beads, magnesite cylinders, bedrock mortars, and house pit sites often attributable to known ethnographic villages (Beardsley 1954:77–79; Fredrickson 1984; Moratto 1984:213). Other traits that distinguish the Augustine Pattern include tightly flexed burials, and cremation as a form of burial apparently reserved for high-status individuals during Phase 1, but widespread during Phase 2 (Fredrickson 1974; Moratto 1984:211). Grave offerings, such as shell beads and ornaments regularly occurred with utilitarian items, including mortars and pestles often “killed” before burial. In the Sacramento Valley area, fishing equipment is more common, elaborate, and diverse than in earlier periods, and several types of harpoons, bone fish hooks, and gorge hooks were used (Beardsley 1954:78; Elsasser 1978:44; Moratto 1984:211). Basketry has been identified from charred remains found in graves and a form of pottery is also known from sites in the Central Valley (Beardsley 1954:77; Moratto 1984:213). Baked clay balls, probably used for cooking, are a common constituent in Central Valley sites where stone is absent (Beardsley 1954:77; Moratto 1984:213). The Augustine Pattern economy was regionally variable, although fishing and acorn gathering appear to have increased in importance over time. Shaped mortars and pestles dominate the ground stone assemblage, with charred acorns frequently found in midden deposits.

Seven excavated sites have yielded evidence of Augustine Pattern occupation in the North Coast Range foothills along the west side of the Sacramento Valley: CA-GLE-10, CA-GLE-11, CA-GLE-15, CA-GLE-217, CA-GLE-268, CA-COL-61, and CA-COL-160.

The most profound Augustine Pattern assemblages yet documented for the west side hills were recovered by Treganza during his excavations at CA-GLE-10, CA-GLE-11, and CA-GLE-15 in advance of construction of Black Butte Reservoir in western Glenn County (Treganza and Heicksen 1969; Wolfenden 1969). The assemblages establish clear distinctions in the archaeology of the ethnographic Nomlaki, but as yet are poorly reported and require further description and analysis.

The CA-GLE-217 excavation mentioned above also produced Component A. This component was associated with shallow soils above the rock layer of Component B, and indicated an ephemeral use of the site between 1,644 and 1,180 calBP (White et al. 2008). Associated artifacts included arrow points, pebble hammerstones, shaped pestles, phyllite pendant fragments, worked bone and antler, and a single burial.

The work at CA-GLE-268 sampled a midden locality with house pit indentations (Offermann and Orlins 1982). This deposit produced a limited Augustine Pattern assemblage marked by a small Gunther barbed point, bone tool fragments, two *Olivella* sequin beads, three *Olivella* spire-lopped beads, and five clamshell disk beads.

The previously discussed CA-COL-61 site produced a rich Augustine Pattern, Phase 1a assemblage (Jackson and Shapiro 2001). Diagnostic artifacts included large, triangular-stemmed Gunther barbed and Rattlesnake corner-notched points, and *Olivella* sequin beads. Three burials are attributable to this phase, all three having associated *Olivella* sequin beads (Bennyhoff in Jackson and Shapiro 2001).

An upper component associated with midden soils was present above 45 centimeters depth at CA-COL-160 (Origer and Waechter 1990). This component produced faunal remains, Rattlesnake corner-notched points, and pestle fragments. Ten hydration rim values on Borax Lake obsidian flakes from the 0 to 30 centimeter levels indicate an age of between 1,500 and 1,000 BP, and are consistent with Augustine Pattern dates.

Sites with Augustine Pattern components in the Sacramento Valley near the study area include the aforementioned CA-COL-247, along with CA-COL-158 at Stegeman Station, two sites in the town of Colusa, (CA-COL-245/H and CA-COL-246/H), and a cluster of sites south of Grimes in the southeast corner of the county (CA-COL-1, CA-COL-2, and CA-COI-3).

In addition to conducting work at CA-COL-247, White (2003a) also excavated sites CA-COL-158, CA-COL-245/H, and CA-COL-246/H as part of the same fiber optic installation project. CA-COL-158 is at Stegeman Station, approximately 3.75 miles south of Princeton on the west bank of the Sacramento River, while both CA-COL-245/H and CA-COL-246/H are within the town of Colusa. CA-COL-246/H is believed to be the site of the ethnographic Patwin village *Coru*. All four sites contained evidence of occupation during the Emergent Period, and White (2003a:222-223) was able to identify two cultural phases; the *Wi'ter-ry* Phase (1180-740 calBP) and the *Coru* Phase (less than 400 BP). The sites collectively contained an array of Augustine Pattern material culture, including Rattlesnake corner-notched and Gunther barbed points, *Olivella* F and M series beads, clamshell disk beads, bipoined gorge hooks, and a J-shaped bone fish hook.

CA-COL-1, CA-COL-2, and CA-COI-3 comprise a series of closely spaced midden-mounds south of Grimes on the west side of the Sacramento River. CA-COL-1 is thought to be the ethnographic village of

Chah'-kah de'-he (Kroeber's 1932 *Tsaki*), while CA-COL-2 is at the site of *Palo*. As reported by White (2003a:42-46), the sites were excavated by the Sacramento Junior College and University of California, Berkeley crews in the 1930s. Unfortunately, CA-COL-1 and CA-COL-2 have not been formally analyzed and reported, and work on CA-COL-3 has not been completed. However, over the years, various researchers have used the collections from these sites for numerous specialty studies of fish hooks, bone tool and shell ornament typology, obsidian sourcing, and a review of Gunther barbed points in Central California (Bennyhoff 1950; Gifford 1950; Jackson 1974; Jackson and Schulz 1975, respectively). Altogether, the sites provide an impressive stratigraphic profile of Augustine Pattern habitation of the area.

Culture contact between Native Californians and immigrant populations from throughout the world occurred at various times in northern California, generally between 1750 to 1820 in the Central Valley and as late as 1850 in the gold-poor North Coast. Sites CA-COL-1, CA-COL-2 and CA-COL-246/H all contain evidence of Patwin interaction with non-indigenous populations by the presence of deposits that mix traditional Native American artifacts with metal and glass items. For example, at CA-COL-1, an exposed Patwin house floor contained "a pair of steel scissors, an iron pan, a tin plate, an axe handle, a Wagon axle, a steel file shaped into a knife, and glass bottles" (White 2003:43) along with clamshell disk beads. Burials at CA-COL-2 were associated with glass trade beads and buttons aside clamshell disk beads, *Olivella* spire-lopped beads, and *Haliotis* ornaments (White 2003:45). Glass trade beads and decorated ceramics were uncovered with obsidian debitage and clamshell disk beads in the ethno-historic component at CA-COL-246/H (White 2003:223).

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CHAPTER 4: ETHNOGRAPHIC CONTEXT

4.1 Introduction

The study area is within the ethnographic territory of the Hill and River Patwin, and the Nomlaki (Barrett 1908; Kroeber 1932; Merriam 1967) (Figure 4), with a heavy emphasis on the Patwin groups. These three groups spoke historically related languages belonging to the Wintuan language family of the Penutian linguistic stock, which indicates that they shared common ancestors and a pattern of historical interdependence (Kroeber 1925:351–363; Shipley 1978:82-83). In keeping with their shared history, they all practiced a form of sociopolitical organization that Kroeber (1925) identified as the tribelet system. As defined by Kroeber, “tribelets,” or little tribes, were the basic political and proprietary unit of Central California. The tribelet controlled a local territory recognized by adjoining communities, and exercised protective measures against uninvited trespassers. Tribelet territories generally were “well-defined, comprising in most cases a natural drainage area” (Kroeber 1925:831), and these territories were recognized by adjoining communities. The resources and territories controlled by a tribelet were usually defended against uninvited trespassers but considered to be communal holdings of tribelet members. The tribelet political structure served to coordinate economic activity such as resource scheduling, trade, ceremonies, and feasts. Tribelets were composed of a central village and related hamlets and activity areas. The main village was the population center, the site of the main assembly lodge, the residence of leaders and specialists, and held caches of ceremonial regalia, food, and trade goods.

In addition to similarities in village size, organization, and structures, such as the pithouse and acorn granary, the Hill Patwin and River Patwin also practiced a unique and elaborate form of the Kuksu ceremonial cycle. The Kuksu society, (also known as the “Big Head” or “Bull Head” dance) was a male secret society focusing on initiation through the ritualistic raising of the dead. Though rituals varied between the groups, they all included an element of death and rebirth or revitalization. Novices were “killed” or speared, and then later, washed and “brought back to life.”

The following describes each of the Patwin tribes and their use of the study area, including settlement patterns, village names and locations, structures, organization, and lifeways. Limited discussion is provided about the Nomlaki because of their peripheral presence in the study area, if at all.

4.2 Patwin

4.2.1 Hill Patwin Territory and Villages

The Hill Patwin claimed the eastern foothill valleys of the North Coast Ranges including Antelope, Indian, Bear, Little Indian, Long, Morgan, and Cache Creek valleys. At its northern extent, the Hill Patwin boundary ran east-west from a point near the confluence of Big and Little Stone creeks east to a point approximately 5 or 6 miles west of the town of Princeton (Barrett 1908:289; Johnson 1978: 350-351; Merriam 1967:55).

The northwestern boundary ran along the divide of the Eel and Sacramento River drainages from approximately Goat Mountain east of Clear Lake, south beyond Cache Creek along the ridge between Morgan and Jerusalem valleys, across Putah Creek south through Butts and Pope creeks, and finally encompassed lower Napa valley (Barrett 1908:286; Merriam 1955:46). Five Hill Patwin subgroups are delineated in the ethnographic literature (Barrett 1908; Kroeber 1932; Merriam 1967): (1) *Choo-hel'-mem-sel*, in Antelope Valley and the southern end of Indian Valley, from the Wintun and Pomo borders south to Leesville and Venagdo, and east to the town of Sites; (2) the *Kletwin*, from Cortina Ridge east

and south to about Rumsey; (3) the *Kopa*, located in the Capay Valley from Rumsey south and including the Knoxville area to the west; (4) the *Chenposel*, in Bear Valley, Little Indian Valley, and including the Long Valley *Lolsel*; and (5) the *Napa* to the south in Napa Valley and beyond (Merriam 1967:262–263). Most of the Greater Sites Reservoir portion of the study area is contained within *Choo-hel'-mem-sel* lands.

Hill Patwin village and place name information is provided by Barrett (1908), Kroeber (1925, 1932), and Merriam (1967, 1977). The Hill Patwin typically designated their tribelets after people, rather than land, with names ending in “-sel.” These sources were consulted for ethnographic place names in or near the study area.

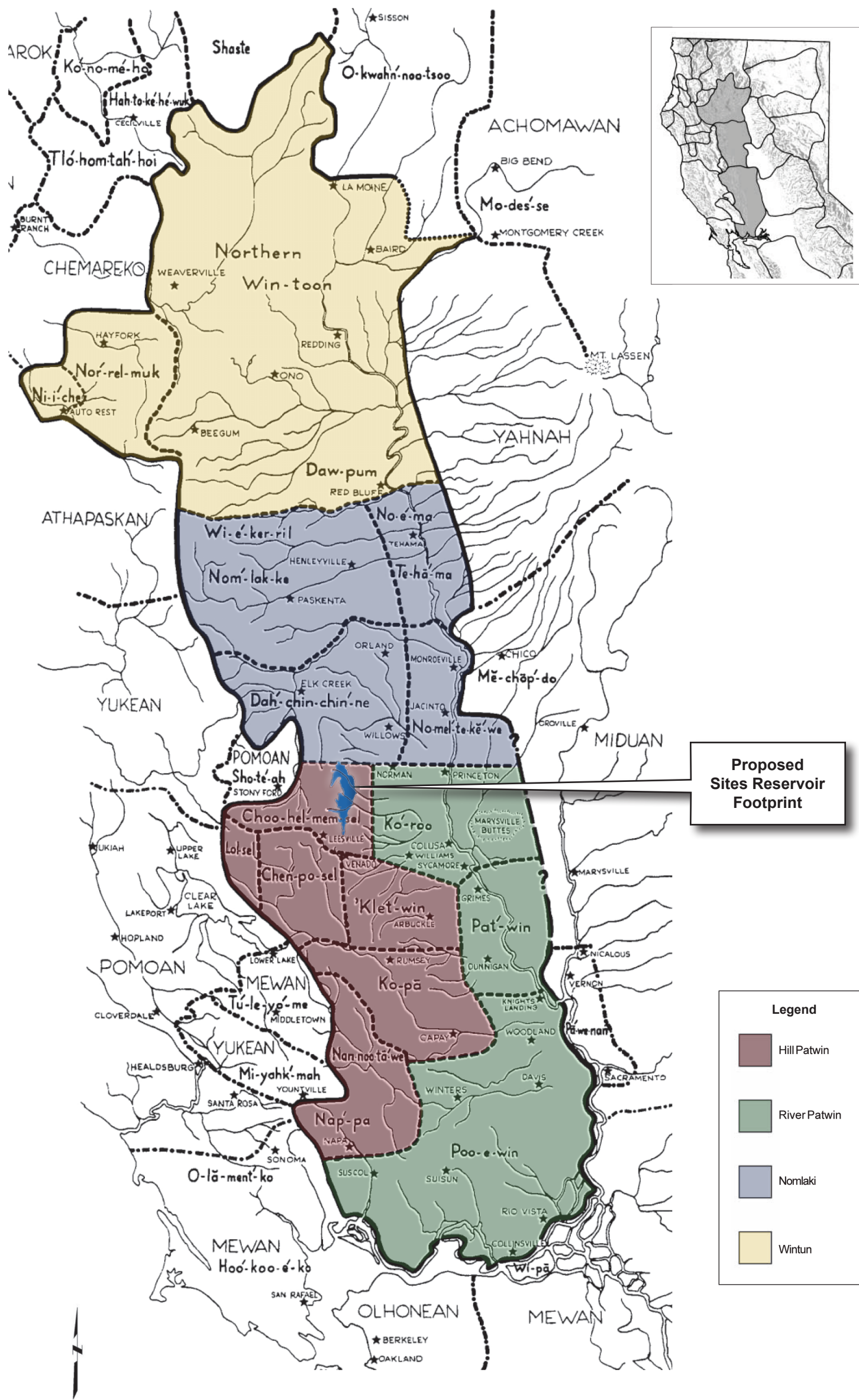
The ethnographies suggest that Antelope Valley was sparsely populated relative to other Hill Patwin locations. However, a total of seven Hill Patwin ethnographic place names pertinent to the study area were identified. Ethnographic sources did not provide specific map coordinates, but provided descriptive information, some of which is conflicting.

The primary village center of the *Choo-hel'-mem-sel* tribelet was *Po-ne klab'-be* (aka *Pone* or *Po-na hlab'-be*), at the foot of Grapevine Grade and “near County Well” (Merriam 1977:189), 4 or 5 miles northwest of Sites. The site of *Kow'-klab'be* (elder tree) is described by Merriam (1977:188) as a small rancheria on Grapevine Creek just east of *Pone*. Kroeber (1932:352) identifies the village of *Tsudukut*, which was 5 miles north of *Pone*.¹ *Choo'-dah-koot* was a rancheria approximately 1.5 miles west of the town of Sites. In 1924, Indian occupants of *Choo'-dah-koot* included Mr. Jesse Berryessa, McGill, and Andrew (Merriam 1977:187). The *Tahp'-kal'-li* (cottonwood) rancheria is described by Merriam (1967:189) as located in the canyon a mile or more northwest of *Choo'-dah-kut* in Antelope Valley. *Len'-mah tin'-be* was a big rancheria approximately 2 miles northwest of the town of Sites near the county road and over the ridge approximately 1 mile east of *Tahp'-kal'-li* (Merriam 1977:188). Barrett (1908:297) also identified *To'pLabe*, which he indicated was a rancheria approximately 5 miles north-northwest of Sites. It is interesting to note that Merriam's (1977:190) consultant told him this same site (referred to as *Top'hlab'-be* or *Toop'hlab'-be*) was not a rancheria, but actually a hill on which people took refuge ages ago during a great flood.

4.2.2 River Patwin Territory and Villages

As implied by their name, the River Patwin occupied lands along the Sacramento River directly adjacent and east of the Hill Patwin. Kroeber (1932:259) identified three tribelets, each of which spoke a different dialect. From north to south, these are the *Koru'* (or *Ko'roo*), *Sāka* (Merriam's [1977] *Pat'-win*), and *Yo'doi* groups. *Koru'* territory, which contains the eastern portion of the study area, extended from just north of present-day Princeton on the river, south to the mouth of Sycamore Slough. On the west side of the river, the *Koru'* occupied a swath of plains approximately 6 miles wide; to the east they controlled a strip approximately 2 miles wide. Seven villages, all on natural rises along the west bank of the Sacramento River, were recorded (Kroeber 1932:59-260). Again, from north to south, these are: *K'eti'*, *Ts'a'a'*, *Wa'itere*, *Katsi'l*, *Tatno*, *Koru'*, and *Kukui*. The villages of *Ts'a'a'* and *Wa'itere* are in close proximity to the study area adjacent the Sacramento River. The county and city name “Colusa” was derived from *Koru'*, which was at the same location of the modern town.

¹ There is some discrepancy about the location of this village. In the same sentence that he says *Tsudukut* is 5 miles north of *Po-ne*, Kroeber (1932:352) also states that the village is 2.5 miles west of Sites. This clearly is in error, because *Po-ne* is described as being 4 or 5 miles northwest of Sites, placing *Tsudukut* 9 or 10 miles from the town. However, if *Tsudukut* was actually 5 miles south of *Po-ne*, it would be approximately 2.5 miles westerly from Sites.



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Wintuan Language Groups of Northern California (after Merriam 1967)

NORTH OF THE DELTA OFFSTREAM STORAGE

Figure 4

Sāka controlled a similar range of territory along the river below *Koru* south to around the current Colusa/Yolo County line, and *Yo'doi* is south of that to an undermined point below the town of Knights Landing (Kroeber 1932: 260-262). Other Patwin populations are known to have inhabited the southern Sacramento Valley west of the Sacramento River to Suisun Bay and west into lower Napa Valley. However these communities were quickly decimated by Spanish missionization in the early 1800s and little is known about them beyond what can be gleaned from mission records (Johnson 1978:351).

4.2.3 Structures

Patwin architecture was distinctive in the diversity of structures, size of major buildings, and complexity of construction. Historical and scholarly sources suggest that at least five types of structures were constructed by the Patwin, which include the dance house, men's sweat lodge, women's menstrual hut, family dwellings, and the acorn granary (Kroeber 1932:293). With the exception of the acorn granary, all of these buildings were earth-covered structures.

Dance houses were the largest structures made by the Patwin. They were larger than those built by other Wintun groups and were some of the largest structures in pre-contact California. Design and construction were intimately connected with the ceremonies the buildings housed. These structures, built in central villages only, were placed on the northern or southern edge of the village, separate from dwellings. Construction began with excavation of a broad, oval-shaped pit measuring approximately 40 feet wide and 50 feet long, with squared to slightly sloping walls and a flat floor dug approximately 5 feet deep. Excavation was done with digging sticks, and the dirt carried and piled outside by using worn food baskets. Work inside the pit began by mounting the main center post of oak and 11 additional posts. Concurrent with the posts, work began on the interior retaining walls, which were constructed of thatch secured by rods mounted in the earth. The entire pit was ringed by a berm composed of excavated spoils. Stringers ran from the 11 main posts to this berm. Long, flexible rods were woven into the ceiling stringers. Tule thatch was layered on top of the pole frame, fastened with grape vines. This inner framework was then completely covered in a 1-foot-thick layer of packed, clayey earth. The construction incorporated a smoke hole and sloping entry ramps, including a long, lightly sloped ramp for general entry and a steep, open ramp at the rear for the dancer's entry.

Dance house fixtures—including a large foot drum and a main hearth—were aligned with the main posts and entry ways. The foot drum was made of a peeled and hollowed sycamore log measuring 6 to 7 feet long, fixed in a pit with planks and stakes. Construction of the community dance house required a substantial coordinated effort, and every available person was drawn into the task. A feast was often held to celebrate completion of the new ceremonial structure (McKern 1923).

The sudatory, or men's sweathouse, was east or west of the dance house with the door facing the dance house. The sudatory was built much like the dance house and at the same scale, but with a single doorway. The menstrual hut was long and narrow, and served as a place of solitude, confinement, or rest for menstruating women and women undergoing childbirth (McKern 1923). By design, the menstrual hut was on the northern or southern outskirts of the village, opposite the dance house (McKern 1923:160).

Dwellings were oval to circular in plain view and constructed like the dance house but at a smaller scale. Paternal relatives were enlisted to assist in the construction. Dwellings were built starting with the excavation of a flat-bottomed, steep-walled pit that measured 1.2 to 1.8 meters deep and 5 to 10 meters in diameter. Thatch retaining walls were secured with stakes, and six support posts were mounted in a circular arrangement, leaving an open central floor area. Six thick stringers reached between the posts, and a series of long rafters rested on the stringers and the perimeter berm to form the roof. The roof was finished with a thick layer of woven rods and thatching, and a packed earth layer around 0.3 meters thick.

The single doorway faced either east or west. Several families occupied a single dwelling house. A fireplace and wooden mortar and stone pestle were fixed near the open center of the house, and were shared by the families. However, each family had ownership over a specific section of the house and had its own cooking area. Family property featured raised beds for each adult made from a rectangular pole framework lined with tule mats. The end of the bed was fixed to the thatched retaining wall and the beds were arranged like spokes on a wheel. Personal gear, such as baskets, tools, and weapons, were suspended from the ceiling against the retaining wall and from house posts. Tule sitting mats were arranged around open space. Household goods and bulky gear, including cooking equipment, nets, burden baskets, and seed beaters, were placed on a pole frame rack outside the house (McKern 1923:165–167).

One of the most distinctive elements of Patwin architecture was the acorn granary. Constructed using a pole and thatch design similar to the retaining walls described above, examples that appear in historical illustrations stand more than 6 feet high and 5 feet in diameter are built as a tall cylinder with an external frame of vertical and horizontal retaining rods and a barrel formed by woven thatch. These large storage structures were constructed to cache a large supply of unhulled acorns through the winter.

4.2.4 Social Organization

The position of chief was inherited patrilineally, although approval by the group was also required (Goldschmidt 1951:325; McKern 1922:242–243). The chief's duties included directing daily activities, announcing duties (such as where and what to gather), sanctioning ceremonies, and arbitrating disputes. The chief was generally the richest man in the village, and was responsible for providing food for ceremonies as well as distributing food throughout the course of the year (Goldschmidt 1951: 323–324 36; Kroeber 1932: 291).

Within the tribelet structure the basic sociopolitical group was the patrilineal family called the *sere*. The oldest male of a patrilineal family was the leader and held considerable authority over his agnatic kin—brothers, sons, brother's sons and uncles, and unmarried women related through these males. Married women belonged to their father's *sere* but lived with their husbands.

4.2.5 Conflict

Patwin intergroup relationships ranged from friendly to hostile and there are several recorded inter-village feuds (Kroeber 1932:301–302). The most common offense leading to hostilities was poaching or death attributed to poisoning by witchcraft. The resulting conflict typically took one of three forms: (1) an attack on the poisoner, poacher, or group of trespassers; (2) a surprise attack on the entire village with the intent to destroy the village, its stores, and kill all inhabitants; (3) or formal pitched battle (Kroeber 1932: 297–298).

In formal battle, one group of armed men with spears and bows formed a line facing an opposing line of men from the enemy village. Each side shot arrows and hurled spears, simply call *doko* (obsidian) at the other until the chiefs called a halt to the battle by walking between the two lines and indicating the dispute was over. Chiefs did not fight and were not attacked, and during skirmishes stood behind or at the side of the line. The chief was not a war leader nor was there a warrior class, but a formal battle might end in a peaceful exchange of gifts brought about by the chief (Goldschmidt 1951:342–343; Kroeber 1932:298).

The war leader was called *yeto*. This was not an official, but a brave man who was a capable shot and could dodge well. War was *ti'-tla-piri* or *ti'tLapita* and enemies were called *yutsen*. War customs between River and Hill Patwin were similar with the exception that Hill Patwin wore elk hide body armor, took

whole scalps from victims, and held a victory dance. Warfare was also, apparently, more organized among the Hill Patwin than the neighboring river tribes (Johnson 1978:353).

Conflict also occurred within the tribelet and was typically as the result of a murder, competition over women, or a gambling dispute. Vengeance would be taken by the victim's family, often in the form of murder of the offending person or family. The chief arranged a meeting and the disputants sometimes could reach a peaceful settlement through payment for proper burial with bear hide or the exchange of wealth items (Goldschmidt 1951:341–345).

4.3 Nomlaki

The Nomlaki occupied lands directly north of the Patwin to as far north as Cottonwood Creek, which defines the present-day Tehama/Shasta County line, and which includes nearly all of Glenn and Tehama counties. Similar to the Patwin, there were Hill and River divisions of the Nomlaki. The Hill Nomlaki territory extended west to the crest of the Coast Range mountains and included the west edge of the Sacramento Valley to approximately 5 miles west of the Sacramento River. The River Nomlaki held lands that were along both sides of the Sacramento River between approximately Toomes Creek in the south and north to Cottonwood Creek. The northwest corner of the study area was likely within the territory of the *Dah'chin-chin'-ne* tribelet Hill Nomlaki.

Merriam's (1977:191-192) consultant provided *Choo-hel'-mem-sel* names for a number of Nomlaki villages that may be in or near the study area. Four of the sites are each generally referenced as a "village north of Grapevine Creek." These include *Kaa-en*, *Kow' hlab'be* (elderberry village), *'Hlah'lah mem* (rotten water), and *Tarr' 'hlabbe* (willow village). *Pot-bah* was another rancheria located north of Grapevine Creek; Merriam (1977:192) notes that Barrett said it was "about 5 miles north-northwest of Sites." *Toop' hlab'-be* is also listed by Merriam (1977:192) as a Hill Nomlaki place name, as well as one associated with the Hill Patwin (1977:190)².

As noted above, the Nomlaki are linguistically closely related to the Patwin, and they also shared a large number of cultural traits. For example, because they inhabited like environments, Nomlaki subsistence practices and staple foods were virtually the same as those of their Patwin neighbors. Other common traits were the construction of semi-subterranean, earth-covered dance houses; the strong leadership of a community chief, which was an inherited position; and the existence of occupational specialization, in which specific families were considered specialists in a variety of positions, such as fishing, medicine, or basketry. Some differences include the construction of family homes and menstrual huts out of thatch rather than being earth-covered. Also, the headman's home was earth-covered, and simultaneously served as the men's sweat lodge (Goldschmidt 1978:343,344-345, 347).

Trading was an occupational specialty, but non-specialist individual families might also conduct trade for necessities. Trade between Hill and River Nomlaki populations were common, whereby the River communities would supply fish, and the Hill families would provide seeds and animals. The Nomlaki also

² Locational information for *Pot-bah* and *Toop' hlab'-be* is somewhat confusing, as Merriam (1977:192) states that *Toop' hlab'-be* is west of *Pot-bah*, and vice versa; the distance between these two sites is not specified. Though this is possible, it would place both of these locations within the plains of northern Antelope Valley, or right where Grapevine Creek enters the valley. Because the whole of Antelope Valley is identified as *Choo-hel'-mem-sel*, this seems unlikely, as one might expect *Pot-bah* to be in the hills that line the valley on the west. In short, it would make more sense if *Toop' hlab'-be* was described as being east of *Pot-bah*. Such speculation is fruitless at this juncture, but it is possible that Merriam's consultant confused the directional orientation of the two sites, that Merriam mistakenly reversed the directional relationship of the sites in his manuscript, or perhaps Merriam's *Toop' hlab'-be* is not the same as Barrett's *To'pLabe*.

participated in the trading system that extended up the Sacramento Valley to the Oregon border, as shells from the San Francisco Bay were traded for skins, yew wood, and obsidian that would be passed down from the north (Goldschmidt 1978:345).

4.4 Contemporary Tribes

Today's descendants of the ethnographic-era Patwin and Nomlaki tribes continue to live and thrive in region around the study area. Federally recognized tribes in the vicinity include the Cachil Dehe Band of Wintun in Colusa; the Cortina Indian Rancheria west of Williams; the Yocha Dehe Wintun Nation in Brooks; the Grindstone Indian Rancheria of Wintun-Wailaki Indians at Elk Creek; and the Paskenta Band of Nomlaki Indians near Corning. Several of these tribes have developed successful gaming venues that have allowed their members to experience economic stability, and through which they have made substantial contributions to their surrounding communities such as providing grants to schools and building medical facilities. All of the tribes invest considerable time and energy into maintaining their cultural heritage by sponsoring and supporting language and arts programs.

CHAPTER 5: HISTORIC-ERA CONTEXT

This section provides a summary history of the west side of the Sacramento Valley from the early 19th century through the early 20th century. Northern California history is comparatively brief relative to the southern portion of the State, but it evolved rapidly. Initial non-Native American exploration began in 1808, and the filing of land grants and colonization were well underway by the time of the Gold Rush just 40 years later. The study area was on the perimeter of the regions directly impacted by the Gold Rush, and it was settled and developed primarily due to its water supply, arable lands, and suitability to transportation needs. Thus, the following focuses on dimensions unique to regional history. These include early Spanish military expeditions, fur trapping expeditions, initial settlement on Mexican land grants, homesteading and the establishment of large ranches, and the development of regional transportation systems (i.e., roads and drayage, river boats, and railroads).

5.1 Early Exploration

The history of culture contact between indigenous and non-native populations in the northern Sacramento Valley began with the Spanish explorer Gabriel Moraga in 1808 and ended suddenly with the devastating smallpox epidemic in 1833. In this 25-year span, the river tribes and their neighbors met non-Native Americans for the first time. No formal European or Euro-American outposts or long-term footholds secured on indigenous lands before 1833, and there is no clear evidence of pandemics or significant social or economic upheaval. Aboriginal lifeways were on full display to the visitors, and their journals and recollections are an interesting source of information about tribal existence. These sources can also be read for information about the nature of initial contact between these disparate societies, and the growing aggregate of events that culminated in a sudden termination of aboriginal lifeways in the western Sacramento Valley.

The study area formed the northern frontier of Spanish territory until the War of Mexican Independence concluded in 1846. Accordingly, the region's earliest known non-Native American visitors consisted of Spanish military expeditions on patrol.

5.1.1 Moraga, 1808

The expedition of Gabriel Moraga spanned approximately one month, from September 25 through October 23, 1808, and began at the Mission de San Jose with the objective of identifying resources and locations that might support an expansion of the Spanish mission system. Eleven privates and a corporal accompanied Moraga, and at least one native guide/translator. They explored the San Joaquin, Consumes, Mokelumne, and American rivers as they progressed north. On October 9, Moraga camped on the lower Feather River, which he named the Sacramento, and later crossed the river somewhere near Nicolas (Chapman 1921:423-425). According to Cutter's translation of Moraga's *Journal Diario de la Tercera Expedicion*, Moraga passed "a mountain range in the middle of the valley" (the Sutter Buttes), then proceeded north on the east side of the Sacramento River, which he named the Jesus Maria (Cutter 1957). Moraga continued up the Sacramento River to a point approximately 18 miles north of the town of Colusa. He then turned east to the foothills and returned south to Mission San Jose.

5.1.2 Arguello and Ordaz, 1821

Among the documents available on the early history of the region are the journals of Arguello and Ordaz. Between October 17 and November 17, 1821, Captain Luis Antonio Arguello, Commandant of the Presidio de San Francisco, conducted a military expedition into northern California. Ordered north by the

Spanish Governor to verify rumors of white settlement in the valley, Arguello's troop included 70 men, their mounts, packhorses, and a horse-drawn cannon. The expedition was transported by launch to the Suisun area. From there, they followed a course up the valley, visiting Patwin villages along the western side of the Sacramento River and tracking the rumors north, then west, to the foothills. Satisfied that the reports actually referred to known Russian settlements on the Pacific coast, the troop turned south again to mission San Rafael, ultimately returning by launch to the Presidio. Expedition diaries were kept by Arguello and his chaplain, the Reverend Father Fray Blas de Ordaz, and these diaries (Arguello 1821 in Fischer 1992; Ordaz 1821 in Heizer and Hester 1970) contain important details about the Patwin and their village and place names. These diaries are especially significant because they predate the pandemics of malaria (1830-33) and smallpox (1837), which later decimated the river tribes (see Cook 1965). As Arguello passed into River Patwin territory in late October 1821, his troop encountered villages with no prior direct experience with non-indigenous peoples. Arguello was a military man with orders to secure territory and he approached each new village with this intent, which was made evident to the Patwin by his actions and interpreters.

Some of Arguello's encounters were peaceful, such as his interaction with the village of *Yo'doi* at present-day Knights Landing on October 25, 1821. However, the next day, as he approached *Sah'Kah* at Grimes, he was met with resistance and at least five villagers were killed in a skirmish. Two days later, Arguello's party ended at another village he identified as *Chac* near the latter day Stegeman Station (also known as Heizer and Hester's 1970 *Chah'de-he*). Here, again, the reception was peaceful. Arguello traveled approximately 18 miles on October 29, passing through five large villages he identified as *Tocolic*, *Utulsabc*, (probably near Codora), *Dacdac* (probably near Glenn), *Pachit* (probably near Jacinto), and *Sunuc*, the latter likely the village identified by Kroeber (1932) as *Su'nusi* at Ordbend, all apparently without altercation. Satisfied that the reports of white settlement actually referred to Native American stories about visitors at known Russian settlements on the Pacific Coast, on October 30, Arguello halted his march up the river and turned west; he probably followed Stony Creek to the foothills and then travelled south through the Coast Range on their return trip to the Presidio.

5.1.3 Fur Trappers and Epidemic

A number of overland fur trapping and trading expeditions visited the Central Valley in the late 1820s and early 1830s. These included two trips by trapper Jedediah Smith, of the Rocky Mountain Fur Company, who led parties of trappers through California in 1827 and 1828 (Sullivan 1934; Weber 1990). In summer 1828, an American trapping party led by Ewing Young conducted a poorly recorded, covert expedition into the Sacramento Valley. Beginning in 1829, the Hudson's Bay Company sent a number of trapping expeditions into the north State from Oregon. Among these were Alexander McLeod, who trapped the Sacramento River south to Stockton in 1829, returning north in the following year (Nunis 1968), and Peter Skene Ogden, who trapped down the north coast to San Francisco Bay, then travelled up the Sacramento River north to the Pit River the following year. John Work led an expedition from 1832 through 1833 that trapped along the Sacramento southward, and then wintered over on the Sutter Buttes (Maloney ed. 1945). For a time, Work's party trapped alongside parties led by Ewing Young, who was again in California, and Michel Laframboise, who had come down from Oregon. All three parties encountered depleted game.

The nexus of these last three parties also had more disastrous consequences. In his book, *The Epidemic of 1830-1833 in California and Oregon*, S.F. Cook tracked the spread of malaria from the trapping centers of the northwest to central California with the Hudson's Bay companies, which resulted in the death in one year of at least 20,000 Native Californians in the Central Valley (Cook 1955). The fur trapper's journals comment on the great number of native peoples encountered in the Sacramento Valley through the winter of 1832. However, in spring and summer 1833, traditional Native American lifeways came to a

sudden and somber end when malaria, introduced by the trappers, swept through and decimated the Nomlaki, Konkow, and Patwin tribes.

Already frustrated with low take resulting from overharvest, the fur trapping parties also suffered the epidemic. Work reported that as many as 72 of his 100 member brigade contracted the fever (Maloney ed. 1945), and eventually they abandoned their efforts in the valley. The first wave of American colonists found a land still reeling from the devastating epidemics of the 1830s; they reported a few occupied villages, but none approached the population sizes observed by Arguello.

Visiting a location at or near the former village site of *Yo'doi* (Knights Landing) on August 25, 1841, Wilkes's party encountered a disturbing tableau, as recorded in his journal: "The ground was strewn with the skulls and bones of an Indian tribe, all of whom are said to have died, within a few years, of the tertian fever, and to have nearly become extinct in consequence" (Wilkes 1958:73 [1841]).

The surviving river tribes suffered further deprivations in the 1840s, at the hands of American colonists who raided their increasingly scarce and temporary camps, murdering villagers and taking slaves.

For example, Wilkes provides the following account of a raid on a camp near present-day Colusa: "Near this had been an Indian village, which was destroyed by Captain Suter (sic) and his trappers, because its inhabitants had stolen cattle, etc. The affair resulted in one of the Indians being killed, twenty-seven made captive, and the removal of the remainder beyond the limits of his territory" (Wilkes 1958:73 [1841]).

It is clear from this and many comparable examples that the river tribes were much reduced by epidemic and other injuries, and were now increasingly hemmed in by colonists. As Wilkes noted, by the mid-1840s traditional game foods were also much depleted due "to large numbers killed by the Hudson's Bay Company who annually frequent these grounds" (Wilkes 1958:134 [1841]). With few options and on the fringes of an economy to which they had little or no access, many Indians worked on the early ranchos, were often assigned the surnames of a white rancher, and established small settlements (rancherías) on the ranch grounds. Within a few years, American colonization and governance led to confinement of the scattered survivors to rancherías and formal reservations.

5.2 Early Settlement

5.2.1 Mexican Land Grants

Much of the northern Sacramento Valley, including Colusa County, remained little known to non-Indians until the 1840s when the area was scouted and mapped. A number of Mexican-era land grants were issued in quick succession, beginning in 1844, in territory now found in Tehama, Butte, Glenn, and Colusa counties. Many of these land grants were settled by some of the important players in the early days of California, such as John Bidwell, Peter Lassen, William Ide, and Thomas Larkin.

Several land grants measuring from 10,000 to 44,000 leagues were obtained on the west bank of the Sacramento River in the vicinity of the study area. From north to south, beginning at Thomes Creek in Tehama County south to the town of Colusa in Colusa County; these land grants included the Rancho Capay, Rancho Jacinto, Rancho Larkin's Children, and Rancho Colus. The lands of Ranchos Capay, Jacinto, and Larkin's Children were granted in 1844, while Rancho Colus was granted in 1845. As was not uncommon for that era, the land grants were awarded but were not immediately occupied.

The first person known to settle on the west bank of the Sacramento River was a man named Bryant, who established a residence at the mouth of Stony Creek near present day Hamilton City sometime prior to

1847 (Rogers 1891:53). In 1847, T.O. Larkin hired John S. Williams and his wife to occupy the Larkins Children Land Grant. That same year, Williams drove cattle into the area and built an adobe ranchhouse and headquarters in the vicinity of the abandoned Patwin village of *Chah' de'-he*, near present-day Princeton (Bidwell 1877 in Rogers 1891; White 2003). Williams's cattle increased so rapidly that in a few years they spread across the plains between Stony and Cache creeks (Rogers 1891:79). Soon, thousands of head of stock covered the plains previously occupied solely by herds of elk and antelope. William B. Ide, notable for his role as a leader in the Bear Flag revolt and fighting with John Fremont in the war with Mexico, was also among the first to establish a settlement in the region. He built a ranch complex in 1847 on a land grant on the east side of the Sacramento River approximately 12 miles north of the Williams residence, near present-day Ord Bend.

Dr. Robert B. Semple made a trip up the valley on horseback to visit the Red Bluff area in 1847. He was deeply impressed by the fertile valley lands and lush vegetation in the vicinity of the *Colus* village. After completing his tour, Semple returned by raft along the Sacramento River. Semple observed that navigation along the river above *Colus* village was precarious, but downstream from this point it was deep, broad, and navigable year round. With this fact in mind, Semple formulated a plan to develop a shipping terminus at *Colus* (McComish and Lambert 1918). He inquired about the ownership of the land and learned that it was part of Rancho Colus, a land grant that was owned by John Bidwell.

5.2.2 Development of the Livestock Industry

Use of Westside range land for livestock grazing was an important element of the California's economy prior to the discovery of gold (Burcham 1981:51), as the raising of cattle was the primary focus of the ranchos. Early Westside settlers were impressed with the region's valleys that were covered with verdant fields of head-high clover, abundant water, and highly productive range. These areas of northern California were some of the first exploited for rangeland purposes.

The spectacular cattle boom that marked the decade 1850 to 1860 had its beginnings in the Gold Rush, which initiated an enormous demand for meat and other animal products. It was during this time that the livestock industry in California experienced phenomenal growth to meet the needs of the mining districts and metropolitan centers. Demand for meat could not be satisfied by local production alone. Ranchers in the southern part of the state sent their cattle to markets in the northern mining districts. Large herds were driven into northern California from as far away as Texas, the Southwest, and the Midwest.

The earliest cattle ranchers in the Sacramento Valley had open range with no fences. The development of grain farming in the valley lands after the mid-1860s significantly reduced the area available for rangeland. Use of the valley for wheat, barley, and hops cultivation intensified the pressure to relocate flocks and herds to higher pastures. Eventually, ranchers were forced to move to foothill regions as arable valley lands were converted to farming (Jelinek 1982). From 1850 to 1900, beef cattle ranching became the most significant economic use of the foothill and mountain lands (Burcham 1981:128).

As the Gold Rush waned, the cattle market also began to decline. This situation was compounded by several years of drought in the 1860s that had a deleterious effect on the livestock industry. Many ranchers shifted interest toward sheep as the market for beef cattle diminished in the belief that this class of livestock was better suited to the semi-arid climate. The wool and sheep industry witnessed great strides in the late 1860s. By 1870, Red Bluff became a leading export center for wool and sheep. Wool was shipped to Sacramento via riverboat and then to industrial sites on the East Coast. California was the leading supplier of sheep in the nation, and Red Bluff was the starting point of northern trail drives (Grimes 1983:31).

The global economic depression that extended from 1890 through 1920 was a time of national economic hardship, and a period of declining flocks on Colusa County range lands. The next major period of growth in the Colusa County sheep industry occurred in 1930 when the number climaxed at 182,221 head (Burcham 1981: Appendix II). The rise in number of sheep may be related to passage of the Stock-Raising Homestead Act of 1916, which increased the acreage limitation for homesteading to 640 acres when public lands were suitable only for grazing livestock.

5.3 Development of Colusa County

Colusa County, originally referred to as Colusi County until 1854, was one of the first 27 counties defined when California became a state in 1850. The county covered a large territory in the northern Sacramento Valley that included present-day Glenn County and a portion of Tehama County. Tehama County split off in 1856, while Glenn County was formed in 1891 (Hoover et al. 2002).

The name “Colusa” was derived from the Patwin village of *Colus* (or *Coru*, *Ko-ru*), which was situated on the west bank of the Sacramento River. As previously noted, the town of Colusa was established in 1850 at the same location as the Patwin village. River travel was important to the growth of the city, and Colusa also soon became a way station along the routes of wagon and mule trains that serviced Shasta and the northern mines, and many entrepreneurs recognized and acted on the potential of the Sacramento River for transportation of goods, people, and livestock from Sacramento northward. Colusa was designated as county seat in 1851 and the town grew rapidly during the 1850s. By 1853, mercantile houses, a hotel, restaurants, and a blacksmith shop had been established. The town of Colusa was incorporated in 1868 after the town’s wealthier citizens became distressed over the poor condition of city streets.

5.3.1 River Travel

Travel on land was slow and uncomfortable in early California; therefore, making use of the rivers was one obvious and sensible way to meet transportation needs (Mansfield 1918:110). River navigation became an important early mode of transportation that helped link California to other parts of the Pacific coast and the nation. Water transportation turned out to be speedy and economic and attracted a number of small, low draft paddlewheel steamers to carry people and freight as far as possible (Johnson 2001:15). Dominance of water transportation in the upper Sacramento Valley ran from 1849 until 1871 with a revival of river traffic in the 1890s (Hardwick and Holtgrieve 1996:121; Stevens 1981:15).

Historically, the Sacramento River above Colusa was shallow, turbid, and very crooked, making it difficult to navigate (Dyke 1932:17, 21-22). Prior to 1849, John Sutter successfully navigated the river in his small boat, and Perry McCoon made occasional trips up the Sacramento and Feather rivers to New Mecklenberg (which was renamed Marysville in 1850) (Dyke 1932:1-4). However, once gold was discovered, every available craft was used to negotiate the river, such as whale boats, ships, launches, barges using oars and sails, and row boats.

Steam boats schooners began working on inland waters between San Francisco and Sacramento in 1849, carrying passengers as well as cargo and freight. Navigation of the upper portion of the Sacramento River was attempted as early as 1850. Two early attempts were made by the *Jack Hayes*, terminating somewhere above Colusa, and the *California*, which was successful but sank just below Chico Landing in August 1850 (Dyke 1932:21). Charles D. Semple also took a trip up the Sacramento River in 1850 aboard the small steamer, the *Martha Jane* (La Bourdette 1974:13-15), to deliver building materials to his newly purchased Colus Land Grant. Semple had hoped to prove the navigability of the Sacramento River to his planned new townsite at Colusa. However, the endeavor did not pay out and he sold the steamer.

Numerous other captains navigated boats up the Sacramento River over the next several years, and by 1854, so many boats were on the river that competition was extremely keen. The towns of Colusa, Monroeville, Tehama, and Red Bluff competed with each other to be the head of navigation (Johnson 2001:15). However, owing to persistent hindrances to navigation and the need to dock, load, and unload at all seasons, Colusa ultimately won out the competition. For a little more than 10 years, all types of steamboats and barges regularly docked at Colusa. The vessels would unload their cargos and pick up local products, such as firewood and hay for San Francisco and barley and wheat for overseas shipping. Travelers had comfortable accommodations and could count on regularly scheduled trips (Dyke 1932:10).

Steamboats continued to haul heavy freight downriver throughout the 19th century, but their use diminished once the railroad was constructed in the valley. Steamboat visits on the river were recorded in 1911, 1918, and 1936, but the river ceased to be an economic hub (Hardwick and Holtgrieve 1996:122).

5.3.2 Roads and Ferries

Before 1849, overland travel in Northern California was very difficult. There were no wagon roads, so most excursions were undertaken on foot, saddle horse, or by pack animals (Dyke 1932:59). Foot trails were narrow and difficult to distinguish from game trails, except they usually went directly from settlement to settlement. Over time, trails were generally established just by the passage of people and animals that followed the wheel tracks of the wagons ahead of them (Bauer 1993:5). New routes were continually reformed around obstructions and soft spots, so most trails branched and rejoined. Many parallel trails, cutoffs, and unnamed roads also developed alongside the major routes. They all reflected the need for commerce and communication, both within the region and to the outside world (Stevens 1981:15).

The early roads in the region of the study area followed both sides of the Sacramento Valley between Colusa and Red Bluff, forming links connecting large and small communities to ferries, bridges, and riverboat landings along the Sacramento River. In 1849, commodities and equipment came by boat to the river ports of Stockton, Sacramento, and Marysville (then known as New Mecklenberg until 1850), and then were transported north by pack train. A number of roads radiated out from Marysville to other settlements in the Valley including two roads that ran north along the Sacramento River, one on the east and one on the west. The Tehama Road progressed north out of Marysville on the east side of the Sacramento River (Hardwick and Holtgrieve 1996:120). The road ran from Marysville to a ferry at Tehama where it crossed the Sacramento River and continued on to Red Bluff. Freight also moved north on the Shasta Road along the western bank of the Sacramento River (Johnson 2001:15). This trail started at Washington, passed through Knight's Landing, Grimes, Colusa, Princeton, Tehama, Red Bluff, Latona (Redding), and Shasta City.

The early Sacramento River ferries were instrumental in determining the locations of the road systems and major towns in the region (Hardwick and Holtgrieve 1996:121). A law was passed by the California legislature in March of 1850 to regulate the licensing of these ferries (Dyke 1932:85). The first ferry used for crossing the Sacramento River in Tehama County, was located at Tehama. Established in 1849, the ferry operated for 38 years until 1887. Another ferry was operated in the Tehama area by William Moon at his Sacramento River rancho (Dietz 1986:38; Hardwick and Holtgrieve 1996:121). The 1854 Eddy Map (Preston 1983:20-21) shows a ferry at Tehama and Moon's Ranch to the south. The towns of Colusa, Butte City, Monroeville, Princeton, and Red Bluff all owe their initial success, at least in part, to ferry service (Hardwick and Holtgrieve 1996:121,128-129).

In the early 1850s, county governments found it impossible to construct and maintain adequate highways to accommodate the increasing travel to Northern California (Dyke 1932:74). Private enterprise stepped

in to offer relief and many of the new roads were operated as toll roads (Darlington et al. 1922:13). The California Legislature provided for the construction of public highways as early as 1850 (Dyke 1932:74-75) and in 1855 a law was passed designating all roads, except toll roads, as public roads (Dyke 1932:79-81). This law empowered County Boards of Supervisors to levy a road tax, and many new roads and road improvements followed. Most of the improved roads and bridges constructed in these times were within the counties to the east of the Sacramento and Feather Rivers (Johnson 2001:17). Colusa was known to have constructed a graded gravel wagon road due west of the railroad (now Lurline Road) after a devastating flood in 1878. Gradually, the state or county took over all the toll roads and they became a part of the present system of highways.

Roads steadily improved throughout the late 1800s. The original state highway system was laid out in 1896. The State Bureau of Highways recommended a highway system with a westside highway from Sacramento through Woodland to Red Bluff, and an eastside route through Pleasant Grove, Marysville, Oroville, and Chico, to Red Bluff (Hardwick and Holtgrieve 1996:174). These early highways were dry, dusty, and rough in summer, and soggy and slippery in winter. No hard surfaced roads were constructed within the highway system until 1914 under the new Highway Commission. The first highway paving projects were completed in Colusa, Glenn, and Tehama counties between 1915 and 1917.

5.3.3 Railroads

Railroads were first built into Central California in the 1850s and tracks had reached Lincoln by 1861 and Wheatland in 1868 (Chappell 1999:51; Hardwick and Holtgrieve 1996:123). With development of the north state's railroad system, the need for stage and river transportation gradually diminished (Grimes 1983:48). Tremendous change came to the economy and transportation modes with the coming of the tracks, deliberately developed at a distance from the floodplain in order to avoid flooding and erosion damage. The steamboat landings ceased to function and the river communities diminished. A number of new town sites developed along the rail systems and the residents of several towns moved their towns to new locations closer to the rails.

The first rail line in the Sacramento Valley was the East Side Railroad, also known as the California and Oregon Railroad, which was a subsidiary of the Central Pacific. The Central Pacific proposed to build a railroad that would dominate the Sacramento Valley and would stretch from Roseville to the Columbia River in Oregon (Hardwick and Holtgrieve 1996:123; Stevens 1981:22). The completed line would start at Roseville, go north through Marysville, Gridley, and Chico, cross the Sacramento River at Tehama, and end at Red Bluff. The tracks were graded beginning at Marysville in May 1870. A little more than two months were required to complete the 43-mile line through Live Oak and Gridley to Chico, with construction ending on July 2, 1870.

The Northern Railroad was also a subsidiary of the Central Pacific (Johnson 2001:16). In 1876, a railroad line was surveyed on the western side of the Sacramento Valley from Woodland to Red Bluff (McGowan 1961:231). The track was placed on the unoccupied plains, midway between the Sacramento River and the foothills of the Coast Range mountains to avoid frequent flooding that occurred in the low lands nearer the river. The settlements of Grimes, Colusa, and Princeton along the Sacramento River were not pleased with this decision. The Northern Railroad began building its track from Woodland in August of 1875 and reached Williams on July 1, 1876. Construction reached Willows in September 1878, but then was delayed for four years due to lack of funding. The railroad then reached Orland on July 31, 1882, and connected with the East Side Railway at Gerber on September 27, 1882.

The City of Colusa—which had thrived as a shipping point on the river—was eight miles east of the rail line, and this new development posed a threat to Colusa's economic underpinnings. In response,

E. A. Harrington, a former stage man, organized a joint stock company for the purpose of building a rail connector from Colusa's main street to a new "Colusa Junction" on the Northern Railway line due west of Colusa (Johnson 2001:16). Harrington sold the idea to local ranchers, farmers, and businessmen, and collected stock investments totaling \$60,000. The Colusa Railroad Company was incorporated in 1885 and construction began in September of that year. Tracks were laid from the depot at the corner of Eighth and Main streets in Colusa, opposite the planing mill (*Colusa Sun*, October 31, 1885:1). From there it bore northwest and then due west, crossing three bridges, and intersecting the Northern Railway at Colusa Junction, where a large grain warehouse, saloon, and post office were built (Rogers 1891:293). The first train ran on March 5, 1886. Colusa Junction is now identified as "Cortena" on the Williams USGS 7.5' topographic map, and present day Lurline Road was constructed on the former Colusa Railroad grade.

After completing the railroad to Colusa Junction, Colusa Railroad stockholders decided to explore other connecting lines in the region, and determined to continue the railroad west from Colusa Junction to Sites and then on to Clear Lake. In November of 1886, when the extension of the railroad further west from Colusa Junction was under consideration, the new Colusa & Lake Railroad (C&LRR) corporation was consolidated with the Colusa Railroad. Construction of the narrow gauge tracks began at Colusa Junction in June 1886 (*Colusa Sun*, June 19 1886:1). In August, a rail yard, consisting of a warehouse, depot, and water tower, was completed on property purchased by the railroad from John Sites in the Antelope Valley along Stone Corral Creek. The rails reached this new rail yard in October (*Colusa Sun*, October 3, 1886:1) and the new town of Sites was born.

The landscape between Antelope Valley and Bear Valley, and then on to Clear Lake is very rugged and the region contained few significant commercial enterprises. Plans to expand the C&LRR ultimately were thwarted when costs of grades, trestles, and bridges became too high to overcome the treacherous terrain and support the enterprise. Consequently, Sites was ultimately the final terminus for the line.

The C&LRR operated until 1915. Freight commodities carried by the rail line were varied but focused primarily on Antelope Valley's agricultural yield (primarily wheat), quarried sandstone, and salt. The C&LRR passenger service featured mostly local traffic, although some commercial passenger links to stage and hotel services were offered. The upper foothills of the western side of Colusa County contained many sulfur hot springs, which were considered by many as fountains of youth. Wilbur Hot Springs, Cook's Springs, and Fouts Springs attracted many people from the San Francisco area who traveled to Colusa via steamboat, took the train to Sites, and then the stagecoach west to the resorts. From 1887 until its dissolution, the C&LRR held a contract with the U.S. Postal Service for mail delivery from Colusa Junction to Colusa in one direction and to Sites, in the other. The demise of the C&LRR was related to how Antelope Valley figured into broader changes in regional market forces, including declines in wheat production, a decrease in stone orders at the quarries, new competition with automobiles for personal transportation and trucks for commercial business, and a demographic shift away from the foothills to urban centers in the Sacramento Valley.

5.4 Antelope Valley and the Town of Sites

5.4.1 Initial Settlement

The earliest record of exploration of Antelope Valley may be found in the memoirs of John Bidwell (Bidwell 1877 in Rogers 1891). In 1844, John Bidwell visited the Sacramento Valley while mapping proposed Mexican land grants for Thomas O. Larkin, Jr., then United States consul to the Mexican governor in Monterey. Accompanied by a Native American guide, Bidwell traveled up the west side of the Sacramento River to a point approximately 5 miles north of the Patwin village of *Colus*; he then

turned west across the plains. In his memoirs, Bidwell describes a rocky landscape and a salt-encrusted creek encountered as he passed into the first rank of foothills (Bidwell 1877 in Rogers 1891). This description suggests that Bidwell passed through the study area, entering the foothills through the Golden Gate on Funks Creek. His reference to salt is consistent with salt-encrusted bedrock common in the Funks Creek streambed just upstream from Golden Gate. Bidwell appears to have spent no time in Antelope Valley, proceeding west to Indian Valley and the Stony Creek watershed.

Granville Perry Swift was the first recorded settler in the valley. He arrived in California in 1842 and went to work as a hunter and furrier for John Sutter (Hobart 2001) in present-day Sacramento. Swift's cousin, Franklin Sears, joined Swift in 1844, and the two men formed a partnership harvesting hides and other products from tule elk, deer, and the large herds of feral cattle which had strayed northward from Mexican ranchos and were common on the central Sacramento Valley frontier (Wilkes 1958 [1841]). In 1847, Swift and Sears moved their hide-and-tallow cattle operation to a new frontier in Colusa County, and built a headquarters along what would be later known as Stone Corral Creek, approximately 0.67 miles east of Antelope Valley. Swift and Sears built an adobe and a corral, the latter made from local sandstone boulders and nestled into a nook in a large boulder outcrop overlooking the creek. This place would later become known locally as "Swift's Stone Corral." Significant historical figures reported to have spent time at Stone Corral include General John Bidwell and mountain man Kit Carson (Schoopman 1951:III).

The Stone Corral fell into disrepair after Steele's departure, but in 1908 the Colusa County chapter of the Native Sons of the Golden West rebuilt the corral by straightening the walls and installing two dressed stone pillars to frame the gate. A commemorative monument was also established for the historical site that erroneously credited John Steele for the original construction of the Stone Corral in 1855. On June 10, 1936, the site was registered as a California Historical Landmark (#238) (State of California, Office of Historic Preservation 2007). Although strong archival evidence suggests that Stone Corral was originally built by Swift and Sears, controversy continues to the present day (Martin 2003:3).

Green (1880:39-40) and Rogers (1891:220) list additional early settlers in the Antelope Valley region, including Major Van Bibber near Canon of Stone Corral Creek in 1853; Augustus Spear and Benjamin Hall Spear, who settled on Stone Corral Creek in 1853; Thomas A. Boots and Dr. William V. Henry who, by 1854, had established cattle ranches on Salt Creek (later known as Funks Creek); George W. Hoag who, in 1854, bought a farm in Antelope Valley, and; and T. J. and James Tolbert located on Funk Slough near the plains in 1854 or 1855. Green (1880) and Rogers (1891) indicate that Spears sold out to Steele and McCord, and the Tolberts sold their holdings to Samuel Horine and John Funk.

5.4.2 Establishment of Large Ranches

The settlement and economic development of the Antelope Valley was greatly enhanced by the passage of four legislative acts that provided for the acquisition of public lands for the purpose of settlement and development. These included the 1820 Act Making Provision for the Sale of Public Land; the Homestead Act of 1862, which allowed citizens to file free land patents (identified as Homesteads); the Soldiers' and Sailors' Additional Homestead Act of 1872, which allowed veterans to file free land patents; and the Stock-Raising Homestead Act of 1916, which allowed ranchers to file for additional grazing lands associated with earlier land claims. In all instances, settlers rushed to claim this free land. Archival research found record of 58 homestead patents filed between 1860 and 1935 for lands within the study area, with the majority of the patents filed between 1870 and 1895.

The availability of government land patents allowed for the establishment of large cattle ranches in the study area. Between 1847 and 1869, eight significant ranches of between 1,000 and 9,000 acres were

established in Antelope Valley, and accounted for more than 16,000 acres of valley land. Each of these ranches are identified with an early settler, including Granville Swift, John Steele, John Sites, John D. Rosenberger, Maurice Dooling, Peter S. Peterson, W. H. Larch, and John Boggs. All of these men were instrumental in the development of Antelope Valley.

The Sites Ranch, at the center of Antelope Valley and the proposed Sites Reservoir, was founded by John Sites in 1858 after stints in gold mining and operating a cattle ranch in Yolo County. Over the years, Sites made improvements to the land, and expanded both ranch and farm operations to include 7,000 acres (Rogers 1891:30; Johnson 1981:57). Land for the town of Sites was purchased from John Sites by the railroad to establish a depot station in Antelope Valley. In addition to the town itself, Sites cemetery, a 1-acre parcel east of the town, is on the ranch property. The cemetery contains markers that document deaths as early as 1868. Three deeds for the Sites Cemetery, that transferred land title from W. F. Sites to the Trustees of the Sites Cemetery Association, were filed in 1904.

5.4.3 Mineral Exploration

Mineral exploration, including sandstone, salt, coal, petroleum, limestone, manganese, and gold discovery, were also important economic contributors to the growth of Antelope Valley in the late 1800s and early 1900s.

High-quality sandstone was available in Logan Ridge along the east side of Antelope Valley where it was exposed in the canyon cut by Stone Corral Creek. Development of the industry was closely tied to the arrival of the railroad, which facilitated export of the material out of the valley, and the 1888 construction of a new sandstone convent in Colusa. In 1891, the first formal quarry operation was established on Stone Corral Creek by David O'Neil who leased property from John Sites on the north side of Stone Corral Creek. The quarry produced some of the finest building stone available in the region (McComish and Lambert 1918:127), and ultimately filled a number of orders locally and in the Bay Area. Between 1892 and 1929, a total of nine individuals or companies of record owned rights to sandstone quarries on Stone Corral Creek. At one time, Colusa County was the leading producer in the state of fireproof sandstone, accounting for nearly half of the annual State production (California State Mining Bureau 1906). Stone Corral Creek sandstone produced stone for 38 substantial buildings of record, including many notable post-1906 buildings in San Francisco (e.g., the Butler building, Emporium, Flood and Fuller buildings, Union Depot and Ferry building, and St. Francis Hotel, among others), important local structures in Colusa (e.g., the Carnegie Library and Colusa Bridge), and even the Honolulu Hotel in Hawaii.

Production at the quarries peaked from 1903 through 1911, and then diminished rapidly by 1914. This decline was probably attributable to the introduction of Portland cement to the U.S. and the increased use of steel, concrete, concrete block, and stucco construction after 1890 (U.S. Department of the Interior 1995). Demise of the historic sandstone quarries was complete when the C&LRR dissolved in 1915 (see above). The quarries ceased operation in the 1920s and only recently have been reopened on a limited basis.

Antelope Valley salt had been harvested by stockmen as early as 1860 from salt springs on Peter S. Peterson's ranch on Salt Creek (now Funks Creek), but J. P. Rathbun was the first to recognize the commercial potential of the resource and lay plans for salt production. Rathbun began salt production in 1889, but his first few years of manufacturing yielded only a few tons made for local use (Bailey 1902). He manufactured 10 tons in 1890 and was enthusiastic at the prospect of increased production (McComish and Lambert 1918).

With increased production, Rathbun filed Articles of Incorporation for the Antelope Valley Crystal Salt Company in February 1892 (Antelope Valley Crystal Salt Company 1892). Under Rathbun's direction, Antelope Valley Crystal Salt Company experimented with several different manufacturing processes on the Salt Lake Ranch. Rathbun first tried natural solar evaporation techniques using shallow ponds to collect the salt. This technique failed because the water often became muddy and contaminated the salt. He then used shallow wooden vats to evaporate the water and collect the salt, which was found to be an effective method (Watts 1893). By mid-1891, Rathbun had 41 vats producing approximately 100 pounds of salt per day, and in 1894 the company had 86 vats for evaporation.

However, contemporaneous with the Antelope Valley Crystal Salt Company's efforts, the salt industry in the San Francisco Bay area was achieving statewide dominance. Salt harvested from evaporation ponds in Alameda County was harvested at a much larger scale and selling at a significantly lower cost than the Antelope Valley salt. Commercial competitors soon forced an end to salt manufacturing in Colusa County. On January 22, 1900, the company underwent voluntary dissolution and large-scale manufacturing of salt ended in Colusa County (Antelope Valley Crystal Salt Company 1899).

Development of several other mineral resources were pursued in Antelope valley in the late 1800s; often led by the efforts of Rathbun and Peterson. These efforts included development of petroleum seeps, natural gas, and coal deposits, in addition to copper ore and limestone. However, none of these undertakings resulted in any significant economic benefit to the inhabitants of Antelope Valley.

5.4.4 Town of Sites

The town of Sites is in Antelope Valley, which is the focal point of the proposed Sites Reservoir. The town was established in 1887 as the railhead for the new narrow gauge train line, the C&LRR, was extended from Maxwell to Antelope Valley.

The Sites town plat map was filed with the Colusa County Recorder's Office on January 14, 1887 (Deed Book I, Page 443) by John Sites. The town was named in his honor (Green 1880:145). The plan featured streets and avenues up to 80 feet wide, and alleys up to 30 feet wide. The main thoroughfare, named Stone Corral Avenue, was 200 feet wide and paralleled the railroad. The original plat map shows a large central square and 11 blocks, numbered one through four and six through 12. The town square was originally planned as the location of the railroad roundhouse. There were 121 building lots shown on the 1887 plat map.

The first buildings constructed in 1886 were related to the railroad: a warehouse, water tower, and railroad station. A general store was also established that year. By the end of 1887, there was a hotel, livery stable, post office, and a new school to replace the first school built in Antelope Valley in 1871. The town continued to grow and thrive into the early 1900s, but by 1910 the economic prosperity of the region was beginning to wane. The area experienced a rapid economic decline between 1910 and 1915, and local businesses were forced to close as people left the area.

The decline in wheat production, decreases in stone orders at the quarries, new competition with automobiles for personal transportation and trucks for commercial business, and a demographic shift away from the foothills to urban centers in the Sacramento Valley during the early 20th century also meant the end of C&LRR. The Railroad Commission agreed to discontinue the operation of passenger service to Sites, and service was halted in August 1914. Freight operations met a similar fate, and in May 1915, the C&LRR ceased all service; in July 1917, C&LRR assets were sold at public auction.

The remaining population of Sites and Antelope Valley found success in farming and stock-raising after the end of the Great Depression, and these ventures continue to the present day. The town of Sites took a final hit when most of its remaining historic structures were erased in a major wildfire in 1965. The fire burned six buildings and erased traces of several streets. When unification with the Maxwell School District occurred in 1965, a new bus route was established to bring students from the Lodoga, Leesville, and Sites areas to Maxwell to attend school. The Sites post office was discontinued in 1968 (Durham 2000). By 1987, the town had a population of just 17. The school buildings, train depot, railroad warehouse, church buildings, stores, and hotels have been burned or razed, and only a few of the original landmarks of the old town still exist.

CHAPTER 6: ARCHAEOLOGICAL INVENTORY METHODS

6.1 Introduction

This chapter describes the methods and results of archaeological inventory of the study area. To date, several studies have been conducted of various sections of the study area. The largest and most significant inventory was of the Sites Reservoir footprint, adjacent viewshed ridgeline buffer, and proposed new access roads. This work was conducted during the 2001 through 2003 field seasons by the ARP at CSU, Chico. The ARP also conducted a partial inventory of a proposed new pipeline (Delevan Pipeline) between Funks Reservoir and the Sacramento River in 2001 (Westwood and White 2005). DWR archaeologists also conducted additional surveys of portions of Funks and Holthouse reservoirs from 2009 through 2011. Three isolated historic-era features were recorded along the Delevan Pipeline route, and no cultural resources were identified during the Funks and Holthouse reservoir surveys; therefore, the results reported herein focus on the Greater Sites Reservoir effort.

The chapter provides a description of the methods and results of pre-field records search and document review, followed by a description of the methods used for the archaeological inventory of the study area, including coverage methods, crew organization, site recording protocols, site documentation, and final site record preparation and archiving practices.

6.2 Results of Records Search and Document Review

6.2.1 Records Search Methods

The purpose of the pre-field research was to: (1) identify the methods, coverage, and results of previous professional archaeological investigation in the study area; (2) determine the location and extent of previously recorded archaeological sites in the study area; and (3) develop background materials which may contribute to our understanding of the archaeological, ethnographic, and historic-era characteristics of the study area. Literature reviews and records searches were conducted at the CHRIS prior to initiation of archaeological field inventory. Records for Glenn County are maintained at the Northeast Information Center (NEIC) at CSU, Chico, while records for Colusa County are filed at the Northwest Information Center (NWIC) at Sonoma State University in Rohnert Park, California. One records search request was filed with the NEIC in 2001, which resulted in the identification of no pertinent records of survey or excavation within the narrow strip of Glenn County within the study area.

Two record searches were conducted by ARP at the NWIC for the Greater Sites Reservoir area and the Delevan Pipeline. The first record search was for the Greater Sites Reservoir area and took place prior to the 2001 inventory (NWIC File No. 01-113); the second record search was for the Delevan Pipeline area (NWIC File No. 04-936). The records search for the Greater Sites Reservoir area included a review of all previously identified archaeological sites and isolates, and all previous cultural resource investigations listed on the six contiguous USGS topographic quadrangles that span the study area (Figure 2). These USGS 7.5' quadrangles include Lodoga (1989), Leesville (Provisional edition 1989), Rail Canyon (1989), Logan Ridge (1958, photorevised [pr.] 1973), Sites (1958, pr. 1973), and Manor Slough (1985, pr. 1973). The record search for the Delevan Pipeline involved the area of the proposed canal with a 0.5-mile buffer on the Maxwell (1952, pr. 1973, minor revision 1994) and Moulton Weir (1949, pr. 1991) USGS 7.5' quadrangles. DWR conducted a third records search in 2011 for the Holthouse Reservoir Complex area (NWIC File No. 10-0807). The Holthouse Reservoir record search covered the proposed reservoir footprint and a 0.5-mile buffer found on the Sites 7.5' (1958, pr. 1973) USGS topographic quadrangle.

Other sources consulted in the records search included the National Register of Historic Places (Listed Properties and Determined Eligible Properties), California Inventory of Historic Points of Interest, California Inventory of Historical Resources, California Register of Historical Resources, California Historical Landmarks, and Directory of Properties in the Historic Property Data File for Colusa County. Record search documentation is archived at DWR, Division of Environmental Services.

As noted earlier, the record search at the NEIC did not identify any previously recorded sites or studies within the Glenn County portion of the study area. Numerous previously recorded sites and inventories were, however, identified by the NWIC record search for the Greater Sites Reservoir area and Holthouse Reservoir Complex; no resources or studies were identified in the Delevan Pipeline area.

6.2.2 Previous Archaeological Investigations in or near the Study Area

The NWIC document review found record of nine previous archaeological studies in the study area and immediate vicinity, including seven surveys and two excavations. Table 1 summarizes the previous investigations and findings.

Table 1

Previous Archaeological Studies in the NODOS Study Area

Author	Date	Affiliation	Acres	Number of Sites in Study Area/Sites Studied
Archaeological Survey				
Treganza et al.	1965	San Francisco State College	Linear; 250 miles	2
Chartkoff	1969	UCLA Archaeological Survey	unknown	26
Soule	1980	DPR	Less than 1	0
Elliott	1988	ARP; CSU, Chico	1	0
Farber	1991	McLaren/Hart	144	1
Hamusek and Jung	1994	ARP; CSU, Chico	Less than 2	0
No author	1998-1999	DWR/DPR	unknown	unknown
Archaeological Excavation				
West, et al.	1975	UCD	n/a	CA-COL-53, CA-COL-233, CA-COL-242
White	2009	ARP; CSU, Chico	n/a	SR-001-A

ARP = Archaeological Research Program
 CSU = California State University
 DPR = Department of Parks and Recreation
 DWR= Department of Water Resources
 n/a = not applicable
 UCD = University of California, Davis
 UCLA = University of California, Los Angeles

An archaeological survey of the Tehama-Colusa Canal unit was conducted by a team from San Francisco State College in 1965 (Treganza et al. 1965). This survey covered a 250-mile-long linear route from Red Bluff in Tehama County, south to the foothills west of Williams in Colusa County. The route passed directly through the proposed Holthouse Reservoir Complex location. The report of investigations

(Treganza et al. 1967) describes two prehistoric sites adjacent to Stone Corral Creek near the current study area: CA-COL-1, Swift's Stone Corral, and CA-COL-2, a small midden to the south of the corral. Table 2 lists sites recorded by Treganza and Chartkoff in 1965 and 1969, respectively.

Table 2
Sites Recorded by Treganza et al. (1965) and Chartkoff (1969)
In or Adjacent to the Study Area

UCLA #	Trinomial	Unit	Type	Description
GLE-103	CA-GLE-103	Sites	LS, HR	Small campsite on knoll. Burial reported by landowner.
GLE-104	CA-GLE-104	Sites	M, HR	Large, deep midden. Extensive prehistoric cemetery.
COL-22	CA-COL-227	Sites	M, HR	Two large midden areas. Human remains observed.
COL-23	CA-COL-228	Sites	M, DH	Historic Sites Rancheria sweathouse.
COL-24	CA-COL-229	Sites	M, LS	Small, distinctive grey midden.
COL-25	CA-COL-230	Sites	M, HP/DH	Midden may be natural organic soil.
COL-26	CA-COL-231	Sites	M	High density of obsidian and chert flakes.
COL-27	CA-COL-232	Sites	M	Large, deep midden.
COL-29	CA-COL-234	Sites	M,B	Large midden with abundant artifacts.
COL-30	CA-COL-235	Sites	M, HP	Small midden with house pit. Possible contact-era camp.
COL-31	CA-COL-236	Sites	M, GS	Two large midden areas.
COL-32	CA-COL-237	Sites	M, BRM	Three midden areas near bedrock mortar outcrop.
COL-33	CA-COL-238	Sites	M, HP, LS	Large midden with three house pits.
COL-34	CA-COL-239	Sites	M, HP, HR, GS	Two large midden areas. Burials reported by landowner.
COL-35	CA-COL-240	Sites	M, HP, GS	Large midden.
COL-36	CA-COL-241	Sites	M	Small midden with house pit. Possible contact-era camp.
COL-38	CA-COL-243	Sites	M, HP, GS	Large, deep midden with six house pits.
COL-39	CA-COL-244	Sites	M, HP, LS	Small midden with two house pits.
H-1	n/a	Sites	Historic	William Sites Ranch.
H-2	n/a	Sites	Historic	Sites Cemetery.
H-3	n/a	Sites	Historic	Sites town site.
H-4	n/a	Sites	Historic	Stone building at sandstone quarry.
COL-28	CA-COL-233	Funks	LS, GS	Handstones and core tools on knoll.
COL-37	CA-COL-242	Funks	M, GS	Large midden with bedrock mortars.
COL-53	?	Funks	LS	Small sparse lithic scatter.
COL-1	CA-COL-24	Stone Corral	M, BRM, HR, RS	Large, complex prehistoric and historic site at Stone Corral.
COL-2	CA-COL-25	Stone Corral	M, GS	Small midden.

B = shell bead
 BRM = bedrock mortar
 DH = dance house
 GS = ground stone
 HP = house pit

HR = human remains
 LS = lithic scatter
 M = midden
 RS = rock shelter
 UCLA = University of California, Los Angeles

In 1967, an archaeological survey was conducted at the sites of five proposed Westside reservoirs (Sites, Funks, Swift Corral, Noonan, and Oat reservoirs), three of which (Sites, Funks and Swift Corral) were in or near the current project study area. The survey was conducted by the University of California, Los Angeles (UCLA) Archaeological Survey, under the direction of Joseph L. Chartkoff. The proposed Sites Reservoir footprint under consideration in 1967 occupied an area essentially identical to the current footprint design, while the proposed Funks and Stone Corral reservoirs were smaller units located immediately to the east of Logan Ridge at the edge of the Sacramento Valley. Chartkoff's report (1969) summarizes the findings from survey in and around these three units. Chartkoff (1969) identified 18 prehistoric and four historic-era sites in or near the proposed Sites Reservoir footprint, two prehistoric sites in the proposed Funks Reservoir footprint, and two prehistoric sites in or near the proposed Stone Corral Reservoir footprint (Table 2). The two Stone Corral sites had also been recorded by Treganza's team in 1965. Four historic-era resources at the town of Sites were not recorded by Chartkoff's team, but are described in his report because of their apparent regional significance.

In 1980, California Department of Parks and Recreation (DPR) archaeologist William Soule conducted a survey of approximately 1 acre of land in Antelope Valley. The project involved a survey in advance of the construction of a proposed stock pond on an unnamed tributary of Stone Corral Creek. The cultural resources survey report submitted to the State Water Resources Control Board reported no archaeological sites in the survey area (Soule 1980).

The County of Colusa Department of Public Works retained the ARP in 1988 to conduct an archaeological survey for a proposed bridge replacement at Stone Corral Creek and bank stabilization along the creek, adjacent to Sites-Lodoga Road just north of Stone Corral Bridge. Project archaeologist Daniel Elliot conducted an intensive archaeological survey of approximately 1 acre and found no evidence of cultural resources (Elliot 1988).

Several years later, Teichert Associates of Sacramento proposed to conduct quarry operations on land known as the Thompson Quarry. This 144-acre parcel is approximately 1 mile south of Stone Corral Creek in the foothills. In 1991, Neal Neuenschwander and Alfred Farber conducted an archaeological survey of the Thompson Quarry area. The survey identified one site and three isolated finds (Farber 1991). Thompson Quarry Site No. 1 consists of a single bedrock outcrop with two mortar cups near a small spring-fed drainage. The three isolated finds consisted of an obsidian projectile point and flake, and two historic rock-lined depressions for collecting spring water.

The ARP was again retained by the County of Colusa Department of Public Works in 1994 to conduct an archaeological reconnaissance of the Grapevine Creek Bridge Replacement and Sites-Lodoga Road realignment. The Sites-Lodoga Road, and Howard and Grapevine creeks project involved a realignment of the existing roadway approximately 5 miles northwest of the town of Sites. No cultural resources were identified (Hamusek and Jung 1994).

In partnership with DPR, DWR conducted an archaeological reconnaissance of the proposed Sites Reservoir project in 1998-1999. The DWR-DPR survey team visited and re-recorded several of the sites previously documented by the UCLA Archaeological Survey (Chartkoff 1969) and identified numerous new cultural resources. The majority of resources identified were prehistoric sites consisting of midden deposits and associated house pit features. Table 3 lists resources recorded by DWR-DPR within the current study area.

Table 3
Sites Recorded by DWR-DPR in 1998-1999

Temp No.	Constituents	Description
16-4-18-1H	M, LS, HS	Multicomponent site; lithic scatter, homestead.
16-5-1-1	M,LS, HP, PP, BRM	Midden with house pit, lithic scatter, and bedrock milling feature.
16-5-1-2	LS	Obsidian flake scatter.
16-5-1-3H	IS	Isolated rock pile may represent the foundation of a structure.
16-5-12-2	M. LS, GS	Midden with a sparse lithic scatter.
16-5-12-1	LS, GS	Lithic scatter with hopper mortar.
16-5-13-1	M, LS	Midden with fire affected rock.
17-4-6-1H	HS	Residence converted to a livestock pen.
14-4-6-14	HS	Historic-era and modern ranch.
17-4-7-1	M, LS	Midden with lithic scatter.
17-4-8-1H	HS	Structural foundations, pipes, and historic trash deposit.
17-4-9-2H	HS	Rock wall.
17-4-9-7H	HS	Bottle scatter in creek.
17-4-19-1H	HS, CM	Cemetery.
17-4-20-1H/3H	HS	C&LRR
17-4-20-2H	HS	Trash scatter and house remains.
17-5-5-1	HS, LS, M, BRM	Multicomponent site with a corral, midden, and bedrock mortars.
17-5-1-2	HS, M, LS	Midden with lithic scatter and historic debris.
17-5-3-1	M, LS, GS	Midden with flaked and ground stone scatters.
17-5-11	HS, M	Midden and historic-era corral.
17-5-13	HS, BRM, M, LS	Multicomponent site with a dance house and historic-era debris.
17-5-13-1	BRM	Bedrock mortars.
17-5-14-1	BRM	Bedrock mortars.
15-5-23	M, BRM, GS, LS	Midden with bedrock milling station.
17-5-23-1	LS	Lithic scatter.
17-5-24	HS, CM, M, LS, GS	Historic-era cemetery and buildings with a midden.
17-5-25-1	M, LS	Midden and associated lithic scatter with fire-affected rock.
18-4-31-1H	HS	Ranch complex.
18-4-32-1H	HS	Developed salt springs for gathering salt.
18-5-14	M, GS, LS, PP	Midden with lithic scatter.
18-5-26	M, GS, LS	Midden with lithic scatter.
18-5-26-1	M, GS, LS	Midden with lithic scatter.
18-5-27	M, GS, LS, BRM	Midden with lithic scatter and bedrock mortars.
18-5-34-1	HP, LS	House pit with associated lithic scatter and fire affected rock.
18-5-35	HS, M, GS, LS	Midden with lithic scatter and historic-era artifacts.
18-5-35-1	M, LS	Midden with lithic scatter.
18-5-35-1H	HS	Shearin home site with a rock foundation and rock lined well.
18-5-35-2	M, LS, BRM	Midden with lithic scatter and bedrock mortars.
18-5-36-1	M, LS, GS	Midden with flakes, ground stone, and fire affected rock.

BRM = bedrock mortar
 C&LRR = Colusa and Lake Railroad
 CM = cemetery
 GS = ground stone
 HP = house pit

HS = historic
 LS = lithic scatter
 M = midden
 PP = projectile point

6.2.3 Archaeological Excavations in the Study Area

Archaeological excavations have been conducted at four sites in the study area (three at Funks Reservoir, and one at Upper Antelope Valley), as described in the following subsections.

6.2.3.1 Funks Reservoir

A crew from University of California, Davis (UCD) conducted test excavations in advance of construction of Funks Reservoir during the winter of 1974-1975 (West et al. 1975). Three sites, all non-midden artifact scatters, were studied: CA-COL-233, CA-COL-242, and CA-COL-53. Intensive surface collection was conducted at all three sites, which was followed by backhoe trenching.

Surface collection at CA-COL-233 yielded a total of 17 prehistoric artifacts from a small patch measuring 20 meters in diameter. The artifacts included six handstones, three core tools, three cores, two hammerstones, one projectile point midsection, and two unmodified flakes. Small obsidian flakes were observed but not collected (West et al. 1975:18).

Surface collection at CA-COL-233 yielded a total of 17 prehistoric artifacts from a small patch measuring 20 meters in diameter. The artifacts included six handstones, three core tools, three cores, two hammerstones, one projectile point midsection, and two unmodified flakes. Small obsidian flakes were observed but not collected (West et al. 1975:18).

A total of 102 prehistoric artifacts were collected from CA-COL-242, in a concentration measuring approximately 70 by 40 meters. The artifacts included two millingstone fragments, 33 handstones, 1 polished stone, 14 core tools, six cores, 12 hammerstones, 10 used/retouched flakes, and 13 unmodified flakes. Small obsidian flakes were observed but not collected (West et al. 1975:18).

Ninety-two artifacts were recovered from a concentration approximately 180 by 75 meters at CA-COL-53. The artifacts included three millingstone fragments, 43 handstones, 12 core tools, 9 cores, 11 hammerstones, 2 used/retouched flakes, and 9 unmodified flakes. Small obsidian flakes were observed but not collected (West et al. 1975:33).

At the conclusion of surface collection, backhoe trenches were excavated at all three sites. Depths ranged between 30 and 70 centimeters, and terminated in sandstone bedrock. Trench A-4 at CA-COL-242 produced a highly mineralized mid-shaft of a human femur. Soil profiles were drawn, and 20-by-20-centimeter column samples were taken from each trench in 10-centimeter levels and wet screened. Tiny obsidian flakes were observed in the upper levels, but no other cultural material was recovered. A small 1.5-by-1.5-meter test excavation unit in CA-COL-53 yielded one obsidian flake.

Dating evidence was limited and problematic. Because all three sites were heavily weathered surface deposits, it was not possible to generate a stratigraphic sequence. In turn, horizontal stratigraphy in the form of a site-to-site comparison showed only that all three sites are closely similar in artifact content. A sample of the human femur fragment recovered from CA-COL-242 was submitted for radiocarbon assay, and produced a date of 720±80 BP. As yet, no obsidian samples have been submitted for hydration analysis. On the basis of the limited dating evidence, small scale assemblages, and overwhelming evidence for food processing specialization, the authors proposed that “the Funks Creek sites represent recent prehistoric short-term seasonal gathering camps or stations occupied by a few individuals and possibly related to a larger permanent or semipermanent village” (West et al. 1976:10).

6.2.3.2 Upper Antelope Valley

To date, one prehistoric archaeological site, the Mathis Mound, has been excavated within the proposed Sites Reservoir footprint. The methods and results of excavations at the Mathis Mound, site SR-001-A, are presented under a separate cover (White 2009), and are summarized below.

In 2001, during the course of intensive cultural resource surveys in the study area, a team composed of professional archaeologists from the ARP, accompanied by Native American monitors from the Cortina Indian Rancheria of Colusa County, identified and recorded a complex, multicomponent site on land held in trust for the Mathis family by Sanwa Bank of California. The site, SR-001-A, was composed of four loci, including a midden-mound (Locus A). The midden-mound was disturbed by modern ground-dwelling animal and cattle activity, which lead to numerous surface exposures of disturbed soil. Large numbers of artifacts and cultural constituents such as fire-affected rock, chipped stone flakes, and animal bones were observed. In addition, the survey team encountered a single human vertebrae fragment on the surface of Locus A. The bone was replaced in the ground at the time of original discovery. This find led to a request by tribal monitors to conduct a minor test excavation with the hope of identifying the skeleton of origin and repatriating the vertebrae fragment with the burial. The property owners, Sanwa Bank of California and the Mathis family, agreed to a limited test excavation with the stipulations that: (1) the work be conducted in the span of a single weekend (two consecutive work days); (2) the area affected by excavation be returned as near as possible to pre-excavation conditions, and; (3) the artifact collection stay in Mathis family ownership.

The excavation was conducted on October 27 and 28, 2001. A 3-by-3-meter grid was defined across Locus A and loose surface soils were screened through 1/8-inch (3-millimeter) hardware cloth. The original vertebrae discovery was not relocated; however, a different human bone, an adult skull fragment, was identified. A 2-by-2-meter section of the grid was dug as an excavation unit. The excavation was ultimately confined to a 1-by-2-meter unit below 50 centimeters deep, and then dug an additional 90 centimeters to a maximum depth of 140 centimeters. All soil excavated from the unit was screened through 1/4-inch (6 millimeter) hardware cloth. Eleven additional human bone fragments were observed between a depth of 20 and 110 centimeters, bringing the site total to 13 human bones. All 12 pieces encountered during the test excavation were small, unassociated, isolated and fragmentary elements that were disturbed and redeposited in the site matrix by the actions of modern ground-dwelling animals.

While excavation was unsuccessful in its initial objective of identifying a human skeleton, the SR-001-A, Locus A excavation did produce a small but diverse sample of formal artifacts and cultural constituents that serve to characterize the midden-mound site type in the study area. The excavation yielded 4,435 cultural items, including 13 temporally diagnostic projectile points and fragments, 31 non-diagnostic projectile point fragments, 4 biface blank fragments, 7 ovate scrapers, 14 edge-modified flakes, 2 spall tools, 2 cores/core-tools, 2 handstones and fragments, 6 pestles and fragments, 1 possible sling stone, 7 marine shell beads, 1 freshwater mussel shell ornament, 13 worked bones, 4 items of baked clay, 4 unusual mineral specimens, 12 human bone fragments, 4,104 chipped stone flakes, 87 items of faunal bone, 103 faunal shell fragments, 6 charred floral specimens, and 11 historic-era/modern manufactured items. No features were encountered.

The excavated soil strata included a light yellow-red, silty, ashy midden to 70 centimeters deep, that graded to a slightly darker and more compact yellow-brown silty, sandy, ashy midden to 140 centimeters deep. The excavation halted in midden soil, thus the maximum depth of cultural deposits and the potential for additional stratigraphic horizons were not established. Stratigraphic analysis of the midden sample found evidence for thorough mixing, with no evidence for stratigraphic integrity. Stratigraphic mixing was definitively traced to the activities of ground-dwelling animals. The skeletal remains of modern

ground-dwelling animals (especially squirrels and gophers) dominated the taxonomically identifiable faunal inventory and the remains were segregated by life zone habits. The excavation unit profile revealed numerous rodent runs, and the two dominant characteristics of artifact distribution—the prevalence of surface artifacts, and the lack of vertical segregation of distinctive temporal components—were both clear signatures of modern biological disturbance.

The SR-001-A artifacts include a number of time-marker forms (e.g., shell beads, projectile points, pestles) whose age-range and cultural associations have been established by previously published excavation and analysis. Based on close parallels to the cultural assemblages recovered from excavations at the Thompson Canyon site, CA-COL-267, located 16.5 miles (26.5 kilometers) south of SR-001-A (White and Orbann 2004), and on cross-dating comparison to the synthetic regional chronology published for southeastern Clear Lake basin (White ed. 2002), SR-001-A appears to contain two cultural-historical components: (1) a numerically dominant Upper Archaic Period, Berkeley Pattern component marked by small Excelsior-series projectile points, shaped cylindrical pestles, ovate scrapers, and *Olivella* A and F series and *Macoma* disk marine shell beads, and (2) a minor Emergent Period, Augustine Pattern component marked by Gunther barbed and Rattlesnake corner-notched projectile points. A clamshell disk marine shell bead made from *Tresus* species shell identified on the surface of SR-001-A, Locus C, by the original survey team can also be assigned to the Augustine Pattern component, and fixes at least a portion of the occupation to the late Augustine (Phase 2).

Analysis is hindered by the small size of the assemblage and lack of stratigraphic segregation of cultural components. Abbreviated analyses of the archaeological faunal remains and tool assemblage are offered, tempered by the constraints imposed by lack of chronological resolution. Analysis of the archaeological faunal assemblage found that the prehistoric diet was consistent with the local habitat, with the focus on black-tailed deer, rabbits, and hares consistent with a distinctive prehistoric foothill diet identified in other nearby excavated sites. The high proportion of chipped stone tools relative to ground stone tools identified at the site is also consistent with chronological trends in the region, as results from several excavated sites show a predominance of ground stone tools in assemblages dating before 2500 BP that were replaced by a predominance of chipped stone tools in assemblages dating after 2500 BP years ago.

The meaning of these larger trends is beyond the scope of the current investigation, and beyond the research potential of the small and stratigraphically compromised recovery documented here. However, it must be noted that the interpretive constraints are primarily a product of sampling error; that is, the incomplete record of cultural deposits and small sample size. In fact, Locus A is one of three distinct occupation areas on SR-001-A, and each area is likely to contain a different phase of occupation. Thus, while Locus A produced a record of vertical mixing, the site's stratigraphic potential might be realized via horizontal stratigraphy. Further, the site's real vertical stratigraphic potential cannot be reliably characterized by the single excavation unit that failed to reach submiddden soils. Additional cultural components and dimensions of research potential no doubt still lie untapped.

6.3 Archaeological Inventory Methods

6.3.1 Greater Sites Reservoir Area

The following subsections describe methods used for the 2001–2003 archaeological inventory conducted by the ARP for the Greater Sites Reservoir portion of the study area.

6.3.1.1 Survey Methods

All archaeological field survey of the Greater Sites Reservoir portion of the study area was conducted using controlled-exclusive survey methods (White and King 2007:86–87), in which no portion of the study area was excluded from coverage, but high-intensity coverage was used on certain landforms while reduced coverage was used on others.

Crews were grouped into coverage teams that combed the landscape in systematic transects with fixed distances between crew members. The intensity of coverage (i.e., spacing between crew members and density of surface scrapes) was adapted to slope, vegetation, and ground surface visibility.

On slopes with greater than a 15-degree grade, individual crew members were spaced no more than 50 meters apart. Surface scrapes were infrequent and targeted to occasional landforms or natural features where experience and prior research indicated cultural resources might occur. On flatlands or on slopes with less than a 15-degree grade, individual crew members were spaced no more than 20 meters apart and surface scrapes were used frequently where groundcover obscured the soil surface.

The ground surface was constantly examined for available indicators of surface and subsurface cultural resources. All landforms were checked for signs of cultural materials, features, and modifications, such as soil color variation, earthworks, depressions, or ditches. Whenever possible, subsurface exposures associated with rodent burrows, road cuts, or creek banks were examined for indications of buried cultural resources. In addition, surface scrapes were made with hand trowels on landforms where research and experience indicated cultural resources might occur.

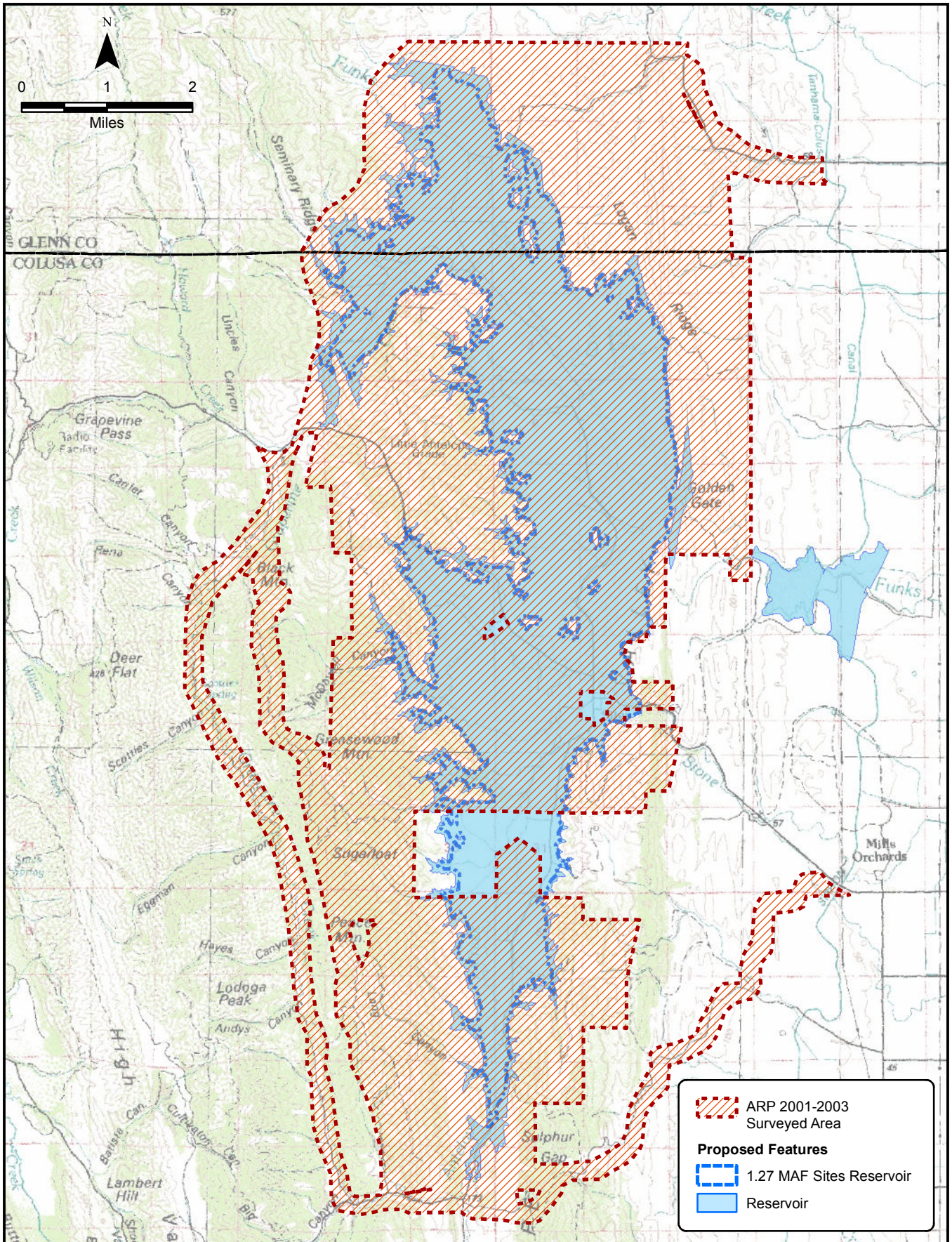
At the request of DWR, sites and isolates were not subject to subsurface probes. No augers or shovel-test pits were dug. Further, no artifacts or archaeological samples were collected. The only exception to this stipulation was at the express permission of the property owners of the Mathis Mound (Sanwa Bank of California and the Mathis family), in relation to the test excavation described above (White 2009).




USGS 7.5' quadrangles and hand-held 12-channel global positioning system (GPS) receivers were used by crews for primary field navigation. Multiple copies of the USGS 7.5' quadrangles spanning the study area were kept on file for use by field and management teams. All six of the USGS 7.5' quadrangles included in the Greater Sites Reservoir area were mapped to the North American Datum–1927 (NAD27) datum, and each GPS unit used in the field was configured to NAD27 in order to facilitate seamless use of the quadrangles to track and verify coordinates. The GPS units were used to determine horizontal position in reference to the Universal Transverse Mercator (UTM) coordinate grid. The entire study area lies within UTM Zone 10.

The GPS units were used to record the UTM coordinates of each daily survey tract. These coordinates were used in conjunction with USGS topographic quadrangle maps and aerial photography to verify ground position, and to plot coverage and cultural resources. To insure complete coverage on open, relatively flat terrain, survey transects were completed using compass bearing alignments, and surveyor flagging was used to mark coverage margins.

6.3.1.2 Dates of Field Work

The archaeological survey of the Greater Sites Reservoir area was conducted in the spring and summer of 2001 through 2003. The ARP executed an intensive pedestrian survey that included the Sites Reservoir footprint, ridgetop buffer, and transportation alternative components (Figure 5). A total of 35,774 acres within the Greater Sites Reservoir portion of the study area was surveyed.



 ARP 2001-2003 Surveyed Area
Proposed Features
 1.27 MAF Sites Reservoir
 Reservoir

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Greater Sites Reservoir
 Portion of the Study Area
 NORTH-OF-THE-DELTA
 OFFSTREAM STORAGE

Figure 5

DWR obtained right-of-entry permission from each landowner, and survey teams did not enter private parcels where access was not granted. Access to private parcels was refused by property owners on 3,670 acres, primarily in the southern portion of Antelope Valley and around the town of Sites. A parcel-by-parcel access list indicating date of access, personnel involved, and acreage covered was maintained by project management staff; this record is part of the permanent project archive.

The survey was conducted in three separate field seasons: (1) mid-February to mid-August 2001; (2) mid-February to mid-August 2002, and; (3) four days of supplemental survey and site recording in March 2003. The 2001 season focused on the alternative transportation routes and proposed recreation areas on the west side of Sites Reservoir. The 2002 field season focused on Antelope Valley flatlands and adjacent hills of the Ridgetop Buffer. Limited field survey and site recording was completed in 2003, which focused on the western margins of Antelope Valley.

6.3.1.3 Recording Criteria

Survey teams searched for and documented all archaeological resources including districts, sites, buildings and structures associated with archaeological remains, and objects. Native American representatives from local tribal communities were part of every survey team, but no effort was made during the archaeological inventory to identify or record tribal traditional places. This concern will be addressed by a separate inventory effort. Similarly, an inventory specific to built environment resources (e.g., buildings, infrastructure features such as bridges, transmission lines, etc.) also will be conducted.

In keeping with federal standards, only those archaeological remains with a preponderance of evidence that indicated an age of 50 years or older were considered for documentation.

For purposes of this study, isolated finds are primarily portable artifacts found individually or in clusters of no more than two items that occurred at a sufficient distance from a recorded site or another isolate to rule out association. Most decisions related to the recording of isolated finds were based on individual field conditions, such as land form association and overall cultural resource density. No firm distance rule was adopted during the inventory, although isolates tended to be more than 30 meters from the nearest recorded site.

The threshold for identifying sites was based on standards promulgated by the California Office of Historic Preservation. A cultural resource was recorded as a site if there were three qualifying objects within 100 square meters. Historic-era sites were also defined by the presence of individual buildings and structures, or combinations of one or more structures and a feature, in addition to the presence of artifacts. Roads and fences were variously recorded as individual features of sites (e.g., ranch or homestead complex), as sites themselves if composed of more than one distinct feature (e.g., road plus fence line or road plus drainage feature), or linear features (e.g., simple alignment, no features). All bedrock mortars with more than one mortar cup were considered sites. Individual artifacts, a cluster of two artifacts, and isolated boulders with single mortar cups were identified and recorded as isolated finds.

6.3.1.4 Site Naming Conventions

Final site and isolate records have not been submitted to the CHRIS, at DWR's request. Thus, sites newly recorded and re-recorded by the ARP teams have not been assigned State of California final trinomials. Consequently, the sites are herein described and reported using project-specific identification numbers.

During the course of the investigation, each recorded cultural resource was assigned a project-specific, three-part field identification number, with each element separated by a dash. Resources recorded during the 2001 field season were assigned a number beginning with "SR," referring to Sites Reservoir, while

cultural resources recorded during the 2002 and 2003 field seasons were designated “SF,” referring to Sites Footprint. The second part of the trinomial was assigned in numerical order per field crew, beginning with -001. Lastly, the third part of the trinomial refers to the field crew itself, identified in the Field Crew Series A through E with designations A, B, C, D, or E. Each field crew included three to five persons led by a crew chief. Depending on the crew numbers available during any field stint, between one and five teams were dispatched (with designations A, B, C, D, and E).

Resources that failed to meet the definition of a site (see above), were further identified as isolates and designated by the letters “ISO.” Although some isolates were later reclassified as sites after reconsideration of the preponderance of evidence, for purposes of record keeping the “ISO” designation was retained in the identification number to maintain links between final site records and crew notebooks, daily work records, and crew chief records.

Archaeological sites previously recorded by the 1967 UCLA, 1975 UCD, and 1998-1999 DWR-DPR studies were re-recorded using the numbering system for the current project to track visitation to the sites. A site record update was prepared for each re-recorded resource.

6.3.1.5 Recording Methods

All identified cultural resources, including prehistoric and historic-era sites, features, and isolated finds, were recorded to the fullest extent possible using standard DPR 523 forms. Detailed site sketch maps were prepared to scale, and all temporally and functionally diagnostic artifacts were sketched. Documentation procedures adhered to recommendations contained in *Instructions for Recording Historical Resources* (State of California Office of Historic Preservation 1995). A site record update was prepared for each previously recorded resource.

All archaeological sites and features were photographed using a standard 35-millimeter film camera or a 1.7 megapixel digital camera. Overview photographs were taken for each archaeological site from specific access and vantage points; individual features were also photographed. Additional photographs were taken to supplement artifact illustrations. One overview photograph was taken of each tract surveyed to document the ground surface conditions at the time of survey. Digital photos and photo logs were cross-referenced into appropriate site survey forms. A computer database of digital photos is stored on compact disc (CD) with the permanent collection.

6.3.1.6 Digital Records and Documentation

Under separate contract between DWR Northern District and the Geographic Information Center, CSU, Chico, all archaeological resources reported herein were digitized using ESRI, Inc., ArcView geographic information system software. The GPS-determined field datum point was plotted for each site and isolate resource, with links to metadata listing the site name and “clickable” links to launch Adobe, Inc. Acrobat format document files containing the complete site or isolate record. Isolates were left as point features, while sites were plotted as polygons (site areas) or linear features (fences, roads, etc.). All data sets related to the digitizing effort were transferred to DWR Northern District in 2004.

6.3.1.7 Archiving

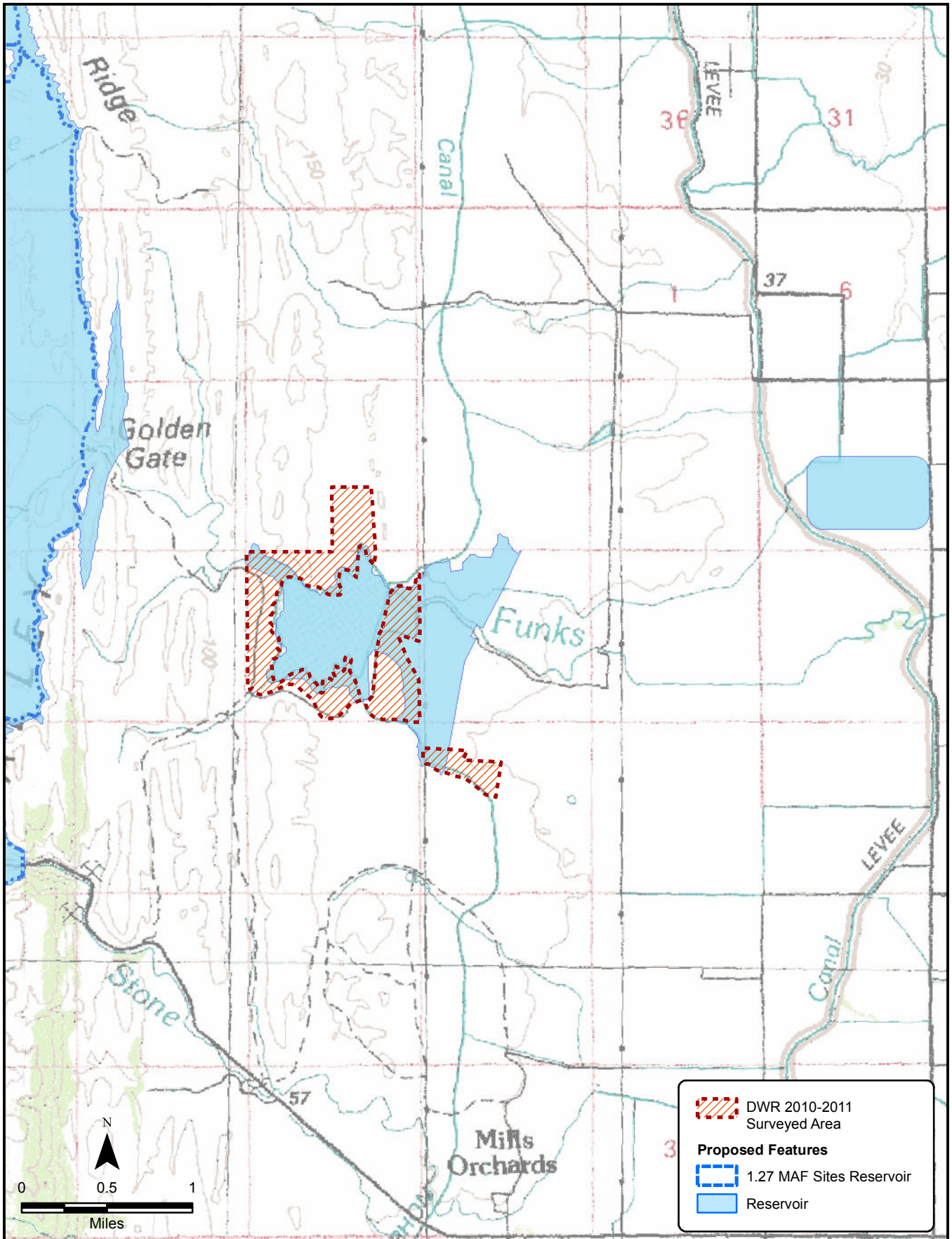
All crew and staff field notes, daily logs, daily coverage maps, master site and isolate location maps, print photographs, and original field site records and sketch maps have been organized and placed in archival-quality non-PVC sheet protectors and stored in metal-edge curation boxes and are housed with the DWR Environmental Division. The archived records include CDs with all digital files and copies of e-mail communications.

6.3.2 Holthouse Reservoir Complex

DWR surveyed approximately 348 acres of the Holthouse Reservoir Complex in 2010 and 2011 (Figure 6). Most of the surveyed area is around the existing Funks Reservoir, while approximately 80 acres of the surveyed area is in the proposed Holthouse Reservoir. Survey protocols closely followed those adhered to by the ARP.

6.3.3 Delevan Pipeline

The ARP conducted a survey of accessible lands within the Delevan Pipeline portion of the study area (Westwood and White 2005). This survey followed the protocols established for the Greater Sites Reservoir portion of the study area. A total of 1,796 acres were inventoried (Figure 7).



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Holthouse Reservoir Complex
Portion of the Study Area

NORTH-OF-THE-DELTA
OFFSTREAM STORAGE

Figure
6

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CHAPTER 7: ARCHAEOLOGICAL INVENTORY RESULTS

Archaeological inventory of the study area resulted in the identification and recording of 573 cultural resources, including 144 archaeological sites and 429 isolated finds. This chapter provides a summary of the recorded resources and descriptions of the archaeological sites recorded. Appendix A provides a complete list of the isolated finds.

7.1 Summary

A total of 144 archaeological sites and 429 isolates are reported here. Figure 8 shows the distribution pattern of the archaeological sites in the Greater Sites Reservoir portion of the study area, depicted by site type (prehistoric, historic-era, multicomponent). Similarly, the isolated finds are depicted in Figure 9 and Figure 10 for the Greater Sites Reservoir, and the Holthouse Complex and Delevan Pipeline areas, respectively. Table 4 provides a summary of survey area and recorded resources.

Table 4

Summary of Project Survey Areas and Recorded Resources

NODOS Section	Total Acres	Surveyed Acres	Archaeological Sites	Isolated Finds
Greater Sites Reservoir	39,444	35,774	144	425
Holthouse Reservoir Complex	1,100	348		1
Delevan Pipeline Area	2,479	1,796		3
Totals	43,023	37,918	144	429

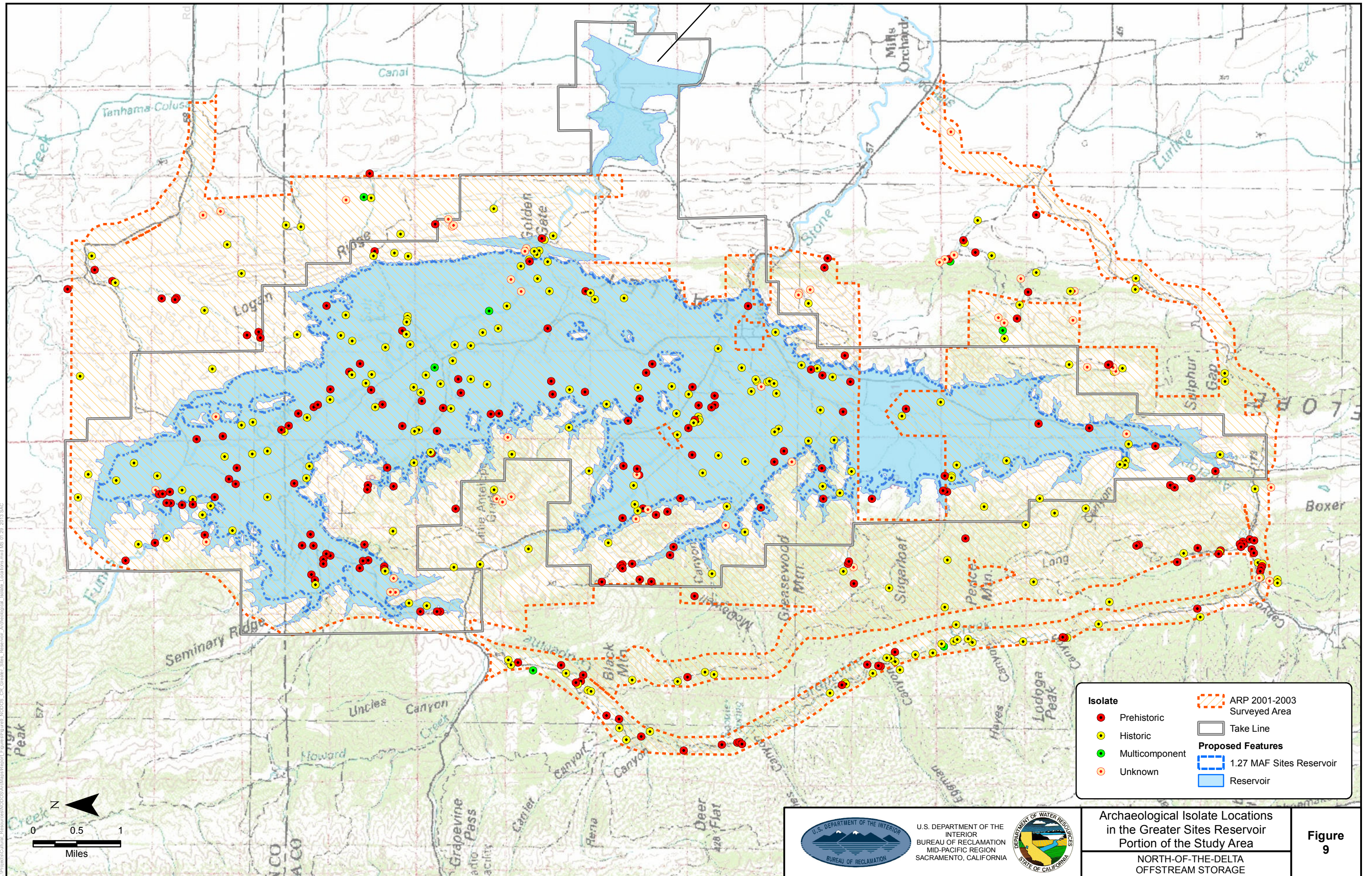
The 144 archaeological sites include 106 sites newly recorded by the 2001–2003 ARP archaeological survey, and 38 sites previously recorded by the 1968 UCLA archaeological survey or the 1998–1999 DWR-DPR study, or both. As mentioned previously, no new archaeological sites were recorded in the Holthouse Reservoir Complex or Delevan Pipeline survey areas.

The site totals reported and the project maps herein do not include:

- Three sites contained in the Funks Reservoir footprint reported by Chartkoff (1969) and West et al. (1975, 1976), including CA-COL-233 (Chartkoff’s Col-28), CA-COL-242 (Chartkoff’s Col-37), and CA-COL-53. These sites are all inundated by the existing Funks Reservoir.
- Three sites recorded by the 1998–1999 DWR-DPR survey but determined to lie outside the current study area, including sites 17-4-9-3, 18-4-8-1H, and 18-5-1/2-1H.

The 429 isolates (Appendix A) are all newly encountered and recorded by the ARP and recent DWR archaeological surveys. The isolate totals reported herein do not include:

- Eight isolated finds recorded by the 1998–1999 DWR-DPR survey but not relocated and not verified during the 2001–2003 ARP survey (DWR-DPR numbers 17-4-9-3, 17-4-9-4, 17-4-9-5, 17-4-9-6, 17-5-13-1, 17-5-23-2, 17-5-24-2, and 17-5-24-2)



- One isolate (DWR-DPR field 18-4-7-1H) recorded by the DWR-DPR field team but determined to lie outside the current study area.

The ARP isolate number series is not in perfect numerical sequence. Some isolate numbers issued in the field were subsequently determined void when it was found that the artifacts fell within the boundaries of an archaeological site and thus the artifact was converted to an element of the site, the artifact was immediately adjacent to another isolate and thus was considered an attribute of one isolate, or the object was determined later not to represent an historic-era artifact. The numbers were retained and listed “void” to reduce confusion associated with field note corrections and correlations.

7.2 Chronological Associations

Field teams thoroughly inspected each site for artifacts, features, and other characteristics that could be used to identify chronological and cultural affiliations. Access agreements negotiated by DWR prohibited collection of artifacts, so thorough field records were considered especially critical. Extensive field notes, illustrations, and photo documentation were generated for each chronologically or functionally diagnostic artifact and feature observed in the field. These findings allowed classification of the sites into basic chronological affiliations and functional types, and identification of some more specific cultural-historical assignments (i.e., “contact-era” Native American sites) in the relatively limited number of instances where more specific marker artifact types and supporting evidence was available.

Based on the survey findings, the 144 archaeological sites reported herein include 69 strictly prehistoric sites, 39 strictly historic-era sites, and 36 multicomponent sites that incorporate both prehistoric and historic-era elements and features. The 429 isolates include 176 prehistoric artifacts, 231 historic-era, 7 multicomponent isolates, and 15 of undetermined attribution. Table 5 provides a summary of these recorded cultural resources.

Table 5
Summary of Recorded Cultural Resources

	Archaeological Sites	Isolated Finds
Prehistoric	69	176
Historic-era	39	231
Multicomponent	36	7
Unknown		15
Total	144	429

7.2.1 Prehistoric Sites

Seventy-three percent of all sites recorded in the Greater Sites Reservoir portion of the study area contain prehistoric materials; this percentage includes multicomponent sites in addition to resources that contain only prehistoric remains. The prehistoric site types found in the Greater Sites Reservoir portion of the study area are midden sites (58), lithic scatters that include both flaked and ground stone (24), flaked stone scatters (9), bedrock milling station sites without any other prehistoric association (8), and ground stone scatters (5). One rock shelter with associated bedrock mortars and a lithic scatter was also recorded. Table 6 presents site constituents for prehistoric sites. Combined data from sites that contain only prehistoric materials and multicomponent sites are used for the analysis presented below.

Table 6
Prehistoric Site Constituents at Prehistoric and Multicomponent Sites

Constituent	Prehistoric	Multicomponent	Total
Midden	41	17	58
House Pits	9	1	10
Dance House		1	1
Milling Station only	5	3	8
Milling Station with midden	10	7	17
Milling Station with flaked and ground stone	8	1	9
Flaked stone only	6	3	9
Ground stone only	2	3	5
Lithic scatter only*	14	10	24
Shell beads	3	3	6
Human Remains	1	1	2
Rock shelter	1		1
Rock art (cupules)		3	3

*Lithic scatters include both flaked and ground stone.

Boldface type indicates a primary site type. Constituents not in bold type are considered subsets to the primary site types. Primary site types can contain multiple other constituents, such as a milling station and shell beads.

By far, midden sites are the most common prehistoric site type. Fifty-five percent of all sites with prehistoric constituents have midden soils. The majority (82 percent) of the midden deposits contain lithic materials that include both flaked and ground stone artifacts; only rarely are ground stone items not recorded within a midden. Fire-affected rock, charcoal, and animal bone fragments are also routinely observed in the midden matrix. Other elements found occasionally at midden sites include bedrock milling stations at 17 sites, house pits at nine sites³, and a possible dance house at one site (SF-020-A). Shell beads were recorded at six sites. These included a surprising variety that included several *Olivella* bead types (e.g., spire-lopped, rectangular sequins, saucers) and clamshell disk beads of varying sizes. Human remains were observed at the Mathis Mound, as discussed above, and at one additional midden deposit. Midden sites were found throughout the Greater Sites Reservoir section of the study area, not only around the perimeter of Antelope Valley as might be expected.

Lithic scatter sites that contain both flaked and ground stone are the second most common prehistoric site type observed, comprising 23 percent of the prehistoric site total. Sites containing only flaked stone or only ground stone are much less frequent at 8.5 and 4.7 percent, respectively. Altogether, though, lithic deposits make up 36 percent of recorded study area sites. Visually sourced Borax Lake obsidian appears to be the most frequent flaked stone material, but cherts, basalts, and greenstones are also common. Recorded flaked stone artifacts represent the full range of the lithic production sequence from cores and cobble/core tools, to all stages of debitage and various flake tools, and final products such as bifaces and projectile points. Although projectile points are relatively uncommon, those noted included a number of different types such as wide-stemmed, side-notched, corner-notched, barbed, and leaf-shaped that are manufactured from obsidian, chert, or basalt. Ground stone artifacts also include a broad range of items, included milling slabs, hopper mortars, bowl mortars, handstones, and pestles, usually in combination. Like midden sites, lithic scatters are found in all parts of the Greater Sites Reservoir area.

³ One possible house pit was recorded at a non-midden lithic scatter.

Milling station sites are almost exclusively bedrock mortars, with only the occasional milling slick. Milling stations are usually associated with middens, but are recorded by themselves at eight locations. One milling station is recorded at the single rock shelter found in the study area. Bedrock milling stations vary considerably in size, ranging from 2 or 3 mortar cups up to as many as 67; most sites contain less than 10 mortar cups. Three of these sites also contain small cupules, which might be a form of rock art. Most of the isolated milling stations (i.e., those without other prehistoric elements) are found on the east side of the Greater Sites Reservoir portion of the study area where large bedrock outcroppings are more prevalent. However, milling stations are anywhere bedrock outcrops are suitably located.

7.2.2 Multicomponent Sites

The 36 multicomponent sites primarily consist of homesteads or ranches built upon prehistoric occupation sites. For the purposes of analysis, these are considered separate occupations that happen to occupy the same geographic space, presumably because the landform was favored for similar reasons by different generations and cultures. Those multicomponent sites that do not reflect actual homesteads contain elements of farming or ranching such as tools, windmills, or corrals.

Seventeen of multicomponent sites (47 percent) contain midden deposits. Three of the 36 sites include just milling stations, and the remaining 16 (47 percent) combine historic-era remains with lithic scatters of some variety (flaked or ground stone, or both).

7.2.3 Historic-era Sites

Historic-era remains are present at 52 percent of all sites, combined, within the Greater Sites Reservoir portion of the study area. They are overwhelmingly associated with homesteading, farming, and ranching. Those few that reflect other aspects of the historic era include site SF-037-A, which contains remnants of the Antelope Valley salt production effort, a sandstone quarry at site SF-025-B, and a section of the C&LRR.

Six historic-era sites that also produced a number of prehistoric ground stone items are not counted as multicomponent because the ground stone artifacts were collected in historic-era or recent times and used in a decorative or functional capacity by the occupants of ranches or homesteads. At sites SF-008-A and SF-046-A, mortar fragments are found in contexts suggesting they were used as plow or harrow weights. Homestead site SF-012-A contains a sandstone hopper mortar used as a fence anchor. SR-005-C is a homestead site with a rockwork chimney that incorporates a sandstone hopper mortar and a large graywacke spall. Historic-era ranch sites SF-008-B and SF-003-E have elaborate landscaping displays of prehistoric artifacts including obsidian chunks, bedrock fragments with mortar cups pried from outcrops, bowl mortars, hopper mortars, millingstones, handstones, and pestles. For the purposes of analysis, these are considered historic-era features of historic-era sites.

7.2.4 Isolated Finds

A total of 429 isolates were recorded within the entire study area. Virtually all (425) are within the Greater Sites Reservoir area (Figure 9), while one prehistoric isolate was recorded in the Holthouse Reservoir Complex, and three historic-era isolates were identified in the Delevan Pipeline Area (Figure 10). Historic-era items comprise 53.8 percent of all study area isolates. Most of these resources relate to ranching or farming activities (e.g., fencing or plow blades) that are widely distributed across large landscapes. The prehistoric isolates are a smaller proportion of all isolates (41 percent), probably because most prehistoric isolates consist of tools used in extractive technologies at resource patches where they tend to cluster and form sites, or more simply they have been on the landscape longer and,

thus, are more likely to have been buried or removed. The multicomponent isolates consist of the rare coincident occurrence at one location of one historic-era and one prehistoric artifact. Fifteen isolates are labeled “unknown” because they cannot be confidently assigned to a temporal period. These resources consist of rock piles or cairns.

7.3 Study Area Archaeological Sites

The following provides a brief description of each archaeological site encountered and recorded by the systematic survey of the study area. Appendix A presents isolated finds.

7.3.1 2001 Sites (SR Series)

Site SR-001-A. Site SR-001-A, the Mathis Mound, is a large, multicomponent site characterized by a number of resource attributes, including prehistoric habitation debris, a prehistoric lithic scatter, and a historic-era road, fence, and well plug, and is situated on the south bank of Antelope Creek. The site measures 120 meters north-south by 288 meters east-west in plain view and includes four loci (Loci A–D), as follows.

Locus A occupies the northeast quadrant of the site and measures 100 meters north-south by 110 meters east-west. The locus contains a prehistoric midden-mound and a historic-era well plug with associated fence posts. The surface of the mound is hummocky, although it is unclear if the low areas are possible house pits or cow wallows. A total of six depressions, identified as “Features,” were recorded, as listed in Table 7. One additional feature (Feature 7) is at the east edge of Locus A, near Antelope Creek, and consists of several fenceposts and a well plug. The latter is composed of a metal pipe 6 inches in diameter and 3/8-inch thick; it is capped by a metal collar 21 inches in diameter and 12 inches tall.

Table 7
Depression Features in Locus A, Site SR-001-A

Feature	Length N-S (cm)	Length E-W (cm)	Depth (cm)
1	225	255	15
2	330	520	15
3	300	280	25-30
4*	310	270	23
5	230	240	30
6	220	250	30

cm =centimeters
 E-W = east-west
 N-S = north-south
 * Feature 4 is horseshoe-shaped

A number of artifacts were observed on the surface of Locus A: one Excelsior projectile point, one Excelsior projectile point base fragment, one ovate scraper, five metasedimentary core tools, one hand stone end fragment, one pestle fragment, and one pestle manufacturing blank. Other cultural constituents noted on the surface of Locus A included fire-affected rock, obsidian flakes, and shell and bone fragments. A single human bone, an adult lumbar vertebrae fragment, was also recorded. The vertebrae fragment was reburied in place during the original survey and was not relocated during the subsequent test excavation.

Locus B occupies the west-central area of the site and is fully contained within Locus C. Locus B consists of the remains of a small historic-era structure marked by a large depression, stone footing blocks, and

associated historic-era debris. Cultural constituents observed included: 10 dressed sandstone blocks with chisel marks; 2 pieces of clear window glass with heavy patina; 2 pieces of white ironware flatware; and 1 square nail. Based on age estimates for the associated artifacts, the locus is judged to date between approximately 1880 and 1914. The footing stones and historic-era artifacts are found around and within a concave-shaped depression measuring 12 feet in diameter and 3 feet deep. The depression appears to be recently disturbed and is judged to result from modern bottle hunting with heavy equipment.

Locus C, at the west end of the site, measures 65 meters north-south by 150 meters east-west. The locus contains a prehistoric midden and a non-midden flake scatter area on a bench elevated above Locus A. Artifacts observed on the surface of Locus C included: an obsidian edge-modified flake; a worked bone fragment; a complete sandstone pestle; an obsidian corner-notched projectile point fragment; three shell beads, including one *Olivella* M-series sequin, one *Olivella* A-series spire-lopped, and one *Tresus* species clamshell disk; a sandstone handstone fragment; a sandstone handstone fragment; and a chert Borax Lake widestemmed projectile point fragment. A number of chert and obsidian flakes were observed on the surface of Locus C.

Locus D is on the east end of the site, confined to the north stream bank exposure on Antelope Creek. Locus D contains a subsurface midden deposit visible in the cut bank. The midden possibly continues north of the cut bank onto a terrace that borders the stream, although groundcover obscures visibility. The midden along the cut bank measures approximately 24 meters and averages 140 centimeters in depth.

A limited test excavation of the site is described and analyzed under a separate cover (White 2009) and the results are summarized above.

SR-002-A. This multicomponent site consists of a historic-era hearth, debris scatter, and fence line, and a prehistoric lithic and ground stone scatter. Situated along Antelope Creek in the southwest corner of the Greater Sites Reservoir portion of the study area, the site is bisected by a dirt road that follows Antelope Creek and intersects with Huffmaster Road approximately 1.2 miles to the south.

This resource contains two features. Feature 1 is a toppled historic-era hearth, measuring 10 feet by 9 feet. Feature 2 is a scatter of historic-era artifacts in an area that covers 594 square feet and includes a possible foundation. A barbed-wire fence partially encircles the locus. The fence has grown into several blue oaks and reutilized wagon parts—two axles, a hand brake, and several miscellaneous parts—have been incorporated as posts; the latter most likely salvaged from the remains of an old wagon road found in the western portion of the site.

Historic-era artifacts identified on site are consistent with a residential occupation and include various types and colors of glass fragments (amber, clear, milk, blue, and green with yellow lettering), white ceramic fragments, thick yellow ceramic fragments, half of a brown ceramic doorknob, 1 slender horseshoe, several pieces of bed frame, 1 large spike, and 12 fig trees. Several pieces of cast-iron stove were also identified, one with the identifying markings *V 6* and one marked with the letters *B M*. Several square nails, ranging in size from 16p to 8p, 6p, and 4p, were also recorded. Prehistoric artifacts observed on site include 2 handstones, 1 milling slab, 20 obsidian flakes, 5 chert flakes, 1 basalt core, 1 obsidian projectile point, and a scatter of fire-affected rock.

SR-003-A. Situated on a bench next to an intermittent creek, this prehistoric site is a low-density lithic scatter. The site encompasses a 3,000 square meter area and is composed of four obsidian flakes, one obsidian biface, two chert cores, and one pestle fragment.

SR-004-A. This prehistoric site consists of four bedrock outcrops that contain a total of five small, shallow mortar cups. The site is situated on a finger ridge south of an ephemeral drainage in the southwest corner of the study area. The site measures 20 meters in diameter and has no associated surface artifacts. An isolated obsidian flake was noted 60 meters west of the site boundaries.

SR-005-A. This historic-era site consists of habitation features and debris situated on a flat along an ephemeral drainage among the otherwise steep hill slopes in the southwest corner of the study area. The site is composed of four features. Feature 1 is a concentration of rocks and machinery parts. Feature 2 is a circular depression that may represent a cold storage pit; it measures 10 feet in diameter and 4 feet deep. Feature 3 consists of two barrel hoops embedded in a blue oak, and Feature 4 is an orchard of six olive (*Olea europaea*) and three fig trees (*Ficus carica*). Artifacts observed include various tractor parts and plow blade fragments, one shovel, one single-bit axe head, four horseshoes, barrel straps, mattress springs, metal gears, amethyst and amber glass fragments (including an amber bottle neck and lip), white ceramic fragments, and barbed-wire fencing. In addition, numerous cast-iron stove parts were observed with the identifying marks of *Improved 1868 Richmond Stove Company, Norwich, Conn. Empire City*.

SR-006-A. SR-006-A is a prehistoric site that consists of a low-density lithic scatter on a large bench overlooking Antelope Creek in Boxer Valley at the very south end of the study area. Antelope Creek lies approximately 200 meters north of the site. Huffmaster Road lies in between the site and the creek, approximately 180 meters north of the deposit. Cultural constituents include two visually sourced Borax Lake obsidian flakes, one hopper mortar fragment, and one possible hopper mortar. The site measures 50 meters in diameter.

SR-007-A. SR-007-A is a large prehistoric site that consists of a midden-mound with ground stone, faunal bone, lithic materials, fire-affected rock, and a possible house pit. The site is situated at the base of a slope on a bench adjacent to an ephemeral drainage or ravine, on the northern bank of Antelope Creek. Site SR-006-A lies directly to the south across Antelope Creek at a distance of approximately 280 meters. The site encompasses an area measuring 13,800 square meters. The midden is a dark brown to black clayey loam with black charcoal fragments. Feature 1 is a possible house pit that measures 5.5 by 6 meters, and is 30 to 50 centimeters deep. Artifacts observed include 1 hopper mortar, 1 hopper mortar fragment, 1 pestle fragment, 1 possible sandstone pestle fragment, 1 shaped slab with pecking and polish, 1 handstone fragment, 1 graywacke core, at least 40 visually sourced Borax Lake obsidian flakes representing all stages of reduction, at least 20 faunal bone fragments, 1 Borax Lake obsidian biface midsection, and a high-density concentration of fire-affected rock.

SR-008-A. This historic-era site consists of a standing chimney and debris scatter situated along Grapevine Creek and along the proposed Ridge Road, approximately 0.3 miles north of site SR-009-C at Scotties Spring. The site covers approximately 50 square feet. Artifacts noted include metal coil fragments, one white china fragment with glaze and gold etching, one metal can with an internal folded seam, and part of a metal stove inside the structure's hearth. The chimney is made from various sized slabs of sandstone and local mortar. Part of the structure has collapsed into a pile on a gentle slope, just east of a steep hillside. A dirt road passes through the east edge of the site.

SR-009-A. Located along the proposed Ridge Road alignment, this prehistoric site consists of a 200-square-meter, low-density lithic scatter situated on a terrace overlooking Grapevine Creek. The site is approximately 83 feet west of a dirt road that follows the creek. Site SR-008-A is approximately 325 feet upstream (south) of the deposit. Artifacts noted include one possible hopper mortar and at least five visually sourced Borax Lake obsidian flakes. All of the flakes were greater than 1 centimeter long; some were weathered. The majority of the flakes were found in an east-west-trending trail through the site.

SR-010-A. This historic-era deposit is a residential occupation site on a flat with a hearth and a rock alignment at the base of a ridge slope between two drainage features. The flat measures 672 square feet. Located upslope and to the east are five cast-iron stove parts, an amethyst bottleneck with a double-ringed applied lip, an amethyst glass fragment, and one amber octagonal piece of glass. The hearth is near a rock alignment, and a small shallow depression measuring 5 inches in depth is downslope and to the west.

SR-011-A. SR-011-A is a historic-era debris scatter situated in a saddle on a north-trending ridge along the proposed Creek Road alignment. The scatter measures approximately 230 feet by 400 feet. Artifacts include 4 amethyst glass fragments, at least 2 amber glass fragments, at least 1 clear glass fragment, 1 tall rectangular can, 2 metal basin fragments, 1 metal pitcher fragment with a riveted handle, 4 possible barrel hoops, at least 10 miscellaneous metal fragments, 2 pieces of graniteware fragments, 1 speckled gray graniteware wash basin, and 3 white china fragments. An old road passes through the site.

SR-012-A (CA-GLE-103; 18-5-14). CA-GLE-103 was originally recorded by UCLA in 1967 and re-recorded by DWR-DPR in 1998 as a prehistoric midden and lithic scatter situated along the confluence of a branch of Funks Creek and an unnamed drainage feature at the north end of Antelope Valley and the Greater Sites Reservoir portion of the study area. This very large site covers 6.5 acres and consists of a midden and lithic scatter with two loci. Both loci are in a relatively flat area in the eastern portion of the site; the lithic scatter trends upstream along the water courses. Locus 1 covers approximately 1,280 square meters and contains one pestle, one handstone, one Borax Lake obsidian Gunther Barbed projectile point, four hopper mortars, a light scatter of flakes, and a high density of shell beads. Types of shell beads represented on site include 1 large and 10 smaller clam shell disk beads, 10 *Olivella* rectangular center-drilled beads, 7 *Olivella* rectangular top-drilled shell beads, and more than 10 *Olivella* top-drilled whole shell beads. Possible human remains noted include one distal humerus fragment, one patella, and two premolars.

Locus 2 covers an area of approximately 3,456 square meters and contains a dense scatter of flaked stone materials and a high density of ground stone. Artifacts observed in Locus 2 include 14 handstones with some indications of extreme battering, three pestle fragments, 5 basalt cores or core tools, 4 battered cobbles, 1 chopper tool, 1 visually sourced Borax Lake obsidian Rattlesnake projectile point, 20 chert flakes, 20 basalt flakes, and more than 50 obsidian flakes.

SR-013-A. This 33,600-square-foot historic-era site consists of historic-era habitation features and debris situated on a terrace adjacent to Grapevine Creek, approximately 900 feet south of Sites-Lodoga Road and along the proposed Ridge Road at the west edge of the Greater Sites Reservoir portion of the study area. The site consists of six features including a windmill, structure, corral, chimney, outhouse, and a plow. Artifacts include 1 wash basin, 1 railroad spike, 1 corrugated metal fragment, more than 5 shoe leather pieces, 1 corrugated metal pipe, more than 15 rolls of barbed-wire, 1 gas tank, miscellaneous barbed-wire, more than 100 miscellaneous historical metal fragments, parts from a 1930s Ford truck, more than 250 milled lumber fragments with some wire nails, 1 stove pipe, and 1 plow blade. In addition, 1 flat lip can lid, 2 clear embossed bottle bases, more than 5 white ceramic fragments with machine painted design, 1 embossed aqua bottle base, 1 amethyst etched glass fragment, 1 embossed clear whiskey jug, at least 5 milk glass fragments, and more than 15 clear glass fragments were noted. Non-native vegetation included a number of lilac, black walnut, oleander, fig, and pomegranate trees.

SR-014-A. SR-014-A is a small prehistoric ground stone scatter situated on an alluvial terrace at the base of a west-facing slope adjacent and west of Grapevine Creek, and along the proposed Ridge Road alignment. The site covers 216 square meters and consists of a single hopper mortar, one handstone, one milling slab, and a possible milling slab with indefinite polish. The hopper mortar was observed lying prone among four sandstone boulders of comparable size.

SR-015-A. This multicomponent site consists of a prehistoric lithic scatter and a historic-era debris scatter situated on a flat adjacent at the confluence of Grapevine Creek and an unnamed drainage feature and along the alignment proposed for Ridge Road. The site covers 2,625 square meters. The prehistoric component includes four hopper mortars and one handstone. Two obsidian flakes were also noted along the creek bank. The historic-era component consists of recent coffee cans and one white ceramic fragment. The debris scatter is contained within a circular mound 15 meters northeast of the milling features.

SR-016-A. This large prehistoric site is at Sulfur Gap at the head of an unnamed stream in the southeast corner of the Greater Sites Reservoir area, along the Southeast Mathis Road alternative. SR-016-A consists of a lithic scatter and five bedrock milling features within an area that covers 16 acres. The site contains five bedrock milling features adjacent to an improved springhead. Two hopper mortars and a lithic scatter, including 1 Borax Lake obsidian distal biface fragment, 1 graywacke core, 1 basalt flake, more than 20 Borax Lake obsidian flakes, and 3 handstones, were also identified.

SR-017-A. Located in the east-facing hills that look over the Sacramento Valley, this prehistoric site is outside of the Sites Reservoir area proper and along the Southeast Mathis Road alignment. This site is along an unnamed drainage feature and a modern stock pond is nearby, which indicates the presence of a viable spring. The site consists of a milling station with 11 mortar cups and a lithic scatter situated along an unnamed ephemeral drainage. The site covers 5 acres. Artifacts include 1 pestle fragment, 1 handstone, and at least 10 visually sourced Borax Lake obsidian flakes.

SR-018-A (CA-COL-29/234). SR-018-A is a multicomponent site with two prehistoric midden loci and an abandoned historic-era road with an associated bridge. The site is situated along Grapevine Creek and is bisected by Sites-Lodoga Road. This site was previously recorded in 1967 by Chartkoff as CA-COL-29.

Two prehistoric loci are present at this site. Locus A is a midden buried beneath bulldozer berms that have been created by road, bridge, and culvert construction on the south side of Sites-Lodoga Road. The midden deposit can be seen in a cut bank along Grapevine Creek. Cultural materials were also observed below the midden deposit. Four surface features are associated with the midden and include three outcrops with single bedrock mortars and another outcrop with four shallow cups. Locus B is also a midden and is on a low terrace on the western side of Grapevine Creek north of Sites-Lodoga Road. The southern end of the site has a narrow mound composed of dark midden soil. The northern end of the locus contains a buried deposit that is 1 meter deep in some areas and is only visible from the stream's cut bank.

Artifacts observed include more than 150 visually sourced Borax Lake obsidian flakes that range in size from small pressure flakes to large biface thinning flakes. In addition, approximately 100 graywacke flakes, 15 chert flakes, 1 visually sourced Borax Lake obsidian Rattlesnake projectile point, and fire-affected rock were noted. The cut bank yielded one biface fragment, one bifacial handstone, and one complete pestle. One large, modified faunal bone and approximately 30 shell beads, primarily clam disk beads of various sizes, were also recorded. *Olivella* center-drilled saddle beads were also found on the site.

The historic-era component of the site consists of the old Sites- Lodoga Road, which crosscuts the southern portion of the site, and a metal bridge.

SR-019-A (CA-COL-35/240; 18-5-26). This prehistoric site consists of a midden-mound, a ground stone scatter, faunal remains, and a lithic scatter situated on a terrace of an unnamed tributary of Grapevine Creek in the northwest corner of the study area. The site encompasses 11,960 square meters. Cultural

constituents noted on site include two handstones, three pestle fragments, faunal bones, and a diverse lithic scatter. Chert flakes found on the site are primarily the result of cobble reduction, most likely from a local source.

This site was first recorded in 1967 by the UCLA summer field school as CA-COL-35/240 and was re-recorded by DWR-DPR in 1998 as 18-5-26. House pits were originally recorded, but none were noted during the current survey; however, several depressions identified on the site were determined to be more characteristic of cow wallows or salt lick areas.

SR-020-A (CA-COL-30/235; 18-5-27). First recorded in 1967 by the UCLA summer field school as a scatter of fire-affected rock, SR-020-A was later recorded in 1998 by DWR-DPR as a midden with house pit depressions (18-5-27). This 2,016-meter-square prehistoric site consists of a midden with ground stone, lithics, and two bedrock milling features situated on a small knoll adjacent to an unnamed drainage feature that flows from the northwest into Antelope Valley, approximately 0.25 mile to the east. The site is at the base of Seminary Ridge as the ridge terminates in Antelope Valley, on the southwest-facing slope of the ridge. This location is in the northwest corner of the study area, approximately 0.25 mile south of the Glenn County line. The midden, observed in a cut bank on the northeastern side of the site, contains obsidian, basalt, chert, graywacke flakes, two cores, one handstone fragment, and a dense scatter of fire-affected rock. Features include a boulder with four mortar cups and a second bedrock mortar feature with five mortar cups. No house pit depressions were noted.

SR-021-A (CA-COL-31/236; 18-5-35-1 and 18-5-35-2). SR-021-A was first recorded in 1967 by the UCLA summer field school as a 2-acre midden site (CA-COL-31/236); it was re-recorded as sites 18-5-35-1 and 18-5-35-2 by DWR-DPR in 1998. The site occupies a terrace on the west bank of Grapevine Creek in a small arm of Antelope Valley that extends to the southwest along the creek in the northwest study area. Locus A, in the south-central portion of the site, covers 400 square meters; it is the smaller of the two loci and consists of a midden-mound approximately 40 meters in diameter. Cultural constituents include a minimum of 15 obsidian flakes, 10 chert flakes, 10 graywacke flakes, 3 basalt flakes, 1 graywacke core, 1 burned clamshell disk bead, faunal bone fragments, and a high density of fire-affected rocks. Three bedrock milling stations with 12 mortar cups are in Grapevine creek in close proximity to Locus A. Locus B, at the north end of SR-021-A, covers approximately 13,650 square meters and contains two concentrations of fire-affected rock, a possible midden, 1 basalt core, 1 large graywacke reduction flake, 6 pestle fragments, 2 graywacke cores, 1 basalt flake, 4 obsidian flakes, 10 basalt flakes, charcoal, and faunal fragments.

SR-022-A (18-5-34-1). This small prehistoric site is situated between two unnamed drainage features at the west edge of an arm of Antelope Valley in the northwest corner of the Greater Sites Reservoir portion of the study area. Grapevine Creek is approximately 30 meters southeast of the site. This site was previously recorded in 1998 by DWR-DPR as a lithic scatter and house pit, as 18-5-34-1. The current survey observed a low-density lithic scatter, one pestle fragment, and a possible house pit. The possible house pit is a small, circular depression approximately 7 meters in diameter.

SR-023-A (CA-COL-33/238; 17-5-3-1). This prehistoric site is a midden and lithic scatter on the north bank of Grapevine Creek and at the base of gently rolling hills near the central-western edge of the Greater Sites Reservoir portion of the study area. The site is approximately 0.25 mile downstream from where Grapevine Creek crosses under Sites-Lodoga Road and site SR-018-A. The site was first recorded in 1967 by the UCLA summer field school as CA-COL-33/238 and was re-recorded by DWR-DPR in 1998 as 17-5-3-1. The site covers 14,000 square meters and consists of two separate loci with midden deposits. Locus A, adjacent Grapevine Creek, encompasses an area of 3,900 square meters. The midden deposit covers the entire locus. Ten obsidian flakes, faunal bone, and fire-affected rocks were noted in

this area. To the north of Locus A, Locus B is a 4,125-square-meter midden-mound that contains shell fragments, faunal bone, charcoal fragments, burned seeds, 3 pestles, 1 handstone, and fire-affected rock at a density of 10 per square meter. A lithic scatter composed of 20 obsidian flakes and 10 basalt flakes also surrounds the mound slopes. The original site record noted the presence of house pits; however, the 2001 recording by ARP indicates that these areas actually may be cattle wallows.

SR-024-A (18-5-26-1). Previously recorded in 1998 by DWR-DPR as 18-5-26-1, SR-024-A is a prehistoric midden site and lithic scatter situated adjacent to an unnamed drainage at the base of a hill on the northeast side of Seminary Ridge in the northwest corner of the Greater Sites Reservoir portion of the study area, in Glenn County. The unnamed drainage feature is a tributary to Grapevine Creek, which lies approximately 1 mile to the southeast. The site measures 40 meters in diameter. Cultural constituents include a moderate density scatter of fire-affected rock, one pestle fragment, faunal bone fragments, and a lithic scatter composed of 50 percent basalt, 30 percent chert, and 20 percent obsidian flakes.

SR-001-B. SR-001-B is a prehistoric site composed of a midden and lithic scatter situated on and around a small knoll on the north bank of Antelope Creek at the very southern end of the Greater Sites Reservoir portion of the study area; Huffmaster Road cuts through the north edge of the site. The midden is dark and clayey, and covers an area roughly 23 meters by 12 meters atop the knoll. At the apex of the knoll there are three 10- to 20-centimeter-deep circular depressions, each measuring approximately 3 meters in diameter, which may represent house pits. No artifacts were found in association with these features. Cultural constituents found elsewhere on site include three *Olivella* M-series shell beads, one hopper mortar, several ground stone fragments, one quartzite flake, one battered core tool, one biface midsection, one chert core, fire-affected rock, and many small obsidian flakes. The majority of the small obsidian flakes were found in or near animal burrows and in the road cut.

SR-002/003-B. This large multicomponent site is near the headwaters of Grapevine Creek and along the proposed Southwest Ridge Road at the west edge of the study area. The site is situated in a small valley among steep hill slopes, at the mouth of Hayes Canyon. Grapevine Creek runs through the west edge of the site, while a dirt access road crosses through the east portion of the deposit.

SR-002/003-B encompasses an area covering 4.7 acres. The historic-era component is composed of seven discrete features that include two trash scatters, one stone fireplace, one fire ring, one inhabited trailer, one collapsed barn, and one farm pond/berm. Artifacts observed include one clear glass bottle base marked with the date *Aug. 31, 1915*, one machine soldered hole-in-top can, one amethyst glass fragment, one amber glass bottleneck, and numerous pieces of metal, ceramics, and milled lumber.

The prehistoric component is marked by a moderately dense and widely dispersed lithic scatter composed of flaked and ground stone. Artifacts include obsidian flakes, ground stone, mortar fragments, one obsidian biface, quartzite, core tools, two bifacial handstones, and faunal bone, which occurred only on the east side of Grapevine Creek. No midden was observed on the site, despite the large deposits of bone.

SR-004-B. This prehistoric site is a sparse to moderately dense lithic scatter located in a valley surrounded by rolling hills just west of Grapevine Creek at the west edge of the study area. The site is approximately 0.75 mile south of Sites-Lodoga Road. SR-004-B covers 1,575 square meters. The cultural constituents recorded include one handstone, two handstone fragments, one chert core, one grinding slab fragment, at least four chert flakes, and more than six obsidian flakes. A dirt access road is just west of the site, and a water tank and military jeep were observed west of the road.

SR-005-B. A multicomponent site, SR-005-B consists of a historic-era homestead and orchard, and a moderately dense prehistoric flaked stone and ground stone scatter. The historic-era component contains a

chimney, outhouse, pump house, windmill, corrugated metal building, and a small orchard of almond trees. Black walnut trees were also noted on site. Artifacts include a light scatter of milk glass, ceramics, and tin items. An historical road, which is still in use, is to the west, along with a lilac bush. The prehistoric component consists of six handstones, two milling slabs, one core, shell (possibly abalone), and one burned bone fragment. A lithic scatter of more than 50 obsidian flakes, chert flakes, and basalt flakes is also present.

The site is in a narrow valley formed by Grapevine Creek at the west edge of the study area. Grapevine Creek runs along the east edge of the site, while a dirt road bisects the site from north to south, and meets up with the Sites-Lodoga Road 1.5 miles to the north. Site measurements are approximately 150 meters north/south and 80 meters east/west.

SR-006-B. SR-006-B is a multicomponent site situated in a narrow valley carved by Grapevine Creek through the surrounding steep hill slopes, and along the Southwest Ridge Road at the west edge of the study area. The site is at the confluence of Hayes Canyon Creek and Grapevine Creek, with Hayes Canyon Creek to the south and Grapevine Creek to the east. A bifurcated dirt road crosses through the site. The entire site covers approximately 4.8 acres.

The prehistoric component consists of a low-density lithic scatter and includes approximately 20 to 30 visually sourced Borax Lake obsidian flakes and one projectile point. All of the flakes were observed in the road or road cut.

The historic-era component is limited to a 390-foot-long fence line situated on a terrace cut by Hayes Creek. The fence line uses standing blue oaks linked with barbed-wire. An old saw-cut gate post that is present has handmade hinges and a recycled metal band secured with wire nails. Wire was observed protruding from the center of the trees.

SR-007-B. This prehistoric site covers approximately 6,300 square meters and consists of a low-density debitage scatter and a ground stone concentration situated on an old stream terrace along the east bank of Grapevine Creek. The site is in a narrow valley cut by the creek and on the Southwest Ridge Road alignment in the westernmost portion of the study area. The debitage contains at least 20 late-stage visually sourced Borax Lake obsidian flakes, one visually sourced Napa Valley obsidian flake, one graywacke flake, and one chert flake. The ground stone scatter contains eight hopper mortars and one handstone fragment.

SR-008-B. This prehistoric site consists of a low-density lithic scatter on a flat in a narrow valley formed by Grapevine Creek and along the Southwest Ridge Road at the west edge of the study area. Grapevine Creek flows along the east edge of the site and a dirt access road bisects the deposit from north to south. Site SR-007-B is in close proximity to the south. This site contains one visually sourced Borax Lake obsidian side-notched projectile point, one handstone fragment, and one large flake scatter containing approximately 90 visually sourced Borax Lake and Mt. Konocti obsidian and basalt flakes.

SR-009-B. SR-009-B occupies a flat on the west side of Grapevine Creek and approximately 150 meters north of Eggman Canyon Creek. The site is at the west edge of the study area on the proposed Southwest Ridge Road alignment. A dirt road parallels Grapevine Creek through the site. This prehistoric site covers 3.75 acres and has a midden component. Blue oaks and manzanita cover much of the flat, though a small clearing contains the midden. The deposit contains more than 50 obsidian flakes, 1 Borax Lake obsidian biface, 1 Borax Lake obsidian biface margin, 1 quartzite chopping tool, fire-affected rock, 1 Borax Lake obsidian biface midsection, 1 gray/green Gunther projectile point, 1 bone hairpin fragment, 2 chert cores, and a high density of faunal bone. The maximum flake density is five flakes per square meter.

SR-010-B. This prehistoric site is situated at the foot of a north-south-trending bench on the west side of Grapevine Creek, and along the Southwest Ridge Road alignment of the study area. The site covers 2,250 square meters, and contains a low-density lithic scatter. Three biface fragments, 1 grayish-white chert core fragment, and 30 visually sourced Borax Lake obsidian flakes were observed on site. In addition, one possible edge modified flake isolate was identified approximately 30 meters east of the site. The area is quite brushy, and most of the cultural constituents were observed in the dirt road that cuts north/south across the bench and the site.

SR-011-B. This historic-era site consists of a 0.5-acre habitation complex bisected by a north-south-trending road. The site is in a clearing along the east bank of Grapevine Creek and on the proposed Southwest Ridge Road alignment at the west edge of the study area. Cultural constituents for this site consist of more than 30 stove fragments, 3 of which were reassembled to read *Buck's patent/Coy & Clark, Albany Pat'd 1858/9*. Also found were 10 ceramic fragments, 10 fragments of aqua glass, 1 aqua bottle base, 1 amber jug base, at least 5 other fragments of amber glass, and a rectangular metal can. In addition, a depression with possible post-occupational fill is west of the road, and measures 3.5 feet squared and is approximately 15 inches deep. The north end of the site includes a grove of trees-of-heaven.

SR-012-B. Grapevine Creek lies approximately 30 meters east of SR-012-B within this narrow valley that is in the westernmost portion of the study area along the Southwest Ridge Road alignment. Several seasonal drainages are on and around the site as they flow the open, gentle slope from west to east into Grapevine Creek. A dirt access road cuts through the site.

SR-012-B is a prehistoric site that covers 10 acres and consists of a low-density lithic scatter. The lithic scatter is composed of visually sourced Borax Lake obsidian, chert, quartzite, and graywacke flakes and ground stone. Specific artifacts noted on the site include one handstone, one hammerstone, one core, and three core tools. One biface fragment manufactured from visually sourced Borax Lake obsidian and one chert wide-stem projectile point were also noted. An isolated historic-era well (SR-ISO-050-B) is between the north end of the site and Grapevine Creek.

SR-013-B. This small, 750-square-meter, prehistoric site is situated on the north and south banks of an unnamed seasonal stream that runs along the proposed North Road alternative in the northeast corner of the greater Sites Reservoir portion of the study area. The site parallels the creek and then extends upslope to the south. A dirt road parallels the site and the creek on the north.

The site is buried beneath an alluvial deposit and is visible in a brownish-red clayey silt with well-sorted, large sandstone cobbles in the creek bed, and in the erosion cuts.

The dense concentration of cultural constituents includes one projectile point (serrated Excelsior), one metavolcanic core tool, two chert core tools, two hopper mortars, one bowl mortar, one cobble core tool, and one quartzite core tool. Flakes were found throughout the site and consisted primarily of basalt and metavolcanic materials, although chert and visually sourced Borax Lake obsidian flakes were also observed. Four bedrock mortar cups on two rock outcrops were noted on the north-facing slope above the drainage.

SR-014-B. Located at the very south end of the greater Sites Reservoir portion of the study area, SR-014-B is a large prehistoric midden site that covers 5.6 acres. The site is approximately 100 meters west of Antelope Creek in the open plain of Antelope Valley; Huffmaster Road passes through the west edge of the site.

The site is marked by an artifact concentration concentrated on top of a small, flat-topped 20-meter-diameter knoll. Cultural constituents include more than 100 obsidian flakes, primarily of visually sourced Borax Lake and Napa Valley obsidian. Metavolcanic and graywacke flakes were also found on the site. Other materials noted include freshwater mussel shell, faunal bone fragments, fire-affected rock, and charcoal.

SR-001-C. VOID.

SR-002-C. This historic-era site is composed of two features that collectively encompass an area measuring 6,000 square feet. One feature consists of an International Harvester hay bailer and a gangplow with an associated lumber and metal scatter on the east side of the dirt access road that bisects the site. The second feature consists of fence remains and a rock cairn on the west side of the road. The fence remnants are embedded in six blue oaks, and contains both barbed and hog wire. Only one wooden fencepost remains standing; however, three posts were observed lying on the ground. The rock cairn measures approximately 16 feet long, 8 feet wide, and 2 feet high.

SR-002 sits in an open meadow near the headwaters of Grapevine Creek, and is on the west edge of the study area and along the Southwest Ridge Road alternative.

SR-003-C. SR-003-C is at the edge of a meadow and at the base of a north-facing hill in the upper reaches of a shallow valley formed by Grapevine Creek, which is also along the Southwest Ridge Road alternative at the west edge of the study area. The site is a historic-era homestead that covers approximately 110,200 square feet and has two distinct features. Feature 1 is a rectangular dry-laid, native rock slab foundation and a collapsed wooden structure, located at the north end of the site and at the edge of a seasonal drainage that flows easterly toward Grapevine Creek. The structure had screened windows and is constructed of planks, beams, and round nails. Associated with this feature is a trash scatter that contains boot leather, ceramic shards, a bullet casing, several cans, and a scattering of olive, amethyst, aqua, amber, and milk glass. Two whole bottles (one small, brown, screw top bottle and one aqua bottle with an embossed label) and two embossed glass fragments (one clear/aqua and the other was an amethyst whiskey bottle fragment) were found. One olive-colored wine bottle base with a kick-up was also noted.

Feature 2 consists of a wooden structure made with round nails, and a wash tub. Additionally, there are two rock alignments that appear to be retaining walls to control slope erosion. A possible well with two wooden posts projecting from the ground was also observed. A pit feature, approximately 3 feet deep, is next to one of the rock alignments and contains numerous iron stove parts (one labeled 882). An adjacent scatter of metal includes round and square nails, one half of a brown ceramic doorknob, a metal toy truck of an older style (possibly 1930s), and a heavy horseshoe. Downslope, adjacent to the creek, and east of Feature 1 is a tin can scatter of at least 15 cans, several pieces of miscellaneous metal, and a horseshoe. To the west of the site is a sparse scatter of iron pieces, one labeled with *NORM COOK/IMPROVED/1866*, and a length of iron pipe. The entire area is littered with wooden fenceposts and barbed wire.

SR-004-C. Measuring 30 feet in diameter, this small historic-era site consists of a foundation and trash scatter. The foundation is made of native rock slabs and is rectangular in shape. Cultural constituents include more than 10 iron stove pieces, at least 10 12p square nails, more than 10 6p square nails, 1 two-person saw, 1 four-tined pitchfork (missing two tines), 1 door plate, 1 metal pail, various can parts, and other miscellaneous metal fragments. Also observed were 1 knife, 2 spoons, 1 silverware handle, more than 20 earthenware/ceramic pieces, and 1 four-hole button. Several fragments of amethyst glass were present, including three fragments from a bottle embossed with the words *G. W. Chesley Importers*

51 Front St. Sacramento. Amber glass fragments include one piece with an embossed seal. Additionally, at least 60 fragments of clear glass or tinted aqua glass fragments show indications of being heat affected.

The site is at the west edge of the study area along the southwest Ridge Road alternative, and is situated at the edge of a meadow on a bench above and 275 feet west of Grapevine Creek.

SR-005-C. This large, multicomponent site is in a shallow valley formed by Grapevine Creek at the west edge of the study area and along the Southwest Ridge Road alternative. Grapevine Creek runs along the east boundary of the resource. SR-005-C contains of a historic-era homestead with and two prehistoric artifacts and covers 139,725 square feet. Features include a collapsed chimney built of native rock slabs and adobe mortar, a modern rock ring, a modern outhouse, and a rock cairn is also present on site. Located at the south end of the site, several depressions are adjacent the collapsed chimney. Each depression contains ceramic fragments, glass fragments (amethyst, amber, and clear), iron stove parts, and miscellaneous metal fragments.

The rock ring consists of a single course of rocks under a large black walnut tree, measures approximately 40 feet in diameter, and is on the east edge of SR-005-C. A barrel hoop, 2 feet in diameter, apparently was used to scrape out a fire pit inside the rock ring. Contained within the fire pit is a metal hinge, an old ax head, charcoal, and charred black walnut shells.

The modern outhouse is constructed with plywood and round nails, and is at the north boundary of the site. A rock cairn is also present on site, surrounded by rock, 2 barrel hoops, 10 barrel hoop fragments, and 1 small stump.

Historic-era artifacts consist of ceramic fragments, glass (amethyst, amber, and clear), iron stove parts, miscellaneous metal fragments, and barrel hoop fragments. Stove parts were observed inside the depressions near the collapsed chimney. The prehistoric cultural constituents, one possible hopper mortar and one graywacke flake tool, were also found near the chimney remains.

SR-006-C. This prehistoric site sits at the west edge of the study area along the Southwest Ridge Road alternative and Grapevine Creek. The site is 105 feet north of site SR-005-C and on the west bank of Grapevine Creek. The deposit consists of a possible midden deposit with a lithic scatter on a knoll at the base of an east-facing slope. The site covers 1,200 square meters and includes one hopper mortar, five basalt flakes, one possible pestle fragment, one obsidian flake, and fire-affected rock.

SR-007-C. SR-007-C is a small historic-era deposit that sits just within the tree line adjacent a meadow approximately 130 feet west of Grapevine Creek. This area is also on the Southwest Ridge Road alternative that follows along the west edge of the study area. The total site area measures approximately 60 feet north/south by 100 feet east/west.

The site consists of a chimney and associated domestic artifacts. The chimney has a rock hearth made from sedimentary rocks, and is 4 feet tall and 40 inches wide. A second feature, a circular depression that measures 2.5 feet in diameter and 12 inches deep, is immediately adjacent to the chimney. There are no structural remains, although one square nail and one wire nail were observed. Other cultural constituents noted include miscellaneous metal fragments, cast-iron stove and stovetop fragments, and amethyst, clear, and aqua bottle glass. White stoneware ceramics, a butter knife, a wash basin, a crimp seam can, and an aluminum friction top lid were also observed.

SR-008-C. This prehistoric site consists of a low-density lithic scatter composed of at least five obsidian flakes, one biface, one pestle, and one milling slab. The site area measures approximately 1,600 square

meters. The site is at the west edge of the study area on the Southwest Ridge Road alternative and sits at the base of an east-facing slope. Eggman Canyon Creek passes through the north end of the site and along its east boundary as it flows to Grapevine Creek, approximately 120 meters to the east. A dirt road also bifurcates the deposit.

SR-009-C. This large multicomponent site is at Scotties Spring on Grapevine Creek at the west edge of the study area and along the Southwest Ridge Road alternative. Two creeks flow into Grapevine Creek within the site boundaries; Scotties Canyon Creek flows into Grapevine Creek from the west. This confluence is at the south end of SR-009-C. East Scotties Canyon Creek joins Grapevine Creek from the east in the northeast corner of the site; Scotties Spring is at the confluence of East Scotties Canyon Creek and Grapevine Creek. A dirt road bisects the site from north to south to the west of Grapevine Creek.

SR-009-C contains two loci within an area approximately 1,200 feet long (north/south), and 712 feet wide (east/west). Locus 1 is a prehistoric midden deposit and historic-era trash scatter. Artifacts noted in association with this locus include hole-in-top milk cans with internal rolled seams, more than 100 church key-opened bean cans with internal rolled seams, 2 coffee cans with key-wind strip tops, 1 rectangular meat can with a key-wind strip side, 1 rectangular sardine can with keywind strip side, 10 sanitary food cans, and 1 bottle marked with the words *7up bottling company Yuba City and Marysville, CA*. Prehistoric artifacts include two biface fragments (one red chert and one Borax Lake obsidian), three handstones, faunal bone, pestle fragments, and one visually sourced large Borax Lake obsidian core. This locus stretches roughly 900 feet along the west side of the dirt road, with its southern terminus just north of the Scotties Canyon/Grapevine Creek confluence.

Locus 2 is a prehistoric habitation site with multiple pit features and a midden. Artifacts noted include numerous flakes (visually sourced Borax Lake obsidian, chert, and graywacke), one visually sourced Borax Lake obsidian biface fragment, one Borax Lake obsidian biface preform (Rattlesnake type), two pieces of modified faunal bone, one mortar, one millingstone, one pestle fragment, four pieces of abalone shell, fire-affected rock, unmodified faunal bone, and charcoal. Locus 2 is situated at the north end of the site and the northeast confluence of East Scotties Canyon and Grapevine creeks, and adjacent Scotties Spring.

SR-010-C. SR-0010-C sits on an open knoll at the base of a southeast-facing slope at the very southern end of the greater Sites Reservoir portion of the study area. Antelope Creek curves around south, east, and north edges of the knoll. A barbed-wire fence passes through the west end of the site. This prehistoric deposit measures approximately 7,000 square meters and is composed of a midden and lithic scatter. Cultural constituents observed on this site include 50 obsidian flakes, 5 basalt flakes, 5 chert flakes, 1 projectile point fragment, numerous faunal bone fragments, and fire-affected rocks.

SR-011-C. This historic-era site covers approximately 4,050 square feet, and consists of a rock wall enclosure with an opening at the southwest corner and a rock wall segment that extends 57 feet from the northeast corner of the structure. The rectangular enclosure is formed from more than 200 boulders and rock slabs of lichen-covered, local fieldstones. The stacked rock wall is a maximum of four courses high, though most of the wall is between one and two courses high.

SR-011-C is near the south end of the study area along the Southeast Mathis Road alternative, on the east face of the ridge that forms the east border of the proposed Sites Reservoir. Two ephemeral drainages merge just beyond the northernmost extension of the rock wall segment.

SR-012-C. The multicomponent site of SR-012-C consists of a historic-era trash scatter, a historic-era rock wall, and two bedrock outcrops with three mortar cups. The trash scatter includes at least five cast-

iron stove fragments, a cot or bed frame, and one plow blade. No prehistoric artifacts were observed in association with the bedrock mortar features. This site is on the Southeast Mathis Road alternative near the south end of the study area and on the east side of the ridgeline that forms the east side of the proposed Sites Reservoir. An ephemeral drainage passes through the north end of the site and a dirt access road is approximately 85 feet to the east.

SR-013-C. SR-013-C is a large, complex multicomponent site on the east-facing slope of the ridge that comprises the east boundary of the proposed Sites Reservoir. The site is in close proximity to the Southeast Mathis Road alternative and is near the headwaters of Lurline Creek, which drains east into the Sacramento Valley. The total site area covers approximately 25 acres.

Six loci have been defined at the site. Locus 1 contains eight bedrock mortar cup on three boulders, a rock wall, and a fence line. Locus 2 contains 23 bedrock mortar cups and 29 cupules on 4 outcrop clusters, a buried midden containing lithic material, fire-affected rock, charcoal, a hopper mortar, and an old stock pond. Locus 3 is a midden, lithic scatter, and active stock pond. A visually sourced Borax Lake obsidian Rattlesnake corner-notched projectile point, bone fragments, charcoal, fire-affected rock fragments, and a large lithic scatter were noted in this locus. Locus 4 contains 23 bedrock mortar cups on 12 boulders, a lithic scatter, a rock wall, and a scatter of historic-era debris, including a stove fragment. Locus 5 contains 11 bedrock mortar cups on 2 features and a rock wall. Locus 6 contains a milling feature with two mortar cups, a hopper mortar, a sparse scatter of historic-era debris, an apparent manmade arrangement of rocks in the cut bank of the creek, several dendroglyphs carved into a fig tree, and landscape trees. There are at least 10 Osage orange trees, at least 5 fig trees, at least 2 black walnut trees, 1 almond tree, and a dense grove of trees-of-heaven.

A sparse to medium lithic scatter covers the entire site. Collectively, prehistoric artifacts observed include at least 300 obsidian flakes, more than 70 basalt flakes, at least 50 chert flakes, 1 chert core tool, 1 obsidian projectile point, 2 hopper mortars, charcoal, faunal bone fragments, and fire-affected rock. The historic-era artifact assemblage is composed of a scatter of tin and metal associated with fence lines, a stove part with an identifying mark *Buck's Patent, Coy and Clark, Albany, Pat'd 1859*, at least 1 green glass fragment, at least 2 clear glass fragments, 1 metal strap, at least 1 milk glass fragment, at least 1 white ceramic fragment, and a piece of metal farm equipment.

7.3.2 2002-2003 Sites (SF Series)

SF-001-A (18-5-24-1). Originally recorded in 1998 by DWR-DPR as 18-5-24-1, this prehistoric site consists of two distinct loci of ground stone straddles Funks Creek west of Antelope Valley in the Greater Sites Reservoir portion of the study area. Loci A and B of SF-001-A encompass a 2-acre area. Loci A is bisected, east-west, by Funks Creek and Locus B is approximately 30 meters south of Funks Creek. Locus A contains seven handstones, two handstone fragments, a portable hopper mortar, a bowl mortar, one cobble tool, one sandstone pestle, one basalt core, and one basalt edge-modified flake. Locus B contains 3 cores (amorphous cobble, chert, and granite), 4 handstone fragments, 12 complete handstones, 1 flake, and 1 basalt core tool. A trailer hitch and a modern lumber scatter were also identified on site.

SF-002-A. SF-002-A is on the valley plain near the western margin of Antelope Valley and adjacent Funks Creek at the north end of the Greater Sites Reservoir portion of the study area. Funks Creek is just to the north of the site. This prehistoric site is a spatially discrete lithic concentration of ground stone consisting of five handstones, one basalt core, and one dark-brown, chert core with a minimum of six flake scars. SF-002-A occupies an area of 0.3 acre on the southern stream terrace of Funks Creek.

SF-003-A. Situated on a flat between two small hills, SF-003-A is 300 yards upslope (west) of southward running Funks Creek and Antelope Valley in the Greater Sites Reservoir portion of the study area. This prehistoric site consists of a spatially discrete, sparse ground stone scatter. Cultural constituents include two handstones, one anvil, and one granite cobble. The site measures 50 meters north-south by 30 meters east-west.

SF-004-A (18-5-36-3). Originally recorded in 1998 by DWR-DPR as 18-5-36-5, SF-004-A is a prehistoric milling station comprised of three bedrock milling features situated on a sandstone and conglomerate outcrop. The 60-meter-long site is at the head of a narrow canyon that trends east-west and drains into Funks Creek, and is in the Greater Sites Reservoir portion of the study area. Feature 1 has three conical mortars, while Features 2 and 3 each contain a single conical mortar. No artifacts were found associated with the features of SF-004-A.

SF-005-A (18-5-36-1). SF-005-A is a 3-acre, prehistoric habitation site that consists of midden soil, stone tool debitage, a bedrock mortar complex, and four circular depressions that could potentially be house pits. The site is in a small valley in the uplands between Funks and Grapevine Creeks in the Greater Sites Reservoir portion of the study area. Originally recorded in 1998 by DWR-DPR as 18-5-36-1, Site SF-005-A straddles an unnamed drainage that flows east to Funks Creek. The site boundary roughly corresponds with the confluences of two minor drainages and the main unnamed drainage that reaches Funks Creek. Locus 1 is east of the southern confluence and Locus 2 is north of the northern confluence. A single house pit is west, upslope of the two loci. Locus 1 contains 3 bedrock mortars and associated midden soil, 2 unidentified animal bones, 5 obsidian flakes, 10 basalt flakes, fire-affected rock, and charcoal. Locus 2 consists of a lithic scatter containing 20 basalt flakes; 10 obsidian flakes; 1 burned animal bone fragment and 3 unburned fragments; a hopper mortar, pestle, and handstone; 1 ground stone fragment; fire-affected rock and charcoal; and 3 of the 4 potential house pits.

SF-006-A (18-5-36-2). This site is a spatially discrete, prehistoric midden and low-density lithic scatter situated along a seasonal drainage, in the uplands west of Antelope Valley, in the Greater Sites Reservoir portion of the study area. Previously recorded in 1998 by DWR-DPR as 18-5-36-2, the site measures approximately 22 meters north-south and 19 meters east-west. Dramatic differences in soil color are evident – reddish brown in the surrounding area, but dark brown to light gray on-site. Two discrete concentrations of local cobbles appear to be fire-affected. Lithic materials include approximately 10 Borax Lake obsidian flakes, and locally available fine-grained basalt flakes and cobble cores. Some pieces of fire-affected rock observed on site may represent ground stone fragments. This site also contains 1 basalt projectile point; 1 obsidian biface; 10 fine-grained, basalt, primary flakes; 2 greenstone cores; and 2 unidirectional cores manufactured from porphyritic-igneous stone.

SF-007-A. This 15,000-square-foot historic-era site is composed of two loci located approximately 1 mile west, southwest of Salt Lake on an unnamed, seasonal drainage tributary to Funks Creek. Locus A consists of an old road, saw-cut tree trunks, and a fence line. Artifacts in Locus A include a trash scatter with three tobacco tins, one knife-opened can, one oil can with a screw top, three pieces of a Mason jar (aqua color, screw top), one rotating wheel-opened lid, one external friction lid, miscellaneous can fragments, and saw-cut oak trunks. The remains of an old road extend through the site and an old fence line continues to the southeast for a distance of approximately 250 feet. Locus B consists of a fence line and a stock pond. Artifacts found in association with Locus B include at least 20 pieces of milled lumber, 2 shovel spade heads, an irrigation line, and a fire ring with at least 25 stones.

SF-008-A. SF-008-A is a large, multicomponent site composed of a historic-era ranch complex and possible prehistoric midden located on Grapevine Creek in a west-trending spur of Antelope Valley below Seminary Ridge. The site is in the northwest section of the Greater Sites Reservoir portion of the study

area and occupies approximately 70 acres. The historic-era component of the site contains eight features that include two barns; a house with evidence suggesting occupation as recent as 1975; a water tower and Airmotor windmill; a wood pile; a collapsed structure; a slight depression in the ground containing historic-era debris; and an orchard with almond, olive, and fig trees. The prehistoric component includes a possible midden and two ground stone fragments near the smaller barn designated Feature 2

SF-009-A. This historic-era site is in Antelope Valley approximately 2 miles north of the town of Sites. SF-009-A consists of farm equipment and an associated trash scatter spread across approximately 2,793 square feet, including 1 hay bailer, 2 wagon tongues, 1 refrigerator, 20 pull-top beer cans, 1 miscellaneous paint can, at least 5 coffee cans, 4 church key-opened juice cans, 4 olive oil or linseed oil cans, 10 sanitary cans, miscellaneous clear glass bottles, 1 bail of hog wire, 1 sickle, 1 wheel hub marked with # 4 *Big*, 1 tool box that reads *John Deere Moline ILL*, 1 disk harrow plow (patent date on depth gauge reads *Feb 19, 1901 155*), 1 wagon tongue marked *Bain # 10*, 1 tobacco tin, 1 license plate (*1941 CA*) on a combine (Lic. No. *98C 396*) that has been modified as a funnel on left side, and several condensed milk cans that date from the 1950s. A wood stove and a metal wagon wheel were observed in the drainage at the northern boundary of the site.

SF-010-A (16-4-18-1H and 16-5-13-1). SF-010-A is a multicomponent site with a historic-era ranch complex that may date to the 1850s and three distinct prehistoric loci (A, B, and C). The resource was originally recorded as two sites, *16-4-18-1H and 16-5-13-1*, by DWR-DPR in 1998. Approximately 27 acres in size, the site is in Antelope Valley at the south end of the Greater Sites Reservoir portion of the study area. The site is on the east bank of Antelope Creek and along the length of a seasonal drainage that joins Antelope Creek at the west end of the site. Huffmaster Road cuts through the west end of SF-010-A.

Locus A is a low midden-mound covering approximately 1,600 square meters. At the southern end is a cut bank (Antelope Creek), exposing two pieces of vermiculated long bone fragments and a rodent bone. Evidence from rodent disturbance suggests the midden could be as deep as 2 meters. Lithics include a possible edge-modified, cryptocrystalline, cobble flake; 30 visually sourced Borax Lake obsidian flakes; 5 metavolcanic cobble flakes; and 50 pieces fire-affected rock. A bedrock mortar with two cups was also noted. Locus B consists of a lithic scatter with 1 metavolcanic stemmed point base, 1 visually sourced Borax Lake obsidian contracting stem point, 2 metavolcanic scrapers, 50 obsidian flakes, 20 metavolcanic flakes, and 5 chert flakes. Locus C, a large midden deposit, is also the site of an active ranch known as the Lady Bug Ranch. Prehistoric artifacts include 1 milling slab, 1 hopper mortar, 1 handstone, 2 handstone fragments, 2 obsidian bifaces, approximately 500 obsidian flakes, 20 metavolcanic flakes, and 10 chert flakes. Numerous artifacts have been collected from the prehistoric component of SF-010-A, presumably by ranch occupants. Hopper mortars, pestles, and handstones have been collected and displayed as decoration and landscaping elements in the vicinity of the active residence.

SF-011-A (CA-COL-27; 16-5-12-2). SF-011-A consists of a 1-acre midden located on a stream terrace, between two hills, and bisected by an intermittent drainage. The site is in the Greater Sites Reservoir portion of the study area, west of Antelope Valley, in a canyon that drains into Antelope Creek. Antelope Creek and Huffmaster Road are 0.5 and 0.75 miles, respectively, east of the site. The site is on the same drainage as and equidistant between sites SF-012-A and SF-002-B. SF-011-A was originally recorded in 1967 by the UCLA summer field school as CA-COL-27 and re-recorded by DWR-DPR in 1998 as 16-5-12-2. The midden contains 10 visually sourced Borax Lake obsidian flakes, 20 metavolcanic flakes, 1 ground stone fragment, 1 cobble tool/chopper, 1 metavolcanic core, 1 visually sourced Borax Lake obsidian edge-modified flake, 1 clamshell fragment, faunal bone fragments, fire-affected rock, and charcoal. The midden in the southernmost cut bank is 1 meter deep.

SF-012-A. This multicomponent site consists of historic-era habitation debris and a single prehistoric isolate situated between two hills along an intermittent drainage. The site is in the hills west of Antelope Valley, in a canyon and a long a creek that drains into Antelope Creek. Pence Mountain is approximately 1 mile to the northwest, while Huffmaster Road is 1 mile due east of the site. This 90-square-meter site contains three features: a rectangular stone foundation intertwined with chicken wire and barbed-wire; a rectangular enclosure made of chicken and barbed-wire attached to trees; and an old fence line consisting of wooden posts, round nails, and two types of barbed-wire. Artifacts noted include metal pipe, a metal rod, one bed frame, at least two hinges, a wash basin, one broken vitrified clay pipe, wood, one galvanized pail with printing on the bottom, a three-tine pitch fork, and an unidentified piece of circular metal. The prehistoric component consists of a single hopper mortar situated on the eastern bank of the creek.

SF-013-A. An approximately 38-square-meter site comprised of a midden deposit and sparse artifact scatter that has been bisected by an intermittent seasonal stream, SF-013-A is on an open finger ridge on the west side of Antelope Valley. Antelope Creek and Huffmaster Road are 0.5 and 0.75 miles, respectively, east of the site. Prehistoric artifacts include one partial hopper mortar, one visually sourced Borax Lake obsidian flake, five metavolcanic flakes, and a small fragment of burned bone. Historical material includes four cast-iron stove door panel fragments.

SF-014-A. SF-014-A is a prehistoric midden with dark, friable soil located on west edge of Antelope Valley, along an unnamed tributary to Antelope Creek. This drainage flows around the north and east sides of Sugarloaf Peak; the site is approximately 1.5 aerial miles southeast of Sugarloaf Peak. Artifacts are scattered across a 135-meter north/south by 125-meter east/west area and include 1 biface fragment, 50 visually sourced Borax Lake obsidian flakes, 20 basalt flakes, and 10 chert flakes. Ground stone observed on site includes one complete handstone and several handstone fragments, two bowl mortars, one pecked rock slab, two pestle bases, two pestle fragments, and a milling slab. One small fragment of burned bone and a scatter of fire-affected rock were also noted.

SF-015-A. This prehistoric midden site is west of Antelope Valley, in a canyon tributary to Antelope Creek, approximately 0.5 mile southeast of Sugarloaf Peak. The site is 80 meters north/south by 190 meters east/west. Artifacts include 4 handstones, 3 pestles, 50 visually sourced Borax Lake obsidian flakes, 10 chert flakes, 2 projectile points, 3 hopper mortars, and approximately 6 unidentifiable burned and unburned bone fragments. Three depressions that may be house pits were also observed. This site has been impacted by a road cut and recent tree cutting.

SF-016-A. Located 1 mile east of Greasewood Mountain in the Greater Sites Reservoir portion of the study area, SF-016-A is a prehistoric midden that covers approximately 1.5 acres. The site is situated between two intermittent drainages that drain into Antelope Creek. The site contains 10 metamorphic chert cobble flakes and cores, 10 visually sourced Borax Lake obsidian flakes, 1 visually sourced Borax Lake obsidian biface fragment, 5 metavolcanic flakes, 2 chert cores, 1 pestle blank (or possible expedient pestle), and 1 hopper mortar fragment. Fire-affected rock is present at a density of 7 to 10 pieces per square meter.

SF-017-A (CA-COL-24; 17-5-25-1). This prehistoric site was first recorded in 1967 by the UCLA summer field school as CA-COL-24, and re-recorded by DWR-DPR as 17-5-25-1. The site is approximately 1.5 miles east-southeast of Greasewood Mountain in the Greater Sites Reservoir portion of the study area. The site consists of two midden deposits, each recorded as distinct loci, that occupy a 6.5-acre area. Locus A contains a midden deposit with an associated lithic scatter that includes approximately 15 visually sourced Borax Lake obsidian flakes and 15 greenstone flakes. Other artifacts identified include three chert cores, one visually sourced Borax Lake obsidian edge-modified flake, one

pestle, one possible pestle, one unidentified burned bone fragment, two hopper mortars, fire-affected rock, one greenstone edge-modified flake, one battered cobble, and one steel horseshoe. Locus B is a midden deposit that includes a sparse lithic scatter, fire-affected rock, hopper mortars, and ground stone artifacts. Lithics include 10 obsidian flakes, 2 cryptocrystalline silicate flakes, and 3 greenstone flakes. Locus B also includes one possible house pit depression.

SF-018-A. Prehistoric milling station SF-018-A consists of two loci of milling features in an approximately 3,750-square-meter area on a sandstone outcrop situated on a hill adjacent to a small drainage. The site is 1.5 miles southwest of the town of Sites, on the western margin of Antelope Valley in the Greater Sites Reservoir portion of the study area. Locus A consists of five bedrock mortar features and Locus B contains three bedrock mortars. SF-018-A contains no cultural constituents other than the milling features.

SF-019-A. This small historic-era site is the remnants of a collapsed structure spread across a 208-square-foot area. SF-019-A is situated on a hilltop among a series of rolling hills and low valleys 1.5 miles southwest of the town of Sites in the Greater Sites Reservoir portion of the study area. The feature consists of fragments of milled wooden beams and slats that are bolted together.

SF-020-A (CA-COL-23/228; 17-5-14-1 and 17-5-13). A multicomponent site covering roughly 15.5 acres, SF-020-A comprises four loci that include bedrock mortars, midden deposits, and a possible dance house. This site was previously recorded as CA-COL-23/238 by the UCLA summer field school as a “sweat house for the Sites Rancheria, used historically.” It was also recorded at two sites, 17-5-14-1 and 17-5-13, by DWR-DPR in 1998.

Locus A consists of a midden, a possible dance house depression, and a milling station. Locus B contains two milling station features and associated artifacts. Locus C is a second midden and a single milling station. Locus D consists of a single milling station and historic-era artifacts.

Artifacts at Locus A include Borax Lake obsidian and metavolcanic debitage (five flakes per square meter), a single handstone and two ground stone fragments, fire-affected rock, charcoal and burned animal bone fragments in rodent disturbances, and a single piece of patinated glass. No surface artifacts were noted within the possible dance house depression. Locus B contains chert and greenstone debitage, fire-affected rock, and one unidirectional core. Locus C consists of obsidian, chert, and metavolcanic debitage and flake tools; ground and battered stone; and fire-affected rock. Locus D contains prehistoric and historic-era artifacts, including cores and assay flakes, and a wagon wheel and hoop.

SF-021-A. SF-021-A is a 384-square-foot historic-era site, situated on a small rise on the west side of Antelope Valley and 0.3 miles southwest of a large ranch complex. The site is approximately 2 miles west-northwest of the town of Sites in the Greater Sites Reservoir portion of the study area. A tall rectangular structure at the site is constructed of wooden posts and plank siding. The remaining portion of the roof is a corrugated metal material. The upper halves of the outer walls retain siding, but the lower elevations are open. Round nails in the lower halves of the support posts are evidence that siding once entirely covered the walls. There is a cast-iron tub in the southwestern corner of the structure. A scatter of roofing materials and lumber is downslope to the southeast of SF-021-A.

SF-022-A (17-5-24-3). Situated on a remnant terrace above a drainage in the hills west of Antelope Valley and approximately 2 miles west-northwest of the town of Sites, SF-022-A is a prehistoric midden-mound. Previously recorded in 1998 by DWR-DPR as 17-5-24-3, this site contains a relatively dense lithic scatter spread across a 120-meter north/south by 60-meter east/west area. SF-022-A includes metavolcanic, chert, and Borax Lake obsidian debitage. Most obsidian flakes are late stage biface

reduction flakes. Three bifacially worked obsidian artifacts were found. These artifacts include one possible projectile point fragment, one fragmented early-stage biface preform, and one small, fragmented biface with an intact tip and midsection. A stacked rock feature, possibly a hearth feature, was also observed.

SF-023-A. This multicomponent site consists of milling station, or possible rock art locale, and two isolated historic-era artifacts in an approximately 7,012-square-meter area. SF-023-A is on top of a low hill approximately 2 miles west-northwest of the town of Sites, just above and west of the Antelope Valley floor, in the Greater Sites Reservoir portion of the study area. The prehistoric component includes 17 bedrock milling features with a total of 28 shallow cups, or cupules, in a sandstone outcrop. A single metavolcanic handstone fragment was also noted. Historic-era constituents include a rectangular metal block possibly used as a heavy equipment counterweight, and single screw.

SF-024-A. The prehistoric lithic scatter of SF-024-A is between two knolls on the western margin of Antelope Valley, approximately 1.5 miles west of the town of Sites. The site stretches 125 meters north/south by 35 meters east/west. Artifacts include handstones and handstone fragments; cores; Borax Lake obsidian chert and metavolcanic (greenstone) debitage and edge-modified flakes; a bowl mortar fragment, a hammerstone, and possible fire-affected rock.

SF-025-A (CA-COL-26; 17-5-24). This multicomponent residential site, 169 meters north/south by 456 meters east/west, contains a prehistoric midden, a historic-era ranching complex, and an associated cemetery. The site is on the western margin of Antelope Valley, at the mouth of a tributary canyon, 2 miles west of the town of Sites. SF-025-A occupies 20 acres. This site was previously recorded in 1967 as CA-COL-26 by the UCLA summer field school, and updated by DWR-DPR as 17-5-24 in 1998. Locus A features a feed barn and prehistoric cultural constituents that include midden soil, stone tool debitage, fire-affected rock, and a possible milling slick, as well as historic-era items such as two buttons, various types of fragmented glass, and a metal handle. Locus B includes a cemetery with 13 individual head stones. Water tanks and troughs were also noted in this locus. Locus C consists of an outbuilding, historic-era debris, and a prehistoric lithic scatter. Locus D includes the remains of an old car (previously recorded as a pre-1940 Dodge sedan) and the remains of two separate building foundations constructed from local sandstone. Also noted in Locus D are two iron hoops (inside the vehicle), miscellaneous vehicle parts, sheet metal, barbed-wire, and other ranch debris.

SF-026-A. Consisting of a midden situated along creek, SF-026-A sits in a small valley 0.6 miles upstream of the mouth of valley at the west edge of Antelope Valley, and approximately 2.5 miles west-northwest of the town of Sites. The site is approximately 750 feet upstream from site SF-027-A at the mouth of McDowell Canyon. The site contains 30 Borax Lake obsidian flakes, 15 metavolcanic flakes, fire-affected rock, charcoal, bone fragments, and 1 sandstone hopper mortar. The site measures approximately 60 meters north/south by 90 meters east/west.

SF-027-A (17-5-23-1). SF-027-A is an approximately 7,500-square-meter multicomponent site with a prehistoric midden and two historic-era corrals. The site contains obsidian, chert, and metavolcanic debitage and tools; ground and battered stone artifacts; dietary remains; and fire-affected rock. The historic-era component includes wire fencing, lumber, and two animal corrals. Previously recorded in 1998 by DWR-DPR as 17-5-23-1, SF-027-A is at the mouth of McDowell Canyon, 0.5 mile up a narrow arm of Antelope Valley on the west side of the valley, and 2.3 miles west-northwest of the town of Sites.

SF-028-A (CA-COL-32/237; 17-5-23). Recorded in 1967 by the UCLA summer field school as CA-COL-32 and updated by DWR-DPR in 1998 as 17-5-23, this prehistoric site consists of five distinct loci (A through E) that cover 12 acres. The site is 2.25 miles west of the town of Sites on a terrace above

Ranchero Creek on the west side of Antelope Valley. Locus A is a midden with three distinct areas of artifact concentrations that include stone tool debitage and ground and battered stone artifacts. Loci B and C are individual milling station features with no associated surface artifacts. Locus D is a milling station with associated metavolcanic and obsidian debitage, and ground stone artifacts. A second midden was recorded as Locus E. Midden soil is exposed in the cut-bank of a seasonal drainage on the northwest side of Locus E. Cultural constituents associated with the Locus E midden include a sandstone hopper mortar and pestle fragment; 1 Borax Lake edge-modified flake and 10 Borax Lake obsidian flakes; 2 greenstone flakes; and fire-affected rock and charcoal fragments.

SF-029-A (17-4-8-1H). This historic-era site is the Well's Ranch complex located on the east side of Antelope Valley, 2 miles north of the town of Sites and 0.34 mile at the end of a dirt access road that exits east off of Peterson Road. SF-029-A straddles both sides of an unnamed creek that flows northeast for 0.4 mile to join Funks Creek just before it travels through the "Golden Gate," a gap in Logan Ridge. The 540-foot north/south by 315-foot east/west site contains two features. Feature 1 is a possible house foundation with an associated cellar and trash scatter. Artifacts noted in association with the cellar at Feature 1 include five pieces of vitrified stoneware marked *Gladding, McBean & Co./Lincoln, Placer Co., CAL*, a cast-iron crank and gear for an ice cream maker marked *WHITE Mountain Freezer*, a stove with an oven and four burners, three window weights with *BLUT 6*, one pulley, six pieces of fire-affected clear glass, three amethyst glass fragments, a stationary vise labeled *Trojan 703 O Parker Meridian Ct.*, and one fragment of aqua colored glass.

Feature 2 is a group of building foundations, one of which may have been a barn, a trash scatter, and a rock-lined well. The well is constructed with sandstone slabs and has an 18-inch-diameter hole and is covered with an oil drum. The foundations of both Features 1 and 2 are constructed from local sandstone material, some of which show evidence of chisel-cutting. Also included within the SF-029-A site boundary is a scatter of metal; barbed-wire; aqua, brown and clear glass; a fence line; a metal well cap; a cast-iron tub used as a water trough; and a hay hook.

SF-030-A. SF-030-A is multicomponent site covering 2,250 square meters, located on the east side of Antelope Valley, and on Funks Creek, 0.5 mile west of the gap in Logan Ridge known as the Golden Gate, in the Greater Sites Reservoir portion of the study area. The prehistoric component includes lithic debitage and ground stone artifacts. The historic-era component is a telephone line situated on a small mound on a terrace adjacent to Funk's Creek.

SF-031-A. Located immediately east of Sites-Lodoga Road and approximately 1.75 miles northwest of the town of Sites, this multicomponent site covers 12.25 acres. SF-031-A consists of a concentration of prehistoric ground, battered and flaked stone artifacts and a historic-era trash scatter situated on remnant terrace. Prehistoric artifacts include 19 handstones and fragments, 4 milling slicks, 2 hopper mortars, 2 pestle fragments, 2 hammerstones, 12 cores, and debitage of Borax Lake obsidian and basalt. Two stock ponds, milled lumber, and modern machinery components were also noted.

SF-032-A (17-4-7-1). This prehistoric site is a midden deposit with associated artifacts and two bedrock mortars in a 42-meter north/south by 11-meter east/west area. The bedrock mortars are on a small outcrop of weathered sandstone. Artifacts include one pestle fragment, one edge-modified flake/chopper, three cores, one handstone, and one handstone fragment, as well as Borax Lake obsidian, basalt, and local cobble debitage. The site is situated on a terrace above an unnamed drainage feature 2.3 miles north-northwest of the town of Sites. The site is in the hills just west of Antelope Valley in the north-central section of the Greater Sites Reservoir portion of the study area.

SF-033-A. Covering a little more than 1 acre, SF-033-A is a historic-era corral with four holding pens and two chutes. The pens are constructed with milled lumber and reclaimed railroad ties. Other items found on the site include one metal ice chest with no lid, one metal hitch, a gate latch, and a horseshoe. The site is immediately west of Peterson Road just north of the intersection of Peterson and Sites-Lodoga Roads.

SF-034-A. SF-034-A is at the headwaters of an unnamed drainage feature that flows 4.5 miles southeast and then north to join Stone Corral Creek just west of Sites. The site is in a small valley, 0.6 miles west of Sites-Lodoga Road and approximately 3.5 miles northwest of the town of Sites. SF-034-A measures 80 meters north/south by 100 meters east/west. This multicomponent site consists of a prehistoric midden and a historic-era ranching complex. Observed cultural materials in the Locus A midden include 50 Borax Lake obsidian flakes, 10 basalt flakes, and 3 chert flakes. Also associated with the Locus A are 1 ground stone fragment, 1 piece of shell, 1 piece of baked clay, fractured and charred animal bone fragments, approximately 200 pieces of fire-affected rock, and 2 biface fragments. The Locus B midden contains 2 clamshell disk beads, 2 *Olivella* beads, a pestle, a ground stone fragment, and at least 10 visually sourced Borax Lake obsidian flakes. The historic-era component of SF-033A is also within Locus B, and includes windmill remnants, an old stock pond, and a water-trough with an associated water tank.

SF-035-A (CA-COL-34/239; 17-5-1). SF-035-A is situated in the low hills immediately west of Antelope Valley approximately 3 miles northwest of the Town of Sites. The site is on a series of terraces adjacent to a drainage tributary of Funks Creek and is 1 mile west of Peterson Road. This multicomponent site includes a ranching complex, two midden concentrations, and a bedrock milling station within a 45-meter north/south by 105-meter east/west area. The milling station is on three bedrock outcrops that contain a total of five milling surfaces. A light scatter of stone tool debitage, fire-affected rock, and one battered cobble fragment is associated with the milling station. Cupule features also occur on the boulders. The portion of the prehistoric site near the corral contains shell fragments, fire-affected rock, and Borax Lake obsidian flakes. Midden soils observed in the drainage cut bank contain a Borax Lake obsidian projectile point (possibly Excelsior type); a sandstone pestle and pestle fragment; a sandstone hopper mortar; a river cobble pestle fragment; and a chert biface. This midden deposit has been impacted by the construction of a stock pond.

The historic-era component of SF-035-A includes a well with an excavated shaft and the remains of a wood superstructure. The superstructure is constructed of milled lumber and wire nails. A galvanized steel trough lies over the well and the shaft is unlined.

SF-036-A. This sparse lithic scatter is on a stream terrace within an east-west tending valley on the west edge of Antelope Valley, approximately 3.8 miles northwest of the town of Sites in the north-central section of the Greater Sites Reservoir portion of the study area. The site is 1 mile west-northwest of the terminal point of Peterson Road. Cultural materials at SF-036-A include seven basalt, one obsidian, and two chert flakes. One edge-modified metavolcanic flake, one chopper/scrapper (metavolcanic), and one battered cobble with possible polish were also identified. The site encompasses approximately 3.3 acres.

SF-037-A (18-4-32-1H). Located on Salt Lake, as depicted of the USGS Sites 7.5' quadrangle, this historic-era complex consists of improved salt springs that contain a series of water conveyance pipes, troughs and water holding troughs. These features may have functioned as a salt evaporator or water desalinization system, or possibly both, as part of Antelope Valley Crystal Salt Company. Salt Lake is currently a dry lake bed. Modifications include various structures including three wells, improved springs, an evaporation vat, and two water-control features. Six features were identified: Feature 1 (one seep), Feature 2 (four seeps), Feature 3 (one seep), and Feature 4 (scatter of wood and pipe). Feature 5 is composed of two structures associated with improved springs, and Feature 6 in an earthen berm. The site covers approximately 21 acres.

SF-038-A (17-4-20-1H/3H). SF-038-A is a 650-foot-long segment of the C&LRR, including two bridge abutments spanning Stone Corral Creek, approximately 0.5 mile east of the Town of Sites. The grade includes a number of sandstone boulders (both shaped and natural) and pebbles of exposed asphaltic tar, which are probably associated with the old Sites-Lodoga Road that paralleled the railroad east of the town of Sites. The two bridge abutments were constructed of mortared, cut sandstone, stacked at least eight courses high and two runs wide. There are several fenceposts and oak trees embedded with barbed-wire lining the path of the grade. A segment of the C&LRR was recorded in Feature 5 of site SF-025-B.

SF-039-A. This historic-era site is 0.25 mile east of the Town of Sites. SF-039-A is composed of rock wall and pit features and an associated debris scatter on a flat area at the base of a large hill. Two depressions are separated by a wall constructed of cement mortared, cut sandstone. A second wall runs perpendicular to the main wall on the western side. A small rock alignment is on the northern side of the pits, opposite to the main wall. Artifacts include at least four bricks, more than three white ceramics fragments, barbed-wire, piping and a cast-iron, enamel-coated iron tub and the remains of a collapsed structure. The site covers roughly 1 acre.

SF-040-A. A multicomponent site, SF-040-A lies in Glenn County at the east base of Logan Ridge in the northeastern reaches of the Greater Sites Reservoir portion of the study area. The resource consists of seven prehistoric bedrock milling stations, a historic-era trash scatter, evidence of quarrying activity, and a grave marker situated on a sandstone outcrop. The site covers approximately 4 acres. The bedrock mortar outcrop is partially covered by a concrete foundation pad for a tombstone dating to 1995.

SF-041-A. Measuring 17.5 square feet, this small multicomponent site consists of a prehistoric ground stone scatter and an isolated historic-era wagon wheel spoke. The prehistoric component includes two handstone fragments and one piece of fire-affected rock. SF-041-A is situated on a flat above an unnamed drainage at the base and east of Logan Ridge, and 1.4 miles south of Stone Corral.

SF-042-A. SF-042-A is 2.8 miles southeast of the town of Sites, east of Logan Ridge and 1.3 miles south of Stone Corral. This prehistoric site is a 2-acre bedrock mortar complex and sparse lithic scatter recorded as two distinct loci. Locus A contains 9 bedrock mortar features with 38 milling surfaces, a single Borax Lake obsidian flake, 1 chert flake, 1 black flake of unknown material, and 1 metal scrap and loop of unknown purpose. Locus B contains 7 bedrock mortar features with 14 milling surfaces.

SF-043-A. This prehistoric site consists of a rock shelter with four bedrock mortar features, two chert flakes, and one obsidian flake. The rock shelter is in an extremely weathered sandstone outcrop that stands approximately 12 feet high at the recessed areas. The site is 630 square meters and lies among the rolling hills on the east side of Logan Ridge, approximately 1.5 miles south of Stone Corral. The site is also approximately 0.8 miles west of the T-C Canal and the Western Area Power Administration line where these two facilities closely parallel one another.

SF-044-A. Consisting of a prehistoric midden deposit and a historic-era debris scatter, SF-044-A covers 22 acres. The site is at the head of a narrow valley that trends northwest/southeast off of the west side of Antelope Valley, approximately 3 miles northwest of the Sites in the Greater Sites Reservoir portion of the study area. This multicomponent resource is situated on a hill and a small flat at the confluence of two intermittent drainages. The site comprises three loci: Locus A is a midden deposit, Locus B is a ground stone scatter, and Locus C is an historic-era debris scatter that also includes one prehistoric handstone and one core reduction flake.

SF-045-A. SF-045-A is 19,200-square-foot site 2.8 miles west-northwest of the Town of Sites, north of McDowell Canyon, in the greater Sites Reservoir portion of the study area. This historic-era site consists

of a sandstone foundation and associated refuse situated on an old stream terrace at the foot of a hill. Artifacts include 45 fragments of aqua glass, a thimble, 3 amber glass fragments, a white ceramic fragment, 8 square nails, 4 wire cut nails, and 4 fragments of a wood burning stove. Also, the soil in the vicinity of the sandstone slabs exhibits characteristics indicative of fire exposure.

SF-046-A. This 1-acre resource is 350 feet southeast of SF-044-A, which is up a narrow valley that trends northwest/southeast off of the west side of Antelope Valley and approximately 3 miles northwest of the town of Sites. SF-046-A is a multicomponent site with four depressions, one hopper mortar, and seven historic-era artifacts. The historic-era artifacts include three ceramic fragments, two pieces of metal, and one plow blade fragment.

SF-047-A. SF-047-A is a 4,800-square-foot historic-era site situated in a saddle near a drainage feature 900 feet upstream from site SF-044-A. The site is up a narrow valley that trends northwest/southeast off of the west side of Antelope Valley and approximately 3.4 miles northwest of the town of Sites in the Greater Sites Reservoir portion of the study area. The site contains a possible chimney feature that contains approximately 30 small sandstone slabs. The site also has three pieces of white earthenware (possibly a plate rim), a metal sheet, and bailing wire grown into a fallen blue oak. This wire may have served as an old fence or livestock containment pen.

SF-001-B. This multicomponent site consists of a historic-era ranching complex and an extensive midden area with associated artifacts that covers approximately 50 acres. The resource is composed of nine features distributed across three historic-era loci. Locus A contains a water tower on a concrete pad, a large wooden barn on a concrete foundation, two concrete pads with well caps, a water trough, and a foundation depression. Locus B, a possible rock foundation and retaining wall, is within Locus A. Locus C is a concrete foundation and an associated antique car. The prehistoric component is comprised of a midden deposit and associated artifacts that include a hopper mortar, a projectile point, a metavolcanic core, and a handstone. All are within the confines of Locus A.

SF-001-B is at the south end of Antelope Valley and the Greater Sites Reservoir portion of the study area. Huffmaster Road is directly adjacent the site to the east, while Antelope Creek bisects the west end of the site. The area is generally open meadow, although some trees (primarily black walnut and blue oak) are present on Locus A.

SF-002-B (16-5-12-1). Situated at the west edge of Antelope Valley near the south end of the Greater Sites Reservoir portion of the study area, this prehistoric site is a midden and a lithic scatter situated on an old stream terrace. The site on the banks of a small drainage approximately 200 meters west of Antelope Creek. The site was first recorded in 1998 by DWR-DPR as 16-5-12-1. Cultural constituents include approximately 20 obsidian flakes and at least 15 chert flakes, as well as a bifacial handstone and a chert core. A previously identified hopper mortar was not relocated. SF-002-B covers approximately 9,600 square meters.

A small stock pond has been created at the north end of the site, and a small drainage that leads to the pond cuts roughly north/south through the deposit. A dirt road parallels the stream on the west and around the south end of the pond. A fence line is also present in the west portion of the site where a gate crosses the dirt road.

SF-003-B. SF-003-B is a prehistoric site consisting of a midden and a lithics scatter with more than 50 obsidian, chert, and greenstone flakes. Other artifacts include one hopper mortar, one pestle fragment, one handstone, and fire-affected rock, along with one possible house pit/depression. The site encompasses 12,100 square meters and is on the north bank of Long Canyon Creek, just inside the tree line upstream

from west edge of Antelope Valley near the south end of the study area in the Greater Sites Reservoir section. A dirt road parallels the creek and runs through the east edge of the site. A second, smaller dirt road forks off to the west from the first road, just north of the deposit. A fence line also bisects the site from north to south.

SF-004-B (16-5-1-2). The prehistoric site recorded as SF-004-B contains a midden deposit and a lithic scatter located in the low hills adjacent the west side of Antelope Valley, and on both sides of a tributary of Antelope Creek. Antelope Creek, itself, is approximately 1 mile to the east of the site. SF-004-B was originally recorded in 1998 by DWR-DPR as 16-5-1-2.

The site covers nearly 4,000 square meters. Three cores and several flakes were noted on the site. Also observed within rodent disturbances were red specks of burned soil and black specks, which may be charcoal. A large secondary flake of fine-grained volcanic material was found in one hole. A large concrete pipe approximately 2 inches in diameter is in the creek, and on its southern bank. A dirt road passes through the southwest portion of the site.

SF-005-B. SF-005-B is at the confluence of two very ephemeral drainages in the hills directly west of Antelope Valley near the south end of the Greater Sites Reservoir portion of the study area, and includes a midden and three bedrock milling features. Antelope Creek and Huffmaster Road are approximately 0.5 and 1 mile to the east, respectively. A small stock pond is immediately west of the site.

Artifacts in the midden area in the west portion of the site include a hopper mortar, one possible milling slab fragment, burned bone, charcoal, and fire-affected rock. Two hopper mortar fragments and one possible pestle were found in the adjacent streambed. The bedrock milling features are all present within a cluster of outcroppings on the east end of the site; each of the features contains two mortar cups. Overall site dimensions are approximately 80 meters east/west by 40 meters north/south.

SF-006-B (16-5-1-1). SF-006-B was originally recorded by DWR-DPR in 1998 as 16-5-1-1. The site is approximately 500 feet downstream from SF-005-B. Similarly, it is on both banks of a shallow, ephemeral creek in the hills along the west side of Antelope Valley near the south end of the Greater Sites Reservoir portion of the study area. Antelope Creek is 0.5 miles downslope to the east. The site area is 83 meters east/west by 51 meters north/south. This site consists of a small midden characterized by flecks of charcoal or blackened earth and reddish flecks of oxidized soil and fire-affected rock. Rodent activity has extensively disrupted the midden. Artifacts include 1 spire-topped *Olivella* bead, faunal bone, more than 10 pieces of obsidian, and a multidirectional greenstone core. A mortar located in the creek bed was removed recently by the landowners. Fire-affected-rock was common. The eastern edge of the midden was a lithic concentration, with two cores, an obsidian biface, and greenstone, obsidian, and metavolcanic flakes.

SF-007-B. This site is a 3,500-square-meter prehistoric sparse lithic scatter on a small low-lying finger ridge on the west edge of the valley floor near the south end of the Greater Sites Reservoir portion of the study area. The low ridge is directly east of a small creek that feeds into a minor tributary of Antelope Creek, approximately 0.5 miles to the east. The site consists of six small visually sourced Borax Lake obsidian flakes, of which some are possible pressure flakes. The flakes were all on the crest of the small ridge, interspersed among the exposed bedrock outcrops. Site SF-006-B is to the south, upstream, approximately 300 feet away from this site. A few pieces of obsidian were located between the two sites, though not close enough to tie either of the sites together. It is possible that surface erosion and stream erosion may have displaced surface materials that could have connected the two sites.

SF-008-B. This historic-era site consists of a ranch complex and at least 75 relocated prehistoric constituents measuring 925 feet north/south by 830 feet east/west. The site contains seven features. Feature 1 is a concentration of 59 sandstone bedrock mortars that have been relocated for use as landscaping in their present location around a large cottonwood tree. Feature 2 consists of two structures and a patio/garden area situated between the two structures. Features 3 and 4 are outbuildings, Feature 5 is a single-wide trailer, Feature 6 consists of a windmill and a small foundation, and Feature 7 is a historic-era trash deposit.

The ranch is on the east bank of Antelope Creek and on the valley floor towards the south end of Antelope Valley. An approximate 0.25-mile-long dirt road connects the site with Huffmaster Road, to the east.

SF-009-B. A linear series of bedrock mortars defines site SF-009-B. The bedrock mortars are among sandstone outcroppings that follow a low, eroded, north-south-trending ridgeline near the center of Antelope Valley in the south-central portion of the Greater Sites Reservoir portion of the study area. An ephemeral drainage that flows into Antelope Creek is immediately adjacent and west of the ridge that contains the site; Antelope Creek is approximately 350 feet to the west. Ten mortars cups are divided unequally among five outcrop features along the 190-meter length of the site. There is no indication of midden; however, one visually sourced Borax Lake obsidian flake was noted on site.

SF-010-B. SF-010-B is a prehistoric site with a midden and associated artifact scatter. The site is nearly 1 mile into a drainage feature on the west side of Antelope Valley in the south-central portion of the Greater Sites Reservoir portion of the study area. The site runs along both banks of a creek on a low terrace, and on a flat above the terrace on the west side of the creek. The drainage is south-flowing and feeds a stock pond approximately 2,000 feet downstream. A smaller drainage, flowing the west, has entrenched itself as it passes through the site, cutting through the southern margin of the midden. The confluence of the two creeks is in the southeast corner of the site. The site measures approximately 160 meters northwest/southeast along the creek, and is approximately 70 meters wide.

The artifact concentration includes more than 50 visually sourced Borax Lake obsidian flakes, more than 5 gray mottled chert flakes, and at least 5 greenstone flakes. There were a minimum of 10 handstone fragments in an eroding cut bank surrounding the datum. Also, near the datum, several calcified bone fragments were noted, along with *Haliotis* ornament fragments and *Olivella* shell bead fragments. Fire-affected rocks were abundant and distributed across the entire site surface and very evident in the eroding midden soil near the datum. Features identified included a grinding slick and two bedrock mortars. Other artifacts noted on site include one sandstone hopper mortar, one unifacial handstone fragment of metavolcanic material with pecking and a battered end, one hopper mortar fragment made of a sandstone material, one pestle fragment, one visually sourced Borax Lake obsidian biface midsection, and one cobble size core of metavolcanic sandstone.

SF-011-B. Consisting of a trash scatter composed of ceramics and glass, this historic-era site is situated on a small rise on the west edge of Antelope Valley approximately 1,000 feet south-southwest of Stone Corral Creek. A ranch, recorded as SF-014-B, exists approximately 800 feet to the southeast; this ranch is accessed by dirt road to the west off of Site Lodoga Road. Cultural constituents include approximately 20 white crockery sherds; 2 china sherds (1 with orange floral pattern); sheet metal; 1 clear bottle base with *S* embossed in the middle and *1 Pt. Q Flu 02* embossed on the side; several shards of aqua glass; 1 square cut nail; several flattened sanitary cans (with machine crimping); 1 medicine bottle with the numbers 2 and 9 with a circle in the center of the square embossed in the middle of the base; a forged iron strap with bolt holes at odd intervals and 4 bolts in place; 1 forged iron flange; 2 pieces of circular forged iron cog; 1 piece of aqua glass with an embossed *V* one bottle base fragment of amethyst glass; seam

galvanized and drilled pipe; and a 3/8-inch stove head bolt with several washers and a nut. The scatter occurs over 9,477 square feet.

SF-012-B. This prehistoric site measures 2.6 acres and consists of bedrock mortars and an associated sparse artifact scatter around a large bedrock outcrop. The bedrock mortar complex is composed of seven boulders with at least nine cups. Artifacts include at least 15 metavolcanic late-stage reduction flakes, 1 metavolcanic stone core, 1 possible flaked quartz cobble, and some possible fire affected rock. The site is on the west edge of Antelope Valley approximately 1,200 feet southwest of Stone Corral Creek, and approximately 100 meters just west of site SF-011-B. The site is at the transition zone between the oak woodland and valley grasslands; the site itself is open, and is approximately 1,000 feet northwest of site SF-014-B.

SF-013-B (17-5-13-1). SF-013-B is a prehistoric site that consists of bedrock milling features and a sparse artifact scatter on a series of open, stepped benches with a northeastern exposure. The site is at the west edge of Antelope Valley approximately 1,440 feet southwest of Stone Corral. SF-013-B is also directly upslope and 500 feet south west of the ranch at site SF-014-B. Site SF-013-B was recorded by DWR-DPR in 1998 as 17-5-13-1.

The current study identified eight bedrock mortar boulders and a very sparse artifact scatter. The eight features represent a total of 30 cups (21 of which occur on Feature 6). Four artifacts were also located, including three obsidian flakes, and one vesicular basalt flake. The site encompasses approximately 12,600 square meters.

SF-014-B. This historic-era site is a ranch complex with associated trash scatters. The site contains seven features (including SF-ISO-071-A). Feature A consists of two metal water tanks and a cement trough. Feature B is a long, low, metal-roofed structure. Feature C is a small trash scatter that consists primarily of sheet metal and wire to the northeast of Feature B. Feature D is a collapsed structure north of Feature B. Feature E is a pole barn with a corrugated metal roof. Feature F consists of a historical vehicle and trash scatter north of Feature E. Feature G is a trash scatter located over a small rise to the north of Feature F, which was also recorded as SF-ISO-071-A by the ARP. Artifacts contained within the Feature G trash scatter include wood stove pieces, embossed with *H.R. 7-140 w-w-co 1603; 8- 145*. The trash scatter also contains numerous bottles: *Pepsi Cola (woodland 1207) DES. PAT 120.277/ 15A54/3 (diamonds) 2-5431*; *Squirt spiral glass (green) 23 ® 6015(the 5 is backwards) /18.3, Coca-Cola (60s) Sacramento - ^G – CALIF*; and an amber whiskey bottle fragment. Two condiment jars, one milk can, one tobacco tin, meat tins, an enamelware pot, and cans with church keys and pull tops are incorporated into the trash scatter, as well.

The site sits in the open grassy plains at the west edge of Antelope Valley, and is accessed by a dirt road that intersects Sites Lodoga Road approximately 1.15 miles to the east. The town of Sites is approximately 1.5 miles to the south along that road. Stone Corral Creek is 1,000 feet north-northeast of the site. The site measures 140 feet north/south by 135 feet east/west.

SF-015-B. Measuring 50 meters east/west by 10 meters north/south, SF-015-B sits on a low, narrow finger ridge at the west edge of Antelope Valley, right at the tree line. The site is directly south of, and approximately 100 feet from, site SF-013-B. This prehistoric site consists of five bedrock milling features with nine cups on a large sandstone outcrop. Other artifacts include one cryptocrystalline silicate core. The site measures 5,000 square meters.

SF-016-B. SF-016-B is a prehistoric site that consists of a small, partially buried, midden deposit and an artifact scatter. Artifacts include a hopper mortar, 2 milling slicks, 1 handstone fragment, 1 metavolcanic

core, fire-affected rock, at least 35 metavolcanic flakes, and at least 2 chert flakes. The site measures 60,600 square feet and is in the first low hills at the east edge of Antelope Valley, approximately 3,600 feet west of Stone Corral Creek and 4,800 feet west of Sites Lodoga Road. Site SF-021-A lies 1,000 feet east of this site.

SF-017-B. This prehistoric site is on a flat at the confluence of McDowell Canyon Creek and an unnamed drainage feature. SF-017-B is approximately 1 mile from McDowell Canyon, where the canyon intersects with a long, narrow northwest/southeast -trending valley on the west side of Antelope Valley near the center of the Greater Sites Reservoir portion of the study area. A jeep road borders the site to the north and west. A dense stand of blue oaks covers a portion of the site.

SF-017-B consists of a midden with dark soil covering 11,050 square meters. Artifacts include fire-affected rock and greenstone, chert, and obsidian flakes. A sparse scatter extends around the perimeter of the midden, with a possible bedrock mortar on a large, buried sandstone slab.

SF-018-B. The presence of several ranch structures and features identifies the location of historic-era site SF-018-B. The site encompasses approximately 2,400 square feet and is delineated by a recently replaced barbed-wire fence that encircles the site perimeter. The site contains four features. Feature 1 consists of a square, concrete-lined cistern with a concrete cap and windmill pad. The water level was approximately 6 feet below ground surface at the time of the survey, and the bottom of the cistern is approximately 20 feet deep. Feature 2 is a corrugated metal structure on an inner wood frame. The structure has an old power line, as well as a new replacement power line, that links with the power line on Sites-Lodoga Road. Inside the metal structure are two large metal storage tanks, where water pumped from the cistern was stored. A wooden fence circles the structure. Feature 3 is a concrete water trough with the initials *W.E.S. 5-16-1949* inscribed. Feature 4 is the remains of a corral and loading ramp, marked by a few posts and a gate on iron-strap-hinges.

The site is in the valley plain of Antelope Valley, approximately 1,150 feet west of the Sites Cemetery.

SF-019-B. Located on both sides of Funks Creek, approximately 3,000 feet downstream and east from the Golden Gate, SF-019-B is a bedrock milling site. The site measures 6,800 square meters and includes six mortar cups on three bedrock features. One of the features is on the north side of Funks Creek, and the other two are to the south. There are no surface artifacts or midden soils associated with this site.

SF-020-B (CA-COL-25/230; 17-5-11). This is a multicomponent site that covers 4 acres. The site was recorded in 1967 as CA-COL- 25/230 by the UCLA summer field school , and in 1998 by DWR-DPR as 17-5-11. Site SF-020-B is situated on both sides of Sites Lodoga Road and on the north side of Stone Corral Creek within the canyon formed by the creek in the west-central portion of the Greater Sites Reservoir portion of the study area.

This site consists of two loci. Locus A is composed of historic-era features associated with a livestock corral and include a water storage tank, a feed trough, a stock pond, a cluster of three black walnut trees, and a livestock corral. The artifact scatter at Locus A consists of more than 5 ceramic fragments, an amethyst glass fragment, and a cluster of more than 10 metal strapping and sheeting fragments. Locus A features are located east of Sites Lodoga Road. Locus B is a leached midden bisected by Sites Lodoga Road. The majority of the midden has been removed, although portions of it remain on both sides of the road. Prehistoric artifacts include basalt flakes, obsidian flakes, handstone fragments, a cobble core, and a battered cobble. Also noted was abundant fire-cracked rock both within and outside the midden area.

SF-021-B (17-5-1-2). SF-021-B is a small multicomponent site that covers approximately 1,200 square meters. The site is situated up a small, unnamed canyon on the west side of Antelope Valley in the north-central portion of the Greater Sites Reservoir area, and is approximately 1.4 miles west of Peterson Road. The site sits on a small knoll at the confluence of two ephemeral drainages.

The site consists of a midden and an artifact scatter. The artifact scatter consists of both historic-era and prehistoric artifacts, including a basalt core, a cryptocrystalline silicate core, and a tobacco tin. Fire-affected rocks were also noted within the site boundaries. SF-021-B was previously recorded by DWR-DPR in 1998 as 17-5-1-2, a small midden site.

SF-022-B (18-4-31-1H). This large historic-era site consists of a ranching complex that covers approximately 6 acres. The site was recorded in 1998 by DWR-DPR as the Fountain House, site 18-4-31-1H. The ranch is on the west bank of Funk Creek in Antelope Valley near the north end of the Greater Sites Reservoir portion of the study area, approximately 1 mile south of the Glenn County line and approximately 1 mile north of the terminus of Peterson Road. The site consists of 14 features including the main house, a pole barn, a large wooden barn, a water tank, a cement pad, three grain storage containers, a drying shed, a grain storage container, a corral area, a garage/repair building, a cement block structure, a pump house and trash scatter, and two trash scatters.

SF-023-B. Located on the east-facing slope of Logan Ridge and approximately 1.6 miles north of the Golden Gate, SF-023-B is a multicomponent site with a midden and sparse lithic scatter, and a historic-era feature and trash scatter. The prehistoric component consists of a midden area, 1 bedrock milling slick, artifacts that include 1 chert core, 1 chert nodule, 1 ground stone fragment, 1 pendant, and a lithic scatter of at least 10 visually sourced Borax Lake obsidian flakes, more than 5 basalt flakes, and fire-affected rocks. The historic-era component consists of a water tank, a pile of milled lumber, and a trash scatter with a cast-iron stove door, a stove door handle fragment, and a small stove door fragment. The site area measures 140 meters north/south by 280 meters east/west, and is amidst open grassy slopes with no trees in the vicinity.

SF-024-B. SF-024-B consists of two historic-era rock features and two artifacts contained within 2,450 square meters. The rock features consist of a semicircular rock ring and a linear rock alignment. Artifacts include one square cut nail and one amethyst glass fragment. This small site sits on the east facing slopes of Logan Ridge, near the top of the ridge, and approximately 1.7 miles north of the Golden Gate. A dirt road passes by the north edge of the site.

SF-025-B (CA-COL-182). This historic-era site is a large sandstone quarry at the base of the steep east-facing slope of Logan Ridge where Stone Corral Creek exits the canyon and has carved through the ridge. SF-025-B is situated immediately south and west of Stone Corral Creek and Sites-Maxwell Road. The site has five associated features that cover nearly 20 acres. Features recorded include a quarry face covered with modern graffiti; a large rectangular depression; a metal object that has been flattened and half buried; and historic-era structural remains with a sandstone slab foundation, a depression, and the lumber remains of the structure. Another feature consists of the remains of a rail bridge from the former C&LRR that crossed Stone Corral Creek, for which another segment was previously recorded as site SF-038-A (17-4-20-1H/3H). Components of this feature include abutments located on both banks of the creek with three footings seated in the creek between the two abutments. Additionally, a metal pipe protrudes from the west bank of the creek, probably representing a former water line. This site was previously recorded in 1967 by the UCLA summer field school as CA-COL-182.

SF-026-B. A prehistoric bedrock milling station and lithic scatter are the identifying characteristics of site SF-026-B. The bedrock milling station consists of 13 mortar cups distributed across eight boulders

located within a series of north-south-trending sandstone outcrops. Cultural constituents include 10 to 20 basalt flakes and 10 to 20 obsidian flakes, an edge-modified bifacial basalt flake, a grayish-purple chert core, and a sandstone pestle. The site covers a little more than 1 acre on the east side of Logan Ridge in the northeast corner of the Greater Sites Reservoir portion of the study area, and sits in a swale created by an ephemeral creek that drains to the east; the creek bisects the site.

SF-027-B. Comprised of historic-era water-control features and associated artifacts, and a prehistoric midden, bedrock mortars, and artifact scatter, SF-027-B is a multicomponent site. The historic-era component of the site consists of several rock alignments associated with the construction of a stock pond and the dirt road that parallels the creek. There is also a sparse scatter of milled lumber with wire nails, more than five pieces of white-glazed china, a fragment of a #77 plow blade, at least two pieces of clear glass, and more than two pieces of aqua glass. Prehistoric features and artifacts dominate the site constituents. Two loci of midden were recorded along with 15 mortar cups on 8 milling features. Prehistoric artifacts noted on site include one white chert biface, one red chert biface, one handstone fragment, one chert core, secondary and tertiary obsidian debitage, chert flakes, and fire-affected rock.

The site is 80 meters north/south by 230 meters east/west and is at the edge of a flat at the headwaters of Lurline Creek in the southeast corner of the Greater Sites Reservoir portion of the study area. Blue oaks dot the landscape of the site.

SF-028-B. SF-028-B is a multicomponent site consisting of a midden deposit, small scatter of prehistoric artifacts, the base of a clear glass bottle, and a stock pond. The site encompasses 13,320 square meters. The majority of the midden deposit lies between two dirt roads and two ephemeral streams. Prehistoric artifacts include one hopper mortar, five cores, one handstone, one chopper, and one scraper. The majority of the artifacts were found on the surface of the midden deposit. The site is on the east edge of Antelope Valley in the south-central section of the Greater Sites Reservoir portion of the study area. The site is at the base of the hills where an ephemeral drainage enters the valley. Huffmaster Road is 2,000 feet west of SF-028-B. A dirt access road exits Huffmaster Road and crosses through the site.

SF-029-B. This prehistoric site consists of a buried midden identified in a cut bank, 100 to 150 centimeters high, in Stone Corral Creek at the base of a low hill near the west edge of Antelope Valley. Sites Lodoga Road is 2,300 feet east of the site, just as the road begins climbing westward out of the valley. The midden contains two pieces of obsidian shatter, one metavolcanic secondary cortical flake, and a fragment of deer metapodial. The midden is buried 55 centimeters down in the wall of the cut bank and is 20 centimeters thick. The site measures 30 square meters.

Isolates SF-ISO-040-B and SF-ISO-041-B may be associated with the site, as they were found in the drainage bed downstream and outside of the site boundaries.

SF-030-B. Site SF-030-B is in the valley plains near the east edge of Antelope Valley in the north-central section of the Greater Sites Reservoir portion of the study area. The site is approximately 2,000 feet south of Salt Lake, and is sandwiched between a barbed-wire fence to the north and a seasonal drainage to the south; a dirt road is situated directly south of the creek. This historic-era site consists of a trash and machinery scatter with fencing equipment. There are five pieces of machinery at the site: two trailers, one tiller, one thresher, and one U.S. Military halftrack. The trash scatter consists of pieces of white ceramic fragments, broken glass, metal fragments, and a broken Pepsi bottle. Also present are several bales of wire. The site is small, covering approximately 420 square feet.

SF-001-C (CA-COL-22; 18-5-35). Covering approximately 14 acres, SF-001-C is situated at the north end of Antelope Valley in a narrow arm of the valley created by Grapevine Creek. The site sits at the base

of a ridge and is approximately 4,000 feet south of the Glenn-Colusa County line. SF-001-C was recorded in 1967 by the UCLA summer field school as CA-COL-22, and in 1998 by DWR-DPR as 18-5-35.

This prehistoric site contains two midden deposits on either side of Grapevine Creek. Locus A consists of a midden-mound with ground stone scattered around the perimeter. Artifacts include at least 10 obsidian flakes, 4 hopper mortars, 2 pestles, 2 pestle fragments, 6 handstones, 5 handstone fragments, and 1 piece of unidentifiable ground stone. The locus is on the east side of Grapevine Creek on the first stream terrace adjacent the hills. Locus B is on the west bank of the creek, and is a midden deposit with a dense lithic scatter with more than 250 obsidian flakes (mostly found along an access road and the northern area of the midden), more than 10 chert flakes, 1 pestle, 2 pestle fragments, 1 hopper mortar fragment, 9 handstone fragments, 1 complete handstone, 1 sandstone millstone, 1 chert core, and 1 historic-era plow. There is one fire-affected rock feature exposed in the cut bank directly below the locus datum.

SF-002-C (18-5-35-1H). This multicomponent site, originally recorded in by DWR-DPR 1999 as site 18-5-35-1H, is a historic-era homestead and prehistoric artifact scatter. The site is composed of foundations, a hearth, fallen chimney, open stone-lined well, and associated historic-era artifacts. The remains of the home consist of a deteriorated outer foundation with remains of two inner foundation supports. One inner foundation runs directly into a hearth. An open stone-lined well sits at approximately the northwestern corner of the foundation and is associated with possible milled lumber and a metal cap. Other features noted include a railroad tie with pegs in place, the remains of a corral, a rock wall, and a ditch and pit that possibly represent an irrigation system. Artifacts observed include fragments of white ceramic, two fragments of terra cotta pipe, one metal cap possibly associated with the well, four to five pieces of milled lumber, shards of clear, green, and milk bottle glass, round wire nails, two galvanized pails, and various lengths of barbed-wire. The prehistoric component of the site consists of at least five visually sourced Borax Lake obsidian flakes and one pestle.

SF-002-C measures 11 acres and is at the base and tip of a narrow finger ridge that juts out into an arm of Antelope Valley formed by Grapevine Creek in the northern section of the Greater Sites Reservoir portion of the study area. The site is 4,500 feet north of Sites Lodoga Road; a dirt access road exits north off of Sites Lodoga Road and runs through the site. Grapevine Creek bends around the south, west, and north sides of the site.

SF-003-C. The historic-era materials recorded at SF-003-C include: more than five earthenware fragments, one leaf spring, a piece of a license plate, one metal tea pot, one aqua soda bottle (base and body) embossed *Enterprise-Pioneer Bottle Co* (base embossed with *E*), one shovel head, one modified pail (bucket) base, more than five fragments of clear glass, and various metal pieces. A recently modified spring is probably related to on-going ranching activities. The site is at the south end of the Greater Sites Reservoir portion of the study area, on the east margin of Antelope Valley. The site sits within a drainage that extends west from Sulphur Gap, as depicted on the Sites 7.5' USGS topographic quadrangle. The site is 220 feet north/south by 100 feet east/west.

SF-004-C. This prehistoric site is in a 2,142-square-meter open flat on top of a finger ridge that trends to the northeast off of Pence Mountain, which is to the west of Antelope Valley in the south-central section of the Greater Sites Reservoir portion of the study area. SF-004-C consists of a midden deposit with one house pit and a second possible house pit. Artifacts include: an obsidian biface, a possible hopper mortar fragment, a metamorphic sandstone pestle, chert core, 2 visually sourced Borax Lake obsidian biface fragments, more than 20 obsidian flakes, at least 1 basalt flake, 1 grinding slab, 1 pestle, 1 core, some shell and bone fragments, and fire-affected rock.

SF-005-C. Measuring 255 square meters, SF-005-C is a small midden with two house pits. Artifacts include one chert core, one hopper mortar fragment, one fire-affected rock metasandstone core, one hopper mortar, and fire-affected rock. The site sits among trees on a bench of an east-trending slope, and is roughly midway between Sugarloaf and Greasewood mountains on the ridge that rises to the west of Antelope Valley in the southern half of the Greater Sites Reservoir area.

SF-006-C. SF-006-C is in the southern half of Antelope Valley, and is bisected by Antelope Creek. The site is accessible by a dirt road that exits west off of Huffmaster Road; the site is approximately 0.25 mile from the road and measures 600 feet north/south by 475 feet east/west. This historic-era site consists of a ranch complex with eight features: an outbuilding and tool shed nailed together with machine-cut nails, a windmill and foundation, a house built in 1938, two barns made with machine cut square nails, a wood pile, a granary, and a sandstone-and-concrete bridge. Artifacts associated with the windmill feature are a barber chair part, a tractor saw attachment, an old porch column (similar to fenceposts), a large clamp, an Aeromotor windmill from Chicago, and an old radiator labeled *W.F. & J. Barnes, Rockford Ill., U.S. Pat. April 17, 1877*. Numerous prehistoric pestles, presumably collected by the residents, are displayed on the northern fence around the house. The several items in the western section of the southernmost barn include four wagons, a buggy, a Formica table, a Victor seeder, and another wooden seeder. The center section includes a cider press, a dolly, and another unidentified farming device.

SF-007-C. This historic-era site consists of a trash scatter spread over approximately 3 acres that is composed of at least 20 milky white glass fragments, more than 20 clear glass fragments, 2 brown bottle necks, at least 20 brown glass fragments, at least 5 amethyst colored glass fragments, more than 5 aqua colored glass fragments, and more than 20 green glass fragments. In addition, 5 to 10 bricks, various metal fender pieces, and at least 4 license plates from the 1930s were noted. One intact Pepsi bottle and one intact brown glass Purex bottle are also present. Additional artifacts found on the site include some wire (barbed and hog), one rubber sole of a shoe, one shovel head, brown ware, ceramic earthen ware, and two galvanized metal pails. Some metal strapping, baling wire, ceramic water piping, one metal hinge, and possible battery parts, were also found along with some cut wood, one intact clear glass Bayer bottle, one clear glass Best Food jar with a screw top lid, and one internal friction can with stamped edges.

SF-007-C is on a flat at the base of the hills just east of where Stone Corral Creek and Sites Lodoga Road enter Antelope Valley from the west, and approximately 200 feet north of Sites Lodoga Road.

SF-008-C. Located directly southwest of Sites Lodoga Road, SF-008-C is a multicomponent site measuring 180 meters north/south by 250 meters east/west. The site lies at the west edge of Antelope Valley where Stone Corral Creek and Sites Lodoga Road enter Antelope Valley from the west. The site consists of a prehistoric component with a midden deposit, a lithic scatter, and a possible bedrock mortar. The historic-era component contains a fallen structure and associated artifact scatter. Three loci have been identified along Stone Coral Creek, which runs through the site. The midden in Locus A includes 5 to 10 visually sourced Borax Lake obsidian flakes, 1 possible chert flake, 1 bone fragment, 2 handstones, 1 pestle, 2 metavolcanic flakes, and 1 possible core. Locus B contains midden soil, 1 metavolcanic core, 1 bone fragment, fire-affected rock, 1 corrugated galvanized metal sheet, and approximately 20 scattered pieces of milled lumber. Locus C consists of a fallen structure and a possible bedrock mortar. The roof of the fallen structure is comprised of 16 corrugated metal sections, 8 on each side of the gable. The base or floor of the structure is believed to be made of railroad ties. A possible bedrock mortar with a single cup was documented approximately 14 feet north-northeast of the structure.

SF-009-C. A prehistoric site, the elements of SF-009-C include five bedrock milling features and a sparse lithic scatter. The five bedrock mortar features collectively contain 13 mortar cups, and are in exposed

bedrock on the west side of the site. The lithic scatter is intermixed with structures and features associated with a modern ranch. The ranch buildings include a small building and a small shed, as well as a modern barn. All buildings are constructed with modern milled boards and round poles with corrugated roofs and siding, and were not recorded. The 5.4-acre site is on the west face of Logan Ridge in the northeast corner of the Greater Sites Reservoir portion of the study area, approximately 600 feet south of the Glenn-Colusa County line.

SF-010-C. SF-010-C is a multicomponent site 280 feet north/south by 390 feet east/west. The site consists of a prehistoric component with a midden deposit and a bedrock mortar, a low-density artifact scatter, and a historic-era component that includes stacked-rock features and stock ponds. The midden deposit contains animal bone fragments, a lithic scatter, baked clay, fire-affected rock, ground stone fragments, and battered cobbles. Lithics include visually sourced Borax Lake obsidian and basalt flakes, mostly consisting of biface thinning flakes with some primary reduction flakes. The midden deposit is on a rise overlooking a drainage feature, which has been modified by two stock ponds. A prehistoric isolate, designated SF-ISO-032-C, was identified nearby. SF-010-C is in the southeast section of the Greater Sites Reservoir portion of the study area. The site is in a small valley formed by an unnamed drainage that flows north-northwest off of Logan Ridge into Antelope valley, approximately 4,200 feet downstream from the site.

SF-011-C. This prehistoric site consists of a possible midden and a low-density lithic scatter that measures 7,524 square meters. The lithic scatter includes fire-affected rock, at least two obsidian and five metavolcanic flakes, and at least three pieces of ground stone. Some animal bone is also present on the surface. The site sits in the open valley plain on the west margin of Antelope Valley in the north-central section of the Greater Sites Reservoir portion of the study area. Funks Creek lies 625 feet northeast of the site. The northern terminus of Peterson Road is 0.8 miles southeast of the deposit.

SF-012-C. SF-012-C is a 10 meter north/south by 15 meter east/west prehistoric artifact scatter, and contains a unifacial mono with polishing, a hopper mortar fragment, and a greenstone core with five flake scars. The site sits in a valley covered in Blue Oak and star thistle, and 26 feet west of a north-south flowing drainage feature. The site is approximately 500 feet north of SF-010-C. A barbed-wire fence runs the western boundary of the site.

SF-001-D. Three historic-era features within an approximately 12.5 acre area define this site: a corral, a structure foundation, and a concrete cattle trough. The corral consists of the remains of seven erect railroad ties and three fallen ties arranged in a rough rectangle; wire cut nails are embedded in the ties. The concrete structure foundation has a *U* shape, open to the west. The concrete cattle trough was constructed in a similar manner, with medium-sized river cobbles used as chinking. A fence line running roughly east to west bisects the middle of the trough. A pipe measuring 2 inches in diameter connects the two tanks of the cattle trough through the fence. A stock pond is also present at the site.

SF-001-D is at the east edge of Antelope Valley on an unnamed drainage feature that feeds into Stone Corral Creek approximately 3,460 linear feet to the south-southwest, as measured along the base of the hills. The confluence of the unnamed creek with Stone Corral Creek is immediately north of the town of Sites.

SF-001-E. Historic-era site SF-001-E sits in the plains of Antelope Valley approximately 0.7 miles west-northwest of the town of Sites. Stone Corral Creek is less than 200 feet north of the 141,100-square-foot site. This resource consists of a trash scatter, concrete foundation, concrete pad with concrete-lined pit, and a depression. The trash scatter includes a car axle, brake pad, milled lumber fragments, large tractor chain, and can fragments. The concrete foundation contains various pieces of metal sheet fragments,

milled lumber pieces, and rolls of wire surrounding the feature. Also within the foundation are at least 20 brick fragments and one 4.5-inch-diameter T-shaped pipe fitting embossed with *Walworth 2000 Test*. The concrete pad contains vertical rebar that extends 0.5 inches above the surface of the pad. The depression is an apparent trash pit that contains small metal piping and fragments of milled lumber.

SF-002-E (17-4-6-1H). SF-002-E was initially recorded by DWR-DPR in 1999 as 17-4-6-1H, the New Peterson Ranch. This historic-era site measures 557 feet north/south by 268 feet east/west and consists of a residence that has been converted into a livestock pen and corral. The structure sits at the terminus of Peterson Road in the middle of Antelope Valley in the north portion of the Greater Sites Reservoir area. Four features are present. Feature 1 is a livestock pen converted from a house. Feature 2 is a large structure built from sandstone slabs which is partially collapsed. Feature 3 is a beehive kiln, and Feature 4 is a water tower. The entire site is surrounded by barbed-wire fences; a dirt road runs along the southern side of the fence.

SF-003-E (17-4-6-14H). This 7-acre historic-era site is a ranch house with surrounding barns, outbuildings, water tanks, and a trash dump. SF-003-E was recorded in 1999 by DWR-DPR as 17-4-6-14H. The site is situated on a grassy flat to the east of a small range of low-lying hills between two unnamed forks of Funk's Creek. This site is approximately 1,400 feet west of Peterson Road in the northern part of Antelope Valley. Salt Lake is east of the site on the east edge of the valley.

SF-003-E contains six features, associated trash, and equipment scatters. These features include a large barn constructed with square nails and associated corrals and equipment dump; a small wooden outbuilding; a collapsed water tower and associated concrete foundation, piping, and trash dump; a wooden barn; a mostly modern trash dump; and a ranch house.

Artifacts associated with the barn include a collection of more than 15 old horseshoes, 2 pitchfork heads, and an old plow blade with embossing *40 DS Oliver*, amethyst glass and ceramic fragments, metal strapping, and piping. The outbuilding showed square nails only in the door on the north side of the structure. The trash scatter to the northwest of the building consists of mostly modern metal and plastic garbage, but some amethyst glass was also noted. A 1956 Studebaker sits to the west, with plates reading *California 64 56 AMM 806*, and indicating it was last registered in 1962. The equipment scatter near the water tower includes a seeding machine, a furrow plow, piping, plow blade, gears, and blacksmithing equipment. A second equipment dump lies to the north and includes a McCormick baler, two plows, metal piping, and strapping. Artifacts noted in the modern trash dump include glass, plastic, metal appliances, golf clubs, skis, and various wood pieces. No items of archaeological note were observed.

The ranch house is currently occupied by the Sites family. Oral interviews conducted with members of the Sites family indicate that parts of the house are at least 100 years old, although areas since have been remodeled. A number of artifacts, historical and prehistoric, are in the front yard of the house. Historical artifacts include a tricycle, two metal wheels, a galvanized teapot, at least five horseshoes, metal hooks, wheelbarrow parts, water pump parts with a brand *PB*, an old bale, and a cast-iron slab engraved, *Board of Supervisors —1905— GW Allgaier, Chariman FG Myers, JF Campbell WA VANN, JF Rathbun CHAS DE ST MURICE Co Surveyor*. There are nine plows, seven complete and two fragmentary and a seeder (not complete). Prehistoric artifacts include obsidian chunks, two large pieces of bedrock with five cups, five sandstone hopper mortars, and three sandstone pestles.

7.3.3 Sites Located But Not Re-Recorded

17-4-9-2H. Originally recorded in 1998 by DWR-DPR, 17-4-2H consists of a linear sandstone rock wall feature standing one to three courses high. The site is situated along the top edge of a hillside on the south

side of Funks Creek and at the east base of Logan Ridge, just as the creek passes through the Golden Gate. The site was relocated in 2002, but the site record was deemed adequate and the site was not re-recorded.

17-4-19-1H. This historic-era site consists of the Sites Cemetery, recorded in 1998 by DWR-DPR. The site was relocated in 2002, but dense star thistle across the entire site prohibited re-recording. The original site record indicates that the cemetery was originally built as a family cemetery for the John Sites family. The deed for the property was later transferred to the town of Sites, thereby rendering it a public cemetery. The original site record contains the names, relationships, and years of birth and death for approximately three dozen individuals buried between 1868 and 1969. The site is in the plains of Antelope Valley approximately 0.3 miles west of the town of Sites.

7.3.4 Sites Not Relocated and Not Re-recorded

17-4-20-2H. Located approximately 50 feet north of Stone Corral Creek and in the canyon formed by the creek as it cuts through Logan Ridge, this historic-era site was recorded in 1998 by DWR-DPR. 17-4-20-2H consists of a stone residential structure constructed of sandstone and mortar. Access to the site was not granted for the 2001-2003 field seasons; therefore, the site was not re-recorded. According to the original recording, artifacts associated with the site include fragments of ironstone, blue glass, window glass, and amber glass. Historical information gathered by the previous investigators indicates that the house was constructed by a quarry owner for his wife, although she did not live in the structure. The site has been recently bulldozed, according to the original site record.

17-4-9-7H. This site was recorded in 1998 by DWR-DPR as a bottle scatter situated in Funk's Creek just before it enters the Golden Gate. Survey efforts did not succeed in relocating the site. Given its location in the creek bed, it has likely washed away.

CHAPTER 8: SUMMARY

The proposed NODOS project area covers 43,023 acres, extending from Antelope Valley at the east edge of the North Coast Ranges, east to the Sacramento River. Most of the project area lies in Colusa County, although the northernmost portions of Antelope Valley are in Glenn County. Facilities proposed for NODOS include the 14,300 acre Sites Reservoir, an expanded Funks Reservoir to be renamed Holthouse Reservoir, the TRR, and the Delevan Pipeline; additional appurtenant facilities have also been proposed.

Archeological surveys conducted between 2001 and 2011 covered 37,918 acres of the project study area. A total of 144 archaeological sites were recorded, all of which are located within the Greater Sites Reservoir Portion of the Study Area. These include 69 prehistoric sites, 39 historic-era sites, and 36 multicomponent resources. In addition, 429 isolates were recorded, including 176 prehistoric, 231 historic-era, and 7 multicomponent finds. Temporal assignments could not be made for another 15 isolates.

Prehistoric sites include midden deposits, lithic scatters, bedrock milling stations, and one rock shelter. Temporal associations, represented by recorded projectile point styles, range from the Lower Archaic Period (10,500 to 7,000 years BP) to the Emergent Period (1250 to 200 BP). The presence of so many sites with midden deposits (58) suggests that early populations intensively occupied the area in and around Antelope Valley for a long period of time. Whether this use was continuous or sporadic over time will have to be determined by future research. Regardless, Antelope Valley and its environs appear to have been an attractive area for residence. This is further supported by the additional 176 prehistoric isolates recorded in the project area.

Historic-era sites are almost exclusively related to homesteading and ranching; only two of the 75 sites that contain historic-era remains reflect another aspect of the historic period. These two sites reflect salt production and a sandstone quarry. All of the 231 historic-era isolates also reflect some aspect of homesteading or farming. A rural way of life has clearly been the focus of the project area throughout the historic period.

Altogether, archaeological sites and isolates recorded in the NODOS project area reflect continuous occupation of the Antelope Valley for the last 10,000 years. Surface observations suggest that the sites have the potential to help fill in many gaps regarding human land use in the region should future research be required for NHPA and CEQA compliance related to NODOS project implementation.

This report has been prepared based on certain key assumptions made by URS that substantially affect the conclusions of this report. These assumptions, although thought to be reasonable and appropriate, may not prove to be true in the future. The conclusions and recommendations of URS are conditioned upon these assumptions.

The Cultural Resources Report was prepared based upon information provided by the NWIC and NEIC, direct observation of site conditions, and other information that is generally applicable as of January, 30, 2013, and the conclusions herein are therefore applicable only to that timeframe.

Information obtained from these sources in this timeframe is assumed to be correct and complete. URS will not assume any liability for findings or lack of findings based upon misrepresentation of information

presented to the URS Cultural Resources Report team or for items not visible, made available, accessible, or present at the site at the time of the document preparation.

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APPENDIX A

**SUMMARY DESCRIPTIONS OF ISOLATED FINDS IDENTIFIED BY THE
2001–2003 PROPOSED SITES RESERVOIR ARCHAEOLOGICAL SURVEY**

APPENDIX A

SUMMARY DESCRIPTIONS OF ISOLATED FINDS IDENTIFIED BY THE 2001–2003 PROPOSED SITES RESERVOIR APE ARCHAEOLOGICAL SURVEY

GREATER SITES RESERVOIR AREA

2001 Isolates (SR-ISO Series)

SR-ISO-001-A: This isolate consists of a concrete trough and improved spring measuring 30 feet long, 61 inches wide, and 32 inches tall. The trough has a wooden shade structure over the western end. A 47-inch long, 4-inch by 4-inch wooden post supports the out-take pipe on the west end.

SR-ISO-002-A: This isolate consists of a possible mano on the northern side of Antelope Creek. One side is polished with striations; however, the object is not shaped or pecked.

SR-ISO-003-A: This isolate is a hopper mortar on the western side of a dirt road, and on the northern bank of an intermittent drainage feature. The mortar hopper is made from a sandstone slab and exhibits one mortar cup.

SR-ISO-004-A: This isolate a possible bedrock mortar with one cup located at the top of the ridge above an unnamed drainage feature.

SR-ISO-005-A: This isolate consists of approximately 328 feet of an abandoned road, adjacent to the existing road. The road bed proceeds west, into the creek, and then continues east, where it rejoins the existing road.

SR-ISO-006-A: This isolate is a possible pestle fragment.

SR-ISO-007-A: This isolate is a bedrock mortar with two cups.

SR-ISO-008-A: VOID.

SR-ISO-009-A: VOID.

SR-ISO-010-A: This isolate consists of an old road grade leading from Huffmaster Road up a knoll to the west.

SR-ISO-011-A: This isolate is a piece of olive green glass, possibly a piece of an insulator. An identical artifact was observed at site SR-004-C.

SR-ISO-012-A: This isolate consists of a light gray chert flake and a visually sourced Borax Lake obsidian flake.

SR-ISO-013-A: This isolate is a fence line that crosses the creek and proceeds toward the road.

SR-ISO-014-A: This isolate consists of a cobble core located 230 feet south of SR-012-A and found in the road on the northern side of Funks Creek.

SR-ISO-015-A: This isolate is a complete piece of unidentified farm equipment measuring 17 inches long and 3.75 inches wide. The isolate has several features, including two bolt holes with square openings on the outside, and markings reading *F 30 1/2*.

SR-ISO-016-A: This isolate is a fragment of iron located on a cut bank of an intermittent drainage, which appears to be a piece of farming or ranching equipment and is near a 3-foot-long, 1-foot-wide concrete pipe.

SR-ISO-017-A: This isolate represents the remnants of a fence line in an ephemeral drainage and an old road with a culvert. The design of the culvert, from top to bottom, includes dirt over native rocksheld in place with hog wire wrapped around and attached to a large post. The post is wired into place over a dirt and stone slab structure, holding the metal culvert in place.

SR-ISO-018-A: This isolate consists of one mano fragment.

SR-ISO-019-A: This isolate consists of one obsidian flake. The flake is transparent material with phenocrysts and black inclusions.

SR-ISO-020-A: This isolate is an overgrown roadbed extending 0.25 mile and measuring approximately 8 feet wide.

SR-ISO-021-A: This isolate consists of a roadbed segment 8 feet wide and 300 meters long.

SR-ISO-022-A: This isolate consists of one visually sourced Borax Lake obsidian biface thinning flake and one greywacke core reduction flake.

SR-ISO-023-A: This isolate is a battered sandstone slab manuport with no polish.

SR-ISO-024-A: This isolate consists of four fragments of a stoneware vessel, one chert flake, and one obsidian flake.

SR-ISO-025-A: This isolate is an anti-erosion feature constructed of rock.

SR-ISO-026-A: This isolate consists of one barrel hoop.

SR-ISO-027-A: VOID.

SR-ISO-028-A: VOID.

SR-ISO-029-A: VOID.

SR-ISO-030-A: This isolate is a palm tree stump recorded during the survey of the New Canal Alignment.

SR-ISO-031-A: This isolate is the remains of a pumping station in an abandoned canal channel. The pump complex consists of a concrete-and-earth-filled dam with galvanized pipes, and the remains of pump machinery. This isolate was recorded during the survey of the New Canal Alignment.

SR-ISO-032-A: This isolate is a water outlet or water control gate located in an abandoned canal channel recorded during the survey of the New Canal Alignment.

SR-ISO-001-B: This isolate is a fragment of a milling slab.

SR-ISO-002-B: This isolate is a bifacial mano.

SR-ISO-003-B: This isolate is a complete milling slab.

SR-ISO-004-B: This isolate is a concrete-improved spring and watering trough.

SR-ISO-005-B: This isolate is a bifacial mano.

SR-ISO-006-B: This isolate is a complete plow blade.

SR-ISO-007-B: This isolate is a complete horseshoe.

SR-ISO-008-B: This isolate is a fragment of a cast-iron stove top.

SR-ISO-009-B: This isolate is an obsidian flake.

SR-ISO-010-B: This isolate consists of an obsidian biface fragment and an obsidian flake.

SR-ISO-011-B: This isolate is a hopper mortar.

SR-ISO-012-B: This isolate is a complete pestle.

SR-ISO-013-B: This isolate is a pestle fragment.

SR-ISO-014-B: This isolate is a hopper mortar.

SR-ISO-015-B: This isolate is a hopper mortar.

SR-ISO-016-B: This isolate is a white ceramic fragment.

SR-ISO-017-B: This isolate is a pair of shearing clippers.

SR-ISO-018-B: This isolate is a core tool.

SR-ISO-019-B: This isolate is a mano fragment.

SR-ISO-020-B: This isolate is a milling slab fragment.

SR-ISO-021-B: This isolate consists of two pestle fragments.

SR-ISO-022-B: This isolate is a pitchfork with four tines.

SR-ISO-023-B: This isolate is the grave marker of Clara Pryor. The marker is enclosed by a fence of posts and lintel boards with the open spaces between covered with poultry wire. The enclosed area covers 10 square feet, and is covered in daffodils. The marker stands more than 2 feet high and is square with the carved panel at an angle. The carved panel has a bird with two encircling olive branches under the feet at the top of the panel, with the words *CLARA/ 1862-1907/ Beloved Wife of/ Frank B. Pryor/ AT REST* underneath.

SR-ISO-024-B: The isolate is composed of a sandstone boulder mortar with one cup.

SR-ISO-025-B: This isolate is a barrel hoop.

SR-ISO-026-B: This isolate consists of one cryptocrystalline silicate core.

SR-ISO-027-B: This isolate consists of a barbed-wire fence line.

SR-ISO-028-B: This isolate is composed of two lichen-covered rock piles, possibly used to control erosion and water flow of a small intermittent drainage.

SR-ISO-029-B: This isolate is a metal fragment embossed with OR8. The fragment was observed on an open flat that is covered in short meadow peat.

SR-ISO-030-B: This isolate consists of a 1-inch-diameter logging cable (choker cable). Four feet of the cable were exposed.

SR-ISO-031-B: This isolate consists of one 1940s-era beer can with an internally rolled seam. The can was found in association with flaked greywacke.

SR-ISO-032-B: This isolate consists of two cast-iron stove fragments found within the site boundaries of SR-007-B, but not associated with that site.

SR-ISO-033-B: This isolate is an old roadbed that seems to extend from a fork in the road approximately 150 meters to the south. The roadbed has been dominated by cattle traffic and has been overgrown with short, mossy grasses.

SR-ISO-034-B: This isolate is a topless, cylindrical metal can with an internally rolled seam.

SR-ISO-035-B: This isolate is a bifacial mano that has been shaped and pecked on its margin and battered on one end.

SR-ISO-036-B: This isolate is a visually sourced Borax Lake secondary reduction flake located in an old roadbed (SR-ISO-033-B).

SR-ISO-037-B: This isolate is a hopper mortar located on a flat.

SR-ISO-038-B: VOID.

SR-ISO-039-B: This isolate is a fragment of a cast-iron stove door.

SR-ISO-040-B: This isolate is a carved sandstone slab.

SR-ISO-041-B: This isolate is a fragment of sheet metal.

SR-ISO-042-B: This isolate is a fragment of cast iron, possibly a stove top.

SR-ISO-043-B: This isolate is a chert core fragment.

SR-ISO-044-B: This isolate is a mortar.

SR-ISO-045-B: This isolate consists of two sandstone hopper mortars, each containing a single cup.

SR-ISO-046-B: This isolate consists of two visually sourced Borax Lake obsidian flakes.

SR-ISO-047-B: VOID.

SR-ISO-048-B: This isolate is a medium-sized secondary visually sourced Borax Lake obsidian flake.

SR-ISO-049-B: This isolate is a large secondary visually sourced Borax Lake obsidian flake.

SR-ISO-050-B: This isolate is an historical well, lined with local stone slabs, measuring 6 feet deep. A semicircular berm representing a possible watering pond is to the northeast of the well, and measures approximately 30 feet across and 20 feet wide.

SR-ISO-051-B: VOID.

SR-ISO-052-B: This isolate consists of one visually sourced Borax Lake obsidian flake and one unidentified metavolcanic flake found in a burned deposit composed of a brown red/orange clayey silt.

SR-ISO-053-B: This isolate is a single boulder mortar.

SR-ISO-054-B: This isolate is a metal wagon wheel with a hub diameter of 6 inches.

SR-ISO-055-B: This isolate is a stone foundation for a water tank located near an oval stock pond. A small retaining wall facing the pond to the south was also observed.

SR-ISO-056-B: This isolate consists of an artificially constructed rock pile surrounded by large cottonwood trees near a stock pond. The sandstone cobbles used to construct the pile range in size from 4 inches to 1 inch in diameter.

SR-ISO-057-B: This isolate consists of a single sandstone mortar found in a secondary context, within a recent fire ring on a gentle slope to the west of Grapevine Creek. The flat has been recently logged and there are a large number of blue oaks, stumps, and piles of limbs in the surrounding area.

SR-ISO-058-B: This isolate consists of an old roadbed found in association with a barbed-wire fence on the top of the ridge. The road runs north to south then connects with a two-track road to the south.

SR-ISO-001-C: This isolate is an historical rock cairn composed of more than 30 stones.

SR-ISO-002-C: This isolate is an old fence line running parallel to the current two-track road and is upslope from Antelope Creek. The barbed-wire is fragmented, with pieces still attached to blue oaks, which have grown around the wires.

SR-ISO-003-C: This isolate is an old axe head that shows signs of extreme use. The opposite site of the blade is flat and has been used as a hammering surface. The blade has a crescent shaped fragment missing from it.

SR-ISO-004-C: This isolate is a rock alignment encircling a blue oak.

SR-ISO-005-C: This isolate is a fragment of an old barbed-wire fence line, using two blue oaks as fenceposts. The fence proceeds upslope to a downed fencepost. The two blue oaks have grown around the barbwire attached to them. Barbed-wire can be found in fragments all along the old fence line.

SR-ISO-006-C: This isolate is a section of an old road. This segment of road is still intact due to retaining walls built with slabs of local rock. This road runs between sites SR-003-C and SR-004-C, but was not observed connecting to either site due to colluvial processes covering the road.

SR-ISO-007-C: This isolate is a segment of an old fence line. The posts are spaced approximately 197 feet apart on center with barbed-wire embedded in blue oaks. There are eight posts, including a corner post. The fence extends approximately 456 feet.

SR-ISO-008-C: This isolate is an historical fence line that extends approximately 150 feet.

SR-ISO-009-C: This resource is an isolated rock cairn used for erosion control.

SR-ISO-010-C: This isolate is an historical fence line located on a northeast-facing slope. Two strands of barbed-wire have grown into a blue oak with a circumference of 31 inches. The fence continues 150 feet.

SR-ISO-011-C: This isolate is a fragment of galvanized metal roofing.

SR-ISO-012-C: This isolate is an old barbed-wire fence embedded in blue oaks. The fence extends from north to south approximately 100 feet.

SR-ISO-013-C: This isolate is a barbed-wire fence located on a grassy slope.

SR-ISO-014-C: This isolate is an obsidian flake located on a dirt road. The flake is an early biface thinning flake made from visually sourced Borax Lake obsidian.

SR-ISO-015-C: This isolate is a barbed-wire fence line. The fence is approximately 3 feet high and has three wires running the length of it. The wires are embedded in the blue oaks, which act as fenceposts. This segment is approximately 75 feet long.

SR-ISO-016-C: This isolate is a blue oak stump located on a ridge top. The stump has been axe-cut and measures 13 inches in diameter.

SR-ISO-017-C: This isolate is a tertiary obsidian flake.

SR-ISO-018-C: This isolate is a small tertiary flake.

SR-ISO-019-C: This isolate is a tertiary obsidian flake.

SR-ISO-020-C: This isolate is an old road cut in close proximity to a rock wall corner, and parallels a modern fence line for approximately 100 to 150 feet. The road then curves to the southwest and fades out upslope, just north of a drainage.

SR-ISO-021-C: This isolate is an old stock pond. The pond has a dam and an overflow channel. The dam is approximately 54 feet wide with a blown out center.

SF-ISO-022-C: This isolate is an old barbed-wire fence line along a hillside. The barbed-wire is attached to blue oaks that have grown over the wire.

2002–2003 Isolates (SF-ISO Series)

SF-ISO-001-A: This isolate is an 11-inch metal shovel blade fragment embossed with #38. The isolate was partially buried.

SF-ISO-002-A: This isolate is one complete metal plow blade, embossed with 40, DS on the body and Red Bluff Iron Works on the edge.

SF-ISO-003-A: This isolate is a metal plow blade fragment triangular in shape measuring 8 inches long.

SF-ISO-004-A: This isolate consists of a scatter of metal and machine parts. Items include one large, intact section of rusty machine and several small sections of metal strapping. The machine piece is embossed with 2 SEC. The metal scatter is northwest of the machine piece and includes one steering knuckle embossed with F66.

SF-ISO-005-A: This isolate is a unifacial mano fragment.

SF-ISO-006-A: This isolate is a plow-scarred bifacial mano.

SF-ISO-007-A: This isolate is a broken marble slab/marker with a notch on top, found on the slope of a hill at an elevation of 680 feet.

SF-ISO-008-A: This isolate is a basalt core with three large flake scars.

SF-ISO-009-A: This isolate is a rusty, triangular plow blade fragment embossed with OL.

SF-ISO-010-A: This isolate consists of a unifacial mano.

SF-ISO-011-A: This isolate is a granite unifacial mano fragment.

SF-ISO-012-A: This isolate is a 75% complete unifacial mano fragment.

SF-ISO-013-A: This isolate is a blue-gray chert flake.

SF-ISO-014-A: This isolate is a unifacial denticulate tool manufactured from a fine-grained, pinkish-white chert. The denticulated edge displays use retouch, indicating that the tool was used for scraping or shaving.

SF-ISO-015-A: This resource consists of two plow blade fragments embossed with the number 77 or 77 oliver.

SF-ISO-016-A: This resource consists of one plow blade, one metal disk, and one miscellaneous piece of metal. The concave disk is embossed with c t.

SF-ISO-017-A: This isolate is a multidirectional chert core formed from a large primary flake. The core is a yellow-brown, fine-grained chert with several large quartz inclusions and had darker cortex with a crenulated surface texture.

SF-ISO-018-A: This isolate consists of a horseshoe.

SF-ISO-019-A: This isolate is a metal wheel with 6 bolts in the hub and 12 spokes.

SF-ISO-020-A: This isolate is a white/pink unifacial mano with good polish and slight pecking on one end.

SF-ISO-021-A: This isolate is a furrow tine.

SF-ISO-022-A: This isolate is a plow blade fragment with 77 embossed on the face.

SF-ISO-023-A: This isolate is a horseshoe with no front cleat.

SF-ISO-024-A: This isolate consists of a hopper mortar made from sandstone.

SF-ISO-025-A: This isolate is a loaf-shaped, white granite, unifacial mano.

SF-ISO-026-A: This isolate is a bifacial mano with anvil marks/pecking, as well as plow marks.

SF-ISO-027-A: This isolate is a unifacial mano with anviling, battered ends, and good polish with striations.

SF-ISO-028-A: This isolate consists of a unifacial granitic mano and a cobble tool with six flake scars.

SF-ISO-029-A: This isolate is a historical well pipe enclosure. The isolate is a 5.25- inch-diameter steel pipe extending 8 inches from the ground surface.

SF-ISO-030-A: This isolate is a blue oak with embedded barbed-wire adjacent to a current fence line.

SF-ISO-031-A: This isolate is a historical water-control feature consisting of a 5.25-inch-diameter iron pipe projecting horizontally 4 to 5 inches from the face of the western bank of Funk's Creek. The pipe is approximately 20 inches below ground surface.

SF-ISO-032-A: This isolate is a plow blade fragment embossed with the letter *R*, the last letter of an unknown word.

SF-ISO-033-A: This isolate is a plow part.

SF-ISO-034-A: This isolate is a rock feature consisting of an accumulation of local cobbles measuring 516 square feet. The feature is thought to have been produced by the clearing of fields for agricultural use.

The pile was likely buried within an intentional or natural depression to at least four courses of rock. The feature does not extend more than 4 to 5 inches above the ground surface and is well embedded.

Rocks of the feature consist of naturally occurring granites, sandstones, and cobbles from conglomerate rocks located on ridges above the feature to the east. There is a shallow depression along the western side of the feature. The cobbles range in size from 3.9 to 13.7 inches in diameter.

SF-ISO-035-A: This isolate consists of two cans embedded within the northern bank of Funk's Creek, buried 2.5 feet below the ground surface. The cans are covered in thick calcium carbonate. One can has a crimped seam.

SF-ISO-036-A: This isolate is a ribbed metal machine part with two punched holes.

SF-ISO-037-A: This site consists of a single bedrock mortar located within a weathered sandstone outcrop on a south-facing hill slope adjacent to an ephemeral drainage.

SF-ISO-038-A: This isolate is a bifacial mano that shows one side well polished and the other side extremely weathered. The mano is possibly made from meta-sedimentary granite. SF-ISO-039-A and SF-ISO-040-A are located nearby.

SF-ISO-039-A: This isolate is a milling station located along the southern side of an unnamed drainage. The mortar is in sandstone bedrock that is very weathered and has lichen and moss covering portions of its surface. Isolates SF-ISO-40-A and SF-ISO-38-A are located nearby.

SF-ISO-040-A: This isolate consists of two bedrock mortars located along the northern side of an unnamed drainage. The mortars are in a very weathered sandstone outcrop that is covered in mosses, lichens, and soils from colluvial action. Isolates SF-ISO-039-A and SF-ISO-038-A are located nearby.

SF-ISO-041-A: This isolate is an historic, hand-cut stump located on a flat hilltop directly south of SF-007-A, Locus A.

SF-ISO-042-A: This isolate is a visually sourced Borax Lake obsidian flake.

SF-ISO-043-A: This isolate is a meta-sedimentary, teardrop-shaped unifacial mano located near site SF-008-A.

SF-ISO-044-A: This isolate is a visually sourced Borax Lake obsidian biface thinning flake.

SF-ISO-045-A: This isolate is an extremely weathered, white granitic unifacial mano.

SF-ISO-046-A: This isolate consists of a bifacial mano of unknown material and a very weathered/rusted plow blade. The mano is loaf-shaped and exhibits good polish and a plow blade scar.

SF-ISO-047-A: This isolate is a sandstone pestle fragment that exhibits pecking and polishing on one side. Numerous plow scars are also evident. Site SF-001-C is in the vicinity.

SF-ISO-048-A: This isolate is a pecked reddish-orange piece of sandstone with five small cupules located near site SF-001-C.

SF-ISO-049-A: This site is a bedrock mortar with one cup located in a sandstone outcrop adjacent to an ephemeral drainage that empties into a stock pond.

SF-ISO-050-A: This isolate is a sandstone hopper mortar located on a slope east of a fence with stock pond to the south.

SF-ISO-051-A: This isolate consists of an old stock pond with 90 feet of berm, located in a drainage between two hills. A red-colored/heat-altered piece of sandstone and one 5-inch-long wire nail were also found.

SF-ISO-052-A: This isolate is a 1 gallon, amber-glass bottle body fragment, embossed with *Colo. mail order, San Francisco, net contents 1 G*. The isolate was found in a steep drainage.

SF-ISO-053-A: This isolate is a multidirectional, meta-sedimentary core.

SF-ISO-054-A: This isolate is a plow blade, embossed with *D40* and engraved with *DEE* (the last E is slightly truncated).

SF-ISO-055-A: This isolate is a plow disk.

SF-ISO-056-A: This isolate consists of two plow blades and one metal strap. One blade is embossed with *40. (O. D.?) s.* The scrap metal is riveted. All elements were found in the creek drainage adjacent to a road.

SF-ISO-057-A: This isolate is a single battered and broken cobble of metavolcanic rock.

SF-ISO-058-A: This isolate is a hopper mortar.

SF-ISO-059-A: This isolate consists of a stock pond complex. There are two basin features, a possible quarry or borrow pits, four large pits, two small pits, and cut blue oak stumps associated with the complex.

SF-ISO-060-A: This isolate is a sandstone hopper mortar.

SF-ISO-061-A: This isolate consists of a north/south-running fence line with hand-hewn fenceposts and three rows of barbed-wire secured to posts by staples, which were previously secured with square nails. Old double-stranded round wire with four point barbs is also present.

SF-ISO-062-A: This isolate is a bifacial mano made from a metavolcanic material. Both surfaces exhibit significant polish and all edges show battering.

SF-ISO-063-A: This isolate consists of various windmill parts.

SF-ISO-064-A: This isolate consists of unidentified machine parts.

SF-ISO-065-A: This isolate consists of a harvester or bailer machine part made of a flat bar with attached blades.

SF-ISO-066-A: This isolate is a plow blade embossed with *77*, a depiction of a plow, and the word *oliver*.

SF-ISO-067-A: This isolate consists of a quarry/borrow pit.

SF-ISO-068-A: This isolate consists of a pump piece with its outtake still attached.

SF-ISO-069-A: This isolate is a fragment of a plow disc that is covered with rust and lichen.

SF-ISO-070-A: This isolate consists of a shard of crockery, a metal washtub, and a metal gas can.

SF-ISO-071-A: This isolate consists of an historical trash scatter that includes a fragmented wood stove, numerous bottles, two condiment jars, a milk can, a tobacco tin, meat tins, an enamelware pot, and various other church-key and pull-top cans. The wood stove is embossed with *H.R. 7-140 w-w-co 1603; 8-145*. Some of the bottles in the trash scatter include Pepsi Cola (*woodland 1207*) *DES. PAT 120.277/15A54/3* (diamonds) *2-5431*, Squirt spiral glass (green) *23 ® 6015* (5 is backwards) */18.3/*, Coca-

Cola (60s) *Sacramento* - ^G - *CALIF*, amber whiskey bottle fragment, with the words *Federal law prohibits . . .*

SF-ISO-072-A: This isolate consists of the remains of a windmill mechanism that are in good condition. Piping and a rusted-out basin were found in association with the isolate.

SF-ISO-073-A: This isolate consists of a bifacial piece of ground stone with a highly polished face exhibiting bi-directional striations and another face with a slightly polished face exhibiting light striations. The artifact is a stream cobble of metavolcanic material located southwest of SF-022-A.

SF-ISO-074 A: This isolate consists of a fragment of metal, inscribed with 378. It is wrapped with a piece of barbed-wire and is similar to a piece of metal identified at SF-028-A.

SF-ISO-075-A: This isolate is a unifacial mano that exhibits pecking and a slight shoulder.

SF-ISO-076-A: This isolate consists of two hopper mortar fragments of very weathered sandstone located approximately 7 meters north of an unnamed ephemeral drainage

SF-ISO-077-A: This isolate is a trash pit containing a pipe, metal pump, and possible windmill remains. Sandstone rocks line the depression. A 12-inch-tall metal post with a large screw is just north of the depression.

SF-ISO-078-A: VOID.

SF-ISO-079-A: This isolate consists of a historical turn signal. On the back of the signal and near the top of the light is the engraving *US 400*. Engraved near the bottom of the signal is *U.S. 400*, an eagle standing in profile, and the brand-name *Pioneer*. The thick, patterned glass is intact, but cloudy from age.

SF-ISO-080-A: This isolate is a chert flake.

SF-ISO-081-A: VOID.

SF-ISO-082-A: This isolate consists of a pile of old wooden fenceposts and several rolls of barbed-wire, including twisted two-strand wire with four-point wire barbs and twisted two-strand wire with four-point sheet-metal plate barbs.

SF-ISO-083-A: This isolate consists of a car body and frame parts of an unidentified make and model located within a pile of rocks that are likely associated with clearing of fields. An air horn was also located within the area with *B.M Lawrence and company 244 California Street San Francisco, CA made in Holland* written on it.

SF-ISO-084-A: This isolate is a single metavolcanic flake.

SF-ISO-085-A: This isolate is an insulator made from a brown ceramic material.

SF-ISO-086-A: This isolate is a plow blade.

SF-ISO-087-A: This isolate consists of a possible deadman fence anchor made of a cast-iron spool/hub with a chain through it, secured with a bolt and square nut. There is a tow-hook at the terminus of the

chain. To serve as an anchor, the spool end would be buried in the ground with the chain and tow-hook remaining above ground.

SF-ISO-088-A: This isolate consists of a plate fragment and a rock fire pit containing ash.

SF-ISO-089-A: This isolate consists of a broken pedestal bowl of white undecorated porcelain. Additionally, two brown glass beer bottles were located approximately 10 meters from the bowl. The bottle bases are embossed with *21 • A 203856 10FF*.

SF-ISO-090-A: This isolate is a historical trash scatter consisting of a bottle base, skillet, milk glass fragment, ceramic fragment, rock ring, and a piece of stoneware. The melted black-glass bottle base with kick-up measures 2.75 inches in diameter. The cast-iron *WAGNER* skillet is missing its handle. A fragment of milk glass, a ceramic fragment with a tulip motif, a rock fire-ring, and a stoneware lid were also contained within the scatter.

SF-ISO-091-A: This isolate consists of a concrete ramp that angles off of a two-track road. The ramp is constructed of a coarse aggregate concrete overlaying a foundation of large local meta-sedimentary boulders.

SF-ISO-092-A: This isolate consists of a wooden post and PVC pipe protruding from the ground.

SF-ISO-093-A: This linear isolate consists of the aligned poles of a former telephone line.

SF-ISO-094-A: This isolate is an extremely weathered and rusty square nail.

SF-ISO-095-A: This isolate consists of a cream-colored ceramic insulator connected to approximately 15 feet of wire.

SF-ISO-096-A: This isolate consists of a mano with unifacial polish and minimal pecking/shaping.

SF-ISO-097-A: This isolate consists of a metal machine part with two bolt holes.

SF-ISO-098-A: This isolate consists of one broken metal plow blade embossed with *76 E*.

SF-ISO-099-A: This isolate consists of a machine part with three holes and green paint.

SF-ISO-100-A: This resource is a sandstone slab containing one cupule.

SF-ISO-101-A: This isolate is a mano with unifacial polish and edge pecking/battering.

SF-ISO-102-A: This isolate is a north/south-running fence line. There are four standing posts and nine posts lying on the ground, as well as an old bale of fencing wire west of the fenceposts.

SF-ISO-103-A: This isolate is vehicle headlamp.

SF-ISO-104-A: This isolate is a well cap marked by a metal spike.

SF-ISO-105-A: This isolate is a unidirectional core exhibiting eight flake scars.

SF-ISO-106-A: This isolate consists of a multi-directional metavolcanic core.

SF-ISO-107-A: This isolate consists of two intersecting fence lines. There are a few standing fenceposts but the fence line is primarily visible as a berm that developed where the fence used to be.

SF-ISO-108-A: This isolated resource consists of a historical trash scatter. Included in this scatter were one metal tire rim, one straight metal pipe, one straight metal pipe with a curve at one end, one L-shaped piece of metal with holes and bolts, one metal piece, one metal sheet, one metal band, and one metal pipe.

SF-ISO-109-A: This resource consists of a well cap with a metal spike that extends 2 feet above the ground surface.

SF-ISO-110-A: This resource is composed of a trash scatter, possibly brought downstream by Stone Corral Creek from the Jennings Ranch complex. Cultural constituents located at the site include several diagnostic historical artifacts including a pressed brick with letters *YHC*, a white ceramic fragment with *The Colonial* painted on the base, a clear glass bottle with *PAT. D-113558 Leutheric 5 3.2 oz.* embossed on the base, a fragment of white ceramic with a clear glaze, a white ceramic fragment with a yellow glaze, a white milk glass with *PONDS* embossed on the base, a coarse stoneware fragment with a brown dimpled glaze, one white ceramic teacup fragment with a clear glaze and a printed floral pattern along the outer rim, three fragments of a cast-iron kettle located 30 inches deep in the cutbank, bottle fragments of clear, amber, green, cobalt and amethyst glass, at least 10 bricks (some with *Richmond* stamped on them), three Jadeite ceramic fragments, a 3-inch diameter amethyst bottle base, and two complete clear glass bottles.

SF-ISO-111-A: This isolate consists of two visually sourced Borax Lake obsidian reduction flakes and one red cryptocrystalline silicate edge-modified flake.

SF-ISO-112-A: This isolate consists of two visually sourced Borax Lake obsidian biface thinning flakes and one red chert edge-modified flake.

SF-ISO-113-A: This isolate consists of the old Sites-Lodoga Road with a side marker road sign.

SF-ISO-114-A: This isolate consists of a cast-iron stove part with a hinge piece and a decorative spiral.

SF-ISO-115-A: This isolate consists of a chert cobble core with seven flake scars. The isolate is very weathered.

SF-ISO-116-A: This isolate consists of a tree-of-heaven (*Alianthus altissima*) grove with trees ranging from 3 inches diameter-at-breast-height to 11 inches diameter-at-breast-height.

SF-ISO-117-A: This isolate consists of a steel hammer head.

SF-ISO-118-A: This isolate consists of a plow blade.

SF-ISO-119-A: This isolate is a large quartzite flake.

SF-ISO-120-A: This isolate consists of a large basalt flake.

SF-ISO-121-A: VOID.

SF-ISO-122-A: This isolate is a brown glass bitters bottle with heavy patina. The bottle is a two piece mold and is embossed with the words Dr. J. Hostetters Stomach Bitters. The base is embossed with *T ___ & Co. Dr. J. Hostetter's Stomach Bitters* were first produced by Dr. Jacob Hostetter of Pennsylvania in the 1830s. However, mass production didn't begin until 1853 by his son, David (Davoli 1998).

SF-ISO-123-A: This isolate consists of one large chert flake.

SF-ISO-124-A: This isolate consists of a possible well house or related structure that is collapsed in two areas. Wire nails, rusted corrugated roofing and lumber are associated with the structures. There is also a white chert flake present.

SF-ISO-125-A: This isolate consists of two plow blades located within 10 feet of each other. One is embossed with 6 and a representation of an old plow.

SF-ISO-126-A: This isolate consists of a small pile of sandstone boulders arranged in a circle and located at the base of a small hill on a flat. At least 15 boulders were observed in the pile, possibly the result of clearing fields for plowing.

SF-ISO-127-A: This isolate consists of a plow disk fragment.

SF-ISO-128-A: This isolate consists of a sandstone hopper mortar. A fragment of green glass was found in association with the mortar.

SF-ISO-129-A: This isolate consists of a horseshoe with one furrow tine.

SF-ISO-130-A: This isolate consists of drilling machinery, possibly for a well. The artifacts include at least 25 pipe fittings with approximately 12 male and 12 female ends, one drill bit, and several 5-inch-long metal pipe pieces with soldered edges. This isolate is near SF-037-A and may be associated with the salt mining activities that took place at that site.

SF-ISO-131-A: This isolate consists of a cement cylinder with hubs on each end, and appears to have been used as a roller/flattener.

SF-ISO-132-A: This isolate consists of a stock pond and improved spring. The improved spring includes a drip-pipe protruding from a hill, a galvanized metal holding-tank with its bottom rusted out, and a backboard to prevent the hill from slumping into the tank. Miscellaneous black PVC pipe and metal pipes lay in the associated stream channel.

SF-ISO-133-A: This isolate consists of milled lumber, a water tank, and a metal machine part labeled with *Pacific Lug PT & P Co. Pat'd Aug 8. 05.*

SF-ISO-134-A: This isolate consists of a well and a surrounding fenced-in enclosure. The enclosure was constructed with horizontal planks attached to vertical posts on each of three sides. The fourth (northern) side was made with wooden pallets attached to vertical posts. The well housing is lined with boards and reinforced by beams. The water level 5 feet below ground surface at the time this isolate was recorded.

SF-ISO-135-A: This isolate consists of a unifacial mano with an obvious shoulder and considerable weathering.

SF-ISO-136-A: This isolate is a sandstone rock pile that is a possible tank foundation, located next to a spring.

SF-ISO-137-A: This isolate consists of an improved spring, associated redwood post fragments, fencing, and a bottle fragment. The spring appears to have been used for salt mining associated with the Salt Lake complex.

SF-ISO-138-A: This isolate consists of an improved spring for mining salt, at least six redwood plank fragments, and one complete olive green bottle. The bottle has a kick-up, applied lip, and a sheared neck finish.

SF-ISO-139-A: This isolate consists of a concrete box constructed to house a well pump.

SF-ISO-140-A: This isolate is a wooden fencepost located on Logan Ridge, approximately 33 feet north of the current fence line.

SF-ISO-141-A: This resource is a rock alignment or rock pile that possibly served as a fencepost support. This resource is on top of Logan Ridge, directly east of an east/west running fence line that also marks the section line.

SF-ISO-142-A: This isolate is a stock pond.

SF-ISO-143-A: This resource consists of a metal animal trap and chain embossed with *Property of U.S. Fish & Wildlife Service*.

SF-ISO-144-A: This resource consists of a series of north/south-running wooden fence posts with square nails.

SF-ISO-145-A: This isolate is a fence line with four different types of barbed-wire attached to it.

SF-ISO-146-A: This isolate consists of one grey chert flake.

SF-ISO-147-A: This multi-component resource consists of a prehistoric bedrock mortar and an isolated historic artifact situated adjacent to an ephemeral drainage, running due east and southeast of Logan's Ridge. The bedrock mortar is on a sandstone outcrop measuring 1.6 meters long, 1.3 meters wide and 0.45 meter high. One plow blade is situated next to the cupule and is embossed with *40 D.S. Oliver*.

SF-ISO-148-A: This isolate is a piece of unmodified ground stone with a heavy polish on one face and pecking on one end.

SF-ISO-149-A (CA-COL-128?): This isolate consists of a bedrock mortar located on a sandstone outcrop adjacent to a seasonal drainage. There is a stock pond east of this outcrop, and a spring to the south. This may represent the formerly recorded site of CA-COL-128.

SF-ISO-150-A: This isolate consists of an alignment of stacked rocks arranged in an *L* shape. The isolate is composed of sandstone rocks and may represent a hunting blind or may be related to other isolates.

SF-ISO-151-A: This isolate consists of a rock wall, wooden fenceposts, and barbed-wire. The wall is made of five courses of sandstone rocks.

SF-ISO-152-A: This prehistoric site is a bedrock mortar situated in a sandstone outcrop near a seasonal drainage.

SF-ISO-153-A: This isolate is a prehistoric bedrock mortar.

SF-ISO-154-A: This isolate is a four-sided rock alignment of at least 100 stacked sandstone rocks. This resource is a possible hunting blind and may be related to other isolates in the area, including SF-ISO-098-B, 102-B, 103-B, and 150-A.

SF-ISO-155-A: This isolate consists of a rock wall composed of several hundred sandstone rocks. One end of the wall begins 15 feet upslope from Lurline Creek. The wall follows the creek southeast for approximately 100 feet, where it turns southwest, crosses the creek, and terminates 20 feet later. This wall is probably associated with an unrecorded site due east of this resource that includes additional rock walls, an orchard, historical trash, midden, chert and obsidian flakes and ground stone pieces.

SF-ISO-156-A: This isolate consists of an old fence line including in situ posts, barbed-wire, and used blue oaks. The southern end of the fence line has two types of barbed-wire that pass through three blue oaks. The northern end of the fence line has five fenceposts that have been cut off 1 foot above the ground and currently lean downslope.

SF-ISO-157-A: This isolate consists of a rock wall segment and a large metal fragment. The rock wall is at the base of a hill and is heavily lichen-covered. The large metal fragment is at the southern end of the wall.

SF-ISO-158-A: This multi-component site consists of a prehistoric bedrock mortar located on a sandstone boulder and a historic rock wall situated on a flat at the base of a hill. The remnants of a rock wall are approximately 40 feet from the bedrock mortar. The wall runs north to south and was dry-laid from locally available sandstone boulders, probably collected in the immediate vicinity. Two intact courses are present, measuring 130 feet in length.

SF-ISO-159-A: This isolate is a purple meta-sedimentary flake.

SF-ISO-160-A: This isolate is an isolated metamorphic basalt flake tool.

SF-ISO-161-A: This isolate is a rock wall made of sandstone rocks that runs uphill from a two-track road.

SF-ISO-162-A: This isolate consists of a visually sourced Borax Lake obsidian flake.

SF-ISO-163-A: This historic site consists of a rock wall and a plow/ripper. The wall segment has a total length of 975 feet. The site is surrounded by extensive sandstone outcrops, which likely provided construction materials for the rock wall. A rock pile is adjacent to the plow/ripper and was probably a part of the rock wall before plowing in the area took place. An ephemeral linear scatter of rocks exists between the plow, rock pile, and the intact eastern end of the rock wall.

SF-ISO-164-A: This isolate consists of a historical metal pump/compressor attached to a wood and concrete pad embossed with *Cushman Motor Works / Lincoln, Nebraska / Cushman RPM 800 / Engine 20402 patented 11-14-11*.

SF-ISO-165-A: This isolate consists of a bifacial mano that has broken into two fragments that reconnect. One face exhibits substantial polish and the opposite face exhibits polish and pecking.

SF-ISO-166-A: This prehistoric site is a bedrock mortar, located on a small sandstone outcrop, with a single cupule.

SF-ISO-167-A: This isolate is a sandstone milling-slab fragment that exhibits a calcium carbonate buildup.

SF-ISO-168-A: This isolate is a metasedimentary core.

SF-ISO-169-A: This isolate is a unifacial mano fragment.

SF-ISO-170-A: This isolate is a meta-sedimentary cobble core with.

SF-ISO-171-A: This isolate is a metavolcanic unifacial mano. This isolate is near site SF-044-A.

SF-ISO-172-A: This isolate is a metavolcanic bifacial mano.

SF-ISO-173-A: This isolate consists of a piece of metal flue flashing constructed of sheet metal, and the cylinder is attached to a rectangular metal piece. Each of the four corners of the rectangular piece has a hole, presumably for securing the flashing to a roof or other exterior wall. The flue flashing may have been used in conjunction with a stove vent.

SF-ISO-174-A: This isolate is a fragment of a metavolcanic unifacial mano located near SF-ISO-046-A.

SF-ISO-175-A: This isolate is a battered cobble located north of SF-ISO-046-A.

SF-ISO-001-B: This isolate is an artificially made mound of dirt and gravel, overgrown with low plants. An old two-track road lies to the east.

SF-ISO-002-B: This isolate is a mottled brown and white chert core.

SF-ISO-003-B: This isolate is a historical metal plate with reinforcing ridges, resembling a thick roadway guardrail.

SF-ISO-004-B: This isolate is a mottled grey chert cobble core.

SF-ISO-005-B: This isolate is a tabular, brown, unidirectional chert core, and is very heavily battered and weathered.

SF-ISO-006-B: This isolate is an Oliver plow blade. It is embossed with a seal consisting of an image of a horse-drawn plow and the letters *HILLED* above the plow and *77* to the right. Below the seal, *I* is embossed. A curved line leads to the right edge of the blade where there is a letter *S*. Below this curved line, near the outer edge is the word *OLIVER*.

SF-ISO-007-B: This isolate is a red-brown chert cobble core.

SF-ISO-008-B: This isolate is a meta-sedimentary unifacial mano.

SF-ISO-009-B: This isolate is a split-cobble, unidirectional chert core.

SF-ISO-010-B: This isolate is a large basalt flake.

SF-ISO-011-B: This isolate is a visually sourced Borax Lake obsidian flake.

SF-ISO-012-B: This isolate consists of a fig grove. Ten large fig trees are planted in a circular pattern approximately 45 feet in diameter. SF-008-A, a historical ranch complex, lies approximately 500 meters to the east.

SF-ISO-013-B: This isolate is a meta-sedimentary unifacial mano.

SF-ISO-014-B: This isolate is a red-brown metasedimentary unifacial mano.

SF-ISO-015-B: This isolate is a possible ground stone fragment of metasedimentary material.

SF-ISO-016-B: This isolate consists of 10 or more local sandstone slabs arranged in two courses over an apparent patch of disturbed earth. The use or function of this pile of rocks is indeterminate, although it may be related to clearing the field for agriculture.

SF-ISO-017-B: This isolate is a rock pile composed mainly of local sedimentary stones. Isolate SF-ISO-018-B is in close proximity of this feature. A depression appears to have been excavated down, and then filled with rocks, ranging in size from a small fist to a small boulder. Associated with rock pile are one sanitary can and one fragment of curved metal in the shape of an arch. The sanitary can has been modified, possibly for watering, as evidenced by deliberate holes in base and the addition of a makeshift wire handle.

SF-ISO-018-B: This isolate is a unifacial, loaf-shaped mano of yellow conglomerate. The isolate is near isolate SF-ISO-017-B.

SF-ISO-019-B: This isolate is a possible unifacial mano with pecking.

SF-ISO-020-B: This isolate is a chert flake.

SF-ISO-021-B: This isolate is a neck fragment of an aqua glass milk jar.

SF-ISO-022-B: VOID.

SF-ISO-023-B: This isolate consists of a metal dump truck bed, associated tailgate, and parts for a frame for a wagon or trailer. The welded portion appears to have been fabricated to act as skids, with an additional welded plate designed to allow towing.

SF-ISO-024-B: This isolate consists of a two-person hand-sawed blue oak stump.

SF-ISO-025-B: This isolate consists of a fragment of an Oliver #77 plow blade.

SF-ISO-026-B: This isolate is a pipe flange, engraved with made in the *U.S.A.* and *Timber* (possible Caterpillar machinery). Wear or plow marks are evident along the length of the flange.

SF-ISO-027-B: This isolate consists of a milling stone/sandstone slab with three shallow cupules and a large cup located at the break in the slab. One of the small cupules exhibits obvious pecking, while the others are much smoother.

SF-ISO-028-B: This isolate is an obsidian flake.

SF-ISO-029-B: This isolate consists of a depression filled with small sandstone boulders and cobbles. There are a few hundred sandstone rocks in this concentration. The location is midway on a slope in an active drainage. The rock feature appears to have been constructed to prevent headcut erosion.

SF-ISO-030-B: This isolate consists of 10 culvert fragments located in an ephemeral wash. Located near an abandoned section of road, the culvert is made of large-grain concrete with no reinforcement. Each section appears to be cast from a two-piece mold.

SF-ISO-031-B: This isolate consists of a pile of sandstone boulders made up of approximately 25 rocks.

SF-ISO-032-B: This isolate is a water-control feature composed of local sandstone and used tires placed within a drainage of in an unsuccessful attempt to slow or prevent erosion.

SF-ISO-033-B: This isolate is a multidirectional basalt core.

SF-ISO-034-B: This isolate is a metavolcanic uniaxial mano.

SF-ISO-035-B: This isolate is a metal object that appears to be a piece of equipment related to hitch or trailer, and is composed of several pieces of metal held together with screws.

SF-ISO-036-B: This isolate is a historical cattle loading ramp made of milled lumber, drilled and bolted with square head lag bolts and nuts (no nails). The entire structure is collapsed.

SF-ISO-037-B: This isolate is a mortar cup on a small boulder located in an unnamed drainage that flows into Antelope Creek. The isolate was located approximately 200 meters south of SF-010-B.

SF-ISO-038-B: This resource is a bedrock mortar on a weathered lichen-covered sandstone outcrop. The isolate is along an ephemeral drainage near site SF-010-B.

SF-ISO-039-B: VOID.

SF-ISO-040-B: This isolate is a visually sourced Borax Lake obsidian flake. This isolate is probably associated with site SF-029-B, located upstream.

SF-ISO-041-B: This isolate is one obsidian secondary flake. This isolate is probably associated with site SF-029-B, located upstream.

SF-ISO-042-B: This isolate consists of a brown-mottled chert secondary flake.

SF-ISO-043-B: This isolate is of a pink-brown chert core with black phenocrysts. It is a split cobble with a minimum of six unidirectional flake removal scars.

SF-ISO-044-B: This isolate is an automobile, dating to the 1920s or 1930s. The vehicle is a Ford two-door coupe body with frame rails. The vehicle appears to be in fair condition, although most of the interior and the motor are not present. Portions of car have moved downslope over a distance of approximately 75 meters. A shovel head in two pieces is noted in association with the isolate.

SF-ISO-045-B: This isolate is of a large visually sourced Borax Lake obsidian turtleback core.

SF-ISO-046-B: VOID.

SF-ISO-047-B: VOID.

SF-ISO-048-B: This isolate is of two isolated purplish-black, fine-grained metavolcanic flakes. The flakes were located on an outcrop of conglomerate bedrock, consisting of large, rounded, river cobbles cemented together. The flakes were likely the result of testing one of these cobbles.

SF-ISO-049-B: This isolate is a black metavolcanic flake.

SF-ISO-050-B: This isolate is of a pile of sandstone rocks. A discrete stack of slabs is on top of the pile. A fragment of green glass was found nearby.

SF-ISO-051-B: This isolate is a metavolcanic core.

SF-ISO-052-B: This isolate is a metasedimentary bifacial mano with battering on both ends.

SF-ISO-053-B: This isolate is a meta-sedimentary bifacial mano with pecking on both ends and plow scars run along its length.

SF-ISO-054-B: This isolate is a meta-sedimentary mano with anvil and hammerstone use.

SF-ISO-055-B: This isolate is a rusty plow blade.

SF-ISO-056-B: This isolate is a harrow and trailer located in the corner of a field. The wheels of the trailer have wooden spokes with a metal wheel tire. The front of the trailer has a hand-forged chain to attach to a tractor. Fence wire was noted tangled in the harrow, possibly as a result of driving over a portion of the fence.

SF-ISO-057-B: This isolate is a bifacial mano with edge and end pecking.

SF-ISO-058-B: This isolate is a metavolcanic unifacial mano.

SF-ISO-059-B: This isolate is a brown and white quartzite core.

SF-ISO-060-B: This isolate is a pecked cobble with four distinct depressions pecked onto the flat surface. The side of the cobble also appears to have been shaped.

SF-ISO-061-B: This isolate is a metasedimentary cobble core with plow damage.

SF-ISO-062-B: This isolate is a white cast-iron, enameled household sink, and appears to have been recently used as a salt lick container.

SF-ISO-063-B: This resource is a brown chert core with a minimum of 10 flake removals.

SF-ISO-064-B: This isolate is an obsidian biface, possibly an Excelsior-style point, which exhibits extreme water wear.

SF-ISO-065-B: This isolate consists of several pieces of fire-affected rock contained in the creek bank. No soil discoloration was noted. Nearby, in the creek bed is a salt seep.

SF-ISO-066-B: This isolate is a collapsed structure, possibly a corral, located at the top of a small hill. Milled lumber and wire nails make up most of the debris. The resource is near site SF-002-E.

SF-ISO-067-B: This isolate is a primary flake and a secondary flake located five meters apart. A fragment of a porcelain cup was found in proximity to the flakes.

SF-ISO-068-B: This isolate is a historical trash scatter including a wagon or trailer frame. The frame has a leaf-spring suspension, and is made of wood. Rubber tires are present. Also present are various metal and wood fragments.

SF-ISO-069-B: This isolate is a fine-grained basalt secondary flake.

SF-ISO-070-B: This isolate is a historical rock pile related to field clearing and associated with a bedrock outcrop. The isolate is made up of medium to large cobble clasts.

SF-ISO-071-B: VOID.

SF-ISO-072-B: This isolate is a historical trash scatter consisting of one metal cot frame and two pieces of milled lumber.

SF-ISO-073-B: VOID.

SF-ISO-074-B: This isolate is a rusty sanitary can lid. There are no visible markings.

SF-ISO-075-B: This isolate is a green glass bottle base fragment. The fragment is a glass push-up that exhibits extreme weathering.

SF-ISO-076-B: This isolate is a portion of a crockery rim. The crockery is white-glazed stoneware displaying crazing, possibly from age. The glaze also exhibits numerous surface pores, most likely formed during the firing process.

SF-ISO-077-B: This isolate is a fence line that consists of rough-hewn wood posts with flat, single-wrap barbed-wire.

SF-ISO-078-B: The isolate consists of two rolls of single-wrap, flat-barb barbwire and chickenwire. This isolate is probably associated with SF-ISO-077-B.

SF-ISO-079-B: VOID.

SF-ISO-080-B: This isolate is a basalt flake.

SF-ISO-081-B: This isolate is a Mason jar mouth and partial shoulder, located in an inverted position over the top of a T-bar on a fence line. Also present is a roll of double-barbed, twisted strand barbed-wire.

SF-ISO-082-B: This isolate is a scatter of 10 metal pipe fragments. The fragments are of various diameters and various lengths. Also present is a bent metal rod.

SF-ISO-083-B: This isolate is an excavated trash dump and associated fill pile. In and around the pit are pieces of metal, piping, and wire.

SF-ISO-084-B: This resource is a scatter of farm equipment and vehicles, lumber, metal, and other garbage. Two trailers, one U.S military half-truck, one tiller, and one thresher are present. Also present

are white ceramic fragments, a broken Pepsi bottle, and wire bales. The entire isolate covers approximately 100 feet along the existing fence line.

SF-ISO-085-B: This isolate is a fine-grained basalt tertiary flake.

SF-ISO-086-B: This isolate is a bifacial mano. Shouldering is apparent on all edges and one face appears to have been pecked and re-sharpened.

SF-ISO-087-B: This isolate is an improved spring and associated wooden fence located in a flat. The spring measures approximately 4 meters in diameter, with the wooden fence closely surrounding the spring. Also present are several iron T-bars implanted vertically into the ground. Two small, unimproved springs lie to the south.

SF-ISO-088-B: This isolate is a quartzite cobble core, one chert tertiary flake, and one pink igneous flake.

SF-ISO-089-B: This isolate is a rock alignment along a north-south-trending ridgeline and bedrock outcrop. The alignment consists of ten or more sandstone boulders laid in two courses. Associated with the alignment is a fragment of light blue glass. This alignment possibly served as a hunting blind.

SF-ISO-090-B: This isolate is a bedrock mortar with two individual cups, located within a north-south-trending outcrop near a spring.

SF-ISO-091-B: This isolate consists of two rock alignments that may have served as hunting blinds. The first alignment is formed from nine sandstone boulders, each approximately 70 centimeters long. To the south of the bedrock outcrop lies the second alignment, a pile of sandstone stones forming an *L* shape.

SF-ISO-092-B: This isolate is a rock alignment containing 50 or more sandstone slabs and boulders measuring up to 1 meter long, aligned west from an upright sandstone bedrock outcrop. The alignment forms a *C* shape. Some of the stones are embedded in up to 5 centimeters of soil.

SF-ISO-093-B: This isolate is a rock alignment that possibly served as a hunting blind. Twelve sandstone slabs lie in a single course to the east of a small north-south-trending sandstone bedrock outcrop. This isolate may be related to Isolates SF-ISO-89-B, 92-B, 93-B, 150-A, and 154-A.

SF-ISO-094-B: This isolate is a small trash scatter that may be related to a structure noted on the Logan Ridge quadrangle map. The structure is no longer present. This isolate consists of metal fragments of various sizes, a portion of a cast-iron stove top, a roll of barbed-wire, a fencepost, and a clear glass jug mouth and partial shoulder.

SF-ISO-095-B: This isolate is a small scatter of wood and metal, most likely associated with a structure appearing on the Logan Ridge Quadrangle map. Artifacts include: one strap hinge, one milled 1-inch by 6-inch board, one wood and metal wagon tongue, one nearly complete #77 plow, and various metal machinery parts. The mapped structure is no longer standing. The plow blade is embossed with *Oliver Chilled Plow Works*.

SF-ISO-096-B: This isolate is a rock pile that possibly served as a hunting blind. The rock pile consists of several large sandstone boulders aligned to the east. Lichen is growing on all of the rocks in the isolate.

SF-ISO-097-B: VOID.

SF-ISO-098-B: This isolate is a rock alignment that possibly served as a water-control feature. The feature runs north/south in a drainage and may control water flow into Lurline Creek, which lies to the south.

SF-ISO-099B: This site consists of two bedrock mortar features located on two different pieces of bedrock on the southern face of a large hill approximately 100 feet upslope from the bottom of the valley.

SF-ISO-100-B: This isolate is a plow blade inscribed with *D40 DEERE DS*.

SF-ISO-101-B: This isolate is a core and an enamel sink. The core is of a metavolcanic material with six flakes removed. The sink is 10 meters to the east of the core and has white enamel with blue piping and iron.

SF-ISO-102-B: This isolate is a rock feature constructed of local sandstone cobbles and boulders. The feature is made up of 60 to 70 rocks arranged in three courses. Lichen was noted on the rocks.

SF-ISO-103-B: This isolate is a rock alignment constructed from local sandstone boulders. Two courses of stones extending west from a bedrock outcrop form a rectangular structure. This isolate may have served as a hunting blind, and may be affiliated with SF-ISO-89-B, 91-B, 92-B, 93-B, 102-B, 103-B, 150-A, and/or 154-A.

SF-ISO-001-C: This isolate is a broken milling slick. The isolate is on a 10-degree slope along a small ephemeral drainage.

SF-ISO-002-C: This isolate is a sandstone unifacial mano fragment with pecking. This isolate may be associated with site SF-001-C.

SF-ISO-003-C: This isolate consists of one mano and one mano fragment. The complete mano is loaf-shaped and unifacial and displays some battering on both ends. The mano fragment is unifacial. This isolate is approximately 150 meters south of site SF-001-C.

SF-ISO-004-C: This isolate is a rock cairn, with stones ranging in size from small cobbles to large flagstones, located in an excavated pit.

SF-ISO-005-C: This isolate is a rock cairn, with stones ranging in size from small cobbles to large flagstones, located in excavated pit.

SF-ISO-006-C: This isolate is an old fence line that begins at an ephemeral drainage and heads due west, up a hill. No wooden posts were used in construction of the fence, and the wire was nailed into local blue oaks. The fence is made up of four strands of wire. The top strand is a four-barbed, double-twisted wire. The bottom three strands are hog wire.

SF-ISO-007-C: This prehistoric site consists of a bedrock mortar located on a southeast-trending ridgeline.

SF-ISO-008-C: This isolate is a retaining wall for a trail. The trail starts at an ephemeral drainage and heads due east. The stones used in the construction of the wall are covered with lichen and moss.

SF-ISO-009-C: This resource is an unidentified piece of metal farming equipment, measuring almost 2 feet in diameter. This resource is partially embedded in a cut bank.

SF-ISO-010-C: This resource is a mano with end battering.

SF-ISO-011-C: This resource consists of a water trough and supports. The isolate is in an area of disturbed ground. Three miscellaneous metal parts and three wooden posts were found, in addition to the water trough and support.

SF-ISO-012-C: This resource is a quartzite core.

SF-ISO-013-C: This isolate is a bifacial mano.

SF-ISO-014-C: This isolate is a bifacial mano with a flake removed from one of the polished sides. Pecking is evident on the sides and polished faces.

SF-ISO-015-C: This isolate is a horseshoe with two complete and two broken, square nails. The isolate was found partially buried next to a cattle trail in long grass and star thistle.

SF-ISO-016-C: This resource is a multi-directional core of greenstone with at least three flake scars.

SF-ISO-017-C: This resource is a broken metal plow blade.

SF-ISO-018-C: This resource is a complete sandstone bifacial mano.

SF-ISO-019-C: This resource consists of three plow blades embedded in the soil.

SF-ISO-020-C: This resource consists of one kettle fragment, one milk can fragment, and one bucket fragment. All are located in the bed of a drainage, and may be associated with SF-011-C, a historical site upstream to the northwest.

SF-ISO-021-C: This isolate is a granitic mano, which appears to be fire-affected. Some battering is evident on one of the sides. The mano has light polish on one face.

SF-ISO-022-C: This isolate is an amber glass bottle neck with a sheared bead finish. The bottle neck has vertical slanted striations, but no visible seam. The bottle may be associated with SF-011-C, a historical site across the parcel line to the west, because it was found in the creek bed, downstream.

SF-ISO-023-C: This resource is a blue-grey metavolcanic pestle fragment. One full side demonstrates polish, while the other side has polish in several spots.

SF-ISO-024-C: This resource is a horseshoe with three square nail fragments.

SF-ISO-025-C: This resource is a pitted igneous mano exhibiting some amount of polish and striations on all four sides.

SF-ISO-026-C: This isolate is an Oliver plow blade fragment, embossed with *Oliver* on the edge.

SF-ISO-027-C: This isolate is a plow blade fragment.

SF-ISO-028-C: This isolate consists of four fragments of white earthenware and one piece of amethyst glass. Two of the earthenware pieces are rims fragments.

SF-ISO-029-C: This isolate is a piece of chain with five links present. The chain shows considerable rust.

SF-ISO-030-C: This isolate consists of a stacked rock formation. The stack consists of approximately 15 to 20 sandstone boulders aligned along a natural bedrock outcrop.

SF-ISO-031-C: VOID.

SF-ISO-032-C: VOID.

SF-ISO-033-C: This isolate is a small sandstone hopper mortar. This isolate may be associated with SF-010-C, located approximately 195 meters to the north. SF-ISO-034-C: This isolate is a sandstone cortical flake, approximately 300 meters south of SF-010-C.

SF-ISO-035-C: VOID.

SF-ISO-036-C: This isolate is a rusted metal, oval vehicle mirror. The mirror is from the driver's side of the vehicle, and measures 5 inches in diameter.

SF-ISO-037-C: This isolate is a plow blade.

SF-ISO-038-C: This isolate is a rock alignment of at least 15 sandstone boulders of varying size, from approximately 10 to 30 centimeters, forming a 2-meter diameter ring.

SF-ISO-039-C: This isolate is a metal pipe, possibly an exhaust pipe.

SF-ISO-001-D: This resource consists of a historical rock pile used to retain or divert a drainage. The feature is constructed of medium to large basalt rocks.

SF-ISO-001-E: This resource consists of fragments of a glazed white earthenware plate. The maker's mark is a *W* in a crown with *Fine Porcelain China Diane Japan*.

SF-ISO-002-E: This resource is a bifacial, loaf-shaped, mano, made of a light cream-colored metavolcanic material with quartz inclusions.

SF-ISO-003-E: This resource is an iron machine part embossed with *L 92*. There are three large holes and three small holes at the distal end, while the proximal end terminates in a circular orifice for an attachment.

SF-ISO-004-E: This resource consists of a metavolcanic bifacial, loaf-shaped mano. Shouldering and weathering are present.

SF-ISO-005-E: This resource is a sedimentary rock quarry located on the eastern side of an unnamed branch of Funk's Creek. Within the quarry itself, there are rocks of various sizes ranging from pebbles to large boulders. No artifacts were noted.

SF-ISO-006-E: This resource is a metal license plate that is folded and rusted. The plate is embossed with *4A 8599 19 California 36*. This may be associated with site SF-007-C, located 600 meters west where several license plates from the same time period were found.

SF-ISO-007-E: This isolate is a wooden water-control feature extending east/west off an improved road.

The water-control feature is at the southern end of a valley, approximately 825 feet south of a stock pond. The feature is made of milled wooden beams and natural, unmilled wood partially buried in a linear fashion along a natural seep. The feature appears to cover and/or protect an existing drainage, perhaps preventing water from affecting the road. At least 20 logs are exposed in a linear pattern that measures 118 feet.

SF-ISO-008-E: This resource is of a water-control feature, consisting of a mound of dirt with a galvanized metal water trough and four fragments of milled lumber.

SF-ISO-009-E: This resource is a partially buried car door. No portion of the window is present, but both the outer and inner handles were identified.

SF-ISO-010-E: This resource is the rear axle of a piece of farm equipment. Three holes are drilled in the center of the axle. The wheels each have 10 spokes.

SF-ISO-011-E: This resource is a metal bed or furniture frame with springs and is possibly a part of a hideaway or trundle bed.

SF-ISO-012-E: This resource is a four-cylinder engine block with the pistons present.

SF-ISO-013-E: This resource is a large, solid frame disk-harrow, with three rows of 20 harrows each, metal cabling, and two ratchet-style levers.

SF-ISO-014-E: This resource is a complete, clear glass medicine bottle with a prescription finish. The base is embossed.

SF-ISO-015-E: This resource consists of concrete and square rebar pieces scattered in a creek bed. Adjacent to the scatter is a bulldozed berm. The concrete pieces vary in size, and appeared to be broken.

SF-ISO-016-E: This resource consists of an improved spring surrounded by a fence. The fence is barbed-wire and forms a square enclosure. Within the fencing are bullrush, cottonwood, and various other riparian plants. A metal tube and some fencing are located just outside the enclosure. Sixty feet to the east lies a 1,350-gallon water tank on a wooden platform and a galvanized metal trough. Embossed on the water tank is *The Sioux Steel Co. / Manufacturers of Sioux Steel Products / Sioux Falls, SD*.

SF-ISO-017-E: This resource is a wooden feed trough with a tin roof. Railroad ties serve as supports for the roof, a scatter of milled lumber lies nearby.